Surface Water Supply of the United States 1955

Part 12. Pacific Slope Basins in Washington and Upper Columbia River Basin

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GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1396

Prepared in cooperation with the States of Idaho, Montana, and Washington, and with other agencies

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Part 12. Pacific Slope Basins in Washington and Upper Columbia River Basin

Prepared under the direction of J. V. B. WELLS, *Chief, Surface Water Branch*

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GEOLOGICAL SURVEY

Thomas B. Nolan, *Director*

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PREFACE

This report was prepared by the Geological Survey in cooperation with the States of Idaho, Montana, and Washington, and with other agencies, by personnel of the Water Resources Division, C. G. Paulsen, chief, under the general direction of J. V. B. Wells, chief, Surface Water Branch, and B. J. Peterson, chief, Annual Reports Section.

The data were collected and computed under supervision of district engineers, Surface Water Branch, as follows:

T. R. Newell----------Boise, Idaho
Frank Stermitz----------Helena, Mont.
F. M. Veatch----------Tacoma, Wash.

CALENDAR FOR WATER YEAR 1955

OCTOBER 1954

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

NOVEMBER 1954

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

DECEMBER 1954

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

JANUARY 1955

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

FEBRUARY 1955

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					

MARCH 1955

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

APRIL 1955

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

MAY 1955

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

JUNE 1955

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

JULY 1955

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

AUGUST 1955

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

SEPTEMBER 1955

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

CONTENTS

ILLUSTRATIONS

SURFACE WATER SUPPLY OF PACIFIC SLOPE BASINS IN WASHINGTON AND UPPER COLUMBIA RIVER BASIN, 1955

SCOPE OF WORK

This volume is one of a series of 18 reports presenting measurements of stage, discharge, and contents of streams, lakes, and reservoirs in the United States during the water year ending September 30, 1955. Since 1888, when the United States Geological Survey first studied streamflow in relation to problems of irrigation, similar measurements have been made at more than 13,250 gaging stations in the 48 States and at many others in the Territories of Alaska and Hawaii. On September 30, 1955, the Geological Survey and cooperating organizations were maintaining 6,860 gaging stations, including those in Alaska and Hawaii. Discharge measurements only were made at many other points in the 1955 water year, most of which are published at the end of each report. The name of each stream measured at points other than gaging stations is not listed in the index to this report. Only the major river basins in which measurements were made are listed under the item "Discharge measurements" in the index.

COOPERATION

Many State, municipal, and private organizations have cooperated with the Geological Survey in this work by either furnishing or helping to collect data. Organizations that supplied data are acknowledged in station descriptions, and organizations that assisted in the collection of data through cooperative agreements with the Survey are:

Idaho: Idaho Department of Reclamation, M. R. Kulp, State reclamation engineer.

Montana: Office of State Engineer, F. E. Buck; State Water Conservation Board.

Washington: State Department of Conservation and Development, W. A. Galbraith, director, and M. G. Walker, supervisor of the Department of Water Resources; State Department of Fisheries, R. J. Schoettler, director; State Department of Game, J. A. Biggs, director; State Department of Highways, W. A. Bugge, director; cities of Aberdeen, Bellingham, Bremerton, Everett, Olympia, Seattle, and Tacoma, and town of Wilson Creek; Intercounty River Improvement Commission; Chelan County Public Utility District No. 1; Pend Oreille County Public Utility District No. 1; and Snohomish County Public Utility District No. 1; Douglas, Grant, Skagit, and Whatcom Counties.

Assistance in the form of funds or services was given by the Corps of Engineers, Department of the Army, in collecting records published herein for 4 gaging stations in Idaho, 1 in Montana, and 15 in Washington.

Assistance was also furnished by the Agricultural Research Service of the United States Department of Agriculture, the United States Department of the Army, the Weather Bureau of the United States Department of Commerce, Bureau of Reclamation and the Office of Indian Affairs of the United States Department of the Interior, and the United States Department of State. Acknowledgment is due to the Forest Service of the United States Department of Agriculture and the Weather Bureau for occupation permits and furnishing special reports of watershed conditions and precipitation records.

Full cooperation exists between the Geological Survey of the United States Department of the Interior and the Water Resources Branch, Department of Northern Affairs and National

Resources, Canada. On water adjacent to the international boundary certain stations are maintained jointly by the United States and Canada under the terms of the Boundary Waters Treaty of 1909, and others are maintained under a subsequent agreement between the two Governments. The records from all these stations are obtained in such a manner as to be equally acceptable and available in either country. These stations are herein designated "international gaging stations."

The following organizations aided in collecting records:

Idaho: Washington Water Power Co.

Montana: The Montana Power Co.

Washington: Crown Zellerbach Coporation; Puget Sound Power & Light Co.; Rayonier, Inc.; and Weyerhaeuser Timber Co.

DIVISION OF WORK

The stream-gaging work was done by the Water Resources Division of the Geological Survey under the direction of personnel shown in the preface. The data for stations in the several States were collected and prepared for publication in the district offices listed below.

State	District office	Address
Idaho	Boise	429 Federal Building.
Montana	Helena	409 Federal Building.
Washington	Tacoma	207 Federal Building.

Information of a more detailed nature than that published for most of the gaging stations given in this report is on file in the district offices listed above. Provisional records of discharge prior to publication, and other unpublished data concerning the gaging-station records may usually be obtained from the district office.

DEFINITION OF TERMS AND ABBREVIATIONS

The terms of streamflow and other hydrologic data, as used in this report, are defined as follows:

Cubic foot per second (cfs) is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second.

Cubic feet per second per square mile (cfsm) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Runoff in inches is the depth to which an area would be covered if all the water draining from it in a given period were uniformly distributed on its surface. The term is used for comparing runoff with rainfall, which is also usually expressed in inches.

Acre-foot is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43,560 cubic feet. The term is commonly used in relation to storage for irrigation.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons, and represents a runoff of 0.0372 inch from 1 square mile.

Stage-discharge relation is the relation between gage height and the amount of water flowing in a channel, expressed as volume per unit of time.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, a long reach of the channel, or an artificial structure.

Contents is the volume of water in a reservoir. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

The drainage area of a stream at a specified location is that area, measured in a horizontal plane, which is so enclosed by a topographic divide that direct surface runoff from precipitation normally would drain by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER OF LISTING GAGING STATIONS

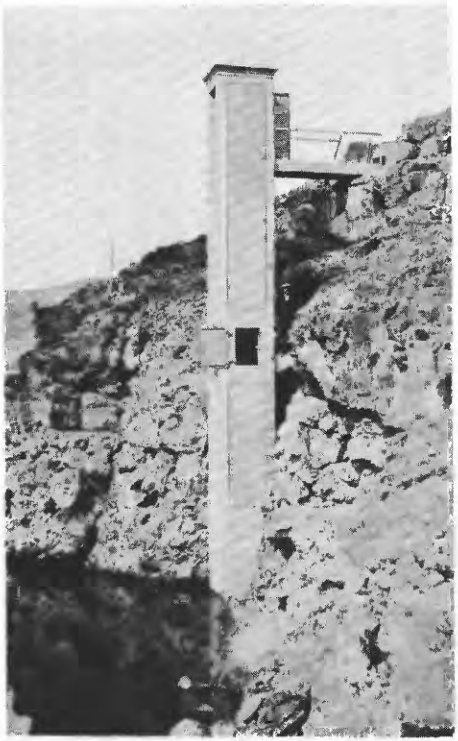
Beginning with the series of reports for the water year ending September 30, 1951, the order of listing gaging-station records was changed. In this report, in a downstream direction along the main stem all stations on a tributary entering above a main-stem station are listed before that station. If a tributary enters between two main-stem stations, it is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. To indicate the rank of any tributary on which a gaging station is situated and the stream to which it is immediately tributary, each indention in the listing of gaging stations in the table of contents of this report represents one rank. This downstream order and system of indention show which gaging stations are on tributaries between any two stations on a main stem and the rank of the tributary on which each gaging station is situated.

The order of listing used before the publication of the 1951 report listed first all stations on the main stem from headwaters toward mouth, then all stations on the uppermost tributary to the main stem from the tributary's source to mouth, and then all stations from source to mouth of the uppermost tributary to the tributary.

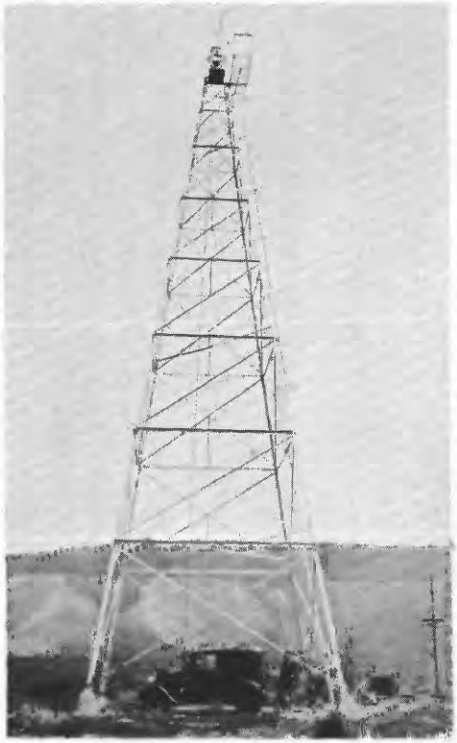
EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage and measurements of discharge. In addition, observations of factors affecting the stage-discharge relation, weather records, and other information are used to supplement base data in determining the daily flow. The records of stage are obtained either from direct readings on a nonrecording gage or from a water-stage recorder that gives a continuous record of fluctuations. Measurements of discharge are made with a current meter by the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in Water-Supply Paper 888 and are also outlined in standard textbooks on the measurement of stream discharge. Typical structures in use at gaging stations are shown in figure 1.

Rating tables giving the discharge for any stage are prepared from stage-discharge relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect



A, COLUMBIA RIVER AT TRINIDAD, WASH.
Recording-gage shelter and stilling well.



B, COLUMBIA RIVER AT TRINIDAD, WASH.
East cable tower.

FIGURE 1.—GAGING-STATION STRUCTURES.

determinations of peak discharge (such as slope-area or contracted-opening determinations, computation of flow over dams or weirs, and by other methods), velocity-area studies, and logarithmic plotting. The application of the daily mean gage height to those rating tables gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is essentially the shifting-control method.

At some gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in determining discharge. Information requisite for determining the slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage. If so, the rate of change in stage is used as a factor in the determination of discharge.

At most gaging stations in the northern part of the United States and at some in the mountainous regions of other parts the stage-discharge relation is affected by ice during the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and engineers, and comparable records of discharge for other stations in the same or nearby basins. If the stage-discharge relation is affected by ice, this information is given in a note to the table. No mention is made of occasional days of ice effect if the degree of accuracy of daily records is not changed.

The data herein presented generally comprise a description of the station, a skeleton rating table, and a table showing the daily discharge and monthly and yearly discharge and runoff of the stream. Records are published for the water year which begins on October 1 and ends on September 30. A calendar for the water year 1955 is shown on page IV for the purpose of finding the day of the week for any date.

The description of the station gives the location, drainage area, records available, type and history of gages, average discharge, extremes of discharge, general remarks, and notations of revisions of the previously published record. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "Location" for some stations, is that determined and used by the Corps of Engineers unless otherwise noted. Under "Records available" are given the periods for which there are published records generally equivalent to those of the present site. Under "Gage" are given the type of gage currently in use and the datum of the present gage above mean sea level, and a condensed history of the types of gages, locations, and datums of previous gages used during the period of records available. Under "Average discharge" is given the average discharge for the number of years indicated. It

is not given for stations having fewer than five complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. Under "Extremes" are given the maximum discharge and gage height; the minimum discharge if there is little or no regulation; the minimum daily discharge if there is extensive regulation (also the minimum discharge if useful); and the minimum gage height (unless it is of no importance). In the first paragraph, the data given are for the complete current water year unless otherwise specified. In the second paragraph, the data given are for the periods of record within the calendar year dates in the heading (not necessarily those for the complete years indicated by the heading dates). Reliable information concerning major floods that have occurred outside the period of record are given in the third or last paragraph under "Extremes." Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder, a crest-stage indicator, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur at the same time as the maximum discharge, it is given separately. Information pertaining to the accuracy of the records and conditions which affect the natural flow at the gaging station is given under "Remarks."

Previously published records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual reports. In order to make it easier to find such revised records, a paragraph headed "Revisions (water years)" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1933 stands for the water year October 1, 1932, to September 30, 1933. If no daily, monthly, or annual figures of discharge are concerned in the revision, that fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

Skeleton rating tables are published for all stations except those at which the daily discharge for the greater part of the open-water period was determined by the shifting-control method, the slope method, or other special methods involving an equivalent adjustment to the gage height of more than one-tenth foot. Skeleton rating tables are generally not published for stations on canals.

For stations equipped with water-stage recorders, except those on streams subject to sudden or rapid fluctuation, the daily table gives the discharge corresponding to the daily mean gage height. For stations subject to such fluctuation the daily mean gage height may not indicate the true daily mean discharge, which must be obtained by averaging the discharge for parts of the day or by using the discharge integrator, an instrument for obtaining the daily mean discharge from a continuous gage-height graph and containing, as

an essential element, a curve representing the stage-discharge relation at the station. For stations equipped with nonrecording gages, the table of daily discharge gives the discharge corresponding to once-daily readings of the gage, or to the mean of twice-daily readings, or to the mean gage height determined from gage-height graphs based on gage readings. For periods of rapidly changing stage, the daily mean discharge is determined from gage-height graphs based on gage readings, the frequency of which is stated in the station description.

In the table of daily discharge, the figures for the maximum day and minimum day for each month are underlined. If the figure is repeated, it is underlined only on the first day of its occurrence.

In the monthly summary below the daily table, the line headed "Total" gives the sum of the daily figures; it is the total cfs-days for the month. The line headed "Mean" gives the average flow in cubic feet per second during the month. Runoff for the month may be expressed in cubic feet per second per square mile (line headed "Cfsm"), or in inches (line headed "In."), or in acre-feet (line headed "Ac-ft"). Figures for cubic feet per second per square mile and runoff in inches are omitted if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches.

In the yearly summary below the monthly summary, the figures of maximum are the maximum daily discharges, not the momentary discharges when the water was at crest stage. Likewise, the minimums in this summary are the minimum daily discharges.

Peak discharges and the times of their occurrence and corresponding gage heights of most stations are listed below the table of daily and monthly discharge. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man.

Footnotes to the table of daily discharge indicate periods when discharge was computed or estimated by unusual or special methods during periods of no gage-height record and ice effect, or by other effects that reduce the degree of accuracy of the records. Days on which discharge measurements were made are indicated by asterisk and footnote unless they were made at frequent regular intervals, in which instance the general frequency of discharge measurements is given under "Remarks" in the station description.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is usually given in the first report in which data for the reservoir are published but it is omitted from succeeding reports.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretation of records.

The station description states the degree of accuracy of the records. "Excellent" indicates that, in general, the error in the daily records is believed to be less than

5 percent; "good," less than 10 percent; "fair," less than 15 percent; and "poor," probably more than 15 percent. The records of monthly and yearly mean discharge and runoff are, in general, more nearly accurate than the daily records.

