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UNITED STATES DEPARTMENT OF THE INTERIOR

SURFACE WATER SUPPLY *of the* UNITED STATES 1926

PART XII

NORTH PACIFIC SLOPE DRAINAGE BASINS

A. PACIFIC SLOPE BASINS IN WASHINGTON AND UPPER COLUMBIA RIVER BASIN

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 632

UNITED STATES DEPARTMENT OF THE INTERIOR
RAY LYMAN WILBUR, Secretary

GEOLOGICAL SURVEY
GEORGE OTIS SMITH, Director

Water-Supply Paper 632

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1926

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A. PACIFIC SLOPE BASINS IN WASHINGTON AND UPPER COLUMBIA RIVER BASIN

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Prepared in cooperation with the States of
WASHINGTON, MONTANA, and IDAHO

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CONTENTS

	Page
Authorization and scope of work	1
Definition of terms	2
Explanation of data	2
Accuracy of field data and computed results	4
Publications	5
Cooperation	9
Division of work	9
Gaging-station records	10
Drainage basins between Columbia River and Puget Sound	10
Chehalis River Basin	10
Wynoochee River at Oxbow, near Aberdeen, Wash	10
Wynoochee River near Montesano, Wash	12
Quinault River Basin	13
Quinault River at Quinault Lake, Wash	13
Quillayute River Basin	15
Soleduck River at Snider ranger station, near Beaver, Wash	15
Lyre River Basin	17
Lake Crescent at Piedmont, Wash	17
Lyre River at Piedmont, Wash	18
Elwha River Basin	19
Elwha River at McDonald Bridge, near Port Angeles, Wash	19
Dungeness River Basin	21
Dungeness River near Sequim, Wash	21
Puget Sound Basins	23
Hamma Hamma River Basin	23
Hamma Hamma River near Hoodsport, Wash	23
Skokomish River Basin	24
North Fork of Skokomish River below Staircase Rapids, near Hoodsport, Wash	24
North Fork of Skokomish River near Hoodsport, Wash	26
South Fork of Skokomish River near Potlash, Wash	28
Nisqually River Basin	30
Nisqually River near La Grande, Wash	30
Little Nisqually River near Alder, Wash	32
Tacoma power conduit near La Grande, Wash	33
Puyallup River Basin	35
Puyallup River near Electron, Wash	35
Puyallup River at Alderton, Wash	37
Puyallup River at Puyallup, Wash	39
White River at Buckley, Wash	41
Lake Washington Basin	43
Cedar River at Cedar Falls, Wash	43
Cedar River near Landsberg, Wash	45

Gaging-station records—Continued.
Puget Sound Basins—Continued. Page
Snohomish River Basin 46
South Fork of Skykomish River near Index, Wash 46
Olney Creek near Startup, Wash 48
Sultan River near Sultan, Wash 49
Middle Fork of Snoqualmie River near North Bend, Wash 51
Snoqualmie River near Snoqualmie, Wash 53
North Fork of Snoqualmie River near North Bend, Wash 55
South Fork of Snoqualmie River at North Bend, Wash 57
Stillaguamish River Basin 58
Deer Creek at Oso, Wash 58
Skagit River Basin 60
Skagit River below Ruby Creek, near Marblemount, Wash 60
Skagit River near Marblemount, Wash 62
Skagit River near Concrete, Wash 63
Thunder Creek near Marblemount, Wash 66
Sauk River at Darrington, Wash 67
Upper Columbia River Basin 69
Main stream 69
Columbia River at Trail, British Columbia 69
Columbia River at Kettle Falls, Wash 71
Columbia River at Vernita, Wash 73
Kootenai River Basin 74
Kootenai River at Libby, Mont 74
Clark Fork Basin 76
Clark Fork near Plains, Mont 76
Pend Oreille Lake at Hope, Idaho 77
Clark Fork at Metaline Falls, Wash 79
Rock Creek near Quigley, Mont 80
Ranch Creek near Quigley, Mont 82
Flathead Lake at Somers, Mont 83
Flathead Lake at Polson, Mont 84
Flathead River near Polson, Mont 85
South Fork of Flathead River near Columbia Falls, Mont 86
Swan River near Big Fork, Mont 88
Big Creek near Polson, Mont 89
Priest River at outlet of Priest Lake, near Coolin, Idaho 91
Colville River Basin 93
Colville River at Meyers Falls, Wash 93
Hall Creek Basin 94
Hall Creek at Inchelium, Wash 94
Stranger Creek Basin 96
Stranger Creek at Meteor, Wash 96
Spokane River Basin 97
Coeur d'Alene River near Cataldo, Idaho 97
Coeur d'Alene Lake at Coeur d'Alene, Idaho 99
Spokane River at Post Falls, Idaho 101
Spokane River at Spokane, Wash 103
Spokane River below Little Falls, near Long Lake, Wash 105
St. Joe River at Calder, Idaho 106
St. Maries River at Lotus, Idaho 109
Hayden Lake at Hayden Lake, Idaho 110
Spokane Valley Farms Co.'s canal at Post Falls, Idaho 111

Gaging-station records—Continued.
Upper Columbia River Basin—Continued. Page
Nespelem River Basin 113
Nespelem River at Nespelem, Wash 113
Nespelem Canal at Nespelem, Wash 114
Okanogan River Basin 116
Similkameen River near Oroville, Wash 116
Sinlahekin Creek above Blue Lake, near Loomis, Wash 117
Toats Coulee Creek near Loomis, Wash 119
West Okanogan Valley Irrigation District Canal near Oroville, Wash 120
Methow River Basin 122
Methow River at Twisp, Wash 122
Chelan River Basin 123
Lake Chelan at Chelan, Wash 123
Chelan River at Chelan, Wash 124
Wenatchee River Basin 126
Wenatchee River near Leavenworth, Wash 126
Yakima River Basin 128
Keechelus Lake near Martin, Wash 128
Yakima River near Martin, Wash 129
Yakima River at Cle Elum, Wash 130
Kachess Lake near Easton, Wash 132
Kachess River near Easton, Wash 133
Cle Elum Lake near Roslyn, Wash 135
Cle Elum River near Roslyn, Wash 135
Naches River below Tieton River, near Naches, Wash 137
Bumping Lake near Nile, Wash 139
Bumping River near Nile, Wash 140
Tieton Reservoir at Tieton Dam, near Naches, Wash 142
Tieton River at Tieton Dam, near Naches, Wash 143
Tieton River at headworks of Tieton Canal, near Naches, Wash 145
Tieton Canal near Naches, Wash 147
Miscellaneous discharge measurements 148
Index 152

ILLUSTRATION

Page
FIGURE 1. Typical gaging station 3

SURFACE WATER SUPPLY OF PACIFIC SLOPE BASINS IN WASHINGTON AND UPPER COLUMBIA RIVER BASIN, 1926

AUTHORIZATION AND SCOPE OF WORK

This volume is one of a series of 14 reports presenting records of measurements of flow made on streams in the United States during the year ending September 30, 1926.

The data presented in these reports were collected by the United States Geological Survey under the following authority contained in the organic law (20 Stat. L. p. 394):

Provided, That this officer [the director] shall have the direction of the Geological Survey and the classification of public lands and examination of the geological structure, mineral resources, and products of the national domain.

The work was begun in 1888 in connection with special studies relating to irrigation. Since the fiscal year ending June 30, 1895, successive appropriation bills passed by Congress have carried the following items:

For gaging the streams and determining the water supply of the United States, and for the investigation of underground currents and artesian wells, and for the preparation of reports upon the best methods of utilizing the water resources.

Annual appropriations for the fiscal years ending June 30, 1895–1927

1895	$12,500.00	1911–1917	$150,000.00
1896	24,500.00	1918	175,000.00
1897–1899	50,000.00	1919	148,244.10
1900	70,000.00	1920	175,000.00
1901–1902	100,000.00	1921–1923	180,000.00
1903–1906	200,000.00	1924–25	170,000.00
1907	150,000.00	1926	165,000.00
1908–1910	100,000.00	1927	151,000.00

In the execution of the work many private and State organizations have cooperated either by furnishing records or by assisting in collecting data. Acknowledgments for cooperation of the first kind are made in connection with the description of each station affected; cooperation of the second kind is acknowledged on page 9.

Measurements of stream flow have been made at about 5,250 points in the United States and also at many points in Alaska and the Hawaiian Islands. In July, 1926, 1,730 gaging stations were being maintained by the Survey and the cooperating organizations. Many miscellaneous discharge measurements were made at other points. In connection with this work data were also collected in regard to precipitation, evaporation, storage reservoirs, river profiles, and water power in many sections of the country and will be made available in water-supply papers from time to time.

DEFINITION OF TERMS

The volume of water flowing in a stream—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 that represent a rate of flow, as second-feet, gallons per minute, miner's inches, and discharge in second-feet per square mile; and (2) those that represent the actual quantity of water, as run-off in inches, acre-feet, and millions of cubic feet. The principal terms used in this series of reports are second-feet, second-feet per square mile, run-off in inches, acre-feet, and millions of cubic feet. They may be defined as follows:

"Second-feet" is an abbreviation for "cubic feet per second." A second-foot is the rate of discharge of water flowing in a channel of rectangular cross section 1 foot wide and 1 foot deep at an average velocity of 1 foot per second. It is generally used as a fundamental unit from which others are computed.

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

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

An "acre-foot," equivalent to 43,560 cubic feet, is the quantity required to cover an acre to the depth of 1 foot. The term is commonly used in connection with storage for irrigation.

The following terms not in common use are here defined:

"Stage-discharge relation," an abbreviation for the term "relation of gage height to discharge."

"Control," a term used to designate the section or sections of the stream channel below the gage which determines the stage-discharge relation at the gage. It should be noted that the control may not be the same section or sections at all stages.

The "point of zero flow" for a gaging station is that point on the gage—the gage height—at which water ceases to flow over the control.

EXPLANATION OF DATA

The data presented in this report cover the year beginning October 1, 1925, and ending September 30, 1926. At the beginning of January in most parts of the United States much of the precipitation in the preceding three months is stored as ground water, in the form of snow or ice, or in ponds, lakes, and swamps, and this stored water passes off in the streams during the spring break-up. At the end of September, on the other hand, the only stored water available for run-off is possibly a small quantity in the ground; therefore

the run-off for the year beginning October 1 is practically all derived from precipitation within that year.

The base data collected at gaging stations consist of records of stage, measurements of discharge, and general information used to supplement the gage heights and discharge measurements in determining the daily flow. The records of stage are obtained either from direct readings on a staff or chain gage or from a water-stage recorder that gives a continuous record of the fluctuations. Measurements of discharge are made with a current meter. The general methods are outlined in standard textbooks on the measurement of river discharge. A typical gaging station, equipped with water-stage recorder and measuring cable and car, is shown in Figure 1.

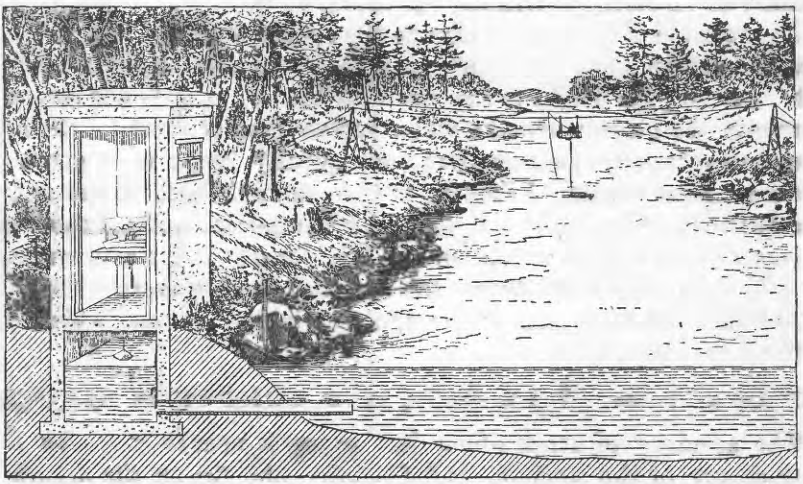

FIGURE 1.—Typical gaging station

From the discharge measurements rating tables are prepared that give the discharge for any stage. The application of the daily gage heights to these rating tables gives the discharge from which the monthly and yearly mean discharge is determined.

The data presented for each gaging station in the area covered by this report comprise a description of the station, a table giving records of discharge measurements, a table showing the daily discharge of the stream, and a table of monthly and yearly discharge and run-off.

If the base data are insufficient to determine the daily discharge, tables giving daily gage height and records of discharge measurements are published.

The description of the station gives, in addition to statements regarding location and equipment, information in regard to any condition that may affect the permanence of the stage-discharge relation, covering such subjects as the occurrence of ice, the use of the stream for log driving, shifting of control, and the cause and effect of

backwater. It gives also information as to diversions that decrease the flow at the gage, artificial regulation, maximum and minimum recorded stages, and the accuracy of the records.

The table of daily discharge gives, in general, the discharge in second-feet corresponding to the means of the gage heights read each day. At stations on streams subject to sudden or rapid diurnal fluctuation the discharge obtained from the rating table and the mean daily gage height may not be the true mean discharge for the day. If such stations are equipped with water-stage recorders, the mean daily discharge may be obtained by averaging discharge at regular intervals during the day or by use of the discharge integrator, an instrument operating on the principle of the planimeter and containing as an essential element the rating curve of the station.

In the table of monthly discharge the column headed "Maximum" gives the mean flow for the day when the mean gage height was highest. As the gage height is the mean for the day it does not indicate correctly the stage when the water surface was at crest height and the corresponding discharge was consequently larger than given in the maximum column. Likewise, in the column headed "Minimum" the quantity given is the mean flow for the day when the mean gage height was lowest. The column headed "Mean" is the average flow in cubic feet per second during the month. On this average flow are based computations recorded in the remaining columns, which are defined on page 2.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of stream-flow data depends primarily (1) on the permanence of the stage-discharge relation and (2) on the accuracy of observation of stage, measurements of flow, and interpretation of records.

A paragraph in the description of the station gives information regarding the (1) permanence of the stage-discharge relation, (2) precision with which the discharge rating curve is defined, (3) refinement of gage readings, (4) frequency of gage readings, and (5) methods of applying daily gage height to the rating table to obtain the daily discharge.

For the rating tables "well defined" indicates, in general, that the rating is probably accurate within 5 per cent; "fairly well defined," within 10 per cent; "poorly defined," within 15 to 25 per cent. These notes are very general and are based on the plotting of the individual measurements with reference to the mean rating curve.

The monthly means for any station may represent with high accuracy the quantity of water flowing past the gage, but the figures showing discharge per square mile and depth in inches may be subject to gross errors caused by the inclusion of large noncontributing districts in the measured drainage area, by lack of information con-

cerning water diverted for irrigation or other use, or by inability to interpret the effect of artificial regulation of the flow of the river above the station. "Second-feet per square mile" and "Run-off in inches" are therefore not computed if such errors appear probable. The computations are also omitted for stations on streams draining areas in which the annual rainfall is less than 20 inches. All figures representing "second-feet per square mile" and "run-off in inches" published by the Geological Survey in earlier reports should be used with caution because of possible inherent but unknown sources of error.

Many gaging stations on streams in the irrigated areas of the United States are situated above most of the diversions from those streams, and the discharge recorded does not show the water supply available for further development, as prior appropriations below the stations must be satisfied first. To give an idea of the amount of prior appropriations, a paragraph on diversions is presented in each station description. The figures given can not be considered exact but represent the best information available.

The table of monthly discharge gives only a general idea of the flow at the station and should not be used for other than preliminary estimates; the tables of daily discharge allow more detailed studies of the variation in flow. It should be borne in mind, however, that the observations in each succeeding year may be expected to throw new light on data previously published.

PUBLICATIONS

Investigation of water resources by the United States Geological Survey has consisted in large part of measurements of the volume of flow of streams and studies of the conditions affecting that flow, but it has comprised also investigation of such closely allied subjects as irrigation, water storage, water powers, underground waters, and quality of waters. Most of the results of these investigations have been published in the series of water-supply papers, but some have appeared in the bulletins, professional papers, monographs, and annual reports.

The results of stream-flow measurements are now published annually in 12 parts, each part covering an area whose boundaries coincide with natural drainage features as indicated below.

PART I. North Atlantic slope basins (St. John River to York River).
II. South Atlantic slope and eastern Gulf of Mexico basins (James River to the Mississippi).
III. Ohio River Basin.
IV. St. Lawrence River Basin.
V. Upper Mississippi River and Hudson Bay Basins.
VI. Missouri River Basin.
VII. Lower Mississippi River Basin.
VIII. Western Gulf of Mexico basins.
IX. Colorado River Basin.
X. Great Basin.

PART XI. Pacific slope basins in California.
XII. North Pacific slope basins, in three volumes:
A, Pacific slope basins in Washington and upper Columbia River Basin.
B, Snake River Basin.
C, Pacific slope basins in Oregon and lower Columbia River Basin.

Water-supply papers and other publications of the United States Geological Survey containing data in regard to the water resources of the United States may be obtained or consulted as indicated below.

1. Copies may be purchased at nominal cost from the Superintendent of Documents, Government Printing Office, Washington, D. C., who will, on application, furnish lists giving prices.

2. Sets of the reports may be consulted in the libraries of the principal cities of the United States.

3. Sets are available for consultation in the local offices of the water-resources branch of the Geological Survey, as follows:

Augusta, Me., State House.
Boston, Mass., 2500 Customhouse.
Hartford, Conn., 64 State Capitol.
Albany, N. Y., 904 Home Savings Bank Building.
Trenton, N. J., 423 Statehouse Annex.
Charlottesville, Va., Brooks Museum, University of Virginia.
South Charleston, W. Va., Naval Ordnance Plant.
Asheville, N. C., 608 City Hall.
Chattanooga, Tenn., 630 Power Building.
Tuscaloosa, Ala., Post Office Building.
Columbus, Ohio, Engineering Experiment Station, Ohio State University.
Chicago, Ill., 1510 Consumers Building.
Madison, Wis., 337N State Capitol.
Thief River Falls, Minn., 618 Knight Avenue North.
Topeka, Kans., 23 Federal Building.
Rolla, Mo., Rolla Building, School of Mines and Metallurgy.
Fort Smith, Ark., Post Office Building.
Austin, Tex., State Capitol.
Tucson, Ariz., 104 Agricultural Building, University of Arizona.
Denver, Colo., 403 Post Office Building.
Salt Lake City, Utah, 313 Federal Building.
Idaho Falls, Idaho, 228 Federal Building.
Boise, Idaho, Federal Building.
Helena, Mont., 45–46 Federal Building.
Tacoma, Wash., 406 Federal Building.
Portland, Oreg., 606 Post Office Building.
San Francisco, Calif., 303 Customhouse.
Los Angeles, Calif., 600 Federal Building.
Honolulu, Hawaii, Territorial Office Building.

A list of the Geological Survey's publications may be obtained by applying to the Director, United States Geological Survey, Washington, D. C.

Stream-flow records have been obtained at about 5,250 points in the United States, and the data obtained have been published in the reports tabulated below:

Stream-flow data in reports of the United States Geological Survey

[A = Annual report; B = Bulletin; W = Water-Supply Paper]

Report	Character of data	Year
10th A, pt. 2	Descriptive information only	
11th A, pt. 2	Monthly discharge and descriptive information	1884 to Sept., 1890.
12th A, pt. 2	do	1884 to June 30, 1891.
13th A, pt. 3	Mean discharge in second-feet	1884 to Dec. 31, 1892.
14th A, pt. 2	Monthly discharge (long-time records, 1871 to 1893)	1888 to Dec. 31, 1893.
B 131	Descriptions, measurements, gage-heights, and ratings	1893 and 1894.
16th A, pt. 2	Descriptive information only	
B 140	Descriptions, measurements, gage-heights, ratings, and monthly discharge (also many data covering earlier years).	1895.
W 11	Gage heights (also gage heights for earlier years)	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also similar data for some earlier years).	1895 and 1896.
W 15	Descriptions, measurements, and gage heights, eastern United States, eastern Mississippi River, and Missouri River above junction with Kansas.	1897.
W 16	Descriptions, measurements, and gage heights, western Mississippi River below junction of Missouri and Platte, and western United States.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also some long-time records).	1897.
W 27	Measurements, ratings, and gage heights, eastern United States, eastern Mississippi River, and Missouri River.	1898.
W 28	Measurements, ratings, and gage heights, Arkansas River and western United States.	1898.
20th A, pt. 4	Monthly discharge (also for many earlier years)	1898.
W 35 to 39	Descriptions, measurements, gage heights, and ratings	1899.
21st A, pt. 4	Monthly discharge	1899.
W 47 to 52	Descriptions, measurements, gage heights, and ratings	1900.
22d A, pt. 4	Monthly discharge	1900.
W 65, 66	Descriptions, measurements, gage heights, and ratings	1901.
W 75	Monthly discharge	1901.
W 82 to 85	Complete data	1902.
W 97 to 100	do	1903.
W 124 to 135	do	1904.
W 165 to 178	do	1905.
W 201 to 214	do	1906.
W 241 to 252	do	1907–8.
W 261 to 272	do	1909.
W 281 to 292	do	1910.
W 301 to 312	do	1911.
W 321 to 332	do	1912.
W 351 to 362	do	1913.
W 381 to 394	do	1914.
W 401 to 414	do	1915.
W 431 to 444	do	1916.
W 451 to 464	do	1917.
W 471 to 484	do	1918.
W 501 to 514	do	1919–20.
W 521 to 534	do	1921.
W 541 to 554	do	1922.
W 561 to 574	do	1923.
W 581 to 594	do	1924.
W 601 to 614	do	1925.
W 621 to 634	do	1926.

NOTE.—No data regarding stream flow are given in the 15th and 17th annual reports.

The records at most of the stations discussed in these reports extend over a series of years, and miscellaneous measurements at many points other than regular gaging stations have been made each year. An index of the reports containing records obtained prior to 1904 has been published in Water-Supply Paper 119.

The following table gives, by years and drainage basins, the numbers of the papers on surface-water supply published from 1899 to 1926. The data for any particular station will be found in the reports covering the years during which the station was maintained. For example, data for Machias River at Whitneyville, Me., 1903 to 1921, are published in Water-Supply Papers 97, 124, 165, 201, 241, 261, 281, 301, 321, 351, 381, 401, 431, 451, 471, 501, and 521, which contain records for the New England streams from 1903 to 1921. Results of miscellaneous measurements are published by drainage basins.

Numbers of water-supply papers containing results of stream measurements, 1899–1926

[For basins included see pp. 5 and 6]

Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII		
												A	B	C
1899 [a]	35	[b] 35, 36	36	36	36	[c] 36, 37	37	37	[d] 37, 38	38, [e] 39	38, [f] 39	38	38	[g] 38
1900 [a]	47, [h] 48	48	48, [i] 49	49	49	49, [f] 50	50	50	50	51	51	51	51	51
1901	65, 75	65, 75	65, 75	65, 75	[k] 65, 66, 75	66, 75	[k] 65, 66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75
1902	82	[b] 82, 83	83	[l] 82, 83	[k] 83, 85	84	[k] 83, 84	84	85	85	85	85	85	85
1903	97	[b] 97, 98	98	97	[k] 98, 99, [m] 100	99	[k] 98, 99	99	100	100	100	100	100	100
1904	[n] 124, [o] 125 [p] 126	[p] 126, 127	128	129	[k] 128, 130	130, [q] 131	[k] 128, 131	132	133	133, [r] 134	134	135	135	135
1905	[n] 165, [o] 166 [p] 167	[p] 167, 168	169	170	171	172	[k] 169, 173	174	175, [s] 177	176, [r] 177	177	178	178	[t] 177, 178
1906	[n] 201, [o] 202, [p] 203	[p] 203, 204	205	206	207	208	[k] 205, 209	210	211	212, [r] 213	213	214	214	214
1907–8	241	242	243	244	245	246	247	248	249	250, [r] 251	251	252	252	252
1909	261	262	263	264	265	266	267	268	269	270, [r] 271	271	272	272	272
1910	281	282	283	284	285	286	287	288	289	290	291	292	292	292
1911	301	302	303	304	305	306	307	308	309	310	311	312	312	312
1912	321	322	323	324	325	326	327	328	329	330	331	332–A	332–B	332–C
1913	351	352	353	354	355	356	357	358	359	360	361	362–A	362–B	362–C
1914	381	382	383	384	385	386	387	388	389	390	391	392	393	394
1915	401	402	403	404	405	406	407	408	409	410	411	412	413	414
1916	431	432	433	434	435	436	437	438	439	440	441	442	443	444
1917	451	452	453	454	455	456	457	458	459	460	461	462	463	464
1918	471	472	473	474	475	476	477	478	479	480	481	482	483	484
1919–20	501	502	503	504	505	506	507	508	509	510	511	512	513	514
1921	521	522	523	524	525	526	527	528	529	530	531	532	533	534
1922	541	542	543	544	545	546	547	548	549	550	551	552	553	554
1923	561	562	563	564	565	566	567	568	569	570	571	572	573	574
1924	581	582	583	584	585	586	587	588	589	590	591	592	593	594
1925	601	602	603	604	605	606	607	608	609	610	611	612	613	614
1926	621	622	623	624	625	626	627	628	629	630	631	632	633	634

[a] Rating tables and index to Water-Supply Papers 35–39 contained in Water-Supply Paper 39. Tables for monthly discharge for 1899 in Twenty-first Annual Report, Part IV.
[b] James River only.
[c] Gallatin River.
[d] Green and Gunnison Rivers and Grand River above junction with Gunnison.
[e] Mohave River only.
[f] Kings and Kern Rivers and south Pacific slope basins.
[g] Rating tables and index to Water-Supply Papers 47–52 and data on precipitation, wells, and irrigation in California and Utah contained in Water-Supply Paper 52. Tables for monthly discharge for 1900 in Twenty-second Annual Report, Part IV.
[h] Wissahickon and Schuylkill Rivers to James River.
[i] Scioto River.
[j] Loup and Platte Rivers near Columbus, Nebr., and all tributaries below junction with Platte.
[k] Tributaries of Mississippi from east.
[l] Lake Ontario and tributaries to St. Lawrence River proper.
[m] Hudson Bay only.
[n] New England rivers only.
[o] Hudson River to Delaware River, inclusive.
[p] Susquehanna River to Yadkin River, inclusive.
[q] Platte and Kansas Rivers.
[r] Great Basin in California, except Truckee and Carson River Basins.
[s] Below junction with Gila.
[t] Rogue, Umpqua, and Siletz Rivers only.

COOPERATION

The work in Washington, Montana, and Idaho was carried on under cooperative agreements between the United States Geological Survey and the respective States. Cooperation with the States is effected under contracts made between the Director of the United States Geological Survey and the State engineers or other officials and authorized by legislative act appropriating money. Work in Washington was carried on in cooperation with the department of conservation and development, Erle J. Barnes, director. Cooperative relations were administered by R. K. Tiffany, supervisor of hydraulics, division of water resources. Acknowledgments are due to C. S. Heidel, State engineer of Montana, and W. G. Swendsen, commissioner of reclamation of Idaho, for cooperation in their respective States.

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The following municipalities, corporations, and individuals have aided in the collection of records by paying the expense of all or part of the work: Inter-County River Improvement Commission of King and Pierce Counties; Skagit County; the cities of Aberdeen, Everett, Seattle, and Tacoma; Chelan Electric Co., E. M. Chandler, Hugh L. Cooper Co., Great Northern Railway Co., Interurban Land Co., Methow-Okanogan Irrigation District, Northwestern Power & Manufacturing Co., Puget Sound Power & Light Co., Sound Power Co., Spokane Valley Farms Co., Stevens County Power & Light Co., Stone-Webster Engineering Corporation, Washington Water Power Co., Whitestone Irrigation District, Washington Irrigation & Development Co., West Okanogan Valley Irrigation District, and Rock Creek Power Co.

DIVISION OF WORK

The data for stations in Washington were collected and prepared for publication under the direction of G. L. Parker, district engineer, assisted by D. J. F. Calkins, R. B. Kilgore, J. S. Gatewood, L. E. Rydell, and J. M. Rogers.

The data for stations in Montana were collected and prepared for publication under the direction of W. A. Lamb, district engineer, assisted by A. H. Tuttle and G. B. McDonough.

The data for stations in the Yakima Basin were collected and results computed and prepared for publication under the general supervision

of J. L. Lytel, project manager, Yakima project, United States Bureau of Reclamation, by Paul Taylor, engineer in charge of hydrometric work, assisted by H. E. Sealing, R. O. Crawford, and F. A. Jenne.

The manuscript was assembled and reviewed by P. R. Speer.

GAGING-STATION RECORDS

DRAINAGE BASINS BETWEEN COLUMBIA RIVER AND PUGET SOUND

CHEHALIS RIVER BASIN

WYNOOCHEE RIVER AT OXBOW, NEAR ABERDEEN, WASH.

LOCATION.—In sec. 12, T. 21 N., R. 8 W., 1 mile below Oxbow and 24 miles northeast of Aberdeen, Grays Harbor County.

DRAINAGE AREA.—65 square miles (measured on map of Olympic National Forest, edition of 1923).

RECORDS AVAILABLE.—May 19, 1925, to September 30, 1926.

GAGE.—Stevens water-stage recorder on right bank, 1 mile below Oxbow, since November 7, 1925. May 19 to November 6, 1925, staff gage on right bank, in SW. ¼ sec. 1, T. 21 N., R. 8 W., 1 mile above site of present gage. Recorder inspected by employees of city of Aberdeen.

DISCHARGE MEASUREMENTS.—Made from cable 1½ miles above gage or by wading.

CHANNEL AND CONTROL.—Banks high, not subject to overflow. Gradient steep. Control for low and medium stages is solid rock; for high stage, solid rock and boulder riffle.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period May 19, 1925, to September 30, 1926, 20.0 feet about 6.30 a. m. December 11 (discharge, 8,350 second-feet); minimum stage, 0.27 feet at 4.55 p. m. October 23 and 8.50 a. m. October 24 (discharge, 80 second-feet).

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during high water December 11. Rating curves well defined. Staff gage read to hundredths twice daily until November 6. Operation of water-stage recorder satisfactory, except as noted in footnote to table of daily discharge. Daily discharge prior to November 7 ascertained by applying to rating table mean of twice daily readings of staff gage, after that date by applying to rating table mean daily gage height obtained by inspecting gage-height graph or, for days of considerable variation in stage, by averaging discharge for shorter intervals. Records good.

COOPERATION.—Many discharge measurements furnished by city of Aberdeen.

Discharge measurements of Wynoochee River at Oxbow, near Aberdeen, Wash., during the years ending September 30, 1925 and 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
1925	*Feet*	*Sec.-ft.*	1925	*Feet*	*Sec.-ft.*	1926	*Feet*	*Sec.-ft.*
May 22	1.79	430	Sept. 11	0.42	98.6	Apr. 22	5.66	673
June 30	1.24	249				Apr. 23	4.96	485
July 24	.80	164	1926			June 16	3.62	229
Aug. 12	.57	115	Feb. 9	9.73	1,870	Aug. 10	2.50	115
Aug. 28	.53	113	Feb. 28	6.69	918	Aug. 19	3.01	147

Daily discharge, in second-feet, of Wynoochee River at Oxbow, near Aberdeen, Wash., for the years ending September 30, 1925 and 1926

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1925						1925					
1		392	246	138	121	16		392	199	114	121
2		392	246	138	121	17		392	188	114	114
3		505	234	130	114	18		360	178	114	107
4		920	234	130	107	19	505	360	168	107	138
5		720	222	130	107	20	505	360	168	107	114
6		526	222	130	101	21	485	360	168	114	107
7		465	210	130	107	22	427	345	168	114	101
8		526	199	121	107	23	392	330	158	114	95
9		631	199	121	101	24	360	315	158	114	95
10		546	199	121	101	25	345	315	158	114	95
11		485	199	121	95	26	360	315	148	121	95
12		446	188	121	95	27	392	300	148	121	97
13		427	300	121	95	28	1,020	272	148	107	100
14		427	234	121	95	29	588	259	138	107	102
15		427	210	114	95	30	465	246	138	107	105
						31	410		138	107	

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1925–26												
1	107	114	3,400			935	376	300	416	162	122	124
2	101	114	1,760			867	366	282	386	156	122	122
3	95	107	1,460	1,300		799	396	334	366	156	119	119
4	95	101	2,560		1,500	730	406	652	357	151	119	117
5	95	101	1,800			662	376	606	338	151	119	117
6	95	95	1,300			594	348	534	319	146	119	115
7	95	103	1,030			558	338	811	310	146	117	115
8	90	277	854	1,100	1,440	521	338	1,030	300	146	117	115
9	90	733	825		1,860	484	328	794	282	142	117	113
10	90	1,390	2,860		2,020	448	357	644	282	142	117	113
11	90	1,940	5,680		1,540	437	357	569	282	137	117	113
12	85	1,260	2,630		1,290	500	328	511	282	137	117	113
13	85	941	1,620	700	1,150	522	319	490	282	134	117	113
14	85	741	1,320		1,050	511	328	458	264	134	117	113
15	85	1,040	1,530		1,000	511	328	416	246	134	115	117
16	85	2,360	1,410		1,000	557	319	386	238	134	117	122
17	85	1,580	2,790		1,100	619	300	449	229	130	127	119
18	85	1,270	2,140	1,800	1,200	769	291	769	220	130	260	119
19	85	970	1,680		1,660	664	461	619	212	130	162	117
20	85	797	1,740		1,530	581	490	581	212	130	156	115
21	85	630	4,560		1,520	522	663	606	204	130	137	149
22	85	526	4,240		1,560	511	693	632	195	127	127	212
23	85	451	4,570	900	1,320	619	500	569	188	127	124	151
24	85	560	2,210		1,620	511	426	522	180	127	122	134
25	95	685	1,590		1,350	468	396	468	180	124	119	124
26	101	551	1,320		1,140	437	366	490	180	124	134	122
27	168	662	1,100		1,070	416	357	644	174	124	151	119
28	222	898	1,000	1,050	1,000	406	338	545	167	124	151	272
29	178	644	900			396	328	500	167	124	134	433
30	148	767	800			406	310	458	162	122	127	300
31	121		750			406		426		122	124	

NOTE.—Gage not read Sept. 27-30, 1925, and water-stage recorder did not operate satisfactorily Dec. 27 to Feb. 7, Feb. 13-18, and Feb. 26 to Mar. 9; discharge interpolated or estimated by comparison with records of Wynoochee River near Montesano.

Monthly discharge of Wynoochee River at Oxbow, near Aberdeen, Wash., for the years ending September 30, 1925 and 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
1925				
May 19–31	1,020	345	481	12,400
June	920	246	425	25,300
July	300	138	191	11,700
August	138	107	119	7,320
September	138	95	105	6,250
The period				63,000
1925–26				
October	222	85	103	6,330
November	2,360	95	747	44,400
December	5,680	750	2,040	125,000
January			1,140	70,100
February			1,390	77,200
March	935	396	560	34,400
April	693	297	384	22,800
May	1,030	282	551	33,900
June	416	162	254	15,100
July	162	122	136	8,360
August	260	115	130	7,990
September	433	113	145	8,630
The year	5,680	85	628	454,000

WYNOOCHEE RIVER NEAR MONTESANO, WASH.

LOCATION.—In sec. 36, T. 20 N., R. 8 W., at Waters ranch, 14 miles north of Montesano, Grays Harbor County.

DRAINAGE AREA.—105 square miles at measuring section (measured on map of Olympic National Forest, edition of 1923).

RECORDS AVAILABLE.—February 1, 1923, to September 30, 1926.

GAGE.—Vertical staff in two sections on left bank, at Waters ranch.

DISCHARGE MEASUREMENTS.—Made from suspension bridge 2½ miles below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of boulders and gravel. Control is riffle on gravel and solid rock several hundred feet below gage. Shifts at high stages. Banks high, not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage during year, 9.6 feet at 7 a. m. December 11 (discharge, 10,000 second-feet); minimum stage recorded, 1.16 feet on October 22–24 (discharge, 109 second-feet).

1923–1926: Observer reported a stage of 17.0 feet at 6 p. m. February 11, 1924, discharge not determined; minimum discharge recorded, 106 second-feet on September 17, 1924.

ICE.—Stage-discharge relation not affected by ice.

DIVERSION.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed December 11. Rating curves well defined up to 7,500 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

Discharge measurements of Wynoochee River near Montesano, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 12	6.02	4,120	Apr. 26	2.30	459	Aug. 5	1.40	150
Dec. 22	7.13	6,010	June 14	2.03	334	Aug. 18	1.98	306
Feb. 25	4.40	2,100						

Daily discharge, in second-feet, of Wynoochee River near Montesano, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	149	158	4,340	820	1,350	1,110	478	355	565	222	161	161
2	140	149	3,070	755	1,110	1,030	478	355	505	222	161	161
3	131	144	2,290	722	1,190	960	565	355	478	209	150	150
4	127	140	3,680	690	2,330	890	535	722	450	209	150	150
5	123	131	3,430	5,350	2,800	820	505	788	450	209	150	150
6	123	127	2,290	2,800	2,680	755	450	690	425	209	150	140
7	123	127	1,630	1,700	3,190	690	425	960	400	209	150	140
8	121	156	1,340	1,350	2,330	658	425	1,350	378	196	150	140
9	119	785	1,090	1,110	2,220	625	400	1,110	355	196	150	140
10	119	1,250	2,840	960	2,930	595	425	890	355	196	150	140
11	115	2,290	8,590	855	2,330	565	450	755	355	196	150	140
12	115	1,850	4,150	788	1,800	658	425	690	355	196	150	140
13	115	1,340	2,560	722	1,430	722	400	658	355	184	150	140
14	115	1,170	1,900	820	1,270	690	400	595	335	184	150	140
15	113	1,090	2,110	1,030	1,190	658	378	565	315	184	150	140
16	113	3,190	1,900	4,010	1,190	722	378	505	315	184	140	140
17	112	2,510	3,730	3,060	1,270	855	378	565	298	184	150	161
18	112	2,070	3,190	2,220	1,800	1,030	355	1,030	280	184	315	150
19	112	1,530	2,440	1,610	1,800	890	378	890	280	184	236	150
20	110	1,250	2,440	1,520	2,220	820	595	820	280	184	222	140
21	110	1,010	5,800	1,610	2,110	722	565	820	265	172	196	161
22	109	752	5,650	1,350	2,220	690	855	855	265	172	184	222
23	109	655	6,880	1,190	2,110	820	595	788	250	172	172	196
24	113	720	3,320	1,030	2,560	722	535	722	250	172	161	172
25	125	970	2,440	960	2,110	625	478	625	250	172	150	161
26	129	752	1,900	855	1,700	595	450	625	236	172	172	150
27	200	820	1,520	788	1,430	565	425	820	236	172	196	150
28	264	1,430	1,350	1,030	1,270	535	425	788	236	161	196	196
29	246	1,090	1,110	2,000	-------	535	400	690	236	161	184	505
30	200	1,010	960	1,700	-------	505	378	625	222	161	172	478
31	174	-------	890	1,610	-------	505	-------	595	-------	161	172	------

Monthly discharge of Wynoochee River near Montesano, Wash., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	264	109	135	8,300
November	3,190	127	1,020	60,700
December	8,590	890	2,930	180,000
January	5,350	690	1,520	93,500
February	3,190	1,110	1,930	107,000
March	1,110	505	728	44,800
April	855	355	464	27,600
May	1,350	355	729	44,800
June	565	222	332	19,800
July	222	161	187	11,500
August	315	140	171	10,500
September	505	140	177	10,500
The year	8,590	109	855	619,000

QUINAULT RIVER BASIN

QUINAULT RIVER AT QUINAULT LAKE, WASH.

LOCATION.—In sec. 25, T. 23 N., R. 10 W., at outlet of Quinault Lake, 4 miles southwest of Quinault and 33 miles north of Hoquiam, Grays Harbor County.

DRAINAGE AREA.—264 square miles (measured on pl. 1, U. S. Geol. Survey Prof. Paper 7).

RECORDS AVAILABLE.—October 29, 1911, to December 21, 1922; July 18 to November 5, 1924; September 23, 1925, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on left bank 350 feet below Olympic Highway crossing at outlet of Quinault Lake, installed September 27, 1916; at different datum from previous gage; reinstalled July 18, 1924, and September 23, 1925; inspected by J. W. Fulton.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of boulders. Well-defined control 600 feet below gage. Left bank high and wooded; not subject to overflow; right bank high, wooded, and subject to overflow above gage height about 20 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period September 23, 1925, to September 30, 1926, 9.14 feet at 10 a. m. December 23 (discharge, 14,800 second-feet); minimum stage, 0.67 foot on October 18, 19, and 20 (discharge, 290 second-feet).

1911–1926: Maximum stage recorded, 16.3 feet at 5 p. m. December 12, 1921 (discharge, 37,000 second-feet); minimum discharge, 285 second-feet on September 20, 1924.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—None.

REGULATION.—None, except from natural storage in lake.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined above 350 second-feet. Operation of water-stage recorder satisfactory except as noted in footnote to table of daily discharge. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspecting gage-height graph or, for days of considerable variation in stage, by averaging discharge for shorter intervals. Records excellent.

Discharge measurements of Quinault River at Quinault Lake, Wash., for the period September 23, 1925, to September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
1925	*Feet*	*Sec.-ft.*	1926	*Feet*	*Sec.-ft.*
Sept. 23	1.00	426	Apr. 25	2.82	1,900
1926			Aug. 25	1.27	532
Mar. 2	3.31	2,510			

Daily discharge, in second-feet, of Quinault River at Quinault Lake, Wash., for the period September 23, 1925, to September 30, 1926

Day	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		389	646	5,290	2,280	2,550	2,760	1,680	1,790	1,850	803	435	544
2		377	596	6,750	2,090	2,350	2,480	1,620	1,680	1,790	783	430	529
3		369	554	5,580	1,970	2,350	2,350	1,560	1,620	1,730	764	424	514
4		361	509	6,350	1,910	3,820	2,220	1,560	1,970	1,730	745	419	500
5		350	476	6,950	5,560	5,390	2,030	1,510	2,090	1,680	732	414	476
6		342	444	5,770	7,150	5,580	1,910	1,360	2,030	1,680	720	414	462
7		338	427	4,640	5,200	5,960	1,790	1,300	2,090	1,680	697	414	449
8		334	462	3,710	3,950	5,960	1,680	1,260	2,550	1,620	674	414	436
9		331	720	3,180	3,180	5,580	1,560	1,240	2,760	1,510	657	414	422
10		327	1,410	4,600	2,690	6,950	1,510	1,310	2,550	1,410	634	414	406
11		323	2,970	12,800	2,350	6,150	1,410	1,410	2,280	1,360	629	414	398
12		316	3,560	11,300	2,090	4,820	1,410	1,460	2,160	1,310	618	410	385
13		312	3,110	8,000	1,910	3,870	1,510	1,410	2,220	1,290	607	406	377
14		305	2,690	5,770	1,910	3,330	1,620	1,460	2,280	1,220	596	402	369
15		301	2,550	5,580	2,090	2,900	1,790	1,560	2,160	1,180	591	398	385
16		298	4,280	5,390	3,680	2,620	2,030	1,680	1,970	1,130	570	393	398
17		294	5,010	6,550	6,550	2,550	2,160	1,620	1,910	1,100	554	422	393
18		290	4,280	6,950	5,390	2,690	2,220	1,560	2,350	1,050	544	529	385
19		290	3,710	6,150	4,110	3,570	2,090	1,680	2,480	1,020	519	623	377
20		290	3,400	5,200	3,400	4,460	2,030	2,030	2,620	994	514	680	369

Daily discharge, in second-feet, of Quinault River at Quinault Lake, Wash., for the period September 23, 1925, to September 30, 1926—Continued

Day	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
21	------	294	2,970	7,450	3,110	4,370	1,910	2,090	2,620	958	509	691	393
22	------	298	2,480	12,100	2,830	4,370	1,850	2,420	2,620	940	504	651	462
23	418	298	2,090	14,000	2,550	4,110	2,220	2,280	2,480	940	500	612	490
24	414	304	1,970	10,600	2,350	4,460	2,220	2,030	2,350	940	476	575	486
25	406	331	2,090	7,360	2,160	4,370	2,030	1,910	2,160	949	471	549	467
26	398	358	2,030	5,580	1,970	3,870	1,850	1,850	2,030	958	466	544	449
27	389	462	1,910	4,370	1,790	3,480	1,730	1,850	2,220	940	461	618	427
28	381	629	2,160	3,710	1,910	3,110	1,680	1,970	2,280	900	455	651	490
29	389	720	2,090	3,180	2,420	----	1,620	1,970	2,220	859	450	640	810
30	293	726	2,090	2,830	2,830	-------	1,620	1,910	2,090	831	445	596	949
31	------	691	-------	2,480	2,830	------	1,730	-------	1,910	-------	440	559	------

NOTE.—Water-stage recorder not operating July 25 to Aug. 4, discharge interpolated.

Monthly discharge of Quinault River at Quinault Lake, Wash., for the year ending September 30, 1926

[Drainage area, 264 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	726	290	376	1.42	1.64	23,100
November	5,010	427	2,120	8.03	8.96	126,000
December	14,000	2,480	6,460	24.5	28.25	397,000
January	7,150	1,790	3,100	11.7	13.49	191,000
February	6,950	2,350	4,130	15.6	16.24	229,000
March	2,760	1,410	1,900	7.20	8.30	117,000
April	2,420	1,240	1,680	6.36	7.10	100,000
May	2,760	1,620	2,210	8.37	9.65	136,000
June	1,850	831	1,250	4.73	5.28	74,400
July	803	440	585	2.22	2.56	36,000
August	691	393	502	1.90	2.19	30,900
September	949	369	467	1.77	1.98	27,800
The year	14,000	290	2,060	7.80	105.64	1,490,000

QUILLAYUTE RIVER BASIN

SOLEDUCK RIVER AT SNIDER RANGER STATION, NEAR BEAVER, WASH.

LOCATION.—In sec. 28, T. 30 N., R. 11 W., at Snider ranger station, 9 miles below South Fork and 11 miles above Beaver, Clallam County.

DRAINAGE AREA.—111 square miles (measured on pl. 1, U. S. Geol. Survey Prof. Paper 7).

RECORDS AVAILABLE.—November 13, 1921, to September 30, 1926.

GAGE.—Vertical staff in two sections on right bank a few hundred feet above ranger station; installed February 5, 1922. Gage read by R. O. Stanley and J. L. Jeffryes.

DISCHARGE MEASUREMENTS.—Made from cable or by wading near gage.

CHANNEL AND CONTROL.—Right bank high, not subject to overflow; left bank subject to overflow at extremely high stages. Channel straight for several hundred feet above and below gage. Control is gravel and boulder riffle about 500 feet below gage; will shift at high stages. Gage height of zero flow September 13, 1926, 0.6 foot ± 0.1 foot.

EXTREMES OF DISCHARGE.—Maximum discharge occurred during period October 21 to April 28, when station was not in operation. Minimum stage recorded, 1.10 feet on September 14 (discharge, 28 second-feet).

1922–1926: Maximum stage recorded, 14.7 feet at noon on December 12, 1921 (discharge, 23,500 second-feet); minimum stage, that of September 14, 1926.

ICE.—Stage-discharge relation seriously affected by ice during severe winters; flow estimated from discharge measurements, observer's notes, and weather records.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed slightly during period station was not in operation. Rating curves well defined below 5,000 second-feet. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

The following discharge measurements were made:

May 29, 1926: Gage height, 2.53 feet; discharge, 423 second-feet.

August 27, 1926: Gage height, 1.36 feet; discharge, 67.4 second-feet.

September 13, 1926: Gage height, 1.11 feet; discharge, 29.9 second-feet.

Daily discharge, in second-feet, of Soleduck River at Snider ranger station, near Beaver, Wash., for the year ending September 30, 1926

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
1	49		353	353	117	56	56
2	48		313	313	115	56	50
3	47		353	313	112	55	44
4	46		633	294	110	55	41
5	44		633	294	106	53	38
6	44		533	294	102	53	37
7	42		439	276	100	52	36
8	42		439	258	98	50	34
9	41		396	225	94	48	33
10	41		353	225	90	47	32
11	40		353	209	86	46	31
12	40		333	209	84	44	30
13	40		395	197	83	42	30
14	40		374	189	83	41	28
15	38		353	186	81	40	39
16	38		374	180	81	40	50
17	38		395	177	79	40	46
18	38		395	175	77	41	43
19	38		417	172	77	46	40
20	38		417	167	74	50	36
21			462	159	74	55	38
22			485	154	72	53	154
23			439	149	72	50	92
24			439	147	70	46	67
25			417	144	68	44	53
26			439	142	68	52	50
27			462	137	65	62	44
28			439	130	63	67	149
29		439	417	126	63	67	353
30		395	374	121	62	63	159
31			333		59	60	

NOTE.—Gage not read May 9, July 31, Aug. 16, and Sept. 15, 17, 18, and 19; discharge interpolated.

Monthly discharge of Soleduck River at Snider ranger station, near Beaver, Wash., for the year ending September 30, 1926

[Drainage area, 111 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October 1-20	48	38	41.6	0.375	0.28	1,650
May	633	313	418	3.77	4.35	25,700
June	353	121	204	1.84	2.05	12,100
July	117	59	83.4	.751	.87	5,130
August	67	40	50.8	.458	.53	3,120
September	353	28	64.4	.580	.65	3,830

LYRE RIVER BASIN

LAKE CRESCENT AT PIEDMONT, WASH.

LOCATION.—In sec. 14, T. 30 N., R. 9 W., on dock at Log Cabin Hotel, at Piedmont, Clallam County.

DRAINAGE AREA.—49.1 square miles (measured on topographic maps).

RECORDS AVAILABLE.—April 1, 1919, to September 30, 1926.

GAGE.—Vertical staff on dock; read by F. S. Dann.

EXTREMES OF STAGE.—Maximum stage recorded during year, 1.46 feet February 10; minimum stage, 0.06 foot October 7–23.

1919–1926: Maximum stage recorded, 5.46 feet December 13–14, 1921; minimum stage, 0.00 foot September 20, 1924.

ACCURACY.—Gage read to hundredths once daily. Records excellent.

COOPERATION.—Gage-height record furnished by Northwest Power & Manufacturing Co.

Daily gage height, in feet, of Lake Crescent at Piedmont, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.10	0.10	0.46	0.90	1.00	1.25	0.80	0.68	0.56	0.34	0.16	0.18
2	.10	.10	.58	.90	1.00	1.23	.80	.68	.52	.32	.16	.18
3	.10	.10	.60	.90	.98	1.20	.80	.68	.52	.32	.16	.18
4	.10	.12	.60	1.00	1.06	1.16	.78	.78	.50	.30	.16	.18
5	.10	.14	.60	1.16	1.12	1.12	.78	.78	.50	.30	.16	.16
6	.08	.14	.60	1.20	1.16	1.10	.76	.76	.50	.30	.16	.16
7	.06	.18	.60	1.18	1.22	1.08	.76	.74	.48	.30	.16	.14
8	.06	.20	.60	1.18	1.26	1.05	.76	.72	.47	.30	.16	.14
9	.06	.24	.60	1.18	1.40	1.02	.74	.72	.45	.30	.16	.12
10	.06	.26	.64	1.18	1.46	1.02	.72	.72	.43	.30	.16	.12
11	.06	.30	.80	1.18	1.44	1.00	.70	.68	.40	.30	.14	.10
12	.06	.32	.80	1.26	1.40	1.00	.68	.66	.40	.30	.14	.10
13	.06	.34	.80	1.26	1.38	.95	.68	.66	.40	.28	.14	.09
14	.06	.36	.84	1.30	1.36	.95	.66	.68	.40	.29	.14	.09
15	.06	.38	.90	1.30	1.34	.92	.64	.68	.40	.29	.14	.10
16	.06	.38	.92	1.30	1.30	.90	.62	.68	.38	.28	.14	.10
17	.06	.38	.98	1.38	1.30	.90	.60	.65	.38	.26	.14	.10
18	.06	.38	.98	1.38	1.28	.86	.60	.63	.36	.26	.14	.10
19	.06	.38	.98	1.38	1.30	.84	.60	.60	.36	.24	.14	.10
20	.06	.38	.98	1.38	1.34	.82	.62	.62	.36	.22	.14	.12
21	.06	.38	1.18	1.38	1.32	.80	.70	.62	.36	.20	.14	.15
22	.06	.38	1.18	1.32	1.38	.80	.76	.62	.36	.20	.14	.16
23	.06	.38	1.18	1.28	1.38	.80	.80	.62	.36	.18	.14	.16
24	.08	.38	1.18	1.20	1.40	.80	.78	.62	.36	.18	.14	.16
25	.08	.38	1.18	1.16	1.36	.80	.76	.60	.36	.18	.14	.16
26	.08	.36	1.18	1.12	1.34	.80	.72	.60	.36	.18	.16	.16
27	.08	.36	1.16	1.10	1.30	.80	.70	.58	.36	.18	.18	.16
28	.10	.36	1.05	1.10	1.30	.80	.68	.62	.36	.18	.20	.16
29	.10	.36	1.00	1.10	-------	.80	.68	.58	.34	.18	.20	.17
30	.10	.36	.96	1.06	-------	.80	.68	.58	.34	.16	.20	.18
31	.10	-------	.94	1.02	-------	-------	-------	.56	-------	.16	.18	-------

LYRE RIVER AT PIEDMONT, WASH.

LOCATION.—In NE. ¼ sec. 15, T. 30 N., R. 9 W., a quarter of a mile below outlet of Crescent Lake and half a mile west of Piedmont, Clallam County.

DRAINAGE AREA.—49.5 square miles (measured on topographic maps).

RECORDS AVAILABLE.—October 1, 1917, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on right bank except for period October 17, 1922, to September 30, 1923, and subsequent to December 16, 1925, when staff gage in Lake Crescent at Piedmont was used. Recording gage inspected by A. A. Firkins; lake staff gage read by F. A. Dann.

DISCHARGE MEASUREMENTS.—Made by wading or from cable near lake outlet.

CHANNEL AND CONTROL.—Channel composed of bedrock and boulders. Banks medium high and wooded. Control formed by series of rapids over bedrock and by contracted channel between railroad bridge abutments.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1.46 feet (lake gage) at 11 a. m. February 10 (discharge, 376 second-feet); minimum stage, 3.93 feet (river gage) October 17, 18, and 21 (discharge, 25 second-feet).

1918–1926: Maximum stage recorded, 3.4 feet on Lake Crescent gage January 10–11, 1923 (discharge, 1,180 second-feet); minimum discharge, 18 second-feet September 19, 1924.

ICE.—None.

DIVERSIONS.—None.

REGULATION.—Flow is very uniform because of natural regulation in Lake Crescent. Channel at mouth of lake cleared of driftwood and deepened July 25 to August 7, 1922.

ACCURACY.—Stage-discharge relation changed with change of gages December 17 and gradually August 27–30. Rating curves well defined. Operation of water-stage recorder satisfactory until removed December 16. Staff gage in Crescent Lake read once daily to hundredths beginning December 17. Daily discharge ascertained by applying to rating table mean daily gage height determined from recorder graph October 1 to December 16; otherwise by applying daily gage height to rating table; shifting-control method used August 27–30. Records excellent October 1 to December 16; after December 16, good.

Discharge measurements of Lyre River at Piedmont, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 16	0.90	195	Aug. 26	0.16	41.4
May 28	.62	129	Sept. 13	.09	26.1

Daily discharge, in second-feet, of Lyre River at Piedmont, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	34	89	203	232	309	176	146	118	72	40	40
2	29	34	107	203	232	309	176	146	109	68	40	40
3	28	34	109	203	232	293	176	146	109	68	40	40
4	28	34	122	232	247	278	171	171	105	64	40	40
5	28	33	124	278	262	262	171	171	105	64	40	36
6	27	32	127	293	278	262	166	166	105	64	40	36
7	27	32	130	293	293	262	166	161	101	64	40	33
8	28	36	127	293	309	247	166	156	99	64	40	33
9	28	40	127	293	359	232	161	156	94	64	40	30
10	28	50	142	293	376	232	156	156	90	64	40	30

Daily discharge, in second-feet, of Lyre River at Piedmont, Wash., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	27	64	185	293	376	232	151	146	84	64	36	27
12	26	66	200	309	359	232	146	141	84	64	36	27
13	26	65	196	309	359	218	146	141	84	60	36	26
14	26	66	199	325	342	218	141	146	84	62	36	26
15	26	68	207	325	342	203	137	146	84	62	36	27
16	27	73	207	325	325	203	132	146	80	60	36	27
17	26	70	232	359	325	203	127	139	80	57	36	27
18	26	69	232	359	325	190	127	134	76	57	36	27
19	26	69	232	359	325	190	127	127	76	53	36	27
20	27	71	232	359	342	176	132	132	76	50	36	30
21	27	66	293	359	325	176	151	132	76	46	36	35
22	27	64	293	325	359	176	166	132	76	46	36	36
23	27	62	293	325	359	176	176	132	76	43	36	36
24	28	64	293	293	359	176	171	132	76	43	36	36
25	28	70	293	278	342	176	166	127	76	43	36	36
26	30	67	293	262	342	176	156	127	76	43	40	36
27	34	65	278	262	325	176	151	123	76	43	41	36
28	36	66	247	262	325	176	146	132	76	43	44	36
29	35	64	232	262	-------	176	146	123	72	43	44	38
30	36	64	218	247	-------	176	146	123	72	40	43	40
31	36	-------	218	232	-------	176	-------	118	-------	40	40	------

NOTE.—Gage not read Mar. 31; discharge interpolated.

Monthly discharge of Lyre River at Piedmont, Wash., for the year ending September 30, 1926

[Drainage area, 49.5 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	acre-feet
October	36	26	28.6	0.578	0.67	1,760
November	73	32	56.4	1.14	1.27	3,360
December	293	89	202	4.08	4.70	12,400
January	359	203	291	5.88	6.78	17,900
February	376	232	321	6.48	6.75	17,800
March	309	176	216	4.36	5.03	13,300
April	176	127	154	3.11	3.47	9,160
May	171	118	141	2.85	3.29	8,670
June	118	72	86.5	1.75	1.95	5,150
July	72	40	55.4	1.12	1.29	3,410
August	44	36	38.5	.778	.90	2,370
September	40	26	33.1	.669	.75	1,970
The year	376	26	134	2.71	36.85	97,200

ELWHA RIVER BASIN

ELWHA RIVER AT McDONALD BRIDGE, NEAR PORT ANGELES, WASH.

LOCATION.—In NE. ¼ NW. ¼ sec. 33, T. 30 N., R. 7 W., at McDonald Bridge, 6½ miles above mouth and 8 miles southwest of Port Angeles, Clallam County.

DRAINAGE AREA.—262 square miles (measured on pl. 1, U. S. Geol. Survey Prof. Paper 7).

RECORDS AVAILABLE.—October 8, 1897, to December 31, 1901; October 1, 1918, to September 30, 1926.

GAGE.—Since October 17, 1918, Stevens water-stage recorder on left bank; inspected by A. J. Hooper. Zero of gage, 206.29 feet above mean sea level.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel; shifting; banks high.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.15 feet at 8 a. m. December 11 (discharge, 6,070 second-feet); minimum stage, 0.57 foot November 6, 7, and parts of September 20, 26, and 27 (discharge, 254 second-feet).

1897–1901; 1918–1926: Maximum stage recorded, 10.6 feet November 27, 1901 (discharge, 23,800 second-feet); minimum discharge, 170 second-feet October 18, 1897.

ICE.—Stage-discharge relation only slightly affected by ice during severe winters.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed at high water December 24, February 9, and gradually February 26 to March 5; not affected by ice. Rating curves used prior to and subsequent to changes well defined below 5,000 second-feet; curves used December 24 to February 25, fairly well defined. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspecting gage-height graph or, for days of considerable variation in stage, by averaging discharge for shorter intervals; shifting-control method used February 26 to March 5. Records good January and February; otherwise excellent.

COOPERATION.—Gage-height record and some discharge measurements furnished by Northwestern Power & Manufacturing Co.

Discharge measurements of Elwha River at McDonald Bridge, near Port Angeles, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 15	0.62	272	Mar. 6	1.74	1,020	June 22	1.47	766
Dec. 15	2.53	1,920	Apr. 20	2.08	1,300	Aug. 21	.88	394
Jan. 22	2.01	1,220	May 24	1.70	947	Sept. 13	.69	296
Feb. 25	2.21	1,380	May 28	1.78	1,060	Sept. 18	.62	278

Daily discharge, in second-feet, of Elwha River at McDonald Bridge, near Port Angeles, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	336	285	2,480	1,020	980	1,180	1,110	1,280	980	762	445	390
2	328	273	1,300	962	926	1,170	1,020	1,210	989	754	450	341
3	323	269	842	917	1,070	1,150	1,020	1,260	1,030	754	462	341
4	318	258	1,280	935	1,840	1,120	944	1,380	1,140	778	450	355
5	314	258	1,600	4,160	1,780	1,060	890	1,180	1,170	826	445	365
6	305	254	1,060	2,560	1,900	1,020	850	1,050	1,270	818	462	360
7	301	254	866	1,840	2,560	980	834	1,010	1,300	715	468	350
8	301	314	770	1,580	2,300	962	834	989	1,190	655	492	318
9	300	375	715	1,390	2,920	917	858	917	989	662	468	328
10	297	580	1,840	1,250	3,200	882	998	890	935	708	425	328
11	293	678	4,700	1,160	2,420	850	1,070	899	866	730	410	314
12	285	445	2,640	1,090	2,040	899	1,010	989	834	740	420	305
13	277	355	1,780	1,020	1,720	962	980	1,340	834	648	420	310
14	273	346	1,480	1,130	1,540	1,060	1,250	1,370	866	625	430	305
15	273	380	1,900	1,110	1,390	1,200	1,520	1,080	834	580	420	314
16	273	715	1,580	2,700	1,290	1,310	1,420	998	850	524	420	301
17	269	498	1,780	2,800	1,200	1,130	1,280	1,100	810	517	425	301
18	265	517	1,660	1,900	1,260	1,050	1,270	1,420	802	510	632	273
19	269	517	1,360	1,560	1,840	989	1,470	1,660	802	486	462	265
20	285	678	1,250	1,400	1,660	980	1,360	1,530	786	486	538	258
21	301	450	2,750	1,330	1,460	935	1,370	1,300	786	486	410	305
22	281	395	3,660	1,220	1,420	1,020	1,230	1,210	818	510	395	410
23	265	365	4,650	1,160	1,350	1,500	1,070	1,090	874	486	415	301
24	281	380	2,840	1,090	1,560	1,130	1,020	989	944	510	415	269
25	323	445	2,230	1,020	1,410	1,020	1,090	926	980	517	400	262
26	375	365	1,840	971	1,350	971	1,250	935	926	474	517	258
27	517	360	1,660	935	1,300	953	1,410	1,170	810	440	498	258
28	480	395	1,440	1,110	1,240	953	1,600	1,090	746	430	430	508
29	355	375	1,310	1,270	------	998	1,660	1,100	746	430	395	552
30	346	482	1,200	1,120	------	1,220	1,410	980	746	450	360	365
31	305	------	1,100	1,030	------	1,250	------	944	------	445	370	------

Monthly discharge of Elwha River at McDonald Bridge, near Port Angeles, Wash., for the year ending September 30, 1926

[Drainage area, 262 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	517	265	313	1.19	1.37	19,200
November	715	254	409	1.56	1.74	24,300
December	4,700	715	1,860	7.10	8.19	114,000
January	4,160	917	1,440	5.50	6.34	88,500
February	3,200	926	1,680	6.41	6.68	93,300
March	1,500	850	1,060	4.05	4.67	65,200
April	1,660	834	1,170	4.47	4.99	69,600
May	1,660	890	1,140	4.35	5.02	70,100
June	1,300	746	922	3.52	3.93	54,900
July	826	430	595	2.27	2.62	36,600
August	632	360	444	1.69	1.95	27,300
September	552	258	330	1.26	1.41	19,600
The year	4,700	254	943	3.60	48.91	683,000

DUNGENESS RIVER BASIN

DUNGENESS RIVER NEAR SEQUIM, WASH.