Runoff at some stations, as indicated by the monthly mean, may vary widely from natural runoff, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and runoff in inches are not published unless storage or diversion records are included to indicate the extent of the regulation or diversion, or unless satisfactory adjustments can be made for changes in contents of reservoirs or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur when relatively large negative adjustments are made or when evaporation is large in comparison with the observed discharge.

Many gaging stations on streams in the irrigated areas of the United States are situated above most of the diversions from those streams, and therefore the discharge recorded does not actually show the water supply available at the stations for further development, because water must first be supplied to existing irrigation systems.

PUBLICATIONS

To facilitate publication of the annual series of reports, the area of the United States is divided into 14 parts whose boundaries coincide with certain natural drainage lines. Formerly, the results of streamflow measurements were published in 14 volumes, one for each of the 14 parts. Beginning with the reports for 1951, the records are published in 18 volumes, there being 2 volumes each for Parts 1, 2, 3, and 6. The boundaries of the various parts are indicated by the following list and the map in figure 2.

Part 1. North Atlantic slope basins, in two volumes:
- A, North Atlantic slope basins, Maine to Connecticut.
- B, North Atlantic slope basins, New York to York River.

2. South Atlantic slope and eastern Gulf of Mexico basins, in two volumes:
- A, South Atlantic slope basins, James River to Savannah River.
- B, South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River.

3. Ohio River basin, in two volumes:
- A, Ohio River basin except Cumberland and Tennessee River basins.
- B, Cumberland and Tennessee River basins.

4. St. Lawrence River basin.
5. Hudson Bay and upper Mississippi River basins.
6. Missouri River basin, in two volumes:
- A, Missouri River basin above Sioux City, Iowa.
- B, Missouri River basin below Sioux City, Iowa.

7. Lower Mississippi River basin.
8. Western Gulf of Mexico basins.
9. Colorado River basin.
10. The Great Basin.
11. Pacific slope basins in California.
12. Pacific slope basins in Washington and upper Columbia River basin.
13. Snake River basin.
14. Pacific slope basins in Oregon and lower Columbia River basin.

Water-supply papers and other publications of the Geological Survey containing data on the water resources of the United States may be purchased or consulted as follows:

1. Copies may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., who will, on application, furnish lists giving prices. A list of Geological Survey publications may also be obtained by applying to the Director, Geological Survey, Washington, D. C.

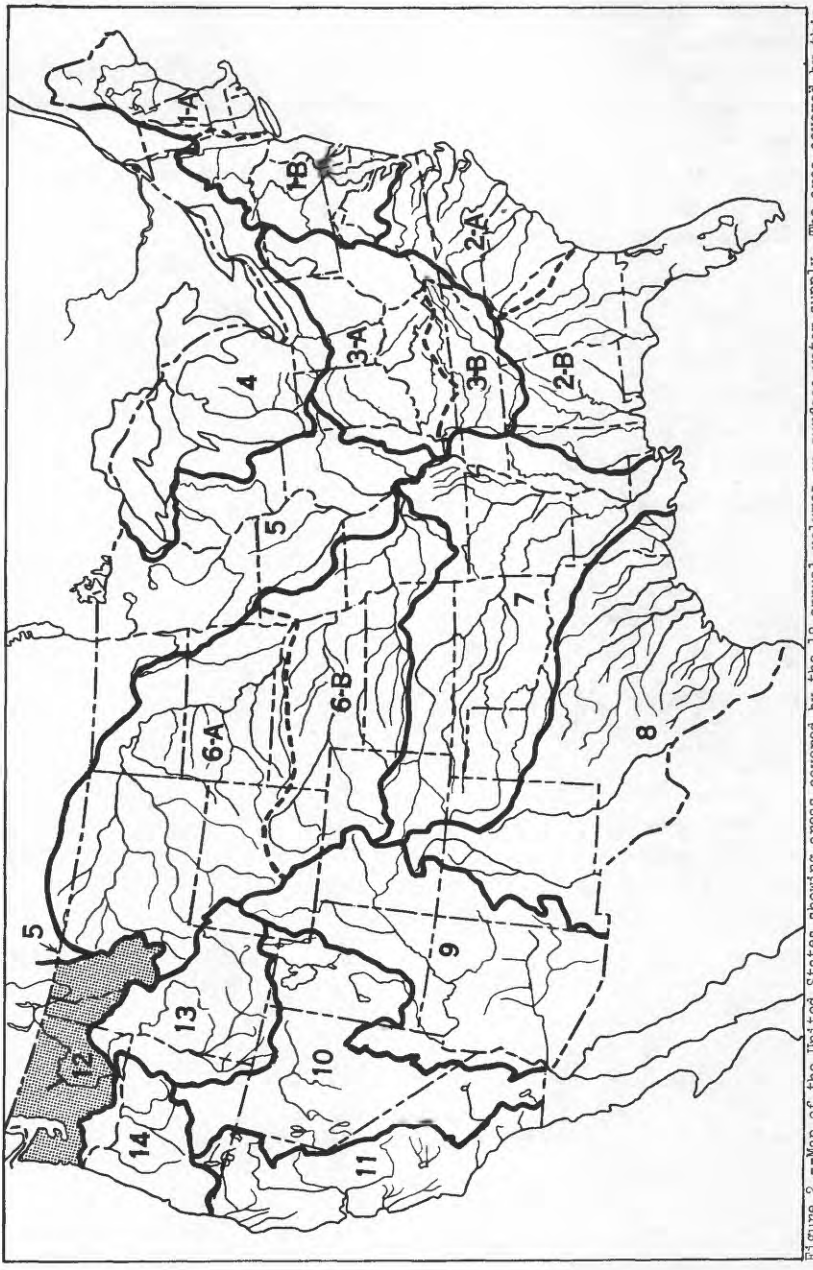


Figure 2.--Map of the United States showing areas covered by the 18 annual volumes on surface-water supply. The area covered by this report is shaded.

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

3. Sets are available for consultation in the offices of the Water Resources Division of the Geological Survey. Addresses of the offices in the area covered by this report are given on page 2.

Early records of the flow of streams in the United States are published in the reports listed below. In many of these reports records for years earlier than those indicated have been included for some streams.

Streamflow data for the years 1884-1901 in reports of the Geological Survey

(A = Annual Report; B = Bulletin)

Report	Character of data	Year
10th A, pt. 2	Descriptive information only.	
11th A, pt. 2	Monthly discharge and descriptive information.....	1884 to September 1890.
12th A, pt. 2	....do.....	1884 to June 30, 1891.
13th A, pt. 3	....do.....	1884-92.
14th A, pt. 2	Monthly discharge.....	1888-93.
B 131.....	Descriptions, measurements, gage heights, and ratings.....	1893-94.
16th A, pt. 2	Descriptive information only.	
B 140.....	Descriptions, measurements, gage heights, ratings, and monthly discharge.	1895.
WSP 11.....	Gage heights.....	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge..	1895-96.
WSP 15.....	Descriptions, measurements, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries above Kansas River.	1897.
WSP 16.....	Descriptions, measurements, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries above Kansas River.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge..	1897.
WSP 27.....	Measurements, ratings, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries.	1898.
WSP 28.....	Measurements, ratings, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries.	1898.
20th A, pt. 4	Monthly discharge.....	1898.
WSP 35 to 39.	Descriptions, measurements, gage heights, and ratings.....	1899.
21st A, pt. 4	Monthly discharge.....	1899.
WSP 47 to 52.	Descriptions, measurements, gage heights, and ratings.....	1900.
22d A, pt. 4.	Monthly discharge.....	1900.
WSP 65, 66...	Descriptions, measurements, gage heights, and ratings.....	1901.
WSP 75.....	Monthly discharge.....	1901.

Reports on surface water supply containing records from 1899 to date for drainage basins in this report are listed below. The data for any particular gaging station will, in general, be found in the reports covering the years during which the station was maintained.

Numbers of water-supply papers containing results of stream measurements in Pacific slope basins in Washington and upper Columbia River basin, 1899-1955

Year	WSP	Year	WSP	Year	WSP	Year	WSP	Year	WSP
1899	38	1911	312	1923	572	1934	767	1945	1042
1900	51	1912	332-A	1924	592	1935	792	1946	1062
1901	66, 75	1913	362-A	1925	612	1936	812	1947	1092
1902	85	1914	392	1926	632	1937	832	1948	1122
1903	100	1915	412	1927	652	1938	862	1949	1152
1904	135	1916	442	1928	672	1939	882	1950	1182
1905	178	1917	462	1929	692	1940	902	1951	1216
1906	214	1918	482	1930	707	1941	932	1952	1246
1907-8	252	1919-20	512	1931	722	1942	962	1953	1286
1909	272	1921	532	1932	737	1943	982	1954	1346
1910	292	1922	552	1933	752	1944	1012	1955	1396

The records at most of the stations discussed in these reports extend over many years. Discharge measurements at many points other than regular gaging stations have been made each year and are published at the end of each report. The streams and points of measurement are listed in the same order as the streams and gaging stations in the body of the report. An index of the records obtained before 1904 has been published in Water-Supply Paper 119.

A compilation of records for the area covered by this report through September 1950 has been published as Water-Supply Paper 1316. That report contains a summary of monthly

and annual discharges for all previously published records as well as some records not contained in the annual series of water-supply papers. All records were reexamined and revised where warranted. Estimates of discharge were made to fill short gaps whenever practical.

Records of discharge have been published also in State reports. Most of these records are also compiled in Water-Supply Paper 1316; however some of them are not contained in the publications of the Geological Survey. The following table contains a list of these reports for the area covered by this report.

State reports containing compilations of records of discharge

State	Period	Report	Issued by
Montana.....	1898-1911	5th biennial report.....	Office of the State Engineer.
Do.....	1898-1938	Water resources of Montana, Part 2, Vol. IV.	Montana Agricultural Experiment Station.
Washington....	1878-1953	Bull. 6, Monthly and yearly summaries of hydrographic data.	Department of Conservation and Development.

Note.--In addition to the records contained in the reports listed above, the following States have issued annual or biennial reports in which are contained records of discharge: Idaho, Montana, Washington.

The reports listed in the foregoing table contain the customary records of discharge collected during the systematic operation of gaging stations. Detailed information on the stage and discharge of many streams during major floods has been included in special reports on these floods published by the Geological Survey. The more recent of these special reports also contain other pertinent hydrologic information and analyses and compilations of data relating to earlier notable floods. The following is a list of these reports:

WSP 771: Floods in the United States, magnitude and frequency.
WSP 847: Maximum discharges at stream-measurement stations through September 1938.
WSP 968-B: Floods of the Puyallup and Chehalis River basins, Washington.
WSP 1080: Floods of May-June 1948 in Columbia River basin.
WSP 1137-I: Summary of floods in the United States during 1950.
Cir. 191: Floods in western Washington, frequency and magnitude in relation to drainage basin characteristics.

RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The table below contains a list of gaging stations for the area covered by this report, at which records of discharge were collected during the water year October 1954 to September 1955 by agencies other than the Geological Survey. The records of these stations are not contained in publications of the Geological Survey, nor have they been published elsewhere.

Records of discharge collected by agencies other than the Geological Survey

Stream	Location	Period	Collected by	Remarks
Lake Whatcom.....	Bellingham, Wash.....	1923-55	City of Bellingham....	Unpublished.
Reservation drain.....	Alfalfa, Wash.....	1912-55	Office of Indian Affairs.	†Unpublished since 1923.
Satus Creek.....	Downstream from Dry Creek, near Toppenish, Wash.	1913-55	....do.....	†Unpublished since 1924.
Do.....	Near Satus, Wash.....	1932-55	....do.....	Unpublished.
Toppenish Creek.....	Near Fort Simcoe, Wash.	1909-55	....do.....	†Unpublished since 1924.
Do.....	Near Alfalfa, Wash.....	1932-55	....do.....	Unpublished.
Yakima River.....	Easton, Wash.....	1904, 1910-15, 1940-55	Bureau of Reclamation.	‡‡Unpublished since 1953.

† Records for earlier years published in water-supply papers of Geological Survey.
‡ Monthly discharge, prior to 1951, published in WSP 1316; prior to 1953, in Washington State Water-Supply Bulletin No. 6.
Note.--Records of daily discharge for many canals and drains in Washington and Montana for 1955 and earlier years have been collected by the Bureau of Reclamation and the Office of Indian Affairs of the United States Department of the Interior in connection with irrigation and drainage projects. These records have not been published. The Inter-Rocky Mountain Forest and Range Experiment Station collects records of runoff from an area of 960 acres on Benton Creek near Priest River, Idaho.

HYDROLOGIC CONDITIONS

The water year 1955 was characterized by slightly above median runoff over most of the area covered by this report. Runoff was deficient over most of the area during March and April. During the remainder of the year runoff was near or slightly above median except during July when runoff was excessive. The excessive runoff during July came from delayed melting of the snow pack and heavy precipitation. No outstanding floods occurred during the year. For two key gaging stations in the area, a comparison of the monthly and yearly mean discharges during the 1955 water year with the median discharges for the 25-year period 1921-45 is shown in figure 3 below.

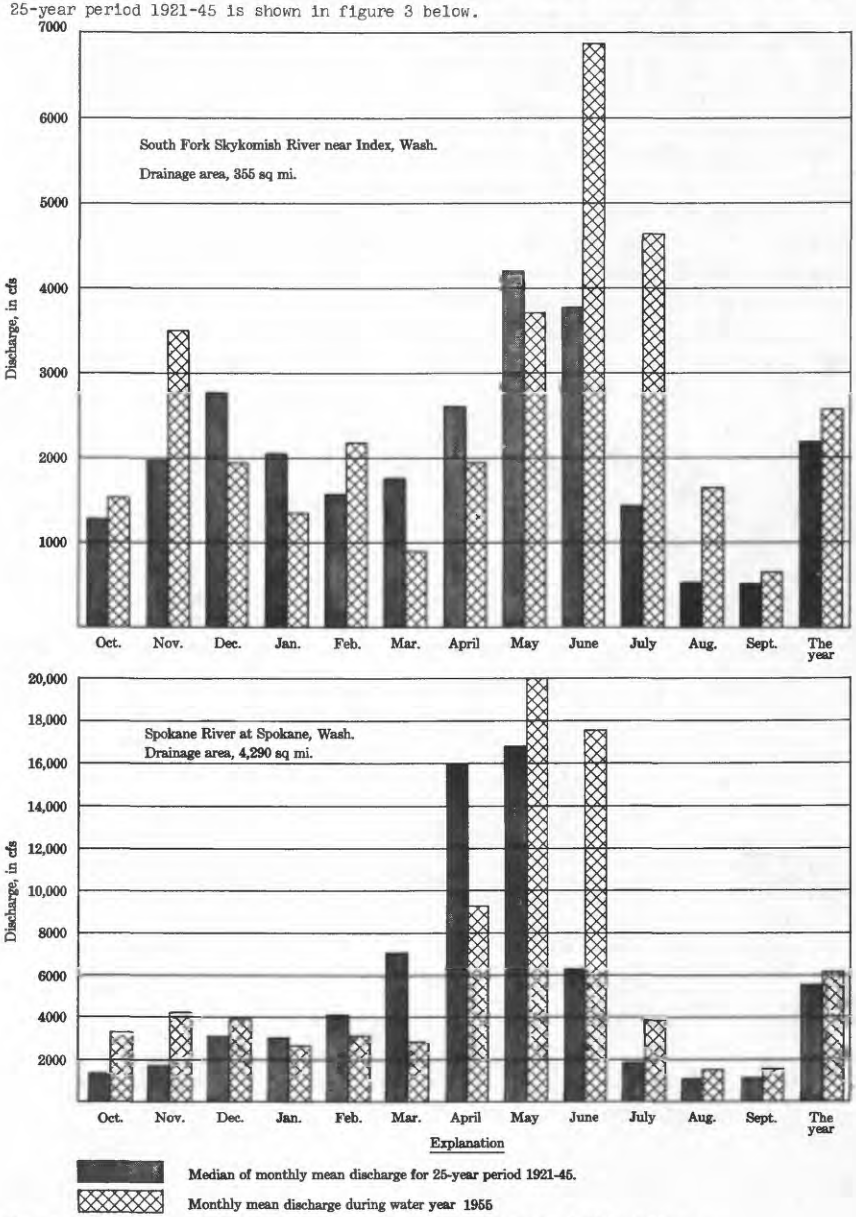


Figure 3. Comparison of discharge at two key gaging stations during 1955 water year with median discharge for 25-year period.