LOCATION.—In sec. 12, T. 29 N., R. 4 W., half a mile above State fish hatchery, 4½ miles southwest of Sequim, and 11 miles above mouth, Clallam County.

DRAINAGE AREA.—150 square miles (measured on Olympic National Forest map, 1923 edition).

RECORDS AVAILABLE.—June 1, 1923, to September 30, 1926; July 5, 1897, to July 31, 1898, at a station about 1½ miles below; July 29, 1898, to December 31, 1900, at a station at Dungeness, 1 mile above mouth.

GAGE.—Vertical and inclined staff on left wall of canyon about 100 feet above McLeay Lindsey Canal intake; read by W. H. Knapman.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Channel in winding gorge, bed composed of gravel and solid rock. Control is gravel riffle, modified since installation of gage by canal headworks; shifts easily.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.0 feet December 23 (discharge, 740 second-feet); minimum discharge, 82 second-feet September 27.

1897–1900; 1923–1926: Maximum stage recorded, 6.0 feet February 12, 1924 (discharge, 5,140 second-feet); minimum discharge, that of September 27, 1926.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed December 1; except for two short periods changes were more or less continuous after March 5. Rating curves poorly defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table; shifting-control method used March 5 to May 27 and June 14 to September 12. Records fair.

Discharge measurements of Dungeness River near Sequim, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 15	1.71	243	Mar. 7	1.26	171	Aug. 14	1.54	128
Dec. 17	1.74	250	May 27	1.60	292	Sept. 12	1.16	101
Mar. 5	1.29	177						

Daily discharge, in second-feet, of Dungeness River near Sequim, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	140	118	550	192	164	182	270	326	284	222	132	112
2	140	118	357	182	156	182	234	312	312	222	132	112
3	132	118	222	173	156	173	234	312	326	222	125	105
4	125	112	192	173	297	173	222	312	357	234	118	105
5	125	112	182	408	270	173	212	297	390	234	118	118
6	118	112	212	374	222	173	212	258	425	245	125	112
7	118	112	201	297	284	173	201	258	425	212	132	112
8	118	125	192	284	245	173	212	234	425	212	140	112
9	118	147	192	245	342	164	212	222	326	201	132	105
10	118	192	182	234	425	164	212	212	277	222	132	105
11	118	182	650	212	374	164	245	222	270	222	132	105
12	118	156	342	201	297	164	245	245	258	222	125	105
13	118	147	245	201	258	166	245	326	245	201	125	99
14	118	140	234	192	245	182	258	374	258	192	125	99
15	118	140	245	182	234	212	357	342	234	182	125	105
16	118	192	258	173	222	245	312	312	245	173	132	105
17	118	192	258	408	212	245	284	297	245	173	140	118
18	118	182	245	312	212	234	326	357	245	164	164	105
19	118	164	234	234	270	222	374	442	258	147	147	93
20	118	156	234	222	245	212	342	478	234	140	132	88
21	118	147	270	212	245	201	342	374	234	140	125	88
22	118	147	478	201	258	192	284	342	258	132	118	105
23	132	147	740	192	212	212	258	326	258	132	125	99
24	132	140	460	192	201	258	245	297	234	132	132	93
25	140	140	312	182	192	245	258	284	297	147	132	88
26	140	140	270	173	192	212	270	258	297	140	201	88
27	147	147	258	173	192	201	326	284	270	140	156	82
28	140	164	234	173	182	201	374	312	245	132	156	132
29	132	173	222	192	------	192	425	326	234	132	132	125
30	132	182	212	182	------	212	374	297	222	140	118	118
31	125	------	201	173	------	222	------	284	------	132	112	------

Monthly discharge of Dungeness River near Sequim, Wash., for the year ending September 30, 1926

[Drainage area, 150 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	147	118	125	0.833	0.96	7,690
November	192	112	148	.987	1.10	8,810
December	740	182	293	1.95	2.25	18,000
January	408	173	224	1.49	1.72	13,800
February	425	156	243	1.62	1.69	13,500
March	258	156	197	1.31	1.51	12,100
April	425	201	279	1.86	2.08	16,600
May	478	212	307	2.05	2.36	18,900
June	425	222	289	1.93	2.15	17,200
July	245	132	179	1.19	1.37	11,000
August	201	112	134	.893	1.03	8,240
September	132	82	105	.700	.78	6,250
The year	740	82	210	1.40	19.00	152,000

PUGET SOUND BASINS

HAMMA HAMMA RIVER BASIN

HAMMA HAMMA RIVER NEAR HOODSPORT, WASH.

LOCATION.—In NW. ¼ sec. 27, T. 24 N., R. 3 W., 900 feet above old Olympic Highway bridge, three-fourtns mile above mouth, and 11 miles northeast of Hoodsport, Mason County.

DRAINAGE AREA.—75 square miles (measured on Olympic National Forest map, 1923 edition).

RECORDS AVAILABLE.—February 24 to September 30, 1926.

GAGE.—Vertical staff on left bank 900 feet above old Olympic Highway bridge; read by B. H. Payne.

DISCHARGE MEASUREMENTS.—Made by wading or from old highway bridge.

CHANNEL AND CONTROL.—Left bank high, not subject to overflow; right bank low and subject to overflow at high stages. Control consists of gravel riffle; will shift easily. High tide may affect stage-discharge relation for few hours of a day during combination of high tide and high water.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period of record, 3.16 feet February 24 (discharge, 695 second-feet); minimum stage, 1.38 feet September 13 and 14 (discharge, 31 second-feet).

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

Discharge measurements of Hamma Hamma River near Hoodsport, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 24	3.16	702	Apr. 27	2.49	321	Aug. 21	1.50	45.4
Mar. 4	2.67	407	May 26	2.32	263	Sept. 1	1.48	43.0
Mar. 8	2.47	308	June 3	2.22	215	Sept. 10	1.40	32.8
Mar. 19	2.48	315						

Daily discharge, in second-feet, of Hamma Hamma River near Hoodsport, Wash., for the year ending September 30, 1926

Day	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		452	283	283	222	117	54	43
2		425	264	264	215	117	51	40
3		425	264	283	215	112	51	40
4		399	240	349	215	108	51	38
5		373	233	349	215	108	48	38
6		349	222	304	215	103	48	38
7		325	212	628	219	108	45	37
8		304	212	535	215	103	45	35
9		283	215	452	201	99	45	35
10		283	233	425	195	95	45	33
11		264	237	373	188	91	43	32
12		264	240	373	182	91	43	32
13		283	240	373	175	87	43	31
14		304	264	373	169	83	43	31
15		349	304	349	163	75	43	33

Daily discharge, in second-feet, of Hamma Hamma River near Hoodsport, Wash., for the year ending September 30, 1926—Continued

Day	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16		373	304	349	172	75	45	35
17		325	283	325	158	71	45	37
18		325	304	325	152	75	48	35
19		325	399	325	152	71	45	34
20		304	373	325	146	71	45	33
21		283	373	325	141	71	45	33
22		283	373	283	138	68	43	33
23		349	325	283	144	68	43	33
24	695	304	304	264	138	64	43	33
25	628	283	283	244	152	64	45	33
26	595	264	283	244	141	60	48	33
27	535	264	325	264	130	57	48	33
28	480	264	325	244	126	57	46	79
29		264	325	244	121	57	45	91
30		283	304	230	126	54	44	87
31		283		230		54	43	

Monthly discharge of Hamma Hamma River near Hoodsport, Wash., for the year ending September 30, 1926

[Drainage area, 75 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
February 24–28	695	480	587	7.83	1.46	1,160
March	452	264	318	4.24	4.89	19,600
April	399	212	285	3.80	4.24	17,000
May	628	230	330	4.40	5.07	20,300
June	222	121	172	2.29	2.56	10,200
July	117	54	81.7	1.09	1.26	5,020
August	54	43	45.8	.611	.70	2,820
September	91	21	39.9	.532	.59	2,370
The period						78,500

SKOKOMISH RIVER BASIN

NORTH FORK OF SKOKOMISH RIVER BELOW STAIRCASE RAPIDS, NEAR HOODSPORT, WASH.

LOCATION.—In SW. ¼ sec. 3, T. 23 N., R. 5 W., 300 feet below Staircase Rapids, 2 miles above Dry Creek, and 10½ miles northwest of Hoodsport, Mason County.

DRAINAGE AREA.—60 square miles (measured on city of Tacoma's Cushman power project map).

RECORDS AVAILABLE.—July 30, 1924, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on right bank, inspected by employees of city of Tacoma.

CHANNEL AND CONTROL.—Bed composed of gravel; control is well-defined riffle in gravel and angular boulders; will shift only during high stages. Gage height of zero flow, according to measurement made September 12, 1924, gage height 0.2 foot ± 0.1 foot.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.8 feet at 4 a. m. December 11 (discharge, 4,250 second-feet); minimum stage, 1.25 feet from noon September 14 to 5 a. m. September 15 (discharge, 28 second-feet).

1924–1926: Maximum stage recorded, 6.88 feet, probably some time February 2, 1925, while recorder was not operating (discharge, 4,400 second-feet); minimum flow that of September 14 and 15, 1926.

ICE.—Stage-discharge relation slightly affected by ice during severe winters; discharge estimated from weather records.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent except as affected by trash on control September 1–30; not affected by ice. Rating curve fairly well defined. Operation of water-stage recorder satisfactory except that partial clogging of intake pipe during late summer caused water stage in well to lag behind that in river. This caused slight uncertainty in daily records for periods of rapidly changing stage but probably had little or no effect on monthly mean discharge. Daily discharge ascertained by applying to rating table mean daily gage height obtained from recorder graph by inspection or, for days of considerable variation in stage, by averaging discharge for shorter intervals. Records good.

Discharge measurements of North Fork of Skokomish River below Staircase Rapids, near Hoodsport, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec. ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 7	1.30	35.4	Apr. 22	2.82	434	Sept. 16	1.40	40.8
Nov. 12	2.86	440	July 2	1.86	127	Do	1.39	38.1
Jan. 15	2.61	375	Aug. 17	1.42	59.9			

Daily discharge, in second-feet, of North Fork of Skokomish River below Staircase Rapids, near Hoodsport, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	43	1,910	435	430	435	333	333	294	132	56	44
2	55	41	864	396	364	448	311	322	286	127	53	41
3	51	38	655	364	600	452	300	364	286	127	53	38
4	48	36	875	434	1,160	413	283	546	294	127	53	36
5	45	35	818	1,830	1,060	356	260	396	290	122	53	36
6	45	35	610	875	965	337	253	360	297	120	53	35
7	44	36	503	655	1,390	322	253	575	297	109	53	34
8	44	228	452	546	935	300	266	605	270	103	53	32
9	43	440	448	180	1,520	280	297	484	237	99	52	32
10	42	910	1,240	430	1,310	266	345	418	224	99	49	32
11	42	790	2,520	384	905	304	345	418	221	99	48	30
12	41	489	1,160	356	708	388	329	480	212	97	46	30
13	40	356	790	341	600	462	337	522	209	88	45	29
14	40	318	630	384	526	439	430	435	206	86	45	28
15	40	674	655	392	470	435	503	348	200	84	45	32
16	38	1,450	637	1,240	439	435	426	341	194	81	46	41
17	37	762	1,230	1,000	409	413	360	396	185	77	60	44
18	37	630	1,160	655	498	384	388	503	180	76	120	48
19	36	551	845	517	1,090	360	685	498	180	77	64	41
20	36	536	762	462	818	348	522	444	174	84	74	37
21	37	388	1,930	444	680	329	546	392	166	76	52	51
22	37	318	2,090	400	610	383	452	380	171	74	45	84
23	35	280	2,320	368	546	493	352	345	177	72	43	52
24	36	329	1,250	348	680	352	333	318	180	70	41	41
25	48	326	935	329	585	326	348	294	177	68	40	38
26	52	273	790	311	546	314	400	318	166	68	84	35
27	86	337	708	300	508	308	475	392	150	64	71	34
28	109	418	630	508	462	311	512	341	139	60	64	198
29	66	333	575	708	-------	333	439	322	134	59	52	163
30	56	486	522	580	-------	409	364	294	134	59	46	91
31	48	-------	475	498	-------	400	-------	283	-------	58	43	------

NOTE.—Stage changing Aug. 17; discharge result of current-meter measurement.

Monthly discharge of North Fork of Skokomish River below Staircase Rapids, near Hoodsport, Wash., for the year ending September 30, 1926

[Drainage area, 60 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	109	35	47.5	0.792	0.91	2,920
November	1,450	35	396	6.60	7.36	23,600
December	2,520	448	1,000	16.7	19.25	61,500
January	1,830	300	547	9.12	10.51	33,600
February	1,520	364	743	12.4	12.91	41,300
March	493	266	372	6.20	7.15	22,900
April	685	253	382	6.37	7.11	22,700
May	605	283	402	6.70	7.72	24,700
June	297	134	211	3.52	3.93	12,600
July	132	58	88.5	1.48	1.71	5,440
August	120	40	54.9	.915	1.05	3,380
September	198	28	50.2	.837	.93	2,990
The year	2,520	28	356	5.93	80.54	258,000

NORTH FORK OF SKOKOMISH RIVER NEAR HOODSPORT, WASH.

LOCATION.—In NE. ¼ sec. 8, T. 22 N., R. 4 W., 1 mile below Cushman Reservoir dam, 5 miles below Lake Cushman, and 3½ miles west of Hoodsport, Mason County.

DRAINAGE AREA.—92 square miles (measured on pl. 1, U. S. Geol. Survey Prof. Paper 7, and township plats).

RECORDS AVAILABLE.—October 1, 1923, to September 30, 1926, at present site; August 17, 1910, to September 22, 1911, and February 1, 1913, to September 30, 1923, at site of present dam, 1 mile above.

GAGE.—Stevens water-stage recorder on left bank; inspected by employees of city of Tacoma.

DISCHARGE MEASUREMENTS.—Made from cable 1,200 feet above gage or by wading.

CHANNEL AND CONTROL.—Channel curved above gage, straight below gage for 200 feet. Banks high, not subject to overflow. Control composed of boulders and gravel, slightly shifting at extremely high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 8.2 feet at 8.30 a. m. September 30 (discharge, 2,250 second-feet); no flow October 22, when gates in dam were closed.

1913–1926: Maximum stage estimated at 23.5 feet January 6, 1914, during part of day when recorder was not operating (discharge estimated at 14,000 second-feet); minimum stage, that of October 22, 1925.

ICE.—Stage-discharge relation affected by ice during severe winters. Discharge estimated from gage height and weather records.

DIVERSIONS.—None.

REGULATION.—Flow controlled by storage and release of water in Lake Cushman reservoir. Monthly discharge, without storage, determined from records of stage of reservoir.

ACCURACY.—Stage-discharge relation practically permanent; not affected by ice. Rating curve well defined. Operation of water-stage recorder satisfactory except as noted in footnote to tables of daily and monthly discharge. Prior to March 22 and later, for very low flow, discharge ascertained by applying to rating table mean daily gage height obtained from recorder graph or, for

days of considerable variation in stage, by averaging discharge for intervals of the day; otherwise by use of discharge integrator. Records for October and April to September good; others fair.

Discharge measurements of North Fork of Skokomish River near Hoodsport, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 5	+1.55	113	June 4	+5.32	866	June 9	+6.2[illegible]	1,210
Jan. 13	−.36	4.6	June 8	+3.70	456	June 10	+7.2[illegible]	1,730
Mar. 19	+1.18	82.2	Do	+4.45	627	Sept. 14	7.01	1,550
June 2	−.30	5.73						

Daily discharge, in second-feet, of North Fork of Skokomish River near Hoodsport, Wash., for the year ending September 30, 1926

Day	Oct.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	138		13	36	106	42	44	3	168
2	133		12	305	31	22	33	284	335
3	127		11	235	152	41	11	224	335
4	120		12	2	67	150	2	254	173
5	116		11	47	100	4	2	362	342
6	111		13	72	111	2	20	171	3
7	108		11	36	440	37	61	118	282
8	105		12	54	54	207	116	262	434
9	104		33	26	4	385	32	211	296
10	102	10	82	55	83	666	3	248	365
11	102		85	3	202	266	197	222	382
12	101		86	68	85	190	107	218	49
13	99		83	62	233	4	83	188	840
14	98		78	21	115	284	62	161	1,300
15	98		78	9	45	268	75	172	1,300
16	97		74	6	4	143	200	241	1,220
17	96		82	3	48	229	130	299	1,050
18	97	18	83	3	47	223	3	83	1,290
19	95	20	82	48	41	142	318	182	1,120
20	94	22	43	146	128	174	365	9[illegible]	1,470
21	70	24	4	119	52	72	206	254	1,510
22	0	28	3	129	28	89	166	22[illegible]	1,160
23		24	192	209	4	77	174	19[illegible]	1,110
24		22	168	170	48	32	200	185	1,060
25		18	72	68	60	4	8	195	1,180
26	3	18	42	116	68	4	208	215	1,060
27		16	63	123	337	2	294	195	1,020
28		14	2	67	354	2	319	187	1,370
29		-------	68	69	231	40	215	235	1,170
30		-------	52	96	5	30	186	280	1,340
31		-------	51	-------	3	-------	90	30[illegible]	-------

NOTE.—Water-stage recorder not operating Oct. 22 to Feb. 17, Apr. 2–6, May 5, 16–25, and Aug. 29 to Sept. 13. Discharge prior to Feb. 17 estimated from general information; thereafter from record of plant load.

Monthly discharge of North Fork of Skokomish River near Hoodsport, Wash., for the year ending September 30, 1926

[Drainage area, 92 square miles]

Month	Discharge in second-feet					Run-off			
	Observed			Corrected for storage		Acre-feet			Inches
	Maximum	Minimum	Mean	Mean	Per square mile	Observed	Stored in Lake Cushman Reservoir	Corrected for storage	
October	138	0	72.2	105	1.14	4,440	+2,000	6,440	1.31
November	------	------	[a] 10	590	6.41	595	34 500	35,100	7.15
December	------	------	[a] 10	1,480	16.1	615	90 500	91,100	18.56
January	------	------	[a] 10	872	9.48	615	53 000	53,600	10.93
February	28	------	14.1	1,220	13.3	783	67,000	67,800	13.85
March	192	2	54.9	551	5.99	3,380	30 500	33,900	6.91
April	305	2	80.0	509	5.53	4,760	25 500	30,300	6.17
May	440	3	106	529	5.75	6,520	26 000	32,500	6.63
June	666	2	128	287	3.12	7,620	+9 500	17,100	3.48
July	365	2	127	127	1.38	7,810	0	7,810	1.59
August	362	3	209	128	1.39	12,900	−5 000	7,900	1.60
September	1,510	3	824	143	1.55	49,000	−40 500	8,500	1.73
The year	1,510	0	137	541	5.88	99,000	293 000	392,000	79.91

[a] Estimated from general information.

SOUTH FORK OF SKOKOMISH RIVER NEAR POTLATCH, WASH.

LOCATION.—In NW. ¼ sec. 22, T. 22 N., R. 5 W., at canyon head, 2 miles below Brown Creek and 7½ miles west of Potlatch, Mason County.

DRAINAGE AREA.—68 square miles (measured on map of Skokomish River watershed of city of Tacoma's Cushman power project).

RECORDS AVAILABLE.—October 1, 1923, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on right bank, about 300 feet below canyon head; inspected by employees of city of Tacoma.

DISCHARGE MEASUREMENTS.—Made from cable about 75 feet above gage or by wading.

CHANNEL AND CONTROL.—Channel winding, bed composed of light gravel to heavy boulders. Banks high and not subject to overflow. Control varies with stage; for low water it is of light gravel, shifting; for medium and high stages, heavy boulder riffles, shifting at high stages only.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 9.1 feet at 5 a. m. December 11 (discharge, 4,560 second-feet); minimum stage, 1.22 feet from 1 to 10 a. m. September 15 (discharge, 38 second-feet).

1924–1926; Maximum stage recorded, 14.86 feet January 31, 1924 (discharge, from extension of rating curve, 9,950 second-feet); minimum discharge, that of September 15, 1926.

ICE.—Stage-discharge relation slightly affected by ice during severe winters. Flow estimated from gage height and weather records.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed for low water December 12; not affected by ice. Rating curves fairly well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage heights determined from recorder graph by inspection or, for days of considerable variation in stage, by averaging discharge for intervals of the day. Records good.

Discharge measurements of South Fork of Skokomish River near Potlatch, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 6	1.68	62.6	Mar. 11	2.84	321	Sept. 15	1.47	64.4
Nov. 11	4.96	1,270	Mar. 31	2.70	275	Do	1.48	63.4
Jan. 14	3.46	481	June 1	2.44	244			

Daily discharge, in second-feet, of South Fork of Skokomish River near Potlatch, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	78	67	2,160	446	700	635	272	206	234	88	50	47
2	72	65	1,410	418	594	575	261	198	225	87	50	46
3	69	64	1,110	391	862	556	270	225	214	86	49	45
4	68	62	1,510	405	1,860	522	263	418	204	84	48	44
5	67	59	1,210	2,050	1,720	475	249	391	200	80	48	43
6	65	58	965	1,240	1,540	432	236	352	194	78	47	43
7	65	62	810	876	1,860	404	227	656	188	77	47	42
8	64	160	700	678	1,270	391	227	744	182	77	47	41
9	64	379	656	575	1,460	365	227	575	176	75	47	41
10	64	898	1,520	490	1,510	340	236	446	173	74	47	40
11	64	1,140	3,270	446	1,180	328	232	391	171	71	47	40
12	64	832	1,670	404	965	365	225	352	169	68	47	40
13	63	575	1,160	378	788	391	219	328	167	65	46	40
14	63	486	920	468	700	391	223	304	163	63	46	39
15	63	870	876	538	614	404	227	270	161	62	46	65
16	62	1,860	832	1,950	594	432	223	252	156	61	45	59
17	62	1,250	1,710	1,740	635	446	208	275	152	60	48	61
18	60	920	1,580	1,080	898	538	210	365	149	59	78	59
19	60	700	1,270	832	1,450	490	349	328	145	59	63	55
20	59	614	1,270	722	1,270	446	352	316	143	60	61	54
21	59	503	2,790	678	1,160	391	476	340	142	57	55	61
22	59	436	2,600	614	1,140	378	475	365	131	54	52	82
23	58	401	2,800	538	988	446	365	340	117	53	50	74
24	58	436	1,620	505	1,080	365	304	316	109	52	48	68
25	59	520	1,180	460	965	340	282	279	102	51	47	65
26	60	452	965	418	876	316	265	282	101	51	61	63
27	72	536	832	391	788	293	258	340	96	51	61	60
28	90	722	700	678	700	291	247	304	94	51	57	138
29	90	556	614	1,270	------	288	234	279	93	52	53	208
30	78	591	538	1,010	------	293	221	256	90	52	50	143
31	71	------	490	876	------	293	------	245	------	51	47	------

NOTE.—Water below intake during summer low water until Sept. 15; mean daily gage heights probably only slightly affected.

Monthly discharge of South Fork of Skokomish River near Potlatch, Wash., for the year ending September 30, 1926

[Drainage area, 68 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	90	58	66.1	0.972	1.12	4,060
November	1,860	58	542	7.97	8.89	32,300
December	3,270	490	1,350	19.9	22.94	83,000
January	2,050	378	760	11.2	12.91	46,700
February	1,860	594	1,080	15.9	16.56	60,000
March	635	288	407	5.99	6.91	25,000
April	476	208	269	3.96	4.42	16,000
May	744	198	346	5.09	5.87	21,300
June	234	90	155	2.28	2.54	9,220
July	88	51	64.8	.953	1.10	3,980
August	78	45	51.2	.753	.87	3,150
September	208	39	63.5	.934	1.04	3,780
The year	3,270	39	426	6.26	85.17	308,000

NISQUALLY RIVER BASIN

NISQUALLY RIVER NEAR LA GRANDE, WASH.

LOCATION.—In sec. 9, T. 15 N., R. 4 E., 1,200 feet below diversion dam of city of Tacoma's municipal power plant and 2½ miles southeast of La Grande, Pierce County.

DRAINAGE AREA.—287 square miles (measured on topographic map of Rainier National Park; map of Rainier National Forest, edition of 1918; and pl. 4, Water-Supply Paper 313).

RECORDS AVAILABLE.—October 1, 1919, to September 30, 1926. September 5, 1906, to October 31, 1911, fragmentary.

GAGE.—Stevens long-distance recorder on left bank 1,200 feet below dam; also vertical staff on left bank at head of low-water control for use during periods of low water when silt interferes with normal stage-discharge relation. Also Stevens long-distance recorder on right side of Tacoma power conduit, 750 feet below head gate, and a staff gage in pool behind diversion dam. Recorders inspected and gages read by head-gate attendants.

DISCHARGE MEASUREMENTS.—Made from cable 250 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of bedrock and boulders. Banks high. Considerable amount of glacial silt is deposited during summer, causing control to change temporarily.

EXTREMES OF DISCHARGE.—Maximum combined daily discharge of river and Tacoma power conduit during year, 5,490 second-feet December 23; minimum combined daily discharge during year, 184-second-feet, November 5.

1920–1926: Maximum combined daily discharge, 16,700 second-feet December 12, 1921; minimum combined daily discharge recorded November 5, 1925.

ICE.—Stage-discharge relation not affected by ice.

DIVERSION.—City of Tacoma diverts water 1,200 feet above gage for development of power. Discharge is computed from determination of combined flow of river and power conduit.

ACCURACY.—River and power conduit rated separately. Stage-discharge relation for river station affected by silt on control and in channel during low water. Rating curves for normal control conditions well defined. Operation of water-stage recorders unsatisfactory for long periods. Automatically recorded gage heights supplemented by one daily reading on gage at control during low water and by 12 daily readings on staff gage behind diversion dam. Accuracy of power conduit records discussed on page 34. Daily discharge determined by combining results obtained for river and for power conduit. Records of combined flow good.

COOPERATION.—Gage-height record furnished by city of Tacoma.

Discharge measurements of Nisqually River near La Grande, Wash., during the year ending September 30, 1926

Date	Auxiliary staff gage height	Regular gage height	Discharge	Date	Auxiliary staff gage height	Regular gage height	Discharge
	Feet	*Feet*	*Sec.-ft.*		*Feet*	*Feet*	*Sec.-ft.*
Oct. 5	0.31	0.46	6.6	June 23	C.30	----------	9.8
Oct. 23	.17	.35	3.4	Aug. 11	.70	----------	22.8
Jan. 11	1.62	1.89	136	Sept. 21	.90	2.96	11.8
Jan. 12	1.01	1.17	53.4	Do	.90	2.96	12.0
Apr. 15	1.71	2.00	159	Sept. 22	----------	4.82	793
June 22	.24	----------	7.0				

NOTE.—For list of discharge measurements of Tacoma power conduit, see page 34.

Combined daily discharge, in second-feet, of Nisqually River and Tacoma power conduit near La Grande, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	215	291	1,590	1,050	1,240	1,500	788	710	818	665	470	533
2	239	254	1,860	930	1,050	1,400	712	658	734	651	486	523
3	232	255	1,280	803	1,010	1,420	751	739	694	637	533	514
4	230	222	1,280	842	1,470	1,350	763	1,200	808	758	496	504
5	252	184	2,170	1,820	2,440	1,220	726	1,090	838	870	474	474
6	266	209	1,770	2,980	3,660	1,050	645	958	920	932	557	444
7	234	210	1,380	1,960	3,430	1,000	621	810	966	806	554	479
8	239	211	1,230	1,580	2,880	878	614	814	950	740	547	374
9	251	223	976	1,310	2,430	945	642	784	768	700	540	467
10	259	293	1,210	1,080	2,740	866	689	738	669	765	532	472
11	216	548	3,660	946	2,470	766	711	647	606	950	525	459
12	224	707	2,980	977	2,040	1,040	802	739	568	1,000	535	446
13	224	531	2,340	840	1,710	1,370	733	884	587	900	583	416
14	253	451	1,860	955	1,490	1,370	768	834	584	800	576	386
15	269	490	1,640	1,180	1,300	1,480	917	798	543	700	569	389
16	282	779	1,400	1,290	1,300	1,540	1,020	592	544	650	562	400
17	292	766	1,350	1,540	1,360	1,320	934	844	518	600	600	461
18	297	761	1,390	1,760	1,310	1,150	967	1,210	586	508	750	354
19	259	760	1,170	1,500	1,390	1,060	962	1,130	601	474	622	318
20	319	598	1,230	1,410	1,500	1,010	878	1,130	552	418	603	306
21	361	564	3,500	1,740	1,440	959	779	1,160	586	496	454	369
22	348	482	3,920	1,600	1,790	870	698	1,090	576	573	482	700
23	293	453	5,490	1,430	1,560	940	612	1,050	654	528	509	600
24	242	421	3,880	1,330	2,290	893	591	1,050	712	524	564	556
25	474	498	2,600	1,240	2,450	820	552	916	832	544	576	451
26	306	480	2,030	1,100	2,050	801	673	868	855	563	598	405
27	572	482	1,670	1,050	1,900	777	698	972	814	428	592	391
28	729	618	1,460	1,090	1,700	694	851	903	736	414	513	415
29	543	587	1,280	1,500	-------	742	929	911	663	497	550	375
30	402	694	1,510	1,460	-------	719	832	829	680	556	456	400
31	326	-------	1,280	1,260	-------	756	-------	788	-------	513	420	------

NOTE.—Data not sufficient for determining directly, flow of river without conduit July 8, 9, 11–17, 25, 31, Aug. 8–10, 14, 15, 17, 18, 22, 29, and Sept. 2, 3, 5, 11, 22, 23, and 30. Combined discharge estimated by comparison with records of Puyallup River at Alderton July 8, 9, 11–17, Aug. 17, 18, 29, and Sept. 22, 23, and 30; otherwise interpolated.

Combined monthly discharge of Nisqually River and Tacoma power conduit near La Grande, Wash., for the year ending September 30, 1926

[Drainage area, 287 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	729	215	311	1.08	1.24	19,100
November	779	184	467	1.63	1.82	27,800
December	5,490	976	2,010	7.00	8.07	124,000
January	2,980	803	1,340	4.67	5.38	82,400
February	3,660	1,010	1,910	6.66	6.94	106,000
March	1,540	694	1,060	3.69	4.25	65,200
April	1,020	552	762	2.66	2.97	45,300
May	1,210	592	898	3.13	3.61	55,200
June	966	518	699	2.44	2.72	41,600
July	1,000	414	650	2.26	2.61	40,000
August	750	420	543	1.89	2.18	33,400
September	700	306	446	1.55	1.73	26,500
The year	5,490	184	920	3.21	43.52	666,000

NOTE.—Results are comparable with combined results previously published for Nisqually River and Tacoma power conduit near La Grande, Wash.

LITTLE NISQUALLY RIVER NEAR ALDER, WASH.

LOCATION.—In NW. ¼ sec. 16, T. 15 N., R. 4 E., in Thurston County, 1,500 feet above mouth, 3,000 feet from diversion dam of city of Tacoma's power plant, and 1½ miles southwest of Alder, Pierce County.

DRAINAGE AREA.—28.5 square miles (measured on Forest Service map).

RECORDS AVAILABLE.—August 1, 1920, to September 30, 1926.

GAGE.—Stevens water-stage recorder on left bank; installed April 16, 1921; inspected by employees of city of Tacoma.

DISCHARGE MEASUREMENTS.—Made by wading or from cable.

CHANNEL AND CONTROL.—One channel at all stages. Banks high, not subject to overflow. Control is riffle in heavy boulders 100 feet below gage. At extremely high stage gage is in riffle.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.15 feet from 5 to 7 a. m. December 23 (discharge, 975 second-feet); minimum stage, 0.58 foot July 17 (discharge, 0.9 second-foot).

1920–1926: Maximum stage recorded 6.4 feet at 3 p. m. January 7, 1923 (discharge, 2,220 second-feet); minimum discharge, that of July 17, 1926.

ICE.—Stage-discharge relation affected by ice during severe winters. Flow estimated from discharge measurements, observer's notes, and weather records.

DIVERSIONS.—None.

REGULATION.—Effect of operation of flash dam above gage for flushing logs down river is noticeable at gage; amount of storage small. Duration of effect at gage only a few hours at extreme low water.

ACCURACY.—Stage-discharge relation changed gradually October 1–5, December 21, and December 23; not affected by ice. Logs in channel and on control caused uncertainty as to amounts of backwater present between dates of measurements. Rating curves used October 6 to December 22 poorly defined; that used December 23 to September 30 fairly well defined. Operation of water-stage recorder satisfactory except as noted in footnote to table of daily discharge. Daily discharge ascertained by applying to rating table mean daily gage height obtained from recorder graph by inspection; shifting-control method used October 1–5. Records fair.

Discharge measurements of Little Nisqually River near Alder, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 6	0.89	4.69	Apr. 15	1.19	27.4	Aug. 11	0.89	5.85
Oct. 23	.90	4.68	June 22	1.06	15.2	Sept. 22	1.59	79.5
Jan. 12	1.54	70.8						

Daily discharge, in second-feet, of Little Nisqually River near Alder, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.1	6.0	317	61	128	180	33	20	38	4.2	6.4	8.2
2	4.6	5.6	272	58	110	160	32	20	35	3.5	6.0	7.8
3	5.2	5.6	174	54	106	150	39	24	31	3.8	5.5	6.9
4	5.2	5.6	154	53	278	135	37	69	28	4.0	5.5	6.9
5	5.5	5.2	138	229	552	116	37	72	27	4.0	5.2	6.4
6	4.8	4.8	111	310	694	98	36	67	24	4.2	3.4	6.4
7	5.2	4.6	84	204	508	85	35	56	23	4.5	5.2	6.4
8	6.0	5.2	68	155	348	78	33	57	21	3.5	5.8	6.0
9	6.8	8.3	60	122	274	74	32	56	20	5.2	4.0	5.8
10	6.8	16	91	94	339	67	32	50	19	6.0	5.2	5.5

Daily discharge, in second-feet, of Little Nisqually River near Alder, Wash., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	6.0	71	468	78	293	64	33	45	19	6.4	5.8	5.5
12	4.8	80	445	69	237	74	32	40	19	7.8	5.2	5.5
13	4.6	57	302	64	178	84	30	38	18	6.9	5.8	5.2
14	4.6	46	190	78	146	87	29	36	18	7.4	5.5	5.0
15	4.6	100	134	98	124	89	28	33	16	6.9	5.2	5.5
16	4.6	183	102	192	110	82	27	30	15	6.4	4.5	13
17	4.6	217	126	323	98	75	27	31	14	6.0	5.5	30
18	4.6	136	154	242	94	72	27	40	13	6.0	10	20
19	4.6	93	128	178	106	66	33	44	16	6.0	9.2	15
20	4.6	66	167	144	144	66	38	49	19	7.4	10	12
21	4.6	52	555	141	185	63	34	74	17	7.4	9.6	22
22	4.6	43	550	137	250	60	38	74	14	6.9	8.2	84
23	4.8	36	810	124	223	54	34	74	12	6.9	4.2	50
24	4.8	34	422	118	351	50	32	77	14	6.0	5.2	35
25	5.6	50	253	108	335	48	30	66	12	6.4	6.0	28
26	6.0	46	175	96	267	44	27	60	8.7	6.4	8.7	23
27	6.8	58	133	85	237	43	25	60	8.2	6.4	11	19
28	7.9	69	106	93	212	39	24	56	6.0	5.5	9.2	22
29	7.9	61	89	150	------	37	22	51	5.8	3.8	8.7	24
30	7.1	114	77	170	------	35	21	48	5.0	4.5	8.7	22
31	6.8	------	67	150	------	34	------	43	------	6.4	8.2	------

NOTE.—Discharge Oct. 1, 2, and 15 interpolated and Oct. 16–22 determined by use of staff-gage readings, because of unsatisfactory operation of water-stage recorder.

Monthly discharge of Little Nisqually River near Alder, Wash., for the year ending September 30, 1926

[Drainage area, 28.5 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	7.9	4.1	5.44	0.191	0.22	334
November	217	4.6	56.0	1.96	2.19	3,330
December	810	60	223	7.82	9.02	13,700
January	323	53	135	4.74	5.46	8,300
February	694	94	247	8.67	9.03	13,700
March	180	34	77.7	2.73	3.15	4,780
April	39	21	31.2	1.09	1.22	1,860
May	77	20	50.3	1.76	2.03	3,090
June	38	5.0	17.9	.628	.70	1,070
July	7.8	3.5	5.70	.200	.23	350
August	11	3.4	6.66	.234	.27	410
September	84	5.0	17.1	.600	.67	1,020
The year	810	3.4	71.8	2.52	34.19	51,900

TACOMA POWER CONDUIT NEAR LA GRANDE, WASH.

LOCATION.—In sec. 9, T. 15 N., R. 4 E., in Thurston County, 750 feet below head gate at diversion dam of city of Tacoma municipal power plant and 2½ miles southeast of La Grande, Pierce County.

RECORDS AVAILABLE.—October 1, 1919, to September 30, 1926.

GAGE.—Stevens long-distance recorder on right side 750 feet below head gate; inspected by head-gate attendants.

DISCHARGE MEASUREMENTS.—Made from footbridge at gage or by wading.

CHANNEL AND CONTROL.—Open concrete-lined canal for 50 feet below gage merging into concrete-lined tunnel 1.9 miles in length.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, from water-stage recorder, 10.6 feet at 1.30 p. m. January 5 (discharge, 904 second-feet); no flow when operating gates are closed or when waste gates are opened wide for cleaning settling basins.

1920–1926: Maximum discharge, 920 second-feet on May 14, 1925; no flow when operating gates are closed or when waste gates are opened wide.

ICE.—Stage-discharge relation not affected by ice.

REGULATION.—Flow regulated at head gate to meet requirements of power plant.

ACCURACY.—Stage-discharge relation changed January 1. Rating curves well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by use of discharge integrator. Records excellent.

Canal diverts water from left bank of Nisqually River in SW. ¼ sec. 9, T. 15 N., R. 4 E., Willamette meridian. Water used for municipal power.

Discharge measurements of Tacoma power conduit near La Grande, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 5	4.78	285	Apr. 16	9.79	800	Aug. 12	7.63	569
Oct. 24	4.75	283	June 23	9.37	754	Sept. 22	7.40	526
Jan. 11	10.23	860						

Daily discharge, in second-feet, of Tacoma power conduit near La Grande, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	210	282	712	660	758	714	738	677	728	654	464	506
2	223	250	721	728	756	714	708	602	703	617	474	382
3	218	251	734	628	750	738	748	722	674	627	504	415
4	216	218	723	680	712	732	648	770	642	549	488	496
5	241	180	684	732	723	723	700	784	658	452	460	412
6	261	204	559	734	712	722	641	779	584	602	538	438
7	230	205	715	721	586	604	616	597	648	647	516	475
8	232	206	719	726	700	745	607	740	578	598	335	366
9	243	217	724	728	770	745	635	594	406	634	544	452
10	250	288	728	592	758	743	677	688	406	625	526	457
11	212	542	706	714	766	715	620	610	514	365	510	412
12	220	668	726	709	756	760	732	616	502	608	524	434
13	218	527	628	710	771	748	722	668	406	649	567	404
14	244	446	751	722	702	579	693	720	510	640	528	378
15	263	454	741	728	767	740	694	735	516	602	382	377
16	274	682	738	742	725	722	713	575	538	554	534	392
17	286	692	762	634	719	738	680	714	510	521	430	446
18	288	664	709	742	714	758	641	730	558	498	628	348
19	254	686	766	756	716	736	774	786	578	462	586	314
20	310	567	636	760	780	694	698	744	520	412	564	300
21	352	558	741	744	695	583	719	784	572	482	448	365
22	342	478	738	770	762	754	686	770	570	535	317	548
23	288	449	682	748	776	710	608	617	606	496	490	516
24	238	416	698	664	766	731	559	680	628	492	524	546
25	404	492	583	771	729	732	439	748	642	581	532	444
26	302	474	716	782	754	746	664	794	670	528	548	400
27	559	478	544	780	754	738	640	636	524	416	544	386
28	644	613	733	788	652	646	669	638	654	406	501	409
29	495	580	711	772	------	708	726	643	648	489	352	368
30	398	678	708	764	------	716	728	599	658	529	445	294
31	322	------	710	718	------	742	------	624	------	557	412	------

Monthly discharge of Tacoma power conduit near La Grande, Wash., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	644	210	298	18,300
November	692	180	448	26,700
December	766	544	701	43,100
January	788	592	724	44,500
February	780	586	733	40,700
March	760	579	715	44,000
April	774	439	671	39,900
May	794	575	690	42,400
June	728	406	584	34,800
July	654	365	543	33,400
August	628	317	491	30,200
September	548	294	416	24,800
The year	794	180	584	423,000

PUYALLUP RIVER BASIN

PUYALLUP RIVER NEAR ELECTRON, WASH.

LOCATION.—In NE. ¼ NW. ¼ sec. 3, T. 16 N., R. 6 E., 1,000 feet above intake of Puget Sound Power & Light Co.'s flume, a quarter of a mile below Mowich River, and 10 miles southeast of Electron, Pierce County.

DRAINAGE AREA.—91 square miles (measured on pl. 4, Water-Supply Paper 313).

RECORDS AVAILABLE.—January 1, 1909, to September 30, 1926.

GAGE.—Friez water-stage recorder on left bank at gaging bridge 1,000 feet above intake; inspected by William Chambers. Datum lowered 1.00 foot March 9, 1918.

DISCHARGE MEASUREMENTS.—Made from gaging bridge at gage.

CHANNEL AND CONTROL.—Channel straight for 150 feet above and below gage. Banks high and wooded. One channel at all stages. Bed composed of boulders and glacial débris; shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.98 feet at 9.30 a. m. December 23 (discharge, 2,740 second-feet); minimum stage, 1.26 feet at 11.45 a. m. October 11 (discharge, 151 second-feet).

1909–1926: Maximum stage estimated from incomplete gage-height record, 6.4 feet at noon December 18, 1917 (discharge, 4,800 second-feet); minimum discharge estimated 100 second-feet on December 12, 1922, when stage-discharge relation was affected by ice.

ICE.—Stage-discharge relation slightly affected by ice except during mild winters. Flow estimated from observer's notes and weather records.

DIVERSIONS.—None above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed continuously throughout the year; not affected by ice. Rating curve developed in 1925 and well defined below 1,500 second-feet used as standard form of curve for this station. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspecting recorder graph, and corrected as to time and amount of shift in accordance with results of frequent discharge measurements. Records good.

COOPERATION.—Complete record furnished by Puget Sound Power & Light Co.

Discharge measurements of Puyallup River near Electron, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 4	1.36	175	Jan. 24	2.00	410	May 6	1.87	361
Oct. 20	1.56	223	Feb. 5	2.18	492	July 16	2.13	459
Nov. 4	1.52	205	Feb. 15	1.84	403	July 28	1.97	373
Nov. 21	1.81	311	Mar. 9	1.71	278	Aug. 7	2.18	480
Dec. 7	2.50	709	Mar. 22	1.87	355	Aug. 24	2.21	475
Dec. 18	2.31	535	Apr. 4	1.65	267	Sept. 5	2.06	398
Jan. 8	2.21	539	Apr. 20	1.98	411	Sept. 14	1.79	244

Daily discharge, in second-feet, of Puyallup River near Electron, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	183	267	844	333	358	432	323	394	437	550	269	631
2	169	240	669	316	337	428	294	386	419	581	269	441
3	176	225	555	319	337	441	278	424	469	663	505	428
4	183	206	773	336	455	415	273	562	556	772	269	499
5	190	206	1,440	1,370	556	415	276	428	605	866	510	504
6	188	199	981	1,020	823	340	262	366	772	904	606	458
7	190	199	722	669	823	323	264	333	794	663	656	469
8	188	201	612	531	676	310	278	347	669	562	631	390
9	181	204	555	469	662	281	287	343	494	650	631	407
10	169	235	966	419	808	267	354	326	403	852	606	386
11	169	293	1,600	396	656	256	437	330	347	1,040	624	362
12	183	281	1,220	362	550	568	419	362	356	1,110	643	340
13	188	270	836	336	489	696	403	424	354	874	656	310
14	195	248	682	340	441	682	460	455	354	751	643	290
15	204	313	780	336	403	764	562	374	373	615	574	278
16	213	354	624	542	378	808	568	366	343	543	543	262
17	233	342	605	574	347	702	504	556	374	526	505	251
18	199	336	587	441	333	455	499	772	415	478	808	213
19	199	326	473	386	336	347	478	729	411	398	543	201
20	240	350	586	402	362	419	424	702	437	412	568	206
21	284	310	1,950	568	343	378	374	722	473	519	390	211
22	256	281	736	499	340	370	336	568	494	574	399	354
23	201	264	2,110	466	330	499	306	543	556	556	574	366
24	225	270	1,310	419	702	415	300	489	633	702	640	303
25	336	293	934	378	510	366	333	441	811	631	631	276
26	336	264	709	354	450	340	374	419	722	478	851	259
27	744	336	568	336	428	319	437	489	612	415	531	248
28	736	483	499	366	432	310	499	446	550	455	489	297
29	402	419	450	446	------	310	515	464	556	531	650	290
30	398	504	402	407	------	343	450	424	574	582	515	264
31	307	------	370	370	------	354	------	437	------	543	515	------

Monthly discharge of Puyallup River near Electron, Wash., for the year ending September 30, 1926

[Drainage area, 91 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	744	169	260	2.86	3.30	16,000
November	504	199	291	3.20	3.57	17,300
December	2,110	370	843	9.26	10.68	51,800
January	1,370	316	468	5.14	5.93	28,800
February	823	330	488	5.36	5.58	27,100
March	808	256	431	4.74	5.47	26,500
April	568	262	386	4.24	4.73	23,000
May	772	326	465	5.11	5.89	28,600
June	801	323	508	5.58	6.23	30,200
July	1,110	398	639	7.02	8.09	39,300
August	851	269	556	6.11	7.04	34,200
September	631	201	340	3.74	4.17	20,200
The year	2,110	169	474	5.21	70.68	343,000

PUYALLUP RIVER AT ALDERTON, WASH.

LOCATION.—On line between sec. 25, T. 20 N., R. 4 E., and sec. 30, T. 20 N., R. 5 E., at highway bridge 1 mile north of Alderton, Pierce County, and 1½ miles above Stuck River.

DRAINAGE AREA.—410 square miles (measured on pl. 4, Water-Supply Paper 313).

RECORDS AVAILABLE.—November 20, 1914, to September 30, 1926.

GAGE.—Chain gage on highway bridge installed December 15, 1920; read by Mrs. H. D. Foster.

DISCHARGE MEASUREMENTS.—Made from bridge at gage.

CHANNEL AND CONTROL.—Bed composed of silt and gravel; shifting. Right bank is overflowed at gage height about 9 feet; left bank high and not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.25 feet at 3 p. m. December 21 (discharge, 6,930 second-feet); minimum stage, 0.30 foot October 20 (discharge, 270 second-feet).

1915–1926: Maximum stage recorded, 11.5 feet at 11 a. m. December 12, 1921 (discharge, 21,200 second-feet); minimum stage, 0.28 foot September 22, 1924 (discharge, 228 second-feet).

ICE.—Stage-discharge relation slightly affected by ice for a few days during severe winters.

DIVERSIONS.—None.

REGULATION.—The operation of the Puget Sound Power & Light Co.'s plant at Electron does not materially affect the natural flow, as the pondage utilized is small.

ACCURACY.—Stage-discharge relation changed December 21–24 and September 22. Rating curves well defined below 5,000 second-feet. Gage read to hundredths once daily. Some diurnal fluctuation. Daily discharge ascertained by applying daily gage height to rating table; shifting-control method used December 21–24. Records good.

Discharge measurements of Puyallup River at Alderton, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 7	0.54	406	Apr. 14	1.20	1,020	June 21	0.86	732
Jan. 7	2.71	2,790	May 18	2.23	2,200	Aug. 6	.99	818
Mar. 11	.84	712						

Daily discharge, in second-feet, of Puyallup River at Alderton, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	496	890	1,940	935	1,600	1,280	800	1,080	1,230	980	800	1,180
2	483	478	1,710	935	1,130	1,490	890	760	1,130	935	935	1,130
3	469	890	1,600	845	1,130	1,380	1,030	845	1,030	1,080	935	1,030
4	456	478	1,490	800	1,130	1,130	845	1,490	1,280	1,280	935	935
5	442	542	4,480	2,460	2,060	1,080	760	1,230	1,380	1,380	935	890
6	429	445	2,880	4,650	2,600	935	760	1,030	1,380	1,380	845	890
7	415	445	2,060	2,880	2,460	935	682	1,030	1,600	1,380	845	845
8	361	385	1,490	2,060	2,190	890	720	890	1,490	1,230	845	800
9	361	325	1,280	1,820	2,060	845	682	800	1,230	1,130	800	760
10	361	325	1,380	1,600	2,190	760	720	682	1,130	1,180	845	720
11	361	325	5,580	1,490	2,460	720	720	682	845	1,600	845	682
12	361	510	3,970	1,230	2,190	1,080	1,180	935	800	1,940	890	726
13	361	645	3,030	1,130	1,940	1,820	1,030	890	760	1,600	1,080	720
14	361	645	2,880	1,130	1,710	1,490	1,030	1,230	760	1,490	1,080	645
15	361	645	2,320	1,080	1,280	1,490	1,280	980	720	1,380	1,080	645
16	349	325	2,600	1,030	1,280	1,820	1,490	890	800	1,130	1,130	845
17	338	645	2,460	1,380	1,230	1,490	1,380	1,180	800	935	1,180	645
18	326	510	1,600	1,380	1,130	1,180	1,490	2,060	760	845	1,490	720
19	314	510	1,490	1,490	1,030	1,080	1,280	1,820	800	845	1,280	575
20	270	510	1,180	1,080	1,280	1,030	1,030	1,940	980	610	1,080	478
21	385	645	6,340	1,820	1,380	1,080	1,030	1,940	800	610	890	1,030
22	510	575	5,770	1,710	1,490	1,230	1,030	1,940	890	1,030	800	2,320
23	510	575	6,730	1,710	1,380	1,490	935	1,710	1,080	1,080	760	1,380
24	542	575	4,650	1,710	1,380	1,230	935	1,710	1,230	1,130	845	890
25	510	645	2,740	1,710	1,280	980	760	1,490	1,280	980	1,180	720
26	890	575	2,460	1,230	1,820	935	760	1,280	1,490	935	1,130	645
27	1,710	1,080	1,820	1,080	1,940	890	935	1,280	1,490	845	1,080	575
28	1,820	1,180	1,600	935	1,490	845	935	1,380	1,380	845	1,130	720
29	890	1,230	1,380	1,380	-------	800	1,030	1,280	1,230	935	1,230	720
30	720	1,230	1,130	1,820	-------	800	1,080	1,280	1,230	1,080	1,180	760
31	890	-------	1,030	1,710	-------	800	-------	1,280	-------	935	1,230	-------

NOTE.—Gage not read because of sand bar under gage Oct. 1-6, 9-13, and 16-18; discharge interpolated.

Monthly discharge of Puyallup River at Alderton, Wash., for the year ending September 30, 1926

[Drainage area, 410 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	1,820	270	550	1.34	1.54	33,800
November	1,230	325	626	1.53	1.71	37,200
December	6,730	1,030	2,680	6.54	7.54	165,000
January	4,650	800	1,560	3.80	4.38	95,900
February	2,600	1,030	1,650	4.02	4.19	91,600
March	1,820	720	1,130	2.76	3.18	69,500
April	1,490	682	974	2.38	2.66	58,000
May	2,060	682	1,260	3.07	3.54	77,500
June	1,600	720	1,100	2.68	2.99	65,500
July	1,940	610	1,120	2.73	3.15	68,900
August	1,490	760	1,010	2.46	2.84	62,100
September	2,320	478	854	2.08	2.32	50,800
The year	6,730	270	1,210	2.95	40.04	876,000

PUYALLUP RIVER AT PUYALLUP, WASH.

LOCATION.—In NE. ¼ sec. 20, T. 20 N., R. 4 E., 1 mile northwest of Puyallup, Pierce County, three-fourths mile above Clark Creek, and 3½ miles below mouth of Stuck River.

DRAINAGE AREA.—914 square miles (measured on pls. 4 and 11, Water-Supply Paper 313).

RECORDS AVAILABLE.—May 1, 1914, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on left bank since December 3, 1919; inspected by C. J. Phillips.

DISCHARGE MEASUREMENTS.—Made from cable 50 feet below gage.

CHANNEL AND CONTROL.—Stream bed composed of light silt; shifting at all stages. Control formed by section of stream bed extending some distance downstream.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 9.40 feet at 3.20 p. m. December 23 (discharge, 15,800 second-feet); minimum discharge, 982 second-feet at 8.45 a. m. October 20.

1914–1926: Maximum stage recorded, 34.15 feet [1] at 4.45 p. m. December 18, 1917 (discharge, 40,500 second-feet); minimum stage, 17.36 feet [1] at 8 p. m. November 18, 1917 (discharge, 726 second-feet).

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Two hydroelectric plants owned by the Puget Sound Power & Light Co. divert water above the station. Water for the Electron plant is diverted from Puyallup River 10 miles above Electron into an equalizing basin having a capacity of 185 acre-feet; water used at this plant is returned directly into the river. Water for the Dieringer plant is diverted from White River at Buckley into Lake Tapps (capacity, 51,000 acre-feet), and after use is discharged into Stuck River, a tributary of Puyallup River above the gaging station.

REGULATION.—See "diversions."

ACCURACY.—Stage-discharge relation changed frequently. Well-defined rating curve developed during 1921 used as standard form of curve for this station, and changes in control indicated by frequent discharge measurements have been assumed to define curves parallel to this. Operation of water-stage recorder satisfactory except as noted in footnote to table of daily discharge. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspecting recorder graph and corrected as to time and amount of shift in accordance with results of discharge measurements. Records good.

Discharge measurements of Puyallup River at Puyallup, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 8	2.38	1,330	Apr. 14	4.06	2,640	June 21	2.91	1,890
Jan. 7	5.30	5,800	May 17	4.08	3,020	Aug. 6	3.16	2,220
Mar. 11	4.31	2,710						

[1] On gage 1¼ miles above present site and at different datum.

Daily discharge, in second-feet, of Puyallup River at Puyallup, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,360	1,200	1,960	2,270	3,550	3,040	2,030	2,270	2,190	2,030	1,750	2,150
2	1,320	1,280	2,270	2,270	3,700	2,930	2,110	2,350	2,190	2,030	1,890	2,000
3	1,240	1,280	2,030	2,110	3,410	2,530	2,030	2,440	2,190	2,190	1,960	1,890
4	1,080	1,280	2,030	2,530	3,700	2,350	1,820	2,820	2,190	1,890	1,890	1,820
5	1,240	1,160	4,430	4,930	4,870	2,270	2,030	2,930	2,190	1,960	1,890	1,630
6	1,240	1,160	2,930	10,800	5,750	2,350	2,030	2,620	2,190	2,350	1,890	1,570
7	1,240	1,160	2,350	5,750	4,430	2,190	2,110	2,350	2,440	2,350	1,960	1,750
8	1,240	1,080	2,190	4,220	4,030	2,440	2,190	2,270	2,350	2,110	1,820	1,690
9	1,160	1,160	2,110	3,700	3,410	2,620	2,110	2,030	2,620	1,960	2,030	
10	1,160	1,160	2,270	3,410	4,430	2,440	2,190	2,190	2,720	2,190	2,030	
11	1,040	1,160	5,970	3,410	5,090	2,530	2,190	2,110	1,960	2,440	1,960	1,600
12	1,160	1,200	5,090	3,040	3,700	2,720	2,440	2,030	1,750	2,530	2,030	
13	1,200	1,200	3,160	2,820	3,410	4,030	2,350	2,190	1,570	2,440		
14	1,160	1,160	2,820	2,820	3,040	3,160	2,270	2,350	1,750	2,190		
15	1,160	1,080	2,930	2,820	3,280	2,530	2,350	2,530	1,750	2,190		
16	1,200	1,240	2,720	2,820	3,410	2,720	2,440	2,030	1,820	2,190	2,100	1,550
17	1,120	1,240	2,720	3,550	3,410	2,530	2,350	2,440	1,750	1,960		
18	1,040	1,240	2,720	3,410	3,280	2,350	2,110	3,160	1,750	1,750		
19	1,160	1,240	2,530	3,040	2,530	2,270	2,530	3,160	1,820	1,750		
20	1,160	1,240	2,350	2,930	2,620	2,440	2,350	3,410	1,630	1,750		
21	1,160	1,240	9,040	3,860	2,440	2,440	2,350	3,550	1,690	1,890	1,950	1,900
22	1,200	1,120	11,000	4,430	2,620	2,720	2,270	3,040	1,750	1,960		
23	1,240	1,240	12,800	4,220	2,820	3,410	2,440	2,620	1,750	2,030		
24	1,160	1,200	10,800	3,700	3,410	3,410	2,190	2,930	1,960	1,890		1,690
25	1,120	1,240	7,120	3,700	4,650	3,160	1,750	2,620	2,110	1,750		1,570
26	1,200	1,120	5,530	3,160	4,030	2,930	2,110	2,350	2,270	1,890		1,510
27	1,510	1,280	4,430	3,040	3,550	2,720	2,190	2,440	1,960	1,820		1,510
28	1,820	1,570	4,220	2,930	3,160	2,190	2,270	2,930	2,350	1,890	2,200	1,510
29	1,510	1,460	3,040	3,280	-------	1,960	2,620	3,040	2,030	1,890		1,570
30	1,360	1,510	2,820	3,280	-------	2,030	2,440	2,530	2,440	2,030		1,510
31	1,320	-------	2,620	2,820	-------	2,110	-------	1,960	-------	2,030		------

NOTE.—Water-stage recorder not operating Aug. 13 to Sept. 2 and Sept. 9–23; discharge estimated from records of flow of Puyallup River at Alderton, White River at Buckley, and output of Puget Sound Power & Light Co.'s plant at Dieringer, Wash. Braced figures show discharge for periods indicated.

Monthly discharge of Puyallup River at Puyallup, Wash., for the year ending September 30, 1926

[Drainage area, 914 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	1,820	1,040	1,230	----------	----------	75,600
November	1,570	1,080	1,230	----------	----------	73,200
December	12,800	1,960	4,230	----------	----------	260,000
January	10,800	2,110	3,580	----------	----------	220,000
February	5,750	2,440	3,630	----------	----------	202,000
March	4,030	1,960	2,630	----------	----------	162,000
April	2,620	1,750	2,220	----------	----------	132,000
May	3,550	1,960	2,570	----------	----------	158,000
June	2,720	1,570	2,040	----------	----------	121,000
July	2,530	1,750	2,040	----------	----------	125,000
August	----------	----------	2,020	----------	----------	124,000
September	----------	----------	1,690	----------	----------	101,000
The year	12,800	1,040	2,420	2.65	35.97	1,750,000

WHITE RIVER AT BUCKLEY, WASH.

LOCATION. River gage in SE. ¼ sec. 34, T. 20 N., R. 6 E., at Northern Pacific Railway bridge; flume gage in sec. 35, T. 20 N., R. 6 E., on left side of White River, half a mile above Northern Pacific Railway crossing; both about a mile northeast of Buckley, Pierce County.

DRAINAGE AREA.—424 square miles (measured on pl. 11, Water-Supply Paper 313).

RECORDS AVAILABLE.—April 22, 1899, to August, 1903 (gage-height record only January 1, 1902, to August 31, 1903); June 8 to December 31, 1911; January 18, 1913, to September 30, 1926.

GAGE.—Stevens 8-day water-stage recorder on left bank of river 40 feet below railway bridge at end of concrete wall protecting abutment of bridge; installed January 9, 1917; and Stevens long-distance recorder with transmitter at stilling well on right side of flume 800 feet below head gate and recorder in gate house, installed January 12, 1918. Recorders inspected by employees of Puget Sound Power & Light Co.

DISCHARGE MEASUREMENTS.—Measurements of river made by wading or from railway bridge; measurements of flume made from footbridge 8 feet below flume gage.

CHANNEL AND CONTROL.—River bed composed of small boulders and gravel; shifting. Gradient steep. One channel prior to flood of January 23, 1919; two channels after the flood. Right bank of main channel low and flat. Left bank protected by concrete wing wall. Various types of protection to under crossing of city of Tacoma's municipal water supply have also been factors in control for this station. Flume control formed by long section of flume bottom below gage. A rock spill a quarter of a mile below gage is partial control also. Stage-discharge relation affected by variable quantity of rocks which work their way from intake to rock spill.

EXTREMES OF DISCHARGE.—Maximum combined daily discharge of river and flume, 5,430 second-feet December 23; minimum combined daily discharge, 342 second-feet October 9.

1899–1901, 1911, and 1913–1926: Maximum daily discharge including flume, 18,100 second-feet December 18, 1917; minimum daily discharge including flume, 342 second-feet October 9, 1926.

ICE.—Stage-discharge relation slightly affected by ice during severe winters.

DIVERSIONS.—White River flume diverts water from river half a mile above gage. Combined discharge is computed from separate determinations of flow of river and flume.

ACCURACY.—River and flume rated separately. Stage-discharge relation of both river and flume changed continuously throughout year. Standard form of rating curves fairly well defined, and changes in control indicated by frequent discharge measurements have been assumed to yield curves parallel to standard forms. Operation of water-stage recorders satisfactory. Daily discharge determined by shifting-control method, combining results obtained for river and for flume. Records good.

COOPERATION.—Complete records furnished by Puget Sound Power & Light Co.

Discharge measurements of White River and White River flume at Buckley, Wash., during the year ending September 30, 1926

Date	White River		White River flume		Date	White River		White River flume	
	Gage height	Discharge	Gage height	Discharge		Gage height	Discharge	Gage height	Discharge
	Feet	*Sec.-ft.*	*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*	*Feet*	*Sec.-ft.*
Oct. 10	620.85	13	1.77	344	Apr. 22	621.36	56	4.36	1,240
Oct. 28	621.10	47	3.52	933	May 10	621.30	54	3.58	897
Nov. 12	620.80	11	2.00	428	May 26	621.50	74	3.89	1,070
Nov. 14	621.86	107			June 11	621.21	44	3.53	923
Nov. 25	620.86	18	2.36	523	June 25	621.48	79	3.85	1,070
Jan. 7	624.26	1,270			July 10	621.19	45	3.51	971
Jan. 8			3.54	978	July 29	621.09	40		
Jan. 25			3.20	847	July 30			2.93	820
Feb. 12	621.89	122	4.72	1,450	Aug. 25			2.67	682
Mar. 15	621.60	84	5.02	1,530	Aug. 28	621.15	26		
Mar. 30	621.32	54			Sept. 9	621.24	30	2.12	475
Mar. 31			3.85	1,050	Sept. 27	621.01	24	1.85	404
Apr. 10	621.23	50	3.48	862					

Combined daily discharge, in second-feet, of White River and White River flume at Buckley, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	388	486	1,150	1,020	1,020	1,240	1,080	1,300	1,190	1,050	786	758
2	388	450	1,210	948	900	1,260	1,010	1,220	1,190	1,010	784	612
3	374	445	968	912	840	1,180	1,010	1,310	1,230	1,010	786	567
4	364	415	1,560	914	930	1,130	977	1,300	1,320	1,120	770	600
5	350	371	3,650	1,480	1,280	1,030	970	1,310	1,320	1,190	753	616
6	350	371	2,260	2,190	1,640	977	901	1,190	1,440	1,200	802	601
7	346	367	1,400	2,160	1,950	931	868	1,080	1,510	993	819	621
8	345	357	1,050	1,890	1,830	878	850	1,030	1,290	950	818	564
9	342	360	940	1,640	1,770	840	867	965	1,150	966	819	562
10	349	363	1,050	1,490	1,910	780	903	944	1,060	1,070	801	575
11	360	410	3,360	1,230	1,620	750	1,040	940	967	1,160	774	559
12	361	439	2,530	1,150	1,520	1,060	1,150	973	924	1,190	743	513
13	353	439	1,990	1,060	1,320	1,610	1,160	1,110	929	1,090	790	513
14	349	439	1,440	1,040	1,240	1,920	1,220	1,160	929	1,040	758	513
15	352	410	1,350	1,070	1,130	1,640	1,400	1,050	897	972	742	573
16	351	486	1,230	1,300	1,060	1,770	1,700	1,050	931	901	739	558
17	356	471	1,120	1,420	995	1,570	1,650	1,250	932	887	688	498
18	357	486	1,010	1,150	1,060	1,370	1,700	1,420	932	865	856	499
19	360	487	945	1,070	985	958	1,700	1,360	937	767	733	438
20	370	507	946	1,060	1,060	1,160	1,590	1,460	937	754	749	411
21	390	465	2,160	1,430	1,050	1,190	1,410	1,410	936	847	618	485
22	418	427	4,630	1,550	1,090	1,160	1,290	1,370	971	860	618	1,100
23	391	400	5,430	1,390	1,050	1,340	1,180	1,360	1,050	802	614	724
24	373	400	4,300	1,400	1,620	1,280	1,100	1,210	1,120	889	771	572
25	451	506	2,910	1,200	1,850	1,170	1,060	1,230	1,190	905	818	448
26	466	476	2,320	1,080	1,670	1,100	1,090	1,170	1,140	812	922	459
27	686	506	1,960	1,040	1,530	1,050	1,200	1,260	1,110	699	751	436
28	1,000	778	1,720	1,080	1,440	998	1,370	1,160	1,070	749	717	436
29	763	765	1,370	1,120	-------	974	1,370	1,210	1,000	794	795	481
30	663	750	1,210	1,130	-------	977	1,520	1,160	938	851	680	451
31	596	-------	1,130	1,060	-------	1,080	-------	1,170	-------	845	662	------

Combined monthly discharge of White River and White River flume at Buckley, Wash., for the year ending September 30, 1926

[Drainage area, 424 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	1,000	342	431	1.02	1.18	26,500
November	778	357	468	1.10	1.23	27,800
December	5,430	940	1,950	4.60	5.30	120,000
January	2,190	912	1,280	3.02	3.48	78,700
February	1,950	840	1,330	3.14	3.27	73,900
March	1,920	750	1,170	2.76	3.18	71,900
April	1,700	850	1,210	2.85	3.18	72,000
May	1,460	940	1,200	2.83	3.26	73,800
June	1,510	897	1,080	2.55	2.84	64,300
July	1,200	699	943	2.22	2.56	58,000
August	922	614	757	1.79	2.06	46,500
September	1,100	411	558	1.32	1.47	33,200
The year	5,430	342	1,030	2.43	33.01	747,100

LAKE WASHINGTON BASIN

CEDAR RIVER AT CEDAR FALLS, WASH.

LOCATION.—In sec. 4, T. 22 N., R. 8 E., below Seattle municipal power plant at Cedar Falls, King County, and 3½ miles above Taylor Creek.

DRAINAGE AREA.—83 square miles (measured on topographic maps).

RECORDS AVAILABLE.—April 9, 1914, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on right bank, 0.7 mile below power plant; installed April 8, 1914; inspected by E. C. and F. H. Hoffstrom.

DISCHARGE MEASUREMENTS.—Made from cable 90 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of small boulders and gravel. Shifts at extremely high water. Banks high; one channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage during year, 6.22 feet at 9 a. m. January 21 (discharge, 765 second-feet); minimum stage, 3.81 feet from 4 to 8 p. m. July 8 (discharge, 3 second-feet).

1914–1926: Maximum stage recorded, 11.4 feet at 9 a. m. December 19, 1917 (discharge, 6,290 second-feet); no flow at 4 p. m. November 25, 1917, and August 18, 1923.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Seattle municipal power plant diverts water directly from Cedar Lake through a pressure pipe and returns it to river at plant above gage. Practically entire low-water flow is carried through plant.

REGULATION.—Flow partly controlled by storage and release of water in Cedar Lake Reservoir to accommodate requirements of Seattle municipal power plant.

ACCURACY.—Stage-discharge relation practically permanent. Rating curves well defined; revised slightly for use after March 1. Operation of water-stage recorder excellent except as noted in footnote to table of daily discharge. Daily discharge ascertained by use of discharge integrator. Records excellent.

Discharge measurements of Cedar River at Cedar Falls, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	4.49	63.7	Oct. 29	5.40	344
Oct. 20	4.55	75.7	May 12	4.59	83.3

Daily discharge, in second-feet, of Cedar River at Cedar Falls, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	64	54	108	382	307	167	147	79	84	35	26	28
2	50	262	126	359	344	225	126	78	85	35	25	41
3	60	297	144	384	290	232	126	91	94	35	25	39
4	60	276	165	400	290	217	267	79	80	34	25	29
5	77	306	113	497	269	210	133	79	82	34	46	79
6	82	302	220	596	269	190	131	77	258	40	43	29
7	82	291	202	483	290	214	156	85	225	20	28	33
8	82	229	195	430	232	244	140	84	226	4	70	39
9	82	275	200	500	241	242	140	84	134	5	36	51
10	81	270	210	476	183	272	132	114	90	4	27	79
11	72	248	282	526	170	246	88	116	79	4	25	38
12	62	236	262	546	164	222	87	80	60	14	25	16
13	62	269	254	551	159	192	86	85	72	25	25	26
14	62	288	308	538	149	149	84	80	84	25	25	55
15	47	242	312	517	166	156	88	74	89	25	25	33
16	44	252	328	488	222	176	86	84	83	28	26	55
17	49	259	292	499	189	177	88	76	54	27	25	94
18	55	226	292	502	172	154	88	92	40	26	44	70
19	57	230	328	494	154	152	103	94	38	27	47	46
20	52	206	415	515	179	156	112	84	38	26	27	69
21	34	218	366	434	146	155	118	99	37	25	28	65
22	21	173	432	292	158	177	105	91	36	25	28	202
23	24	281	473	281	281	174	112	101	36	27	27	266
24	24	287	512	234	210	174	80	91	36	27	25	278
25	24	282	420	286	225	190	220	80	36	26	25	274
26	27	175	361	361	192	190	99	107	36	26	37	282
27	34	276	374	350	184	182	105	88	37	26	28	272
28	101	274	385	333	158	150	106	87	45	29	27	281
29	200	196	480	330	-------	148	102	86	35	26	30	245
30	168	208	400	277	-------	164	100	108	34	26	27	179
31	224	-------	416	257	-------	160	-------	90	-------	25	27	------

NOTE.—Water-stage recorder not operating Feb. 3-15; discharge estimated from power-plant output by Seattle officials.

Monthly discharge of Cedar River at Cedar Falls, Wash., for the year ending September 30, 1926

[Drainage area, 83 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	224	21	69.8	----------	----------	4,290
November	306	54	246	----------	----------	14,600
December	512	108	302	----------	----------	18,600
January	596	234	423	----------	----------	26,000
February	344	146	214	----------	----------	11,900
March	272	148	189	----------	----------	11,600
April	267	80	119	----------	----------	7,080
May	116	74	88.5	----------	----------	5,440
June	258	34	79.1	----------	----------	4,710
July	40	4	24.5	----------	----------	1,510
August	70	25	30.8	----------	----------	1,890
September	282	16	110	----------	----------	6,550
The year	596	4	158	1.90	25.79	114,000

NOTE.—Monthly discharge in second-feet per square mile and run-off in inches not computed owing to regulation. Yearly figures closely represent the natural flow.

CEDAR RIVER NEAR LANDSBERG, WASH.

LOCATION.—In sec. 17, T. 22 N., R. 7 E., 1¾ miles above intake of Seattle water-supply system at Landsberg, King County, 3 miles northeast of Ravensdale, and 5 miles below Taylor Creek.

DRAINAGE AREA.—135 square miles (measured on topographic maps).

RECORDS AVAILABLE.—April 30, 1914, to September 30, 1926. July 25, 1895, to September 30, 1898, at Clifford Bridge, 2 miles below present gage; March 24, 1901, to April 30, 1912, at intake of Seattle water-supply system, 1¾ miles below present gage. Early records not exactly comparable with those for present site because of small difference in drainage area.

GAGE.—Stevens continuous water-stage recorder on right bank, installed April 29, 1914; inspected by T. S. Beals.

DISCHARGE MEASUREMENTS.—Made from cable near gage or by wading.

CHANNEL AND CONTROL.—Bed composed of large boulders and gravel. Control formed by broad riffle about 1,200 feet below gage; shifts at extremely high water. Logs may lodge on riffle. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, from water-stage recorder, 7.56 feet at 9 p. m. January 5 (discharge, 1,720 second-feet); minimum discharge probably occurred sometime October 15–26, when stage was below intake to stilling well.

1914–1926: Maximum stage, from recorder, 13.55 feet at 10 p. m. December 29, 1917 (discharge, 7,500 second-feet); minimum discharge, 162 second-feet at 1 a. m. October 15, 1914. Discharge may have been lower sometime October 15–26, 1925, when water was below intake to stilling well.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—None above the station. (See Cedar River at Cedar Falls Wash.)

REGULATION.—Flow partly controlled by storage and release of water in Cedar Lake reservoir to accommodate requirements of Seattle municipal power plant.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined between 200 and 7,000 second-feet. Operation of water-stage recorder satisfactory except as noted in footnote to table of daily discharge. Daily discharge ascertained by use of discharge integrator or by applying to rating table mean daily gage height determined from gage-height graph by inspection. Records excellent.

The following discharge measurements were made:

October 2, 1926: Gage height, 4.39 feet; discharge, 234 second-feet.

May 13, 1926: Gage height, 5.05 feet; discharge, 411 second-feet.

August 30, 1926: Gage height, 4.28 feet; discharge, 203 second-feet.

Daily discharge, in second-feet, of Cedar River near Landsberg, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	243	235	452	675	751	675	536	406	442	327	229	232
2	225	386	444	627	786	732	514	408	441	324	226	234
3	231	416	396	660	742	728	529	426	448	319	222	242
4	229	410	519	685	796	688	688	437	431	313	220	219
5	238	429	581	1,070	754	672	538	434	429	308	220	253
6	247	432	596	1,300	800	634	520	430	596	308	250	214
7	240	423	513	997	901	648	538	428	547	295	224	209
8	240	374	468	845	784	685	510	426	588	274	218	215
9	235	412	448	886	703	660	502	427	485	267	266	214
10	238	430	500	858	771	678	494	444	438	262	222	252

Daily discharge, in second-feet, of Cedar River near Landsberg, Wash., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	231	411	756	878	706	676	460	439	404	260	222	211
12	220	392	760	909	672	665	448	414	394	262	215	191
13	215	434	733	915	637	696	440	411	388	274	211	187
14	213	450	678	905	611	606	442	406	408	270	207	211
15	197	420	706	901	620	583	436	402	412	267	205	204
16	194	424	654	891	674	612	429	408	404	267	205	220
17	198	442	647	925	659	599	435	426	381	264	205	278
18	204	412	616	943	629	574	430	497	355	260	218	248
19	205	406	628	910	604	564	452	473	351	257	224	216
20	199	415	726	969	652	590	464	456	367	255	207	222
21	181	378	1,090	1,060	660	577	461	476	352	252	203	239
22	167	346	1,170	879	695	582	450	546	344	250	203	342
23	170	416	1,350	806	797	614	452	538	339	250	200	431
24	169	438	1,160	776	840	592	421	500	336	247	196	441
25	169	464	948	772	854	594	550	465	333	245	198	440
26	173	383	794	832	789	588	432	480	329	243	236	444
27	182	446	757	818	739	576	436	476	329	240	232	436
28	256	561	730	814	688	542	432	460	332	240	209	449
29	323	454	798	830	-------	540	427	464	323	240	207	432
30	318	491	704	766	-------	544	424	456	324	235	213	357
31	357	-------	700	732	-------	556	-------	458	-------	233	213	-------

NOTE.—Water below intake to stilling well for parts of days Oct. 15–26, and water-stage recorder not operating satisfactorily; discharge ascertained by adding flow at Cedar Falls to difference in flow between stations near Landsberg and at Cedar Falls, estimated by comparison with records of South Fork of Snoqualmie River at North Bend, Wash.

Monthly discharge of Cedar River near Landsberg, Wash., for the year ending September 30, 1926

[Drainage area, 135 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	357	167	223	----------	----------	13,700
November	561	235	418	----------	----------	24,900
December	1,350	396	710	----------	----------	43,700
January	1,300	627	866	----------	----------	53,200
February	901	604	726	----------	----------	40,300
March	732	540	622	----------	----------	38,200
April	688	421	476	----------	----------	28,300
May	546	402	449	----------	----------	27,600
June	596	323	402	----------	----------	23,900
July	327	233	268	----------	----------	16,500
August	266	196	217	----------	----------	13,300
September	449	187	283	----------	----------	16,800
The year	1,350	167	470	3.48	47.24	340,000

NOTE.—Monthly discharge in second-feet per square mile and run-off in inches not computed owing to regulation. Yearly figures closely represent the natural flow.

SNOHOMISH RIVER BASIN

SOUTH FORK OF SKYKOMISH RIVER NEAR INDEX, WASH.

LOCATION.—In NE. ¼ sec. 29, T. 27 N., R. 10 E., 300 feet above Sunset Falls and 2 miles southeast of Index and mouth of North Fork, Snohomish County.

DRAINAGE AREA.—355 square miles (revised; measured on topographic maps).

RECORDS AVAILABLE.—October 1, 1902, to September 30, 1905; April 26, 1911, to September 30, 1926.

GAGE.—Inclined and vertical staff gage on right bank; installed April 19, 1914; read by Mrs. George Bingham.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Sunset Falls, 300 feet below gage, forms solid-rock control. Stage-discharge relation changed by blasting at falls in July, 1914, and by shifting of channel above falls during floods.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 13.6 feet December 23 (discharge, 18,200 second-feet); minimum discharge, 214 second-feet October 15–21 and 23.

1902–1905, 1911–1926: Maximum stage recorded, 22.6 feet at 9 a. m. December 18, 1917 (discharge, 47,000 second-feet); minimum discharge, that of October 15–21 and 23, 1925.

ICE.—Stage-discharge relation slightly affected by ice during severe winters.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed gradually June 1–30 and on August 20; not affected by ice. Rating curve well defined below 16,000 second-feet. Staff gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

The following discharge measurements were made:

October 20, 1925: Gage height, 0.38 foot; discharge, 211 second-feet.

August 5, 1926: Gage height, 1.18 feet; discharge, 336 second-feet.

September 2, 1926: Gage height, 1.82 feet; discharge, 627 second-feet.

Daily discharge, in second-feet, of South Fork of Skykomish River near Index, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	271	1,040	8,170	1,510	1,040	1,960	2,040	2,210	1,580	556	346	798
2	271	890	5,760	1,380	1,040	1,800	1,720	2,040	1,440	556	333	633
3	259	798	3,370	1,320	990	1,650	1,650	2,660	1,440	519	333	519
4	248	713	4,170	1,260	1,200	1,580	1,440	3,480	1,510	519	320	483
5	248	633	6,510	9,290	2,480	1,510	1,440	2,760	1,440	519	333	483
6	259	556	4,540	5,340	2,760	1,380	1,320	2,120	1,440	519	333	449
7	236	519	3,260	3,480	3,930	1,260	1,260	1,800	1,440	519	333	594
8	236	519	2,860	2,760	2,960	1,200	1,260	1,580	1,320	483	320	519
9	236	594	3,370	2,390	2,390	1,140	1,380	1,440	1,140	483	333	483
10	236	1,040	4,410	1,960	3,160	1,090	1,720	1,380	1,040	449	320	449
11	236	1,650	14,400	1,720	2,570	990	2,210	1,440	940	449	320	417
12	236	1,580	7,310	1,440	2,120	1,580	2,120	1,800	890	449	320	417
13	225	1,720	4,670	1,380	1,880	2,120	2,040	1,880	890	449	308	387
14	225	1,440	3,930	1,320	1,580	2,390	2,480	1,880	940	417	320	417
15	214	1,260	3,370	1,440	1,440	2,660	3,370	1,580	890	417	320	417
16	214	1,200	2,960	2,960	1,320	2,960	3,370	1,440	843	417	308	594
17	214	2,040	2,570	4,050	1,260	2,570	2,960	2,120	798	417	320	673
18	214	1,960	2,300	1,960	1,260	2,390	3,160	3,590	753	387	483	633
19	214	1,880	1,960	2,300	1,260	2,040	2,210	2,760	713	359	483	556
20	214	2,040	1,800	2,120	1,380	2,120	2,390	2,660	753	359	843	483
21	214	1,580	2,570	2,040	1,510	1,880	2,390	3,060	713	359	594	1,260
22	225	1,320	9,100	1,960	1,720	1,880	1,960	2,760	713	359	483	1,880
23	214	1,090	18,200	1,800	2,390	3,480	1,800	2,390	673	359	483	1,090
24	519	1,090	6,830	1,580	5,060	2,570	1,650	2,120	713	359	449	890
25	940	1,720	5,060	1,440	3,160	2,120	1,720	1,880	713	387	449	713
26	990	1,380	3,590	1,320	2,660	1,880	1,960	1,650	713	359	519	633
27	3,260	1,320	3,160	1,200	2,390	1,720	2,570	2,300	673	346	633	594
28	6,510	1,260	2,570	1,200	2,210	1,580	2,960	1,880	633	346	519	633
29	2,390	1,320	2,210	1,200	-------	1,580	2,960	2,040	594	333	519	990
30	1,960	3,160	1,880	1,140	-------	1,720	2,660	1,720	556	346	483	1,140
31	1,320	-------	1,720	1,090	-------	2,390	-------	1,510	-------	346	519	------

NOTE.—Gage not read Oct. 19; discharge interpolated.

Monthly discharge of South Fork of Skykomish River near Index, Wash., for the year ending September 30, 1926

[Drainage area, 355 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	6,510	214	750	2.11	2.43	46,100
November	3,160	519	1,310	3.69	4.12	78,000
December	18,200	1,720	4,790	13.5	15.56	295,000
January	9,290	1,090	2,170	6.11	7.04	133,000
February	5,060	990	2,110	5.94	6.18	117,000
March	3,480	990	1,910	5.38	6.20	117,000
April	3,370	1,260	2,140	6.03	6.73	127,000
May	3,590	1,380	2,120	6.00	6.92	131,000
June	1,580	556	963	2.71	3.02	57,300
July	556	333	424	1.19	1.37	26,100
August	843	308	419	1.18	1.36	25,800
September	1,880	387	674	1.90	2.12	40,100
The year	18,200	214	1,650	4.65	63.05	1,190,000

OLNEY CREEK NEAR STARTUP, WASH.

LOCATION.—In SE. ¼ sec. 12, T. 28 N., R. 8 E., 1½ miles above Stickney Bridge and 5 miles northeast of Startup, Snohomish County.

DRAINAGE AREA.—10 square miles (measured on topographic maps).

RECORDS AVAILABLE.—October 1, 1922, to October 23, 1926, when station was discontinued.

GAGE.—Stevens continuous water-stage recorder on left bank; installed April 20, 1923; inspected by H. H. Annis and C. L. McCormick.

DISCHARGE MEASUREMENTS.—Made from cable at gage or by wading.

CHANNEL AND CONTROL.—Banks high, not subject to overflow. Channel straight for 300 feet below gage. Control is of boulders and solid rock outcrops; may shift at high water.

EXTREMES OF DISCHARGE.—1923–1926: Maximum stage recorded, 5.97 feet at 3.45 a. m. October 27, 1925 (discharge, 1,600 second-feet); minimum stage, 0.67 foot October 16, 1925 (discharge, 3.8 second-feet).

ICE.—Stage-discharge relation seriously affected by ice during severe winters; flow estimated from discharge measurements, observer's notes, and weather records.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent; not affected by ice. Rating curve well defined. Operation of water-stage recorder satisfactory except as noted in footnote to table of daily discharge. Daily discharge ascertained by applying to rating table mean daily gage height determined from gage-height graph by inspection or, for days of considerable variation in stage, by averaging discharge for intervals of the day. Records excellent except for estimated periods.

Discharge measurements of Olney Creek near Startup, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 21	0.68	4.09	May 19	2.16	136	Aug. 4	0.72	4.33
Feb. 9	2.02	108	June 16	1.08	18.8	Sept. 1	1.52	49.6
Feb. 12	2.03	108	Aug. 4	.72	4.65			

Daily discharge, in second-feet, of Olney Creek near Startup, Wash., for the period October 1, 1925, to October 23, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1	5.2	67	271	38	62	75	42	27	58	12	5.0	67	46
2	5.2	54	166	34		69	34	26	54	12	4.8	31	104
3	5.0	45	204	32	100	68	35	50	50	11	4.6	24	89
4	5.0	37	484	34		60	34	83	47	11	4.4	19	55
5	4.8	32	502	589		48	34	55	44	11	4.4	16	42
6	4.6	29	202	195	223	42	32	44	40	11	4.4	14	54
7	4.4	26	120	97	300	39	31	34	36	11	4.4	30	216
8	4.2	34	89	69	150	37	36	67	33	11	4.2	20	200
9	4.2	36	121	55	99	34	37	55	30	11	4.2	16	97
10	4.2	64	503	46	239	32	40	43	26	11	4.2	14	67
11	4.1	135	478	40	170	32	47	39	22	10	4.2	13	67
12	4.1	94	290	36	110		37	41	19	10	4.2	12	62
13	4.0	103	178	32	81		37	37	19	10	4.2	11	148
14	4.0	76	122	31	67		48	58	18	9.6	4.2	10	88
15	4.0	67	266		61	80	52	37	18	9.3	4.2	77	110
16	3.8	75	132		58		42	34	18	9.3	4.2	149	412
17	4.0	253	125	150	69		39	73	18	9.3	5.2	104	206
18	4.0	168	119		94		35	388	16	8.9	63	69	104
19	4.1	90	84		93		44	139	17	8.9	18	42	74
20	4.1	123	70		103	122	39	100	18	8.5	30	32	58
21	4.1	72	347	145	150	83	35	90	17	7.8	19	86	47
22	4.0	52	748	113	137	91	40	76	16	7.8	12	92	41
23	4.2	42	722	101	130	136	28	75	14	7.4	9.6	61	36
24	88	46	235	80	360	70	27	74	14	7.0	8.2	42	------
25	61	62	132	59	166	56	31	58	14	6.3	7.4	35	------
26	563	55	94	45	141	49	33	55	13	6.3	94	31	------
27	819	83	76	38	110	44	37	81	13	6.1	84	29	------
28	654	119	62		94	42	37	57	12	6.1	31	77	------
29	189	93	54	90	------	42	32	68	12	5.7	24	66	------
30	176	205	47		------	45	34	64	12	5.5	30	55	------
31	93	------	42		------	56	------	61	------	5.2	49	------	------

NOTE.—Gage not operating Jan. 15–20, 28–31, Feb. 2–9, Mar. 12–19, May 30 to June 15; discharge Feb. 6, 9, and June 12 determined from staff gage readings; results for other days of missing gage heights in May and June supplied by interpolation; otherwise discharge for periods named estimated by comparison with records of Sultan River near Sultan, Wash.

Monthly discharge of Olney Creek near Startup, Wash., for the period October 1, 1925, to October 23, 1926

[Drainage, 10.0 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
1925–26						
October	819	3.8	88.5	8.85	10.20	5,440
November	253	26	81.2	8.12	9.06	4,830
December	748	42	229	22.9	26.40	14,100
January	589	31	102	10.2	11.76	6,270
February	------	------	131	13.1	13.64	7,280
March	136	32	64.9	6.49	7.48	3,990
April	52	27	37.0	3.70	4.13	2,200
May	388	26	70.6	7.06	8.14	4,340
June	58	12	24.6	2.46	2.74	1,460
July	12	5.2	8.94	.894	1.03	550
August	94	4.2	17.9	1.79	2.06	1,100
September	149	10	44.8	4.48	5.00	2,670
The year	819	3.8	74.9	7.49	101.64	54,200
1926						
October 1–23	412	36	105	10.5	8.98	4,790

SULTAN RIVER NEAR SULTAN, WASH.

LOCATION.—In sec. 8, T. 28 N., R. 8 E., at Horseshoe Bend, 4½ miles north of Sultan and mouth of river, in Snohomish County.

DRAINAGE AREA.—88 square miles (measured on topographic maps).

RECORDS AVAILABLE.—August 18, 1911, to October 23, 1926, when station was discontinued.

GAGE.—Stevens continuous water-stage recorder on left bank one-fourth mile above Horseshoe Bend; inspected by N. S. Berridge.

DISCHARGE MEASUREMENTS—Made from cable at gage or by wading.

CHANNEL AND CONTROL.—In canyon; control formed by large rocks, boulders, and heavy gravel. Not likely to change except at extremely high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period October 1, 1925, to October 23, 1926, 11.6 feet at 6. p. m. October 16, 1926 (discharge, 11,100 second-feet); minimum stage, −0.05 foot from 6 to 8 p. m. October 23, 1925 (discharge, 31 second-feet).

1911–1926: Maximum stage, from high-water mark in well, 18.5 feet on December 12, 1921 (discharge, 24,600 second-feet); minimum discharge, that of October 23, 1925.

ICE.—Stage-discharge relation seldom affected by ice.

DIVERSIONS.—City of Everett diverts water above station for municipal use. (See results of discharge measurements of Everett water-supply conduit, p. 150.)

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during high water December 23; not affected by ice. Rating curves well defined below 5,000 second-feet. Operation of water-stage recorder satisfactory except as noted in footnote to table of daily discharge. Daily discharge ascertained by applying to rating table mean daily gage height determined from recorder graph by inspection or, for days of considerable variation in stage, by averaging discharge for intervals of the day. Records excellent except for periods when recorder was not operating.

Discharge measurements of Sultan River near Sultan, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 19	−0.04	31.4	Feb. 11	4.56	1,450	June 17	1.35	190
Feb. 10	5.61	2,290	May 20	3.63	931	Aug. 4	.02	37.8

Daily discharge, in second-feet, of Sultan River near Sultan, Wash., for the period October 1, 1925, to October 23, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	May	June	July	Aug.	Sept.	Oct.
1	45	460	3,610	337	542	730		475	112	40	321	508
2	44	370	2,070	303	475	690		413	110	39	247	584
3	43	309	1,350	286	428	690		384	102	38	186	1,220
4	41	258	2,500	277	762	613		370	99	37	152	795
5	40	224	3,380	4,910	1,530	508		321	96	37	132	542
6	40	198	1,760	2,000	1,500	443		324	95	37	116	443
7	40	183	1,120	995	2,050	398		316	93	36	162	1,900
8	39	202	878	710	1,310	384		286	93	35	151	1,760
9	39	285	702	560	1,090	356		241	87	35	125	1,110
10	38	453	2,890	459	2,310	329	600	233	81	35	111	730
11	37	1,340	5,840	398	1,500	301		245	78	35	99	650
12	36	1,080	2,440	356	1,020	684		216	76	35	87	770
13	35	925	1,480	316	730	1,100		202	75	35	81	1,240
14	35	766	1,000	313	595	1,020		245	73	35	77	1,170
15	35	660	1,480	443	560	1,120		229	70	35	185	1,980
16	34	723	1,100	2,150	508	1,200		209	68	35	704	5,050
17	38	1,430	900	2,100	577	920		192	66	37	595	3,310
18	33	1,510	900	1,100	670	1,100		181	62	284	542	1,410
19	32	1,120	702	770	710	845		177	61	223	356	920
20	32	1,200	562	730	820	920	895	204	59	260	275	670

Daily discharge, in second-feet, of Sultan River near Sultan, Wash., for the period October 1, 1925, to October 23, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	May	June	July	Aug.	Sept.	Oct.
21	32	810	1,890	920	995	770	895	185	55	268	516	542
22	32	581	4,720	770	1,120	690	820	167	51	161	1,930	443
23	32	460	6,980	690	845	1,870	690	160	51	121	875	384
24	95	456	2,260	613	1,980	945	632	155	48	99	526	------
25	364	723	1,220	525	1,220	690	525	154	46	85	334	------
26	1,580	562	895	443	1,070		475	148	46	246	311	------
27	3,420	492	710	398	945		804	142	46	446	238	------
28	3,310	600	613	443	845	500	613	132	45	255	424	------
29	1,380	620	508	736	------		670	125	43	188	900	------
30	1,000	1,560	443	870	------		577	116	42	195	595	------
31	660	------	384	632	------		475	------	41	202	------	------

NOTE.—Water-stage recorder not operating Mar. 26 to May 19; discharge estimated by comparison with records of Deer Creek at Oso and North Fork of Snoqualmie River near North Bend, Wash. Braced figures show mean discharge for periods indicated.

Monthly discharge of Sultan River near Sultan, Wash., for the period October 1, 1925, to October 23, 1926

[Drainage area, 88 square miles]

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
1925–26				
October	3,420	32	408	25,100
November	1,560	183	685	40,800
December	6,980	384	1,850	114,000
January	4,910	277	857	52,700
February	2,310	428	1,030	57,200
March	1,870	301	720	44,300
April	------	------	550	32,700
May	------	------	628	38,600
June	475	116	232	13,800
July	112	41	70.0	4,300
August	446	35	118	7,260
September	1,930	77	381	22,700
The year	6,980	32	625	453,000
1926				
October 1–23	5,050	384	1,220	55,700

MIDDLE FORK OF SNOQUALMIE RIVER NEAR NORTH BEND, WASH.

LOCATION.—In NE. ¼ SE. ¼ sec. 10, T. 23 N., R. 8 E., 1 mile southeast of North Bend, King County, and 2¾ miles above junction with North Fork.

DRAINAGE AREA.—173 square miles (revised; measured on topographic maps).

RECORDS AVAILABLE.—August 10, 1907, to February 29, 1908; August 25, 1908, to September 30, 1926, when station was discontinued.

GAGE.—Stevens continuous water-stage recorder on left bank; installed August 7, 1915; inspected by employees of Puget Sound Power & Light Co.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge 2¼ miles below station.

CHANNEL AND CONTROL.—Bed composed of large boulders. Channel slightly curved above and below station. Control shifts at extremely high water. Right bank high; left bank low and heavily wooded. Gage height of zero flow September 11, 1919, −0.7 foot.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 8.57 feet at 6.20 p. m. January 5 (discharge, 9,760 second-feet); minimum stage, from recorded range of stage, 1.15 feet October 24 (discharge, 102 second-feet).

1907–1926: Maximum stage, from water-stage recorder, 12.2 feet at 10 a. m. December 18, 1917 (discharge, 18,300 second-feet); discharge may have been greater during floods of November, 1909, and November, 1910; minimum discharge, that of October 24, 1925.

ICE.—Stage-discharge relation seldom affected by ice.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent; not affected by ice. Rating curves fairly well defined. Operation of water-stage recorder satisfactory except as noted in footnote to table of daily discharge. Daily discharge ascertained by applying to rating table mean daily gage height determined from recorder graph by inspection or, for days of considerable variation in stage, by averaging results obtained by applying mean gage heights for shorter intervals. Records good.

COOPERATION.—Discharge measurements and gage-height record furnished by Puget Sound Power & Light Co.

Discharge measurements of Middle Fork of Snoqualmie River near North Bend, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 16	1.21	112	Jan. 24	3.16	952	Apr. 26	2.99	764
Nov. 6	2.06	289	Feb. 18	2.75	628	Aug. 20	2.58	594
Dec. 15	4.53	2,290	Mar. 13	4.36	2,130			

Daily discharge, in second-feet, of Middle Fork of Snoqualmie River near North Bend, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	132	690	4,180	618	602	1,110	966	831	736
2	130	586	2,680	564	559	1,010	773	736	702
3	128	512	2,020	538	527	1,020	719	824	------
4	125	426	3,360	507	773	929	690	1,630	------
5	124	362	4,990	5,340	1,480	804	674	1,380	------
6	122	330	3,060	3,800	1,740	719	630	1,010	------
7	120	307	2,080	1,840	1,790	662	591	785	------
8	124	285	1,790	1,290	1,530	624	602	719	------
9	124	262	1,530	1,020	1,240	580	668	690	------
10	122		3,360	866	1,840	543	818	630	------
11	121		6,300	754	1,530	512	1,160	613	------
12	119	850	3,930	668	1,110	998	1,070	707	------
13	117		2,200	602	894	2,020	936	908	------
14	115		1,680	586	779	1,840	1,110	845	------
15	114		2,080	779	725	1,900	1,480	760	------
16	112	838	1,680	1,590	674	1,900	1,530	652	------
17	111	1,340	1,380	2,080	674	1,380	1,200	831	------
18	109	1,480	1,200	1,340	668	1,200	1,290	2,470	------
19	108	1,290	974	1,030	668	1,030	1,240	1,680	------
20	106	1,240	894	966	785	1,110	1,380	1,480	------
21	105	990	2,360	1,340	943	958	1,010	1,480	------
22	103	760	5,980	1,200	1,160	894	922	1,430	------
23	102	652	6,700	998	998	1,740	767	1,200	------
24	110	608	3,520	915	2,540	1,240	674	1,160	------
25	507	1,010	2,140	779	1,840	982	674	974	------
26	591	824	1,530	679	1,680	859	798	831	------
27	3,440	719	1,240	618	1,430	778	1,030	1,630	------
28	3,280	1,290	1,030	586	1,290	713	1,240	1,070	------
29	1,790	1,340	880	630	------	696	1,290	1,020	------
30	1,240	1,790	760	657	------	725	1,030	887	------
31	1,200	------	652	624	------	1,110	------	760	------

NOTE.—Water-stage recorder not operating Oct. 1–3, 10–24, and Nov. 8–15; discharge estimated from recorded range of stage and by comparison with records of North and South Forks of Snoqualmie River.

Monthly discharge of Middle Fork of Snoqualmie River near North Bend, Wash., for the year ending September 30, 1926

[Drainage area, 173 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	3,440	102	479	2.77	3.19	29,500
November	1,790		834	4.82	5.38	49,600
December	6,700	652	2,520	14.6	16.83	155,000
January	5,340	507	1,150	6.65	7.67	70,700
February	2,540	527	1,160	6.71	6.99	64,400
March	2,020	512	1,050	6.07	7.00	64,600
April	1,530	591	965	5.58	6.23	57,400
May	2,470	613	1,050	6.07	7.00	64,600
June			580	3.35	3.74	34,500
July			310	1.79	2.06	19,100
August			320	1.85	2.13	19,700
September			550	3.18	3.55	32,700
The year	6,700	102	914	5.28	71.77	662,000

NOTE.—Mean monthly flow, June to September, determined by applying to flow of Snoqualmie River below the falls a factor, for the month in question, obtained by averaging all percentages of flow of this fork to the sum of flow of three forks for the same month covering the last 18 years of record.

SNOQUALMIE RIVER NEAR SNOQUALMIE, WASH.

LOCATION.—In SW. ¼ SW. ¼ sec. 19, T. 24 N., R. 8 E., one-eighth mile below Snoqualmie Falls, 1½ miles below Snoqualmie, King County, and 3½ miles below mouth of South Fork.

DRAINAGE AREA.—375 square miles (measured on topographic maps).

RECORDS AVAILABLE.—June 1 to September 30, 1926; May 1, 1898, to July 12, 1899; January 1 to July 16, 1900; September 14, 1902, to July 31, 1904, at a station 300 feet below the mouth of South Fork. Mean monthly records at present station are comparable with sum of flow shown by records of North, Middle, and South Forks of Snoqualmie River near North Bend, available August, 1907, to September 30, 1926.

GAGE.—Friez water-stage recorder on left bank one-eighth mile below Snoqualmie Falls; inspected by employees of Puget Sound Power & Light Co.

DISCHARGE MEASUREMENTS.—Made from suspension bridge half a mile below gage.

CHANNEL AND CONTROL.—Channel is straight for some distance above and below gage and is strewn with huge boulders, which with heavy boulder riffle act as control. Banks high, not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded June 1 to September 30, 1926, 6.44 feet at 3 a. m. September 22 (discharge, 5,220 second-feet); minimum stage, 0.67 foot at 7.30 a. m. July 8 (discharge, 320 second-feet).

1898–1899, 1900, 1902–1904, 1926: Maximum discharge, 24,400 second-feet January 3, 1903; minimum discharge, that of July 8, 1926.

Records of the combined flow of three forks at and near North Bend for 1907–1926 indicate that a discharge probably in excess of 32,000 second-feet occurred December 12, 1921; discharge may have been greater in November, 1909, and November, 1911; probable minimum discharge for the same period, 223 second-feet on October 23, 1925.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Entire low-water flow diverted through power plant but returned to river above gage.

REGULATION.—Low dam at head of falls creates sufficient pondage to equalize diurnal fluctuation and to allow regulation to meet power demands during low-water period.

ACCURACY.—Stage-discharge relation permanent. Rating curve fairly well defined between 500 and 7,500 second-feet. Operation of water-stage recorder satisfactory except as noted in footnote to table of daily discharge. Operation of power plant causes large fluctuation in flow. Daily discharge ascertained by averaging results obtained by applying mean gage heights for short intervals to rating table. Records good.

COOPERATION.—Complete record furnished by Puget Sound Power & Light Co.

Discharge measurements of Snoqualmie River near Snoqualmie, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 27	4.09	1,940	Dec. 6	4.47	2,350	Jan. 10	4.22	2,110
Nov. 5	3.01	1,120	Dec. 29	4.29	2,110	Jan. 25	3.55	1,520
Nov. 27	5.65	4,000	Jan. 6	5.10	3,020			

Daily discharge, in second-feet, of Snoqualmie River near Snoqualmie, Wash., for the year ending September 30, 1926

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1	1,560	773	414	1,420	16	1,010	504	417	920
2	1,460	862	462	1,510	17	928	542	468	1,140
3	1,400	772	433	857	18	880	400	716	1,220
4	1,700	456	450	692	19	900	498	734	920
5	1,510	598	442	654	20	949	490	910	758
6	1,420	445	439	637	21	1,070	495	751	1,190
7	1,550	608	458	629	22	919	491	592	4,320
8	1,470	615	422	719	23	877	496	472	2,170
9	1,330	571	437	635	24	896	492	494	1,590
10	1,200	582	447	598	25	850	402	451	1,170
11	1,070	480	447	567	26	896	498	802	980
12	1,120	578	432	493	27	710	484	1,340	852
13	975	575	432	512	28	805	450	939	866
14	1,080	531	439	507	29	743	449	691	1,430
15	1,100	539	537	509	30	759	451	830	1,300
					31		477	829	

NOTE.—Gage installed June 3; discharge June 1-3 obtained from records of flow of three forks of Snoqualmie River.

Monthly discharge of Snoqualmie River near Snoqualmie, Wash., for the year ending September 30, 1926

[Drainage area, 375 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
June	1,700	710	1,100	2.93	3.27	65,500
July	862	400	536	1.43	1.65	33,000
August	1,340	414	585	1.56	1.80	36,000
September	4,320	493	1,060	2.83	3.16	63,100
The period						198,000

NORTH FORK OF SNOQUALMIE RIVER NEAR NORTH BEND, WASH.

LOCATION.—In NE. ¼ sec. 26, T. 24 N., R. 8 E., at Gabriel ranch, 2 miles above mouth and 3½ miles northeast of North Bend, King County.

DRAINAGE AREA.—105 square miles (revised; measured on topographic maps).

RECORDS AVAILABLE.—July 4, 1907, to September 30, 1926, when station was discontinued.

GAGE.—Friez water-stage recorder on right bank 200 yards southeast of ranch house; installed September 26, 1916; inspected by employees of Puget Sound Power & Light Co.

DISCHARGE MEASUREMENTS.—Made by wading or from cable 200 yards above mouth.

CHANNEL AND CONTROL.—Bed composed of boulders and gravel; shifting at extremely high stages. Left bank not subject to overflow; right bank fairly high, not subject to overflow except at extremely high stages. Gage height zero flow determined August 25, 1922, 0.0±0.3 foot.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, estimated from fragmentary gage-height record, 8.5 feet December 23 (discharge, 6,550 second-feet); minimum stage, 1.52 feet at 3 p. m. October 24 (discharge, 55 second-feet).

1907–1926: Maximum stage, determined by leveling to high-water mark, 14.5 feet November 18, 1911 (discharge, 11,100 second-feet); water above gage November 18, 19, 23, 24, 29, and 30, 1909, and stage may have exceeded that reached in 1911. Minimum discharge, 55 second-feet October 24, 1926.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed January 6. Rating curves well defined below 2,000 second-feet. Operation of water-stage recorder satisfactory except as noted in footnote to table of daily discharge. Daily discharge ascertained by applying to rating table mean daily gage height determined from gage-height graph by inspection or, for days of considerable variation in stage, by averaging discharge for intervals of the day. Records good.

COOPERATION.—Discharge measurements and gage-height record furnished by Puget Sound Power & Light Co.

Discharge measurements of North Fork of Snoqualmie River near North Bend, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 16	1.55	59.2	Feb. 17	3.07	443	Apr. 25	2.95	386
Nov. 4	2.78	292	Mar. 12	3.15	486	Aug. 20	2.17	137
Jan. 27	3.21	526						

Daily discharge, in second-feet, of North Fork of Snoqualmie River near North Bend, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	64	491	2,440	412	534	756	610	391	445
2	63	408	1,430	368	481	660	481	336	396
3	62	351	1,150	351	445	615	450	386	376
4	62	297	2,020	331	748	570	430	857	-------
5	61	255	2,800	2,000	1,210	525	430	650	-------
6	61	229	1,800	2,800	1,230	480	410	528	-------
7	60	204	1,200	2,000	1,320	450	381	405	-------
8	60	199	960	1,000	1,110	425	396	391	-------
9	60	220	808	720	914	383	420	400	-------
10	60	343	1,540	573	1,480	373	520	353	-------
11	60	808	3,460	502	1,140	360	790	336	-------
12	60	785	2,200	450	869	480	700	376	-------
13	59	912	1,530	405	693	1,040	620	430	-------
14	59	673	1,100	391	585	1,270	700	396	-------
15	58	608	1,700	465	534	1,220	800	344	-------
16	58	712	1,310	985	496	1,210	1,000	298	-------
17	57	1,110	1,090	1,530	455	932	640	579	-------
18	57	1,280	1,010	932	450	932	591	1,580	-------
19	57	968	896	700	465	812	585	1,030	-------
20	57	896	800	642	523	896	788	896	-------
21	56	660	1,900	923	579	772	523	995	-------
22	56	518	4,800	968	724	672	512	977	-------
23	56	430	6,050	869	604	1,320	425	772	-------
24	59	394	3,200	820	1,430	1,210	367	732	-------
25	163	725	1,700	732	1,150	671	372	1,020	-------
26	500	524	1,100	579	1,110	540	430	528	-------
27	1,600	455	666	518	968	470	512	716	-------
28	1,200	968	647	540	878	465	562	616	-------
29	1,000	864	577	700	-------	450	556	616	-------
30	800	1,430	502	700	-------	465	470	528	-------
31	610	-------	455	591	-------	716	-------	455	-------

NOTE.—Water-stage recorder not operating Oct. 26–31, Dec. 20–26, Jan. 5–9, Mar. 2–6, 9–13, and Apr. 10–17; discharge estimated by Puget Sound Power & Light Co. officials and by comparison with records of Middle and South Forks of Snoqualmie River.

Monthly discharge of North Fork of Snoqualmie River near North Bend, Wash., for the year ending September 30, 1926

[Drainage area, 105 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	1,600	56	235	2.24	2.58	14,400
November	1,430	199	624	5.94	6.63	37,100
December	6,050	455	1,700	16.20	18.68	105,000
January	2,800	331	822	7.83	9.03	50,500
February	1,480	445	826	7.87	8.20	45,900
March	1,320	360	714	6.80	7.84	43,900
April	1,000	367	549	5.23	5.84	32,700
May	1,580	298	610	5.81	6.70	37,500
June	----------	----------	300	2.86	3.19	17,900
July	----------	----------	125	1.19	1.37	7,690
August	----------	----------	135	1.29	1.49	8,300
September	----------	----------	300	2.86	3.19	17,900
The year	6,050	56	578	5.50	74.74	419,000

NOTE.—Mean monthly flow, June to September, determined by applying to flow of Snoqualmie River below the falls a factor, for the month in question, obtained by averaging all percentages of flow of this fork to the sum of flow of three forks for the same month covering the last 18 years of record.

SOUTH FORK OF SNOQUALMIE RIVER AT NORTH BEND, WASH.

LOCATION.—In SE. ¼ sec. 9, T. 23 N., R. 8 E., at Cooper ranch, half a mile south of North Bend, King County, and 3½ miles by river above mouth.

DRAINAGE AREA.—84 square miles (measured on topographic maps).

RECORDS AVAILABLE.—July 21, 1907, to February 29, 1908, and June 26, 1908, to September 30, 1926, when station was discontinued.

GAGE.—Friez water-stage recorder on left bank at Cooper ranch; installed October 2, 1916; inspected by employees of Puget Sound Power & Light Co.

DISCHARGE MEASUREMENTS.—Made by wading or from cable 150 feet below gage.

CHANNEL AND CONTROL.—Bed composed of gravel; shifting at extremely high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.75 feet at 12.45 p. m. December 23 (discharge, 3,160 second-feet); minimum stage, 1.14 feet at 11.45 a. m. October 22 (discharge, 63 second-feet).

1907–1926: Maximum stage recorded, "Water over gage" November 3, 4, 19, 23, and 29, 1909 (gage height and discharge not determined); minimum discharge, that of October 22, 1925.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed January 6. Rating curves fairly well defined below 1,500 second-feet. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height determined from recorder graph by inspection or, for days of considerable variation in stage, by averaging discharge for intervals of the day. Records good.

COOPERATION—Discharge measurements and gage-height record furnished by Puget Sound Power & Light Co.

Discharge measurements of South Fork of Snoqualmie River at North Bend, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 15	1.20	69.0	Jan. 25	2.88	521	Mar. 12	3.01	567
Nov. 5	1.84	163	Feb. 17	2.81	481	Aug. 20	1.60	122
Dec. 13	3.73	837						

Daily discharge, in second-feet, of South Fork of Snoqualmie River at North Bend, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
1	73	237	1,030	478	440	702	702	488
2	73	223	988	461	433	660	600	452
3	72	209	808	444	436	640	560	480
4	72	188	1,080	428	540	620	540	702
5	72	169	1,830	1,090	748	600	520	725
6	71	156	1,350	1,740	860	560	508	600
7	71	145	988	975	905	540	488	516
8	71	143	785	770	882	516	488	480
9	71	143	672	660	748	496	508	468
10	71	172	762	600	838	476	600	436
11	71	266	2,180	560	815	464	725	433
12	71	336	1,610	512	680	600	680	452
13	71	392	1,200	484	600	975	620	484
14	69	425	852	476	560	1,020	660	448
15	68	359	762	496	520	1,100	792	418

Daily discharge, in second-feet, of South Fork of Snoqualmie River at North Bend, Wash., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
16	68	372	695	560	496	1,080	838	386
17	67	444	610	680	480	882	702	464
18	67	530	550	620	464	792	748	725
19	66	512	478	560	456	702	702	640
20	66	478	461	540	504	680	725	580
21	66	444	762	620	560	660	600	560
22	65	372	1,400	640	660	640	560	580
23	65	330	2,360	580	640	860	500	560
24	67	311	1,610	560	975	770	460	520
25	104	408	1,080	512	975	660	468	488
26	113	378	852	480	882	620	512	456
27	478	362	740	452	815	600	600	516
28	785	421	650	464	770	580	660	508
29	550	428	590	472	-------	560	660	496
30	346	478	550	456	-------	580	560	472
31	287	-------	512	444	-------	748	-------	436

Monthly discharge of South Fork of Snoqualmie River at North Bend, Wash., for the year ending September 30, 1926

[Drainage area, 84 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	785	65	140	1.67	1.92	8,610
November	530	143	328	3.90	4.35	19,500
December	2,360	461	993	11.8	13.60	61,100
January	1,740	428	607	7.23	8.34	37,300
February	975	433	667	7.94	8.27	27,000
March	1,100	464	690	8.21	9.46	42,400
April	838	460	610	7.26	8.10	36,300
May	725	386	515	6.13	7.07	31,700
June	-------	-------	220	2.62	2.92	13,100
July	-------	-------	100	1.19	1.37	6,150
August	-------	-------	130	1.55	1.79	7,990
September	-------	-------	210	2.50	2.79	12,500
The period	2,360	65	433	5.15	69.98	314,000

NOTE.—Mean monthly flow, June to September, determined by applying to flow of Snoqualmie River below the falls a factor, for the month in question, obtained by averaging all percentages of flow of this fork to the sum of flow of three forks for the same month covering the last 18 years of record.

STILLAGUAMISH RIVER BASIN

DEER CREEK AT OSO, WASH.

LOCATION.—In sec. 5, T. 32 N., R. 7 E., 1¼ miles above Oso and junction with North Fork of Stillaguamish River, Snohomish County.

DRAINAGE AREA.—84 square miles (measured on topographic maps).

RECORDS AVAILABLE.—August 11, 1917, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on left bank about 250 feet below mouth of 3-mile canyon; inspected by F. L. Bloxham.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge.

CHANNEL AND CONTROL.—Bed composed of boulders and gravel overlying bedrock. Banks high. One channel at all stages. Gage height of zero flow July 26, 1926, -0.60 foot ± 0.15 foot.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 8.60 feet at 4 a. m. December 23 (discharge, 6,170 second-feet); minimum stage, 0.25 foot at various times August 15, 16, and 17 (discharge, 18.5 second-feet).

1918–1926: Maximum stage, from high-water mark in well, 11.7 feet December 12, 1921 (discharge, 10,400 second-feet); minimum stage, that of August 15–17, 1926.

ICE.—Stage-discharge relation affected by ice during severe winters; flow estimated from discharge measurements, observer's notes, and weather records.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed at high water October 26 and December 22–23; not affected by ice. Rating curve used prior to first change fairly well defined; curves used after October 26 poorly defined. Operation of water-stage recorder satisfactory except as noted in footnote to table of daily discharge. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection of gage height graph or, for days of considerable variation in stage, by averaging discharge for intervals of the day. Records fair.

Discharge measurements of Deer Creek at Oso, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 4	3.42	802	July 26	0.38	25.4	Sept. 22	3.88	1,130
May 5	3.24	707	July 27	.39	27.1	Sept. 23	2.60	464

Daily discharge, in second-feet, of Deer Creek at Oso, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	210	3,170	181	405	435	230	186	245	40	22	196
2	24	173	1,330	160	339	435	190	156	211	40	22	114
3	24	150	850	150	366	482	215	498	183	39	22	76
4	24	120	3,600	150	807	420	218	1,200	164	37	21	59
5	24	102	2,370	2,650	1,320	331	215	764	146	36	20	52
6	24	93	1,100	845	1,520	279	190	562	134	35	20	47
7	24	85	672	420	1,570	245	181	372	123	34	20	58
8	24	169	527	306	1,030	227	199	420	110	34	20	50
9	24	592	499	282	1,040	211	213	366	99	33	20	43
10	24	496	2,280	242	1,150	183	247	263	103	33	20	40
11	24	1,060	3 640	213	701	}	328	220	110	32	20	38
12	24	960	1,370	188	500	}	247	202	91	30	20	35
13	22	720	770	168	405	} 600	225	211	90	30	20	35
14	22	474	527	335	334	}	285	295	88	29	20	34
15	22	402	970	916	366	}	323	285	81	28	20	217
16	22	1,170	720	2,360	328	}	282	204	74	28	19	890
17	22	1,190	672	1,570	339	}	237	217	69	28	20	405
18	22	795	795	648	585	} 700	245	525	66	28	472	282
19	22	527	474	450	722	}	375	372	66	30	423	170
20	22	626	379	435	665	}	562	325	77	30	432	122
21	22	379	1,700	500	738	}	783	287	66	28	138	1,780
22	22	282	3,040	450	794	}	834	290	58	28	72	1,390
23	22	230	3,740	450	561	} 700	462	484	55	27	52	530
24	342	235	1,170	405	1,440	}	334	958	53	26	43	301
25	271	530	688	314	724	}	306	515	50	26	36	213
26	1,620	330	500	266	710	279	279	426	48	26	183	166
27	2,040	280	390	237	600	260	276	740	47	26	378	135
28	1,740	319	317	498	520	247	258	465	44	26	150	983
29	454	327	268	851	------	245	235	505	43	25	99	1,060
30	474	864	232	710	------	274	258	351	41	23	178	614
31	305	------	204	465	------	290	------	279	------	23	128	------

NOTE.—Water-stage recorder not operating Mar. 11–25; discharge estimated by comparison with records of Sultan River near Sultan, Wash. Braced figures show mean discharge for periods indicated.

Monthly discharge of Deer Creek at Oso, Wash., for the year ending September 30, 1926

[Drainage area, 84 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	2,040	22	251	2.99	3.45	15,400
November	1,190	85	463	5.51	6.15	27,600
December	3,740	204	1,260	15.0	17.29	77,500
January	2,650	150	575	6.85	7.90	35,400
February	1,570	328	735	8.75	9.11	40,800
March			479	5.70	6.57	29,500
April	834	181	308	3.67	4.10	18,300
May	1,200	156	418	4.98	5.74	25,700
June	245	41	94.5	1.12	1.25	5,620
July	40	23	30.3	.361	.42	1,860
August	472	19	101	1.20	1.38	6,210
September	1,780	34	338	4.02	4.48	20,100
The year	3,740	19	419	4.99	67.84	304,000

SKAGIT RIVER BASIN

SKAGIT RIVER BELOW RUBY CREEK, NEAR MARBLEMOUNT, WASH.

LOCATION.—In Whatcom County, three-fourths mile below Ruby Creek, 5 miles above Reflector Bar, and 23 miles northeast of Marblemount, Skagit County.

DRAINAGE AREA.—978 square miles. Area in United States, 588 square miles (measured on Washington National Forest map, edition of 1922); area in British Columbia, 390 square miles.

RECORDS AVAILABLE.—June 1, 1919, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on right bank; installed June 9, 1919; inspected by F. E. Davis.

DISCHARGE MEASUREMENTS.—Made from cable 40 feet below gage.

CHANNEL AND CONTROL.—Control at head of rapids about 125 feet below gage composed of large, angular boulders and perhaps some bedrock; banks high and wooded, not subject to overflow. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.76 feet at 2 a. m. April 30 (discharge, 7,460 second-feet); minimum stage, 3.0 feet on October 13 (discharge, 450 second-feet). Discharge may have been lower some time October 4–16, while water-stage recorder was not functioning properly.

1919–1926: Maximum stage recorded, 16.1 feet at 7 p. m. December 12, 1921 (discharge from extension of rating curve, 45,700 second-feet); minimum stage recorded, that of October 13, 1925.

ICE.—Stage-discharge relation slightly affected by ice during severe winters.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent; not affected by ice. Rating curve well defined. Operation of water-stage recorder satisfactory, except as noted in footnote to table of daily discharge. Daily discharge ascertained by applying to rating table mean daily gage height determined from recorder graph by inspection or, for days when there was considerable variation in stage, by averaging discharge for intervals of the day. Records excellent.

Discharge measurements of Skagit River below Ruby Creek, near Marblemount, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 21	3.34	595	July 22	4.40	1,470	Sept. 27	3.39	630
May 9	5.60	3,050	July 23	4.36	1,430			

Daily discharge, in second-feet, of Skagit River below Ruby Creek, near Marblemount, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	669	664	2,520	1,650	936	1,100	2,350	5,840	2,700	2,560	1,210	1,080
2	652	630	2,490	1,540	920	1,100	2,150	5,170	2,780	2,420	1,200	1,010
3	647	605	1,770	1,480	912	1,130	2,080	5,170	3,000	2,630	1,230	968
4	627	580	1,540	1,430	952	1,140	1,960	5,280	3,600	2,700	1,210	1,030
5	608	557	1,650	1,540	968	1,130	1,830	4,560	3,760	2,850	1,130	1,120
6	588	544	1,890	1,600	1,030	1,090	1,710	4,000	4,360	2,850	1,270	1,080
7	568	534	1,710	1,480	1,220	1,080	1,650	3,600	4,560	2,560	1,380	1,250
8	548	539	1,600	1,380	1,330	1,070	1,600	3,300	4,090	2,220	1,380	976
9	529	544	1,540	1,330	1,380	1,050	1,710	3,000	3,220	2,220	1,330	952
10	509	562	1,650	1,300	1,710	1,030	1,960	2,920	2,780	2,420	1,240	952
11	489	595	3,220	1,230	1,710	1,020	2,780	3,000	2,490	2,490	1,220	873
12	470	595	3,600	1,160	1,650	1,030	3,080	3,600	2,280	2,560	1,230	817
13	450	575	2,920	1,130	1,540	1,050	3,220	4,560	2,220	2,350	1,230	810
14	474	566	2,420	1,110	1,430	1,110	3,920	4,850	2,280	2,020	1,260	796
15	497	557	2,150	1,080	1,380	1,280	5,500	4,180	2,420	1,830	1,300	768
16	520	566	2,080	1,250	1,310	1,600	6,940	3,600	2,490	1,650	1,240	734
17	544	580	1,960	1,480	1,250	1,650	6,200	3,520	2,420	1,600	1,160	704
18	544	575	1,890	1,430	1,220	1,650	5,960	3,760	2,280	1,540	1,540	674
19	539	595	1,710	1,310	1,200	1,600	5,960	4,460	2,280	1,380	1,430	647
20	539	704	1,600	1,260	1,160	1,600	5,500	4,750	2,220	1,320	1,960	620
21	595	704	1,540	1,200	1,130	1,600	4,750	4,090	2,280	1,430	1,290	658
22	590	669	1,650	1,160	1,130	1,600	4,090	3,600	2,420	1,480	1,150	775
23	562	642	3,080	1,130	1,090	2,020	3,600	3,380	2,700	1,480	1,210	674
24	539	636	3,150	1,100	1,160	2,020	3,380	3,150	3,150	1,540	1,310	625
25	562	686	2,780	1,070	1,150	1,960	3,520	2,850	3,380	1,650	1,260	615
26	585	652	2,560	1,030	1,140	1,830	4,090	2,700	3,380	1,480	1,430	620
27	647	615	2,350	1,020	1,130	1,770	5,280	2,920	3,000	1,270	1,430	620
28	686	615	2,150	1,020	1,110	1,770	6,440	2,850	2,630	1,200	1,250	658
29	716	600	2,020	1,020	-------	1,770	6,940	2,920	2,420	1,210	1,250	728
30	704	652	1,890	976	-------	1,960	6,940	2,700	2,420	1,300	1,220	692
31	698	-------	1,770	952	-------	2,420	-------	2,490	-------	1,320	1,120	-------

NOTE.—Water-stage recorder not operating satisfactorily Oct. 4–16; discharge for period is result of one gage-height reading on Oct. 13 and interpolation.

Monthly discharge of Skagit River below Ruby Creek, near Marblemount, Wash., for the year ending September 30, 1926

[Drainage area, 978 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	716	450	577	0.590	0.68	35,500
November	704	534	605	.619	.69	36,000
December	3,600	1,540	2,160	2.21	2.55	133,000
January	1,650	952	1,250	1.28	1.48	76,900
February	1,710	912	1,220	1.25	1.30	67,800
March	2,420	1,020	1,460	1.49	1.72	89,800
April	6,940	1,600	3,900	3.99	4.45	232,000
May	5,840	2,490	3,770	3.85	4.44	232,000
June	4,560	2,220	2,870	2.93	3.27	171,000
July	2,850	1,200	1,920	1.96	2.26	118,000
August	1,960	1,120	1,290	1.32	1.52	79,300
September	1,250	615	818	.836	.93	48,700
The year	6,940	450	1,820	1.86	25.29	1,320,000

SKAGIT RIVER NEAR MARBLEMOUNT, WASH.

LOCATION.—In SE. ¼ sec. 21, T. 37 N., R. 12 E., at city of Seattle power camp, Whatcom County, one-fourth mile above Newhalem Creek, 6½ miles below Stetattle Creek, and 16 miles above Marblemount.

DRAINAGE AREA.—1,160 square miles. Area in Canada, 390 square miles;[2] area in United States, 770 square miles, measured on Washington National Forest maps.

RECORDS AVAILABLE.—December 21, 1908, to May 23, 1914; October 1, 1920, to September 30, 1926.

GAGE.—Stevens water-stage recorder, installed June 5, 1923, on right bank about 300 feet below suspension footbridge and trail to Newhalem Creek power plant; inspected by F. E. Davis. Present gage datum 400 feet, United States Geological Survey datum.

DISCHARGE MEASUREMENTS.—Made from suspension bridge and from measuring cable at gage.

CHANNEL AND CONTROL.—Right bank high, not subject to overflow; left bank gently sloping and wooded, overflowed at extremely high stage. Channel straight for several hundred feet above and for long distance below gage. Control is gravel and boulder riffle; will shift at high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 85.68 feet at 2 a. m. April 30 (discharge, 9,220 second-feet); minimum stage, from recorder, 79.50 feet at 2 p. m. January 31 (discharge, 400 second-feet).

1908–1914, 1920–1926: Maximum stage recorded, 94.2 feet at 8 p. m. December 12, 1921 (discharge, 60,000 second-feet); minimum stage, that of January 31, 1926.

ICE.—Stage-discharge relation seriously affected by ice during severe winters; flow estimated from observer's notes and weather records.

DIVERSIONS.—Seattle municipal power plant diverts water directly from river about 3 miles above the gage, through a pressure tunnel, and returns it to the river at the plant just above the gage. Entire low-water flow may be carried through the plant.

REGULATION.—Daily flow partly controlled at very low water by storage and release of water at tunnel intake to accommodate requirements of power plant.

ACCURACY.—Stage-discharge relation changed April 30; not affected by ice. Rating curves well defined. Operation of water-stage recorder satisfactory except as noted in footnote to table of daily discharge. Daily discharge determined by use of discharge integrator except for high water, when daily discharge was ascertained by applying to rating table mean daily gage height determined from recorder graph by inspection. Records excellent.

Discharge measurements of Skagit River near Marblemount, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 20	80.20	702	May 10	82.84	3,440	Sept. 25	80.34	850
Oct. 23	80.20	716	July 21	81.93	2,290	Sept. 28	80.60	1,040
May 7	83.27	4,150						

[2] White, A. V., Water powers of British Columbia, p. 483, Conservation Comm. Canada, 1919.