PACIFIC SLOPE BASINS NORTH OF COLUMBIA RIVER

NASELLE RIVER BASIN

Naselle River near Naselle, Wash.

Location.--Lat 46°22'25", long 123°44'45", in SW¼ sec. 1, T. 10 N., R. 9 W., on left bank 150 ft downstream from county bridge, 1½ miles upstream from Salmon Creek, and 3½ miles east of Naselle.

Drainage area.--55.3 sq mi.

Records available.--May 1929 to September 1955.

Gage.--Staff gage and crest-stage indicator; gage read twice daily. Altitude of gage is 24 ft (by barometer).

Average discharge.--26 years, 427 cfs (309,100 acre-ft per year).

Extremes.--Maximum discharge during year, 4,640 cfs Nov. 18 (gage height, 9.86 ft); minimum observed, 49 cfs Sept. 11-13 (gage height, 1.75 ft).
1929-55: Maximum discharge, 11,100 cfs Jan. 22, 1935 (gage height, 15.9 ft, from floodmarks), from rating curve extended above 4,000 cfs; minimum observed, 19 cfs Sept. 12-14, 1949, Sept. 21-24, 1951; minimum gage height observed, 1.70 ft Sept. 21-30, Oct. 15-20, 1952.

Remarks.--Records good except those for period of shifting control, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1930(M), 1932(M), 1934-40(M), 1945-46(M).

Rating table, water year 1954-55, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

1.7	41	5.0	1,180
1.9	70	6.0	1,780
2.1	105	7.0	2,450
2.5	188	8.0	3,150
3.0	323	9.0	3,950
3.5	490	10.0	4,770
4.0	690		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	85	152	385	1,680	472	416	2,730	281	128	248	259	56
2	82	148	341	1,040	427	375	1,660	267	122	232	227	55
3	85	142	*311	890	385	338	1,150	264	118	152	186	54
4	85	136	293	706	375	299	816	248	118	130	.159	52
5	82	176	320	622	366	273	658	230	118	118	144	51
6	78	214	434	518	506	259	558	217	114	118	130	50
7	94	179	486	458	1,620	248	486	202	105	*107	122	51
8	320	186	430	444	3,030	245	434	193	103	103	114	52
9	259	276	438	413	1,500	*250	770	181	100	100	*111	52
10	250	344	410	372	960	574	900	174	96	98	105	52
11	574	326	375	347	722	658	730	264	92	94	103	49
12	483	399	502	326	570	578	1,370	302	89	89	94	49
13	372	483	784	502	480	775	1,310	240	85	87	91	58
14	290	905	845	455	427	630	*965	207	85	84	89	100
15	248	1,060	1,260	430	375	534	806	188	82	84	85	148
16	220	1,610	960	739	338	458	875	181	82	80	84	256
17	207	2,460	714	1,040	308	392	788	176	82	80	80	114
18	193	4,530	594	816	278	356	682	165	82	84	78	84
19	237	3,550	472	654	259	323	598	159	78	78	75	77
20	311	1,790	402	570	242	305	538	150	75	73	75	68
21	518	1,080	372	494	224	402	472	142	72	73	75	*64
22	385	770	347	476	214	1,060	458	134	72	70	70	61
23	326	594	344	466	205	670	510	128	78	68	68	58
24	287	486	416	566	261	534	518	122	70	67	68	55
25	253	706	452	622	250	570	480	*122	77	67	67	54
26	232	606	382	*526	232	526	444	132	78	217	67	54
27	*214	622	353	462	224	466	402	138	80	220	64	77
28	200	542	406	402	392	458	366	134	134	172	61	66
29	188	494	865	363	-	940	332	132	122	161	60	60
30	174	452	2,450	338	------	1,110	302	138	144	214	58	55
31	161	-----	2,710	369	-----	2,040	-----	140	------	276	56	------
Total	7,493	25,418	19,853	18,106	15,642	17,062	23,108	5,751	2,881	3,844	3,125	2,132
Mean	242	847	640	584	559	550	770	186	96.0	124	101	71.1
Cfsm	4.38	15.3	11.6	10.6	10.1	9.95	13.9	3.36	1.74	2.24	1.83	1.29
In.	5.04	17.09	13.35	12.18	10.52	11.47	15.54	3.87	1.94	2.59	2.10	1.43
Ac-ft	14,860	50,420	39,380	35,910	31,030	33,840	45,830	11,410	5,710	7,620	6,200	4,230

Calendar year 1954: Max 4,530 Min 60 Mean 466 Cfsm 8.43 In. 114.37 Ac-ft 337,300
Water year 1954-55: Max 4,530 Min 49 Mean 396 Cfsm 7.16 In. 97.12 Ac-ft 286,400

Peak discharge (base, 4,000 cfs).--Nov. 18 (time unknown) 4,640 cfs (9.86 ft); Feb. 8 (time unknown) 4,320 cfs (9.39 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used Apr. 1-15.

Salmon Creek near Naselle, Wash.

Location.--Lat 46°21'20", long 123°45'00", in NE¼ sec. 14, T. 10 N., R. 9 W., on left bank half a mile upstream from last crossing of U. S. Highway 830, 2 miles upstream from mouth, and 3 miles southeast of Naselle.

Drainage area.--16.4 sq mi.

Records available.--June 1953 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 80 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,150 cfs Nov. 18 (gage height, 7.20 ft), from rating curve extended above 560 cfs by logarithmic plotting; minimum, 6.1 cfs Sept. 13 (gage height, 1.18 ft).
1953-55: Maximum discharge, that of Nov. 18, 1954; minimum, 2.4 cfs Sept. 20, 1953 (gage height, 0.90 ft).

Remarks.--Records good. Slight regulation from millpond. Possibly some diversion for domestic use.

Revisions (water years).--WSP 1346: 1953(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 17				Nov. 18 to Sept. 30					
1.3	14	3.0	225	1.1	5.4	2.5	125	5.0	795
1.5	24	3.5	345	1.3	10.5	3.0	205	6.0	1,340
1.7	38	4.0	490	1.5	20	3.5	310	7.0	2,010
2.0	68	4.5	660	1.7	33	4.0	440		
2.5	135			2.0	62	4.5	598		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17.5	38	95	450	103	139	730	68	27	39	46	8.4
2	17	36	81	294	93	122	429	82	25	31	39	8.1
3	19	34	*72	209	83	110	287	64	27	25	35	8.1
4	*17.5	32	68	173	85	97	205	56	26	23	31	7.5
5	16	49	71	159	81	86	159	51	24	21	27	7.0
6	16	57	113	128	181	79	132	46	22	21	25	6.8
7	25	43	107	108	442	72	111	44	20	*19.5	23	7.0
8	74	51	88	102	870	68	107	40	19	21	22	7.5
9	53	65	95	92	398	*65	196	37	18	20	*21	7.3
10	69	90	89	80	252	127	179	37	17.5	19	19.5	7.3
11	117	90	79	73	178	139	218	55	17	18	19	7.0
12	90	114	172	68	148	308	425	53	16.5	16.5	17.5	6.8
13	74	145	236	102	129	244	362	46	16	15.5	16.5	19.5
14	64	219	256	88	104	201	*276	43	15.5	14.5	15.5	23
15	55	298	301	113	89	167	234	39	15.5	13.5	15	56
16	51	365	234	214	78	140	250	36	15	15.5	14.5	63
17	50	549	182	240	71	121	216	35	14.5	14	13.5	30
18	43	1,890	142	187	63	104	184	35	15	13.5	13.5	22
19	69	1,420	115	150	56	92	167	33	14	13.5	12.5	18
20	124	598	94	129	52	80	146	31	13.5	12	12	16
21	140	322	85	108	49	112	125	28	13	11.5	11.5	*14.5
22	110	214	75	101	46	178	124	28	12.5	10.5	11	13.5
23	90	154	90	89	43	140	178	26	17	10.5	11	13
24	78	122	107	110	55	124	139	26	14	10.5	10.5	12
25	69	183	114	115	50	140	121	*25	16	11	10.5	11.5
26	62	170	101	101	47	124	108	*27	15.5	83	10.5	12
27	*56	173	90	*90	48	108	102	28	15.5	54	9.8	18
28	51	148	137	*81	165	136	93	24	26	39	9.5	14
29	46	129	263	73	-	234	83	24	21	39	8.9	12.5
30	44	111	735	65	------	334	75	32	27	41	8.9	11.5
31	40	-----	681	85	-----	899	-----	31	------	50	8.9	------
Total	1,847.0	7,909	5,168	4,177	4,059	5,090	6,161	1,210	555.5	746.0	549.0	468.8
Mean	59.6	264	167	135	145	164	205	39.0	18.5	24.1	17.7	15.6
Cfsm	3.63	16.1	10.2	8.23	8.84	10.0	12.5	2.38	1.13	1.47	1.08	0.951
In.	4.19	17.94	11.72	9.47	9.20	11.54	13.97	2.74	1.26	1.69	1.24	1.06
Ac-ft	3,660	15,690	10,250	8,280	8,050	10,100	12,220	2,400	1,100	1,480	1,090	930

Calendar year 1954: Max 1,890 Min 9.2 Mean 128 Cfsm 7.80 In. 105.70 Ac-ft 92,440
Water year 1954-55: Max 1,890 Min 6.8 Mean 104 Cfsm 6.34 In. 86.02 Ac-ft 75,250

Peak discharge (base, 1,300 cfs).--Nov. 18 (6 p.m.) 2,150 cfs (7.20 ft); Feb. 8 (12:30 a.m.) 1,430 cfs (6.15 ft).
* Discharge measurement made on this day.

Willapa River at Lebam, Wash.

Location.--Lat 46°33'50", long 123°33'50", in SW¼ sec. 33, T. 13 N., R. 7 W., on left bank half a mile west of Lebam and 1 mile upstream from Walker Creek.

Drainage area.--41.4 sq mi.

Records available.--June 1948 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 154.0 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--7 years, 198 cfs (143,300 acre-ft per year).

Extremes.--Maximum discharge during year, 1,890 cfs Nov. 18 (gage height, 9.24 ft); minimum, 5.0 cfs Sept. 6; minimum gage height, 2.44 ft Sept. 4, 5, 6.
1948-55: Maximum discharge, 4,930 cfs Feb. 22, 1949 (gage height, 17.53 ft, from high-water mark in gage house), from rating curve extended above 2,200 cfs; minimum, 1.4 cfs Sept. 22, 1951; minimum gage height, 2.39 ft Aug. 22, 23, 1951, Oct. 27, 1952.

Remarks.--Records good. No regulation. Some diversion for domestic use.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 17				Nov. 18 to Sept. 30					
2.6	17	4.0	285	2.4	5.0	3.5	190	7.0	1,190
2.7	26	4.5	410	2.5	11	4.0	315	8.0	1,490
2.9	50	5.0	560	2.7	31	4.5	440	9.0	1,800
3.1	82	6.0	860	2.9	59	5.0	590		
3.5	162	7.0	1,160	3.1	95	6.0	890		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	56	*175	746	205	310	788	138	43	44	31	8.6
2	17	52	155	530	180	275	587	130	41	36	29	7.4
3	21	52	140	385	172	240	438	128	40	29	27	6.8
4	19.5	47	130	325	170	210	352	128	40	28	26	6.2
5	*19	60	190	278	165	188	302	114	38	*27	22	6.2
6	18	86	272	240	218	168	270	108	35	29	19	5.6
7	28	67	288	215	542	*158	242	101	31	26	18	6.2
8	106	74	252	205	1,280	165	218	93	30	29	*17.5	6.2
9	79	96	250	192	635	170	302	91	29	31	18	6.8
10	77	142	222	170	420	278	280	87	27	31	17.5	7.4
11	188	140	195	158	318	330	*308	108	28	28	16.5	7.4
12	188	142	272	150	262	566	*753	114	27	24	15.5	6.8
13	134	162	390	222	225	455	686	97	23	23	14.5	12
14	110	278	461	230	192	368	515	91	23	20	13.5	19
15	91	348	629	262	175	302	420	84	23	19	13	33
16	75	701	449	380	152	255	470	74	23	20	13	64
17	70	976	345	430	138	225	412	73	22	19	12	28
18	60	1,690	280	352	123	202	350	69	23	18	10.5	20
19	128	*1,390	238	288	116	180	308	66	22	18	9.8	*15.5
20	164	848	202	252	108	162	265	62	20	17.5	10.5	15.5
21	232	506	178	225	101	168	235	58	18	16.5	9.2	13
22	179	362	158	205	99	278	220	54	18	16.5	9.2	11
23	142	278	195	198	91	240	265	*53	21	15.5	9.2	11
24	119	238	252	202	130	218	235	50	20	14.5	9.2	9.8
25	106	288	260	*200	128	250	212	48	22	16.5	9.2	9.8
26	95	268	235	175	121	240	218	48	26	43	9.2	9.8
27	84	285	218	155	118	228	192	47	24	45	9.2	13.5
28	77	260	228	142	292	222	178	44	29	35	8.6	13
29	70	230	315	135	-	315	165	43	28	30	7.4	11
30	64	*200	659	126	------	435	150	56	29	30	7.4	11
31	59	-----	890	155	-----	638	-----	48	------	29	8.0	------
Total	2,836.5	10,322	9,123	7,928	6,876	8,439	10,336	2,505	823	808.0	449.6	401.5
Mean	91.5	344	294	256	246	272	345	80.8	27.4	26.1	14.5	13.4
Cfsm	2.21	8.31	7.10	6.18	5.94	6.57	8.33	1.95	0.662	0.630	0.350	0.324
In.	2.55	9.27	8.20	7.12	6.18	7.58	9.28	2.25	0.74	0.73	0.40	0.36
Ac-ft	5,630	20,470	18,100	15,720	13,640	16,740	20,500	4,970	1,630	1,600	892	796

Calendar year 1954: Max 2,420 Min 12 Mean 221 Cfsm 5.34 In. 72.55 Ac-ft 160,200
Water year 1954-55: Max 1,690 Min 5.6 Mean 167 Cfsm 4.03 In. 54.66 Ac-ft 120,700

Peak discharge (base, 1,800 cfs).--Nov. 18 (6 to 7 a.m.) 1,890 cfs (9.24 ft); Feb. 8 (2 a.m.) 1,830 cfs (9.08 ft).
* Discharge measurement made on this day.