Daily discharge, in second-feet, of Skagit River near Marblemount, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	884	935	5,500	2,050	1,200	1,520	2,910	7,170	3,740	4,320	2,300	2,150
2	830	874	3,970	1,940	1,150	1,500	2,670	6,410	3,720	4,040	2,330	1,890
3	826	795	2,630	1,840	1,120	1,540	2,530	6,520	4,100	4,690	2,480	1,820
4	803	736	2,400	1,760	1,230	1,530	2,320	6,520	5,100	5,010	2,360	2,100
5	841	696	2,840	2,310	1,290	1,480	2,200	5,840	5,460	5,330	2,160	2,340
6	818	674	2,870	2,030	1,460	1,450	2,070	4,910	6,400	5,440	2,680	2,320
7	789	656	2,500	2,010	1,770	1,400	1,980	4,400	6,750	4,550	2,880	2,620
8	751	684	2,270	1,840	1,950	1,450	1,960	4,010	5,980	3,880	2,840	1,820
9	755	727	2,120	1,760	1,970	1,400	2,130	3,670	4,390	4,080	2,770	1,850
10	772	768	2,640	1,670	2,520	1,330	2,600	3,540	3,780	4,500	2,480	1,870
11	690	836	5,580	1,570	2,400	1,370	3,580	3,820	3,400	4,800	2,500	1,660
12	672	824	5,180	1,510	2,210	1,380	3,860	4,740	3,150	4,980	2,580	1,560
13	657	802	3,900	1,460	2,040	1,390	3,960	6,000	3,140	4,340	2,560	1,480
14	701	742	3,200	1,450	1,880	1,500	5,130	6,490	3,340	3,680	2,590	1,500
15	731	750	3,020	1,480	1,830	1,800	6,980	5,450	3,530	3,280	2,740	1,350
16	708	769	2,920	1,860	1,700	2,180	8,400	4,640	3,660	2,860	2,540	1,260
17	731	833	2,650	2,390	1,660	2,170	7,410	4,570	3,580	2,800	2,340	1,120
18	789	897	2,530	2,060	1,620	2,130	7,140	5,250	3,330	2,710	3,360	1,060
19	737	931	2,270	1,890	1,620	2,060	7,360	6,240	3,200	2,410	3,320	970
20	762	1,210	2,070	1,780	1,560	2,060	6,750	6,680	3,140	2,280	3,840	924
21	1,000	1,060	2,070	1,740	1,480	2,030	5,760	5,550	3,320	2,440	2,360	1,080
22	912	964	2,830	1,620	1,590	2,140	5,060	4,990	3,690	2,590	2,120	1,340
23	774	878	5,830	1,510	1,480	2,920	4,360	4,490	4,290	2,750	2,460	1,040
24	740	860	4,630	1,440	1,660	2,660	4,000	4,090	5,160	2,950	2,830	904
25	808	1,010	3,730	1,430	1,640	2,480	4,220	3,650	5,700	3,310	2,640	862
26	855	914	3,340	1,320	1,620	2,370	5,140	3,490	5,810	2,800	3,220	886
27	1,300	820	3,000	1,300	1,580	2,280	6,560	3,860	4,960	2,240	3,060	880
28	1,490	808	2,750	1,300	1,530	2,210	7,890	3,780	4,240	2,120	2,550	1,010
29	1,240	791	2,540	1,300	------	2,240	8,660	3,940	3,960	2,240	2,520	1,170
30	1,260	1,280	2,370	1,260	------	2,580	8,660	3,540	4,070	2,490	2,350	1,050
31	1,130	------	2,230	1,190	------	3,050	------	3,330	------	2,640	2,160	------

NOTE.—No record July 21–22; discharge interpolated.

Monthly discharge of Skagit River near Marblemount, Wash., for the year ending September 30, 1926

[Drainage area, 1,160 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	1,490	657	863	0.744	0.86	53,100
November	1,280	656	851	.734	.82	50,600
December	5,830	2,070	3,170	2.73	3.15	195,000
January	2,390	1,190	1,680	1.45	1.67	103,000
February	2,520	1,120	1,670	1.44	1.50	92,800
March	3,050	1,330	1,920	1.66	1.91	118,000
April	8,660	1,960	4,810	4.15	4.63	286,000
May	7,170	3,330	4,890	4.22	4.86	301,000
June	6,750	3,140	4,270	3.68	4.11	254,000
July	5,440	2,120	3,500	3.02	3.48	215,000
August	3,840	2,120	2,640	2.28	2.63	162,000
September	2,620	862	1,460	1.26	1.41	86,900
The year	8,660	656	2,650	2.28	31.03	1,920,000

SKAGIT RIVER NEAR CONCRETE, WASH.

LOCATION.—In sec. 16, T. 35 N., R. 8 E., at dalles 2 miles below mouth of Baker River and 2½ miles southwest of Concrete, Skagit County.

DRAINAGE AREA.—2,700 square miles. Area in United States, 2,310 square miles (measured on topographic maps and Washington National Forest map, edition of 1922). Area in British Columbia, 390 square miles.[3]

[3] White, A. V., Water powers of British Columbia, p. 483, Conservation Comm. Canada. 1919.

RECORDS AVAILABLE.—September 15, 1924, to September 30, 1926. Flood peaks only as noted under "Extremes of discharge."

GAGE.—Since December 10, 1924, Stevens continuous recorder in concrete house over stilling well, on right bank at the dalles. Gage datum, 163 feet above sea level.

DISCHARGE MEASUREMENTS.—Made from cable three-fourths mile below gage.

CHANNEL AND CONTROL.—Boulder riffle below canyon for low stages; rock canyon forming the dalles, for high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 13.6 feet at 12.15 p. m. December 23 (discharge, 51,600 second-feet); minimum discharge probably occurred during the period October 1–24, 1925, when recorder was not operated and gates in Baker River Dam were closed for the first time; discharge not determined but probably less than 2,160 second-feet.

1924–1926: Maximum stage recorded, 19.75 feet at 1 p. m. December 12, 1924 (discharge, 92,500 second-feet); minimum discharge probably occurred during period October 1–24, 1925.

High-water marks at gage height 56.6 feet indicate a flood of 500,000 second-feet about 1815. Records of other floods prior to establishment of station are given in Water-Supply Paper 612.

DIVERSIONS.—Water is diverted for the operation of Seattle's municipal power plant in sec. 21, T. 37 N., R. 12 E., and at low stage the entire flow at that point may be carried through the plant. Water is also diverted from Baker River, a tributary, for the operation of the Puget Sound Power & Light Co.'s power plant at the mouth of Baker River, and at low stage the entire flow of Baker River may be carried through the plant. But at both plants water is returned to river, and all water passes through this station.

REGULATION.—At very low stage flow of upper river is partly controlled by storage and release of water at tunnel intake of Seattle's municipal power plant, to accommodate plant requirements. Flow of Baker River, a tributary, is partly controlled by storage and release of 70,000 acre-feet of water in Baker River Reservoir to accommodate requirements of Puget Sound Power & Light Co.'s Baker River power plant.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Operation of water-stage recorder satisfactory except as noted in footnote to table of daily discharge. Daily discharge ascertained by use of discharge integrator. Records excellent except those for October, which are fair.

Discharge measurements of Skagit River near Concrete, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 19	0.56	2,470	July 24	3.77	8,680
Jan. 19	4.78	11,700	Sept. 24	2.16	5,260

Daily discharge, in second-feet, of Skagit River near Concrete, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		4,580	24,100	9,030	7,100	8,300	10,100	19,700	10,900	11,600	6,300	7,360
2		3,900	22,300	8,670	6,720	7,950	9,200	16,100	11,600	10,600	6,600	6,820
3		3,460	13,300	7,560	6,520	7,950	8,670	17,400	12,200	10,900	7,140	6,380
4		3,140	13,100	7,540	7,190	7,780	7,540	21,200	15,100	12,400	7,220	6,530
5	3,200	2,870	18,100	13,400	8,460	7,400	7,840	18,400	15,400	13,400	6,460	6,820
6		2,880	17,800	19,100	9,290	7,020	7,540	14,800	17,700	13,900	7,060	6,910
7		2,800	15,300	12,700	11,500	6,520	7,300	12,700	20,000	12,600	7,320	7,760
8		2,740	13,700	10,800	13,000	6,440	7,380	11,400	19,000	10,100	6,990	6,430
9		3,020	12,300	9,680	11,500	6,420	7,440	10,600	13,200	10,300	7,380	5,910
10		3,320	15,100	8,500	15,900	6,290	8,420	10,000	11,500	10,900	7,100	5,940
11		4,480	42,100	8,480	14,100	6,170	9,820	10,300	10,500	11,800	6,830	5,680
12		5,020	36,000	7,840	12,000	6,500	11,400	12,100	9,880	12,300	6,940	4,550
13	2,800	4,300	23,400	7,290	10,500	6,550	11,100	15,800	8,700	11,300	7,020	5,120
14		3,840	17,400	7,110	8,980	6,370	13,300	17,500	9,620	9,980	6,920	5,140
15		3,590	16,700	7,680	8,870	8,120	18,700	15,000	10,400	9,310	6,620	5,080
16		4,240	17,300	10,600	8,310	9,620	23,200	11,900	10,700	7,920	6,840	5,720
17		4,580	15,000	19,800	7,620	9,220	20,500	12,500	10,700	7,680	6,410	4,840
18		4,780	14,000	13,900	7,960	8,840	19,200	15,400	10,200	7,200	7,980	4,740
19		5,420	12,000	11,100	7,840	8,360	20,900	17,400	9,340	7,720	10,200	3,980
20		6,740	10,600	10,200	7,980	8,140	20,700	19,700	8,680	7,000	10,900	4,230
21	2,400	6,390	11,400	9,560	7,440	7,360	17,100	16,500	9,450	7,460	8,160	4,250
22		5,340	22,300	8,860	8,540	7,890	15,600	15,600	10,400	7,980	6,290	7,860
23		4,920	41,200	8,200	8,420	12,500	12,800	14,700	11,500	7,720	6,680	7,420
24		5,050	31,800	7,660	9,820	11,500	11,500	14,000	13,100	7,940	7,520	5,180
25	2,700	6,100	22,000	7,580	10,100	9,990	11,000	11,900	14,600	8,040	7,470	4,340
26	2,900	5,500	17,800	7,140	9,340	9,140	13,800	10,900	16,500	8,160	7,940	3,650
27	12,400	4,890	14,900	6,820	9,020	8,520	17,600	12,800	14,100	7,140	10,200	4,180
28	12,600	4,860	12,700	6,820	8,520	7,440	21,400	13,400	11,900	6,740	7,760	4,480
29	8,420	4,620	11,700	7,290	-------	8,160	23,900	13,500	11,200	6,820	7,120	7,180
30	6,190	5,460	10,700	7,660	-------	8,740	23,800	12,300	10,900	7,100	7,500	5,850
31	5,640	-------	9,840	6,980	-------	10,000	-------	10,900	-------	7,480	6,980	-------

NOTE.—Water-stage recorder not operating Oct. 1–18; water below intake Oct. 19–24. Discharge estimated by comparison with records of combined flow of Skagit River near Marblemount and Sauk River at Darrington. Braced figures represent mean flow for periods indicated.

Monthly discharge of Skagit River near Concrete, Wash., for the year ending September 30, 1926

[Drainage area, 2,700 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	12,600	----------	3,810	----------	----------	234,000
November	6,740	2,740	4,430	----------	----------	264,000
December	42,100	9,840	18,600	----------	----------	1,140,000
January	19,800	6,820	9,530	----------	----------	586,000
February	15,900	6,520	9,380	----------	----------	521,000
March	12,500	6,170	8,100	----------	----------	498,000
April	23,900	7,300	14,000	----------	----------	833,000
May	21,200	10,000	14,400	----------	----------	885,000
June	20,000	8,680	12,300	----------	----------	732,000
July	13,900	6,740	9,400	----------	----------	578,000
August	10,900	6,290	7,410	----------	----------	456,000
September	7,860	3,650	5,680	----------	----------	338,000
The year	42,100	----------	9,760	3.61	49.07	7,060,000

NOTE.—Monthly discharge in second-feet per square mile and run-off in inches not computed owing to regulation on Baker River. The yearly figures closely represent the natural flow.

THUNDER CREEK NEAR MARBLEMOUNT, WASH.

LOCATION.—One-fourth mile above junction with Skagit River, 3½ miles from Reflector Bar ranger station, Whatcom County, and 20 miles northeast of Marblemount.

DRAINAGE AREA.—111 square miles (measured on Washington National Forest map, edition of 1922).

RECORDS AVAILABLE.—February 15, 1919, to September 30, 1926.

GAGE.—Stevens water-stage recorder on left bank; inspected by F. E. Davis.

DISCHARGE MEASUREMENTS.—Made from cable half a mile above gage or by wading.

CHANNEL AND CONTROL.—Control at high stage is at head of falls, about 200 feet below gage; at low stage it is bed of stream between gage and falls, composed of shifting gravel and boulders. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 8.11 feet from 8 to 9 p. m. July 5 (discharge, 2,470 second-feet); minimum stage, 2.78 feet from 1 a. m. to noon November 15 (discharge, 117 second-feet).

1919–1926: Maximum stage, 15.5 feet about 4.30 p. m. December 12, 1921 (discharge, 9,720 second-feet); minimum stage, 2.88 feet from March 14 to 17, 1922 (discharge, 71 second-feet). Discharge may have been less in January and February, 1922, when stage-discharge relation was affected by ice.

ICE.—Stage-discharge relation affected by ice during severe winters. Flow estimated from study of observer's notes, weather records, and results at near-by gaging stations.

REGULATION.—None.

DIVERSIONS.—None.

ACCURACY.—Stage-discharge relation changed gradually July 6–21; not affected by ice. Rating curves fairly well defined. Operation of water-stage recorder satisfactory except as noted in footnote to table of daily discharge. Daily discharge ascertained by applying to rating table mean daily gage height determined from recorder graph by inspection; shifting-control method used July 6–21. Records fair.

Discharge measurements of Thunder Creek near Marblemount, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 22	3.63	267	July 22	5.51	858
May 8	4.12	422	Sept. 26	3.36	170

Daily discharge, in second-feet, of Thunder Creek near Marblemount, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	204	177	905	246	160		345	860	654	1,400	900	855
2	204	152	543	224	160		301	770	617	1,350	900	695
3	195	145	330	224	152	200	273	815	730	1,760	1,000	695
4	204	131	287	214	160		259	860	1,050	1,880	900	900
5	224	125	439	375	168		246	692	1,200	2,060	855	1,000
6	224	119	391	315	186		234	543	1,400	2,120	1,160	900
7	214	119	315	259	224		224	473	1,520	1,640	1,220	950
8	195	131	273	246	246	190	224	407	1,250	1,400	1,220	615
9	214	131	259	234	246		246	375	860	1,580	1,100	695
10	214	131	375	224	330		330	391	730	1,760	1,000	655

Daily discharge, in second-feet, of Thunder Creek near Marblemount, Wash., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	168	131	905	214	301		473	508	617	1,940	1,000	575
12	160	125	617	204	273		473	730	617	2,000	1,100	538
13	168	119	439	195	246	210	473	950	654	1,640	1,050	538
14	195	119	375	195	224		654	1,000	730	1,350	1,100	470
15	204	119	391	195	224		950	730	815	1,200	1,100	438
16	204	119	407	246	214	259	1,100	617	905	1,000	1,000	302
17	204	119	330	345	195	246	905	654	860	1,000	900	262
18	195	125	301	273	195	234	860	905	770	950	1,460	238
19	177	138	273	246	195	234	905	1,100	692	770	1,460	216
20	251	186	246	234		234	770	1,150	654	815	1,340	196
21	391	152	246	224		224	617	860	860	1,000	775	250
22	301	138	439	214		234	508	730	1,000	1,050	735	288
23	204	131	1,100	204		391	439	654	1,300	1,050	1,000	196
24	186	138	692	195	210	315	407	580	1,640	1,280	1,220	178
25	214	145	543	186		287	473	508	1,880	1,400	1,100	178
26	268	131	439	177		273	617	473	1,880	1,000	1,340	178
27	375	125	391	177		259	860	580	1,520	775	1,220	187
28	508	125	360	177		259	1,100	543	1,300	775	1,000	238
29	273	119	315	168	-------	259	1,200	617	1,250	900	1,000	250
30	315	177	287	168	-------	315	1,150	508	1,400	1,000	815	216
31	214	-------	259	168	-------	375	-------	508	-------	1,050	815	------

NOTE.—Water-stage recorder not operating Feb. 19 to Mar. 15; discharge estimated by comparison with difference in recorded flow between Skagit River near Marblemount and Skagit River below Ruby Creek. Braced figures show mean discharge for periods indicated.

Monthly discharge of Thunder Creek near Marblemount, Wash., for the year ending September 30, 1926

[Drainage area, 111 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	508	160	234	2.11	2.43	14,400
November	186	119	135	1.22	1.36	8,030
December	1,100	246	435	3.92	4.52	26,700
January	375	168	225	2.03	2.34	13,800
February	330	152	214	1.93	2.01	11,900
March	391	----------	239	2.15	2.48	14,700
April	1,200	224	587	5.29	5.90	34,900
May	1,150	375	680	6.13	7.07	41,800
June	1,880	617	1,050	9.46	10.56	62,500
July	2,120	770	1,320	11.9	13.72	81,200
August	1,460	735	1,060	9.55	11.01	65,200
September	1,000	178	463	4.17	4.65	27,600
The year	2,120	119	556	5.01	68.05	403,000

SAUK RIVER AT DARRINGTON, WASH.

LOCATION.—In SE. ¼ sec. 24, T. 32 N., R. 9 E., at suspension footbridge half a mile southeast of Darrington, Snohomish County, 2½ miles below Clear Creek, and 23 miles above mouth of river.

DRAINAGE AREA.—293 square miles (measured on topographic map).

RECORDS AVAILABLE.—June 15, 1914, to October 15, 1926, when station was discontinued.

GAGE.—Vertical and inclined staff on right bank at suspension footbridge; installed April 14, 1922; read by E. L. Jackson.

DISCHARGE MEASUREMENTS.—Made by wading or from the suspension footbridge.

CHANNEL AND CONTROL.—Bed composed of gravel and large boulders. Right bank at gage high and not subject to overflow; left bank flat and subject to overflow at extremely high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.3 feet January 5 (discharge, 10,000 second-feet); minimum discharge, 286 second-feet October 13–16 and 18, 1925.

1914–1926: Maximum stage, 15.0 feet at 9 a. m. December 29, 1917, and 4 p. m. December 12, 1921, determined by levels to high-water mark (discharge, 36,000 second-feet); minimum discharge, that of October 13–16 and 18, 1925.

ICE.—Stage-discharge relation only slightly affected by ice during severe winters.

DIVERSIONS.—An average diversion of possibly 10 second-feet is made from a point about one-fourth mile above gage for the purpose of driving shingle bolts to mill pond at Darrington.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent; not affected by ice. Rating curves well defined below 10,000 second-feet. Gages read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

The following discharge measurements were made:

May 5, 1926: Gage height, 3.70 feet; discharge, 2,350 second-feet.

July 27, 1926: Gage height, 1.87 feet; discharge, 522 second-feet.

September 23, 1926: Gage height, 3.09 feet; discharge, 1,560 second-feet.

Daily discharge, in second-feet, of Sauk River at Darrington, Wash., for the period October 1, 1925, to October 15, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1	395	775	8,280	1,260	970	1,310	1,470	1,580	1,820	1,060	507	507	2,820
2	375	675	4,240	1,160	930	1,260	1,360	1,780	2,220	1,110	561	483	3,860
3	356	559	3,860	1,060	970	1,260	1,260	1,970	2,220	1,210	615	483	1,950
4	356	507	3,680	970	2,080	1,060	1,350	2,160	2,220	1,310	615	483	1,470
5	336	483	3,500	10,000	1,820	1,060	1,430	2,360	2,080	1,360	615	483	1,470
6	356	415	3,150	3,500	1,950	1,020	1,520	1,820	2,080	1,420	615	587	1,950
7	336	559	2,820	2,820	2,980	970	1,600	1,580	1,820	1,310	615	459	2,510
8	318	459	2,660	1,950	2,360	890	1,690	1,580	1,700	2,820	561	459	2,660
9	301	615	3,150	1,700	3,860	970	1,780	1,420	1,580	970	507	459	2,510
10	301	670	6,610	1,470	3,320	970	1,860	1,360	1,820	615	533	459	2,820
11	301	725	4,240	1,310	2,820	1,020	1,950	1,310	1,470	1,470	559	437	1,950
12	301	780	3,680	1,160	1,950	1,110	1,950	1,470	1,260	970	483	437	1,950
13	286	835	3,320	1,210	1,700	1,210	1,820	2,080	1,160	970	483	415	2,220
14	286	890	2,510	1,260	1,820	1,260	1,820	1,820	1,210	645	533	437	6,840
15	286	1,260	2,510	1,360	1,580	1,420	1,820	1,470	1,260	645	483	970	4,640
16	286	1,060	2,220	6,840	1,420	1,420	1,950	1,580	1,210	615	507	810	------
17	301	1,310	2,820	1,470	1,160	1,580	1,950	2,220	1,260	615	507	675	------
18	286	1,160	2,080	1,580	1,210	1,470	1,820	3,150	1,260	615	1,260	645	------
19	301	1,060	1,950	1,700	1,360	1,420	1,820	3,500	1,310	615	1,470	615	------
20	301	1,020	1,700	1,700	1,310	1,360	1,820	2,980	1,210	587	1,360	559	------
21	318	930	2,080	1,470	1,470	1,310	1,950	2,820	1,060	587	708	4,640	------
22	336	890	3,860	1,360	1,360	1,260	1,950	3,150	1,020	559	708	2,360	------
23	356	810	4,640	1,360	2,080	1,950	2,220	2,820	970	587	708	1,580	------
24	615	850	4,050	930	2,510	2,510	2,220	2,980	930	615	740	1,470	------
25	615	970	3,500	970	2,220	1,820	2,080	2,660	970	559	587	1,060	------
26	2,080	890	2,820	1,020	1,950	1,700	1,950	2,220	970	559	675	775	------
27	2,980	1,020	2,220	970	1,700	1,470	1,820	1,950	970	533	615	675	------
28	3,680	930	1,950	1,060	1,470	1,420	1,950	1,950	970	507	708	675	------
29	1,820	890	1,700	1,020	-------	1,360	1,950	1,950	970	533	810	1,820	------
30	1,360	1,950	1,470	1,060	-------	1,360	1,470	1,820	1,020	587	615	1,950	------
31	890	-------	1,360	1,110	-------	1,420	-------	1,820	-------	533	559	-------	

NOTE.—No gage-height record Nov. 10–13, Apr. 4–10, May 2–4; gage-height record faulty Aug. 2, 5, 6, and 8; discharge interpolated. Gage heights apparently recorded 1 foot too low Jan. 22, 23, and Apr. 15–29.

Monthly discharge of Sauk River at Darrington, Wash., for the period October 1, 1925, to October 15, 1926

[Drainage area, 293 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
1925–26						
October	3,680	286	691	2.36	2.72	42,500
November	1,950	415	865	2.95	3.29	51,500
December	8,280	1,360	3,180	10.9	12.57	196,000
January	10,000	930	1,860	6.35	7.32	114,000
February	3,860	930	1,870	6.38	6.64	104,000
March	2,510	890	1,340	4.57	5.27	82,400
April	2,220	1,260	1,790	6.11	6.82	107,000
May	3,500	1,310	2,110	7.20	8.30	130,000
June	2,220	930	1,400	4.78	5.33	83,300
July	2,820	507	874	2.98	3.44	53,700
August	1,470	483	672	2.29	2.64	41,300
September	4,640	415	929	3.17	3.54	55,300
The year	10,000	286	1,460	4.98	67.88	1,060,000
1926						
October 1–15	6,840	1,470	2,770	9.45	5.27	82,400

UPPER COLUMBIA RIVER BASIN

MAIN STREAM

COLUMBIA RIVER AT TRAIL, BRITISH COLUMBIA

LOCATION.—At highway bridge at Trail, 15 miles above international boundary and mouth of Clark Fork and 18 miles below mouth of Kootenai River.

DRAINAGE AREA.—34,000 square miles (measured by Dominion Water Power Branch).

RECORDS AVAILABLE.—April 18, 1913, to September 30, 1926.

GAGE.—Chain gage installed on bridge in June, 1913; read by C. A. Broderick.

DISCHARGE MEASUREMENTS.—Made from highway bridge.

CHANNEL AND CONTROL.—Channel straight for a quarter of a mile above and below gage. Riffle control below gage; apparently permanent.

EXTREMES OF DISCHARGE.—Maximum mean daily stage during year, 24.9 feet July 10–14 (discharge, 138,000 second-feet); minimum mean daily stage, 7.6 feet February 4 (discharge, 12,400 second-feet).

1913–1926: Maximum stage recorded, 41.6 feet June 14–15, 1913 (discharge, 312,000 second-feet); minimum stage, 7.40 feet March 28 1917 (discharge, 9,600 second-feet).

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—A small amount of water is diverted above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Gage read twice daily to hundredths. Daily discharge ascertained by applying mean daily gage height to rating table.

COOPERATION.—Complete record furnished by Dominion Water Power and Reclamation Service, Department of the Interior, Canada.

The following discharge measurements were made:

February 5, 1926: Gage height, 7.62 feet; discharge, 12,400 second-feet.

June 12, 1926: Gage height, 21.70 feet; discharge, 106,000 second-feet.

Daily discharge, in second-feet, of Columbia River at Trail, British Columbia, for th year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48,000	24,200	17,900	16,100	12,700	12,600	15,200	92,600	96,400	120,000	95,700	80,00
2	47,000	23,900	17,600	15,900	12,600	12,600	15,400	95,700	96,100	122,000	93,400	79,60
3	46,000	23,500	17,500	15,700	12,500	12,500	15,500	98,400	96,400	124,000	91,800	78,90
4	44,800	23,000	17,500	15,600	12,400	12,400	15,700	99,900	97,000	125,000	90,600	78,20
5	43,600	22,600	17,600	15,400	12,600	12,600	15,800	102,000	98,000	126,000	87,800	77,60
6	42,400	22,200	17,700	15,200	12,700	12,700	16,100	102,000	98,400	128,000	85,800	77,30
7	41,400	21,900	17,700	15,000	12,600	12,600	16,300	104,000	98,800	130,000	84,100	76,70
8	40,300	21,700	17,800	14,800	12,500	12,700	16,600	106,000	99,300	133,000	83,100	75,60
9	39,100	21,500	17,900	14,700	12,600	12,700	17,000	108,000	102,000	136,000	82,300	74,70
10	37,800	21,300	17,800	14,500	12,600	12,800	17,400	109,000	105,000	138,000	81,300	73,00
11	37,000	21,000	17,700	14,400	12,600	12,800	17,900	109,000	108,000	138,000	80,500	71,60
12	36,100	20,800	17,600	14,300	12,700	12,800	18,600	109,000	108,000	138,000	80,100	70,60
13	35,200	20,600	17,600	14,200	12,700	12,800	19,400	108,000	108,000	138,000	80,000	70,00
14	34,600	20,400	17,600	14,100	12,700	13,000	20,800	108,000	106,000	138,000	79,800	69,20
15	33,900	20,300	17,800	14,000	12,600	13,000	23,700	106,000	105,000	137,000	79,300	68,20
16	33,100	20,200	17,800	13,900	12,600	13,000	27,100	105,000	103,000	136,000	79,800	67,00
17	32,500	20,000	17,600	13,800	12,600	13,100	31,000	104,000	102,000	134,000	79,600	63,60
18	31,600	20,000	17,500	13,800	12,700	13,100	34,800	103,000	101,000	130,000	80,300	61,20
19	30,700	19,800	17,400	13,600	12,700	13,200	38,500	103,000	99,300	127,000	80,000	57,10
20	30,100	19,800	17,200	13,500	12,600	13,400	42,400	102,000	98,000	122,000	80,700	54,70
21	29,300	19,800	17,100	13,400	12,600	13,600	46,700	102,000	97,500	118,000	80,700	53,60
22	28,600	19,600	17,200	13,300	12,600	13,800	52,000	102,000	98,200	112,000	81,400	54,40
23	27,700	19,400	17,400	13,200	12,600	13,900	57,200	102,000	101,000	108,000	81,800	56,20
24	26,800	19,200	17,200	13,100	12,600	14,000	55,100	102,000	102,000	105,000	82,300	56,50
25	26,500	19,000	17,100	13,000	12,600	14,200	67,600	102,000	106,000	102,000	81,800	55,90
26	26,200	18,900	17,000	12,900	12,600	14,400	72,600	101,000	109,000	99,600	81,800	54,00
27	25,900	18,800	17,000	12,800	12,600	14,500	77,400	99,900	112,000	98,000	81,400	53,00
28	25,500	18,700	16,800	12,800	12,600	14,600	82,100	99,100	114,000	97,000	81,000	51,70
29	25,100	18,600	16,600	12,700	-------	14,800	86,100	98,400	115,000	97,500	81,400	50,90
30	24,800	18,400	16,500	12,800	-------	15,000	89,600	97,500	115,000	98,200	81,200	49,80
31	24,500	-------	16,300	12,800	-------	15,100	-------	96,800	-------	97,300	81,000	-------

Monthly discharge of Columbia River at Trail, British Columbia, for the year ending September 30, 1926

[Drainage area, 34,000 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	48,000	24,500	34,100	1.00	1.16	2,100,000
November	24,200	18,400	20,600	.606	.68	1,230,000
December	17,900	16,300	17,400	.512	.59	1,070,000
January	16,100	12,700	14,000	.412	.47	861,000
February	12,700	12,400	12,600	.371	.39	700,000
March	15,100	12,500	13,400	.394	.45	824,000
April	89,600	15,200	37,400	1.10	1.23	2,230,000
May	109,000	92,600	102,000	3.00	3.46	6,270,000
June	118,000	96,100	103,000	3.03	3.38	6,130,000
July	138,000	97,000	121,000	3.56	4.10	7,440,000
August	95,700	79,300	83,000	2.44	2.81	5,100,000
September	80,000	49,800	65,400	1.92	2.15	3,890,000
The year	138,000	12,400	52,300	1.54	20.90	37,800,000

COLUMBIA RIVER AT KETTLE FALLS, WASH.

LOCATION.—In SW. ¼ sec. 23, T. 36 N., R. 37 E., 150 feet above ferry at Kettle Falls, Stevens County, 1½ miles above mouth of Colville River, and 4½ miles below mouth of Kettle River.

DRAINAGE AREA.—64,500 square miles. (Areas in United States measured on maps issued by United States Geological Survey. Areas in British Columbia measured on Department of the Interior railway-belt maps; Department of Mines, West Kootenai sheet; and Department of Lands map.)

RECORDS AVAILABLE.—April 1, 1916, to September 30, 1926. Monthly discharge April, 1913, to March, 1916.

GAGE.—Since June 5, 1921, several sets of vertical and inclined staff gages on left bank at Kettle Falls ferry, set first at arbitrary datum and later to mean sea-level datum; read by employees of Washington Water Power Co. An auxiliary low-water gage installed at mean sea-level datum on right or west bank January 25 and 26, 1924, was read in conjunction with gages on left bank when discharge fell below about 50,000 second-feet. All gage heights at the Kettle Falls Ferry have been reduced to mean sea-level datum.

DISCHARGE MEASUREMENTS.—Made from cable at gage.

CHANNEL AND CONTROL.—Left bank high; right bank is overflowed at extremely high stages. Two channels at extremely low stage. Channel straight for half a mile above and 1 mile below gage. Bed composed of small boulders and gravel. Control consists of river channel below gage and Rickey Rapids, which is about 3 miles downstream from gage; permanent except at extremely high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1,180.0 feet May 7 and 8 (discharge, 168,000 second-feet); minimum stage recorded, 1,164.2 feet January 31 and February 3 and 4 (discharge, 21,000 second-feet).

1913–1926: Maximum stage, 34.2 feet during night of June 14–15, 1913, as determined from well-defined high-water mark referred to United States Weather Bureau gage at Marcus (discharge, 468,000 second-feet); minimum discharge, 15,800 second-feet, result of current-meter measurements February 16, 1923, when stage-discharge relation was affected by ice.

The United States Weather Bureau reports a maximum stage of 44.7 feet on the Marcus gage during the June flood of 1894 (probably June 7); discharge, 735,000 second-feet, estimated by extending rating curve.

ICE.—Stage-discharge relation affected by ice during severe winters; flow estimated from gage-height record, discharge measurements, observer's notes, and weather records.

DIVERSIONS.—Considerable water diverted for irrigation above gage, but amount very small in proportion to flow past gage.

REGULATION.—None, except the effect of natural storage in Upper and Lower Arrow, Kootenai, Flathead, Pend Oreille, Priest, and smaller lakes.

ACCURACY.—Stage-discharge relation practically permanent, not affected by ice. Rating curve well defined below 500,000 second-feet. Gage read to hundredths twice daily; morning and afternoon readings made by different persons. Daily discharge ascertained by applying mean daily gage height to rating table. Records excellent.

The following discharge measurements were made:

January 26, 1926: Gage height, 64.33 feet; discharge, 21,600 second-feet.

May 14, 1926: Gage height, 79.49 feet; discharge, 159,000 second-feet.

Daily discharge, in second-feet, of Columbia River at Kettle Falls, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58,900	33,300	26,100	24,100	21,400	22,800	30,700	134,000	144,000	145,000	105,000	79,400
2	57,300	32,800	26,100	24,100	21,400	22,800	30,700	141,000	141,000	145,000	104,000	80,300
3	55,800	32,800	26,100	24,100	21,000	22,800	30,700	146,000	138,000	146,000	100,000	81,300
4	54,300	32,200	26,100	23,600	21,000	22,800	30,700	154,000	137,000	146,000	98,800	81,300
5	53,600	32,200	26,100	23,200	21,400	22,800	30,700	163,000	137,000	146,000	97,600	82,200
6	52,000	31,700	26,100	23,200	21,400	22,400	30,700	166,000	135,000	146,000	94,300	81,300
7	51,300	31,200	26,100	23,200	21,400	22,400	30,700	168,000	137,000	150,000	91,000	81,300
8	49,800	30,700	26,100	23,200	21,700	22,400	30,700	168,000	139,000	152,000	90,000	81,300
9	48,400	30,700	26,100	22,800	21,700	22,400	30,200	166,000	141,000	154,000	89,000	82,200
10	47,700	30,700	25,600	22,800	22,000	22,400	30,200	164,000	144,000	157,000	87,000	80,300
11	46,300	30,200	26,100	23,600	22,400	22,400	30,700	162,000	144,000	157,000	87,000	77,500
12	45,600	30,200	26,100	22,800	22,400	22,400	31,700	160,000	144,000	156,000	86,100	75,700
13	44,200	30,200	26,100	22,800	22,400	22,400	33,300	158,000	144,000	156,000	85,100	72,900
14	43,600	29,600	26,100	22,000	22,400	22,800	35,000	160,000	141,000	156,000	85,100	70,200
15	42,900	29,600	26,100	22,000	22,800	22,800	38,000	163,000	138,000	156,000	85,100	68,500
16	41,600	29,600	25,600	22,000	22,400	23,200	42,900	162,000	135,000	152,000	85,100	67,700
17	41,000	29,600	25,600	22,000	22,800	23,600	49,100	162,000	132,000	150,000	85,100	66,000
18	39,800	29,100	26,100	22,400	22,400	24,100	55,100	162,000	130,000	146,000	85,100	64,400
19	39,200	29,100	26,100	22,400	22,400	24,600	61,200	163,000	129,000	144,000	85,100	62,800
20	38,600	28,100	26,100	22,000	22,400	24,600	68,500	164,000	129,000	138,000	85,100	61,200
21	38,000	28,100	25,600	22,000	22,800	25,600	72,900	164,000	129,000	133,000	85,100	59,600
22	37,400	28,100	25,600	22,000	22,800	26,100	76,600	163,000	129,000	128,000	85,100	58,900
23	37,400	28,100	25,600	22,000	22,800	26,100	81,300	162,000	129,000	122,000	84,200	58,100
24	36,800	27,600	25,600	22,000	22,800	26,600	85,100	162,000	128,000	118,000	83,200	55,800
25	36,200	27,600	25,600	21,700	22,800	27,100	90,000	162,000	128,000	115,000	80,300	54,300
26	35,600	27,100	25,100	21,700	22,800	28,100	94,300	160,000	129,000	113,000	79,400	52,800
27	35,600	27,100	26,100	21,400	22,800	28,100	100,000	157,000	130,000	111,000	77,500	52,000
28	35,600	26,600	25,100	21,400	22,800	28,600	108,000	154,000	133,000	110,000	77,500	50,600
29	35,000	26,600	25,100	21,700	-------	29,100	115,000	152,000	138,000	110,000	77,500	49,800
30	33,900	26,600	24,600	21,400	-------	29,600	126,000	150,000	141,000	108,000	77,500	49,100
31	32,800	-------	24,600	21,000	-------	29,600	-------	146,000	-------	107,000	77,500	-------

Monthly discharge of Columbia River at Kettle Falls, Wash., for the year ending September 30, 1926

[Drainage area, 64,500 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	58,900	32,800	43,400	0.673	0.78	2,670,000
November	33,300	26,600	29,600	.459	.51	1,760,000
December	26,100	24,600	25,800	.400	.46	1,590,000
January	24,100	21,000	22,500	.349	.40	1,380,000
February	22,800	21,000	22,200	.344	.36	1,230,000
March	29,600	22,400	24,600	.381	.44	1,510,000
April	126,000	30,200	56,700	.879	.98	3,370,000
May	168,000	134,000	159,000	2.47	2.85	9,780,000
June	144,000	128,000	136,000	2.11	2.35	8,090,000
July	157,000	107,000	138,000	2.14	2.47	8,480,000
August	105,000	77,500	86,900	1.35	1.56	5,340,000
September	82,200	49,100	68,000	1.05	1.17	4,050,000
The year	168,000	21,000	68,000	1.05	14.33	49,200,000

COLUMBIA RIVER AT VERNITA, WASH.

LOCATION.—In sec. 11, T. 13 N., R. 24 E., at Richmond Ferry, half a mile north of Vernita and 6 miles below Priest Rapids, Benton County.

DRAINAGE AREA.—95,500 square miles. (Areas in United States measured on topographic and other maps issued by the United States Geological Survey. Areas in British Columbia measured on Department of the Interior railway-belt maps; Department of Mines, West Kootenai sheet; and Department of Lands map.)

RECORDS AVAILABLE.—Flood heights only at Wenatchee, 1894–1903; continuous gage-height record at Wenatchee, April 18, 1904, to December 31, 1916; at Beverly, January 1–13, 1917; at Vernita, January 14, 1917, to September 30, 1926. Gage-height record at Wenatchee published by United States Weather Bureau.

GAGE.—Since March 25, 1918, vertical staff gage in eight sections, on right bank at ferry; read by J. P. Richmond. Gage datum, 388.7 feet above sea level.

DISCHARGE MEASUREMENTS.—Made from standard gaging car on ferry cable at Vernita or, when ice conditions are severe, from railroad bridge at Beverly.

CHANNEL AND CONTROL.—Bed composed of gravel and boulders. High-water control is Coyote Rapids, 6 or 7 miles below gage; low-water control, riffle about three-fourths mile below gage; apparently permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 17.15 feet at 6.30 p. m. May 8 (discharge, 197,000 second-feet); minimum stage, 0.40 foot January 31 (discharge, 29,000 second-feet).

1913–1926: Maximum stage recorded, 45.7 feet at Wenatchee June 15 and 16, 1913 (discharge, 528,000 second-feet); minimum discharge, 23,900 second-feet (current-meter measurements) January 31, 1917, and December 14, 1919, when stage-discharge relation was affected by ice.

Maximum stage recorded at Wenatchee by United States Weather Bureau and Great Northern Railway Co., 58.0 feet June 7, 1894 (estimated discharge, by extending rating curve, 710,000 second-feet). The Chief of Engineers, United States Army,[4] gives a crest elevation of the flood of 1894 and an elevation of zero on the Weather Bureau gage, from which it appears that the gage height was 59.8 feet (estimated discharge, by extending rating curve, 740,000 second-feet).

ICE.—Stage-discharge relation affected by ice except during mild winters. Flow estimated from gage-height record, discharge measurements, observer's notes, and weather records.

DIVERSIONS.—Some water diverted for irrigation.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent; not affected by ice. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records excellent.

Discharge measurements of Columbia River at Vernita, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 14	1.82	38,000	May 29	15.51	172,000
Feb. 6	.58	29,800	Sept. 22	6.07	70,000

[4] Chief Eng. U. S. Army Rept., 1895, pt. 5, p. 3542.

Daily discharge, in second-feet, of Columbia River at Vernita, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68,500	42,800	33,800	35,000	29,000	35,600	50,200	153,000	165,000	149,000	116,000	85,200
2	68,500	42,800	33,200	35,000	30,800	35,600	51,000	162,000	160,000	151,000	114,000	85,200
3	67,600	41,500	33,800	33,800	30,200	37,000	51,000	167,000	159,000	154,000	113,000	86,200
4	66,800	40,200	33,800	33,200	30,200	35,600	51,000	173,000	156,000	155,000	110,000	87,000
5	65,100	40,800	33,800	33,800	30,200	35,600	49,600	180,000	155,000	156,000	108,000	88,000
6	65,100	40,200	33,800	32,000	30,200	35,600	50,200	186,000	154,000	155,000	106,000	88,000
7	63,400	39,600	33,800	32,600	30,200	36,300	48,800	192,000	153,000	155,000	104,000	88,000
8	61,800	38,900	33,800	31,400	32,600	35,600	48,800	195,000	151,000	156,000	102,000	88,000
9	60,200	38,900	33,800	32,000	34,400	35,600	48,800	195,000	154,000	159,000	100,000	88,800
10	59,400	38,200	33,800	32,000	37,000	35,600	48,200	194,000	153,000	162,000	98,300	88,800
11	57,000	37,600	33,800	32,000	35,600	36,300	48,200	191,000	154,000	163,000	97,400	88,000
12	56,200	37,600	35,000	30,800	35,600	36,300	48,200	191,000	156,000	165,000	96,400	87,000
13	55,400	37,600	35,600	30,800	35,600	36,300	49,600	188,000	156,000	165,000	95,400	85,200
14	53,900	37,600	35,600	30,200	36,300	35,600	51,000	183,000	156,000	165,000	93,600	82,600
15	53,200	37,600	35,000	30,200	37,000	36,300	53,200	180,000	155,000	165,000	93,600	80,800
16	52,400	38,200	34,400	30,200	37,000	37,600	57,800	183,000	154,000	165,000	92,600	79,000
17	51,000	37,600	35,000	30,800	37,000	38,200	66,000	186,000	150,000	163,000	91,600	76,200
18	50,200	37,000	35,000	30,200	35,600	39,600	71,000	183,000	147,000	162,000	91,600	74,400
19	48,800	37,000	35,000	29,600	35,600	39,600	78,000	183,000	145,000	159,000	91,600	73,600
20	48,200	37,000	35,000	30,200	35,600	40,200	86,200	183,000	142,000	155,000	91,600	72,800
21	47,400	36,300	35,000	29,600	35,000	41,500	92,600	186,000	141,000	151,000	91,600	70,200
22	46,800	35,600	34,400	29,600	35,000	43,400	97,400	189,000	141,000	146,000	91,600	69,400
23	46,000	35,600	33,800	29,600	35,600	42,800	103,000	185,000	141,000	141,000	92,600	67,600
24	45,400	35,600	35,000	29,600	36,300	44,100	107,000	182,000	140,000	136,000	92,600	66,800
25	44,800	35,000	37,000	29,600	35,600	44,100	111,000	180,000	140,000	131,000	91,600	66,000
26	44,100	35,000	36,300	30,800	37,000	44,100	114,000	177,000	140,000	128,000	89,800	64,200
27	44,100	35,000	35,000	30,200	37,600	44,800	120,000	176,000	140,000	122,000	88,000	62,600
28	43,400	34,400	34,400	29,600	36,300	46,000	127,000	174,000	140,000	120,000	87,000	61,800
29	44,100	33,800	35,000	29,600	-------	46,800	135,000	172,000	141,000	120,000	86,200	60,200
30	44,100	33,800	35,600	29,600	-------	46,800	144,000	170,000	144,000	118,000	84,400	58,600
31	43,400	-------	34,400	29,000	-------	49,600	-------	167,000	-------	117,000	84,400	-------

NOTE.—Gage not read Nov. 7 and Dec. 29; discharge interpolated.

Monthly discharge of Columbia River at Vernita, Wash., for the year ending September 30, 1926

[Drainage area, 95,500 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	68,500	42,400	53,800	0.563	0.65	3,310,000
November	42,800	33,800	37,600	.394	.44	2,240,000
December	37,000	33,200	34,600	.362	.42	2,130,000
January	35,000	29,000	31,100	.326	.38	1,910,000
February	37,600	29,000	34,400	.360	.37	1,910,000
March	49,600	35,600	39,600	.415	.48	2,430,000
April	144,000	48,200	75,300	.788	.88	4,480,000
May	195,000	153,000	181,000	1.90	2.19	11,100,000
June	165,000	140,000	149,000	1.56	1.74	8,870,000
July	165,000	117,000	149,000	1.56	1.80	9,160,000
August	116,000	84,400	96,300	1.01	1.16	5,920,000
September	88,800	58,600	77,300	.809	.90	4,600,000
The year	195,000	29,000	80,200	.840	11.41	58,100,000

KOOTENAI RIVER BASIN

KOOTENAI RIVER AT LIBBY, MONT.

LOCATION.—In sec. 3, T. 30 N., R. 31 W., at highway bridge opposite Great Northern Railway station at Libby, Lincoln County.

DRAINAGE AREA.—11,000 square miles.

RECORDS AVAILABLE.—October 13, 1910, to September 30, 1926.

GAGE.—Chain gage on left span of highway bridge; read by United States Forest Service.

DISCHARGE MEASUREMENTS.—Made from highway bridge.

CHANNEL AND CONTROL.—Channel probably permanent; broken by two piers. Bed of stream composed of small rocks; probably permanent; current fairly swift and uniformly distributed.

EXTREMES OF DISCHARGE.—Maximum stage reported during year, 7.93 feet at 1 p. m. May 1 (discharge, 26,000 second-feet); minimum stage, 1.80 feet January 27 (discharge, 2,160 second-feet).

1910–1926: Maximum stage, 19.17 feet June 21, 1916 (discharge, 130,000 second-feet); minimum stage, 1.4 feet February 7, 1914 (discharge, 1,480 second-feet).

ICE.—Stage-discharge relation seriously affected by ice during part of winter.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined between 2,500 and 40,000 second-feet and fairly well defined above 40,000 second-feet. Gage read to hundredths or half-tenths three times a week October 1 to April 18, daily except Sundays and holidays April 19 to August 7, and once a week August 8 to September 30. Daily discharge ascertained by applying gage height to rating table. Discharge for days of no gage reading interpolated or estimated prior to August 10. Records are poor because of missing gage heights.

The following discharge measurements were made:

March 15, 1926: Gage height, 2.00 feet; discharge, 2,650 second-feet.

August 10, 1926: Gage height, 3.21 feet; discharge, 5,500 second-feet.

Daily discharge, in second-feet, of Kootenai River at Libby, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,870	3,780	2,720		2,340	2,530	2,920	25,800	10,700	13,300	6,120	
2	5,770	3,780	2,720		2,340	2,480	2,920	24,400	10,600	12,800	6,280	
3	5,670	3,780	2,720	2,300	2,340	2,340	2,920	23,000	10,400	12,400	6,120	
4	5,380	3,780	2,720		2,340	2,400	2,820	20,800	10,000	12,200	5,670	11,200
5	5,080	3,630	2,720		2,340	2,470	2,720	20,300	10,400	12,100	5,820	
6	4,940	3,480	2,820	2,250	2,340	2,530	2,620	19,200	12,700	12,000	5,670	
7	4,800	3,330	2,920	2,250		2,530	2,530	17,800	15,000	11,600	5,520	
8	4,800	3,330	2,920	2,250		2,530	2,620	15,400	15,000	11,600	5,470	
9	4,800	3,330	2,920	2,250		2,530	2,720	14,400	15,400	11,600	5,420	
10	4,800	3,330	2,920	2,290		2,530	2,820	13,300	15,900	11,600	5,370	
11	4,660	3,330	2,920	2,340	2,400	2,530	2,920	12,400	14,100	10,800		8,230
12	4,530	3,330	2,920	2,480		2,530	3,020	11,600	14,600	10,000		
13	4,400	3,440	2,920	2,620		2,530	4,050	11,600	12,800	10,400		
14	4,270	3,550	2,920	2,620		2,530	5,080	12,000	11,200	10,000	4,940	
15	4,270	3,550	2,920	2,620	2,530	2,530	7,250	14,100	10,400	9,650		
16	4,270	3,440	2,920	2,620	2,480		9,420	14,600	9,650	8,570		
17	4,270	3,330	2,920	2,580	2,340		11,600	15,000	10,000	8,570		
18	4,140	3,330	2,920	2,530	2,370	2,800	14,400	15,400	10,000	8,400		7,890
19	4,020	3,330	2,920	2,530	2,400		17,300	15,900	9,650	8,230		
20	4,140	3,330	2,920	2,530	2,440		21,300	15,000	11,200	7,560		
21	4,270	3,330	2,920	2,470	2,480		21,900	15,000	12,800	7,560	4,530	
22	4,270	3,330	2,820	2,400	2,530	3,120	20,300	14,600	12,000	6,910		
23	4,270	3,330	2,720	2,340	2,580	3,220	17,300	14,200	11,600	6,590		
24	4,270	3,220	2,720	2,340	2,620	3,330	14,100	13,700	12,000	6,590		
25	4,140	3,120	2,720	2,340	2,560	3,290	13,200	13,700	12,000	6,440		6,590
26	4,020	3,050	2,720	2,250	2,500	3,250	12,400	13,300	12,000	6,280		
27	4,020	2,980	2,720	2,160	2,440	3,220	12,800	11,600	13,000	6,280		
28	4,020	2,920	2,720	2,280	2,480	3,200	13,700	11,200	14,100	5,970	4,530	
29	3,940	2,820	2,530	2,410		3,200	17,300	11,200	15,000	6,280		
30	3,860	2,720	2,340	2,530		3,070	21,300	11,000	14,100	6,280		
31	3,780		2,300	2,480		2,920		10,900		5,970		

NOTE.—Daily discharge interpolated for days of no gage readings prior to Aug. 11; after that date, discharge applied for days of gage readings only. Braced figures represent estimated mean discharge for periods indicated.

Monthly discharge of Kootenai River at Libby, Mont., for the year ending September 30, 1926

[Drainage area, 11,000 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	5,870	3,780	4,510	0.410	0.47	277,000
November	3,780	2,720	3,340	.304	.34	199,000
December	2,920	2,300	2,790	.254	.29	172,000
January	2,620	2,160	2,400	.218	.25	148,000
February	2,620	2,340	2,430	.221	.23	135,000
March	3,330	2,340	2,780	.253	.29	171,000
April	21,900	2,530	9,610	.874	.98	572,000
May	25,800	10,900	15,200	1.38	1.59	935,000
June	15,900	9,650	12,300	1.12	1.25	732,000
July	13,300	5,970	9,180	.835	.96	564,000
August 1–10	6,280	5,370	5,750	.523	.19	118,000
The period						4,020,000

CLARK FORK BASIN

CLARK FORK NEAR PLAINS, MONT.

LOCATION.—On lot 7, sec. 7, T. 19 N., R. 26 W., at Coopers Ferry, 3 miles above Plains, in Sanders County, and 7 miles below mouth of Flathead River.

DRAINAGE AREA.—19,900 square miles.

RECORDS AVAILABLE.—October 28, 1910, to September 30, 1926.

GAGE.—Stevens continuous recorder, installed November 1, 1924; inspected by Mattie Monaghan.

DISCHARGE MEASUREMENTS.—Made from cable about 500 feet above gage.

CHANNEL AND CONTROL.—The river is deep, and the current is only moderately swift, even at flood stages. The banks are high and are not overflowed. The channel probably acts as control, as there is no defined control below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 11.00 feet at 11 p. m. May 6 (discharge, 47,800 second-feet); minimum stage, 3.97 feet at 1.45 a. m. January 31 (discharge, 5,910 second-feet).

1910–1926: Maximum stage recorded, 17.9 feet June 5, 1913, and July 2, 1916 (discharge, 115,000 second-feet); minimum stage, 3.7 feet several times during October and November, 1919 (discharge, 4,890 second-feet); lower flow may have occurred during the ice period.

ICE.—Stage-discharge relation seriously affected by ice.

DIVERSIONS.—Numerous diversions are made for irrigation from the headwaters of Clark Fork and tributaries to Flathead River.

REGULATION.—Flathead Lake furnishes natural but uncontrolled regulation for part of flow.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined between 5,000 and 100,000 second-feet. Gage heights from recorder graph October 1 to November 1 and January 8 to July 30; staff gage read once a week November 1 to January 7 and August 1 to September 30. Daily discharge ascertained by applying mean daily gage height to rating table except for periods as indicated in footnote to daily-discharge table. Records for period covered by recorder good; others fair.

The following discharge measurements were made:

January 8, 1926: Gage height, 4.20 feet; discharge, 6,500 second-feet.

July 27, 1926: Gage height, 4.79 feet; discharge, 9,120 second-feet.

Daily discharge, in second-feet, of Clark Fork near Plains, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9,520	8,120			6,160	6,160	8,910	45,900	31,000	16,900	7,370	
2	9,310				6,490	6,320	8,910	45,900	31,000	16,900		
3	9,310				6,320	6,490	8,910	45,900	29,600	16,400		
4	9,310				6,490	6,490	8,910	45,900	29,000	15,900		
5	9,310			6,320	6,490	6,660	8,710	45,900	28,300	15,000		
6	8,910		7,010		6,660	6,840	8,710	46,800	27,000	15,000		6,660
7	9,110				6,660	6,840	8,710	45,900	26,400	14,500		
8	8,910	7,010		6,840	6,840	7,010	8,510	45,000	25,800	14,500	6,660	
9	8,910			7,010	7,010	7,010	8,510	42,300	25,100	14,000		
10	8,710			6,840	7,370	6,840	8,510	41,400	24,500	14,000		
11	8,510			6,840	7,560	6,840	8,510	40,500	23,900	13,600		
12	8,510			6,660	7,740	6,840	8,710	39,600	23,300	13,200		7,370
13	8,510		7,370	6,660	7,740	6,840	9,520	37,900	22,200	13,200		
14	8,320			6,490	7,560	7,190	10,600	36,300	22,200	13,200		
15	8,320	7,370		6,490	7,560	7,190	11,800	35,500	21,100	12,700	6,320	
16	8,120			6,320	7,370	7,370	14,000	35,500	21,100	12,300		
17	8,120			6,320	7,190	8,120	17,400	35,500	21,100	11,800		
18	8,120			6,320	7,010	8,320	21,600	35,500	20,000	11,800		
19	8,120			6,320	7,010	8,510	26,400	36,300	20,000	11,400		7,370
20	7,930		6,660	6,320	6,840	8,510	29,000	37,100	20,000	10,600		
21	7,930			6,320	6,840	8,510	31,000	38,800	20,500	10,600		
22	7,930	7,010		6,320	6,660	8,320	31,700	42,300	20,500	10,600		
23	7,740			6,320	6,490	8,320	31,700	40,500	20,500	9,310	6,320	
24	7,930			6,160	6,320	8,510	32,400	39,600	20,000	9,110		
25	7,740			6,160	6,320	8,910	31,700	38,800	19,500	8,910		
26	7,930			6,160	6,160	9,310	31,700	38,800	18,900	8,910		7,740
27	7,930			6,000	6,160	9,310	32,400	37,100	18,400	8,910		
28	8,320	6,660		6,000	6,000	9,310	33,900	34,700	17,900	8,910		
29	7,930			6,000		9,310	37,100	33,900	17,400	8,510		
30	7,930			6,000		9,110	39,600	32,400	16,900	8,120	6,000	
31	7,930			6,000		8,910		32,400		7,740		

NOTE.—Staff gage read once a week Nov. 1 to Dec. 31 and Aug. 1 to Sept. 30; daily discharge for this period computed for days of gage readings only. Braced figure represents mean discharge for period indicated.

Monthly discharge of Clark Fork near Plains, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off acre-feet
	Maximum	Minimum	Mean	
October	9,520	7,740	8,420	518,000
November			7,250	431,000
December			7,000	430,000
January	7,010	6,000	6,360	391,000
February	7,740	6,000	6,820	379,000
March	9,310	6,160	7,750	477,000
April	39,600	8,510	19,300	1,150,000
May	46,800	32,400	39,700	2,440,000
June	31,000	16,900	22,800	1,360,000
July	16,900	7,740	12,100	744,000
August			6,510	400,000
September			7,300	434,000
The year	46,800	6,000	12,600	9,150,000

NOTE.—Mean discharge for November, December, August, and September based upon discharge for days of gage reading.

PEND OREILLE LAKE AT HOPE, IDAHO.

LOCATION.—In lot 2, sec. 35, T. 57 N., R. 1 E. Boise meridian, at floating dock near Northern Pacific Railway station at Hope, Bonner County.

DRAINAGE AREA.—22,900 square miles. (Areas in United States measured on maps issued by United States Geological Survey; area of Flathead River Basin in British Columbia measured on Department of Lands map.)

RECORDS AVAILABLE.—September 17, 1921, to September 30, 1926.

GAGE.—Vertical staff in three sections on piles at floating dock; read by Capt. E. E. Moore. Zero of gage at elevation 2,045.67 feet, United States Coast and Geodetic Survey datum.

EXTREMES OF STAGE.—Maximum water-surface elevation recorded during year, 2,055.97 feet May 10; minimum, 2,047.37 feet February 2 and 3.

1922–1926: Maximum water-surface elevation recorded, 2,065.37 feet on May 29 and 30, 1925; minimum, 2,047.13 feet January 9, 1924.

Crest elevation during June, 1894, flood was 2,076.08 feet [5] (U. S. Coast and Geodetic Survey datum) as determined by William Ashley, who referred the height of the water to the United States Geological Survey bench mark at Hope.

ICE.—Ice conditions not serious at this station.

DIVERSIONS.—Considerable water diverted from tributaries of Clark Fork for irrigation.

REGULATION.—None.

ACCURACY.—Gage read to hundredths once on each day for which gage height is shown.

Daily gage height, in feet, of Pend Oreille Lake at Hope, Idaho, for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48.31	------	------	47.75	47.41	47.71	------	54.02	------	51.27	------	47.83
2	48.27	47.87	------	47.73	47.37	47.69	48.35	------	54.87	51.17	48.57	47.83
3	48.23	47.87	------	------	47.37	47.69	48.35	54.67	54.72	51.07	48.47	47.81
4	------	47.87	47.67	47.69	------	47.69	------	------	54.52	------	------	47.77
5	48.21	47.87	47.69	47.69	47.41	47.69	48.35	------	54.37	50.87	48.32	------
6	48.19	47.87	------	47.71	47.47	47.71	48.33	55.57	------	50.77	48.27	47.75
7	48.17	47.85	47.67	47.71	------	------	48.31	55.72	54.12	50.72	48.22	47.75
8	48.17	------	47.67	47.69	47.53	47.71	48.29	55.87	------	50.57	------	47.73
9	48.17	47.83	47.65	47.67	47.57	47.75	48.27	------	53.82	50.47	48.12	47.73
10	48.17	------	47.65	------	------	47.75	48.27	55.97	------	50.42	48.03	47.73
11	------	------	47.65	47.65	47.63	47.75	------	55.92	53.52	------	48.01	47.73
12	------	------	47.75	47.63	47.67	47.77	48.27	55.87	53.37	50.27	47.97	------
13	48.11	------	------	47.61	47.71	47.79	48.29	55.82	------	50.22	47.95	47.75
14	48.11	47.79	47.79	47.59	------	------	48.37	------	53.07	50.17	47.92	47.75
15	48.09	------	47.79	------	47.73	47.83	48.47	55.72	52.97	------	------	------
16	48.07	47.79	47.77	------	47.75	------	------	------	52.82	49.87	47.87	47.79
17	48.05	47.81	47.75	------	------	47.87	49.07	55.57	52.67	49.77	47.85	47.85
18	------	47.81	47.75	47.59	47.73	47.97	------	55.47	52.52	------	47.83	47.89
19	48.01	47.79	47.75	47.59	47.73	48.03	49.92	55.47	52.37	49.67	47.83	------
20	48.01	------	------	47.59	------	------	------	------	------	49.52	------	47.83
21	48.01	47.77	47.73	47.59	------	------	51.02	55.37	52.17	49.42	47.81	------
22	47.99	------	47.73	47.59	------	48.11	51.52	55.42	52.07	49.32	------	------
23	47.97	47.73	------	47.59	------	------	51.87	------	51.97	49.22	47.77	47.91
24	47.97	47.71	47.79	------	------	48.17	52.22	------	51.92	49.17	47.73	47.93
25	------	------	47.79	47.55	47.77	48.21	------	55.47	51.82	------	47.71	47.97
26	47.93	47.69	47.79	47.53	47.77	48.27	52.82	55.42	51.77	49.07	------	------
27	------	47.67	------	47.51	47.77	48.31	52.97	55.42	------	------	47.71	47.97
28	47.91	47.67	47.77	47.49	------	------	53.17	55.47	51.57	48.87	47.69	47.97
29	47.91	------	47.77	47.47	------	48.35	53.47	------	51.42	48.77	------	47.97
30	------	47.65	47.75	47.47	------	------	------	------	51.37	48.75	------	47.97
31	47.89	------	47.75	------	------	48.37	------	55.12	------	------	------	------

NOTE.—Add 2,000 feet to obtain mean sea-level elevations.

[5] Elevation 2,079.29 feet, previously published for this flood, referred to U. S. Geol. Survey bench mark at Hope, Idaho, described in U. S. Geol. Survey Bull. 567, p. 94, 1915

CLARK FORK AT METALINE FALLS, WASH.

LOCATION.—In SE. ¼ sec. 21, T. 39 N., R. 43 E., three-eighths mile above Metaline Falls, opposite town of Metaline Falls, Pend Oreille County, and 11 miles south of international boundary.

DRAINAGE AREA.—25,100 square miles. (Areas in United States measured on maps issued by United States Geological Survey; area of Flathead River Basin in British Columbia measured on Department of Land map; area of Priest River Basin in British Columbia measured on Nelson sheet, British Columbia map.)

RECORDS AVAILABLE.—November 4, 1908, to September 4, 1910 (gage heights only; data insufficient for determination of discharge); October 1, 1912, to September 30, 1926.

GAGE.—Vertical and inclined staff on right bank, three-eighths mile above falls; installed December 10, 1916; read by Willis Pugh and Earl Phillips.

DISCHARGE MEASUREMENTS.—Made from cable at gage. Flow of Sullivan Creek added to flow measured at cable.

CHANNEL AND CONTROL.—Banks high and not subject to overflow. Sensitive and practically permanent control formed by Metaline Falls, the drop over which is 20 feet in a distance of 1,200 feet. Elevation of water surface at medium low stage, 1,970 feet above sea level.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 19.9 feet May 11 (discharge, 50,400 second-feet); minimum stage, 2.34 feet August 28 (discharge, 8,090 second-feet).

1912–1926: Maximum stage recorded, 41.2 feet June 16, 1913 (discharge, 139,000 second-feet); minimum stage, −2.4 feet December 12, 1919 (discharge, 2,500 second-feet).

Maximum stage at Newport (900 square miles less drainage area) independently determined from three separate high-water marks left by the flood of June, 1894, 38.9 feet (discharge, 217,000 second-feet, estimated by extending rating curve).

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Numerous small diversions from upper tributaries for irrigation.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined above 7,000 second-feet. Gage read to hundredths once daily. No diurnal fluctuation. Daily discharge ascertained by applying daily gage height to rating table. Records excellent.

COOPERATION.—Station maintained in cooperation with Dominion Water Power and Reclamation Service. Gage-height record furnished by Hugh L. Cooper Co.