Fork Creek near Lebam, Wash.

Location.--Lat 46°33'20", long 123°35'00", in NW¼ sec. 5, T. 12 N., R. 7 W., on right bank three-quarters of a mile upstream from mouth and 1½ miles southwest of Lebam.

Drainage area.--20.4 sq mi.

Records available.--June 1953 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 155 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,750 cfs Feb. 7 (gage height, 5.53 ft), from rating curve extended above 940 cfs; minimum, 9.0 cfs on part of each day Sept. 3-7, 11-13 (gage height, 1.74 ft).

1953-55: Maximum discharge, 2,430 cfs Feb. 19, 1954 (gage height, 6.36 ft), from rating curve extended above 940 cfs; minimum, 7.7 cfs Aug. 19, 20, 1953; minimum gage height, 1.74 ft on part of each day Sept. 3-7, 11-13, 1955.

Remarks.--Records good except those for April, which are fair. Small diversion to State fish hatchery with possibly some regulation.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.7	7.0	2.6	145
1.8	12	3.0	265
1.9	20	3.5	470
2.1	44	4.0	720
2.3	77	5.2	1,500

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	44	*111	545	176	150	763	97	39	71	85	10
2	21	41	102	348	150	132	430	93	38	53	63	9.5
3	27	40	93	244	130	120	316	91	38	40	50	9.5
4	21	38	87	203	130	104	224	93	36	34	41	9.5
5	19	71	108	170	125	95	188	87	34	32	35	9.5
6	18.5	73	158	145	226	89	165	81	31	*35	30	9.0
7	94	58	165	128	668	85	158	77	29	28	27	9.5
8	192	68	142	120	978	*85	150	73	28	29	26	9.5
9	102	97	145	111	420	95	358	66	27	30	*22	9.5
10	193	148	135	102	268	278	265	64	26	28	21	9.5
11	268	125	118	95	203	262	254	147	23	26	19	9.5
12	173	122	190	89	168	394	*593	143	23	23	18.5	9.0
13	122	132	296	138	150	268	461	99	22	22	17.5	19.5
14	91	194	370	122	130	206	316	85	21	20	17	31
15	75	266	484	140	115	165	251	73	20	19	16	63
16	66	585	300	239	102	145	286	66	19	21	16	109
17	61	810	224	279	95	125	251	64	19	18.5	15	47
18	53	1,460	173	215	87	115	212	64	19	19	14.5	32
19	103	*948	148	173	79	106	191	63	18.5	18.5	13.5	26
20	142	512	125	152	73	97	176	54	17.5	17	13.5	*22
21	160	293	113	135	70	182	158	50	17	16	13	19
22	122	215	104	130	66	431	150	47	17	15	12	17
23	99	165	120	150	64	230	212	44	20	14.5	12	16
24	85	140	158	187	102	176	188	41	17.5	14.5	12	15
25	*75	213	158	*188	87	182	160	*40	20	15	12	14.5
26	68	200	138	145	79	170	148	41	20	102	11.5	14.5
27	63	218	125	125	73	155	132	41	21	89	11	23
28	56	176	138	111	163	179	122	38	38	59	11	17
29	53	150	274	99	-	344	113	39	30	63	11	14.5
30	48	130	792	91	------	434	104	53	50	69	10.5	14.5
31	47	-----	786	138	-----	672	-----	44	-----	81	10	------
Total	2,737.5	7,732	6,580	5,257	5,177	6,271	7,495	2,158	778.5	1,122.0	686.5	628.0
Mean	88.3	258	212	170	185	202	250	69.6	26.0	36.2	22.1	20.9
Cfsm	4.33	12.6	10.4	8.33	9.07	9.90	12.3	3.41	1.27	1.77	1.08	1.02
In.	4.99	14.10	12.00	9.58	9.44	11.43	13.66	3.93	1.42	2.05	1.25	1.14
Ac-ft	5,430	15,340	13,050	10,430	10,270	12,440	14,870	4,280	1,540	2,230	1,360	1,250

Calendar year 1954: Max 1,730 Min 13 Mean 164 Cfsm 8.04 In. 109.16 Ac-ft 118,800
Water year 1954-55: Max 1,460 Min 9.0 Mean 128 Cfsm 6.27 In. 84.99 Ac-ft 92,490

Peak discharge (base, 2,000 cfs).--No peak above base.
* Discharge measurement made on this day.

South Fork Willapa River near Raymond, Wash.

Location.--Lat 46°37'45", long 123°42'00", in E½ sec. 8, T. 13 N., R. 8 W., on left bank at downstream side of logging bridge, a quarter of a mile downstream from Rue Creek and 4¼ miles southeast of junction of Highways 101 and 12 at Raymond.

Drainage area.--27.3 sq mi.

Records available.--May 1953 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 155 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,330 cfs Feb. 8 (gage height, 5.43 ft); minimum, 25 cfs Sept. 13 (gage height, 1.62 ft).
1953-55: Maximum discharge, 1,960 cfs Dec. 9, 1953 (gage height, 6.72 ft); minimum, 24 cfs Sept. 20-22, 1953 (gage height, 1.38 ft).

Remarks.--Records good except those for periods of no gage-height record, which are fair. Some slight diversion for domestic use. No regulation.

Rating tables, water year 1954-55 (gage height, in feet and discharge, in cubic feet per second)

Oct. 1 to Feb. 8

1.5	23	3.0	325
1.7	40	3.5	510
2.0	78	4.0	710
2.3	135	5.0	1,140
2.6	205		

Feb. 9 to Sept. 30

1.6	23	2.3	131
1.8	46	2.6	205
2.0	74		

Note.--Same as preceding table above 2.6 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	33	58	*159	702	185	251	838	136	66	74	79	31
2	31	57	150	518	166	215	586	131	65	62	66	30
3	34	54	142	395	157	195	442	125	66	55	62	28
4	30	53	135	336	157	172	356	118	65	52	56	28
5	29	76	150	304	157	158	300	112	64	51	52	27
6	29	74	188	260	271	148	263	106	62	49	50	27
7	55	60	218	233	476	141	233	102	59	*47	49	27
8	76	62	185	222	998	*138	222	100	58	50	*47	27
9	62	68	188	208	538	138	290	97	56	49	45	27
10	70	81	175	192	388	299	272	95	55	46	44	27
11	86	80	166	180	314	300	297	123	54	45	42	27
12	77	90	192	170	269	442	*467	116	52	44	42	26
13	70	92	233	200	239	346	406	104	52	42	41	33
14	66	131	257	180	218	284	342	99	50	41	40	34
15	62	205	318	250	198	245	308	95	49	40	40	44
16	59	388	260	310	182	222	314	89	49	42	39	55
17	56	402	225	340	170	202	281	88	49	40	38	35
18	51	738	202	300	158	188	254	84	49	40	38	31
19	66	*678	185	250	148	175	230	81	47	39	36	30
20	85	*430	171	210	141	162	218	79	45	38	36	28
21	120	300	164	190	133	235	200	76	45	36	36	*27
22	100	239	153	180	127	398	205	74	45	36	34	26
23	86	202	164	170	120	287	263	71	46	36	34	26
24	76	178	192	*225	158	242	215	*71	45	36	34	26
25	71	228	205	205	145	251	200	71	47	36	34	26
26	*69	228	182	188	136	225	188	76	46	65	34	28
27	68	230	168	175	131	210	172	70	47	60	33	41
28	64	210	189	164	259	212	162	66	65	52	32	33
29	63	190	298	157	-	281	155	68	54	62	31	30
30	59	173	772	150	------	353	143	79	62	74	31	30
31	58	-----	862	175	-----	608	-----	70	------	82	31	------
Total	1,961	6,055	7,248	7,739	6,739	7,723	8,822	2,872	1,614	1,521	1,306	915
Mean	63.3	202	234	250	241	249	294	92.6	53.8	49.1	42.1	30.5
Cfsm	2.32	7.40	8.57	9.16	8.83	9.12	10.8	3.39	1.97	1.80	1.54	1.12
In.	2.67	8.25	9.87	10.54	9.18	10.52	12.02	3.91	2.20	2.07	1.78	1.25
Ac-ft	3,890	12,010	14,380	15,350	13,370	15,320	17,500	5,700	3,200	3,020	2,590	1,810

Calendar year 1954: Max 1,280 Min 29 Mean 169 Cfsm 6.19 In. 83.93 Ac-ft 122,200
Water year 1954-55: Max 998 Min 26 Mean 149 Cfsm 5.46 In. 74.26 Ac-ft 108,100

Peak discharge (base, 1,500 cfs).--No peak above base.
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-25, Jan. 12-23; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

North River near Brooklyn, Wash.

Location.--Lat 46°46'55", long 123°28'50", in S½ sec. 18, T. 15 N., R. 6 W., on left bank 1¼ miles upstream from Fall River and 1½ miles northeast of Brooklyn.

Drainage area.--29.8 sq mi.

Records available.--June 1953 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 190 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,200 cfs Feb. 8 (gage height, 5.05 ft); minimum daily, 7.5 cfs Sept. 6, 7.
1953-55: Maximum discharge, 1,490 cfs Dec. 9, 1953 (gage height, 5.98 ft); minimum daily, that of Sept. 6, 7, 1955.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation. Possibly some small diversion for irrigation and domestic use.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
0.5	13	1.6	216	0.4	7.0	1.5	198
.6	22	2.0	307	.5	14	2.0	312
.7	34	2.5	430	.6	24	2.5	442
.8	51	3.0	559	.7	38	3.0	585
1.0	90	3.5	700	.8	56	4.0	885
1.3	150			1.0	94		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	40	115	502	134	205	322	79	38	34	29	8.0
2	21	39	*112	348	114	174	283	75	35	30	21	8.0
3	20	38	104	252	108	149	233	71	35	23	18	8.0
4	20	40	96	198	110	124	191	69	37	22	17	7.8
5	19	51	96	176	106	110	163	66	34	21	15	7.6
6	19	56	116	146	170	102	142	62	33	*22	13.5	7.5
7	25	51	179	132	374	98	124	60	30	21	12.5	7.5
8	34	48	138	136	884	*102	120	56	29	22	*12.5	7.8
9	38	54	134	136	416	108	161	54	26	24	12.5	7.9
10	58	63	130	122	271	238	153	52	24	24	12	8.0
11	85	67	116	116	209	290	187	75	24	22	12	8.0
12	72	74	132	108	176	387	333	79	23	20	11	8.5
13	60	92	168	148	151	319	*305	64	23	18	10.5	10
14	52	120	212	144	134	251	233	60	22	17	10.5	13
15	46	170	314	144	120	200	194	54	21	16	10.5	27
16	42	250	236	183	108	168	242	51	21	19	10	35
17	39	350	183	236	98	144	216	51	21	18	10	23
18	37	400	150	205	90	130	185	49	21	16	9.8	16
19	50	500	128	168	84	118	159	47	21	16	9.4	13
20	87	350	114	152	81	110	140	45	20	15	9.2	*11
21	105	260	106	132	75	134	128	43	19	15	9.0	10.5
22	92	180	102	128	75	218	120	40	18	14	9.0	9.8
23	80	140	100	122	71	183	142	38	19	12.5	9.0	9.8
24	71	120	136	136	98	157	120	*37	20	13.5	8.8	9.8
25	62	200	181	*152	96	178	112	37	20	14	8.6	9.1
26	*55	210	148	138	92	168	110	43	21	24	8.5	10.5
27	51	240	126	124	86	151	100	42	22	22	8.2	19
28	45	200	128	114	193	144	96	35	38	19	8.1	15
29	41	170	236	106	-	153	90	35	31	20	8.0	12.5
30	40	140	534	98	------	180	83	54	29	23	8.0	12
31	40	-----	616	106	-----	247	-----	47	------	33	7.9	------
Total	1,528	4,713	5,386	5,108	4,722	5,440	5,187	1,670	775	630.0	359.0	360.6
Mean	49.3	157	174	165	169	175	173	53.9	25.8	20.3	11.6	12.0
Cfsm	1.65	5.27	5.84	5.54	5.67	5.87	5.81	1.81	0.866	0.681	0.389	0.403
In.	1.91	5.88	6.72	6.37	5.89	6.79	6.47	2.08	0.97	0.79	0.45	0.45
Ac-ft	3,030	9,350	10,680	10,130	9,370	10,790	10,290	3,310	1,540	1,250	712	715

Calendar year 1954: Max 1,010 Min 12 Mean 122 Cfsm 4.09 In. 55.47 Ac-ft 88,140
Water year 1954-55: Max 884 Min 7.5 Mean 98.3 Cfsm 3.30 In. 44.77 Ac-ft 71,170

Peak discharge (base, 1,000 cfs).--Feb. 8 (3:45 a.m.) 1,200 cfs (5.05 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-25, Oct. 31 to Dec. 1, Aug. 16 to Sept. 19; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

North River near Raymond, Wash.

Location.--Lat 46°48'30", long 123°51'00", in sec. 6, T. 15 N., R. 9 W., on left bank 1½ miles upstream from Salmon Creek and 10 miles northwest of Raymond.

Drainage area.--219 sq mi.

Records available.--August 1927 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 7.39 ft above mean sea level (Western Washington Electric Light & Power Co. benchmark).

Average discharge.--28 years, 939 cfs (679,800 acre-ft per year).

Extremes.--Maximum discharge during year, 6,710 cfs Nov. 19 (gage height, 7.98 ft); minimum, 57 cfs Sept. 6, 8 (gage height, 1.36 ft).
1927-55: Maximum discharge, 35,000 cfs Dec. 10, 1933 (gage height, 15.8 ft, from floodmarks), from rating curve extended above 7,500 cfs; minimum, 21 cfs Aug. 24, 1951 (gage height, 1.01 ft).

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 792: 1934. WSP 832: 1935-36. WSP 1286: 1952.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.3	50	3.5	970
1.5	76	4.0	1,420
1.7	112	5.0	2,580
2.0	181	6.0	3,840
2.3	278	7.0	5,220
2.6	400	8.0	6,740
3.0	615		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	223	343	1,180	4,800	1,020	1,680	5,050	667	315	250	450	63
2	210	323	*1,010	3,790	1,070	1,640	4,160	628	271	268	351	63
3	204	311	895	2,680	940	1,430	2,930	591	260	257	282	63
4	201	300	806	1,980	895	1,190	2,160	561	260	201	233	63
5	196	400	778	1,670	918	1,030	1,660	538	257	*178	204	61
6	187	544	858	1,400	1,110	910	1,360	495	246	168	176	58
7	213	573	1,110	*1,190	2,740	828	1,180	470	230	156	156	58
8	308	480	1,240	1,110	5,720	799	1,090	450	213	154	147	58
9	355	511	1,070	1,110	5,280	771	1,630	430	196	164	133	61
10	*377	641	1,070	1,050	3,220	994	1,810	410	181	174	129	61
11	674	667	994	948	2,200	1,930	1,820	500	174	176	122	63
12	910	750	1,030	888	1,660	2,960	2,580	579	168	161	114	62
13	785	895	1,420	962	1,370	3,200	*3,450	567	164	144	110	66
14	609	1,180	1,780	1,120	1,160	2,580	2,930	475	156	131	104	84
15	500	1,520	2,360	1,130	*1,030	2,020	2,300	435	154	120	101	111
16	435	2,320	2,460	1,450	925	1,600	2,080	405	151	118	97	257
17	396	3,520	1,850	1,940	842	1,320	2,110	382	149	125	93	274
18	364	5,640	1,440	1,970	764	1,130	1,760	378	149	131	93	176
19	396	6,280	1,170	1,600	694	994	1,500	360	147	120	90	120
20	693	4,590	1,000	1,320	654	888	1,280	343	147	112	86	*99
21	1,060	2,870	895	1,170	615	895	1,130	323	138	108	83	90
22	1,020	1,940	835	1,060	579	*1,310	1,050	308	133	101	79	81
23	850	1,470	842	1,040	561	1,670	1,280	296	129	95	76	76
24	750	1,170	1,030	1,120	628	1,390	1,240	*282	133	93	73	75
25	648	1,370	1,640	1,320	764	1,350	1,070	278	138	93	72	72
26	573	1,960	1,660	1,280	736	1,480	962	278	142	192	*72	73
27	511	2,410	1,360	1,130	687	1,320	910	293	151	264	70	101
28	470	2,280	1,240	1,020	955	1,230	835	289	230	246	69	106
29	435	1,780	1,610	910	-	1,510	778	271	260	250	66	125
30	396	1,420	3,220	828	------	1,710	729	278	278	271	66	104
31	368	-----	4,660	850	-----	3,410	-----	323	------	410	65	------
Total	15,317	50,458	44,513	45,836	39,737	47,169	54,824	12,883	5,720	5,431	4,062	2,824
Mean	494	1,682	1,436	1,479	1,419	1,522	1,827	416	191	175	131	94.1
Cfsm	2.26	7.68	6.56	6.75	6.48	6.95	8.34	1.90	0.872	0.799	0.598	0.430
In.	2.60	8.57	7.56	7.78	6.75	8.01	9.31	2.19	0.97	0.92	0.69	0.48
Ac-ft	30,380	100,100	88,290	90,910	78,820	93,560	108,700	25,550	11,350	10,770	8,060	5,600

Calendar year 1954: Max 8,670 Min 76 Mean 1,079 Cfsm 4.93 In. 66.86 Ac-ft 780,800
Water year 1954-55: Max 6,280 Min 58 Mean 901 Cfsm 4.11 In. 55.83 Ac-ft 652,100

Peak discharge (base, 4,000 cfs).--Nov. 19 (6 a.m.) 6,710 cfs (7.98 ft); Jan. 1 (3 a.m.) 5,010 cfs (6.85 ft); Feb. 8 (8 p.m.) 5,900 cfs (7.45 ft); Apr. 1 (9 a.m.) 5,210 cfs (6.99 ft).
* Discharge measurement made on this day.

Chehalis River near Doty, Wash.

Location.--Lat 46°37'00", long 123°16'40", in NW¼ sec. 14, T. 13 N., R. 5 W., on right bank 1½ miles upstream from Elk Creek, 1½ miles south of Doty, and 3½ miles north of Pe Ell.

Drainage area.--113 sq mi.

Records available.--October 1939 to September 1955.

Gage.--Staff gage and crest-stage indicator; gage read twice daily. Datum of gage is 302.1 ft above mean sea level (river-profile survey).

Average discharge.--16 years, 551 cfs (398,900 acre-ft per year).

Extremes.--Maximum discharge during year, 6,400 cfs Feb. 8 (gage height, 9.20 ft, from graph based on gage readings); minimum observed, 33 cfs Sept. 12 (gage height, 1.02 ft). 1939-55: Maximum discharge, 18,100 cfs Feb. 7, 1945 (gage height, 17.80 ft, water over gage, discharge based on observer's estimate of maximum gage height); minimum observed, 18 cfs Oct. 14, 1952; minimum gage height, 0.84 ft Aug. 25-27, Sept. 21, 22, 1951.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1316: 1943(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.0	30	3.0	810
1.2	60	4.0	1,490
1.4	100	5.0	2,260
1.7	181	6.0	3,080
2.0	291	7.0	4,000
2.5	530	9.0	6,160

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	151	520	2,820	591	570	2,400	460	191	215	160	41
2	71	140	460	1,800	657	510	1,600	450	175	184	151	40
3	79	135	410	1,380	580	430	1,220	440	169	148	129	38
4	83	132	376	1,030	565	380	958	460	169	127	110	38
5	71	146	445	822	545	335	834	470	163	*114	98	36
6	68	259	530	679	662	322	774	450	157	110	92	36
7	71	219	657	591	2,210	*309	822	430	148	100	83	36
8	376	208	690	540	4,750	340	810	415	140	102	79	37
9	275	313	646	490	2,160	371	1,170	390	135	110	*77	38
10	291	390	602	460	1,360	662	1,150	362	127	105	71	38
11	1,050	400	540	420	1,040	1,270	*1,100	366	119	100	68	36
12	738	390	624	395	786	1,410	2,710	570	110	94	66	33
13	490	420	1,240	679	668	1,060	2,440	510	105	87	64	37
14	362	774	1,460	679	570	798	1,660	380	105	83	60	122
15	283	1,340	1,880	657	510	668	1,250	353	100	79	57	135
16	237	2,550	1,280	756	450	575	1,270	326	100	79	58	520
17	215	2,900	1,030	1,110	410	510	1,100	309	100	79	57	195
18	201	5,550	846	944	362	475	993	309	98	75	55	119
19	275	4,520	679	762	335	465	834	313	96	71	54	*110
20	430	2,580	550	684	313	440	762	283	92	68	52	94
21	613	1,670	490	624	295	440	690	244	87	71	50	81
22	470	993	460	570	275	1,620	674	229	85	60	47	75
23	376	762	470	520	267	1,120	810	*212	87	58	47	71
24	322	602	750	*828	353	894	732	198	87	57	46	68
25	*283	762	684	1,180	340	906	657	195	85	57	44	64
26	251	906	613	*876	317	894	596	188	94	81	44	60
27	222	1,110	565	690	371	840	560	184	92	140	44	71
28	201	882	580	591	520	858	520	175	124	119	43	73
29	184	714	930	540	-	1,680	490	178	119	105	43	66
30	172	*602	2,680	500	------	1,640	470	226	122	105	41	60
31	160	-----	3,980	485	-----	2,170	-----	219	------	119	41	------
Total	8,995	32,520	27,667	25,102	22,262	24,962	32,056	10,294	3,581	3,102	2,131	2,468
Mean	290	1,084	892	810	795	805	1,069	332	119	100	68.7	82.3
Cfsm	2.57	9.59	7.89	7.17	7.04	7.12	9.46	2.94	1.05	0.885	0.608	0.728
In.	2.96	10.70	9.11	8.26	7.33	8.22	10.55	3.39	1.18	1.02	0.70	0.81
Ac-ft	17,840	64,500	54,880	49,790	44,160	49,510	63,580	20,420	7,100	6,150	4,230	4,900

Calendar year 1954: Max 7,600 Min 44 Mean 669 Cfsm 5.92 In. 80.34 Ac-ft 484,200
Water year 1954-55: Max 5,550 Min 33 Mean 535 Cfsm 4.73 In. 64.23 Ac-ft 387,100

* Discharge measurement made on this day.

Newaukum River near Chehalis, Wash.

Location.--Lat 46°37'10", long 122°56'40", on line between secs. 9 and 16, T. 13 N., R. 2 W., on left bank at highway bridge 2½ miles southeast of Chehalis and 3½ miles upstream from mouth.

Drainage area.--159 sq mi.

Records available.--March 1929 to September 1931, July 1942 to September 1955.

Gage.--Staff gage and crest-stage indicator; gage read once or twice daily. Altitude of gage is 190 ft (from topographic map). Prior to Oct. 1, 1929, at datum 1.0 ft higher.

Average discharge.--15 years, 488 cfs (353,300 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 4,780 cfs Feb. 8 (gage height, 10.88 ft); minimum observed, 34 cfs Sept. 5, 7, 12 (gage height, 1.00 ft).
1929-31, 1942-55: Maximum discharge, 7,400 cfs Dec. 9, 1953 (gage height, 13.62 ft), from rating curve extended above 3,800 cfs by logarithmic plotting; minimum observed, 12 cfs Sept. 13, 14, 1949; minimum gage height, 0.74 ft Sept. 12, 13, 15, 1929 (present datum).

Remarks.--Records good except those for periods of doubtful or no gage-height record, which are fair. Cities of Chehalis and Centralia divert about 15 cfs for municipal use. No regulation.

Revisions (water years).--WSP 1012: 1943. WSP 1182: 1949(M). WSP 1316: 1929-31(M), 1945-46(M), 1950(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 8				Feb. 9 to Sept. 30			
1.2	55	5.0	1,260	1.0	34	3.0	550
1.5	106	6.5	2,020	1.2	52	4.0	940
2.0	227	8.0	2,920	1.6	134	5.0	1,350
3.0	510	10.0	4,160	2.0	230	6.0	1,850
4.0	850			2.5	375	7.5	2,620

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	114	430	2,910	890	804	1,840	410	250	240	143	43
2	a58	110	384	1,870	a700	728	1,440	396	230	238	130	42
3	a80	104	353	1,310	588	652	1,190	410	250	185	108	40
4	84	104	a320	946	588	632	956	403	270	180	103	37
5	70	114	a300	970	692	417	808	378	255	149	99	34
6	67	325	477	794	780	382	728	366	*240	143	88	37
7	64	227	675	661	1,990	400	704	357	230	136	85	34
8	a90	198	584	626	3,990	476	744	363	232	132	81	37
9	84	270	540	934	*2,400	532	1,040	333	235	182	78	42
10	85	268	*682	773	1,650	660	1,340	315	235	156	76	40
11	254	232	a580	633	1,130	a1,000	1,540	333	218	154	68	39
12	224	427	498	570	984	a1,500	2,470	400	200	134	*68	37
13	170	a400	790	720	816	1,350	2,170	389	182	143	65	38
14	136	608	886	794	692	1,080	1,540	375	166	a125	65	a60
15	119	890	1,350	745	606	772	1,260	571	152	*114	65	86
16	110	930	946	850	585	676	1,120	459	143	a113	64	324
17	170	1,380	734	1,150	476	*578	988	392	138	112	62	158
18	104	1,660	a600	890	420	540	880	375	143	103	62	101
19	143	2,500	522	720	396	501	768	378	145	97	56	80
20	404	1,740	462	636	363	445	740	369	141	92	56	72
21	328	1,070	415	622	333	420	*644	321	154	92	54	68
22	262	d880	510	605	333	944	688	276	147	85	50	64
23	217	564	a700	1,030	312	924	728	258	180	85	58	59
24	201	501	922	710	a500	800	812	250	161	83	50	58
25	193	720	890	766	452	888	708	235	138	85	52	54
26	170	640	829	668	414	828	724	255	134	118	50	56
27	158	890	675	591	410	724	d600	242	143	156	48	86
28	a140	720	766	534	628	916	a540	242	192	149	46	118
29	*129	588	1,180	486	-	1,280	494	230	198	147	42	81
30	127	507	2,930	450	------	1,540	445	297	180	170	42	68
31	121	------	3,940	a650	------	1,440	------	282	------	158	46	------
Total	4,620	19,681	25,870	26,614	24,118	24,829	30,649	10,660	5,682	4,256	2,160	2,093
Mean	149	656	835	859	861	801	1,022	344	189	137	69.7	69.8
Ac-ft	9,160	39,040	51,310	52,790	47,840	49,250	60,790	21,140	11,270	8,440	4,280	4,150

Calendar year 1954: Max 5,210 Min 56 Mean 544 Ac-ft 393,700
Water year 1954-55: Max 3,990 Min 34 Mean 497 Ac-ft 359,500

Peak discharge (base, 4,000 cfs).--Dec. 31 (time unknown) 4,440 cfs (10.4 ft); Feb. 8 (time unknown) 4,780 cfs (10.88 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge interpolated or estimated on basis of records for stations on nearby streams.

d Doubtful gage-height record; discharge estimated as for footnote "a."

Skookumchuck River near Centralia, Wash.

Location.--Lat 46°47'15", long 122°42'45", in SW¼NW¼ sec. 17, T. 15 N., R. 1 E., on left bank half a mile upstream from Bloody Run Creek, 4¼ miles upstream from Thompson Creek, and 12 miles northeast of Centralia.

Drainage area.--60.8 sq mi.

Records available.--April 1929 to November 1933, October 1939 to September 1955. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 300.00 ft above mean sea level (river-profile survey). Apr. 1, 1929, to Dec. 6, 1933, staff gage at site a quarter of a mile downstream at different datum. Oct. 9 to Nov. 29, 1939, staff gage at present site and datum.

Average discharge.--20 years, 242 cfs (175,200 acre-ft per year).

Extremes.--Maximum discharge during year, 4,010 cfs Feb. 8 (gage height, 46.11 ft, from high-water mark in well); minimum, 30 cfs Sept. 8, 13 (gage height, 39.64 ft).
1929-33, 1939-55: Maximum discharge, 6,710 cfs Dec. 9, 1953 (gage height, 48.59 ft); minimum, 15.5 cfs Nov. 28, 29, 1952 (gage height, 39.22 ft).

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation or diversion above station.

Revisions (water years).--WSP 722: 1929-30. WSP 1246: Drainage area. WSP 1286: 1930, 1945.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
39.7	40	41.0	465	39.6	26	41.5	700
39.9	71	41.5	700	39.8	50	42.0	950
40.1	114	42.0	950	40.0	85	42.5	1,250
40.3	168	43.0	1,550	40.2	130	43.0	1,550
40.6	280	44.0	2,250	40.5	225	44.0	2,250
				41.0	450		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	71	220	1,360	350	185	968	221	182	146	83	36
2	43	69	187	845	280	172	780	214	166	141	77	35
3	47	68	168	591	260	154	585	214	169	120	72	34
4	48	66	160	470	250	141	455	221	179	108	66	33
5	44	93	157	384	270	130	396	225	185	102	63	33
6	44	143	279	325	500	125	369	234	*179	100	60	32
7	43	109	340	276	1,100	130	396	238	182	91	58	32
8	53	98	276	260	2,000	157	465	252	203	91	55	32
9	51	130	260	250	1,000	199	872	230	221	125	55	33
10	53	140	*272	230	*650	415	910	218	214	111	53	33
11	131	137	236	210	490	480	750	297	188	104	50	33
12	151	174	407	260	405	560	1,260	364	163	96	*50	32
13	107	171	695	320	342	418	1,070	302	141	89	50	33
14	87	252	560	280	288	306	720	400	123	85	49	64
15	77	424	710	390	252	248	560	346	111	*79	47	120
16	69	770	514	450	221	210	465	292	104	81	46	210
17	77	835	393	500	199	185	405	261	98	76	45	110
18	66	910	316	410	182	*185	360	266	106	68	44	80
19	153	1,280	264	350	169	179	324	342	104	68	42	62
20	228	840	228	320	163	166	315	320	100	64	42	52
21	252	532	208	290	154	196	302	252	106	63	41	47
22	197	380	236	320	149	692	*338	214	108	61	40	45
23	160	289	297	390	146	520	432	185	120	60	40	42
24	135	240	564	480	185	418	414	172	100	58	38	39
25	117	367	465	620	185	356	360	166	91	58	40	38
26	100	406	335	480	172	324	360	188	100	79	40	*42
27	93	510	268	380	160	320	324	188	104	93	38	56
28	85	398	284	320	182	396	284	169	118	81	37	58
29	*79	320	546	280	-	795	256	182	120	79	37	50
30	77	260	1,500	260	------	785	230	230	120	89	36	46
31	73	-----	1,860	300	-----	780	-----	210	------	87	35	------
Total	2,983	10,482	13,205	12,601	10,704	10,327	15,725	7,613	4,203	2,753	1,529	1,592
Mean	96.2	349	426	406	382	333	524	246	140	88.8	49.3	53.1
Cfsm	1.58	5.74	7.01	6.68	6.28	5.48	8.62	4.05	2.30	1.46	0.811	0.873
In.	1.82	6.41	8.08	7.71	6.55	6.32	9.62	4.66	2.57	1.68	0.94	0.97
Ac-ft	5,920	20,790	26,190	24,990	21,230	20,480	31,190	15,100	8,340	5,460	3,030	3,160

Calendar year 1954: Max 2,720 Min 41 Mean 285 Cfsm 4.69 In. 63.62 Ac-ft 206,300
Water year 1954-55: Max 2,000 Min 32 Mean 257 Cfsm 4.23 In. 57.33 Ac-ft 185,900

Peak discharge (base, 2,000 cfs).--Dec. 30 (8:30 p.m.) 2,400 cfs (44.22 ft); Feb. 8 (time unknown) 4,010 cfs (46.11 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Jan. 8 to Feb. 10, Sept. 15-25; discharge estimated on basis of records for stations on nearby streams.