Discharge measurements of Clark Fork at Metaline Falls, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 29	2.64	8,570	Jan. 31	2.54	8,400	May 16	19.41	48,600
Jan. 30	2.64	8,510	Mar. 27	4.66	12,200	Sept. 15	2.60	8,030
Do	2.65	8,690	May 15	19.53	50,000	Sept. 16	2.75	8,660

Daily discharge, in second-feet, of Clark Fork at Metaline Falls, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11,700	9,580	8,950	9,420	8,510	9,920	12,400	36,300	44,500	24,800	12,600	8,510
2	11,700	9,580	8,800	9,260	8,510	9,750	12,600	38,500	43,900	24,400	12,200	8,650
2	11,500	9,580	8,800	9,260	8,370	9,920	12,600	40,200	46,500	23,900	12,200	8,800
4	11,300	9,580	8,950	9,100	8,370	9,750	12,600	42,000	46,900	23,200	11,900	8,950
5	11,200	9,580	8,950	9,100	8,510	9,750	12,600	43,900	44,500	22,500	11,500	8,800
6	11,300	9,420	8,800	9,100	8,650	9,750	12,600	45,800	42,600	20,900	11,300	8,800
7	11,500	9,420	8,950	8,950	8,800	9,750	12,600	47,200	39,900	19,800	11,000	8,510
8	11,500	9,420	8,950	8,950	8,950	9,920	12,400	48,600	39,400	18,700	10,800	8,650
9	11,300	9,580	8,950	8,950	9,100	9,920	12,400	49,000	38,000	18,600	10,400	8,510
10	11,000	9,580	8,950	8,800	9,260	9,750	12,200	49,300	37,100	18,500	10,300	8,510
11	11,200	9,750	8,950	8,800	9,420	9,750	12,200	50,400	36,600	18,400	10,100	8,510
12	11,200	9,750	8,800	8,800	9,420	9,750	12,100	50,100	36,000	18,300	9,750	8,510
13	11,200	9,580	8,800	8,800	9,580	9,750	12,100	50,100	35,200	18,300	9,420	8,650
14	10,800	9,580	8,800	8,800	9,580	9,750	12,200	49,700	34,700	18,200	9,100	8,510
15	10,400	9,580	8,950	8,800	9,750	9,920	12,600	49,300	33,900	18,100	9,100	8,510
16	10,400	9,580	9,100	8,800	9,750	10,300	13,100	49,000	33,600	18,000	8,950	8,650
17	10,400	9,580	9,420	8,800	9,750	10,300	13,700	48,600	33,100	17,900	8,800	8,800
18	10,400	9,420	9,420	8,950	9,750	10,400	15,600	47,900	31,600	17,200	8,950	9,100
19	10,300	9,420	9,420	8,950	9,750	10,600	16,400	47,900	30,800	17,200	9,100	9,100
20	10,300	9,260	9,420	8,800	9,750	11,000	17,900	44,900	30,600	16,400	8,950	9,260
21	10,100	9,260	9,420	8,800	9,920	11,000	19,800	46,500	29,900	16,400	8,650	9,260
22	9,920	9,100	9,580	8,800	10,100	11,200	22,300	46,900	29,100	16,000	8,650	9,260
23	9,920	9,100	9,580	8,800	9,920	11,300	24,600	46,200	28,700	15,400	8,510	8,950
24	9,750	9,100	9,420	8,800	9,920	11,200	27,000	46,900	28,200	15,200	8,510	9,420
25	9,750	9,100	9,580	8,800	9,920	11,500	28,400	48,200	27,900	14,800	8,370	9,100
26	9,750	9,100	9,750	8,510	9,920	11,900	30,100	47,900	27,500	14,400	8,230	9,580
27	9,750	8,950	9,580	8,650	9,920	12,100	31,600	47,200	26,700	14,100	8,230	9,750
28	9,920	8,800	9,580	8,510	10,100	12,100	32,600	46,900	26,000	13,700	8,090	9,750
29	10,100	8,950	9,420	8,510	-------	12,200	34,200	46,500	25,800	13,300	8,230	9,750
30	10,100	8,800	9,580	8,510	-------	12,200	35,700	45,800	25,300	13,300	8,230	9,580
31	9,580	-------	9,580	8,510	-------	12,400	-------	45,200	-------	13,000	8,650	------

NOTE.—Gage-height record unreliable Jan. 16 and July 9–16; discharge interpolated.

Monthly discharge of Clark Fork at Metaline Falls, Wash., for the year ending September 30, 1926

[Drainage area, 25,100 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	11,700	9,580	10,600	0.422	0.49	652,000
November	9,750	8,800	9,370	.373	.42	558,000
December	9,750	8,800	9,200	.367	.42	566,000
January	9,420	8,510	8,850	.353	.41	544,000
February	10,100	8,370	9,400	.375	.39	522,000
March	12,400	9,750	10,600	.422	.49	652,000
April	35,700	12,100	18,300	.729	.81	1,090,000
May	50,400	36,300	46,500	1.85	2.13	2,860,000
June	46,900	25,300	34,500	1.37	1.53	2,050,000
July	24,800	13,000	17,800	.709	.82	1,090,000
August	12,600	8,090	9,640	.384	.44	593,000
September	9,750	8,510	8,960	.357	.40	533,000
The year	50,400	8,090	16,200	.645	8.75	11,700,000

ROCK CREEK NEAR QUIGLEY, MONT.

LOCATION.—In SW. ¼ sec. 36, T. 10 N., R. 17 W. (unsurveyed), at highway bridge one-fourth mile above mouth of Ranch Creek and 2½ miles south of Quigley, Granite County.

DRAINAGE AREA.—772 square miles (measured on topographic map).

RECORDS AVAILABLE.—May 1, 1922, to September 30, 1926, at present site; September 22, 1910, to November 17, 1912, at a site below mouth of Ranch Creek.

GAGE.—Standard wire and weight on downstream side of highway bridge; read by Ed. Shaughnessy and Mrs. C. H. Hamm.

DISCHARGE MEASUREMENTS.—Made from highway bridge.

CHANNEL AND CONTROL.—Bed composed of heavy boulders. Two channels at high stages. Control is bed of stream for several hundred feet below gage; probably permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.63 feet April 30 and May 1 (discharge, 1,520 second-feet); minimum stage, 1.23 feet January 11 and March 1–3 (discharge, 137 second-feet).

1922–1926: Maximum stage recorded, 6.32 feet June 5, 1922 (discharge, 6,260 second-feet); minimum stage, 1.00 foot December 17, 1924 (discharge, 115 second-feet).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—None of importance.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined between 150 and 3,500 second-feet. Gage read once daily to hundredths or to half-tenths. Daily discharge ascertained by applying daily gage height to rating table. Records good.

The following discharge measurements were made:

October 4, 1925: Gage height, 1.56 feet; discharge, 200 second-feet.

May 24, 1926: Gage height, 3.44 feet; discharge, 1,330 second-feet.

July 23, 1926: Gage height, 1.58 feet; discharge, 230 second-feet.

Daily discharge, in second-feet, of Rock Creek near Quigley, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	208	204	181	159	172	137	159	1,520	1,080	354	189	170
2	204	214	189	152	172	137	156	1,400	1,040	336	185	170
3	204	214	181	148	167	137	154	1,400	1,040	320	185	181
4	198	218	181	156	172	141	154	1,290	1,040	288	185	181
5	198	214	181	156	170	145	159	1,290	1,040	288	185	181
6	198	204	181	152	172	150	154	1,190	997	304	185	181
7	204	198	189	148	172	159	159	1,090	997	320	185	192
8	204	198	189	145	167	159	181	997	997	336	181	192
9	204	198	185	145	167	167	204	997	979	354	181	192
10	204	198	185	145	159	176	229	997	954	371	181	204
11	208	198	181	137	159	176	288	914	930	336	181	204
12	214	194	181	148	163	181	258	914	914	288	181	204
13	208	194	181	152	163	192	294	758	914	273	181	204
14	204	194	176	152	159	192	320	758	874	258	181	204
15	198	189	176	159	159	196	389	686	858	258	181	192
16	198	189	172	159	163	204	468	758	834	258	181	192
17	204	189	172	159	167	229	686	758	795	243	181	181
18	204	189	172	159	163	204	758	834	780	229	229	181
19	204	185	172	163	159	181	834	914	758	229	229	192
20	204	185	172	167	156	181	834	1,190	686	216	204	192
21	204	189	167	172	156	181	834	1,290	686	204	204	192
22	204	181	167	176	152	181	795	1,190	623	204	204	204
23	204	172	159	192	152	181	758	1,090	566	204	204	204
24	204	172	159	204	148	181	686	1,090	515	204	192	204
25	214	172	159	181	148	181	686	1,140	468	204	181	204
26	218	167	159	172	148	189	795	1,140	447	204	167	204
27	204	159	152	176	141	192	914	1,090	427	198	172	204
28	198	167	152	176	141	181	1,090	1,090	408	198	170	204
29	204	167	152	176	------	170	1,190	1,090	389	194	159	204
30	208	167	159	172	------	170	1,520	1,090	371	194	159	208
31	214	------	159	176	------	159	------	1,080	------	189	170	------

Monthly discharge of Rock Creek near Quigley, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	218	198	205	12,600
November	218	159	189	11,200
December	189	152	172	10,600
January	204	137	162	9,960
February	172	141	160	8,890
March	229	137	175	10,800
April	1,520	154	537	32,000
May	1,520	686	1,070	65,800
June	1,080	371	780	46,400
July	371	189	260	16,000
August	229	159	186	11,400
September	208	170	194	11,500
The year	1,520	137	341	247,000

RANCH CREEK NEAR QUIGLEY, MONT.

LOCATION.—In NE. ¼ sec. 36, T. 10 N., R. 17 W. (unsurveyed), one-fourth mile above mouth and 2¼ miles south of Quigley, Granite County.

DRAINAGE AREA.—42.7 square miles (measured on topographic map).

RECORDS AVAILABLE.—May 2, 1922, to September 30, 1926.

GAGE.—Vertical staff with enamel face on right abutment of highway bridge; read by Mrs. C. H. Hamm.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of cobblestones. Control is riffle 20 feet below gage, subject to slight shifts. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1.00 foot April 30 (discharge, 67 second-feet); minimum stage, 0.64 foot August 14–21 and September 19–30 (discharge, 17 second-feet).

1922–1926: Maximum stage, 1.50 feet May 19 and 20, 1922 (discharge, 238 second-feet); minimum discharge, 10.7 second-feet (measurement of February 1, 1924).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—None of importance.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during period of missing record. Rating curve applicable October 1 to December 31 is well defined between 16 and 80 second-feet; another applicable March 21 to September 30 is fairly well defined between 14 and 80 second-feet. Gage read once daily to hundredths. Daily discharge ascertained by applying daily gage height to rating table. Records October to December good; others fair.

The following discharge measurements were made:

October 4, 1925: Gage height, 0.68 foot; discharge, 23.4 second-feet.

May 24, 1926: Gage height, 0.97 foot; discharge, 60 second-feet.

July 23, 1926: Gage height, 0.68 foot; discharge, 19.2 second-feet.

Daily discharge, in second-feet, of Ranch Creek near Quigley, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	24	24	------	20	63	40	29	18	18
2	25	24	24	------	18	63	40	29	18	18
3	25	24	25	------	18	63	40	29	18	18
4	25	25	24	------	18	58	38	29	18	18
5	25	25	24	------	20	54	38	29	18	18

Daily discharge, in second-feet, of Ranch Creek near Quigley, Mont., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
6	25	24	24		20	54	40	28	18	18
7	25	24	24		20	45	40	26	18	18
8	25	25	24		20	45	40	26	18	18
9	25	25	24		20	45	44	26	18	18
10	25	25	24		20	49	44	26	18	18
11	25	25	24		20	45	44	21	18	18
12	25	24	24		21	42	44	21	18	18
13	25	24	24		25	42	40	21	18	18
14	25	24	22		26	42	40	21	17	18
15	25	24	22		29	42	38	21	17	18
16	25	24	22		38	42	38	20	17	18
17	25	24	22		54	42	38	20	17	18
18	25	24	22		56	42	38	18	17	18
19	25	24	22		63	42	38	18	17	17
20	25	24	22		63	49	34	18	17	17
21	24	24	22	20	58	54	30	18	17	17
22	24	24	22	20	54	49	30	18	18	17
23	24	24	22	20	45	49	29	18	18	17
24	24	24	22	20	44	54	29	18	18	17
25	24	24	22	20	39	45	28	18	18	17
26	24	25	22	20	38	45	28	18	18	17
27	24	25	18	20	45	45	29	18	18	17
28	24	25	18	20	56	45	29	18	18	17
29	24	25	18	19	56	45	29	18	18	17
30	24	24	18	19	67	44	29	18	18	17
31	24		18	20		44		18	18	

NOTE.—Ice Nov. 27 and Dec. 29–31; discharge interpolated. No records Jan. 1 to Mar. 20.

Monthly discharge of Ranch Creek near Quigley, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	25	24	24.6	1,510
November	25	24	24.3	1,450
December	25	18	22.2	1,360
March 21–31	20	19	19.8	432
April	67	18	36.4	2,170
May	63	42	48.0	2,950
June	44	28	36.2	2,150
July	29	18	21.7	1,330
August	18	17	17.7	1,090
September	18	17	17.6	1,050

FLATHEAD LAKE AT SOMERS, MONT.

LOCATION.—In NE. ¼ sec. 26, T. 27 N., R. 21 W., at steamboat dock at Somers, Flathead County.

RECORDS AVAILABLE.—April 25, 1922, to September 30, 1926.

GAGE.—Steven water-stage recorder referred to sea-level datum.

EXTREMES OF STAGE.—Maximum stage recorded during year, 2,888.55 feet at 6.30 a. m. May 7; minimum stage, 2,882.65 feet at 10 p. m. November 3.

1922–1926: Maximum stage, 2,894.40 feet at 4.30 p. m. May 28 1925; minimum stage, 2,882.0 feet December 6–12, 1923.

ACCURACY.—Records good.

Daily gage height, in feet, of Flathead Lake at Somers, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Apr.	May	June	July	Aug.
1	-------	82.75	-------	87.45	87.05	85.20	83.30
2	-------	82.75	-------	87.65	86.90	85.15	83.25
3	-------	82.70	-------	87.95	86.85	85.10	83.20
4	-------	-------	-------	88.15	86.75	85.05	83.15
5	-------	-------	-------	88.25	86.70	85.00	83.10
6	83.20	-------	-------	88.40	86.60	84.90	83.05
7	83.15	-------	-------	88.45	86.55	84.90	83.05
8	83.15	-------	-------	88.40	86.50	84.80	82.95
9	83.15	-------	-------	88.30	86.50	84.70	82.90
10	83.10	-------	-------	88.20	86.40	84.65	82.90
11	83.05	-------	-------	88.10	86.35	84.60	82.85
12	83.05	-------	-------	87.95	86.20	84.50	82.85
13	83.05	-------	-------	87.85	86.10	84.45	82.80
14	83.00	-------	-------	87.75	86.00	84.40	82.80
15	83.00	-------	-------	87.70	85.95	84.30	82.75
16	82.95	-------	-------	87.65	85.90	84.20	82.75
17	82.95	-------	-------	87.65	85.80	84.15	82.85
18	82.90	-------	-------	87.45	85.70	84.10	82.80
19	82.85	-------	-------	-------	85.65	84.05	82.70
20	82.85	-------	-------	-------	85.65	84.00	-------
21	82.85	-------	-------	-------	85.60	83.85	-------
22	82.80	-------	85.65	-------	85.55	83.85	-------
23	82.80	-------	86.00	-------	85.50	83.80	-------
24	82.85	-------	86.20	-------	85.50	83.75	-------
25	82.80	-------	86.35	-------	85.45	83.70	-------
26	82.75	-------	86.45	87.55	85.40	83.65	-------
27	82.75	-------	86.70	87.50	85.40	83.60	-------
28	82.75	-------	86.90	87.45	85.30	83.55	-------
29	82.80	-------	87.10	87.35	85.30	83.50	-------
30	82.80	-------	87.30	87.25	85.25	83.40	-------
31	82.75	-------	-------	87.30	-------	83.40	-------

NOTE.—Add 2,800.00 feet to reduce to sea level.

FLATHEAD LAKE AT POLSON, MONT.

LOCATION.—In SE. ¼ sec. 4, T. 22 N., R. 20 W., at steamboat dock at south end of lake at Polson, Lake County.

RECORDS AVAILABLE.—August 23, 1908, to September 30, 1926.

GAGE.—Stevens water-stage recorder, installed April 23, 1922, and referred to staff gage set to sea-level datum.

EXTREMES OF STAGE.—Maximum stage recorded during year, 2,888.6 feet at 6.15 a. m. May 7; minimum stage, 2,882.1 feet at 11 a. m. March 4.

1908–1926: Maximum stage recorded, 2,895.7 feet July 1, 2, and 4, 1916; minimum stage, 2,881.5 feet February 16–22, 1913, and November 24, 1923.

ACCURACY.—Records reliable but fragmentary.

Daily gage height, in feet, of Flathead Lake at Polson, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	83.40	82.70	82.30	-------	82.70	87.40	86.95	85.10	83.25	82.40
2	83.40	82.65	82.25	-------	82.65	87.75	86.85	85.05	83.25	82.55
3	83.30	82.65	82.25	-------	82.70	87.95	86.80	85.00	83.15	82.65
4	83.20	82.60	82.30	82.20	82.70	88.05	86.65	84.90	83.10	82.65
5	83.20	82.55	82.30	82.15	82.75	88.20	86.55	84.85	83.10	82.70
6	83.15	82.60	82.35	82.15	82.70	88.35	86.50	84.75	83.05	82.85
7	83.10	82.60	82.35	82.15	82.65	88.40	86.50	84.70	83.05	82.75
8	83.05	82.60	82.35	82.20	82.65	88.45	86.40	84.70	83.00	82.85
9	83.05	82.60	82.35	82.20	82.60	88.35	86.35	84.65	83.05	82.80
10	83.05	82.55	82.30	82.20	82.60	88.30	86.30	84.55	82.95	82.85

Daily gage height, in feet, of Flathead Lake at Polson, Mont., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	83.05	82.50	82.30	82.20	82.60	88.15	86.25	84.45	82.85	82.95
12	82.95	82.50	82.30	82.20	82.60	88.00	86.20	84.40	82.80	82.85
13	82.90	82.55	82.35	82.25	82.70	87.90	86.15	84.40	82.80	82.75
14	82.90	82.50	82.40	82.25	82.80	87.70	86.00	84.30	82.70	82.75
15	82.85	82.50	82.35	82.25	82.90	87.60	85.95	84.20	82.70	82.80
16	82.90	82.50	82.40	82.20	83.05	87.55	85.80	84.15	82.70	82.80
17	82.80	82.45	.....	82.25	83.35	87.50	85.75	84.10	82.65	82.85
18	82.80	82.40	.....	82.25	83.85	87.45	85.70	84.05	82.60	82.90
19	82.75	82.50	.....	82.30	84.20	87.50	85.60	84.00	82.60	82.90
20	82.75	82.45	.....	82.30	84.65	87.40	85.55	83.95	82.60	82.90
21	82.70	82.50	.....	82.30	85.20	87.45	85.50	83.95	82.55	82.85
22	82.75	82.40	.....	82.35	85.65	87.55	85.50	83.85	82.60	82.85
23	82.75	82.40	.....	82.30	86.05	87.50	85.45	83.75	82.55	83.05
24	82.65	82.40	.....	82.50	86.20	87.50	85.40	83.70	82.55	83.00
25	82.75	82.35	.....	82.50	86.35	87.50	85.35	83.65	82.50	.....
26	82.80	82.35	.....	82.55	86.45	87.50	85.30	83.55	82.45	.....
27	82.80	82.30	.....	82.60	86.55	87.45	85.20	83.50	82.35	.....
28	82.70	82.35	.....	82.65	86.70	87.35	85.20	83.45	82.50	.....
29	82.70	82.35	.....	82.60	86.90	87.15	85.15	83.40	82.50	.....
30	82.70	82.35	.....	82.65	87.10	87.10	85.10	83.40	82.45	.....
31	82.70	.....	.....	82.70	.....	87.05	.....	83.30	82.35	.....

NOTE.—Add 2,800.00 feet to reduce to sea level.

FLATHEAD RIVER NEAR POLSON, MONT.

LOCATION.—In sec. 19, T. 22 N., R. 21 W., on highway bridge at Norrisvale, 5 miles below Newell Tunnel, 15 miles northwest of Ronan, and 12 miles below Polson, Lake County.

DRAINAGE AREA.—7,010 square miles.

RECORDS AVAILABLE.—July 23, 1907, to September 30, 1926.

GAGE.—Chain gage on upstream side of bridge; read by Mrs. Jennie Wiren.

DISCHARGE MEASUREMENTS.—Made from highway bridge at gage.

CHANNEL AND CONTROL.—There is no definite riffle; entire channel acts as control. Current fairly swift. Banks high.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 9.22 feet May 8 and 9 (discharge, 29,300 second-feet); minimum recorded discharge, 2,870 second-feet March 5–7.

1907–1926: Maximum stage recorded, 16.4 feet June 13, 1913 (discharge, 75,400 second-feet); minimum stage recorded, −0.1 foot December 9–14, 1919, and March 14, 1920 (discharge, 1,360 second-feet).,

ICE.—Stage-discharge relation not seriously affected by ice.

DIVERSIONS.—Several diversions from tributaries above Flathead Lake.

REGULATION.—Flathead Lake forms a natural regulation.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined between 2,000 and 70,000 second-feet. Gage read once daily to hundredths (occasionally twice daily). Daily discharge ascertained by applying daily gage height to rating table. Records good except for periods when discharge was interpolated.

The following discharge measurements were made:

October 6, 1925: Gage height, 3.26 feet; discharge, 4,830 second-feet.

August 10, 1926: Gage height, 3.08 feet; discharge, 4,960 second-feet.

Daily discharge, in second-feet, of Flathead River near Polson, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,260	3,770	3,090		3,830	23,400	23,400	13,300	4,920	3,250
2	5,260	3,680	3,020	2,900	3,830	25,300	22,100	13,000	4,920	3,500
3	5,030	3,680	3,020		3,830	26,400	22,000	12,900	4,690	3,680
4	4,800	3,590	3,090	2,940	3,830	27,000	21,000	12,400	4,580	3,680
5	4,800	3,500	3,090	2,870	3,830	27,400	20,500	12,200	4,580	3,770
6	4,690	3,590	3,170	2,870	3,830	27,600	20,000	12,000	4,480	4,060
7	4,580	3,590	3,170	2,870	3,830	28,900	19,500	11,800	4,480	3,860
8	4,480	3,590	3,170	2,940	3,830	29,300	19,400	11,400	4,370	4,060
9	4,480	3,590	3,170	2,940	3,830	29,300	19,300	11,200	4,480	3,960
10	4,480	3,500	3,170	2,940	3,830	28,700	18,900	10,900	4,260	4,060
11	4,480	3,420	3,090	2,940	3,830	28,100	18,600	10,700	4,060	4,260
12	4,260	3,420	3,090	2,940	3,830	27,400	18,400	10,300	3,960	4,060
13	4,160	3,500	3,170	3,020	3,830	26,900	18,100	9,900	3,960	3,860
14	4,160	3,420	3,250	3,020	3,900	26,000	17,300	9,710	3,770	3,860
15	4,060	3,420	3,170	3,020	4,130	25,300	16,900	9,470	3,770	3,960
16	4,160	3,420		2,940	4,880	24,800	16,800	9,240	3,770	3,960
17	3,960	3,340		3,020	6,160	24,700	16,400	9,180	3,680	4,060
18	3,960	3,250		3,020	8,330	24,700	16,100	8,630	3,590	4,160
19	3,860	3,420		3,090	9,520	24,800	15,700	8,190	3,590	4,160
20	3,860	3,340		3,090	10,700	24,800	15,500	7,790	3,590	4,160
21	3,770	3,420		3,090	13,100	24,800	15,300	6,710	3,500	4,060
22	3,860	3,250		3,170	14,700	25,300	15,100	6,420	3,590	4,060
23	3,860	3,250		3,090	16,400	26,200	14,600	6,240	3,500	4,480
24	3,680	3,250		3,420	17,300	25,600	14,400	6,010	3,500	4,370
25	3,860	3,170		3,420	17,900	25,300	14,200	5,880	3,420	
26	3,960	3,170		3,500	18,300	25,300	14,000	5,620	3,340	
27	3,960	3,090		3,590	18,900	25,000	13,900	5,500	3,170	4,500
28	3,770	3,170		3,680	20,200	25,000	13,800	5,380	3,420	
29	3,770	3,170		3,590	20,500	24,200	13,600	5,260	3,420	
30	3,770	3,170		3,680	21,700	23,700	13,600	5,260	3,340	
31	3,770			3,770		24,000		5,030	3,170	

NOTE.—Oct. 1 to Dec. 15, Mar. 4–31, and July 21 to Sept. 24 discharge determined from J. S. James curve of relation between Flathead Lake and Flathead River gages using the published gage heights for Flathead Lake. No record obtained Dec. 16 to Feb. 28. Observer's readings discarded after July 21. Braced figures represent mean discharge for periods indicated.

Monthly discharge of Flathead River near Polson, Mont., for the year ending September 30, 1926

[Drainage area, 7,010 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	5,260	3,770	4,220	0.602	0.69	259,000
November	3,770	3,090	3,400	.485	.54	202,000
December 1–15	3,250	3,020	3,130	.447	.25	93,100
March	3,770	2,870	3,130	.447	.52	192,000
April	21,700	3,830	9,210	1.31	1.46	548,000
May	29,300	23,400	26,000	3.71	4.28	1,600,000
June	23,400	13,600	17,300	2.47	2.76	1,030,000
July	13,300	5,030	8,950	1.28	1.48	550,000
August	4,920	3,170	3,900	.556	.64	240,000
September	4,500	3,250	4,080	.582	.65	243,000

SOUTH FORK OF FLATHEAD RIVER NEAR COLUMBIA FALLS, MONT.

LOCATION.—In NW. ¼ sec. 7, T. 30 N., R. 19 W., at highway bridge half a mile above mouth and 7 miles east of Columbia Falls, Flathead County.

DRAINAGE AREA.—1,640 square miles (measured on United States Forest Service map).

RECORDS AVAILABLE.—September 20, 1910, to September 30, 1916, and April 13, 1923, to September 30, 1926 (fragmentary during 1925 and 1926).

GAGE.—Stevens water-stage recorder, installed April 13, 1923, on downstream side of pier.

DISCHARGE MEASUREMENTS.—Made from highway bridge.

CHANNEL AND CONTROL.—Channel composed of boulders and cobblestones. No definite control. Both banks high; not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.15 feet at 8.45 a. m. April 23 (discharge, 10,400 second-feet); minimum stage, 2.23 feet at 5 p. m. August 17 (discharge, 446 second-feet).

1910–1916, 1923–1926: Maximum stage recorded, 16.6 feet June 19, 1916 (discharge estimated by extension of rating curve, 46,200 second-feet); minimum stage, 2.08 feet October 6, 1924 (discharge, 340 second-feet).

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent; affected by ice and by shifting control. Rating curve well defined between 400 and 24,000 second-feet and is applicable directly after April 1, 1926, and indirectly prior to that date. Daily discharge for October 1 to 31 and March 16 to 25 ascertained by shifting-control method and for April 1 to September 30 by applying to rating table mean daily gage height obtained from recorder graph by inspection. Records fragmentary.

Discharge measurements of South Fork of Flathead River near Columbia Falls, Mont., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 5	2.90	898	Apr. 23	7.12	10,500	July 26	2.78	891
Mar. 16	3.14	1,170	May 27	5.83	6,810			

Daily discharge, in second-feet, of South Fork of Flathead River near Columbia Falls, Mont., for the year ending September 30, 1926

Day	Oct.	Mar.	Apr.	May	July	Aug.	Day	Oct.	Mar.	Apr.	May	July	Aug.
1	985					713	16	659	1,170				467
2	974					704	17	650	1,180				460
3	952					686	18	642	1,160				481
4	920					642	19	626	1,250				532
5	900					570	20	626	1,270				562
6	860					540	21	618	1,330				570
7	812					532	22	602	1,600				532
8	785					525	23	586	1,920	9,600			495
9	767					525	24	618	2,410	8,850			
10	731					525	25	704	2,330				
11	722					525	26	722				880	
12	713					518	27	704			6,510	860	
13	704					510	28	704			6,400	821	
14	686					495	29	704				803	
15	686					481	30	713				767	
							31	677				740	

Monthly discharge of South Fork of Flathead River near Columbia Falls, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	985	586	734	45,100
March 16–25	2,410	1,160	1,560	30,900
July 26–31	890	740	814	9,690
August 1–23	713	460	547	25,000

SWAN RIVER NEAR BIG FORK, MONT.

LOCATION.—In NW. ¼ sec. 14, T. 26 N., R. 19 W., Lake County, at outlet of Swan Lake, 7 miles southeast of Big Fork, Flathead County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 28, 1922, to September 30, 1926.

GAGE.—Vertical staff with enamel face fastened to pier on left bank 100 feet below outlet of lake; read by Pat Murphy.

DISCHARGE MEASUREMENTS.—Made from highway bridge three-fourths mile below gage, from boat, or by wading.

CHANNEL AND CONTROL.—Bed of stream composed of boulders and gravel. Banks subject to overflow at high stages. Control is rock ledge about 300 feet below gage, slightly shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.80 feet at 8 p. m. April 21 (discharge, 3,860 second-feet); minimum stage, 0.70 foot August 15–17 and 29–30 (discharge, 404 second-feet).

1922–1926: Maximum stage recorded, 5.45 feet May 23, 1925 (discharge, 6,760 second-feet); minimum stage, 0.33 foot February 25 to March 24, 1923 (discharge, 268 second-feet).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined between 300 and 6,500 second-feet. Gage read once daily October 1 to April 10 and May 28 to September 30, and twice daily April 11 to May 27. Daily discharge ascertained by applying daily gage height to rating table. Records good.

Discharge measurements of Swan River near Big Fork, Mont., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 5	1.10	603	May 26	3.10	2,780
Apr. 23	3.60	3,600	July 26	1.00	564

Daily discharge, in second-feet, of Swan River near Big Fork, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	655	560	505	-------	860	3,380	2,000	1,250	470	532
2	620	532	505	-------	815	3,700	2,000	1,300	470	560
3	620	560	505	-------	770	3,540	1,890	1,250	453	590
4	620	560	505	-------	730	3,380	1,890	1,250	453	620
5	620	532	532	-------	730	3,380	1,890	1,150	453	620
6	620	532	532	-------	730	3,220	2,000	1,100	453	620
7	590	532	532	-------	730	3,070	2,120	1,050	453	655
8	590	505	532	-------	690	2,780	2,250	1,050	427	620
9	590	505	505	-------	690	2,640	2,250	955	427	620
10	590	505	505	-------	690	2,380	2,120	955	427	620
11	560	505	505	-------	690	2,250	2,120	908	427	620
12	560	505	560	-------	770	2,000	1,890	908	427	620
13	560	532	560	-------	860	1,890	1,890	860	427	620
14	560	532	590	-------	1,100	1,780	1,780	815	427	590
15	560	532	590	-------	1,350	1,780	1,670	770	404	590
16	560	505	590	-------	1,670	1,890	1,670	770	404	590
17	532	505	590	-------	2,120	2,000	1,560	690	404	590
18	532	505	590	-------	2,640	2,000	1,450	690	453	590
19	532	505	560	-------	3,070	2,120	1,350	655	453	560
20	505	505	560	-------	3,540	2,380	1,450	620	453	560
21	505	505	560	770	3,860	2,640	1,450	620	470	560
22	505	505	560	860	3,700	2,920	1,450	620	453	620
23	505	505	620	860	3,540	2,920	1,350	620	453	655
24	505	505	655	1,050	3,220	2,920	1,350	590	453	620
25	505	479	770	1,150	2,780	2,920	1,300	560	453	620
26	532	479	770	1,150	2,640	2,780	1,250	560	453	620
27	560	479	770	1,100	2,640	2,640	1,250	532	453	620
28	560	479	770	1,050	2,640	2,380	1,250	505	453	620
29	560	479	730	1,050	2,780	2,250	1,250	505	404	590
30	560	479	690	955	3,070	2,120	1,200	505	404	590
31	560	-------	690	908	-------	2,120	-------	505	453	-------

NOTE.—No record Jan. 1 to Mar. 20.

Monthly discharge of Swan River near Big Fork, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	655	505	562	34,600
November	560	479	512	30,500
December	770	505	595	36,600
March 21-31	1,150	770	991	21,600
April	3,860	690	1,870	111,000
May	3,700	1,780	2,590	159,000
June	2,250	1,200	1,680	100,000
July	1,300	505	810	49,800
August	479	404	442	27,200
September	655	532	603	35,900

BIG CREEK NEAR POLSON, MONT.

LOCATION.—In NW. ¼ sec. 4, T. 22 N., R. 19 W., just below power house of Mission Range Power Co., three-fourths mile above mouth and 7 miles east of Polson, Lake County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—June 1, 1917, to September 30, 1926.

GAGE.—Stevens water-stage recorder on left bank.

CHANNEL AND CONTROL.—An artificial control about 2 feet below gage. One channel at all stages. Shifts occasionally, owing to gravel being deposited above control.

DISCHARGE MEASUREMENTS.—Made from foot log just above gage or by wading.

EXTREMES OF DISCHARGE.—Maximum discharge during year, 34 second-feet on May 1 (flow in canal and pipe line has been included); minimum discharge, 2.7 second-feet July 5 (including flow in pipe line and canal).

1917–1926: Maximum stage recorded, 2.4 feet June 9, 1917 (discharge, from extended rating curve, 104 second-feet); no flow when power plant was shut down for short periods during November and December, 1922, seldom longer than one or two hours.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Polson "A" Canal of the United States Indian Service diverts water between power house and gage, and the intake for the Polson pipe line is between the canal and the gage. Records include all diverted flow.

REGULATION.—Operation of power plant materially affects flow; maximum effect during low-water period.

ACCURACY.—Stage-discharge relation permanent during period. Rating curve well defined below 35 second-feet. No gage-height record prior to April 19. Daily discharge ascertained April 19 to May 31 by applying to rating curve mean daily gage heights obtained from recorder graph and adding the diversion into the pipe line and canal; for remainder of year, by computing from kilowatt output of power plant. Records fair.

COOPERATION.—Gage-height record furnished by Mission Range Power Co.

Discharge measurements of Big Creek near Polson, Mont., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 5	1.34	3.5	May 26	1.45	7.1	Aug. 20	1.22	[a] 0.5
Apr. 21	1.78	27.4	July 24	1.21	[a] .4			

[a] Estimated.

Daily discharge, in second-feet, of Big Creek near Polson, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.1	3.2	5.5	3.3	4.1	3.8	4.7	28.6	4.4	3.9	3.7	5.8
2	5.1	4.6	5.2	4.4	4.1	3.2	4.5	19.6	5.2	4.4	4.9	5.6
3	5.0	3.9	5.4	3.4	4.3	4.1	4.7	20.8	4.9	4.5	5.1	5.4
4	3.2	4.9	5.5	3.2	4.3	3.1	3.1	20.2	5.0	3.3	5.1	5.2
5	4.6	4.9	5.7	4.6	4.6	4.2	4.0	19.0	4.8	2.7	5.2	3.8
6	3.7	4.8	3.9	3.6	4.8	3.5	4.5	17.2	3.3	4.4	5.2	3.2
7	5.0	3.9	4.8	4.5	3.1	2.9	4.4	16.6	4.6	5.0	5.3	4.1
8	3.9	3.2	5.8	3.5	4.5	4.3	4.3	10.0	5.0	4.9	3.8	5.4
9	4.7	4.6	5.8	3.5	4.8	3.8	4.1	3.0	5.0	4.7	5.2	5.6
10	4.8	5.2	5.5	3.3	4.7	4.6	4.2	5.2	4.9	4.8	5.7	5.8
11	3.2	5.1	5.7	3.5	4.8	3.8	3.0	6.4	3.7	3.6	5.7	5.3
12	4.7	5.0	5.6	3.7	4.6	4.7	3.9	5.4	3.4	5.0	5.5	3.7
13	4.9	5.2	3.9	4.0	4.5	3.7	4.3	5.2	3.2	5.3	5.5	4.6
14	3.8	5.1	4.6	3.8	3.1	3.2	4.6	5.4	3.3	5.3	5.6	5.9
15	3.6	3.3	5.6	3.7	4.4	4.3	4.4	7.8	3.5	5.1	4.1	6.0
16	4.8	4.7	5.6	3.8	4.6	3.7	4.6	9.0	3.3	5.2	5.4	5.8
17	3.8	5.3	5.6	3.1	4.3	4.7	4.6	6.8	3.2	5.1	5.7	5.9
18	3.1	5.3	5.5	4.4	4.2	3.7	3.1	3.4	3.3	3.7	5.9	6.1
19	3.4	5.0	5.4	4.8	4.6	4.6	26.2	10.0	4.9	4.5	5.7	4.1
20	4.8	4.9	3.6	4.8	3.5	3.6	27.0	12.8	3.2	3.8	5.4	5.0
21	3.7	5.0	4.8	4.6	3.0	2.9	22.2	13.4	4.4	3.7	5.5	5.4
22	4.9	3.4	5.2	4.4	3.1	4.1	17.2	11.6	4.9	4.8	3.8	5.6
23	3.3	4.6	5.4	4.5	4.1	4.8	15.6	6.4	4.9	4.7	5.3	4.9
24	4.9	5.2	5.2	3.1	3.0	3.6	9.6	8.2	4.7	4.9	5.4	4.9
25	3.4	5.3	3.6	4.5	4.0	4.4	7.4	4.0	4.5	3.6	5.8	4.1
26	4.8	3.4	4.5	4.7	3.1	4.7	11.2	9.6	3.6	4.6	6.0	3.1
27	3.8	4.6	3.4	4.8	3.9	4.4	13.4	6.0	3.2	5.1	5.9	4.9
28	4.8	5.5	4.9	4.8	3.0	2.9	16.6	4.0	3.6	5.0	5.6	5.1
29	3.7	3.8	5.3	4.8	------	4.2	20.2	3.8	4.0	4.8	3.9	5.1
30	4.8	4.7	4.0	4.6	------	4.5	24.0	3.4	3.5	4.9	5.1	5.5
31	3.9	------	5.5	3.0	------	4.5	------	3.4	------	4.9	5.6	------

Monthly discharge of Big Creek near Polson, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	5.1	3.1	4.23	260
November	5.5	3.2	4.59	273
December	5.8	3.4	5.03	309
January	4.8	3.0	4.02	247
February	4.8	3.0	4.04	224
March	4.8	2.9	3.95	243
April	27.0	3.0	9.52	566
May	28.6	3.0	9.94	611
June	5.2	3.2	4.11	245
July	5.3	2.7	4.52	278
August	6.0	3.7	5.21	320
September	6.1	3.1	5.03	299
The year	28.6	2.7	5.36	3,880

PRIEST RIVER AT OUTLET OF PRIEST LAKE, NEAR COOLIN, IDAHO

LOCATION.—In SW. ¼ sec. 5, T. 59 N., R. 4 W., at southwest end of Priest Lake, 2 miles northwest of Coolin, Bonner County.

DRAINAGE AREA.—572 square miles.

RECORDS AVAILABLE.—June 18, 1911, to September 30, 1918 (fragmentary); May 1, 1919, to September 30, 1926.

GAGE.—Stevens water-stage recorder on right bank 600 feet below outlet; installed November 24, 1914; inspected by F. S. Williamson.

DISCHARGE MEASUREMENTS.—Made from cable about 300 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed rough. Banks high. Control formed by boulder riffle. Many large boulders and angular rocks at control catch logs and cause backwater.

EXTREMES OF DISCHARGE.—Maximum discharge during year estimated 3,080 second-feet May 4 (gage height, 3.75 feet); minimum stage recorded, 0.03 foot at frequently recurring intervals November 18–20 (discharge, 133 second-feet).

1911–1926: Maximum stage recorded, 6.83 feet at 1.30 p. m. May 30, 1917 (discharge, 7,290 second-feet); minimum stage recorded, that of November 18–20, 1926.

ICE.—Forms on lake and occasionally in river just below outlet. Stage-discharge relation not affected by ice except possibly for short periods when ice running out of lake jams on rocks at control.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent; affected by logs March 24 to September 30 and amount of backwater due to logs uncertain over long periods. Rating curve well defined. Operation of water-stage recorder satisfactory except as noted in footnote to table of daily discharge. Daily discharge ascertained by applying to rating table mean daily gage height determined from recorder graph by inspection and corrected for estimated amounts of backwater. Records excellent October to March; fair thereafter.

Discharge measurements of Priest River at outlet of Priest Lake, near Coolin, Idaho, during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 27	0.46	265	May 17	3.37	2,070
Apr. 3	.71	335	Sept. 14	.57	266

Daily discharge, in second-feet, of Priest River at outlet of Priest Lake, near Coolin, Idaho, for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	190	155	192	265	262	299	310	2,880	1,230	522	262	299
2	187	155	204	268	262	291	314	2,940	1,230	522	265	299
3	184	155	211	268	258	287	326	3,010	1,140	513	251	291
4	175	155	214	265	265	287	334	3,080	1,120	504	240	283
5	172	155	217	272	280	283	334	3,010	1,100	490	237	287
6	175	158	220	276	280	283	330	2,940	1,050	485	234	291
7	165	160	224	272	283	283	334	2,820	1,020	476	230	295
8	162	162	224	268	283	283	334	2,760	954	463	227	291
9	160	162	227	265	283	280	338	2,640	930	458	227	291
10	158	165	230	258	287	280	342	2,520	890	445	217	283
11	160	160	254	258	291	280	354	2,460	846	432	214	283
12	158	155	258	254	291	280	374	2,400	824	419	207	276
13	155	155	262	248	287	283	398	2,340	796	411	207	268
14	152	155	265	248	287	283	445	2,280	769	403	207	265
15	150	155	265	244	287	287	546	2,220	755	382	207	268
16	150	150	268	262	295	291	672	2,220	742	382	207	299
17	150	148	268	280	291	299	832	2,170	722	370	211	322
18	148	145	268	287	295	310	994	2,120	703	358	237	334
19	148	143	268	283	295	322	1,140	2,060	690	346	251	338
20	148	143	268	291	306	330	1,280	2,000	684	346	254	338
21	149	145	268	291	310	338	1,420	1,900	666	342	262	346
22	150	152	272	287	318	342	1,520	1,780	654	338	258	374
23	150	158	287	287	314	354	1,620	1,680	637	330	258	394
24	151	160	291	280	318	317	1,780	1,620	625	326	258	398
25	152	160	287	268	318	258	1,900	1,520	614	326	262	403
26	152	162	287	265	314	265	2,000	1,470	593	314	262	403
27	150	168	283	258	310	272	2,120	1,470	571	299	272	411
28	152	170	280	262	306	280	2,280	1,420	556	299	272	415
29	155	178	280	262	-------	287	2,460	1,370	551	287	258	424
30	155	184	276	262	-------	299	2,640	1,320	537	280	268	428
31	152	-------	272	258	-------	302	-------	1,280	-------	265	283	------

NOTE.—Water-stage recorder not operating Oct. 21–24; discharge interpolated.

Monthly discharge of Priest River at outlet of Priest Lake, near Coolin, Idaho, for the year ending September 30, 1926

[Drainage area, 572 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	190	148	159	0.278	0.32	9,780
November	184	143	158	.276	.31	9,400
December	291	192	255	.446	.51	15,700
January	291	244	268	.469	.54	16,500
February	318	258	292	.510	.53	16,200
March	354	258	295	.516	.59	18,100
April	2,640	310	1,000	1.75	1.95	59,500
May	3,080	1,280	2,180	3.81	4.39	134,000
June	1,230	537	807	1.41	1.57	48,000
July	522	265	391	.684	.79	24,000
August	283	207	242	.423	.49	14,900
September	428	265	330	.577	.64	19,600
The year	3,080	143	533	.932	12.63	386,000

COLVILLE RIVER BASIN

COLVILLE RIVER AT MEYERS FALLS, WASH.

LOCATION.—In sec. 29, T. 36 N., R. 38 E., at Stevens County Light & Power Co.'s plant at foot of Meyers Falls, at town of Meyers Falls, Stevens County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—October 26, 1922, to September 30, 1926.

GAGE.—Vertical staff in two sections at confluence of power-plant tailrace and river; read by W. L. Miller.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Right bank high, not subject to overflow. Left bank may be overflowed at extremely high water. Channel straight for several hundred feet below gage. Control is of sand, gravel, and boulders, which form pool at foot of falls; will shift at high stage. Stage of zero flow September 19, 1925, gage height, 0.23 foot ±0.05 foot.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.39 feet at 7.05 a. m. April 19 (discharge, 285 second-feet); minimum stage, 0.76 foot at 2.20 p. m. July 27 (discharge, 12 second-feet).

1923–1926: Maximum stage recorded, 4.65 feet at 2.15 p. m. April 19, 1925 (discharge, 1,290 second-feet); minimum stage, that of July 27, 1926.

ICE.—Stage-discharge relation seriously affected by ice during severe winters; flow estimated from observer's notes and weather records.

DIVERSIONS.—Several small ditches divert water for irrigation above station.

REGULATION.—Small reservoir above the falls; effect probably slight.

ACCURACY.—Stage-discharge relation practically permanent; not affected by ice. Logs on control December 14 to January 24. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

Discharge measurements of Colville River at Meyers Falls, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 25	1.73	134	Mar. 23	2.24	233
Mar. 22	2.26	238	May 13	1.56	96.4

Daily discharge, in second-feet, of Colville River at Meyers Falls, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	77	92	111	125	121	231	231	164	88	30	15	65
2	77	97	134	118	125	207	244	154	68	28	13	80
3	71	92	125	112	125	207	244	154	71	25	17	77
4	84	84	144	109	134	207	244	154	65	30	19	62
5	84	88	144	111	154	207	244	154	59	28	2[illegible]	51
6	76	92	144	92	196	196	231	164	56	27	1[illegible]	51
7	77	84	144	109	219	196	231	164	54	27	2[illegible]	44
8	71	87	125	120	244	196	219	164	43	27	2[illegible]	51
9	74	93	125	116	257	196	219	174	30	35	2[illegible]	51
10	93	92	125	114	257	196	219	164	30	30	16	51
11	77	95	121	116	271	196	219	143	30	28	2[illegible]	54
12	77	104	134	114	271	196	219	121	30	28	2[illegible]	51
13	65	111	144	120	257	196	244	100	31	28	19	54
14	74	125	164	120	257	207	257	93	30	27	2[illegible]	55
15	72	111	154	112	257	207	257	92	28	24	2[illegible]	50

Daily discharge, in second-feet, of Colville River at Meyers Falls, Wash., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	74	121	134	120	257	207	271	95	29	26	21	54
17	72	107	134	125	231	219	271	134	28	24	21	76
18	72	123	134	134	219	231	285	118	68	23	28	102
19	80	125	134	144	219	231	285	107	46	24	56	87
20	87	120	123	154	219	244	271	111	50	24	42	90
21	80	111	125	144	219	244	271	104	51	30	44	87
22	74	112	134	109	244	244	257	97	50	26	42	80
23	84	109	134	125	257	244	244	87	49	21	40	82
24	80	100	144	134	257	244	231	90	71	22	36	85
25	82	104	164	134	244	244	244	87	65	21	30	84
26	80	107	174	125	231	244	196	90	59	29	37	77
27	82	104	154	125	231	244	244	87	59	13	39	84
28	98	100	154	118	231	231	207	93	42	18	31	77
29	79	107	144	123	------	231	185	90	39	21	34	74
30	77	121	134	134	------	219	185	82	33	22	36	76
31	80	------	134	125	------	231	------	68	------	18	68	------

NOTE.—Gage not read May 11 and 12; discharge interpolated.

Monthly discharge of Colville River at Meyers Falls, Wash., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	98	65	78.4	4,820
November	125	84	104	6,190
December	174	111	138	8,480
January	154	92	122	7,500
February	271	121	222	12,300
March	244	196	219	13,500
April	285	185	239	14,200
May	174	68	119	7,320
June	88	28	48.4	2,880
July	35	13	25.3	1,560
August	68	15	29.0	1,780
September	102	44	68.7	4,090
The year	285	13	117	84,600

HALL CREEK BASIN

HALL CREEK AT INCHELIUM, WASH.

LOCATION.—In NE. ¼ sec. 6, T. 32 N., R. 37 E., half a mile above highway bridge, three-fourths mile above mouth, and three-fourths mile northwest of Inchelium, Ferry County.

DRAINAGE AREA.—163 square miles (measured on topographic map and maps of Colville Indian Reservation and Colville National Forest).

RECORDS AVAILABLE.—December 18, 1912, to September 30, 1926.

GAGE.—Stevens water-stage recorder on right bank half a mile above highway bridge since August 27, 1916; inspected by C. E. Williamson.

DISCHARGE MEASUREMENTS.—Made from cable 15 feet downstream from gage or by wading.

CHANNEL AND CONTROL.—Bed of stream composed of gravel and boulders; shifts at extremely high stages. Channel straight above and below gage. Banks high. Gage height of zero flow September 20, 1925, 0.46 foot ±0.1 foot.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.59 feet for few hours on April 17, 18, and 19 (discharge, 155 second-feet); minimum stage, 1.22 feet from 12 p. m. to 3 a. m. August 1 (discharge, 6 second-feet).

1912–1926: Maximum stage recorded, 3.10 feet at 6.20 a. m. April 16, 1914 (discharge, 965 second-feet); minimum discharge probably occurred on January 1, 1919, when stage-discharge relation was affected by ice; discharge estimated at 4 second-feet.

ICE.—Stage-discharge relation seriously affected by ice; observations discontinued during winter.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent; affected by tree top on control April 11 to May 11. Rating curve fairly well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection from gage-height graph. Records good.

The following discharge measurements were made:

March 22, 1926: Gage height, 1.94 feet; discharge, 47.8 second-feet.

March 23, 1926: Gage height, 2.00 feet; discharge, 54.9 second-feet.

May 12, 1926: Gage height, 2.10 feet; discharge, 64.8 second-feet.

Daily discharge, in second-feet, of Hall Creek at Inchelium, Wash., for the year ending September 30, 1926

Day	Mar.	Apr.	May	June	July	Aug.	Sept.
1		84	94	29	13	6.2	16
2		72	90	29	13	6.4	12
3		66	87	27	13	6.6	10
4		61	94	26	13	6.6	9.7
5		59	94	26	12	6.6	9.1
6		56	87	25	11	6.6	8.8
7		54	87	24	10	6.9	11
8		54	87	23	11	6.9	14
9		55	85	22	11	6.9	13
10		62	78	22	10	6.6	11
11		76	72	21	9.4	6.9	11
12		90	67	21	9.4	6.9	10
13		99	63	21	9.1	6.6	9.7
14		110	60	21	8.8	6.6	9.4
15		125	57	21	8.4	6.6	9.7
16		142	54	21	8.1	6.9	11
17		150	52	21	8.1	7.3	13
18		150	51	20	8.1	8.8	13
19		152	47	20	8.1	9.4	13
20		150	44	22	8.1	9.1	13
21		142	42	23	8.1	8.1	12
22	48	133	40	22	7.8	7.3	13
23	53	122	40	20	7.8	7.1	15
24	59	114	38	18	7.3	6.4	15
25	55	108	37	17	7.1	6.2	14
26	53	103	35	16	6.9	6.9	14
27	52	101	35	15	6.9	7.1	13
28	50	99	34	15	6.6	7.1	13
29	50	99	33	14	6.6	7.1	13
30	57	97	31	14	6.6	9.1	13
31	79		29		6.4	16	

Monthly discharge of Hall Creek at Inchelium, Wash., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean.	
March 22–31	79	48	55.6	1,100
April	152	54	99.5	5,920
May	94	29	59.5	3,660
June	29	14	21.2	1,260
July	13	6.4	9.05	556
August	16	6.2	7.41	456
September	16	8.8	12.1	720
The period				13,700

STRANGER CREEK BASIN

STRANGER CREEK AT METEOR, WASH.

LOCATION.—In sec. 21, T. 32 N., R. 36 E., at highway bridge at Meteor, 8 miles southwest of Inchelium, Ferry County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—August 29, 1916, to September 30, 1926.

GAGE.—Vertical staff on right bank 15 feet downstream from bridge; read by Andrew Kilgore.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel. One channel at all stages. Left bank subject to overflow at extremely high stages. Concrete control 6 feet downstream from gage. Stage of zero flow, according to measurements made April 6 to September 25, 1923, gage-height zero.

EXTREMES OF DISCHARGE.—Maximum discharge recorded during year, 11.8 second-feet May 7 and 8; no flow July 31 to August 17, August 21–29, and September 5 and 6.

1916–1926: Maximum stage recorded, 1.8 feet April 19–20, 1925 (discharge 180 second-feet). Probably no flow December 12, 1919, creek frozen almost solid; no flow August 13–18 and August 24 to September 30, 1924, July 31 to August 17, August 21–29, and September 5–6, 1926.

ICE.—Stage-discharge relation affected by ice. Observations discontinued during winter.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed gradually March 23 to May 12. Rating curves fairly well defined. Gage read twice daily to hundredths. Daily discharge ascertained by applying daily mean gage height to rating table; shifting-control method used March 23 to May 12. Records fair.

The following discharge measurements were made:

March 23, 1926: Gage height, 0.42 foot; discharge, 5.9 second-feet.

May 12, 1926: Gage height, 0.53 foot; discharge, 10.6 second-feet.

Daily discharge, in second-feet, of Stranger Creek at Meteor, Wash., for the year ending September 30, 1926

Day	Mar.	Apr.	May	June	July	Aug.	Sept.
1		7.2	11.6	5.0	0.8	0	0.2
2		6.6	11.2	5.0	.8	0	.1
3		6.3	10.8	5.0	.6	0	.1
4		7.9	10.8	4.5	.6	0	.1
5		7.2	11.7	4.5	3.8	0	0
6		7.2	11.7	4.0	2.0	0	0
7		7.3	11.8	4.0	1.4	0	.4
8		6.9	11.8	4.0	1.3	0	.3
9		7.3	11.3	3.1	2.2	0	.2
10		7.3	11.0	3.1	2.9	0	.1
11		7.3	11.0	2.7	1.7	0	.1
12		8.0	10.5	2.6	1.2	0	.1
13		8.0	10.1	2.4	1.2	0	.1
14		8.0	10.1	2.4	1.4	0	.1
15		8.0	9.2	2.4	1.3	0	.1
16		8.0	9.2	2.4	1.1	0	.2
17		8.8	8.8	2.0	1.1	0	.3
18		9.2	8.4	2.0	.4	.3	.8
19		8.8	8.4	2.0	.1	.2	.4
20		9.3	8.0	2.0	1.6	.1	.3
21		9.7	7.6	2.0	.9	0	.2
22	5.9	10.1	8.4	2.0	.6	0	.3
23	5.9	10.6	6.9	1.7	.5	0	.4
24	5.9	10.6	6.9	1.7	.2	0	.4
25	5.9	10.6	6.6	1.7	1.1	0	.4
26	5.9	11.1	6.2	1.7	.3	0	.4
27	5.0	10.7	5.9	1.4	.3	0	.4
28	5.3	11.1	5.6	1.2	.3	0	.4
29	5.9	11.6	5.6	1.0	.2	0	.4
30	5.9	11.6	5.0	1.0	.2	.5	.4
31	6.6		5.0		0	1.0	

Monthly discharge of Stranger Creek at Meteor, Wash., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
March 22-31	6.6	5.0	5.82	115
April	11.6	6.3	8.74	520
May	11.8	5.0	8.94	550
June	5.0	1.0	2.68	159
July	3.8	0	1.03	63.3
August	1.0	0	.07	4.3
September	.8	0	.26	15.5
The period				1,430

SPOKANE RIVER BASIN

COEUR D'ALENE RIVER NEAR CATALDO, IDAHO

LOCATION.—In sec. 26, T. 49 N., R. 1 E. Boise meridian, in Shoshone County, 1½ miles above Cataldo and 3 miles below junction of North and South Forks.

DRAINAGE AREA.—1,220 square miles (measured by engineers of Wasl ington Water Power Co. on map of Spokane River drainage basin compiled from best information available).

RECORDS AVAILABLE.—April 25, 1911, to December 31, 1912; July 29, 1920, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on left bank 1½ miles above Cataldo; installed October 11, 1925; inspected by employees of Washington Water Power Co. Prior to October 11, 1925, an inclined staff gage on right bank opposite present site was used. Approximate elevation of gage datum, 2,100 feet above sea level.

DISCHARGE MEASUREMENTS.—Made from cable about 50 feet above gage or by wading 800 feet above.

CHANNEL AND CONTROL.—Channel straight for 500 feet above and 1,500 feet below gage. Left bank high and wooded; not subject to overflow. Right bank is overflowed at gage height about 50 feet. Low-water control is boulder and gravel riffle about 1,500 feet below gage; high-water control indeterminate, probably long stretch of river channel.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 45.3 feet at 2.30 p. m. April 19 (discharge, 11,000 second-feet); minimum stage, 37.30 feet August 10 and 11 (discharge, 252 second-feet).

1911–1912, 1920–1926: Maximum stage recorded, 51.3 feet from high-water mark on February 5, 1925 (discharge, 27,600 second-feet); minimum stage, 37.0 feet August 27, 1923 (discharge, 215 second-feet). Discharge probably lower in December, 1922, while gage was not being read.

ICE.—Stage-discharge relation seriously affected by ice during severe winters; flow estimated from discharge measurements, observer's notes, and weather records.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed gradually April 24 to September 30; not affected by ice. Rating curve well defined. Operation of water-stage recorder satisfactory, except as noted in footnote to table of daily discharge. Daily discharge ascertained by applying to rating table mean daily gage height determined from recorder graph by inspection; shifting-control method used April 24 to September 30. Records good.

COOPERATION.—Gage-height record and some discharge measurements furnished by Washington Water Power Co.

Discharge measurements of Coeur d'Alene River near Cataldo, Idaho, during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 1	37.62	347	Jan. 22	38.23	654	May 20	39.82	1,870
Oct. 21	37.48	292	Feb. 26	39.45	1,460	June 25	38.12	592
Nov. 19	37.74	403	Mar. 31	40.54	2,510	July 27	37.51	332
Do	37.74	398	Apr. 23	42.32	4,880	Sept. 16	37.60	392
Dec. 8	38.02	553						

Daily discharge, in second-feet, of Coeur d'Alene River near Cataldo, Idaho, for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	340	362	410	700	590	1,990	2,380	4,780	1,050	535	280	930
2	340	362	700	562	562	2,180	2,180	3,960	990	618	300	755
3	340	340	755	562	535	2,280	2,080	3,380	990	618	300	562
4	340	320	645	672	663	2,600	1,990	3,520	990	562	280	460
5	340	320	562	700	1,450	2,720	1,900	3,660	930	510	280	410
6	320	300	590	810	1,990	2,600	1,810	3,240	870	485	280	385
7	320	300	590	755	2,490	2,380	1,720	2,970	870	485	280	460
8	340	280	562	700	3,960	2,280	1,720	2,720	810	485	280	510
9	320	300	535	645	3,660	2,280	1,720	2,490	810	485	280	485
10	320	320	535	618	3,240	2,080	1,990	2,180	755	460	260	435
11	320	362	760	618	3,240	2,080	2,860	2,080	755	410	260	410
12	340	485	1,480	590	3,100	2,180	4,880	1,990	755	385	260	410
13	320	510	1,480	535	2,720	2,280	6,830	1,990	755	385	280	385
14	320	460	1,190	535	2,280	2,970	7,030	2,080	755	385	280	362
15	340	410	1,050	535	2,080	3,660	7,830	1,990	870	362	280	340
16	340	410	870	535	1,900	4,280	9,510	1,900	810	362	280	385
17	362	410	870	672	1,720	5,120	10,400	1,810	755	362	280	410
18	320	435	755	810	1,560	5,120	10,200	1,810	755	362	340	485
19	320	410	755	755	1,480	4,610	10,800	1,810	755	340	460	535
20	300	385	672	755	1,560	4,120	9,940	1,900	870	362	460	510
21	300	385	645	700	1,560	3,810	7,830	1,810	810	340	410	485
22	300	362	645	645	1,560	3,520	6,230	1,640	755	340	340	755
23	300	340	918	618	1,560	4,120	5,120	1,560	700	340	320	1,05[illegible]
24	320	340	1,640	645	1,560	5,480	4,440	1,560	645	340	300	990
25	340	340	1,720	618	1,560	5,300	3,960	1,400	590	333	280	870
26	362	340	1,560	590	1,480	4,440	4,120	1,330	562	327	300	755
27	385	320	1,330	535	1,560	3,810	4,610	1,260	535	320	300	700
28	385	320	1,190	460	1,720	3,380	4,950	1,260	510	315	300	645
29	362	320	1,050	510	-------	2,970	5,300	1,190	510	310	280	590
30	340	340	870	590	-------	2,720	5,300	1,120	510	305	320	562
31	362	-------	755	590	-------	2,490	--------	1,120	-------	300	598	------

NOTE.—Gage not read Oct. 4 and water-stage recorder did not operate satisfactorily July 22-31; discharge interpolated or determined from occasional staff-gage reading.

Monthly discharge of Coeur d'Alene River near Cataldo, Idaho, for the year ending September 30, 1926

[Drainage area, 1,220 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	385	300	334	0.274	0.32	20,500
November	510	280	363	.298	.33	21,600
December	1,720	410	906	.743	.86	55,700
January	810	460	631	.517	.60	38,800
February	3,960	535	1,900	1.56	1.62	106,000
March	5,480	1,990	3,290	2.70	3.11	202,000
April	10,800	1,720	5,050	4.14	4.62	300,000
May	4,780	1,120	2,180	1.79	2.06	134,000
June	1,050	510	768	.630	.70	45,700
July	618	300	404	.331	.38	24,800
August	598	260	314	.257	.30	19,300
September	1,050	340	568	.466	.52	33,800
The year	10,800	260	1,390	1.14	15.42	1,000,000

COEUR D'ALENE LAKE AT COEUR D'ALENE, IDAHO

LOCATION.—In SW. ¼ sec. 13, T. 50 N., R. 4 W., at Johnson Wharf, 800 feet southeast of railroad station at Coeur d'Alene, Kootenai County.

DRAINAGE AREA.—3,750 square miles (measured by Washington Water Power Co. on map of Spokane River Basin compiled from best data available).

RECORDS AVAILABLE.—February 15, 1905, to September 30, 1926; April 26, 1903, to February 14, 1905, at St. Joe Boom Co.'s gage at mouth of St. Joe River.

GAGE.—Stevens continuous water-stage recorder at wharf; inspected by employees of Washington Water Power Co. The original gage installed by the Geological Survey February 11, 1905, was referred to the Geological Survey bench mark in the southeast corner of the Merriam Building, at the corner of Sherman and Fourth Streets, Coeur d'Alene, Idaho. This bench mark is firmly set in a substantial building which has not been moved. Accordingly the elevation of the bench mark should be the same now as when it was set. Levels referred to the bench mark, however, have sometimes been misinterpreted because various adjustments in level nets have resulted in changing its accepted elevation. These accepted elevations are as follows:

	Feet
Original, as published in U. S. Geological Survey Twenty-first Annual Report, pt. 1, p. 518	2, 157. 404
Second, as published in U. S. Geological Survey Bulletins 487, p. 24, and 567, p. 79	2, 157. 909
Third, as determined by adjustment to fit the U. S. Coast and Geodetic Survey precise-level net	2, 154. 509

Coeur d'Alene Lake stages published in Water-Supply Paper 272 and subsequent water-supply papers (including this one) refer to the original accepted elevations of the bench mark—that is, 2,157.404 feet; to obtain mean sea-level elevation corresponding to the third accepted elevation of the bench mark, add 2,097.105 feet to published stages.

EXTREMES OF STAGE.—Maximum stage recorded during year, from water-stage recorder, 28.49 feet April 23; minimum stage, 22.17 feet at 1 p. m. November 27.

1903–1926; Maximum stage recorded, 36.00 feet at 6.15 p. m. January 3, 1918; minimum stage, 19.9 feet October 10–12, 1904, September 24–25, 1905, and October 14 to November 3, 1906.

The maximum stage known to early settlers, 37.6 feet as determined from high-water marks, occurred May 31, 1894.

DIVERSIONS.—None.

REGULATION.—Considerable storage is used by the Washington Water Power Co. Flow is regulated by Taintor gates and bear-trap dam at Post Falls.

ACCURACY.—Daily mean gage heights have been determined by inspection from gage-height graph. Records excellent.

COOPERATION.—Gage-height record furnished by Washington Water Power Co.