Chehalis River near Grand Mound, Wash.

Location.--Lat 46°46'35", long 123°02'05", in NE¼ sec. 22, T. 15 N., R. 3 W., on left bank at downstream side of highway bridge at Meadows, 1½ miles southwest of Grand Mound and 6 miles downstream from Skookumchuck River.

Drainage area.--895 sq mi.

Records available.--October 1928 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 123.27 ft above mean sea level, datum of 1929. Prior to Oct. 3, 1934, staff gage at same site at datum 3.0 ft higher.

Average discharge.--27 years, 2,713 cfs (1,964,000 acre-ft per year).

Extremes.--Maximum discharge during year, 18,100 cfs Feb. 9 (gage height, 12.90 ft); minimum, 160 cfs Sept. 5, 6 (gage height, 1.20 ft).
1928-55: Maximum discharge, 48,400 cfs Dec. 29, 1937 (gage height, 18.39 ft); minimum, 90 cfs Aug. 23-26, 1951; minimum gage height, 1.20 ft Aug. 23-26, 1951, Sept. 5, 6, 1955.

Remarks.--Records excellent. Many small diversions for irrigation and domestic use above station, including about 15 cfs for municipal water supply for Centralia and Chehalis. No regulation.

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1929-30(M), 1931, 1932-34(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.2	160	3.0	1,040	7.5	6,330
1.4	220	3.5	1,410	9.0	8,890
1.6	295	4.0	1,840	11.0	13,000
2.0	470	5.0	2,890	13.0	18,400
2.5	730	6.0	4,140		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	331	635	2,770	17,000	3,470	5,800	9,470	2,320	1,120	724	580	196
2	323	610	2,400	15,100	3,540	5,700	9,340	2,180	984	928	570	193
3	327	580	2,110	10,800	3,110	4,770	7,400	2,130	964	802	520	187
4	348	565	1,930	7,600	2,880	3,740	5,820	2,110	977	676	461	172
5	358	585	1,830	6,120	3,070	2,970	4,720	2,010	970	610	420	160
6	335	958	2,170	4,830	3,170	2,580	4,090	1,920	934	585	394	172
7	323	1,140	3,350	3,980	6,500	2,360	3,820	1,840	892	570	358	181
8	348	984	3,540	3,580	13,200	2,440	3,720	1,780	862	545	331	172
9	655	1,090	*3,190	4,180	17,000	2,620	4,110	1,700	862	590	323	184
10	620	1,330	3,310	3,830	12,200	3,430	6,170	1,560	844	676	319	184
11	942	1,510	2,990	3,350	8,310	6,760	6,190	1,570	808	*625	295	175
12	1,770	1,710	2,680	2,960	6,040	7,970	7,790	2,030	748	570	*287	178
13	1,490	2,090	4,490	3,170	4,620	9,220	13,100	1,880	682	520	279	193
14	1,110	2,680	5,540	4,080	3,780	7,900	10,900	1,950	645	485	259	230
15	898	3,970	7,280	4,020	3,240	6,090	8,170	2,130	620	452	263	407
16	772	5,330	7,680	4,840	2,840	4,790	6,890	1,780	595	490	267	700
17	688	8,210	5,770	6,540	2,540	3,890	6,380	1,610	575	490	252	1,140
18	670	10,400	4,410	6,460	2,240	*3,350	5,420	1,500	570	456	244	670
19	665	13,900	3,540	5,170	2,020	2,990	4,610	1,500	580	425	252	500
20	1,330	14,400	3,010	4,230	1,870	2,700	4,130	1,520	565	407	238	402
21	1,680	10,100	2,580	3,680	1,760	2,500	3,780	1,390	535	380	220	371
22	1,800	6,630	2,460	3,370	1,670	4,180	*3,500	1,260	525	362	220	335
23	1,540	4,720	2,330	3,420	1,600	5,980	3,910	1,160	535	348	224	315
24	1,270	3,500	3,590	3,610	1,810	5,010	4,150	1,070	580	327	208	283
25	1,080	3,230	5,470	4,180	2,380	4,510	3,760	1,020	540	331	214	267
26	970	4,100	5,000	4,020	2,230	5,350	3,560	1,020	525	371	211	*263
27	886	4,790	4,040	3,410	2,210	4,900	3,390	1,080	540	525	211	291
28	820	4,760	3,650	3,010	2,830	4,580	3,000	1,020	585	620	211	348
29	760	3,930	4,700	2,700		5,880	2,780	958	688	555	199	371
30	*706	3,300	8,340	2,460		7,580	2,560	1,050	665	525	202	331
31	670		14,900	*2,350		8,640		*1,240		575	190	
Total	26,485	121,737	131,050	158,050	122,130	151,180	166,630	49,288	21,515	16,545	9,222	9,571
Mean	854	4,058	4,227	5,098	4,362	4,877	5,554	1,590	717	534	297	319
Cfsm	0.954	4.53	4.72	5.70	4.87	5.45	6.21	1.78	0.801	0.597	0.332	0.356
In.	1.10	5.06	5.45	6.57	5.07	6.28	6.92	2.05	0.89	0.69	0.38	0.40
Ac-ft	52,530	241,500	259,900	313,500	242,200	299,900	330,500	97,760	42,670	32,820	18,290	18,980

Calendar year 1954: Max 31,300 Min 230 Mean 3,255 Cfsm 3.64 In. 49.36 Ac-ft 2,356,000
Water year 1954-55: Max 17,000 Min 160 Mean 2,694 Cfsm 3.01 In. 40.86 Ac-ft 1,951,000

Peak discharge (base, 13,000 cfs).--Nov. 20 (4 a.m.) 15,100 cfs (11.83 ft); Jan. 1 (4 a.m.) 17,200 cfs (12.59 ft); Feb. 9 (4 a.m.) 18,100 cfs (12.90 ft); Apr. 13 (12:30 p.m.) 13,500 cfs (11.21 ft).
* Discharge measurement made on this day.

Rock Creek at Cedarville, Wash.

Location.--Lat 46°52'05", long 123°18'25", in SW¼SW¼ sec. 15, T. 16 N., R. 5 W., on left bank 0.2 mile downstream from Williams Creek, 1 mile west of Cedarville, and 1¼ miles upstream from mouth.

Drainage area.--24.8 sq mi.

Records available.--July 1942 to October 1943 (fragmentary), June 1944 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 70 ft (from topographic map). Prior to Aug. 17, 1944, staff gage at railroad bridge three-quarters of a mile downstream at different datum.

Average discharge.--11 years (1944-55), 85.6 cfs (61,970 acre-ft per year).

Extremes.--Maximum discharge during year, 878 cfs Feb. 8 (gage height, 9.70 ft, from high-water mark in gage well); minimum, 2.2 cfs Sept. 6 (gage height, 2.35 ft).
1942-55: Maximum discharge, 1,660 cfs Feb. 9, 1951 (gage height, 13.77 ft), from rating curve extended above 860 cfs; minimum, 0.3 cfs Sept. 25, 1946.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. No regulation. Some diversion for irrigation.

Revisions (water years).--WSP 982: 1942. WSP 1092: 1945-46(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 11 to Nov. 14, Feb. 11-18, Feb. 28 to Mar. 19)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30					
2.7	7.9	3.6	73	2.3	1.8	3.0	22	5.0	237
2.8	11	4.0	117	2.4	3.0	3.3	42	5.5	302
3.0	20	4.5	177	2.5	4.5	3.6	70	6.0	367
3.3	44	5.0	237	2.6	6.4	4.0	116	7.0	500
Note.--Same as following table above 5.0 ft.				2.8	12.5	4.5	176	9.0	780

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10.5	22	111	429	107	172	271	48	19	17.5	13	*3.0
2	10	21	96	299	105	153	237	*46	18	15	10.5	2.9
3	9.4	20	84	215	96	130	183	44	*18.5	11.5	8.4	2.7
4	9.4	19	77	170	100	106	144	41	18	10.5	7.1	2.6
5	8.8	32	72	143	93	89	118	39	16.5	9.0	6.2	2.6
6	8.5	48	78	118	167	77	99	36	15.5	8.4	5.8	2.4
7	8.8	40	115	104	412	68	84	35	14.5	7.9	5.2	2.5
8	14	41	106	105	700	64	78	33	14.5	*8.1	5.0	2.6
9	13	51	106	112	400	64	110	31	12	10.5	4.8	3.0
10	14.5	58	105	106	*250	128	114	31	11	10.5	4.3	2.9
11	70	67	100	97	193	194	152	36	10.5	9.6	4.3	2.7
12	80	85	160	90	156	230	256	40	10.5	8.4	4.2	2.5
13	54	91	260	105	130	216	288	34	9.9	7.3	4.0	3.0
14	*42	116	220	106	111	*171	216	32	9.6	6.6	3.8	4.3
15	33	169	280	115	97	134	159	29	9.6	6.2	3.8	6.9
16	27	302	190	147	86	108	200	28	9.3	7.1	3.7	16.5
17	24	402	150	197	76	89	204	27	9.3	7.1	3.4	10.5
18	22	609	120	182	67	78	169	26	9.6	6.2	3.4	6.8
19	38	545	105	149	61	70	138	25	9.3	6.2	3.3	5.0
20	76	361	91	128	57	67	115	23	9.0	5.8	3.4	4.5
21	100	225	87	106	52	*67	98	22	8.1	5.2	3.3	3.6
22	85	*170	100	101	50	99	89	21	7.9	4.8	3.1	3.1
23	71	131	135	96	47	93	96	20	8.1	4.7	2.9	3.0
24	60	107	170	107	56	90	86	20	8.4	4.5	3.0	2.9
25	53	164	145	127	56	110	82	20	8.4	4.7	3.0	2.6
26	47	231	110	118	53	124	80	22	8.7	8.1	3.0	2.6
27	40	281	105	106	51	117	76	22	8.7	10.5	3.0	4.7
28	35	217	110	94	126	109	61	19	13	8.4	2.9	4.8
29	31	169	250	84	-	112	56	20	13	8.1	2.7	3.8
30	28	136	*450	77	------	136	51	24	11.5	9.9	2.7	3.3
31	25	-----	520	81	-----	204	-----	23	------	15	2.9	------
Total	1,147.9	4,930	4,808	4,214	3,957	3,669	4,110	917	349.9	263.3	140.1	124.3
Mean	37.0	164	155	136	141	118	137	29.6	11.7	8.49	4.52	4.14
Cfsm	1.49	6.61	6.25	5.48	5.69	4.76	5.52	1.19	0.472	0.342	0.182	0.167
In.	1.72	7.39	7.21	6.32	5.93	5.50	6.16	1.38	0.52	0.39	0.21	0.19
Ac-ft	2,280	9,780	9,540	8,360	7,850	7,280	8,150	1,820	694	522	278	247

Calendar year 1954: Max 864 Min 3.0 Mean 99.5 Cfsm 4.01 In. 54.48 Ac-ft 72,050
Water year 1954-55: Max 700 Min 2.4 Mean 78.4 Cfsm 3.16 In. 42.92 Ac-ft 56,800

Peak discharge (base, 800 cfs).--Feb. 8 (time unknown) 878 cfs (9.70 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Dec. 10-30, Feb. 8-10; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Chehalis River at Porter, Wash.

Location.--Lat 46°56'20", long 123°18'45", on line between secs. 21 and 28, T. 17 N., R. 5 W., at upstream end of right bank pier of Chehalis River bridge at mouth of Porter Creek, 700 ft west of Porter.

Drainage area.--1,300 sq mi, approximately.

Records available.--January 1952 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 25 ft (from topographic map).

Extremes.--Maximum discharge during year, 19,200 cfs Jan. 2 (gage height, 18.03 ft); minimum, 285 cfs Sept. 6, 7 (gage height, 2.62 ft).
1952-55: Maximum discharge, 31,700 cfs Jan. 7, 1954 (gage height, 22.27 ft); minimum, 164 cfs Oct. 17, 1952 (gage height, 2.25 ft).

Remarks.--Records excellent. Cities of Centralia and Chehalis divert about 15 cfs from Newaukum River, a tributary, for municipal use. Other small diversions for irrigation and domestic use. No regulation.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 1				Jan. 2 to Sept. 30			
3.4	480	8.0	3,720	2.6	280	7.0	2,770
3.9	680	10.0	5,900	3.0	395	8.0	3,670
4.4	920	12.0	8,490	3.5	565	10.0	5,770
5.0	1,260	14.0	11,600	4.0	775	12.0	8,280
6.0	1,950	16.0	15,300	4.5	1,020	14.0	11,200
7.0	2,780	18.0	19,600	5.0	1,310	16.0	14,800
				6.0	1,980	18.0	19,100

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	508	960	4,500	18,800	4,210	6,300	11,300	3,400	1,660	1,020	905	320
2	494	915	3,900	19,000	4,940	7,410	11,900	*3,220	1,500	1,180	835	326
3	494	890	3,460	16,900	4,500	6,780	10,400	3,100	*1,450	1,190	775	317
4	487	860	3,130	12,400	4,190	5,660	8,420	3,050	1,450	1,030	694	305
5	*504	1,010	2,960	9,180	4,240	4,690	6,900	2,940	1,440	915	633	295
6	501	1,250	3,090	7,420	4,560	4,090	5,960	2,810	1,410	870	581	285
7	494	1,670	4,180	6,170	6,920	3,750	5,400	2,700	1,330	825	540	295
8	512	1,580	4,910	5,480	13,300	3,610	5,130	2,620	1,270	802	516	305
9	611	1,600	4,630	5,580	17,300	3,770	5,430	2,540	1,220	820	498	302
10	855	*1,870	4,610	5,620	18,300	4,610	6,860	2,410	1,210	905	484	305
11	1,200	2,130	4,410	5,070	*15,100	7,140	7,670	2,420	1,170	910	464	305
12	2,040	2,390	4,110	4,560	9,670	9,480	8,890	2,650	1,120	825	450	298
13	2,090	2,850	4,950	4,440	7,400	11,200	13,000	2,770	1,040	762	428	314
14	1,700	3,270	6,940	5,240	6,030	10,900	14,600	2,560	975	703	419	365
15	1,370	4,570	8,520	5,460	5,180	8,980	11,900	2,850	945	657	407	428
16	1,170	6,180	10,300	5,890	4,570	7,240	9,780	2,560	910	694	413	690
17	1,040	9,230	8,560	7,450	4,110	6,010	8,980	2,350	885	730	404	1,180
18	965	12,700	6,710	8,420	3,680	*5,190	7,930	2,230	875	690	395	1,000
19	1,050	15,600	5,440	7,450	3,360	4,640	6,870	2,130	860	641	386	721
20	1,480	16,900	4,680	6,190	3,140	4,230	6,050	2,150	860	601	389	585
21	2,240	15,900	4,100	5,440	2,940	3,970	5,540	2,070	820	569	368	512
22	2,490	11,500	3,730	5,010	2,800	4,770	5,100	1,910	798	540	356	481
23	2,240	7,670	3,570	4,920	2,680	7,240	5,180	1,800	798	523	356	456
24	1,940	5,740	4,090	5,120	2,760	6,810	5,500	1,670	830	509	356	425
25	1,700	5,300	6,330	5,460	3,340	6,130	5,140	1,590	835	502	341	404
26	1,480	6,280	6,760	5,770	3,320	6,690	4,780	1,570	806	585	347	392
27	1,360	6,850	5,840	5,160	3,230	6,630	4,690	1,580	811	645	341	436
28	1,240	7,090	5,120	4,600	3,650	6,250	4,220	1,560	895	816	338	432
29	1,160	6,200	5,840	4,180	-	6,710	3,940	1,480	955	*820	332	474
30	1,070	5,240	*9,140	3,890	------	8,670	3,670	1,530	1,020	798	329	474
31	1,020	-----	15,000	3,670	-----	10,100	-----	1,710	------	930	*329	------
Total	37,505	166,195	173,510	219,940	169,420	199,650	221,130	71,930	32,148	24,007	14,409	13,427
Mean	1,210	5,540	5,597	7,095	6,051	6,440	7,371	2,320	1,072	774	465	448
Cfsm	0.931	4.26	4.31	5.46	4.65	4.95	5.67	1.78	0.825	0.595	0.358	0.345
In.	1.07	4.75	4.96	6.29	4.85	5.71	6.33	2.06	0.92	0.69	0.41	0.38
Ac-ft	74,390	329,600	344,200	436,200	336,000	396,000	438,600	142,700	63,760	47,620	28,580	26,630

Calendar year 1954: Max 30,800 Min 398 Mean 4,465 Cfsm 3.43 In. 46.63 Ac-ft 3,233,000
Water year 1954-55: Max 19,000 Min 285 Mean 3,680 Cfsm 2.83 In. 38.42 Ac-ft 2,664,000

Peak discharge (base, 20,000 cfs).--No peak above base.
* Discharge measurement made on this day.

Cloquallum River at Elma, Wash.

Location.--Lat 47°00'20", long 123°23'10", in S½NW¼ sec. 36, T. 18 N., R. 6 W., on right bank 10 ft downstream from bridge, half a mile east of Elma, and 1.8 miles downstream from Wildcat Creek.

Drainage area.--65.8 sq mi.

Records available.--July 1942 to October 1943 (fragmentary), July 1944 to September 1955. Published as Cloquallum Creek at Elma 1942.

Gage.--Water-stage recorder. Altitude of gage is 20 ft (from topographic map). Prior to Aug. 7, 1944, staff gage at site 350 ft downstream at datum 0.42 ft lower. Aug. 7, 1944, to Sept. 1, 1953, water-stage recorder at site 200 ft upstream at same datum.

Average discharge.--11 years (1944-55), 255 cfs (184,600 acre-ft per year).

Extremes.--Maximum discharge during year, 2,080 cfs Feb. 8 (gage height, 7.51 ft); minimum, 18 cfs Sept. 5 (gage height, 1.75 ft).
1942-55: Maximum discharge, 4,470 cfs Feb. 9, 1951 (gage height, 11.04 ft); minimum, 6.8 cfs Sept. 15, 1945 (gage height, 1.43 ft).

Remarks.--Records good except those for periods of shifting control, which are fair. Several small diversions on minor tributaries above station and some regulation by log pond on Wildcat Creek.

Revisions.--WSP 1246: Drainage area.

Rating tables, water year 1954-55, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 8

1.8	31	3.5	405
1.9	43	4.0	555
2.1	73	5.0	900
2.3	108	6.0	1,330
2.5	150	7.0	1,810
3.0	270		

Feb. 8 to Sept. 30

1.7	13	2.5	145
1.9	36	3.0	270
2.1	64		

Note.--Same as preceding table above 3.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	63	275	1,040	290	332	710	180	68	71	97	26
2	38	62	235	724	248	318	600	172	*86	61	75	24
3	42	59	210	546	225	285	501	165	88	58	64	23
4	41	60	191	*459	260	242	411	158	86	61	58	22
5	*38	228	186	408	258	212	351	150	82	55	52	21
6	37	268	230	345	414	198	312	143	78	52	49	21
7	46	194	225	312	843	195	278	140	75	50	45	22
8	87	184	186	332	1,740	200	295	131	71	52	45	25
9	68	215	194	363	949	202	504	127	66	56	45	24
10	82	*191	206	310	626	422	459	124	64	55	42	24
11	269	194	179	290	492	528	558	152	64	52	41	24
12	248	238	242	272	408	692	737	152	62	49	40	22
13	159	225	372	310	351	646	825	131	62	46	39	29
14	120	292	406	278	*308	558	696	127	61	42	37	46
15	99	335	552	292	278	468	561	118	61	41	36	62
16	85	489	438	342	250	402	579	114	58	56	36	68
17	85	851	354	453	225	348	504	114	58	55	36	44
18	75	1,520	298	417	198	315	438	114	60	49	35	36
19	108	*1,260	258	357	185	288	381	112	58	46	34	32
20	172	752	230	340	172	262	340	107	55	44	34	31
21	232	525	213	305	162	*321	315	101	52	42	32	29
22	196	399	203	298	152	558	295	97	50	40	31	26
23	165	315	208	357	145	453	338	95	54	40	31	26
24	135	265	317	465	225	378	292	92	55	40	30	24
25	116	640	474	504	190	369	262	93	54	40	30	24
26	103	671	387	423	175	342	252	97	55	68	*30	25
27	92	678	328	363	162	312	228	90	56	71	29	44
28	85	507	328	320	319	312	*220	88	78	56	28	35
29	76	402	459	290	--	351	205	86	71	*61	26	30
30	71	328	879	265	------	420	192	107	69	88	25	28
31	68	- - - -	1,370	270	------	543	-- ---	97	------	147	26	------
Total	3,279	12,410	10,633	12,050	10,250	11,472	12,639	3,776	1,977	1,744	1,258	917
Mean	106	414	343	389	366	370	421	122	65.9	56.3	40.6	30.6
Cfsm	1.61	6.29	5.21	5.91	5.56	5.62	6.40	1.85	1.00	0.856	0.617	0.465
In.	1.85	7.01	6.01	6.81	5.79	6.48	7.14	2.13	1.12	0.99	0.71	0.52
Ac-ft	6,500	24,610	21,090	23,900	20,330	22,750	25,070	7,490	3,920	3,460	2,500	1,820

Calendar year 1954: Max 2,260 Min 33 Mean 283 Cfsm 4.30 In. 58.38 Ac-ft 204,900
Water year 1954-55: Max 1,740 Min 21 Mean 226 Cfsm 3.43 In. 46.56 Ac-ft 163,400

Peak discharge (base, 1,500 cfs).--Nov. 18 (5 p.m.) 1,650 cfs (6.88 ft); Feb. 8 (5 a.m.) 2,080 cfs (7.51 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used Nov. 16 to Dec. 15, Mar. 11-23.

Satsop River near Satsop, Wash.

Location.--Lat 47°00'05", long 123°29'40", in sec. 36, T. 18 N., R. 7 W., in west pier of bridge on U. S. Highway 410, three-quarters of a mile west of Satsop and 2 miles upstream from mouth.

Drainage area.--290 sq mi, approximately.

Records available.--March 1929 to September 1955.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Prior to Mar. 19, 1938, staff gage at site 60 ft downstream at datum 20.9 ft higher.

Average discharge.--26 years, 1,939 cfs (1,404,000 acre-ft per year).

Extremes.--Maximum discharge during year, 29,300 cfs Nov. 18 (elevation, 35.37 ft); minimum, 271 cfs Sept. 12, 13 (elevation, 23.93 ft).
1929-55: Maximum discharge, 46,600 cfs Jan. 22, 1935 (elevation, 38.9 ft, from floodmarks); minimum, 166 cfs Sept. 21, 1938; minimum elevation, 21.66 ft, present datum, Sept. 3-6, 1934.

Remarks.--Records excellent. No regulation or diversion above station.

Revisions (water years).--WSP 1246: Drainage area. WSP 1286: 1930-35(M), 1937(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30			
24.1	276	28.0	5,670	23.9	250	27.0	4,320
24.3	405	29.0	7,890	24.1	395	28.0	6,370
24.6	645	30.0	10,500	24.3	550	29.0	8,740
25.0	1,030	31.0	13,300	24.6	810	30.0	11,300
25.5	1,600	32.5	18,000	25.0	1,230	31.0	14,100
26.0	2,240	34.0	23,500	25.5	1,870	32.5	18,400
27.0	3,790			26.0	2,600		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	364	672	2,780	7,230	2,860	1,650	9,880	1,420	810	666	*1,310	313
2	357	645	2,400	5,120	2,330	1,550	6,060	1,400	*774	590	1,150	306
3	351	636	2,150	3,990	2,050	1,470	4,340	1,350	756	558	940	292
4	351	620	2,000	*3,350	2,120	1,350	3,370	1,300	738	534	792	292
5	*337	2,590	2,070	2,980	2,110	1,240	2,860	1,300	711	502	693	285
6	331	3,360	2,560	2,570	2,720	1,190	2,540	1,300	684	478	630	278
7	371	2,070	2,620	2,340	7,410	1,160	2,540	1,250	666	462	582	278
8	1,670	1,730	2,330	2,340	15,100	1,140	2,600	1,220	639	455	558	278
9	1,410	*1,860	2,280	2,390	7,010	1,130	5,710	1,160	614	470	534	278
10	1,100	1,850	2,320	2,210	4,720	1,600	5,060	1,110	598	448	510	278
11	3,120	1,780	2,080	2,050	3,700	2,320	4,190	1,280	582	440	486	278
12	2,310	1,710	2,530	1,930	3,100	2,980	5,420	1,630	566	425	470	271
13	1,660	1,700	3,950	2,150	2,840	2,860	5,970	1,330	550	410	448	285
14	1,280	4,320	4,820	2,090	*2,510	2,500	4,590	1,150	550	395	440	440
15	1,060	5,330	7,070	2,160	2,280	2,150	3,750	1,060	534	388	432	470
16	930	5,920	4,550	2,660	2,070	1,940	3,900	1,040	518	418	425	711
17	870	7,840	3,470	3,340	1,870	1,730	3,660	1,040	518	455	402	556
18	782	21,900	2,870	3,160	1,690	*1,600	3,220	1,060	518	425	402	462
19	811	*18,400	2,460	2,730	1,590	1,470	2,870	1,130	502	418	388	402
20	1,360	9,930	2,210	2,460	1,480	1,390	2,660	1,110	486	402	380	380
21	2,580	6,260	2,040	2,160	1,400	1,490	2,400	1,040	470	388	372	358
22	1,810	4,620	1,980	2,040	1,330	3,750	2,220	980	470	372	365	335
23	1,430	3,660	1,930	2,510	1,250	3,180	2,460	940	478	365	358	320
24	1,220	3,080	2,790	3,560	1,420	2,450	2,280	900	486	358	350	320
25	1,080	5,020	3,390	4,640	1,350	2,260	2,110	900	470	365	350	313
26	970	6,350	2,860	3,560	1,250	2,050	1,910	890	470	462	342	313
27	890	7,280	2,450	2,900	1,190	1,880	1,730	860	478	1,020	342	365
28	820	5,160	2,460	2,510	1,520	1,950	*1,660	820	534	1,020	335	350
29	773	3,990	3,180	2,270	-	3,300	1,550	801	526	890	328	320
30	735	3,300	5,700	2,070	------	2,540	1,460	930	566	920	320	313
31	708	-----	9,750	2,180	-----	5,700	-----	880	------	1,310	*320	------
Total	33,841	143,583	98,050	89,650	82,270	65,970	104,970	34,581	17,262	16,809	15,754	10,442
Mean	1,092	4,786	3,163	2,892	2,938	2,128	3,499	1,116	575	542	508	348
Cfsm	3.77	16.5	10.9	9.97	10.1	7.34	12.1	3.85	1.98	1.87	1.75	1.20
In.	4.34	18.41	12.57	11.50	10.55	8.46	13.46	4.43	2.21	2.16	2.02	1.34
Ac-ft	67,120	284,800	194,500	177,800	163,200	130,800	208,200	68,590	34,240	33,340	31,250	20,710

Calendar year 1954: Max 21,900 Min 313 Mean 2,276 Cfsm 7.85 In. 106.54 Ac-ft 1,648,000
Water year 1954-55: Max 21,900 Min 271 Mean 1,954 Cfsm 6.74 In. 91.45 Ac-ft 1,415,000

Peak discharge (base, 13,500 cfs).--Nov. 18 (12 m.) 29,300 cfs (35.37 ft); Feb. 8 (6 a.m.) 19,900 cfs (32.96 ft).
* Discharge measurement made on this day.

Wynoochee River above Save Creek, near Aberdeen, Wash.

Location.--Lat 47°18', long 123°39', in NW¼ sec. 24, T. 21 N., R. 8 W., on left bank 1 mile upstream from Save Creek and 22 miles northeast of Aberdeen.

Drainage area.--69.5 sq mi.

Records available.--May 1925 to September 1955. Published as "at Oxbow, near Aberdeen" 1925-52. Records published for both sites October 1951 to October 1952.

Gage.--Water-stage recorder at present site and datum since Oct. 5, 1951. Datum of gage is 401 ft above mean sea level (by stadia traverse). Prior to Nov. 7, 1925, staff gage at site 1,200 ft downstream from Oxbow, 3 miles upstream from present site at different datum. Nov. 7, 1925, to Sept. 3, 1947, water-stage recorder at site 1 mile downstream from Oxbow at datum 444.0 ft above mean sea level (levels by city of Aberdeen). Sept. 4, 1947, to Oct. 13, 1952, water-stage recorder at Oxbow at datum 91 ft higher.

Average discharge.--30 years, 785 cfs (568,300 acre-ft per year).