Daily gage height, in feet, of Coeur d'Alene Lake at Coeur d'Alene, Idaho, for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23.49	22.59	22.24	24.07	23.37	24.25	25.33	27.94	27.20	27.09	25.27	24.49
2	23.43	22.58	22.30	24.02	23.25	24.28	25.21	27.92	27.22	27.05	25.17	24.50
3	23.40	22.55	22.34	24.00	23.15	24.31	25.10	27.82	27.2[illegible]	27.01	25.11	24.51
4	23.35	22.54	22.39	24.00	23.15	24.34	25.01	27.72	27.27	26.99	25.02	24.51
5	23.31	22.51	22.42	24.05	23.25	24.41	24.95	27.65	27.23	27.00	24.92	24.51
6	23.25	22.48	22.44	24.10	23.50	24.43	24.89	27.55	27.27	26.98	24.85	24.49
7	23.24	22.45	22.46	24.06	23.81	24.43	24.79	27.42	27.25	26.94	24.79	24.51
8	23.23	22.41	22.49	24.01	24.23	24.42	24.71	27.24	27.25	26.90	24.71	24.53
9	23.20	22.39	22.49	24.00	24.60	24.39	24.65	27.04	27.23	26.84	24.65	24.54
10	23.14	22.40	22.49	24.00	24.82	24.36	24.60	26.82	27.20	26.80	24.55	24.52
11	23.09	22.40	22.55	24.01	25.00	24.32	24.66	26.60	27.19	26.75	24.53	24.49
12	23.03	22.41	22.65	24.01	25.12	24.29	24.81	26.46	27.15	26.70	24.49	24.49
13	23.02	22.41	22.81	24.01	25.18	24.27	25.09	26.50	27.12	26.63	24.45	24.48
14	23.00	22.40	22.90	24.00	25.13	24.33	25.46	26.52	27.16	26.57	24.40	24.43
15	22.96	22.39	22.97	24.00	25.06	24.48	25.82	26.50	27.2[illegible]	26.49	24.38	24.42

Daily gage height, in feet, of Coeur d'Alene Lake at Coeur d'Alene, Idaho, for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	22.94	22.38	23.01	24.00	24.96	24.70	26.22	26.48	27.23	26.39	24.33	24.41
17	22.91	22.36	23.03	24.02	24.85	24.91	26.67	26.50	27.26	26.30	24.33	24.40
18	22.89	22.32	23.09	24.04	24.72	25.14	27.15	26.52	27.29	26.22	24.39	24.40
19	22.88	22.31	23.11	24.04	24.60	25.33	27.54	26.53	27.33	26.13	24.42	24.40
20	22.83	22.31	23.13	24.07	24.53	25.45	27.99	26.51	27.34	26.03	24.43	24.39
21	22.81	22.29	23.17	24.09	24.48	25.48	28.31	26.50	27.35	25.94	24.41	24.40
22	22.78	22.29	23.23	24.06	24.44	25.49	28.48	26.50	27.34	25.89	24.40	24.42
23	22.76	22.27	23.38	24.00	24.41	25.47	28.49	26.58	27.33	25.82	24.40	24.48
24	22.75	22.24	23.63	23.93	24.37	25.55	28.40	26.70	27.33	25.76	24.39	24.52
25	22.70	22.22	23.91	23.87	24.34	25.68	28.23	26.79	27.31	25.70	24.35	24.50
26	22.70	22.19	24.08	23.80	24.30	25.77	28.09	26.87	27.30	25.66	24.39	24.50
27	22.71	22.19	24.18	23.73	24.26	25.80	27.99	26.94	27.28	25.62	24.34	24.50
28	22.71	22.20	24.21	23.69	24.23	25.79	27.92	27.00	27.23	25.53	24.29	24.50
29	22.70	22.19	24.20	23.62	-------	25.73	27.92	27.06	27.17	25.47	24.26	24.49
30	22.67	22.20	24.18	23.53	-------	25.62	27.93	27.11	27.12	25.40	24.33	24.49
31	22.62	-------	24.12	23.43	-------	25.47	-------	27.14	-------	25.33	24.42	-------

NOTE.—Add 2,100 feet to gage heights to obtain nominal sea-level elevations.

SPOKANE RIVER AT POST FALLS, IDAHO

LOCATION.—In sec. 4, T. 50 N., R. 5 W. Boise meridian, a quarter of a mile below power plant of Washington Water Power Co., three-fourths mile below intake of Spokane Valley Farms Co.'s canal, and 1 mile west of Post Falls, Kootenai County.

DRAINAGE AREA.—3,880 square miles (measured by engineers of Washington Water Power Co. on map of Spokane River Basin, compiled from all sources available).

RECORDS AVAILABLE.—January 1, 1913, to September 30, 1926.

GAGE.—Stevens water-stage recorder on right bank since November 22, 1920; inspected by employees of Washington Water Power Co. Elevation of zero of gage, 2,000 feet above sea level.

DISCHARGE MEASUREMENTS.—Made from cable 600 feet above gage.

CHANNEL AND CONTROL.—Bed of river composed of coarse gravel and boulders; shifts during floods. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, from water-stage recorder, 72.13 feet at 11.30 p. m. April 29 (discharge, 15,800 second-feet); minimum stage, from recorder, 65.30 feet at 3.50 a. m. September 5 (discharge, 540 second-feet).

1911–1926: Maximum stage recorded, 79.20 feet at 7.30 a. m. May 18, 1917 (discharge, 39,800 second-feet); minimum discharge, that of September 5, 1926.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Spokane Valley Farms Co.'s canal diverts water above gage for irrigation. Mean diversion during 1926, 100 second-feet.

REGULATION.—Varying load on power plant causes fluctuation in stage. Storage in Coeur d'Alene Lake partly regulated by operation of gates in dam at Post Falls.

ACCURACY.—Stage-discharge relation permanent; rating curve well defined. Operation of water-stage recorder satisfactory except as stated in footnote to table of daily discharge. Daily discharge ascertained by use of discharge integrator. Records excellent.

COOPERATION.—Gage-height record and some discharge measurements furnished by Washington Water Power Co.

Discharge measurements of Spokane River at Post Falls, Idaho, during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 1	68.34	3,810	May 21	68.84	5,170
Mar. 25	70.09	8,460	June 17	66.77	1,480

Daily discharge, in second-feet, of Spokane River at Post Falls, Idaho, for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,340	1,110	1,090	2,160	3,760	5,930	7,910	13,100	1,550	1,550	1,420	726
2	1,410	1,130	1,210	1,870	3,450	6,090	7,700	13,100	1,520	1,410	1,470	732
3	1,390	1,080	1,210	1,400	3,000	6,160	7,500	12,800	1,480	1,360	1,460	746
4	1,260	1,030	1,180	1,260	2,840	6,160	7,350	12,600	1,600	1,140	1,480	688
5	1,250	1,080	1,080	1,640	3,520	6,350	7,210	12,500	2,110	1,080	1,450	630
6	1,240	1,120	1,010	2,420	4,820	6,370	7,000	12,200	1,920	1,500	1,410	663
7	1,250	1,170	1,070	2,720	5,380	6,390	6,870	12,000	1,610	1,260	1,380	683
8	1,320	1,080	1,130	2,060	5,770	6,310	6,740	11,500	2,110	1,400	1,340	729
9	1,340	1,160	1,180	1,540	6,580	6,290	6,600	11,100	1,910	1,430	1,180	819
10	1,270	1,230	1,270	1,380	6,950	6,160	6,470	10,700	1,600	1,420	1,180	898
11	1,230	1,180	1,340	1,410	7,230	6,200	6,530	9,830	1,680	1,500	1,120	891
12	1,290	1,210	1,250	1,520	7,450	6,060	6,770	5,280	1,570	1,490	1,010	878
13	1,350	1,280	1,170	1,470	7,540	6,050	7,260	4,800	1,480	1,620	942	996
14	1,300	1,280	1,310	1,480	7,480	6,120	7,910	5,950	1,490	1,660	836	1,060
15	1,180	1,290	1,340	1,470	7,370	6,310	8,570	6,060	1,510	1,830	764	998
16	1,050	1,500	1,300	1,450	7,200	6,680	9,330	5,160	1,510	1,880	799	976
17	1,000	1,580	1,120	1,540	7,030	7,060	10,400	4,420	1,390	1,730	841	1,100
18	1,030	1,220	1,060	1,680	6,710	7,510	11,500	4,830	1,320	1,680	750	1,120
19	1,070	1,170	1,240	1,630	6,530	7,810	12,500	6,150	1,500	1,780	684	1,050
20	1,100	1,160	1,210	1,560	6,430	8,040	13,600	5,650	2,110	1,770	722	1,040
21	1,220	1,090	1,050	1,810	6,370	8,170	14,400	5,200	1,490	1,550	720	1,040
22	1,200	1,040	1,060	2,220	6,300	8,200	14,800	4,170	1,460	1,400	678	1,180
23	1,070	1,140	1,190	2,730	6,240	8,200	14,800	2,210	1,370	1,320	702	1,260
24	1,090	1,150	1,270	2,500	6,170	8,280	14,500	1,880	1,370	1,330	746	1,420
25	1,130	1,150	1,290	2,460	6,140	8,410	14,200	1,880	1,430	1,220	866	1,390
26	1,070	1,140	1,470	2,650	6,070	8,510	13,600	1,840	1,420	1,280	848	1,230
27	1,070	1,140	2,080	2,680	6,020	8,520	13,200	1,810	1,430	1,230	854	1,290
28	1,270	1,030	2,360	2,720	5,980	8,440	13,100	1,810	1,480	1,340	876	1,320
29	1,400	1,050	2,450	2,830	-------	8,390	12,800	1,650	1,540	1,350	798	1,340
30	1,520	1,050	2,390	3,150	-------	8,230	13,400	1,590	1,560	1,400	728	1,290
31	1,350	-------	2,300	3,440	-------	8,110	-------	1,600	-------	1,450	672	-------

NOTE.—Water-stage recorder did not operate Oct. 18–20; discharge Oct. 18 and 19 interpolated; discharge Oct. 20 is result of single staff-gage reading.

Monthly discharge of Spokane River and Spokane Valley Farms Co.'s canal at Post Falls, Idaho, for the year ending September 30, 1926

[Drainage area, 3,880 square miles]

Month	Discharge in second-feet						Run-off (combined)	
	River			Canal (mean)	Combined			
	Maximum	Minimum	Mean		Mean	Per square mile	Inches	Acre-feet
October	1,520	1,000	1,230	-------	1,230	-------	-------	75,600
November	1,580	1,030	1,170	-------	1,170	-------	-------	69,600
December	2,450	1,010	1,380	-------	1,380	-------	-------	84,800
January	3,440	1,260	2,030	-------	2,030	-------	-------	125,300
February	7,540	2,840	5,940	-------	5,940	-------	-------	330,000
March	8,520	5,930	7,150	40	7,190	-------	-------	442,000
April	14,800	6,470	10,200	139	10,300	-------	-------	613,000
May	13,100	1,590	6,620	216	6,840	-------	-------	421,000
June	2,110	1,320	1,580	246	1,830	-------	-------	109,000
July	1,880	1,080	1,460	234	1,690	-------	-------	104,000
August	1,480	672	991	229	1,220	-------	-------	75,000
September	1,420	630	1,010	94	1,100	-------	-------	65,500
The year	14,800	630	3,370	-------	3,470	0.894	12.14	2,510,000

NOTE.—Monthly figures showing discharge in second-feet per square mile and run-off in inches are not published, owing to regulation by Coeur d'Alene Lake; the yearly figures represent more nearly the natural discharge and run-off.

SPOKANE RIVER AT SPOKANE, WASH.

LOCATION.—In sec. 13, T. 25 N., R. 42 E., opposite Cochran Street, Spokane, Spokane County, a quarter of a mile above high railroad viaduct and half a mile above Latah Creek.

DRAINAGE AREA.—4,350 square miles (measured by engineers of Washington Water Power Co. on maps of Spokane River Basin, compiled from all available sources).

RECORDS AVAILABLE.—April 1, 1891, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on right bank at Cochran Street, 1 mile below Monroe Street Bridge; used since July 1, 1921. Approximate elevation of gage datum 1,700 feet above sea level.

DISCHARGE MEASUREMENTS.—Made from cable at gage.

CHANNEL AND CONTROL.—Bed composed of gravel and boulders. One channel at all stages. Control is well-defined riffle one-fourth mile below gage; permanent. Gage height of zero flow estimated at 14.5 feet on October 7, 1922.

EXTREMES OF DISCHARGE.—Maximum stage during year, 23.07 feet at 8.10 p. m. April 22 (discharge, 15,800 second-feet); minimum stage, 17.20 feet at 9.30 a. m. September 4 and 12.25 p. m. September 6 (discharge, 970 second-feet).

1891–1926: Maximum discharge recorded, 49,000 second-feet May 31, 1894; minimum stage, from recorder, 16.70 feet at 8.30 a. m. October 21, 1922 (discharge, 500 second-feet).

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Water is diverted above the station for irrigation by Spokane Valley Farms Co.

REGULATION.—Flow partly regulated by storage in Coeur d'Alene Lake since July, 1906.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Operation of water-stage recorder satisfactory except as noted in footnote to table of daily discharge. Daily discharge ascertained by use of discharge integrator or, when discharge was above 11,500 second-feet, by applying to rating table daily mean gage height determined from recorder graph by inspection. Records excellent.

COOPERATION.—Gage-height record and some discharge measurements furnished by Washington Water Power Co.

Discharge measurements of Spokane River at Spokane, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 20	17.90	1,840	May 11	21.80	11,400	Aug. 17	17.57	1,390
Apr. 8	20.53	6,930	July 9	17.93	1,930	Sept. 18	17.80	1,670
Apr. 22	22.80	14,200						

Daily discharge, in second-feet, of Spokane River at Spokane, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,910	1,680	1,670	2,660	3,920	6,060	8,280	13,600	2,230	1,970	1,970	1,140
2	1,890	1,680	1,700	2,550	3,920	6,160	7,930	13,600	2,010	2,000	1,960	1,220
3	2,040	1,790	1,810	2,190	3,540	6,200	7,740	13,200	2,140	1,920	1,940	1,310
4	1,840	1,660	1,780	1,910	3,330	6,200	7,520	13,200	2,140	1,860	1,940	1,210
5	1,820	1,720	1,710	1,920	3,580	6,340	7,480	12,900	2,420	1,620	1,970	1,190
6	1,880	1,720	1,560	2,620	4,740	6,480	7,240	12,900	2,730	1,790	1,930	1,150
7	1,820	1,820	1,610	3,040	5,270	6,440	7,230	12,500	2,140	1,910	1,930	1,200
8	1,860	1,750	1,620	2,860	5,730	6,240	7,040	12,200	2,410	1,830	1,890	1,170
9	1,940	1,730	1,700	2,200	6,380	6,430	6,900	11,800	2,620	1,910	1,820	1,300
10	1,940	1,790	1,740	1,940	6,830	6,290	6,850	11,300	2,210	1,930	1,710	1,390
11	1,810	1,770	1,870	1,850	7,160	6,290	6,770	11,000	2,210	2,000	1,770	1,480
12	1,840	1,690	1,880	1,960	7,470	6,220	7,030	6,820	2,200	1,970	1,670	1,410
13	1,910	1,830	1,700	1,950	7,610	6,230	7,430	5,650	2,070	1,960	1,630	1,470
14	1,910	1,780	1,740	1,990	7,610	6,230	7,990	6,330	2,030	2,080	1,430	1,570
15	1,810	1,800	1,870	1,980	7,370	6,340	8,540	6,640	2,090	2,110	1,370	1,580
16	1,690	1,890	1,860	2,000	7,190	6,720	9,200	6,060	2,140	2,290	1,260	1,480
17	1,620	2,070	1,740	2,020	7,140	7,140	10,200	5,160	2,070	2,210	1,360	1,570
18	1,520	2,170	1,610	2,140	6,860	7,520	11,100	5,300	1,940	2,090	1,450	1,680
19	1,750	1,740	1,670	2,170	6,680	7,910	12,200	6,300	1,950	2,180	1,210	1,590
20	1,790	1,740	1,730	2,110	6,480	8,150	13,200	6,320	2,590	2,280	1,240	1,540
21	1,690	1,740	1,690	2,160	6,550	8,290	14,300	5,720	2,170	2,150	1,290	1,570
22	1,800	1,630	1,580	2,420	6,420	8,360	14,700	5,420	2,100	2,040	1,160	1,580
23	1,750	1,670	1,600	3,100	6,450	8,340	14,700	3,390	2,000	1,880	1,210	1,670
24	1,680	1,720	1,770	2,890	6,350	8,470	14,700	2,910	1,930	1,910	1,220	1,840
25	1,730	1,760	1,730	2,820	6,330	8,630	14,300	2,820	1,940	1,830	1,210	1,890
26	1,700	1,730	1,740	3,010	6,280	8,820	13,900	2,770	1,930	1,800	1,370	1,760
27	1,680	1,730	2,180	3,000	6,190	8,850	13,900	2,670	1,890	1,790	1,380	1,730
28	1,720	1,730	2,610	3,040	6,170	8,780	13,600	2,670	1,930	1,850	1,360	1,820
29	1,960	1,670	2,840	3,150	-------	8,700	13,600	2,530	1,860	1,920	1,310	1,840
30	2,020	1,670	2,770	3,340	-------	8,560	13,600	2,340	1,970	1,870	1,360	1,880
31	2,090	-------	2,780	3,640	-------	8,390	--------	2,340	-------	1,950	1,230	------

NOTE.—Water-stage recorder not operating satisfactorily Oct. 31 to Nov. 3, Nov. 19–20, and June 21–22; discharge determined from record for partial day or from staff-gage readings.

Monthly discharge of Spokane River at Spokane, Wash., for the year ending September 30, 1926

[Drainage area, 4,350 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	2,090	1,520	1,820	----------	----------	112,000
November	2,170	1,630	1,760	----------	----------	105,000
December	2,840	1,560	1,870	----------	----------	115,000
January	3,640	1,850	2,470	----------	----------	152,000
February	7,610	3,330	6,060	----------	----------	337,000
March	8,850	6,060	7,280	----------	----------	448,000
April	14,700	6,770	10,300	----------	----------	613,000
May	13,600	2,340	7,370	----------	----------	453,000
June	2,730	1,860	2,140	----------	----------	127,000
July	2,290	1,620	1,960	----------	----------	121,000
August	1,970	1,160	1,530	----------	----------	94,100
September	1,890	1,140	1,510	----------	----------	89,800
The year	14,700	1,140	3,820	0.878	11.92	2,770,000

NOTE.—Monthly discharge in second-feet per square mile and run-off in inches not computed, owing to regulation. Yearly figures closely represent the natural flow and run-off.

SPOKANE RIVER BELOW LITTLE FALLS, NEAR LONG LAKE, WASH.

LOCATION.—In NW. ¼ sec. 19, T. 27 N., R. 39 E., just above Chamokane Ferry, 1½ miles below Little Falls power plant of Washington Water Power Co., 4 miles below Chamokane Creek, and 5 miles below Long Lake, Lincoln County.

DRAINAGE AREA.—6,380 square miles (measured by engineers of Washington Water Power Co. on maps compiled from best data available).

RECORDS AVAILABLE.—November 5, 1912, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on left bank; gage datum 1,200 feet above mean sea level.

DISCHARGE MEASUREMENTS.—Made from cable 50 feet below gage.

CHANNEL AND CONTROL.—Bed composed of large boulders; shifting at high stages. Both banks high. One channel at all stages. No noticeable control below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 83.72 feet at 3.40 p. m. April 22 (discharge, 18,800 second-feet); minimum stage, 73.4 feet from 5.40 to 12 p. m. August 22 (discharge, 1,060 second-feet).

1912–1926: Maximum stage, 90.32 feet at 8.30 p. m. May 18, 1917 (discharge, 41,300 second-feet); minimum discharge, that of August 22, 1926.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Water is diverted by the Spokane Valley Farms Co. for irrigation above the station.

REGULATION.—Flow affected considerably by power regulation at Little Falls and Long Lake and slightly by power regulation at Ninemile, Spokane, and Post Falls. Low-water flow is affected by regulation of storage in Coeur d'Alene Lake.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined between 2,000 and 30,000 second-feet. Operation of water-stage recorder satisfactory. Daily discharge ascertained by use of discharge integrator. Records excellent.

COOPERATION.—Gage-height record and some discharge measurements furnished by Washington Water Power Co.

The following discharge measurements were made:

December 22, 1925: Gage height, 76.34 feet; discharge, 3,180 second-feet.

May 24, 1926: Gage height, 77.24 feet; discharge, 4,440 second-feet.

August 26, 1926: Gage height, 75.44 feet; discharge, 2,270 second-feet.

Daily discharge, in second-feet, of Spokane River below Little Falls, near Long Lake, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,690	1,820	2,620	3,300	5,550	8,600	9,680	14,200	3,140	2,670	2,020	2,140
2	2,720	2,160	2,390	3,930	4,710	7,200	8,920	14,400	2,820	2,640	2,530	2,120
3	2,540	2,240	2,360	2,570	4,170	7,930	9,040	15,000	2,980	2,670	2,640	2,050
4	2,230	2,320	2,430	2,710	4,080	8,000	8,130	14,900	2,810	2,000	2,730	2,030
5	2,840	2,630	2,440	2,430	5,670	8,190	8,420	13,700	2,630	2,330	2,690	1,560
6	2,600	2,550	2,100	3,200	6,920	8,140	8,400	13,800	2,170	2,460	2,640	1,480
7	2,640	2,580	2,530	3,210	10,600	7,660	8,480	13,700	3,520	2,690	2,610	2,200
8	2,540	2,050	2,620	3,800	10,300	8,070	8,370	12,600	2,660	2,920	2,000	2,280
9	2,560	2,390	2,670	3,340	8,820	7,910	8,230	11,000	2,950	2,780	2,350	2,450
10	2,610	2,430	2,610	2,700	9,120	7,980	7,360	12,600	2,890	2,840	2,700	2,410
11	2,120	2,360	2,410	2,480	9,240	7,530	7,970	11,300	2,560	2,340	2,330	2,260
12	2,480	2,780	2,420	2,430	9,890	7,360	8,730	8,460	2,810	2,810	2,090	2,000
13	2,440	2,810	1,930	2,440	10,600	7,380	7,590	5,160	2,730	2,810	2,100	2,100
14	2,450	2,830	2,450	2,730	9,430	7,480	9,660	7,330	2,920	2,770	2,170	2,180
15	2,400	2,250	2,410	2,980	9,270	7,870	10,600	8,210	2,480	2,720	1,830	2,260

Daily discharge, in second-feet, of Spokane River below Little Falls, near Long Lake, Wash., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	2,500	2,630	2,620	2,460	7,730	8,310	9,490	6,300	2,780	2,720	2,200	2,360
17	2,580	2,610	2,840	3,070	9,450	8,330	10,700	6,680	2,770	2,760	2,130	2,240
18	2,060	2,440	3,000	2,870	8,770	8,200	12,600	6,140	2,660	2,230	1,940	2,040
19	2,300	2,490	2,620	2,790	7,180	11,200	12,900	6,400	2,430	2,620	2,040	1,800
20	2,350	2,370	2,070	3,440	8,160	8,820	14,000	8,820	3,390	2,680	2,090	1,910
21	2,470	2,610	2,860	2,710	8,100	9,810	14,700	5,590	2,950	2,640	1,950	2,350
22	2,410	2,090	2,830	3,270	9,850	9,730	16,600	6,460	2,500	2,560	1,670	2,650
23	2,450	2,590	2,910	3,690	7,760	8,910	17,500	4,030	2,860	2,630	2,050	2,440
24	2,650	2,730	2,390	3,960	9,650	9,250	15,900	3,820	2,740	2,460	2,140	2,480
25	1,870	2,520	1,830	3,680	8,530	9,410	15,400	3,530	2,890	2,050	2,250	2,410
26	2,520	1,920	3,180	3,470	8,230	10,300	15,300	3,540	2,830	2,580	2,150	2,030
27	2,560	2,420	3,240	3,450	8,030	10,100	14,800	3,450	2,330	2,700	2,080	2,440
28	2,510	2,510	2,700	3,580	7,840	9,150	14,700	3,380	2,660	2,720	2,160	2,500
29	2,940	1,860	3,470	3,500	-------	10,100	14,600	3,320	2,800	2,640	1,710	2,590
30	2,820	2,700	3,660	4,440	-------	9,500	13,800	2,930	2,750	2,650	1,940	2,570
31	2,560	-------	2,970	5,080	-------	9,570	-------	3,000	-------	2,590	2,170	------

Monthly discharge of Spokane River below Little Falls, near Long Lake, Wash., for the year ending September 30, 1926

[Drainage area, 6,380 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	2,940	1,870	2,500	----------	----------	154,000
November	2,830	1,820	2,420	----------	----------	144,000
December	3,660	1,830	2,630	----------	----------	162,000
January	5,080	2,430	3,220	----------	----------	198,000
February	10,600	4,080	8,130	----------	----------	452,000
March	11,200	7,200	8,640	----------	----------	531,000
April	17,500	7,360	11,400	----------	----------	678,000
May	15,000	2,930	8,190	----------	----------	504,000
June	3,520	2,170	2,780	----------	----------	165,000
July	2,920	2,000	2,600	----------	----------	160,000
August	2,730	1,670	2,200	----------	----------	135,000
September	2,650	1,480	2,210	----------	----------	132,000
The year	17,500	1,480	4,720	0.740	10.04	3,420,000

NOTE.—Monthly discharge in second-feet per square mile and run-off in inches not computed owing to regulation. Yearly figures closely represent the natural discharge and run-off.

ST. JOE RIVER AT CALDER, IDAHO

LOCATION.—In sec. 3, T. 45 N., R. 2 E. Boise meridian, at suspension bridge 150 feet southwest of Chicago, Milwaukee, St. Paul & Pacific Railway station at Calder, Shoshone County, 5 miles below Marble Creek, and 11 miles east of St. Joe.

DRAINAGE AREA.—1,080 square miles (measured by engineers of Washington Water Power Co. on map of Spokane River Basin, compiled from best information available).

RECORDS AVAILABLE.—July 13, 1920, to September 30, 1926; April 14, 1911, to September 30, 1912, at station about 2½ miles farther downstream.

GAGE.—Stevens continuous water-stage recorder on right bank at old ferry landing at Calder; installed December 22, 1920; inspected by Z. D. Turner. Elevation of gage datum about 2,100 feet above sea level.

DISCHARGE MEASUREMENTS.—Made from cable or by wading at gage.

CHANNEL AND CONTROL.—Right bank high, not subject to overflow; left bank subject to overflow at high stages. Control is shifting gravel riffle 800 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 85.97 feet at 1 p. m. April 19 (discharge, 11,500 second-feet); minimum stage, 79.07 feet from 1 to 5 a. m. November 28 (discharge, 240 second-feet).

1911–12, 1920–1926: Maximum stage recorded, 87.8 feet at 7 a. m. May 18, 1922 (discharge, 17,600 second-feet). Discharge may have been greater on February 2 or 3, 1925, when recorder was not operating and stage-discharge relation was affected by ice. Minimum stage, 78.67 feet at 9.30 a. m. and from 11 a. m. to 12 m. November 25, 1922 (discharge, 194 second-feet). Discharge probably less in December, 1922, when stage-discharge relation was affected by ice.

ICE.—Stage-discharge relation seriously affected by ice; flow estimated from discharge measurements, observer's notes, and weather records.

DIVERSIONS.—None.

REGULATION.—Flash dam at Marble Creek used to store water for flushing logs down river during low water. Water released at regular intervals during driving season. Operation of dam causes diurnal fluctuation at gage of about 1 foot. Duration of effect about four hours.

ACCURACY.—Stage-discharge relation changed gradually October 1 to December 24 and on July 20 and August 31; affected by ice January 1–4, 8–15, and 20–31. Rating curves fairly well defined. Operation of water-stage recorder satisfactory. Daily discharge March 20 to September 30 ascertained by use of discharge integrator; for remainder of year by applying to rating table mean daily gage height determined from gage-height graph by inspection; shifting-control method used October 1 to December 24. Records good.

COOPERATION.—Gage-height record and some discharge measurements furnished by Washington Water Power Co.

Discharge measurements of St. Joe River at Calder, Idaho, during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 14	79.51	344	Jan. 21	[a] 79.70	481	May 19	82.41	3,030
Oct. 20	79.58	357	Feb. 25	80.41	896	June 23	80.34	873
Nov. 10	79.74	419	Mar. 30	81.49	1,790	Aug. 13	79.54	388
Dec. 17	79.93	565	Apr. 30	84.50	7,280	Sept. 20	79.53	438

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of St. Joe River at Calder, Idaho, for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	412	412	592		492	1,350	1,660	7,300	1,680	923	364	718
2	378	378	1,020		492	1,430	1,540	6,350	1,660	782	409	520
3	412	378	732	480	492	1,610	1,490	5,840	1,590	726	370	473
4	395	360	560		560	1,920	1,500	6,140	1,560	694	367	436
5	345	330	538	665	970	1,810	1,490	6,040	1,520	660	374	395
6	360	315	585	780	1,110	1,610	1,470	5,070	1,470	668	370	416
7	378	275	585	692	1,550	1,520	1,480	4,520	1,490	681	360	553
8	412	275	538		2,560	1,520	1,630	4,020	1,370	664	388	560
9	395	400	450		1,920	1,520	1,860	3,700	1,300	640	395	483
10	378	412	450		1,710	1,520	2,610	3,420	1,220	606	384	444
11	378	448	1,030	500	1,710	1,520	3,680	3,180	1,130	572	392	458
12	360	524	1,350		1,520	1,710	5,030	3,240	1,130	565	395	433
13	360	474	1,040		1,350	2,150	5,920	3,470	1,070	612	384	419
14	360	395	780		1,190	3,000	5,970	3,480	1,130	582	402	401
15	345	378	692		1,110	3,150	6,920	3,250	1,240	561	384	400
16	345	378	610	560	1,040	3,470	8,930	3,020	1,150	551	374	489
17	360	430	560	610	970	3,310	9,500	3,080	1,090	536	381	568
18	378	450	560	638	905	2,850	10,000	3,360	1,050	533	488	502
19	360	412	560	560	905	2,560	10,800	3,380	1,100	513	621	458
20	360	395	515		905	2,460	9,460	3,290	1,200	474	528	439
21	360	360	515		905	2,320	7,760	3,200	1,030	442	420	542
22	360	345	538	470	905	2,340	6,670	3,110	992	442	378	1,080
23	345	275	1,340		905	3,210	5,730	2,920	991	434	374	1,230
24	378	288	2,030		905	3,770	5,160	2,630	878	430	345	743
25	412	435	1,520		905	3,320	5,100	2,360	838	423	339	592
26	470	430	1,190		905	2,960	5,680	2,210	819	423	339	543
27	560	288	1,040		1,040	2,550	6,400	2,150	782	420	351	557
28	470	275	780	420	1,190	2,290	7,110	2,030	748	420	364	539
29	412	462	692		-------	2,070	7,560	1,930	743	412	321	535
30	412	452	610		-------	1,900	7,800	1,890	722	402	402	531
31	430	-------	538		-------	1,790	-------	1,750	-------	395	786	-------

NOTE.—Braced figures show mean discharge for periods indicated.

Monthly discharge of St. Joe River at Calder, Idaho, for the year ending September 30, 1926

[Drainage area, 1,080 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	560	345	390	0.361	0.42	24,000
November	524	275	381	.353	.39	22,700
December	2,030	450	792	.733	.85	48,700
January	780	----------	509	.471	.54	31,300
February	2,560	492	1,110	1.03	1.07	61,600
March	3,770	1,350	2,270	2.10	2.42	140,000
April	10,800	1,470	5,260	4.87	5.43	313,000
May	7,300	1,750	3,590	3.32	3.83	221,000
June	1,680	722	1,150	1.06	1.18	68,400
July	923	395	554	.513	.59	34,100
August	786	321	405	.375	.43	24,900
September	1,230	395	549	.508	.57	32,700
The year	10,800	275	1,410	1.31	17.72	1,020,000

ST. MARIES RIVER AT LOTUS, IDAHO

LOCATION.—In sec. 20, T. 45 N., R. 2 W. Boise meridian, 1,000 feet below Lotus station on Elk River branch of Chicago, Milwaukee, St. Paul & Pacific Railway and 9 miles above St. Maries and mouth of river, Benewah County.

DRAINAGE AREA.—420 square miles (measured by engineers of Washington Water Power Co. on map of Spokane River Basin compiled from best data available).

RECORDS AVAILABLE.—July 9, 1911, to October 31, 1912, and July 15, 1920, to September 30, 1926.

GAGE.—Since October 1, 1922, vertical and inclined staff on left bank; read by Mrs. Naoma Carter.

DISCHARGE MEASUREMENTS.—Made by wading near gage or from suspension footbridge at railway station.

CHANNEL AND CONTROL.—Bed composed of gravel and small boulders. Channel straight for 200 feet below gage. Left bank high, not subject to overflow; right bank is overflowed at high stages. Control is riffle 150 feet below gage; shifting at high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.46 feet February 8 (discharge, 2,800 second-feet); minimum discharge not determined but probably occurred during winter, while stage-discharge relation was affected by ice.

1911–1912, 1920–1926: Maximum stage recorded, 66.5 feet at 6 a. m. March 18, 1921 (discharge, 8,660 second-feet); discharge may have been greater sometimes January 31 to February 3, 1925. Minimum discharge probably occurred during winter of 1922–23, when stage-discharge relation was affected by ice and logs (probably less than 30 second-feet).

ICE.—Stage-discharge relation seriously affected by ice. Flow estimated from discharge measurements, observer's notes, and weather records.

ACCURACY.—Stage-discharge relation changed frequently during year, owing to shifting of logs on control; affected by ice November 24–30 and January 1 to February 5. Rating curves fairly well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table; shifting-control method used March 3 to April 1, April 9–20, April 23–29, and May 16–18. Records fair except for periods represented by flat estimates of discharge, which are poor.

COOPERATION.—Gage-height record and some discharge measurements furnished by Washington Water Power Co.

Discharge measurements of St. Maries River at Lotus, Idaho, during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 16	2.94	54.2	Feb. 24	3.93	548	May 18	3.74	302
Nov 11	3.12	92.3	Mar. 29	3.94	548	June 22	3.30	160
Dec. 18	3.34	130	Do	3.94	496	Aug. 12	2.61	42.1
Jan. 20	3.60	111	Apr. 1	4.05	548	Sept. 21	2.85	68.4
Feb. 24	3.91	556	Apr 29	4.04	515			

Daily discharge, in second-feet, of St. Maries River at Lotus, Idaho, for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	76	54			790	556	458	152	87	47	270
2	72	70	255			705	522	458	144	98	46	98
3	68	64	255		160	745	458	428	137	96	45	82
4	64	64	220			790	665	428	134	96	46	74
5	59	59	188			745	745	490	132	94	45	68
6	57	50	214		1,600	628	790	458	129	80	44	63
7	57	64	220		1,680	556	745	428	124	80	44	74
8	61	68	188	200	2,800	522	665	428	112	76	44	132
9	61	76	168		1,980	556	885	398	112	75	45	92
10	61	68	168		1,120	665	935	364	110	72	44	74
11	59	90	198		1,180	705	935	458	108	68	43	67
12	59	113	313		1,250	745	1,050	428	108	66	42	66
13	59	116	274		885	885	1,050	384	104	63	41	62
14	57	116	204		705	1,250	935	342	98	62	43	61
15	55	100	171		590	1,250	1,050	342	185	61	43	60
16	57	86	140		556	1,530	1,120	249	185	60	42	67
17	55	100	133		522	1,600	1,320	253	139	59	47	117
18	54	160	130		458	1,750	1,250	306	120	58	61	98
19	54	133	148		458	1,750	1,250	287	160	55	108	82
20	54	102	145		458	1,390	1,250	270	270	54	87	75
21	55	86	123		590	1,180	992	252	236	54	68	68
22	55	68	150		665	885	835	236	163	55	60	134
23	55	54	415	100	556	935	705	236	166	56	53	306
24	55		885		556	1,120	590	236	128	56	51	144
25	63		590		590	885	556	219	115	54	49	98
26	74	45	428		628	745	490	188	108	52	50	87
27	111		322		705	628	490	185	96	51	49	81
28	204		258		705	556	490	177	92	51	52	65
29	111		249		-------	522	490	168	90	50	51	61
30	95		200		-------	458	490	163	78	49	62	68
31	88	-------	170		-------	490	-------	157	-------	47	122	------

NOTE.—Braced figures show mean discharge for periods indicated.

Monthly discharge of St. Maries River at Lotus, Idaho, for the year ending September 30, 1926

[Drainage area, 420 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	204	54	69.6	0.166	0.19	4,280
November	160	----------	76.6	.182	.20	4,560
December	885	54	244	.581	.67	15,000
January	----------	----------	148	.352	.41	9,100
February	2,800	----------	787	1.87	1.95	43,700
March	1,750	458	902	2.15	2.48	55,500
April	1,320	458	810	1.93	2.15	48,200
May	490	157	319	.760	.88	19,600
June	270	78	135	.321	.36	8,030
July	98	47	65.6	.156	.18	4,030
August	122	41	54.0	.129	.15	3,320
September	306	60	96.5	.230	.26	5,740
The year	2,800	----------	305	.726	9.88	221,000

HAYDEN LAKE AT HAYDEN LAKE, IDAHO

LOCATION.—In sec. 18, T. 51 N., R. 3 W. Boise meridian, at Avondale and Hayden Lake pumping plants, a quarter of a mile north of Hayden Lake station of Spokane & Eastern Railway & Power Co., Kootenai County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 19, 1920, to September 30, 1926.

GAGE.—Vertical staff in three sections; read by Sigurd Berven. Zero of gage at elevation 2,230.35 feet,[6] United States Coast and Geodetic Survey datum. To obtain sea-level elevation from records previously published add 2,230.35 feet to published gage heights.

EXTREMES OF STAGE.—Maximum water-surface elevation recorded during year, 2,232.05 feet April 25; minimum, 2,227.29 feet September 30.

1920–1926: Maximum water-surface elevation recorded, 2,240.41 feet April 30 to May 18, 1921; minimum stage, that of September 30, 1926.

ICE.—No ice during period of record.

DIVERSION.—Water pumped from lake for irrigation and domestic supply.

REGULATION.—None.

ACCURACY.—Gage read once daily to hundredths. Records excellent.

Daily gage height, in feet, of Hayden Lake at Hayden Lake, Idaho, for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30.53	29.92	29.69	29.81	29.82	30.79	31.73	31.99	31.45	30.33	28 48	27.63
2	30.50	29.91	29.69	29.81	29.82	30.82	31.73	31.98	31.41	30.28	28 41	27.63
3	30.47	29.89	29.68	29.80	29.83	30.85	31.74	31.97	31.37	30.23	28 35	27.61
4	30.45	29.87	29.68	29.80	29.84	30.90	31.74	31.96	31.33	30.19	28.28	27.59
5	30.43	29.86	29.67	29.78	29.87	30.95	31.75	31.96	31.27	30.15	28.21	27.58
6	30.41	29.85	29.66	29.78	29.91	30.97	31.76	31.96	31.23	30.10	28 16	27.58
7	30.39	29.84	29.66	29.77	29.95	30.99	31.76	31.95	31.19	30.05	28 10	27.57
8	30.37	29.84	29.66	29.77	29.99	31.01	31.77	31.94	31.15	30.00	28 05	27.56
9	30.35	29.84	29.65	29.77	30.04	31.04	31.78	31.94	31.09	29.95	27.99	27.56
10	30.33	29.83	29.65	29.77	30.09	31.05	31.79	31.94	31.03	29.90	27.93	27.55
11	30.31	29.83	29.66	29.77	30.15	31.07	31.80	31.93	30.97	29.85	27.88	27.55
12	30.29	29.82	29.67	29.77	30.19	31.09	31.81	31.92	30.93	29.78	27.82	27.53
13	30.27	29.82	29.69	29.78	30.23	31.11	31.82	31.91	30.89	29.67	27.77	27.50
14	30.25	29.82	29.71	29.78	30.27	31.13	31.83	31.90	30.85	29.60	27.71	27.47
15	30.23	29.81	29.73	29.78	30.29	31.15	31.85	31.89	30.82	29.49	27.67	27.46
16	30.21	29.81	29.75	29.79	30.32	31.17	31.87	31.88	30.80	29.43	27.64	27.45
17	30.19	29.80	29.77	29.79	30.33	31.21	31.89	31.87	30.78	29.38	27.62	27.45
18	30.17	29.80	29.78	29.79	30.37	31.25	31.92	31.86	30.76	29.32	27.60	27.45
19	30.15	29.79	29.80	29.80	30.39	31.30	31.95	31.85	30.75	29.27	27.58	27.44
20	30.13	29.79	29.80	29.80	30.43	31.35	31.98	31.82	30.73	29.20	27.56	27.43
21	30.11	29.78	29.80	29.80	30.47	31.41	32.01	31.79	30.71	29.15	27.55	27.42
22	30.09	29.77	29.80	29.81	30.51	31.47	32.02	31.76	30.69	29.10	27.53	27.41
23	30.07	29.76	29.81	29.81	30.55	31.53	32.03	31.73	30.67	29.03	27.51	27.40
24	30.05	29.76	29.81	29.81	30.59	31.57	32.04	31.70	30.65	28.97	27.49	27.38
25	30.03	29.75	29.81	29.81	30.63	31.60	32.05	31.67	30.62	28.90	27.47	27.37
26	30.01	29.74	29.81	29.81	30.67	31.63	32.04	31.64	30.59	28.82	27.46	27.35
27	29.99	29.73	29.81	29.81	30.71	31.65	32.03	31.61	30.56	28.76	27.45	27.33
28	29.97	29.72	29.81	29.82	30.75	31.67	32.02	31.58	30.53	28.70	27.43	27.31
29	29.95	29.71	29.81	29.82	-------	31.69	32.01	31.55	30.48	28.63	27.41	27.30
30	29.94	29.70	29.81	29.82	-------	31.70	32.00	31.52	30.43	28.58	27.46	27.29
31	29.93	-------	29.81	29.82	-------	31.71	-------	31.49	-------	28.55	27.57	-------

NOTE.—Add 2,200 feet to obtain mean sea-level elevations (U. S. Coast and Geodetic Survey datum).

SPOKANE VALLEY FARMS CO.'S CANAL AT POST FALLS, IDAHO

LOCATION.—In NE. ¼ sec. 4, T. 50 N., R. 5 W. Boise meridian, on right bank of Spokane River 1,200 feet below canal head gates and half a mile west of Post Falls, Kootenai County.

RECORDS AVAILABLE.—May 20, 1911, to September 30, 1917; September 6, 1919, to September 30, 1926.

GAGE.—Vertical staff on left side of flume; read by K. K. Scott and J. J. Sheaham.

DISCHARGE MEASUREMENTS.—Made from crossties on top of flume.

CHANNEL AND CONTROL.—Flume and canal section below gage; shifts at all stages owing to effect of gravel bar at end of flume and plant growth, and possibly to regulation of head gates of diversion ditches below gage.

[6] The elevation 2,233.13 feet, previously published, was based upon information obtained by use of a bench mark which had been disturbed and its published elevation, which has been recently revised.

EXTREMES OF DISCHARGE.—Maximum discharge, 259 second-feet May 23–26; canal dry during nonirrigation season.

1911–1917, 1919–1926: Maximum discharge, 259 second-feet July 23–28, 1925, and May 23–26, 1926; no water in canal during nonirrigation periods.

ICE.—Stage-discharge relation not affected by ice.

ACCURACY.—Stage-discharge relation changed gradually May 22 to July 22. Rating curves fairly well defined. Gage read to hundredths once daily, which is considered adequate for determination of mean daily gage height, as two submerged orifices and wasteway above canal head gates are instrumental in causing gage height in canal to remain constant, even though the stage of the river is subject to considerable daily fluctuation. Gage at head of flume read March 17 to April 21. Daily discharge ascertained by applying gage height to rating table; shifting-control method used May 22 to July 22. Records for March and April fair; others good.

COOPERATION.—Gage-height record furnished by Spokane Valley Farms Co. and some measurements furnished by Washington Water Power Co.

Canal diverts water from right bank of Spokane River in SE. ¼ sec. 3, T. 50 N., R. 5 W. Boise meridian. Water used for irrigation.

Discharge measurements of Spokane Valley Farms Co.'s canal at Post Falls, Idaho, during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 25	2.33	85.4	June 17	4.78	246	Aug. 25	4.66	223
May 21	4.65	255	July 22	4.73	227			

Daily discharge, in second-feet, of Spokane Valley Farms Co.'s canal at Post Falls, Idaho, for the year ending September 30, 1926

Day	Mar.	Apr.	May	June	July	Aug.	Sept.
1		95	165	251	235	233	218
2		107	165	251	235	233	218
3		116	165	251	235	233	211
4		116	165	251	243	233	211
5		116	165	251	243	233	211
6		116	172	251	235	233	211
7		116	180	251	235	233	198
8		124	180	251	235	233	183
9		130	180	251	235	233	176
10		130	180	251	235	233	176
11		130	188	251	235	233	169
12		134	188	251	235	233	169
13		137	188	251	235	233	149
14		137	204	243	235	233	149
15		137	213	243	235	233	149
16		140	227	243	235	233	10
17	42	144	243	243	235	233	5
18	83	144	243	243	235	233	
19	83	144	251	243	235	225	
20	83	144	251	243	227	225	
21	83	151	251	243	227	225	
22	83	155	251	243	235	225	
23	83	158	259	243	233	225	
24	83	158	259	243	233	225	
25	83	165	259	243	233	225	
26	83	165	259	243	233	225	
27	83	165	251	243	233	218	
28	90	165	251	235	233	218	
29	95	165	251	235	233	218	
30	95	165	251	243	233	218	
31	95		251		233	218	

NOTE.—Gage not read Sept. 14–17; discharge estimated from observer's notes.

Monthly discharge of Spokane Valley Farms Co.'s canal at Post Falls, Idaho, for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
March 17–31	95	42	83.1	2,470
April	165	95	139	8,270
May	259	165	216	13,300
June	251	235	246	14,600
July	243	227	234	14,400
August	233	218	229	14,100
September 1–17	218	5	165	5,560
The period				72,700

NESPELEM RIVER BASIN

NESPELEM RIVER AT NESPELEM, WASH.

LOCATION.—In SE. ¼ sec. 24, T. 31 N., R. 30 E., half a mile above Nespelem, Okanogan County, 5 miles above Little Nespelem River, and 6 miles above mouth.

DRAINAGE AREA.—122 square miles (measured on map of Colville Indian Reservation, edition of 1911).

RECORDS AVAILABLE.—May 1, 1911, to September 30, 1926.

GAGE.—Vertical staff on left bank at gaging bridge, installed October 19, 1916; read by Claude Marble and Jack Pursley.

DISCHARGE MEASUREMENTS.—Made from gaging bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and boulders. Concrete control. Moss grows on concrete control during summer. Right bank flat, subject to overflow at gage height 4.0 feet; left bank high, not subject to overflow. Stage of zero flow, gage height 0.4 foot.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1.17 feet, April 17 and 18 (discharge, 38 second-feet); minimum discharge, 2.7 second-feet July 26 to August 1.

1911–1926: Maximum stage recorded, 4.9 feet April 5, 1919, determined by leveling to high-water mark (discharge, 483 second-feet); minimum discharge, July 26 to August 1, 1926.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Nespelem Canal diverts water for irrigation from a point above gage. See records for Nespelem Canal.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent except as affected by aquatic growth October 21 to March 25, April 11 to May 9, and June 16 to August 31. Rating curve fairly well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table; shifting-control method used October 21 to March 25, April 11 to May 9, and June 16 to August 31. Records good.

Discharge measurements of Nespelem River at Nespelem, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 26	0.94	16.5	May 10	1.02	22.1	Sept. 1	0.72	3.94
Do	.94	16.6	Sept. 1	.72	3.71			

Daily discharge, in second-feet, of Nespelem River at Nespelem, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.1	5.0	5.0	7.7	7.7	13.8	17.8	26.0	10.4	3.0	2.7	3.7
2	6.1	4.7	5.0	7.7	7.7	13.8	23	27	10.4	2.8	3.3	4.0
3	6.1	4.7	5.0	7.7	7.7	13.8	26	27	10.4	2.8	3.3	4.0
4	5.7	4.7	5.0	7.7	11.0	13.8	26	27	10.4	2.8	3.3	4.0
5	5.7	4.7	5.0	7.7	11.0	13.0	26	27	10.4	2.8	3.3	4.0
6	5.7	4.7	5.0	7.7	11.0	12.3	26	27	9.0	2.8	3.3	4.0
7	5.7	4.7	5.0	7.7	11.0	12.3	26	27	8.4	2.8	3.3	4.0
8	5.7	4.7	5.0	7.7	11.0	12.3	26	27	6.4	2.8	3.0	4.0
9	5.7	4.7	5.0	7.7	11.0	12.3	26	27	5.7	2.8	3.0	4.0
10	5.7	5.0	5.0	7.7	13.8	12.3	26	24	5.4	2.8	3.0	4.0
11	5.7	5.0	4.7	7.7	13.8	12.3	27	11.7	5.4	2.8	3.0	4.0
12	5.7	5.0	4.7	7.7	13.8	12.3	30	11.7	5.0	2.8	3.0	4.0
13	5.7	5.0	4.7	7.7	13.8	12.3	30	11.7	5.0	2.8	3.0	4.0
14	5.4	5.0	4.7	7.7	12.3	12.3	33	11.7	5.0	2.8	3.0	4.0
15	5.4	5.0	4.7	7.7	12.3	13.0	37	11.7	5.0	2.8	3.0	4.0
16	5.4	5.0	4.7	7.7	12.3	13.0	37	11.7	4.7	2.8	3.0	4.0
17	5.4	5.0	4.7	8.4	12.3	13.0	38	11.7	4.7	2.8	3.7	4.0
18	5.4	5.0	4.7	8.4	12.3	10.4	38	11.7	4.7	2.8	3.7	4.0
19	5.4	5.0	4.7	8.4	12.3	10.4	33	11.7	4.7	2.8	3.7	4.0
20	5.4	5.0	4.7	8.4	13.8	10.4	33	11.7	4.7	2.8	3.7	4.0
21	5.0	5.0	4.7	8.4	15.4	11.0	33	11.7	4.4	2.8	3.7	4.0
22	5.0	5.0	4.7	8.4	15.4	11.0	3	11.7	4.4	2.8	3.7	4.0
23	5.0	5.0	4.7	8.4	15.4	13.8	35	11.0	4.0	2.8	3.7	4.0
24	5.0	5.0	4.7	7.7	15.4	13.8	35	11.0	4.0	2.8	3.7	4.0
25	5.0	5.0	4.7	7.7	14.6	13.8	35	10.4	4.0	2.8	3.7	4.0
26	5.0	5.0	4.7	7.7	14.6	15.4	35	10.4	3.7	2.7	3.7	4.0
27	5.0	5.0	4.7	7.7	14.6	16.2	26	10.4	3.7	2.7	3.7	4.0
28	5.0	5.0	4.7	7.7	13.8	16.2	26	10.4	3.3	2.7	3.7	4.0
29	5.0	5.0	4.7	7.7	------	17.8	26	10.4	3.3	2.7	3.7	4.0
30	5.0	5.0	4.7	7.7	------	17.8	26	10.4	3.0	2.7	3.7	4.0
31	5.0	------	4.7	7.7	------	17.8	------	10.4	------	2.7	3.3	------

Combined monthly discharge of Nespelem River and Nespelem Canal at Nespelem, Wash., for the year ending September 30, 1926

Month	Discharge in second-feet					Combined run-off in acre-feet
	Maximum (combined)	Minimum (combined)	Mean			
			River	Canal	Combined	
October	11.1	9.8	5.42	4.82	10.2	627
November	9.8	9.3	4.92	4.61	9.53	567
December	9.6	9.3	4.80	4.60	9.40	578
January	8.4	7.7	7.86	.00	7.86	483
February	15.4	7.7	12.5	.00	12.5	694
March	23	12.3	13.3	2.08	15.4	947
April	40	23	29.9	3.08	33.0	1,960
May	34	18.5	16.2	8.62	24.8	1,520
June	18.4	7.7	5.79	5.71	11.5	684
July	7.7	5.9	2.79	3.57	6.36	391
August	7.2	5.7	3.37	2.55	5.92	364
September	8.6	7.0	3.99	3.56	7.55	449
The year	40	5.7	9.19	3.62	12.8	9,260

NESPELEM CANAL AT NESPELEM, WASH.

LOCATION.—In sec. 24, T. 31 N., R. 30 E., three-fourths mile below canal intake and three-fourths mile northwest of Nespelem post office, Okanogan County.

RECORDS AVAILABLE.—April 1, 1921, to September 30, 1926.

GAGE.—Vertical staff on right side of canal; read by Claude Marble.

DISCHARGE MEASUREMENTS.—Made by wading near gage.

CHANNEL AND CONTROL.—Canal section modified during growing season by plant growth.

EXTREMES OF DISCHARGE.—Maximum discharge recorded during year, 10.0 second-feet May 11–22; no flow through canal January 1 to March 17 and April 2.

1921–1926: Maximum stage recorded, 1.8 feet May 29 to June 1, 1924 (discharge, 12.7 second-feet); no flow through canal during winter.

ACCURACY.—Stage-discharge relation changed during period canal was not used. Rating curves fairly well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

Canal diverts water from right bank of Nespelem River about on line between secs. 24 and 13, T. 31 N., R. 30 E.

The following discharge measurements were made:

March 26, 1926: Gage height, 1.12 feet; discharge, 4.80 second-feet.

May 10, 1926: Gage height, 1.41 feet; discharge, 9.08 second-feet.

September 13, 1926: Gage height, 0.97 foot; discharge, 3.36 second-feet.

Daily discharge, in second-feet, of Nespelem Canal at Nespelem, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.0	4.8	4.6	-------	5.3	6.3	8.0	4.7	3.2	3.3
2	5.0	4.6	4.6	-------	-------	6.5	7.1	4.5	2.7	3.2
3	5.0	4.6	4.6	-------	1.7	6.5	7.0	4.4	2.7	3.2
4	4.8	4.6	4.6	-------	1.7	6.5	6.8	4.4	2.7	3.2
5	4.8	4.6	4.6	-------	1.7	6.5	6.5	4.3	2.7	3.2
6	4.8	4.6	4.6	-------	1.7	6.5	6.5	4.1	2.7	3.2
7	4.8	4.6	4.6	-------	1.7	6.5	6.4	4.0	2.7	3.2
8	4.8	4.6	4.6	-------	1.7	6.5	6.0	3.9	2.7	3.2
9	4.8	4.6	4.6	-------	1.7	6.5	5.7	3.8	2.7	3.2
10	4.8	4.6	4.6	-------	1.8	7.8	5.6	3.8	2.7	3.2
11	4.8	4.6	4.6	-------	1.8	10.0	5.5	3.8	2.7	3.2
12	4.8	4.6	4.6	-------	1.8	10.0	5.4	3.6	2.7	3.2
13	4.8	4.6	4.6	-------	1.8	10.0	5.4	3.6	2.7	3.3
14	4.8	4.6	4.6	-------	2.1	10.0	5.4	3.4	2.7	3.4
15	4.8	4.6	4.6	-------	2.3	10.0	5.4	3.3	2.7	3.4
16	4.8	4.6	4.6	-------	2.4	10.0	5.5	3.2	2.7	3.5
17	4.8	4.6	4.6	-------	2.5	10.0	5.5	3.2	2.2	4.6
18	4.8	4.6	4.6	3.7	2.5	10.0	5.5	3.2	2.2	4.6
19	4.8	4.6	4.6	3.7	3.7	10.0	5.5	3.2	2.2	4.4
20	4.8	4.6	4.6	3.7	3.7	10.0	5.5	3.2	2.2	4.0
21	4.8	4.6	4.6	3.9	3.8	10.0	5.4	3.2	2.2	3.7
22	4.8	4.6	4.6	4.0	3.9	10.0	5.4	3.2	2.2	3.7
23	4.8	4.6	4.6	4.6	4.0	9.6	5.3	3.2	2.2	3.7
24	4.8	4.6	4.6	5.0	4.0	9.6	5.3	3.2	2.2	3.7
25	4.8	4.6	4.6	5.0	4.0	9.2	5.2	3.2	2.2	3.7
26	4.8	4.6	4.6	4.9	4.0	9.2	5.0	3.2	2.2	3.7
27	4.8	4.6	4.6	5.0	6.3	9.2	5.0	3.2	2.2	3.7
28	4.8	4.6	4.6	5.0	6.3	8.8	4.9	3.2	2.2	3.7
29	4.8	4.6	4.6	5.3	6.3	8.8	4.9	3.2	2.2	3.7
30	4.8	4.6	4.6	5.3	6.3	8.5	4.7	3.2	3.5	3.7
31	4.8	-------	4.6	5.3	-------	8.1	-------	3.2	3.3	-------

Monthly discharge of Nespelem Canal at Nespelem, Wash., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	5.0	4.8	4.82	296
November	4.8	4.6	4.61	274
December	4.6	4.6	4.60	283
March 18–31	5.3	3.7	4.60	128
April	6.3	.0	3.08	183
May	10.0	6.3	8.62	530
June	8.0	4.7	5.71	340
July	4.7	3.2	3.57	220
August	3.5	2.2	2.55	157
September	4.6	3.2	3.56	212

OKANOGAN RIVER BASIN

SIMILKAMEEN RIVER NEAR OROVILLE, WASH.

LOCATION.—In SE. ¼ sec. 13, T. 40 N., R. 26 E., at Okanogan Valley Power Co.'s plant, 4 miles above Oroville, Okanogan County, and 5 miles above mouth; below all tributaries.

DRAINAGE AREA.—3,450 square miles (measured on topographic and Canadian railway-belt maps).

RECORDS AVAILABLE.—May 14, 1911, to September 30, 1926.

GAGE.—Since March 4, 1924, vertical staff set to sea-level datum on right bank about 40 feet above tailrace of power plant; read by employees of Washington Water Power Co.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge at Oroville, 4 miles below gage.

CHANNEL AND CONTROL.—Narrow canyon at gage and control; fairly permanent. Banks high, not subject to overflow. Control for low and medium stages is riffle formed by bedrock and boulders; high-water control not well defined.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 971.95 feet at 6 p. m. April 30 (discharge, 5,840 second-feet); minimum stage, 964.60 feet from 6 p. m. August 15 to 6 a. m. August 18 (discharge, 75 second-feet).

1911–1926: Maximum stage recorded, 18.5 feet June 8, 1922 (discharge, 21,400 second-feet); river dry at 4 p. m. December 5, 1920, while filling pond behind dam.

ICE.—Stage-discharge relation seriously affected by ice; flow estimated from gage-height record, discharge measurements, observer's notes, and weather records.

DIVERSIONS.—Some water is diverted for irrigation from tributaries above the station. The principal diversion is made from the river above the gage by the West Okanogan Valley Irrigation District. (See p. 120.)

REGULATION.—Slight regulation by means of flashboards during low-water periods to accommodate power load.

ACCURACY.—Stage-discharge relation practically permanent; not affected by ice. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

COOPERATION.—Gage-height record and some discharge measurements furnished by Washington Water Power Co.

Discharge measurements of Similkameen River near Oroville, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft*		*Feet*	*Sec.-ft.*
Feb. 18	65.66	316	June 23	66.93	920	Sept. 9	65.00	130
Mar. 20	66.25	549	Aug. 4	65.09	133	Sept. 11	65.00	127
May 8	69.85	3,310						

Daily discharge, in second-feet, of Similkameen River near Oroville, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	387	406	351	387	444	387	1,100	5,450	1,780	713	169	122
2	406	444	351	444	369	351	1,170	4,720	1,700	744	139	114
3	334	444	463	387	351	369	1,100	4,600	1,700	775	148	114
4	351	444	463	387	351	334	1,040	4,360	1,620	655	139	114
5	351	444	463	387	387	334	1,040	4,240	1,620	655	130	122
6	351	387	484	369	406	387	970	3,910	1,700	601	130	130
7	351	334	463	424	406	406	905	3,480	1,780	576	130	130
8	351	282	601	444	387	369	905	3,280	1,780	576	130	130
9	334	369	576	424	387	387	840	3,090	1,780	551	100	130
10	334	406	601	424	387	369	905	2,820	1,540	444	81	130
11	334	424	505	463	387	387	1,040	2,730	1,380	463	81	139
12	316	369	463	406	387	387	1,540	2,730	1,310	444	87	130
13	282	387	528	406	351	369	2,040	2,910	1,240	424	94	139
14	299	369	601	387	424	528	2,120	3,180	1,170	387	114	130
15	351	369	601	387	316	351	2,820	3,380	1,040	424	100	130
16	351	424	528	387	387	424	4,130	3,090	1,040	351	75	139
17	351	369	528	387	387	463	4,600	2,820	970	282	75	148
18	351	387	528	387	334	505	4,360	2,640	970	282	107	171
19	351	369	528	406	334	551	4,600	2,730	970	266	193	169
20	351	387	484	387	351	601	5,080	2,730	1,240	266	122	148
21	351	387	444	387	316	684	4,480	3,000	1,380	282	130	158
22	351	369	369	387	334	551	3,910	2,730	1,240	266	139	193
23	334	387	601	406	334	551	3,580	2,550	1,170	250	235	220
24	316	424	463	406	351	551	3,280	2,460	1,100	250	193	169
25	316	369	655	406	351	775	3,280	2,290	1,040	220	130	169
26	351	351	713	406	351	775	3,480	2,200	1,040	193	122	193
27	351	351	684	406	387	775	4,130	2,040	970	171	130	220
28	387	351	601	406	369	775	4,840	2,040	905	169	130	220
29	387	334	601	406	------	775	5,320	2,040	808	193	130	220
30	369	334	528	387	------	744	5,580	1,950	744	169	122	220
31	387	------	528	387	------	840	------	1,860	------	193	130	------

Monthly discharge of Similkameen River and West Okanogan Valley Irrigation District Canal near Oroville, Wash., for the year ending September 30, 1926

[Drainage area, 3,450 square miles]

Month	Discharge in second-feet						Run-off (combined)	
	Combined				River mean	Canal mean	Inches	Acre-feet
	Maximum	Minimum	Mean	Per square mile				
October	406	282	348	0.101	348	0.0	0.12	21,400
November	444	282	382	.111	382	.0	.12	22,700
December	713	351	526	.152	526	.0	.18	32,300
January	463	369	402	.117	402	.0	.13	24,700
February	444	316	369	.107	369	.0	.11	20,500
March	840	334	518	.150	518	.0	.17	31,900
April	5,700	----------	2,870	.832	2,810	60.2	.93	171,000
May	5,560	1,990	3,160	.916	3,030	127	1.06	194,000
June	1,910	892	1,430	.414	1,290	137	.46	85,100
July	929	334	555	.161	395	160	.19	34,100
August	373	224	276	.080	127	149	.09	17,000
September	286	227	252	.073	155	96.7	.08	15,000
The year	5,700	224	925	.268	864	61.2	3.64	670,000

SINLAHEKIN CREEK ABOVE BLUE LAKE, NEAR LOOMIS, WASH.

LOCATION.—In NE. ¼ sec. 20, T. 37 N., R. 25 E., 1,800 feet above Blue Lake diversion dam, 1 mile northwest of Blue Lake, 3½ miles above Sarsapkin Creek, and 9½ miles southwest of Loomis, Okanogan County.

DRAINAGE AREA.—41.7 square miles (measured on topographic maps).

RECORDS AVAILABLE.—April 17, 1924, to September 27, 1926. June 13, 1903, to March 30, 1905, at a site 3 miles above Loomis; June 1 to October 31, 1920, at a station half a mile below present gage; May 1, 1921, to September 30, 1923, at Twin Bridges, 4 miles below.

GAGE.—Stevens continuous water-stage recorder on right bank; inspected by employees of Whitestone Irrigation District.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed of stream composed of boulders. Right bank high; left bank subject to overflow at extreme high water. High-water control large boulders; permanent. Low-water control gravel and small boulders; will shift at high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1.04 feet at 1 a. m. April 19 (discharge, 20 second-feet); minimum stage below intake for parts of August 6–10 and probably other days when recorder was not operating, discharge probably as low as 0.6 second-foot.

1920–1926: Maximum stage recorded, 2.6 feet on Twin Bridges gage May 18, 1922 (discharge, 363 second-feet); minimum stage, that of 1926.

ICE.—Station discontinued during winter.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed slightly during winter. Rating curve fairly well defined. Operation of water-stage recorder fairly satisfactory except as noted in footnote to table of daily discharge. Daily discharge ascertained by applying to rating table mean daily gage height determined from recorder graph by inspection. Records fair.

Discharge measurements of Sinlahekin Creek above Blue Lake, near Loomis, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 20	0.57	3.40	May 7	0.81	9.29	June 26	0.58	2.98
Apr. 7	.58	3.14	Do	.81	9.06	Sept. 10	.43	1.19
Do	.59	3.62	June 1	.69	5.31			

Daily discharge, in second-feet, of Sinlahekin Creek above Blue Lake, near Loomis, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.7	2.8		4.8		5.2	3.0	0.9	
2	2.7			3.5		5.0	3.3	1.0	
3	2.7			4.6	12	4.8	2.9	.9	
4	2.6			4.0		4.8	2.6	1.0	
5	2.6			4.0	10	4.8	2.5	1.0	
6	2.6			3.8	9.5	4.6	2.3	.9	
7	2.6			3.5	9.5	4.4	2.6	.8	
8	2.6			3.5	9.1	4.2	2.3	.8	
9	2.6			3.8	9.1	4.2	2.0	.8	
10	2.6			4.8	8.7	4.6	1.9	.8	1.2
11	2.6			6.4	8.7	5.0	1.8		1.2
12	2.6			7.7	8.7	4.2	1.9		1.2
13	2.7			8.7	8.7	4.0	1.9		1.2
14	2.7			11	8.7	4.0	1.6		1.1
15	2.7			14	7.7	3.8	1.6		1.5
16	2.7			15	7.3	4.0	1.6		3.3
17	2.7			13	7.3	4.2	1.5		3.3
18	2.7			16	7.0	4.4	1.5		2.8
19	2.7			17	6.7	7.3	1.4		2.3
20	2.7		3.2	15	6.7	5.4	1.3		2.5
21	2.7		3.2	13	6.4	6.4	1.3		2.6
22	2.6		3.2	11	6.0	4.8	1.2		3.2
23	2.6		3.6	10	7.0	4.4	1.3		2.0
24	2.7		3.5	9.5	7.7	3.8	1.2		1.2
25	2.8		3.5	10	7.0	3.5	1.2		1.9
26	2.9		3.5	12	6.4	3.3	1.2		1.8
27	2.8		3.5	13	6.4	3.2	1.2		1.8
28	3.2		3.6		6.4	3.0	1.1		
29	3.0		4.0	15	6.0	3.0	1.0		
30	3.2		5.7		5.4	2.9	.9		
31	3.0		6.7		5.2		.9		

NOTE.—Water-stage recorder not operating Apr. 28 to May 4; discharge estimated from recorded range of stage and general information. Braced figures show mean discharge for periods indicated.

Monthly discharge of Sinlahekin Creek above Blue Lake, near Loomis, Wash., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	3.2	2.6	2.73	168
March 20-31	6.7	3.2	3.92	93.3
April	17	3.5	9.59	571
May		5.2	8.11	499
June	7.3	2.9	4.37	260
July	3.3	.9	1.74	107
August 1-10	1.0	.8	.89	17.7
September 10-27	3.3	1.1	2.01	71.8

TOATS COULEE CREEK NEAR LOOMIS, WASH.

LOCATION.—In SE. ¼ sec. 33, T. 39 N., R. 25 E., just below Deer Creek, 1,200 feet above intake of Whitestone Irrigation District flume, and 3 miles northwest of Loomis, Okanogan County.

DRAINAGE AREA.—132 square miles (measured on topographic maps).

RECORDS AVAILABLE.—May 1, 1920, to September 30, 1926, when station was discontinued.

GAGE.—Stevens continuous water-stage recorder on left bank at head of falls; installed June 3, 1920; inspected by Price Fruit.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of large boulders and gravel. One channel at all stages. Banks high and wooded. Control head of 20-foot falls several feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.41 feet from 4 to 6 a. m. April 30 (discharge, 81 second-feet); minimum stage, 0.72 foot from 4 to 8 p. m. September 13 and 14 (discharge, 1.6 second-feet); flow may have been lower sometime August 1 to September 9, while intake was clogged and recorder was not operating.

1920–1926: Maximum stage recorded, 4.8 feet at 8 p. m. June 3, 1922 (discharge, 925 second-feet); minimum stage, that of September 13 and 14, 1926.

ICE.—Stage-discharge relation seriously affected by ice; record discontinued during winter.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during winter, March 25, and September 10; not affected by ice while recorder was in operation. Rating curves fairly well defined. Operation of water-stage recorder fairly satisfactory except as noted in footnote to table of daily discharge. Daily discharge ascertained by applying to rating table mean daily gage height determined from recorder graph by inspection. Records fair.

Discharge measurements of Toats Coulee Creek near Loomis, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 19	1.28	7.74	Apr. 7	1.23	5.16	June 26	1.64	12.7
Do	1.29	7.69	May 7	2.13	41.2	Do	1.64	12.8
Apr. 7	1.22	5.02	June 1	1.90	25.1	Sept. 10	.80	2.32

Daily discharge, in second-feet, of Toats Coulee Creek near Loomis, Wash., for the year ending September 30, 1926

Day	Oct.	Mar.	Apr.	May	June	July	Sept.
1	5.2		10	60	24	10	
2			7.2	56	24	24	
3			8.8	54	23	18	
4			8.4	55	24	13	
5			7.9	51	23	11	
6			6.8	45	24	9.8	
7			7.1	44	23	34	
8			7.5	41	22	20	
9			7.9	38	19	13	
10			9.6	34	18	11	2.3
11			12	34	16	9.4	2.2
12			14	37	14	8.4	1.9
13			19	40	12	7.7	1.8
14			27	43	10	7.2	1.8
15			42	40	9.6	7.4	3.1
16			58	36	8.8	7.2	5.2
17			59	36	10	6.2	7.4
18			60	34	12	5.8	7.3
19		7.7	60	36	19	5.5	6.1
20		8.0	53	37	18	5.8	5.5
21		8.0	42	33	23	5.8	6.2
22		7.8	35	31	21	5.1	7.3
23		8.3	28	33	18	4.9	6.3
24		7.8	29	39	15	4.6	4.3
25		6.5	32	37	13	4.2	5.2
26		6.7	42	34	13	3.9	5.5
27		6.5	56	35	13	3.8	5.8
28		6.6	62	33	11	3.6	6.2
29		6.8	68	30	10	3.1	6.6
30		10	71	27	9.4	2.5	6.3
31		13		25		2.5	

NOTE.—Intake clogged July 31 to Aug. 8; water-stage recorder not operating Aug. 9 to Sept. 9. Because of cloudburst on Sept. 18 and other unusual conditions, discharge Aug. 1 to Sept. 9 not estimated.

Monthly discharge of Toats Coulee River near Loomis, Wash., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
March 19–31	13	6.5	7.98	206
April	71	6.8	31.7	1,890
May	60	25	39.0	2,400
June	24	8.8	16.7	994
July	34	2.5	8.98	552
September 10–30	7.4	1.8	4.97	207

WEST OKANOGAN VALLEY IRRIGATION DISTRICT CANAL NEAR OROVILLE, WASH.

LOCATION.—In sec. 20, T. 40 N., R. 27 E., at under crossing of road to power plant, 1½ miles northwest of Oroville, Okanogan County.

RECORDS AVAILABLE.—Irrigation seasons 1922 to 1926.

GAGE.—Since April 7, 1924, float and staff gage on left side of flume; read by employees of West Okanogan Valley Irrigation District.

DISCHARGE MEASUREMENTS.—Made from plank over flume.

CHANNEL AND CONTROL.—Control is long section of metal-lined flume and earth canal. Stage-discharge relation may be affected somewhat by operation of lateral gates considerable distance below gage and by plant growth in earth section.

EXTREMES OF DISCHARGE.—Maximum discharge recorded during year, 169 second-feet July 25; canal dry during nonirrigating season.

1922–1926: Maximum stage recorded, 3.1 feet from June 27 to July 1, 1924, (discharge, 182 second-feet); canal dry June 15, 1923, April 25, 1924, and August 13–15, 1925, and during nonirrigating seasons.

ICE.—Canal dry during winter.

ACCURACY.—Stage-discharge relation changed gradually May 9 to August 3. Rating curves fairly well defined. Daily discharge ascertained by applying daily gage height to rating table; shifting-control method used May 9 to August 3. Records fair.

COOPERATION.—Gage-height record furnished by West Okanogan Valley Irrigation District.

Canal diverts water from left bank of Similkameen River in sec. 7, T. 40 N., R. 26 E., water is used for irrigation.

Discharge measurements of West Okanogan Valley Irrigation District Canal near Oroville, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 8	0.52	23.5	June 28	2.59	149	Sept. 9	2.53	129
May 8	2.62	132	Aug. 4	3.11	157	Sept. 11	2.31	112

Daily discharge, in second-feet, of West Okanogan Valley Irrigation District Canal near Oroville, Wash., for the year ending September 30, 1926

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1		114	127	155	164	132	16	61	129	138	161	162	102
2		114	127	154	163	126	17	51	129	139	160	162	96
3		120	128	154	163	120	18	54	123	139	160	117	96
4		120	128	153	162	120	19	66	123	139	166	76	96
5	15	126	135	153	162	120	20	86	124	139	165	138	96
6		126	129	152	162	120	21	81	124	140	164	138	71
7		132	135	152	162	120	22	96	124	140	164	138	51
8	23	132	129	159	162	120	23	96	124	140	163	138	66
9		132	103	158	162	126	24	96	125	141	163	138	66
10		139	130	158	162	120	25	96	125	141	169	144	58
11	45	139	137	157	162	114	26	102	125	148	168	138	61
12		139	137	153	162	114	27	108	126	149	167	138	61
13		140	137	156	162	114	28	120	126	149	167	138	54
14		134	138	162	162	126	29	120	126	149	166	138	54
15	56	134	138	161	162	126	30	120	126	148	165	138	56
							31	------	127	------	165	132	------

Monthly discharge of West Okanogan Valley Irrigation District Canal near Oroville, Wash., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April	120	----------	60.2	3,580
May	140	114	127	7,810
June	149	103	137	8,150
July	169	152	160	9,840
August	164	76	149	9,160
September	132	51	96.7	5,750
The period	----------	----------	----------	44,300

METHOW RIVER BASIN

METHOW RIVER AT TWISP, WASH.

LOCATION.—In sec. 17, T. 33 N., R. 22 E., at highway bridge at Twisp, Okanogan County, a quarter of a mile below mouth of Twisp River.

DRAINAGE AREA.—1,330 square miles (measured on topographic and Forest Service maps).

RECORDS AVAILABLE.—June 1, 1919, to September 30, 1926.

GAGE.—Chain gage on upstream side of highway bridge; installed June 14, 1920; read by H. A. Mykrantz.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—One channel at all stages; straight for long distance above and below gage. Bed composed of boulders and gravel. Control consists of a large boulder riffle about 300 feet below gage; may shift during floods.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.1 feet April 30 (discharge, 3,050 second-feet); minimum stage, 1.42 feet September 4 and 5 (discharge, 134 second-feet).

1919–1926: Maximum stage recorded, 10.4 feet at 9 a. m. June 5, 1921 (discharge, 13,400 second-feet); minimum discharge, that of September 4 and 5, 1926.

ICE.—Stage-discharge relation seriously affected by ice during severe winters. Flow estimated from discharge measurements, observer's notes, and weather records.

DIVERSIONS.—Numerous diversions above station for irrigation.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent; not affected by ice. Rating curve well defined below 6,000 second-feet. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

Discharge measurements of Methow River at Twisp, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 6	4.06	1,830	June 25	2.70	674
June 2	3.13	965	Sept. 28	1.72	214

Daily discharge, in second-feet, of Methow River at Twisp, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	204	275	238	204	178	191	378	2,760	990	500	178	155
2	204	275	238	204	191	191	426	2,490	920	500	178	144
3	238	256	238	204	191	191	450	2,240	920	500	178	144
4	238	256	238	204	191	191	450	2,120	1,060	450	178	134
5	238	238	238	191	191	191	475	1,900	1,400	426	178	134
6	238	238	238	178	204	191	450	1,800	1,600	426	178	144
7	238	238	238	178	204	191	450	1,700	1,800	401	178	144
8	238	238	238	191	204	204	450	1,500	1,700	401	166	144
9	238	238	221	191	204	204	450	1,310	1,060	378	166	155
10	238	256	221	191	204	204	475	1,310	990	356	166	155
11	238	256	204	191	191	204	550	1,310	850	356	155	155
12	238	256	221	191	191	204	685	1,310	815	314	155	155
13	238	256	221	191	191	221	815	1,700	748	294	155	155
14	238	256	221	191	191	221	920	1,900	685	275	155	155
15	238	256	238	191	191	221	1,220	1,800	655	256	155	155

Daily discharge, in second-feet, of Methow River at Twisp, Wash., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	238	256	221	191	191	238	1,900	1,700	655	256	155	166
17	238	256	221	191	191	238	1,900	1,500	628	238	155	166
18	238	256	221	191	191	238	2,010	1,600	655	221	155	178
19	238	256	221	191	204	238	2,120	1,700	655	204	155	178
20	238	256	221	191	204	256	1,800	1,700	655	204	155	178
21	[6]238	256	221	191	191	256	1,600	1,700	628	191	166	178
22	238	238	221	191	191	275	1,500	1,500	628	191	155	178
23	238	221	221	191	178	275	1,400	1,500	628	191	155	178
24	238	238	221	178	178	275	1,310	1,310	628	178	155	191
25	238	238	204	178	191	275	1,400	1,220	655	178	155	191
26	238	221	204	191	191	275	1,600	1,140	628	178	144	191
27	256	221	204	191	191	275	1,800	1,060	600	178	155	204
28	294	221	204	191	191	275	2,240	1,060	550	178	155	204
29	275	238	204	191	------	294	2,620	1,060	525	178	144	221
30	275	238	204	178	------	314	3,050	990	475	178	144	221
31	275	------	204	178	------	356	------	990	------	178	144	------

Monthly discharge of Methow River at Twisp, Wash., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	294	204	242	14,900
November	275	221	247	14,700
December	238	204	222	13,600
January	204	178	190	11,700
February	204	178	193	10,700
March	356	191	238	14,600
April	3,050	378	1,230	73,200
May	2,760	990	1,580	97,200
June	1,800	475	846	50,300
July	500	178	289	17,800
August	204	144	162	9,960
September	221	134	168	10,000
The year	3,050	134	467	339,000

CHELAN RIVER BASIN

LAKE CHELAN AT CHELAN, WASH.

LOCATION.—In sec. 13, T. 27 N., R. 22 E., at Forest Service boat landing at Chelan, Chelan County, a quarter of a mile above highway bridge at outlet.

DRAINAGE AREA.—950 square miles (measured on topographic and Forest Service maps).

RECORDS AVAILABLE.—September 1 to October 15, 1897; January 1, 1898, to December 31, 1899; January 1 to June 30, 1905; December 5, 1910, to September 30, 1926.

GAGE.—Vertical staff on pile at landing installed December 5, 1910; datum 1,076.07 [7] feet above sea level; read by employees of Chelan Electric Co.

EXTREMES OF STAGE.—Maximum stage recorded during year, 1,080.62 feet at 6 a. m. July 6 and 11.40 a. m. July 7; minimum stage, 1,077.05 feet on afternoon of December 4.

1898–99, 1911–1926: Maximum stage recorded, 1,084.27 feet [8] June 8, 1921; minimum stage, 1,076.78 feet January 27–28 and December 2–3, 1898.

[7] Datum previously published as 1,076.15 feet is erroneous.

[8] Revised sea-level determination.

REGULATION.—The lake level is controlled at low water by operation of flashboard dam at outlet in the interest of navigation.

ACCURACY.—Gage read to hundredths once and frequently twice on days for which gage heights are recorded.

Daily gage height, in feet, of Lake Chelan at Chelan, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	78.08	------	77.12	77.57	77.69	78.01	78.65	80.37	79.80	80.60	79.67	79.27
2	78.06	77.36	77.23	77.51	77.77	78.01	78.65	80.42	79.77	80.52	79.53	79.25
3	77.98	77.31	77.15	------	77.68	78.01	78.71	80.47	79.73	80.52	79.51	79.24
4	------	77.33	77.07	77.49	77.74	78.00	78.64	80.55	79.82	80.50	79.52	79.22
5	77.97	77.28	77.21	77.61	77.71	78.00	78.72	80.53	79.85	80.50	79.47	79.26
6	77.89	77.29	------	77.57	77.78	77.97	78.68	80.49	79.94	80.55	79.41	79.27
7	77.90	77.26	77.19	77.51	------	77.98	78.65	80.49	80.01	80.54	79.43	79.19
8	77.85	------	77.17	77.55	77.87	77.99	78.65	80.45	80.17	80.51	79.44	79.22
9	77.84	77.21	77.21	77.51	77.85	78.04	78.65	80.30	80.15	80.41	79.39	79.16
10	77.75	77.21	77.23	------	77.85	78.05	78.67	80.25	80.23	80.49	79.38	79.15
11	------	77.34	77.25	------	77.83	78.05	78.70	80.15	80.27	80.46	79.37	79.11
12	77.71	77.25	77.27	77.57	77.82	78.05	78.66	80.15	80.21	80.42	79.37	79.11
13	77.69	77.17	------	77.57	77.86	78.11	78.71	80.26	80.32	80.37	79.35	79.09
14	77.62	77.11	77.27	77.58	77.88	78.16	78.79	80.32	80.20	80.37	79.37	79.09
15	77.63	------	77.27	77.61	77.91	78.07	78.97	80.25	80.25	80.25	79.32	79.03
16	77.61	77.24	77.26	77.64	77.87	78.22	79.15	80.22	80.24	80.16	79.32	78.95
17	77.54	77.21	77.28	------	77.89	78.21	79.35	80.20	80.37	80.10	79.30	78.92
18	------	77.23	77.23	77.66	77.91	78.27	79.43	80.18	80.27	80.07	79.38	78.87
19	77.46	77.23	77.29	77.63	77.87	78.28	79.67	80.25	80.25	79.97	79.41	78.90
20	77.46	77.11	------	77.72	77.93	78.39	79.77	80.33	80.25	79.89	79.44	78.90
21	77.44	77.21	77.37	77.67	------	78.44	79.83	80.33	80.19	79.79	79.37	78.91
22	77.44	------	77.33	77.59	78.02	78.45	79.87	80.27	80.29	79.75	79.30	78.91
23	77.36	77.15	77.34	77.57	77.99	78.47	79.84	80.32	80.30	79.84	79.29	78.74
24	77.38	77.18	77.35	------	78.03	78.44	79.81	80.18	80.39	79.69	79.31	78.69
25	------	77.17	------	77.68	78.05	78.50	79.79	80.15	80.42	79.82	79.31	78.65
26	77.32	77.22	77.47	77.62	77.95	78.50	79.77	80.12	80.53	79.75	79.37	78.62
27	77.32	77.21	------	77.64	77.92	78.54	79.85	80.12	80.58	79.74	79.33	78.56
28	77.39	77.17	77.51	77.65	78.00	78.56	79.98	80.02	80.57	79.66	79.31	78.56
29	77.39	------	77.52	77.69	------	78.60	80.17	80.02	80.52	79.65	79.27	78.55
30	77.34	77.12	77.51	77.68	------	78.62	80.34	79.92	80.59	79.67	79.27	78.50
31	77.38	------	77.51	------	------	78.59	80.37	79.82	------	79.67	79.27	------

NOTE.—Add 1,000 feet to obtain mean sea-level elevation.

CHELAN RIVER AT CHELAN, WASH.

LOCATION.—In sec. 13, T. 27 N., R. 22 E., at lower bridge at Chelan, Chelan County, 800 feet below flashboard dam at outlet of Lake Chelan and 4 miles northwest of Chelan Falls.

DRAINAGE AREA.—950 square miles (measured on topographic and Forest Service maps).

RECORDS AVAILABLE.—November 1, 1903, to September 30, 1926.

GAGE.—Vertical staff on fourth bent of left approach to lower bridge; read by employees of Chelan Electric Co.

DISCHARGE MEASUREMENTS.—Made from upper bridge 1,000 feet above gage, from boat, or by wading.

CHANNEL AND CONTROL.—Bed composed of boulders and gravel; shifting at extremely high water. Channel curved above gage but practically straight below. Banks high, not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.8 feet May 4–5 (discharge, 3,800 second-feet); minimum stage, 3.8 feet February 8, 9, 11–16 (discharge, 275 second-feet).

1903–1926; Maximum stage recorded, 12.3 feet June 8, 1921 (discharge, 11,600 second-feet) practically no flow for at least part of day, January 30, 1917, when outlet to lake was blocked solid with ice so that no water could flow over dam.

ICE.—Stage-discharge relation not affected by ice.

DIVERSION.—Several irrigation ditches divert from tributaries a very small proportion of the run-off.

REGULATION.—Flashboard dam 800 feet above gage controls lake level at low water in interest of navigation. Monthly summaries of flow have been corrected for storage.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

COOPERATION.—Gage-height record furnished by Chelan Electric Co.

Discharge measurements of Chelan River at Chelan, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 17	3.80	275	Apr. 19	6.80	2,420	Aug. 3	5.75	1,160
Feb. 19	4.15	334	May 4	7.75	3,700	Sept. 10	5.34	910
Mar. 18	4.89	637	May 5	7.72	3,650	Sept. 28	5.08	737
Apr. 18	6.74	2,380	June 30	6.83	2,400			

Daily discharge, in second-feet, of Chelan River at Chelan, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	865	471	330	320	290	440	1,610	3,520	2,820	2,540	1,200	925
2	865	460	330	310	290	440	1,610	3,660	2,820	2,400	1,200	925
3	865	440	330	315	290	440	1,610	3,660	2,540	2,400	1,200	925
4	865	440	310	320	290	440	1,730	3,800	2,680	2,540	1,120	925
5	865	440	320	320	290	440	1,610	3,660	2,820	2,680	1,120	925
6	810	440	320	320	290	440	1,610	3,660	2,960	2,680	1,050	925
7	810	420	320	310	282	440	1,610	3,660	2,820	2,680	1,050	925
8	755	411	320	310	275	440	1,610	3,520	2,680	2,540	1,050	865
9	755	402	310	310	275	440	1,610	3,520	2,260	2,540	1,050	865
10	700	402	320	310	282	440	1,610	3,380	1,980	2,540	1,050	865
11	675	420	320	310	275	440	1,610	3,240	1,730	2,400	1,050	865
12	650	385	320	310	275	460	1,610	3,240	1,730	2,540	1,050	865
13	650	385	315	310	275	440	1,610	3,240	1,730	2,400	1,050	865
14	650	370	310	310	275	440	1,730	3,380	1,850	2,400	1,050	865
15	650	378	320	310	275	625	1,850	3,380	1,850	2,400	1,050	865
16	625	385	320	300	275	650	1,980	3,240	1,850	2,260	1,050	810
17	625	370	320	305	290	650	2,120	3,240	1,850	2,120	985	810
18	612	370	320	310	342	650	2,260	3,240	1,850	2,120	985	810
19	600	370	320	300	342	650	2,400	3,240	1,850	2,120	985	810
20	600	355	320	300	342	700	2,540	3,380	1,850	1,980	985	810
21	575	355	320	300	331	810	2,680	3,380	1,850	1,850	985	810
22	575	355	320	300	320	925	2,960	3,240	1,850	1,610	985	810
23	575	355	320	300	320	925	2,960	3,240	1,850	1,290	985	865
24	550	342	320	295	385	925	2,820	3,240	1,980	1,290	985	810
25	516	342	320	290	440	925	2,960	3,240	1,980	1,290	985	755
26	482	342	320	300	440	925	2,820	3,100	2,400	1,290	985	755
27	482	330	325	290	460	925	2,820	3,240	2,400	1,290	985	755
28	482	330	330	290	460	1,200	3,100	2,960	2,400	1,200	925	755
29	482	330	320	290	------	1,200	3,240	2,960	2,400	1,200	925	755
30	482	330	320	290	------	1,390	3,520	2,960	2,400	1,200	925	755
31	482	------	320	290	------	1,500	------	2,820	------	1,200	925	------

NOTE.—Gage not read Oct. 4, 11, 18, 25, Nov. 1, 8, 15, 22, 29, Dec. 6, 13, 20, 27, Jan. 3, 10, 17, 24, 31, Feb. 7, 14, 21; discharge interpolated.

Monthly discharge of Chelan River at Chelan, Wash., for the year ending September 30, 1926

[Drainage area, 950 square miles]

Month	Observed discharge in second-feet					Run-off			
				Corrected for storage		Acre-feet			Inches
	Maximum	Minimum	Mean	Mean	Per square mile	Observed	Stored in Chelan Lake	Corrected for storage	
October	865	482	651	291	0.306	40,000	−22,100	17,900	0.35
November	471	330	384	244	.257	22,800	−8,300	14,500	.29
December	330	310	320	519	.546	19,700	+12,200	31,900	.63
January	320	290	305	394	.415	18,800	+5,400	24,200	.48
February	460	275	321	497	.523	17,800	+9,800	27,600	.54
March	1,500	440	702	999	1.05	43,200	+18,200	61,400	1.21
April	3,520	1,610	2,190	3,090	3.25	130,000	+54,000	184,000	3.63
May	3,800	2,820	3,330	3,070	3.23	205,000	−15,600	189,000	3.72
June	2,960	1,730	2,200	2,600	2.74	131,000	+23,600	155,000	3.06
July	2,680	1,200	2,030	1,570	1.65	125,000	−28,600	96,400	1.90
August	1,200	925	1,030	826	.869	63,300	−12,500	50,800	1.00
September	925	755	842	445	.468	50,100	−23,600	26,500	.52
The year	3,800	275	1,200	1,210	1.27	867,000	+12,500	879,000	17.33

NOTE.—Storage estimated from gage-height record of Lake Chelan and capacity of lake determined from areas measured on topographic maps.

WENATCHEE RIVER BASIN

WENATCHEE RIVER NEAR LEAVENWORTH, WASH.

LOCATION.—In SW. ¼ sec. 12, T. 26 N., R. 17 E., 1,500 feet below highway bridge at Plain, half a mile below Beaver Creek, and 14 miles north of Leavenworth, Chelan County.

DRAINAGE AREA.—591 square miles (measured on topographic maps).

RECORDS AVAILABLE.—November 27, 1910, to September 30, 1926.

GAGE.—Since September 6, 1913, vertical and inclined staff gage on left bank 1,500 feet below highway bridge; read by P. H. Hertzog.

DISCHARGE MEASUREMENTS.—Made from cable three-eighths mile above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and small boulders. Control likely to shift during extremely high water. One channel at all stages. Banks high and not subject to overflow. Gage height of zero flow September 24, 1926, 1.3 feet ±0.2 foot.

EXTREMES OF DISCHARGE.—Maximum discharge during year, 6,200 second-feet April 29 and 30; minimum discharge, 250 second-feet October 18 and 19.

1910–1926: Maximum stage recorded, 11.8 feet December 13, 1921 (discharge, 20,800 second-feet); minimum discharge recorded October 18 and 19, 1925.

ICE.—Stage-discharge relation affected by ice during severe winters; flow estimated from gage-height record, discharge measurements, observer's notes, and weather records.

DIVERSIONS.—Wenatchee Park Land & Irrigation Co. diverts a maximum of about 12 second-feet from Chiwawa River during irrigation season.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent for period of unobstructed control, April 29 to September 30; otherwise seriously affected by logs. Rating curve used directly for period of open channel and as standard form for other periods during year, well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good except for periods of estimated discharge.

Discharge measurements of Wenatchee River near Leavenworth, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	[a] 3.20	335	Apr. 9	[a] 4.53	1,950	June 24	4.14	1,990
Nov. 10	[a] 3.05	402	May 4	5.97	5,090	Sept. 8	2.77	472
Jan. 19	[a] 3.95	792	May 5	5.86	4,820	Sept. 24	2.71	426
Mar. 18	[a] 5.12	2,040	June 3	4.46	2,430			

[a] Stage-discharge relation affected by logs.

Daily discharge, in second-feet, of Wenatchee River near Leavenworth, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	367	870						5,520	2,340	1,600	500	448
2	338	770						4,900	2,340	1,540	550	448
3	328	630						5,100	2,480	1,480	550	415
4	316	590						5,100	2,780	1,480	515	415
5	306	515						4,700	2,930	1,540	480	480
6	300	448	1,350	750	850	1,300	2,250	4,120	3,250	1,600	515	480
7	285	415						3,590	3,590	1,540	515	480
8	280	409						3,250	3,420	1,280	515	448
9	280	403						2,930	2,930	1,150	480	448
10	280	409						2,630	2,630	1,150	515	415
11	311	448						2,630	2,200	1,150	515	403
12	300	480						2,930	2,200	1,150	550	367
13	280	480						3,760	2,060	1,030	550	344
14	265	480						4,120	1,930	975	515	355
15	265	480						3,590	1,930	920	515	344
16	260	515	1,400	800	900	1,950	4,700	3,590	2,060	870	515	344
17	255	532						3,760	2,060	820	550	373
18	250	550						4,500	1,930	770	550	385
19	250	550						3,760	1,800	720	550	415
20	255	590						3,590	1,670	630	630	355
21	260	630						3,590	1,670	630	630	415
22	270	590						3,590	1,670	630	515	515
23	270	590						3,090	1,800	590	515	480
24	265	590						2,930	1,930	630	515	415
25	285	590			1,050		4,000	2,630	1,930	630	515	379
26	306	590	1,200	700		2,650		2,480	2,200	675	515	355
27	1,090	550						2,480	2,060	630	550	344
28	1,220	590						2,480	1,670	630	515	355
29	1,220	590					6,200	2,480	1,600	630	515	415
30	1,090	590					6,200	2,480	1,600	630	550	415
31	975	-------			-------		-------	2,200	-------	550	480	-------

NOTE.—Gage not read November 17; discharge interpolated. Braced figures show mean discharge for periods indicated, estimated from results of three discharge measurements, observer's notes, and comparison with records at gaging stations on near-by streams.

Monthly discharge of Wenatchee River near Leavenworth, Wash., for the year ending September 30, 1926

[Drainage area, 591 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	1,220	250	420	0.711	0.82	25,800
November	870	403	549	.929	1.04	32,700
December	----------	----------	1,310	2.22	2.56	80,600
January	----------	----------	748	1.27	1.46	46,000
February	----------	----------	925	1.57	1.64	51,400
March	----------	----------	1,990	3.37	3.88	122,000
April	6,200	----------	3,800	6.43	7.17	226,000
May	5,520	2,200	3,500	5.92	6.82	215,000
June	3,590	1,600	2,220	3.76	4.20	132,000
July	1,600	550	976	1.65	1.90	60,000
August	630	480	530	.897	1.03	32,600
September	515	344	408	.690	.77	24,300
The year	6,200	250	1,450	2.45	33.29	1,050,000

YAKIMA RIVER BASIN

KEECHELUS LAKE NEAR MARTIN, WASH.

LOCATION.—At outlet of lake. 1¼ miles northeast of Meadow Creek railroad station, 3½ miles northwest of Martin, Kittitas County, and 9½ miles northwest of Easton.

DRAINAGE AREA.—55 square miles (measured on topographic maps).

RECORDS AVAILABLE.—January 12, 1906, to September 30, 1926.

GAGE.—Vertical and inclined staff attached to pier of bridge, to gage house, and to stump in lake; set to sea-level datum; read by L. M. Ralph.

EXTREMES OF STORAGE.—Maximum stage recorded during year, 2,515.34 feet at 8.50 a. m. May 13 (storage, 153,550 acre-feet); minimum stage, 2,428.30 feet at 5.20 p. m. September 20 (storage, 4,120 acre-feet).

1906–1926: Maximum stage recorded, 2,518.09 feet at 11.05 a. m. May 16, 1925 (storage, 160,570 acre-feet); minimum stage, that of September 20, 1926.

STORAGE.—Capacity of reservoir, 152,000 acre-feet; elevation of gate sill, 2,425 feet; elevation of spillway crest, 2,515 feet. Record of storage or release each month used to determine discharge without storage at gaging station below dam.

ACCURACY.—Staff gage read to hundredths twice daily. Records excellent.

COOPERATION.—Complete records furnished by United States Bureau of Reclamation.

Daily storage, in acre-feet, of Keechelus Lake near Martin, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20,860	21,940	31,440	64,250	77,620	90,340	115,420	145,260	141,140	92,760	36,470	5,480
2	20,230	22,130	32,490	64,440	77,840	90,860	116,300	146,080	139,640	91,340	34,210	5,300
3	19,610	22,360	33,200	64,850	78,050	91,400	117,130	146,880	137,970	89,860	31,960	5,190
4	18,960	22,520	33,990	65,110	78,300	91,810	118,000	148,120	136,260	88,420	29,710	5,080
5	18,410	22,680	35,790	65,670	78,840	92,220	118,470	149,240	134,640	86,960	27,370	4,960
6	17,790	22,800	37,490	67,120	79,410	92,710	118,980	150,170	132,960	84,970	25,150	4,890
7	17,130	22,900	38,680	68,970	79,920	93,080	119,490	150,750	131,290	83,440	22,860	4,820
8	17,010	23,020	39,560	69,740	80,440	93,490	120,000	151,280	129,720	81,520	20,740	4,720
9	17,010	23,160	40,220	70,310	80,970	93,840	120,540	151,780	128,030	79,580	19,000	4,640
0	17,040	23,310	41,210	70,760	81,630	94,250	121,260	152,290	126,250	77,710	17,330	4,600
11	17,040	23,600	43,950	71,140	82,050	94,700	122,300	152,770	124,370	75,870	15,800	4,510
12	17,050	23,920	46,530	71,470	82,500	95,260	123,500	153,220	122,680	73,960	14,420	4,460
13	17,150	24,240	48,150	71,680	82,920	96,250	124,640	153,500	120,810	72,030	13,080	4,400
14	17,300	24,570	49,080	72,170	83,270	97,570	125,790	153,270	119,160	70,190	11,940	4,320
15	17,400	24,860	49,880	72,700	83,660	98,980	127,290	153,020	117,490	68,260	10,850	4,280
16	17,460	25,270	50,490	73,160	84,010	100,600	129,070	152,640	115,750	66,360	10,010	4,290
17	17,520	25,620	51,080	73,570	84,360	102,060	130,470	152,490	114,130	64,400	9,280	4,260
18	17,530	26,180	51,600	73,910	84,650	103,110	132,020	152,290	112,320	62,630	8,730	4,210
19	17,590	26,690	52,060	74,220	85,030	103,980	133,460	152,040	110,600	60,740	8,190	4,190
20	17,700	27,160	52,510	74,450	85,380	104,750	134,850	151,730	108,940	58,900	7,680	4,140
21	17,790	27,540	53,090	74,810	85,850	105,650	135,970	151,350	107,310	57,060	7,390	4,240
22	17,850	28,060	54,200	75,110	86,260	106,570	136,930	151,050	105,670	55,200	6,950	4,820
23	17,930	28,370	56,590	75,310	86,670	107,650	137,650	150,700	104,060	53,430	6,660	5,050
24	18,060	28,690	58,850	75,610	87,370	108,790	138,350	150,170	102,640	51,660	6,450	5,040
25	18,310	29,260	60,350	75,870	88,010	109,770	138,960	149,340	101,090	49,870	6,260	5,010
26	18,580	29,560	61,320	76,100	88,580	110,500	139,830	148,620	100,110	48,070	6,080	5,000
27	19,160	29,910	62,070	76,320	89,260	111,200	140,800	147,940	98,600	46,250	6,000	4,890
28	20,100	30,340	62,640	76,620	89,740	111,870	141,950	146,780	97,110	44,440	5,870	4,860
29	20,880	30,630	63,120	76,900	-------	112,560	143,300	145,460	95,600	42,650	5,760	4,920
30	21,400	30,930	63,550	77,150	-------	113,230	144,400	144,030	94,210	40,630	5,680	4,890
31	21,720	-------	63,880	77,380	-------	114,340	--------	142,540	--------	38,590	5,580	------

YAKIMA RIVER NEAR MARTIN, WASH.

LOCATION.—Below dam at outlet of Keechelus Lake, 1½ miles east of Meadow Creek railroad station, 3½ miles northwest of Martin, Kittitas County, and 9½ miles northwest of Easton.

DRAINAGE AREA.—55 square miles (measured on topographic maps).

RECORDS AVAILABLE.—October 18 to November 14, 1903; January 28, 1904, to September 30, 1926.

GAGE.—Friez water-stage recorder on left bank, installed July 20, 1923; inspected by L. M. Ralph.

DISCHARGE MEASUREMENTS.—Made from cable 700 feet below dam or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel; shifts at high stages. Logs and brush sometimes lodge on riffle control below gage and affect stage-discharge relation.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 8.03 feet at 7 p. m. August 5 (discharge, 1,220 second-feet); minimum discharge, 1 second-foot October 15 to November 1.

1904–1926: Maximum discharge, 7,370 second-feet at 10.45 a. m. March 25, 1915, when temporary crib dam was washed out (gage destroyed; discharge computed from hourly gage readings of lake surface and estimated natural inflow to lake; practically no flow when gates in Keechelus Reservoir Dam are closed.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—None.

REGULATION.—Flow partly controlled by storage and release of water at Keechelus Reservoir. Monthly discharge without storage determined from records of stage at reservoir.

ACCURACY.—Stage-discharge relation changed slightly during winter. Rating curves fairly well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

COOPERATION.—Complete records furnished by United States Bureau of Reclamation.

Discharge measurements of Yakima River near Martin, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 8	2.80	61.8	May 21	5.52	465	Aug. 14	6.12	571
Mar. 26	1.29	2.37	June 17	7.12	899	Sept. 9	3.16	82.5
Apr. 22	1.28	2.81	July 23	7.40	970	Sept. 24	3.60	130

Daily discharge, in second-feet, of Yakima River near Martin, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	449	1	22	41	2	2	3	3	880	756	1,170	127
2	438	5	22	41	2	2	3	3	913	786	1,170	140
3	405	17	23	41	2	2	3	3	947	786	1,210	128
4	365	18	23	42	2	2	3	3	947	786	1,210	118
5	365	18	22	42	2	2	3	3	947	786	1,210	108
6	356	18	22	42	2	2	3	3	947	913	1,210	100
7	257	18	22	42	2	2	3	3	947	982	1,170	96
8	60	17	22	42	2	2	3	3	947	982	1,020	89
9	36	17	24	42	2	2	3	3	947	982	913	84
0	17	17	25	43	2	2	3	3	947	982	848	80

Daily discharge, in second-feet, of Yakima River near Martin, Wash., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	17	16	29	43	2	2	3	3	9'7	982	786	75
12	16	16	32	29	2	2	3	67	9'7	982	727	72
13	9	16	34	18	2	2	3	309	9'7	982	684	74
14	2	16	35	17	2	2	3	385	9'7	982	616	77
15	1	16	34	17	2	2	3	385	9'7	982	552	76
16	1	16	36	17	2	2	3	385	9'3	982	493	76
17	1	16	36	17	2	2	3	448	8'9	982	426	75
18	1	16	37	18	2	2	3	493	9'7	982	375	73
19	1	16	38	18	2	2	3	493	9'3	982	327	71
20	1	16	38	18	2	2	3	493	8'9	982	282	68
21	1	17	38	18	2	2	3	470	8'9	982	249	80
21	1	18	38	18	2	2	3	448	8'8	982	218	121
23	1	19	39	8	2	2	3	482	8'8	982	188	130
24	1	21	39	2	2	3	3	552	8'8	982	170	129
25	1	21	39	2	2	3	3	590	6'0	982	151	131
26	1	22	40	2	2	3	3	528	6'1	982	142	129
27	1	22	41	2	2	3	3	656	7'6	982	133	125
28	1	21	41	2	2	3	3	817	7'6	982	123	123
29	1	21	42	2	-------	3	3	848	7'6	1,020	114	124
30	1	22	42	2	-------	3	3	848	756	1,090	112	121
31	1	-------	41	2	-------	3	-------	880	-------	1,130	103	-------

Monthly discharge of Yakima River near Martin, Wash., for the year ending September 30, 1926

[Drainage area, 55 square miles]

Month	Discharge in second-feet					Run-off			
	Observed			Corrected for storage		Acre-feet			Inches
	Maximum	Minimum	Mean	Mean	Per square mile	River (observed)	Stored	River (corrected for storage)	
October	449	1	90.6	94.3	1.71	5,570	+230	5,800	1.97
November	22	1	17.0	171	3.11	1,010	+9,210	10,200	3.47
December	42	22	32.8	569	10.3	2,010	+33,000	35,000	11.87
January	43	2	22.3	242	4.40	1,370	+13,500	14,900	5.07
February	2	2	2.0	225	4.09	111	+12,400	12,500	4.26
March	3	2	2.3	402	7.31	139	+24,600	24,700	8.43
April	3	3	3.0	509	9.25	178	+30,100	30,300	10.32
May	880	3	342	311	5.65	21,000	−1,860	19,100	6.51
June	947	620	883	70.6	1.28	52,500	−48,300	4,200	1.43
July	1,130	756	957	52.0	.945	58,800	−55,600	3,200	1.09
August	1,210	103	584	47.2	.858	35,900	−33,000	2,900	.99
September	140	68	101	89.1	1.62	5,990	−690	5,300	1.81
The year	1,210	1	255	232	4.22	185,000	−16,400	168,000	57.22

YAKIMA RIVER AT CLE ELUM, WASH.

LOCATION.—In sec. 27, T. 20 N., R. 15 E., at highway bridge at Cle Elum, Kittitas County, just above Roslyn Creek, 3 miles below mouth of Cle Elum River, and 6½ miles above Teanaway Creek.

DRAINAGE AREA.—500 square miles (measured on topographic maps).

RECORDS AVAILABLE.—August 24, 1906, to September 30, 1923.

GAGE.—Stevens continuous water-stage recorder on left bank just below highway bridge since October 22, 1924. Gage inspected by J. F. Huffman.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and cobblestones. One channel at all stages. Control at low water formed by broad riffle about 1,200 feet below gage; riffle drowned out at high water. Control shifts during floods.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.78 feet at 3.30 p. m. April 17 (discharge, 3,840 second-feet); minimum stage, 0.94 foot at 4.30 p. m. October 25 (discharge, 179 second-feet).

1906–1926: Maximum stage, from high-water marks, 12.5 feet November 14, 1906 (discharge, about 25,600 second-feet); minimum stage, 0.83 foot from 7.30 a. m. November 17 to 7.15 a. m. November 19, 1923 (discharge, 144 second-feet).

ICE.—Stage-discharge relation seriously affected by ice during severe winters.

DIVERSIONS.—None.

REGULATION.—Flow partly regulated by storage and release of water at Keechelus, Kachess, and Cle Elum Reservoirs. Monthly discharge without storage determined from records of stage at reservoirs.

ACCURACY.—Stage-discharge relation practically permanent; not affected by ice. Rating curves well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

COOPERATION.—Complete record furnished by United States Bureau of Reclamation.

Discharge measurements of Yakima River at Cle Elum, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 10	1.45	378	Apr. 22	3.88	2,470	July 22	4.12	2,850
Oct. 30	1.60	451	May 20	3.72	2,240	Aug. 13	3.40	1,860
Mar. 27	3.42	1,970	June 16	4.13	2,760	Sept. 9	1.97	689

Daily discharge, in second-feet, of Yakima River at Cle Elum, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	700	454	270	1,110	544	1,200	2,500	2,770	1,920	2,980	2,700	910
2	640	427	270	1,030	532	1,160	2,380	2,380	1,920	3,060	2,700	910
3	514	410	270	963	508	1,160	2,140	2,200	2,030	3,060	2,700	880
4	484	400	282	910	532	1,160	1,920	2,320	2,140	3,060	2,700	835
5	466	380	427	990	694	1,160	1,700	2,440	2,140	3,060	2,700	793
6	454	370	568	1,500	772	1,110	1,550	2,140	2,140	3,060	2,630	765
7	449	375	508	1,650	821	1,070	1,410	1,860	2,140	3,060	2,560	739
8	520	365	454	1,500	880	1,070	1,320	1,600	2,380	3,060	2,440	706
9	400	355	422	1,410	858	1,030	1,320	1,410	2,770	3,060	2,260	664
10	360	337	405	1,280	872	974	1,410	1,280	2,700	3,060	2,200	640
11	342	328	670	1,160	888	934	1,750	1,200	2,770	3,060	2,080	610
12	328	342	1,650	1,070	872	990	2,140	1,200	2,770	3,060	1,970	580
13	324	342	2,200	990	835	1,320	2,320	1,450	2,770	3,060	1,920	532
14	319	342	1,970	934	793	1,700	2,440	1,860	2,910	2,980	1,810	514
15	314	342	1,700	934	765	2,200	2,840	1,920	2,910	3,060	1,750	520
16	298	337	1,500	926	746	2,630	3,610	1,810	2,840	3,060	1,650	538
17	252	346	1,320	902	746	2,700	3,700	1,700	2,770	3,060	1,550	526
18	242	350	1,200	835	706	2,440	3,610	1,920	2,840	3,060	1,500	422
19	221	355	1,070	772	700	2,200	3,530	2,200	2,980	3,060	1,410	390
20	214	355	990	732	758	2,030	3,290	2,260	2,910	2,980	1,370	370
21	204	346	1,070	746	765	1,920	2,910	2,200	2,910	2,980	1,280	375
22	196	346	1,070	720	765	1,860	2,500	2,080	2,840	2,770	1,200	454
23	193	350	1,600	700	786	2,080	2,140	1,970	2,910	2,770	1,160	427
24	190	346	2,770	676	1,030	2,320	1,860	1,860	2,980	2,770	1,110	385
25	186	346	2,770	634	1,280	2,260	1,700	1,810	2,910	2,770	1,070	319
26	186	342	2,380	604	1,240	2,080	1,650	1,700	2,910	2,770	1,030	282
27	204	332	2,030	580	1,200	1,920	1,860	1,550	2,980	2,700	982	290
28	282	324	1,700	568	1,200	1,810	2,380	1,810	2,980	2,700	950	298
29	422	298	1,500	574	-------	1,700	2,910	1,920	3,060	2,700	926	282
30	460	282	1,320	562	-------	1,750	3,060	1,920	2,980	2,700	918	274
31	460	-------	1,240	550	-------	2,140	-------	1,920	-------	2,700	934	------

Monthly discharge of Yakima River at Cle Elum, Wash., for the year ending September 30, 1926

[Drainage area, 500 square miles]

Month	Discharge in second-feet					Run-off			
	Observed			Corrected for storage		Acre-feet			Inches
	Maximum	Minimum	Mean	Mean	Per square mile	Observed	Stored	Corrected for storage	
October	700	186	349	416	0.832	21,500	+4,070	25,600	0.96
November	454	282	354	605	1.21	21,100	+14,900	36,000	1.35
December	2,770	270	1,210	2,470	4.94	74,600	+77,600	152,000	5.70
January	1,650	550	920	1,340	2.68	56,500	+25,800	82,300	3.09
February	1,280	508	825	1,270	2.54	45,800	+24,600	70,400	2.64
March	2,700	934	1,680	2,470	4.94	103,000	+49,500	152,000	5.70
April	3,700	1,320	2,330	3,360	6.72	139,000	+60,500	200,000	7.50
May	2,770	1,200	1,890	2,100	4.20	116,000	+12,800	129,000	4.84
June	3,060	1,920	2,670	958	1.92	159,000	−102,000	57,000	2.14
July	3,060	2,700	2,940	439	.878	181,000	−154,000	27,000	1.01
August	2,700	918	1,750	296	.592	107,000	−88,800	18,200	.68
September	910	274	541	413	.826	32,200	−7,640	24,600	.92
The year	3,700	186	1,460	1,350	2.70	1,060,000	−82,700	974,000	36.53

KACHESS LAKE NEAR EASTON, WASH.

LOCATION.—In sec. 24, T. 21 N., R. 13 E. (unsurveyed), at lake outlet, 2½ miles northwest of Easton, Kittitas County.

DRAINAGE AREA.—63 square miles (measured on topographic maps).

RECORDS AVAILABLE.—September 30, 1905, to September 30, 1926.

GAGE.—Stevens water-stage recorder, installed in gate tower November 25, 1915, for use when gates are closed, and staff gage in three sections (datum, mean sea level); inspected by Fred Diener.

EXTREMES OF STORAGE.—Maximum stage recorded during year, 2,258.39 feet at 6.10 a. m. June 8 (storage, 222,770 acre-feet); minimum stage, 2,200 feet at 6.50 a. m. September 21 (storage, 20,030 acre-feet).

1906–1926: Maximum stage recorded, 2,261.14 feet at 4 p. m. July 21, 1920 (storage, 235,090 acre-feet); minimum stage, 2,197.73 feet September 26–27, 1915 (storage, 13,730 acre-feet).

STORAGE.—Capacity of reservoir at crest of spillway, 221,000 acre-feet. Elevation of gate sill, 2,192.75 feet; and of spillway crest, 2,258 feet. Record of storage or release each month used for determining discharge without storage at gaging station below dam.

ACCURACY.—Water-stage recorder not used during year. Staff gage read to hundredths twice daily. Records excellent.

COOPERATION.—Complete record furnished by United States Bureau of Reclamation.

Daily storage, in acre-feet, of Kachess Lake near Easton, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	89,230	92,430	99,220	126,800	140,010	151,950	175,590	204,280	221,750	176,840	84,850	31,010
2	89,260	92,670	100,030	127,170	140,200	152,540	176,460	205,020	222,110	173,770	82,250	29,950
3	89,350	92,770	100,700	127,510	140,430	153,020	177,300	205,890	222,280	170,840	79,740	29,000
4	89,400	92,840	101,330	127,840	140,700	153,410	177,920	207,150	222,370	167,890	77,090	28,080
5	89,430	92,940	102,280	128,850	141,270	153,880	178,590	208,110	222,280	164,950	74,680	27,240
6	89,460	93,010	103,340	130,270	141,810	154,320	179,170	208,940	222,280	161,870	72,330	26,460
7	89,520	93,080	104,120	131,100	142,380	154,710	179,630	209,590	222,730	158,860	70,090	25,760
8	89,580	93,190	104,830	131,740	142,810	155,150	180,140	210,120	222,420	155,820	67,850	25,040
9	89,610	93,290	105,470	132,230	143,150	155,630	180,640	210,640	220,730	152,660	65,530	24,280
10	89,670	93,460	106,190	132,710	143,540	155,940	181,350	211,040	219,180	149,480	63,390	23,780

Daily storage, in acre-feet, of Kachess Lake near Easton, Wash., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	89,700	93,780	108,320	133,170	143,930	156,260	182,400	211,430	217,410	146,410	61,370	23,220
12	89,720	93,980	110,470	133,540	144,270	156,860	183,450	212,000	216,220	143,310	59,370	22,860
13	89,750	94,230	111,690	133,880	144,620	157,700	184,420	212,620	214,860	140,470	57,530	22,310
14	89,750	94,400	112,700	134,330	144,930	158,660	185,560	213,320	213,360	137,790	55,570	21,840
15	89,780	94,510	113,430	134,940	145,280	159,940	187,000	213,800	211,820	134,780	53,730	21,450
16	89,810	94,710	114,120	135,500	145,550	161,390	188,690	214,240	210,290	131,960	51,920	21,080
17	89,840	95,030	114,590	136,000	145,980	162,520	190,140	214,860	208,720	128,550	50,200	20,750
18	89,870	95,340	115,200	136,380	146,330	163,530	191,670	215,650	207,060	125,510	48,650	20,640
19	89,870	95,580	115,560	136,610	146,760	164,380	193,000	216,490	205,320	122,550	47,150	20,440
20	89,900	95,830	116,070	136,870	147,150	165,270	194,240	217,100	203,630	119,240	45,520	20,220
21	89,930	96,040	117,050	137,330	147,570	165,920	195,180	217,680	201,900	116,250	44,250	20,110
22	89,960	96,280	117,850	137,600	147,960	166,660	196,120	218,210	200,170	113,140	42,680	20,330
23	89,990	96,530	119,610	137,860	148,430	167,720	196,860	218,690	198,140	110,610	41,270	20,500
24	90,020	96,810	121,400	138,130	149,440	168,830	197,370	219,090	196,170	107,680	40,200	20,420
25	90,190	97,190	122,620	138,290	150,030	169,730	198,060	219,490	193,980	104,730	38,910	20,640
26	90,340	97,440	123,620	138,520	150,580	170,550	198,790	219,840	191,290	101,820	37,820	20,700
27	90,680	97,750	124,400	138,710	151,010	171,250	199,780	220,110	188,400	98,870	36,550	20,720
28	91,180	98,210	125,030	138,980	151,440	171,990	201,030	220,460	185,600	95,900	35,540	20,670
29	91,670	98,450	125,540	139,280	-------	172,610	202,330	220,860	182,570	92,910	34,480	20,750
30	92,050	98,730	126,030	139,590	-------	173,270	203,410	221,220	179,680	90,070	33,300	21,000
31	92,250	-------	126,400	139,820	-------	174,470	-------	221,400	-------	87,460	32,070	-------

KACHESS RIVER NEAR EASTON, WASH.

LOCATION.—In sec. 3, T. 20 N., R. 13 E., three-fourths mile below Kachess storage dam, one-fourth mile above mouth, and 2 miles northwest of Easton, Kittitas County.

DRAINAGE AREA.—64 square miles (measured on topographic maps).

RECORDS AVAILABLE.—November 20, 1903, to September 30, 1926.

GAGE.—Stevens water-stage recorder at highway bridge; installed August 15, 1916; inspected by Fred Diener.

DISCHARGE MEASUREMENTS.—Made from cable one-fourth mile below Kachess storage dam or by wading.

CHANNEL AND CONTROL.—Bed composed of light gravel and sand, shifting frequently. One channel at all stages. Control formed by broad riffle 125 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.06 feet at 1 a. m. July 18 (discharge, 1,600 second-feet); practically no flow when gates in dam are closed.

1904–1926: Maximum discharge, 2,240 second-feet (computed from gate opening) August 27, 1920; practically no flow when gates in dam are closed.

ICE.—Stage-discharge relation affected by ice; flow estimated from gage-height record, observer's notes, weather records, and discharge measurements.

DIVERSIONS.—None.

REGULATION.—Flow controlled by storage and release of water in Kachess Lake Reservoir. Monthly discharge, without storage, determined from records of stage of reservoir.

ACCURACY.—Stage-discharge relation affected by backwater from Yakima River August 15 to September 8; not affected by ice. Rating curves fairly well defined. Water-stage recorder inspected daily except when gates are closed. Daily discharge ascertained by applying mean daily gage height to rating table. When gates are closed leakage estimated from knowledge of governing conditions. Records good.

COOPERATION.—Complete records furnished by United States Bureau of Reclamation.

Discharge measurements of Kachess River near Easton, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 28	1.79	1.78	June 17	4.88	850	Aug. 14	4.98	942
Mar. 26	1.74	4.60	July 22	5.87	1,480	Sept. 9	3.49	341
May 22	1.78	4.46						

Daily discharge, in second-feet, of Kachess River near Easton, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	2	1	1	1	1	5	5	4	1,500	1,370	565
2	0	2	1	1	1	1	5	5	4	1,500	1,340	541
3	0	2	1	1	1	1	5	5	124	1,520	1,320	514
4	0	2	1	1	1	1	5	5	176	1,530	1,290	492
5	0	2	1	1	1	1	5	5	146	1,530	1,270	458
6	0	2	1	1	1	1	5	4	150	1,530	1,240	428
7	0	1	1	1	1	1	5	4	173	1,530	1,210	397
8	0	1	1	1	1	1	5	4	640	1,540	1,160	366
9	9	1	1	1	1	1	5	4	837	1,550	1,110	337
10	29	1	1	1	1	1	5	4	853	1,560	1,060	313
11	29	1	1	1	1	1	5	4	869	1,560	1,030	288
12	29	1	1	1	1	1	5	4	891	1,560	993	266
13	29	1	1	1	1	1	5	4	914	1,510	959	248
14	29	1	1	1	1	2	5	4	925	1,510	925	234
15	29	1	1	1	1	2	5	4	897	1,560	896	237
16	21	1	1	1	1	2	5	4	869	1,560	863	240
17	2	1	1	1	1	2	5	4	880	1,560	835	223
18	2	1	1	1	1	3	5	4	947	1,560	803	204
19	2	1	1	1	1	3	5	4	976	1,560	782	189
20	2	1	1	1	1	3	5	4	970	1,560	760	180
21	2	1	1	1	1	3	5	4	970	1,530	734	180
22	2	1	1	1	1	4	5	4	982	1,480	704	165
23	2	1	1	1	1	4	5	4	1,110	1,490	679	141
24	2	1	1	1	1	4	5	4	1,120	1,500	659	101
25	2	1	1	1	1	4	5	4	1,230	1,500	634	25
26	2	1	1	1	1	5	5	4	1,500	1,500	610	15
27	2	1	1	1	1	5	5	4	1,510	1,490	586	14
28	2	1	1	1	1	5	5	4	1,510	1,480	572	13
29	2	1	1	1	-------	5	5	4	1,510	1,450	562	11
30	2	1	1	1	-------	5	5	4	1,510	1,420	589	1
31	2	-------	1	1	-------	5	-------	4	-------	1,400	593	------

Monthly discharge of Kachess River near Easton, Wash., for the year ending September 30, 1926

[Drainage area, 64 square miles]

Month	Discharge in second-feet					Run-off			
	Observed			Corrected for storage		Acre-feet			Inches
	Maximum	Minimum	Mean	Mean	Per square mile	River (observed)	Stored in Kachess Lake Reservoir	River (corrected for storage)	
October	29	0	7.5	57.6	0.900	461	+3,080	3,540	1.04
November	2	1	1.2	110	1.72	71.4	+6,480	6,550	1.92
December	1	1	1.0	452	7.06	61.5	+27,700	27,800	8.14
January	1	1	1.0	220	3.44	61.5	+13,400	13,500	3.97
February	1	1	1.0	211	3.30	55.5	+11,600	11,700	3.44
March	5	1	2.5	377	5.89	154	+23,000	23,200	6.79
April	5	5	5.0	491	7.67	297	+28,900	29,200	8.56
May	5	4	4.2	298	4.66	258	+18,000	18,300	5.37
June	1,510	4	840	139	2.17	50,000	−41,700	8,300	2.42
July	1,560	1,400	1,520	17.9	.280	93,300	−92,200	1,100	.32
August	1,370	562	908	6.51	.102	55,800	−55,400	400	.12
September	565	1	246	58.8	.919	14,600	−11,100	3,500	1.03
The year	1,560	0	297	203	3.17	215,000	−68,200	147,000	43.12

CLE ELUM LAKE NEAR ROSLYN, WASH.

LOCATION.—In sec. 10, T. 20 N., R. 14 E., at outlet of lake, 4 miles northwest of Roslyn, Kittitas County, and 7½ miles northwest of Cle Elum.

DRAINAGE AREA.—202 square miles (measured on topographic maps).

RECORDS AVAILABLE.—May 4, 1906, to September 30, 1926.

GAGE.—Stevens water-stage recorder; installed November 8, 1916; inspected by W. W. Wasson. Zero of gage at elevation of gate sills, 2,122.75 feet above sea level.

EXTREMES OF STORAGE.—Maximum stage recorded during year, 13.65 feet at 6.20 a. m. April 17 (storage, 29,570 acre-feet); minimum stage, 2.72 feet at 5.05 p. m. October 24 (storage, 5,660 acre-feet).

1907–1926: Maximum stage recorded, 19.10 feet at 6 p. m. December 30, 1917 (storage, 43,180 acre-feet); minimum stage estimated at 1.15 feet August 31, 1906 (storage, 2,380 acre-feet).

STORAGE.—Reservoir capacity at crest of spillway (gage height, 11.3 feet), 24,100 acre-feet. Storage or release each month used in determining discharge without storage for gaging station below dam.

ACCURACY.—Water-stage recorder referred to staff gage read to hundredths twice daily. Records excellent.

COOPERATION.—Complete records furnished by United States Bureau of Reclamation.

Daily storage, in acre-feet, of Cle Elum Lake near Roslyn, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,730	9,850	9,620	25,740	24,810	25,460	27,700	28,430	25,240	13,660	7,450	7,190
2	8,540	9,790	10,680	25,600	24,760	25,490	27,590	28,010	24,920	13,440	7,400	7,190
3	8,690	9,580	11,760	25,490	24,690	25,490	27,310	27,680	24,580	13,190	7,340	7,240
4	8,800	9,370	12,590	25,400	24,760	25,510	26,890	27,910	24,440	12,640	7,210	7,260
5	8,920	9,160	13,660	25,620	24,940	25,580	26,640	28,010	24,380	12,270	7,170	7,170
6	9,070	8,820	15,260	26,360	25,060	25,600	26,400	27,610	24,400	12,000	7,110	7,130
7	9,160	8,540	16,770	26,610	25,140	25,580	26,220	27,150	24,600	11,630	7,000	7,090
8	8,860	8,400	18,060	26,450	25,170	25,530	26,130	26,750	24,990	11,570	6,960	7,090
9	8,610	8,180	19,220	26,290	25,140	25,510	26,130	26,520	25,030	11,630	6,860	7,050
10	8,370	7,970	20,290	26,080	25,170	25,440	26,360	26,290	24,850	11,530	6,900	7,020
11	8,180	7,850	22,780	25,900	25,170	25,370	26,820	26,200	24,540	11,340	6,900	6,980
12	7,870	7,830	26,340	25,740	25,190	25,490	27,360	26,290	24,040	11,210	6,880	6,900
13	7,610	7,780	27,150	25,600	25,100	25,710	27,680	26,640	23,400	11,000	6,860	6,860
14	7,340	7,720	27,080	25,530	25,100	26,290	27,840	26,960	23,000	10,870	6,770	6,750
15	7,130	7,660	26,660	25,550	25,080	26,940	28,450	26,940	22,220	10,510	6,750	6,820
16	6,900	7,680	26,400	25,530	25,060	27,500	29,380	26,800	21,690	10,260	6,710	6,860
17	6,710	7,700	26,170	25,440	25,030	27,590	29,500	26,590	21,050	9,980	6,650	6,900
18	6,500	7,700	25,970	25,370	24,990	27,360	29,330	26,820	20,380	9,700	6,730	7,090
19	6,290	7,700	25,830	25,260	24,940	27,100	29,230	27,310	19,590	9,390	6,750	7,280
20	6,180	7,720	25,710	25,190	25,030	26,820	28,900	27,360	18,780	9,160	6,960	7,470
21	6,100	7,800	25,710	25,140	25,030	26,750	28,450	27,190	17,850	8,920	7,050	7,760
22	5,980	7,890	25,740	25,100	25,030	26,710	27,910	27,080	17,010	8,690	7,150	8,310
23	5,850	7,890	26,520	25,030	25,100	26,910	27,470	26,870	15,990	8,540	7,170	8,920
24	5,700	7,850	27,700	24,960	25,370	27,290	27,050	26,660	14,940	8,400	7,170	9,410
25	5,740	7,890	27,890	24,920	25,460	27,220	26,890	26,400	14,020	8,270	7,130	9,830
26	5,740	7,950	27,450	24,920	25,440	27,050	26,890	26,200	14,130	8,080	7,110	10,110
27	6,290	8,160	26,980	24,830	25,420	26,870	27,290	26,130	14,880	7,910	7,110	10,380
28	7,610	8,420	26,590	24,810	25,440	26,710	28,030	25,970	14,730	7,870	7,210	10,680
29	8,800	8,670	26,360	24,850	-------	26,610	28,760	25,920	14,410	7,800	7,210	10,960
30	9,490	8,990	26,100	24,810	-------	26,780	28,850	25,780	13,920	7,610	7,190	11,320
31	9,770	-------	25,900	24,810	-------	27,310	-------	25,550	-------	7,550	7,170	-------

CLE ELUM RIVER NEAR ROSLYN, WASH.

LOCATION.—In sec. 10, T. 20 N., R. 14 E., below temporary crib dam at outlet of Cle Elum Lake, 4 miles northwest of Roslyn, Kittitas County, and 7½ miles northwest of Cle Elum.

DRAINAGE AREA.—202 square miles (measured on topographic maps).

RECORDS AVAILABLE.—October 10, 1903, to September 30, 1926.

GAGE.—Stevens water-stage recorder on left bank 800 feet below temporary crib dam; installed October 14, 1913; inspected by W. W. Wasson.

DISCHARGE MEASUREMENTS.—Made from cable about 350 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel and boulders; shifting at high water. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.62 feet at 1 a. m. April 17 (discharge, 2,910 second-feet); minimum stage, 0.47 foot at 3 p. m. September 19 (discharge, 24 second-feet).

1904–1926: Maximum stage recorded, 14.05 feet at 2 p. m. November 15 1906 (discharge, 18,700 second-feet); minimum stage, zero at 6 p. m. September 28, 1914 (practically no flow).

ICE.—Stage-discharge relation not seriously affected by ice.

DIVERSIONS.—None.

REGULATION.—Flow partly controlled by storage and release of water at Cle Elum Lake Reservoir. Monthly discharge without storage determined from records of stage at reservoir.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying mean daily gage heights to rating table or, for a few days of considerable range of stage, by averaging results obtained by applying mean gage heights for shorter intervals. Records good.

COOPERATION.—Complete records furnished by United States Bureau of Reclamation.

Discharge measurements of Cle Elum River near Roslyn, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 8	1.60	210	Apr. 27	4.03	1,480	July 22	1.76	272
Oct. 26	1.13	109	May 20	4.01	1,480	Aug. 13	1.40	158
Mar. 26	3.70	1,270	June 16	3.02	822	Sept. 8	1.43	171
Apr. 21	4.72	1,720						

Daily discharge, in second-feet, of Cle Elum River near Roslyn, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	198	336	33	637	279	508	1,730	2,120	780	549	181	173
2	99	330	33	597	275	512	1,650	1,860	807	563	176	181
3	28	316	32	549	266	526	1,420	1,690	807	568	186	181
4	28	305	30	512	282	544	1,250	1,820	807	554	188	178
5	28	288	29	607	344	559	1,110	1,900	836	554	181	176
6	28	282	30	954	385	563	984	1,690	836	508	174	171
7	92	282	35	1,080	401	554	894	1,390	864	377	171	171
8	231	269	44	984	405	544	836	1,210	836	389	169	171
9	225	251	46	864	401	531	836	1,050	836	385	169	169
10	214	239	46	780	409	508	923	923	807	377	169	166
11	222	228	86	699	417	490	1,180	864	807	377	169	162
12	209	220	970	637	413	526	1,500	894	807	385	166	146
13	214	220	1,390	583	401	622	1,650	1,110	807	377	164	132
14	201	214	1,280	554	381	864	1,780	1,210	807	370	160	130
15	186	214	1,080	549	373	1,180	2,120	1,210	836	373	157	130
16	169	217	954	544	358	1,500	2,680	1,110	807	373	155	132
17	160	220	836	521	355	1,580	2,780	1,050	807	351	151	106
18	149	220	752	490	340	1,460	2,680	1,180	807	333	155	26
19	142	220	689	455	336	1,280	2,580	1,420	836	305	157	26
20	134	220	652	425	351	1,140	2,390	1,460	807	285	164	27
21	124	222	699	417	358	1,110	2,120	1,390	807	272	169	27
22	118	228	673	393	362	1,080	1,820	1,320	807	254	174	28
23	115	231	1,020	377	385	1,210	1,500	1,210	836	245	174	29
24	106	228	1,780	358	490	1,390	1,320	1,080	836	239	181	30
25	108	220	1,780	336	499	1,390	1,210	954	807	234	174	31
26	111	176	1,460	326	503	1,250	1,210	864	726	222	171	31
27	128	124	1,250	326	508	1,180	1,420	807	544	220	171	32
28	198	101	1,080	333	503	1,110	1,900	807	563	214	183	33
29	275	52	923	316	------	1,080	2,350	807	559	206	183	38
30	316	34	807	302	------	1,180	2,390	807	559	198	181	74
31	336	------	699	288	------	1,460	------	807	------	186	174	------

Monthly discharge of Cle Elum River near Roslyn, Wash., for the year ending September 30, 1926

[Drainage area, 202 square miles]

Month	Discharge in second-feet					Run-off			
	Observed			Corrected for storage		Acre-feet			Inches
	Maximum	Minimum	Mean	Mean	Per square mile	River (observed)	Stored in Cle Elum Lake Reservoir	River (corrected for storage)	
October	336	28	158	171	0.847	9,700	+760	10,500	0.98
November	336	34	224	210	1.04	13,300	−780	12,500	1.16
December	1,780	29	684	960	4.75	42,100	+16,900	59,000	5.48
January	1,080	288	542	524	2.59	33,300	−1,090	32,200	2.99
February	508	266	385	396	1.96	21,400	+630	22,000	2.04
March	1,580	490	949	981	4.86	58,400	+1,870	60,300	5.60
April	2,780	836	1,670	1,700	8.42	99,600	+1,540	101,000	9.39
May	2,120	807	1,230	1,170	5.79	75,400	−3,300	72,100	6.68
June	864	544	780	585	2.90	46,400	−11,600	34,800	3.24
July	568	186	350	246	1.22	21,500	−6,370	15,100	1.41
August	188	151	171	164	.812	10,500	−380	10,100	.94
September	181	26	104	173	.856	6,160	+4,150	10,300	.96
The year	2,780	26	605	608	3.01	438,000	+2,330	440,000	40.87

NACHES RIVER BELOW TIETON RIVER, NEAR NACHES, WASH.

LOCATION.—In sec. 35, T. 15 N., R. 16 E., 600 feet below Tieton River, 500 feet above intake of Wapatox Canal, and 5 miles northwest of Naches, Yakima County.

DRAINAGE AREA.—942 square miles (revised; measured on topographic maps and Pl. I, Water-Supply Paper 369).

RECORDS AVAILABLE.—August 4 to October 28, 1905; March 16, 1909, to October 31, 1912; May 10 to September 30, 1915; April 13, 1916, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on left bank; installed December 7, 1916; inspected by R. D. Powell.

DISCHARGE MEASUREMENTS.—Made from cable at gage.

CHANNEL AND CONTROL.—Bed of stream composed of small boulders and gravel; shifts at extremely high water. One channel except at extremely high stages.

EXTREMES OF DISCHARGE.—Maximum stage during year, 5.02 feet at 11 p. m. April 18 (discharge, 3,190 second-feet); minimum stage, 1.32 feet at 3 a. m. September 30 (discharge, 107 second-feet).

1905, 1909–1926: Maximum stage recorded, 8.9 feet at 8 a. m. November 24, 1909 (discharge, 18,800 second-feet); minimum stage, 1.10 feet from 7 a. m. September 23 to noon September 24, 1924 (discharge, 57 second-feet).

ICE.—Stage-discharge relation seriously affected by ice during severe winters. Flow estimated from gage-height record, discharge measurements, observer's notes, and weather records.

DIVERSIONS.—Above all important diversions except Selah Valley and Tieton Canals.

REGULATION.—Flow partly controlled by storage and release of water at Bumping Lake and at Tieton Reservoir. See records for Bumping Lake and Bumping River near Nile, Tieton River and reservoir at Tieton Dam, and Tieton Canal near Naches, Wash.

ACCURACY.—Stage-discharge relation practically permanent; not affected by ice. Possibly slightly affected during periods of low stage by backwater from Taintor gates at intake of Wapatox Canal. Rating curve well defined. Water-stage recorder inspected daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

COOPERATION.—Maintained by the United States Bureau of Reclamation in cooperation with Pacific Power & Light Co. Records for publication furnished by Bureau of Reclamation.

Discharge measurements of Naches River below Tieton River, near Naches, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 24	1.91	297	Apr. 20	4.75	2,830	June 25	2.75	752
Feb. 8	2.60	647	May 5	4.12	2,020	Aug. 3	2.32	472
Feb. 20	2.38	512	June 2	3.35	1,240	Aug. 27	3.28	1,190
Apr. 2	3.46	1,360						

Daily discharge, in second-feet, of Naches River below Tieton River, near Naches, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	456	307	323	442	519	543	1,480	1,740	1,200	630	579	1,240
2	350	295	513	411	502	537	1,340	1,740	1,200	637	561	1,200
3	328	295	421	421	502	537	1,240	1,740	1,200	650	497	1,190
4	279	279	387	432	497	549	1,110	2,020	1,430	561	463	1,200
5	275	272	447	502	531	543	1,010	2,020	1,300	555	437	1,180
6	233	287	579	798	502	513	956	1,690	1,200	624	368	1,180
7	217	287	519	663	525	491	923	1,430	1,190	684	387	1,200
8	204	287	411	567	605	474	867	1,380	1,200	691	363	1,100
9	233	295	406	537	502	453	899	1,530	1,070	643	387	250
10	207	303	382	480	463	432	1,580	1,900	733	585	561	236
11	236	307	561	463	502	437	1,960	1,960	733	519	747	220
12	257	315	704	463	508	480	1,960	2,190	637	519	791	189
13	311	307	513	463	469	783	1,900	2,500	633	567	806	192
14	311	307	427	447	463	1,190	2,020	2,500	718	579	875	201
15	307	315	416	567	480	1,530	2,250	2,370	633	630	907	198
16	303	323	406	643	463	1,790	2,890	1,990	650	592	931	192
17	303	323	377	617	447	1,640	3,020	1,790	592	480	939	254
18	299	323	416	519	447	1,380	3,160	1,900	637	480	931	330
19	295	319	421	469	447	1,190	3,020	1,960	633	485	931	421
20	295	311	427	502	491	1,130	2,820	1,960	575	458	939	363
21	303	303	401	502	406	1,100	2,500	1,530	537	491	956	189
22	291	295	421	502	416	1,090	2,130	1,200	519	537	1,100	174
23	291	275	821	497	447	1,340	1,850	1,130	592	585	1,240	210
24	283	250	1,060	453	474	1,380	1,580	1,340	711	624	1,190	172
25	217	236	813	447	519	1,240	1,480	1,380	733	643	1,240	136
26	283	230	711	427	519	1,130	1,580	1,380	624	657	1,290	121
27	307	299	643	406	555	1,050	1,850	1,430	650	670	1,160	121
28	332	295	567	427	537	997	2,130	1,530	630	643	1,180	126
29	359	291	555	458	-------	997	2,130	1,480	555	643	1,160	136
30	319	279	502	502	-------	1,110	1,850	1,340	531	617	1,200	136
31	311	-------	458	525	-------	1,380	-------	1,240	-------	592	1,240	-------

Monthly discharge of Naches River below Tieton River, near Naches, Wash., for the year ending September 30, 1926

[Drainage area, 942 square miles]

Month	Discharge in second-feet					Run-off				
	Observed			Corrected for storage and diversions		Acre-feet				Inches
	Maximum	Minimum	Mean	Mean	Per square mile	River (observed)	Stored in Bumping Lake and Tieton Reservoirs	Diverted by Selah Valley and Tieton Canals	River (corrected for storage and diversions)	
October	456	204	290	379	0.402	17,800	+3,780	1,730	23,300	0.46
November	323	230	294	222	.236	17,500	−5,440	1,110	13,200	.26
December	1,060	323	516	990	1.05	31,700	+29,100	133	60,900	1.21
January	798	411	502	751	.797	30,800	+15,400	----------	46,200	.92
February	605	406	491	780	.828	27,200	+16,000	64	43,300	.86
March	1,790	432	950	1,530	1.62	58,400	+32,900	3,030	94,300	1.87
April	3,160	867	1,850	2,710	2.88	110,000	+33,500	17,800	161,000	3.21
May	2,500	1,130	1,720	1,900	2.02	106,000	−15,900	27,000	117,000	2.33
June	1,430	519	821	943	1.00	48,800	−18,900	26,200	56,100	1.12
July	691	458	589	467	.496	36,200	−34,400	26,900	28,700	.57
August	1,290	363	850	449	.477	52,300	−51,200	26,500	27,600	.55
September	1,240	121	469	212	.225	27,900	−27,600	12,300	12,600	.25
The year	3,160	121	780	945	1.00	564,000	−22,800	----------	684,000	13.61

NOTE.—The run-off without storage and estimated natural discharge shown in the foregoing table represents natural yield as nearly as may be computed from stream-flow records. They do not take into account depletion due to irrigation above the gaging station, amounting to perhaps 6,000 acre-feet a year, and unmeasured waste above the gaging station on Selah Valley Canal, which reaches the river below the river gaging station. Accordingly the actual natural yield is larger than shown.

BUMPING LAKE NEAR NILE, WASH.

LOCATION.—At storage dam in outlet, 12 miles above American River and 19 miles west of Nile, Yakima County.

DRAINAGE AREA.—68 square miles (measured on topographic maps).

RECORDS AVAILABLE.—April 27 to November 22, 1909; November 3, 1910, to September 30, 1926.

GAGE.—Stages below elevation 3,399 feet obtained by measuring from reference point to surface of water since January 6, 1923; vertical staff on gate tower used for all stages above elevation 3,399 feet; read by J. H. Nelson. Datum of gage is mean sea level.

EXTREMES OF STORAGE.—Maximum stage recorded during year, 3,430.29 feet at 5.10 p. m. May 4 (storage, 39,480 acre-feet); minimum stage, 3,392.95 feet September 13–16 (storage, 2,510 acre-feet).

1911–1926: Maximum stage recorded, 3,430.55 feet from 7.05 a. m. June 21 to 4.50 p. m. June 22, 1925 (storage, 39,840 acre-feet); minimum stage, 3,391 feet February 12–15, 1916 (storage, 1,260 acre-feet).

STORAGE.—Capacity of reservoir at crest of spillway, 33,700 acre-feet. Elevation of gate sill, 3,389 feet, and of spillway crest, 3,426 feet. Storage or release each month used for determining discharge with storage for gaging station below dam.

ACCURACY.—Gage read to half-tenths twice daily. Records excellent.

COOPERATION.—Complete records furnished by United States Bureau of Reclamation.

Daily storage, in acre-feet, of Bumping Lake near Nile, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7,910	7,880	8,770	17,800	19,320	20,800	32,400	39,010	38,790	31,600	15,210	2,630
2	7,910	7,910	9,050	17,840	18,930	20,940	32,930	39,190	38,790	31,100	14,640	2,610
3	7,910	7,940	9,290	17,850	18,540	21,210	33,320	39,220	38,810	30,670	14,090	2,610
4	7,910	7,950	9,430	17,820	18,290	21,460	33,890	39,410	38,840	30,170	13,530	2,610
5	7,910	7,950	9,570	17,890	18,100	21,680	34,450	39,380	38,810	29,670	12,970	2,610
6	7,910	7,950	9,740	18,710	17,960	21,910	34,860	39,250	38,790	29,190	12,450	2,590
7	7,910	7,950	9,870	19,310	18,040	22,120	35,260	39,100	38,790	28,700	11,920	2,570
8	7,910	7,950	9,960	19,710	18,230	22,250	35,660	38,970	38,780	28,120	11,360	2,570
9	7,910	7,950	10,080	20,000	18,540	22,390	36,060	38,880	38,730	27,630	10,820	2,550
10	7,910	7,950	10,270	20,230	18,890	22,560	36,460	38,860	38,600	27,040	10,280	2,540
11	7,910	7,970	11,010	20,360	19,100	22,720	36,800	38,860	38,420	26,480	9,700	2,540
12	7,910	8,140	11,810	20,400	19,260	22,960	37,000	38,900	38,180	25,960	9,180	2,540
13	7,910	8,160	12,260	20,410	19,410	23,240	37,070	38,990	38,000	25,430	8,650	2,520
14	7,910	8,140	12,590	20,390	19,560	23,610	37,140	39,000	37,860	24,920	8,110	2,510
15	7,910	8,130	12,760	20,270	19,630	24,000	37,320	39,000	37,680	24,390	7,600	2,510
16	7,910	8,110	12,790	20,130	19,760	24,540	37,550	38,940	37,410	23,830	7,040	2,520
17	7,910	8,190	12,800	20,320	19,880	25,160	37,670	38,940	37,220	23,330	6,520	2,540
18	7,910	8,250	12,800	20,520	20,000	25,660	37,680	39,060	36,960	22,830	6,030	2,540
19	7,910	8,280	12,790	20,670	20,100	26,110	37,680	39,140	36,690	22,270	5,500	2,540
20	7,900	8,290	12,770	20,770	20,170	26,510	37,670	39,190	36,460	21,680	4,910	2,540
21	7,860	8,290	12,760	20,780	20,310	26,860	37,560	39,140	36,200	21,130	4,410	2,560
22	7,810	9,290	12,810	20,770	20,400	27,260	37,360	39,100	35,930	20,600	3,980	2,670
23	7,810	8,290	13,300	20,730	20,410	27,760	37,260	39,000	35,530	20,070	3,530	2,730
24	7,880	8,290	14,560	20,730	20,410	28,360	37,100	38,960	35,100	19,520	3,130	2,710
25	7,900	8,320	15,500	20,720	20,460	28,870	37,000	38,860	34,660	18,990	2,920	2,700
26	7,910	8,320	16,400	20,670	20,510	29,330	36,940	38,860	34,220	18,440	2,820	2,700
27	7,910	8,330	16,880	20,540	20,540	29,800	36,950	38,860	33,720	17,850	2,740	2,700
28	7,910	8,350	17,240	20,360	20,690	30,190	37,110	38,860	33,190	17,250	2,710	2,700
29	7,910	8,380	17,420	20,100	-------	30,670	37,550	38,860	32,700	16,700	2,690	2,690
30	7,900	8,480	17,650	19,920	-------	31,180	38,590	38,850	32,190	16,140	2,670	2,700
31	7,880	-------	17,820	19,640	-------	31,820	-------	38,810	-------	15,700	2,660	-------

BUMPING RIVER NEAR NILE, WASH.

LOCATION.—A quarter of a mile below spillway of Bumping Lake Dam, half a mile below outlet conduit through storage dam, 11½ miles above American River, and 19 miles west of Nile, Yakima County.

DRAINAGE AREA.—68 square miles (measured on topographic maps).

RECORDS AVAILABLE.—June 13 to July 31, 1906; April 27, 1909, to September 30, 1926.

GAGE.—Stevens water-stage recorder; installed June 17, 1913; inspected daily by J. H. Nelson.

DISCHARGE MEASUREMENTS.—Made from cable about 40 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and of large angular rocks; shifts at extremely high water. Riffle control 60 feet below gage. Gage height of zero flow about 0.4 foot.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.88 feet at 1 p. m. April 18 (discharge, 862 second-feet); minimum stage, 1.07 feet March 4 (discharge, 6 second-feet).

1906; 1909–1926: Maximum stage recorded, 9.33 feet at 5 p. m. December 29, 1917 (discharge, 5,180 second-feet); practically no flow when gates in outlet conduit are closed.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—None.

REGULATION.—Flow partly controlled by storage and release of water at Bumping Lake Reservoir. Monthly discharge without storage determined from records of stage at reservoir.

ACCURACY.—Stage-discharge relation affected by tree on control April 30 to September 25; not affected by ice. Rating curve well defined. Water-stage recorder inspected daily. Daily discharge ascertained by applying mean daily gage height to rating table or, for a few days of considerable range of stage, by averaging discharge for intervals of the day; shifting-control method used April 30 to September 25. Records good.

COOPERATION.—Complete records furnished by United States Bureau of Reclamation.

Discharge measurements of Bumping River near Nile, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 10	1.68	39.4	May 11	2.89	276	July 29	3.18	321
Oct. 23	1.41	18.7	June 3	2.65	213	Aug. 25	2.12	99.9
Apr. 24	3.04	386	June 30	3.18	341	Sept. 30	1.91	64.0
May 4	4.18	692						

Daily discharge, in second-feet, of Bumping River near Nile, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	31	34	105	272	38	15	401	221	336	320	48
2	39	31	33	126	272	16	15	472	212	336	316	45
3	39	31	32	151	254	7	16	502	212	332	316	43
4	39	31	32	160	221	6	17	681	228	332	320	41
5	39	31	31	153	181	7	18	614	221	332	320	39
6	39	31	31	85	148	7	18	472	225	332	316	39
7	39	31	31	62	124	7	19	383	231	332	320	38
8	39	31	31	87	68	7	20	328	212	332	316	36
9	39	31	31	87	19	7	21	293	215	328	316	35
10	39	31	31	101	33	15	70	272	228	324	320	34
11	39	32	37	131	55	26	228	268	247	324	312	33
12	39	31	36	168	55	18	340	293	254	328	312	32
13	39	31	36	178	61	10	387	349	254	328	316	31
14	39	31	61	215	83	10	443	357	258	328	309	31
15	38	31	90	237	94	10	556	332	258	324	305	31
16	38	31	90	180	94	12	739	305	254	328	305	31
17	38	31	116	120	99	12	806	324	258	324	305	34
18	38	31	153	103	105	12	820	401	258	324	305	35
19	38	31	158	120	126	12	820	443	258	324	309	35
20	38	31	158	144	68	12	752	452	254	320	297	35
21	38	31	158	158	68	13	632	428	254	328	254	40
22	27	31	160	158	120	14	513	387	278	320	212	65
23	20	31	77	142	137	14	428	361	312	320	170	74
24	20	31	28	146	137	14	370	320	328	320	135	68
25	23	31	28	153	137	14	447	272	340	316	108	65
26	31	31	28	165	137	14	452	254	340	320	87	62
27	31	31	28	189	88	14	467	254	340	316	74	60
28	31	31	60	218	57	14	518	254	340	316	64	61
29	31	31	83	244	-------	14	216	247	340	320	61	64
30	31	32	66	264	-------	14	189	231	340	316	56	66
31	31	-------	85	272	-------	15	-------	225	-------	320	52	-------

Monthly discharge of Bumping River near Nile, Wash., for the year ending September 30, 1926

[Drainage area, 68 square miles]

Month	Discharge in second-feet					Run-off			
	Observed			Corrected for storage		Acre-feet			Inches
	Maximum	Minimum	Mean	Mean	Per square mile	River (observed)	Stored in Bumping Lake Reservoir	River (corrected for storage)	
October	39	20	35.1	34.6	0.509	2,160	−30	2,130	0.59
November	32	31	31.1	41.2	.606	1,850	+600	2,450	.68
December	160	28	66.2	218	3.21	4,070	+9,340	13,400	3.70
January	272	62	156	185	2.72	9,560	+1,870	11,400	3.14
February	272	19	118	137	2.01	6,570	+1,050	7,620	2.09
March	38	6	13.1	194	2.85	803	+11,100	11,900	3.29
April	820	15	345	459	6.75	20,500	+6,770	27,300	7.53
May	681	225	360	364	5.35	22,200	+220	22,400	6.17
June	340	212	266	154	2.26	15,800	−6,620	9,180	2.52
July	336	316	325	56.9	.837	20,000	−16,500	3,500	.96
August	320	52	243	30.0	.441	14,900	−13,000	1,900	.51
September	74	31	45.0	45.7	.672	2,680	+40	2,720	.75
The year	820	6	167	160	2.35	121,000	−5,270	116,000	31.93

TIETON RESERVOIR AT TIETON DAM, NEAR NACHES, WASH.

LOCATION.—2,000 feet above mouth of Wild Cat Creek, 1½ miles below junction of forks of river, 7½ miles above headworks of Tieton Canal, and 22½ miles southwest of Naches, Yakima County.

DRAINAGE AREA.—187 square miles (measured on topographic maps).

RECORDS AVAILABLE.—April 27, 1925, to September 30, 1926.

GAGE.—Vertical and inclined staff in five sections on and near spillway weir; installed 1925; stages below elevation 2,828 feet determined from reference point by means of steel tape.

EXTREMES of STORAGE.—Maximum stage recorded during year, 2,890.27 feet May 8 (storage, 119,550 acre-feet); minimum stage, 2,766.97 feet September 24 and 25 (storage, 113 acre-feet).

1925–1926: Maximum stage recorded, May 8, 1926; minimum stage, September 24 and 25, 1926.

STORAGE.—Capacity of reservoir at crest of spillway, drums up, 198,000 acre-feet. Elevation of sill of tunnel entrance, 2,766 feet. Elevation of spillway crest, drums down, 2,918 feet; drums up, 2,926 feet. Records of storage or release each month used for determining discharge without storage at gaging station below dam.

ACCURACY.—Gage read to half-tenths twice daily. Records good.

COOPERATION.—Complete record furnished by United States Bureau of Reclamation.

Daily storage, in second-feet, of Tieton Reservoir at Tieton Dam, near Naches, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17,170	21,570	15,140	35,440	49,220	64,380	86,550	113,440	95,330	83,530	65,180	25,650
2	17,090	21,650	15,030	35,700	49,660	64,830	87,480	114,490	94,480	83,080	64,350	23,470
3	16,770	21,490	14,970	36,010	50,070	65,320	88,340	115,450	93,480	82,540	63,750	20,730
4	16,540	21,340	15,080	36,310	50,430	65,800	89,160	116,390	92,190	82,040	63,260	17,990
5	16,380	21,210	15,530	36,580	50,900	66,300	90,000	117,530	91,290	81,710	62,710	15,380
6	16,230	21,100	16,380	37,030	51,460	66,810	90,820	118,340	90,550	81,360	62,270	12,780
7	16,090	20,750	17,280	37,470	51,970	67,320	91,590	119,130	89,890	80,840	61,850	9,820
8	15,980	20,540	18,340	37,850	52,530	67,840	92,350	119,490	89,460	80,160	61,450	7,010
9	15,890	20,290	19,220	38,280	53,100	68,340	92,880	119,240	88,960	79,600	61,130	5,940
10	15,870	20,050	20,070	38,860	53,620	68,910	92,550	117,450	88,660	79,110	60,390	5,310
11	15,870	20,060	21,090	39,440	54,200	69,440	92,180	115,670	88,300	78,710	59,430	4,710
12	15,870	20,200	22,300	39,980	54,750	69,940	92,600	113,680	88,120	78,240	58,180	4,230
13	15,850	20,120	23,260	40,590	55,330	70,490	93,260	111,290	87,940	77,790	56,940	3,720
14	15,840	19,880	24,070	41,110	55,920	71,080	94,310	109,080	87,710	77,390	55,580	3,230
15	15,830	19,630	24,570	41,610	56,520	71,740	95,550	107,090	87,510	76,800	54,400	2,760
16	15,830	19,440	24,970	42,060	57,100	72,490	96,910	105,560	87,280	76,170	53,050	2,340
17	15,920	19,230	25,340	42,600	57,730	73,290	98,360	104,450	87,060	75,620	51,640	1,970
18	16,190	18,970	25,730	43,060	58,330	74,120	100,020	103,640	86,830	74,960	50,290	1,560
19	16,580	18,790	26,120	43,470	59,010	74,960	101,620	102,970	86,480	74,560	48,930	1,150
20	16,850	18,600	26,480	43,820	59,640	75,880	103,090	102,520	86,160	74,110	47,490	673
21	17,380	18,360	26,960	44,250	60,140	76,800	104,460	102,520	86,000	73,560	46,020	202
22	17,920	17,980	27,550	44,790	60,630	77,730	105,830	103,060	85,830	73,000	44,470	176
23	18,490	17,570	28,130	45,320	61,110	78,580	106,970	103,640	85,530	72,400	42,810	175
24	18,920	17,100	28,860	45,810	61,600	79,380	107,750	103,540	85,120	71,580	41,070	138
25	19,450	16,720	29,950	46,320	62,170	80,130	108,480	102,880	84,860	70,680	39,270	132
26	19,900	16,570	31,000	46,750	62,720	80,900	109,060	101,970	84,730	69,880	37,480	137
27	20,250	16,360	32,000	47,210	63,270	81,780	109,610	100,930	84,590	69,070	35,650	141
28	20,400	16,090	33,000	47,550	63,790	82,710	110,240	99,550	84,400	68,340	33,740	156
29	20,680	15,730	33,960	47,920	-------	83,670	111,180	98,240	84,220	67,550	31,820	178
30	21,140	15,350	34,660	48,340	-------	84,620	112,290	97,080	83,910	66,840	29,870	171
31	21,390	-------	35,140	48,770	-------	85,610	-------	96,170	-------	66,010	27,770	-------

TIETON RIVER AT TIETON DAM, NEAR NACHES, WASH.

LOCATION.—At highway bridge at Rimrock site, 100 feet above Wild Cat Creek, 2 miles below junction of forks of river, 7 miles above headworks of Tieton Canal, and 22 miles southwest of Naches, Yakima County.

DRAINAGE AREA.—187 square miles (measured on topographic maps).

RECORDS AVAILABLE.—August 28 to November 24, 1908; March 21, 1909, to September 30, 1914 (fragmentary); October 1, 1918, to March 31, 1919; April 27, 1925, to September 30, 1926.

GAGE.—Friez water-stage recorder on left bank at highway bridge; installed September 5, 1925; inspected by C. L. Tice.

DISCHARGE MEASUREMENTS.—Made from highway bridge at gage, by wading, or from cable half a mile below Wild Cat Creek.

CHANNEL AND CONTROL.—Bed composed of gravel and boulders; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.94 feet at 8 a. m. May 14 (discharge, 1,860 second-feet); minimum discharge, 2 second-feet January 3–5, 10–18, 20, 21, 23–26, 29–31, February 4, 5, and 13–23.

1908, 1909–1914, 1918–1919, 1925–1926: Maximum stage recorded, 6.2 feet at 3.30 p. m. November 23, 1909 (discharge, 4,200 second-feet); minimum discharge in 1926. Bureau of Reclamation engineers report a stage of 7.5 feet from 10.30 p. m. December 18 to 1.30 a. m. December 19, 1917 (discharge, 8,400 second-feet).

ICE.—Stage-discharge relation affected by ice during severe winters. Flow estimated from observer's notes, discharge measurements, and weather records.

DIVERSIONS.—None.

REGULATION.—Flow regulated by storage and release of water at Tieton Reservoir, about 2,000 feet above gage. Monthly discharge without storage determined from records of stage at reservoir.

ACCURACY.—Stage-discharge relation changed by blasting March 1–20; not affected by ice. Rating curves fairly well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying mean daily gage height to rating table or, for days of considerable range in stage, by averaging discharge for intervals of the day; shifting-control method used March 2–20. Records good.

COOPERATION.—Complete record furnished by United States Bureau of Reclamation.

Discharge measurements of Tieton River at Tieton Dam, near Naches, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 7	2.09	107	May 11	4.45	1,390	July 20	3.10	489
Nov. 2	2.30	171	May 15	4.40	1,370	Aug. 23	4.50	1,460
Apr. 22	2.40	245	May 20	3.85	961	Sept. 7	4.59	1,480
May 1	2.52	285						

Daily discharge, in second-feet, of Tieton River at Tieton Dam, near Naches, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	247	167	249	3	3	3	45	318	913	558	632	1,540
2	220	167	198	3	3	3	45	339	1,000	582	582	1,490
3	204	167	167	2	3	5	42	349	1,080	587	540	1,490
4	193	167	167	2	2	6	46	367	1,160	513	513	1,490
5	185	167	167	2	2	5	46	357	968	558	453	1,490
6	167	167	167	3	3	5	60	346	833	632	409	1,450
7	138	167	108	3	3	6	90	367	872	702	433	1,490
8	148	167	88	4	4	6	87	535	933	674	429	1,110
9	129	167	99	3	4	6	402	976	772	627	504	429
10	155	167	132	2	4	7	669	1,450	558	549	680	429
11	155	167	117	2	4	7	510	1,400	504	513	833	409
12	160	167	22	2	3	7	196	1,630	474	535	872	398
13	167	167	3	2	2	8	123	1,780	513	558	899	398
14	167	167	3	2	2	8	125	1,630	473	597	968	390
15	167	167	3	2	2	11	148	1,510	470	658	968	382
16	167	167	3	2	2	12	174	1,180	463	568	968	417
17	167	167	3	2	2	12	206	1,040	457	513	968	441
18	167	167	3	2	2	12	225	1,080	535	526	968	441
19	167	167	3	3	2	13	231	1,000	523	526	968	441
20	167	167	3	2	2	14	233	879	465	504	1,000	315
21	167	167	3	2	2	11	233	509	445	549	1,080	134
22	167	167	3	3	2	11	248	379	474	587	1,240	106
23	167	167	3	2	2	11	285	523	535	632	1,400	81
24	140	167	3	2	3	11	279	777	587	696	1,450	70
25	112	167	3	2	4	11	298	906	554	691	1,540	65
26	167	212	3	2	3	11	346	1,000	500	713	1,490	68
27	167	249	3	3	3	11	495	1,080	540	707	1,450	71
28	172	249	3	3	3	44	379	1,120	513	680	1,490	70
29	167	249	3	2	-------	53	315	1,080	463	674	1,490	71
30	165	249	3	2	-------	49	345	968	500	658	1,540	76
31	167	-------	3	2	-------	49	-------	885	-------	643	1,540	-------

Monthly discharge of Tieton River at Tieton Dam, near Naches, Wash., for the year ending September 30, 1926

[Drainage area, 187 square miles]

Month	Discharge in second-feet					Run-off			
	Observed			Corrected for storage		Acre-feet			Inches
	Maximum	Minimum	Mean	Mean	Per square mile	River (observed)	Stored in Tieton Reservoir	River (corrected for storage)	
October	247	112	168	229	1.22	10,300	+3,810	14,100	1.41
November	249	167	179	78.3	.419	10,700	−6,040	4,660	.47
December	249	3	56.1	377	2.02	3,450	+19,800	23,200	2.33
January	4	2	2.4	223	1.19	145	+13,600	13,700	1.37
February	4	2	2.7	274	1.47	151	+15,000	15,200	1.53
March	53	3	13.8	368	1.97	849	+21,800	22,600	2.27
April	669	42	231	679	3.63	13,700	+26,700	40,400	4.05
May	1,780	318	895	633	3.39	55,000	−16,100	38,900	3.91
June	1,160	445	637	430	2.30	37,900	−12,300	25,600	2.57
July	713	504	604	312	1.67	37,100	−17,900	19,200	1.92
August	1,540	409	977	356	1.90	60,100	−38,200	21,900	2.19
September	1,540	65	575	111	.594	34,200	−27,600	6,690	.66
The year	1,780	2	364	340	1.82	264,000	−17,400	246,000	24.68

TIETON RIVER AT HEADWORKS OF TIETON CANAL, NEAR NACHES, WASH.

LOCATION.—In sec. 30, T. 14 N., R. 15 E. (unsurveyed), below intake of Tieton Canal, 15 miles above mouth, and 16 miles southwest of Naches, Yakima County.

DRAINAGE AREA.—240 square miles (measured on topographic maps).

RECORDS AVAILABLE.—April 17 to September 17, 1906 (fragmentary gage-height record); July 5, 1907, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on right bank 1,000 feet below intake of Tieton Canal; inspected by Willis Taylor and Jack Bronell.

DISCHARGE MEASUREMENTS.—Made from cable about 500 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and boulders; shifts slightly at high water; gradient steep. One channel at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.86 feet at 8 a. m. May 14 (discharge, 1,690 second-feet); no flow from 6.30 p. m. March 27 to 6.30 a. m. March 28.

1907–1926: Maximum stage recorded, 8.15 feet at 1.20 a. m. December 13, 1921 (discharge, 6,150 second-feet); no flow from 6.30 p. m. March 27 to 6.30 a. m. March 28, 1926.

ICE.—Stage-discharge relation affected by ice during severe winters; flow estimated from observer's notes, discharge measurements, and weather records.

DIVERSIONS.—Tieton Canal has diverted water above gage since 1910. Diversions through canal added to mean monthly discharge to determine monthly flow past gage.

REGULATION.—Flow regulated by storage and release of water at Tieton Reservoir, about 7 miles above gage. Monthly discharge corrected for storage determined from records of stage at reservoir.

ACCURACY.—Stage-discharge relation practically permanent; not affected by ice. Rating curve fairly well defined; revised slightly for use after April 1. Operation of water-stage recorder satisfactory except as noted in footnote to table of daily discharge. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

COOPERATION.—Complete record furnished by United States Bureau of Reclamation.

Discharge measurements of Tieton River at headworks of Tieton Canal, near Naches Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 15	2.77	171	May 7	2.15	43.5	July 20	2.79	178
Nov. 4	2.78	187	May 20	3.80	665	Aug. 23	4.32	1,130
Apr. 21	2.12	41.4						

Daily discharge, in second-feet, of Tieton River at headworks of Tieton Canal, near Naches, Wash., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	300	181	201	24	16	83	78	48	629	265	306	1,300
2	251	181	229	23	16	78	56	60	692	294	277	1,270
3	229	181	172	24	16	76	10	69	758	306	242	1,200
4	201	181	172	25	21	78	6	85	851	231	220	1,200
5	194	181	178	32	34	72	5	85	685	250	183	1,200
6	159	181	181	49	36	70	9	66	610	320	134	1,190
7	148	181	116	43	44	74	15	72	577	400	151	1,200
8	150	181	106	36	58	79	10	257	629	395	140	985
9	150	181	121	28	65	76	313	639	503	347	207	223
10	162	184	184	26	59	56	671	1,230	286	277	347	216
11	168	181	172	26	50	43	471	1,170	232	223	515	188
12	165	181	76	26	46	59	131	1,400	169	231	546	172
13	172	181	42	26	44	83	33	1,620	216	290	552	176
14	175	187	22	26	44	109	22	1,430	195	311	629	188
15	175	187	17	26	38	76	21	1,250	169	357	643	182
16	181	194	17	26	38	72	23	925	179	298	657	202
17	184	187	17	24	37	79	21	773	157	220	664	246
18	181	181	17	23	36	53	29	773	234	223	650	361
19	184	181	17	23	34	45	19	729	242	220	650	426
20	181	181	18	23	32	43	31	657	163	195	657	341
21	181	184	20	23	31	39	40	299	140	250	714	169
22	181	184	33	23	26	38	44	128	151	290	925	151
23	181	162	142	23	74	48	30	222	219	324	1,090	135
24	178	136	50	22	79	19	30	497	311	376	1,120	112
25	126	109	33	16	65	38	37	622	311	371	1,240	91
26	178	134	34	15	65	28	76	706	192	381	1,260	58
27	184	187	33	18	65	------	231	789	246	381	1,140	59
28	190	178	30	16	81	8	144	876	213	376	1,170	100
29	184	175	27	16	------	28	59	796	166	361	1,170	58
30	175	187	25	16	------	28	97	692	200	347	1,260	52
31	181	------	24	16	------	37	------	610	------	329	1,300	------

NOTE.—Water-stage recorder not operating Dec. 15 to Mar. 30; recorder graph for Aug. 30 to Sept. 30 lost; discharge determined from two staff-gage readings daily.

Combined monthly discharge of Tieton River and Canal at headworks of Tieton Canal, near Naches, Wash., for the year ending September 30, 1926

[Drainage area, 240 square miles]

Month	Discharge in second-feet					Run-off				
	Observed			Corrected for storage and diversion		Acre-feet				Inches
	Maximum	Minimum	Mean	Mean	Per square mile	River (observed)	Stored in Tieton Reservoir	Diverted in Tieton Canal	River (corrected for storage and diversion)	
October	300	126	182	244	1.02	11,200	+3,810	----------	15,000	1.18
November	194	109	176	93.6	.390	10,500	−6,040	1,110	5,570	.44
December	229	17	81.5	405	1.69	5,010	+19,800	133	24,900	1.95
January	49	15	24.6	246	1.02	1,510	+13,600	----------	15,100	1.18
February	81	16	44.6	315	1.31	2,480	+15,000	----------	17,500	1.36
March	109	0	56.3	431	1.80	3,460	+21,800	1,260	26,500	2.08
April	671	5	92.1	751	3.13	5,480	+26,700	12,500	44,700	3.49
May	1,620	48	631	683	2.85	38,800	−16,100	19,300	42,000	3.29
June	851	140	344	450	1.88	20,500	−12,300	18,600	26,800	2.10
July	400	195	304	324	1.35	18,700	−17,900	19,100	19,900	1.56
August	1,300	134	670	359	1.50	41,200	−38,200	19,100	22,100	1.73
September	1,300	52	448	112	.467	26,760	−27,600	7,570	6,670	.52
The year	1,620	0	256	368	1.53	185,000	−17,400	----------	267,000	20.88

TIETON CANAL NEAR NACHES, WASH.

LOCATION.—In sec. 30, T. 14 N., R. 15 E. (unsurveyed), below canal intake and 16 miles southwest of Naches, Yakima County.

RECORDS AVAILABLE.—Irrigation seasons, 1910 to September 30, 1926.

GAGE.—Float gage about 500 feet below canal intake; read by W. H. Taylor.

DISCHARGE MEASUREMENTS.—Made from gaging bridge 30 feet below gage or by wading.

CHANNEL AND CONTROL.—Earth section merging into concrete-lined section 1,000 feet below gage.

EXTREMES OF DISCHARGE.—Maximum discharge during year, 318 second-feet May 10; no flow October 1 to November 22, December 2 to March 14, and for a few hours April 10 and August 6.

1910–1926: Maximum stage recorded, 5.53 feet for a few hours September 9, 1921 (discharge, 344 second-feet); no flow when head gates are closed.

ACCURACY.—Stage-discharge relation changed during winter and gradually July 10 to September 18. Rating curves fairly well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

COOPERATION.—Complete records furnished by United States Bureau of Reclamation.

Canal diverts water from right bank of Tieton River in sec. 30, T. 14 N., R. 15 E.; water is used for irrigation.

Discharge measurements of Tieton Canal near Naches, Wash., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 22	5.32	309	July 14	5.38	312	Aug. 17	5.74	313
May 6	5.41	311	Aug. 4	5.56	310	Sept. 3	4.47	228
May 28	5.33	312	Do	5.56	314	Sept. 15	4.08	200
June 24	5.32	304						

Daily discharge, in second-feet, of Tieton Canal near Naches, Wash., for the year ending September 30, 1926

Day	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		67		85	317	312	311	309	250
2				84	317	312	311	309	236
3				85	317	312	311	311	230
4				85	317	313	312	311	229
5				85	317	312	313	311	229
6				87	317	312	314	293	229
7				110	317	313	314	311	229
8				118	317	313	314	312	225
9				124	317	313	314	310	222
10				83	318	313	314	309	220
11				132	317	312	313	307	217
12				159	314	313	312	310	215
13				171	314	312	311	313	210
14				184	314	313	311	313	208
15			22	207	314	312	311	312	203
16			27	230	314	313	311	312	201
17			20	260	311	312	310	312	201
18			21	286	311	312	310	313	68
19			19	295	313	312	309	313	
20			18	301	312	312	309	314	
21			17	307	312	311	309	314	
22			17	307	312	311	309	314	
23	13		17	311	312	310	308	315	
24	43		30	317	313	311	308	315	
25	80		34	317	313	311	308	316	
26	85		37	317	312	311	308	316	
27	85		57	317	313	311	307	316	
28	85		63	317	313	311	306	316	
29	85		70	317	312	311	307	313	
30	85		81	317	312	311	307	296	
31			85		312		309	270	

NOTE.—Canal dry during periods for which discharge is not known.

Monthly discharge of Tieton Canal near Naches, Wash., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
November 23–30	85	13	70.1	1,110
March 15–31	85	17	37.4	1,260
April	317	83	210	12,500
May	318	311	314	19,300
June	313	310	312	18,600
July	314	306	310	19,100
August	316	270	310	19,100
September 1–18	250	68	212	7,570

MISCELLANEOUS DISCHARGE MEASUREMENTS

In addition to the records of stream flow obtained at gaging stations and reported in the preceding pages, measurements of flow were made at a number of other points, as shown in the following table:

Miscellaneous discharge measurements in drainage basins in Washington during the year ending September 30, 1926

Chehalis River Basin

Date	Stream	Tributary to or diverting from—	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
Oct. 8	South Fork of Porter Creek.[a]	Porter Creek	NE. ¼ sec. 12, T. 17 N., R. 5 W., Washington.		7.7
25	do.[a]	do	do		12.1
8	do.[a]	do	NW. ¼ sec. 12, T. 17 N., R. 5 W., Washington.		8.0

Queets River Basin

Aug. 23	Queets River	Pacific Ocean	Fisher Rapids, near Clearwater, Wash.	0.68	663
24	Clearwater River	Queets River	Ben Northrup's ranch, near Clearwater, Wash.	1.44	119

Hoh River Basin

Nov. 11	Hoh River[b]	Pacific Ocean	Spruce, Wash	2.70	1,950
Aug. 5	do	do	Gaging station near Spruce, Wash.	2.48	722
6	do	do	do	2.92	918
Sept. 15	do	do	do	2.49	740
16	do	do	do	2.02	530

Quillayute River Basin

May 29	Soleduck River	Quillayute River	Former gaging station near Fairholm, Wash.	1.61	401
Sept. 13	do	do	do	.14	52.0

[a] Results furnished by R. H. Ober, of Jacobs & Ober, consulting engineers, Seattle, Wash.
[b] Results furnished by F. P. Zoffman, Grays Harbor Railway & Light Co., Aberdeen, Wash.

Miscellaneous discharge measurements in drainage basins in Washington during the year ending September 30, 1926—Continued

Little Quilcene River Basin

Date	Stream	Tributary to or diverting from—	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
Oct. 4	Little Quilcene River.[a]	Hood Canal	SW. ¼ sec. 2, T. 27 N., R. 2. W., Washington.		7.3
2	do	do	NE. ¼ sec. 14, T. 27 N., R. 2 W., at Olympic Highway crossing, Washington.		6.2
4	do.[a]	do	do		6.6
Sept. 11	do	do	do	0.88	4.5
Aug. 31	do.[c]	do	SW. ¼ SW. ¼ sec. 18, T. 27 N., R. 1 W., 100 feet below bridge, Washington.		10.6

Duckabush River Basin

Mar. 4	Duckabush River	Hood Canal	Sec. 17, T. 25 N., R. 2 W., 1 mile above mouth.		308
7	do	do	do		241
June 7	do	do	do		308
Sept. 10	do	do	do		50.3

Lilliwaup Creek Basin

Mar. 3	Lilliwaup Creek	Hood Canal	Below falls at Lilliwaup, Wash.	1.04	92.0
8	do	do	do	.84	70.9
May 26	do	do	do	1.25	18.7
June 3	do	do	do	1.45	15.0
Sept. 2	do[c]	do	do		3.1

Skokomish River Basin

Sept. 17	South Fork of Skokomish River.	Skokomish River	3 miles above mouth, Washington.		[d] 45.6

Puyallup River Basin

Sept. 1	West Branch of Maplewood Springs.	Clark Creek	NE. ¼ SE. ¼ sec. 32, T. 20 N., R. 4 E., at trail crossing at old city pumping plant, Washington.	0.66	13.9
1	East Branch of Maplewood Springs.	do	do	.42	6.8
1	Clear Creek	Puyallup River	NW. ¼ sec. 24, T 20 N., R. 3 E., at city of Tacoma weir 2 miles above mouth, Washington.	.43	7.8

Hylebo Creek Basin

Sept. 1	Hylebo Creek	Puget Sound	SW. ¼ sec. 32, T. 21 N., R. 4 E., at city of Tacoma weir, Washington.	0.41	6.0
1	do	do	500 feet below city of Tacoma weir, Washington.		8.2

[a] Results furnished by R. H. Ober, of Jacobs & Ober, consulting engineers, Seattle, Wash.
[c] Results furnished by State department of conservation and development.
[d] Mean of results of 2 discharge measurements.

Miscellaneous discharge measurements in drainage basins in Washington during the year ending September 30, 1926—Continued

Snohomish River Basin

Date	Stream	Tributary to or diverting from—	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
June 18	Wallace River	Skykomish River	NE. ¼ sec. 6, T. 27 N., R. 9 E., at road crossing at Gold Bar, Wash.	0.31	34.0
Aug. 31	do.[a]	do	do	.60	58.9
Oct. 19	Everett water supply conduit.	Right side of Sultan River in sec. 32, T. 28 N., R. 8 E.	Lower end of first tunnel above gate tender's house, Washington.	1.24	16.5
Feb. 10	do	do	do	3.38	21.3
May 20	do	do	do	1.81	17.3
June 17	do	do	do	1.48	15.6
Aug. 4	do	do	do	3.51	19.8
July 13	Middle Fork of Snoqualmie River.	Snoqualmie River	Sec. 14, T. 23 N., R. 8 E., at Tanner, Wash.		252
17	North Fork of Snoqualmie River.	do	2 miles below Sunday Creek, Wash.		36.0
10	Tokul Creek	do	¼ mile above Sunset Highway bridge, Washington.		27.5
Aug. 19	do	do	800 feet above mouth, Washington.		24.7
July 9	Tolt River	do	600 feet below the forks, Washington.		106

Kootenai River Basin

Apr. 2	Moyie River	Kootenai River	¾ mile below Cynide Gold Mining Co.'s dam, Washington.	1.28	212

Clark Fork Basin

Jan. 30	Sullivan Creek	Clark Fork	¼ mile above mouth, Washington.		66.0
Mar. 28	do	do	do		35.0
May 15	do	do	do		223
Sept. 16	do	do	do		77.9

Spokane River Basin

Aug. 23	Little Spokane River.[a]	Spokane River	1 mile above mouth, Washington.		369

Okanogan River Basin

Sept. 30	Okanogan River	Columbia River	100 feet above Ellis Ford road bridge at Oroville, Wash.		43.6
30	do	do	Former gaging station at Okanogan, Wash.	1.02	355

[a] Results furnished by State department of conservation and development.
[b] Results furnished by Washington Water Power Co.

Miscellaneous discharge measurements in drainage basins in Washington during the year ending September 30, 1926—Continued

Methow River Basin

Date	Stream	Tributary to or diverting from	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
Sept. 30	Methow River	Columbia River	3½ miles above Winthrop, Wash.		112
29	Lost River	Methow River	Mouth, 8 miles above Mazama, Wash.		28.7
29	Chewack Creek	do	800 feet above mouth of Boulder Creek, Wash.		45.4
29	Boulder Creek	Chewack Creek	1,000 feet above mouth, Washington.		7.2
May 6	Methow Valley Irrigation District Canal.	Left side of Methow River.	Opposite confluence of Methow and Twisp Rivers, Wash.	5.48	56.4
June 25	do	do	do	5.80	66.2
Sept. 28	do	do	do	4.50	24.8
May 6	do	Right side of Twisp River.	Twisp, Wash., 3 miles below headworks.		40.3
June 25	do	do	do		39.1
Sept. 29	do	do	do		11.8
May 6	Risley ditch	do	Methow Valley Creamery building, Twisp, Wash.	4.27	9.6
June 25	do	do	do	4.45	11.9
Sept. 29	do	do	do	3.75	2.5

Entiat River Basin

Sept. 9	Entiat River	Columbia River	Former gaging station at Entiat, Wash.	0.76	87.2
23	do	do	do	.80	92.0
9	Entiat Irrigation Co's. canal.	Entiat River	½ mile above power house on Entiat River, Wash.		13.1
23	do	do	do		10.4

Wenatchee River Basin

Sept. 8	Chiwaukum Creek	Wenatchee River	¼ mile above Great Northern Ry. station at Chiwaukum, Wash.		13.9
24	do	do	do		18.8
8	Icicle Creek	do	¼ mile above Snow Creek, at intake of Icicle Irrigation District Canal, Wash.		104
25	do	do	do		109
9	Chumstick Creek	do	1 mile above Stromberg Canyon, Wash.		.6
27	do	do	do		.7
7	Peshastin Creek	do	Above all diversions; ½ mile below Ingalls Creek, Wash.		23.0
24	do	do	do		24.3
9	Mission Creek	do	Above all diversions; 1½ miles above Bear Gluch, Wash.		.8
23	do	do	do		1.8

Squillchuck Creek Basin

Sept. 9	Squillchuck Creek	Columbia River	1 mile above School 14, Washington.		1.7
23	do	do	do		1.8

INDEX

A

Page

Aberdeen, Wash., Wynoochee River near ... 10-12
Accuracy of data and results, degrees of ... 4-5
Acre-foot, definition of ... 2
Alder, Wash., Little Nisqually River near ... 32-33
Alderton, Wash., Puyallup River at ... 37-38
Appropriations, record of ... 1

B

Beaver, Wash., Soleduck River near ... 15-17
Big Creek near Polson, Mont ... 89-91
Big Fork, Mont., Swan River near ... 88-89
Boulder Creek, Wash., discharge measurement of ... 151
Buckley, Wash., White River at ... 41-43
Bumping Lake near Nile, Wash ... 139-140
Bumping River near Nile, Wash ... 140-142

C

Calder, Idaho, St. Joe River at ... 106-108
Cataldo, Idaho, Coeur d'Alene River near ... 97-99
Cedar Falls, Wash., Cedar River at ... 43-44
Cedar River at Cedar Falls, Wash ... 43-44
near Landsberg, Wash ... 45-46
Chehalis River Basin, Wash., gaging-station records in ... 10-13, 148
Chelan, Wash., Lake Chelan at ... 123-124
Chelan River at Chelan, Wash ... 124-126
Chewack Creek, Wash., discharge measurement of ... 151
Chiwaukum Creek, Wash., discharge measurements of ... 151
Chumstick Creek, Wash., discharge measurements of ... 151
Clark Fork at Metaline Falls, Wash ... 79-80
near Plains, Mont ... 76-77
Clark Fork Basin, Mont.-Idaho-Wash., gaging-station records in ... 76-92, 150
Cle Elum, Wash., Yakima River at ... 130-132
Cle Elum Lake near Roslyn, Wash ... 135
Cle Elum River near Roslyn, Wash ... 135-137
Clear Creek, Wash., discharge measurement of ... 149
Clearwater River, Wash., discharge measurement of ... 148
Coeur d'Alene Lake at Coeur d'Alene, Idaho ... 99-101
Coeur d'Alene River near Cataldo, Idaho ... 97-99
Columbia Falls, Mont., South Fork of Flathead River near ... 86-88
Columbia River at Kettle Falls, Wash ... 71-72
at Trail, British Columbia ... 69-70
at Vernita, Wash ... 73-74
Colville River at Meyers Falls, Wash ... 93-94
Computations, results of, accuracy of ... 4-5
Concrete, Wash., Skagit River near ... 63-65
Control, definition of ... 2
Coolin, Idaho, Priest River near ... 91-92
Cooperation, record of ... 9

D

Page

Darrington, Wash., Sauk River at ... 67-69
Data, accuracy of ... 4-5
explanation of ... 2-4
Deer Creek at Oso, Wash ... 58-60
Duckabush River, Wash., discharge measurements of ... 149
Dungeness River near Sequim, Wash ... 21-22

E

Easton, Wash., Kachess Lake near ... 132-133
Kachess River near ... 133-134
Electron, Wash., Puyallup River near ... 35-37
Elwha River at McDonald Bridge, near Port Angeles, Wash ... 19-21
Entiat Irrigation Co.'s canal, Wash., discharge measurements of ... 151
Entiat River, Wash., discharge measurements of ... 151
Entiat River Basin, Wash., discharge measurements in ... 151
Everett water supply conduit, Wash., discharge measurements of ... 150

F

Flathead Lake at Polson, Mont ... 84-85
at Somers, Mont ... 83-84
Flathead River near Polson, Mont ... 85-86
South Fork of, near Columbia Falls, Mont ... 86-88

H

Hall Creek at Inchelium, Wash ... 94-96
Hamma Hamma River near Hoodsport, Wash ... 23-24
Hayden Lake at Hayden Lake, Idaho ... 110-111
Hoh River, Wash., discharge measurements of ... 148
Hoodsport, Wash., Hamma Hamma River near ... 23-24
North Fork of Skokomish River near ... 24-28
Hope, Idaho, Pend Oreille Lake at ... 77-78
Hylebo Creek, Wash., discharge measurements of ... 149
Icicle Creek, Wash., discharge measurements of ... 151

I

Inchelium, Wash., Hall Creek at ... 94-96
Index, Wash., South Fork of Skykomish River near ... 46-48

K

Kachess Lake near Easton, Wash ... 132-133
Kachess River near Easton, Wash ... 133-134
Keechelus Lake near Martin, Wash ... 128
Kettle Falls, Wash., Columbia River at ... 71-72

Page

Kootenai River at Libby, Mont. 74–76
Kootenai River Basin, Wash., gaging-station records in 74–76, 150

L

La Grande, Wash., Nisqually River near 30–31
Tacoma power conduit near 33–35
Lake Chelan at Chelan, Wash. 123–124
Lake Crescent at Piedmont, Wash. 17
Lake Washington Basin, Wash., gaging-station records in 43–46
Landsberg, Wash., Cedar River near 45–46
Leavenworth, Wash., Wenatchee River near 126–127
Libby, Mont., Kootenai River at 74–76
Lilliwaup Creek, Wash., discharge measurements of 149
Little Nisqually River near Alder, Wash. 32–33
Little Quilcene River, Wash., discharge measurements of 149
Little Spokane River, Wash., discharge measurement of 150
Long Lake, Wash., Spokane River near 105–106
Loomis, Wash., Sinlahekin Creek near 117–119
Toats Coulee Creek near 119–120
Lost River, Wash., discharge measurement of 151
Lotus, Idaho, St. Maries River at 109–110
Lyre River at Piedmont, Wash. 18–19
Lyre River Basin, Wash., gaging-station records in 17–19

M

Maplewood Springs, East Branch of, Wash., discharge measurement of 149
West Branch of, Wash., discharge measurement of 149
Marblemount, Wash., Skagit River near 60–63
Thunder Creek near 66–67
Martin, Wash., Keechelus Lake near 128
Yakima River near 129–130
Metaline Falls, Wash., Clark Fork at 79–80
Meteor, Wash., Stranger Creek at 96–97
Methow River at Twisp, Wash. 122–123
discharge measurements of 151
Methow River Basin, Wash., gaging-station records in 122–123, 151
Methow Valley Irrigation District Canal, Wash., discharge measurement of 151
Meyers Falls, Wash., Colville River at 93–94
Mission Creek, Wash., discharge measurements of 151
Montesano, Wash., Wynoochee River near 12–13
Moyie River, Wash., discharge measurement of 150

N

Naches River below Tieton River, near Naches, Wash. 137–139
Naches, Wash., Naches River near 137–139
Tieton Reservoir near 142–143
Tieton River near 143–146
Nespelem Canal at Nespelem, Wash. 114–115
Nespelem River at Nespelem, Wash. 113–114
Nespelem River Basin, Wash., gaging-station records in 113–115

Page

Nile, Wash., Bumping Lake near 139–140
Bumping River near 140–142
Nisqually River near La Grande, Wash. 30–31
Nisqually River Basin, Wash., gaging-station records in 30–35
North Bend, Wash., Middle Fork of Snoqualmie River near 51–53
North Fork of Snoqualmie River near 55–56
South Fork of Snoqualmie River at 57–58

O

Okanogan River, Wash., discharge measurements of 150
Olney Creek near Startup, Wash. 48–49
Oroville, Wash., Similkameen River near 116–117
West Okanogan Valley Irrigation District Canal near 120–121
Oso, Wash., Deer Creek at 58–60

P

Pend Oreille Lake at Hope, Idaho 77–78
Peshastin Creek, Wash., discharge measurements of 151
Piedmont, Wash., Lake Crescent at 17
Lyre River at 18–19
Plains, Mont., Clark Fork near 76–77
Polson, Mont., Big Creek near 89–91
Flathead Lake at 84–85
Flathead River near 85–86
Port Angeles, Wash., Elwha River near 19–21
Porter Creek, South Fork of, Wash., discharge measurements of 148
Post Falls, Idaho, Spokane River at 101–102
Spokane Valley Farms Co.'s canal at 111–113
Potlatch, Wash., South Fork of Skokomish River near 28–29
Priest River at outlet of Priest Lake, near Coolin, Idaho 91–92
Publications, information concerning 5–8
obtaining or consulting of 6
on stream flow, lists of 7, 8
Puget Sound Basins, Wash., gaging-station records in 23–69
Puyallup River at Alderton, Wash. 37–38
at Puyallup, Wash. 39–40
near Electron, Wash. 35–37
Puyallup River Basin, Wash., gaging-station records in 35–43, 149

Q

Queets River, Wash., discharge measurement of 148
Quigley, Mont., Ranch Creek near 82–83
Rock Creek near 80–82
Quillayute River Basin, Wash., gaging-station record in 13–15, 148
Quinault Lake, Wash., Quinault River at 13–15
Quinault River at Quinault Lake, Wash. 13–15

R

Ranch Creek near Quigley, Mont. 82–83
Risley ditch, Wash., discharge measurements of 151
Rock Creek near Quigley, Mont. 80–82

Page

Roslyn, Wash., Cle Elum Lake near 135
Cle Elum River near 135–137
Run-off in inches, definition of 2

S

St. Joe River at Calder, Idaho 106–108
St. Maries River at Lotus, Idaho 109–110
Sauk River at Darrington, Wash 67–69
Second-feet, definition of 2
Second-feet per square mile, definition of 2
Sequim, Wash., Dungeness River near 21–22
Similkameen River near Oroville, Wash 116–117
Sinlahekin Creek above Blue Lake, near Loomis, Wash 117–119
Skagit River below Ruby Creek, near Marblemount, Wash 60–61
near Concrete, Wash 63–65
near Marblemount, Wash 62–63
Skagit River Basin, Wash., gaging-station records in 60–69
Skokomish River, North Fork of, below Staircase Rapids, near Hoodsport, Wash 24–26
North Fork of, near Hoodsport, Wash 26–28
South Fork of, Wash., discharge measurement of 149
near Potlatch, Wash 28–29
Skokomish River Basin, Wash., gaging-station records in 24–29, 149
Skykomish River, South Fork of, near Index, Wash 46–48
Snohomish River Basin, Wash., gaging-station records in 46–58, 150
Snoqualmie River, Middle Fork of, Wash., discharge measurement of 150
Middle Fork of, near North Bend, Wash 51–53
near Snoqualmie, Wash 53–54
North Fork of, discharge measurement of 150
near North Bend, Wash 55–56
South Fork of, at North Bend, Wash 57–58
Soleduck River at Snider ranger station, near Beaver, Wash 15–17
discharge measurements of 148
Somers, Mont., Flathead Lake at 83–84
Spokane River at Post Falls, Idaho 101–102
at Spokane, Wash 103–104
below Little Falls, near Long Lake, Wash 105–106
Spokane River Basin, Idaho-Wash., gaging-station records in 97–113, 150
Spokane Valley Farms Co., canal at Post Falls, Idaho 111–113
Squilchuck Creek, Wash., discharge measurements of 151
Stage-discharge relation, definition of 2
Startup, Wash., Olney Creek near 48–49
Stillaguamish River Basin, Wash., gaging-station records in 58–60

Page

Stranger Creek at Meteor, Wash 96–97
Sullivan Creek, Wash., discharge measurements of 150
Sultan River near Sultan, Wash 49–51
Swan River near Big Fork, Mont 88–89

T

Tacoma power conduit near La Grande, Wash 33–35
Terms, definition of 2
Thunder Creek near Marblemount, Wash 66–67
Tieton Canal near Naches Wash 147–148
Tieton Reservoir at Tieton Dam, near Naches, Wash 142–143
Tieton River at headworks of Tieton Canal, near Naches, Wash 145–146
at Tieton Dam, near Naches, Wash 143–145
Toats Coulee Creek near Loomis, Wash 119–120
Tokul Creek, Wash., discharge measurements of 150
Tolt River, Wash., discharge measurements of 150
Trail, British Columbia, Columbia River at 69–70
Twisp, Wash., Methow River at 122–123

U

Upper Columbia River Basin, British Columbia-Mont.-Idaho-Wash., gaging-station records in 69–148

V

Vernita, Wash., Columbia River at 73–74

W

Wallace River, Wash., discharge measurements of 150
Wenatchee River near Leavenworth, Wash 126–127
Wenatchee River Basin, Wash., gaging-station records in 126–127, 151
West Okanogan Valley Irrigation District Canal near Oroville, Wash 120–121
White River at Buckley, Wash 41–43
Work, authorization of 1
division of 9–10
scope of 1–2
Wynoochee River at Oxbow, near Aberdeen, Wash 10–12
near Montesano, Wash 12–13

Y

Yakima River at Cle Elum, Wash 130–132
near Martin, Wash 129–130
Yakima River Basin, Wash., gaging-station records in 128–148

Z

Zero flow, point of, definition of 2