Extremes.--Maximum discharge during year, 20,400 cfs Nov. 18 (gage height, 15.83 ft), from rating curve extended above 9,000 cfs; minimum, 168 cfs Sept. 11, 12; minimum gage height, 4.30 ft Sept. 11-13.
1925-55: Maximum discharge, that of Nov. 18, 1954; minimum, 64 cfs Jan. 27, 1949.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1346: 1952.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 17				Nov. 18 to Sept. 30			
4.4	188	6.0	1,210	4.2	147	7.0	2,150
4.7	308	7.0	2,370	4.5	246	8.0	3,430
5.0	460	8.0	3,800	4.8	372	9.5	5,890
5.5	790	9.5	6,170	5.1	525	11.0	8,870
				5.5	765	13.0	13,400
				6.0	1,150		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	206	308	1,010	1,960	1,110	471	2,840	498	525	580	865	184
2	199	299	902	1,410	865	451	1,560	493	509	487	664	184
3	195	299	821	1,130	752	430	1,150	482	525	451	552	184
4	192	413	828	998	779	410	950	482	564	435	487	184
5	188	2,490	1,540	872	746	406	835	520	634	410	435	180
6	188	1,460	*1,420	*779	1,070	396	850	536	604	386	401	177
7	844	886	1,130	732	4,740	386	958	558	664	372	372	180
8	2,190	854	998	746	4,600	491	1,210	564	800	368	350	174
9	950	1,080	1,040	720	1,930	396	2,920	530	895	377	*332	174
10	1,220	1,560	958	676	1,390	530	1,780	525	918	386	319	171
11	2,160	1,160	858	640	1,130	558	1,270	756	850	372	302	168
12	1,210	1,020	1,540	634	1,020	552	1,650	966	752	372	289	168
13	*838	1,270	1,690	828	990	498	1,470	706	652	391	281	220
14	864	4,250	2,440	746	902	461	1,140	598	569	401	269	298
15	572	3,520	2,360	726	*835	435	1,010	569	*503	391	262	410
16	496	3,830	1,480	779	765	420	966	586	486	435	258	471
17	484	5,780	1,190	793	700	406	910	616	451	401	250	314
18	432	13,300	1,050	758	652	396	828	739	451	386	246	266
19	668	9,040	942	688	622	391	779	865	446	377	235	239
20	1,500	4,000	880	640	586	382	739	835	451	350	232	224
21	1,320	2,440	1,020	598	564	577	688	700	503	336	224	217
22	854	1,860	990	604	536	*1,110	676	628	547	332	217	210
23	678	1,520	1,050	1,070	520	752	720	569	525	319	217	207
24	585	1,300	1,460	1,310	558	628	670	536	498	310	210	197
25	514	2,450	1,170	1,400	503	586	616	547	446	302	210	194
26	460	3,150	942	1,030	482	558	580	552	451	651	203	190
27	427	2,490	821	858	466	569	*552	542	471	1,040	200	207
28	400	1,700	858	793	509	713	525	498	493	670	197	203
29	370	1,370	1,010	739	-	1,390	503	564	487	634	194	194
30	350	1,160	2,240	706	------	1,270	493	664	610	646	190	184
31	332	-----	2,850	984	-----	2,080	-----	580	------	765	184	------
Total	21,686	76,259	39,488	27,347	30,322	18,999	31,838	18,804	17,260	14,133	9,647	6,573
Mean	700	2,542	1,274	882	1,083	613	1,061	607	575	456	311	219
Cfsm	10.1	36.6	18.3	12.7	15.6	8.82	15.3	8.73	8.27	6.56	4.47	3.15
In.	11.60	40.81	21.13	14.63	16.23	10.17	17.04	10.06	9.24	7.56	5.16	3.52
Ac-ft	43,010	151,300	78,320	54,240	60,140	37,680	63,150	37,300	34,230	28,030	19,130	13,040

Calendar year 1954: Max 13,300 Min 172 Mean 990 Cfsm 14.2 In. 193.40 Ac-ft 716,900
Water year 1954-55: Max 13,300 Min 168 Mean 856 Cfsm 12.3 In. 167.15 Ac-ft 619,600

Peak discharge (base, 6,800 cfs).--Nov. 18 (5:15 a.m.) 20,400 cfs (15.83 ft); Feb. 7 (10 p.m.) 10,600 cfs (11.78 ft).
* Discharge measurement made on this day.

Humptulips River near Humptulips, Wash.

Location.--Lat 47°13'40", long 123°56'25", in NE¼ sec. 17, T. 20 N., R. 10 W., on right bank 1 mile southeast of Humptulips, 2.5 miles upstream from Stevens Creek, and 3¼ miles downstream from confluence of East and West Forks.

Drainage area.--130 sq mi.

Records available.--May 1933 to January 1935, July 1942 to September 1955.

Gage.--Staff gage and crest-stage indicator; gage read once daily. Datum of gage is 117.4 ft above mean sea level (river-profile survey). Prior to Jan. 14, 1935, and Mar. 1, 1950, to Jan. 15, 1953, water-stage recorder, and July 1, 1942, to Feb. 28, 1950, staff gage, at same site and datum.

Average discharge.--14 years (1933-34, 1942-55), 1,309 cfs (947,700 acre-ft per year).

Extremes.--Maximum discharge during year, 23,600 cfs Nov. 18 (gage height, 10.80 ft); minimum observed, 195 cfs Sept. 12; minimum gage height, 1.04 ft Oct. 6, Sept. 12.
1933-35, 1942-55: Maximum discharge, 33,000 cfs Jan. 22, 1935 (gage height, 12.7 ft, from floodmarks), from rating curve extended above 16,500 cfs; minimum observed, 82 cfs Sept. 11, 1944; minimum gage height, 0.64 ft Sept. 14, 1949 (from graph based on gage readings).
Revisions.--The maximum discharge for the water year 1946 has been revised to 13,200 cfs Apr. 11, 1946 (gage height, 8.32 ft, from graph based on gage readings), superseding figure published in WSP 1216 and 1316.

Remarks.--Records fair. No diversion above station. Slight regulation by fish hatchery on West Fork for short periods at low flow.

Revisions (water years).--WSP 1216: 1934-35, 1943-46, 1947(M), 1949(M). WSP 1246: Drainage area. The figure of peak discharge for Jan. 5, 1954 (erroneously published as for Feb. 5, 1954) has been revised to 9,450 cfs (gage height, 6.65 ft), superseding figure published in WSP 1346.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	286	416	*1,450	4,290	1,610	809	7,010	774	659	783	1,770	225
2	267	392	1,250	2,760	1,260	766	3,550	707	*598	612	1,200	225
3	267	404	1,100	1,990	1,100	732	2,300	699	582	518	953	218
4	254	539	1,040	1,630	1,350	732	1,690	691	598	490	818	218
5	250	3,430	1,340	1,410	1,240	651	1,540	707	612	453	724	218
6	242	2,300	1,750	1,220	1,810	628	1,300	707	590	434	643	210
7	635	1,390	1,530	1,130	7,040	605	1,370	707	605	404	598	210
8	2,380	1,130	1,340	1,100	9,740	605	1,700	724	675	392	532	210
9	1,270	1,360	1,340	1,140	3,890	620	4,660	675	707	404	511	206
10	1,900	2,200	1,260	1,040	*2,550	1,010	3,160	643	724	380	471	203
11	3,090	1,550	1,120	953	1,980	1,160	2,320	740	675	374	447	199
12	*1,860	1,470	1,910	*908	1,650	1,460	3,600	1,070	605	352	422	195
13	1,270	1,340	2,710	1,400	1,640	1,170	2,960	863	539	352	410	225
14	980	4,100	3,640	1,140	1,460	1,030	2,010	740	490	352	380	336
15	818	5,120	4,120	1,170	1,390	899	1,720	675	453	347	368	301
16	699	5,900	2,440	1,460	1,250	827	1,790	691	422	368	347	546
17	699	6,770	1,830	1,730	1,130	*758	1,660	691	410	398	331	363
18	590	*16,300	1,530	1,530	1,040	740	1,460	818	410	352	320	301
19	732	*11,900	1,290	1,270	971	699	1,300	899	392	363	310	267
20	1,390	5,760	1,140	1,150	917	667	1,220	863	386	347	305	246
21	1,880	3,570	1,080	1,020	872	1,190	1,110	740	398	320	296	238
22	1,240	2,660	1,180	1,020	827	2,870	1,050	675	410	301	281	225
23	944	2,050	1,080	2,260	783	1,650	1,240	628	410	301	272	218
24	800	1,910	2,020	2,300	944	1,260	1,150	582	471	301	259	210
25	699	4,340	1,750	2,770	818	1,220	1,030	590	404	286	*259	203
26	620	4,760	1,360	1,880	766	1,050	953	612	392	398	254	199
27	575	4,210	1,180	1,480	707	1,020	*899	605	410	*1,360	250	301
28	518	2,760	1,160	1,300	971	1,080	836	568	497	971	242	233
29	490	2,110	1,980	1,160	-	2,680	774	575	497	1,150	242	218
30	453	1,720	3,810	1,060	------	2,280	758	809	783	980	233	210
31	428	-----	6,100	1,130	-----	5,460	-----	724	------	1,410	225	------
Total	28,526	103,861	57,830	47,801	51,706	38,328	58,120	22,192	15,804	16,253	14,673	7,377
Mean	920	3,462	1,865	1,542	1,847	1,236	1,937	716	527	524	473	246
Cfsm	7.08	26.6	14.3	11.9	14.2	9.51	14.9	5.51	4.05	4.03	3.64	1.89
In.	8.16	29.71	16.54	13.67	14.79	10.96	16.63	6.35	4.52	4.65	4.20	2.11
Ac-ft	56,580	206,000	114,700	94,810	102,600	76,020	115,300	44,020	31,350	32,240	29,100	14,630

Calendar year 1954: Max 16,300 Min 199 Mean 1,430 Cfsm 11.0 In. 149.27 Ac-ft 1,035,000
Water year 1954-55: Max 16,300 Min 195 Mean 1,267 Cfsm 9.75 In. 132.29 Ac-ft 917,400

Peak discharge (base, 12,000 cfs).--Nov. 18 (time unknown) 23,600 cfs (10.80 ft); Feb. 8 (time unknown) 17,500 cfs (9.28 ft).
* Discharge measurement made on this day.

Quinault River at Quinault Lake, Wash.

Location.--Lat 47°27'30", long 123°53'30", in sec. 25, T. 23 N., R. 10 W., on left bank at outlet of Quinault Lake, 50 ft downstream from Olympic Highway bridge, U. S. Highway 101, and 4 miles southwest of Quinault.

Drainage area.--264 sq mi.

Records available.--October 1911 to September 1955. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 184.60 ft above mean sea level (Washington State Highway benchmark). Prior to Jan. 1, 1913, staff gage on south shore of Quinault Lake 3 miles northeast of present site and Jan. 1, 1913, to Sept. 30, 1916, staff gage at mouth of Canoe Creek, 4 miles northeast of present site, at datum 1.06 ft higher. Oct. 1, 1916, to May 2, 1935, water-stage recorder at site 300 ft downstream from present site at datum 0.36 ft higher than present datum.

Average discharge.--44 years, 2,744 cfs (1,987,000 acre-ft per year).

Extremes.--Maximum discharge during year, 30,500 cfs Nov. 18 (gage height, 15.58 ft); minimum, 598 cfs Sept. 30 (gage height, 2.55 ft).
1911-22, 1924-55: Maximum discharge, 42,300 cfs Nov. 27, 1949 (gage height, 18.60 ft); minimum, 276 cfs Sept. 12, 1944 (gage height, 1.96 ft).
Flood in November 1909 reached a stage of approximately 22 ft, present datum (discharge, 52,600 cfs).

Remarks.--Records excellent. Natural regulation by Quinault Lake. No diversion above station.

Revisions (water years).--WSP 442: Drainage area. WSP 1286: 1915-16(M), 1934, 1936-39(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.5	565	5.0	3,270	11.0	16,300
3.0	940	6.0	4,950	13.0	22,000
3.5	1,400	7.0	6,880	15.1	28,800
4.0	1,920	9.0	11,200		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	876	1,650	4,290	6,880	2,650	1,330	6,220	1,310	*2,730	3,710	3,600	900
2	828	1,570	3,680	5,490	2,610	1,310	5,640	1,300	2,550	3,440	3,450	868
3	804	1,530	3,210	4,320	2,410	1,270	4,340	1,280	2,580	3,090	3,040	860
4	772	1,560	2,930	3,600	2,330	1,190	3,390	1,290	2,720	2,890	2,750	860
5	732	3,510	4,140	3,080	2,260	1,130	2,770	1,320	3,090	2,720	2,510	860
6	716	5,420	6,040	2,660	2,370	1,080	2,420	1,390	3,340	2,550	2,370	852
7	1,100	4,380	5,360	2,380	5,360	1,020	2,360	1,450	3,640	2,420	2,300	836
8	5,480	3,690	4,460	2,210	12,600	994	2,650	1,540	4,190	2,370	2,190	828
9	6,220	4,140	3,970	2,140	*9,000	1,000	5,520	1,580	5,080	2,410	2,050	796
10	5,020	5,020	3,600	2,000	6,100	1,140	6,520	1,610	5,950	2,560	1,910	772
11	6,980	5,090	3,160	1,880	4,500	1,320	5,380	1,730	6,320	2,650	1,810	740
12	*6,740	4,770	3,480	*1,800	3,580	1,480	4,840	2,290	6,060	2,770	1,730	708
13	5,300	4,410	4,220	1,860	3,210	1,500	4,860	2,480	5,420	2,960	1,640	748
14	4,070	8,690	4,820	1,900	2,860	1,410	4,140	2,340	4,610	3,220	1,550	924
15	3,340	13,200	6,320	1,880	2,620	1,310	3,500	2,170	3,900	3,360	1,470	1,180
16	2,870	13,500	5,380	1,970	2,380	1,220	3,120	2,160	3,390	3,520	1,410	1,350
17	2,630	13,900	4,380	2,080	2,170	*1,160	2,870	2,280	3,040	3,530	1,360	1,260
18	2,430	28,700	3,770	2,030	1,980	1,110	2,550	2,550	2,870	3,180	1,320	1,130
19	2,920	*27,100	3,330	1,920	1,830	1,070	2,320	3,100	2,820	2,940	1,290	1,020
20	5,130	19,200	2,960	1,810	1,710	1,030	2,110	3,690	2,770	2,720	1,270	924
21	6,640	12,400	3,180	1,690	1,610	1,110	1,960	3,610	3,000	2,580	1,250	852
22	5,470	9,420	3,680	1,620	1,520	1,660	1,840	3,260	3,450	2,510	1,190	796
23	4,320	7,280	3,640	2,000	1,450	1,800	1,890	2,930	3,870	2,460	1,140	748
24	3,530	5,830	4,540	2,650	1,480	1,700	1,860	2,650	3,980	2,420	1,090	700
25	3,020	6,980	4,590	3,200	1,450	1,620	1,760	2,520	3,630	2,320	*1,060	672
26	2,610	9,510	3,930	3,040	1,380	1,510	*1,650	2,520	3,380	2,410	1,010	651
27	2,340	11,200	3,330	2,700	1,290	1,460	1,580	2,500	3,360	*3,150	958	658
28	2,140	8,560	3,030	2,410	1,300	1,520	1,490	2,360	3,390	3,120	940	644
29	1,970	6,540	3,150	2,210	-	1,990	1,410	2,340	3,400	3,160	924	617
30	1,830	5,190	4,120	2,050	------	2,560	1,350	2,750	3,530	3,210	916	604
31	1,740	-----	6,920	2,140	-----	3,570	-----	2,960	------	3,320	916	------
Total	100,568	253,940	127,610	79,600	86,010	44,574	94,310	69,260	112,060	89,670	52,414	25,358
Mean	3,244	8,465	4,116	2,568	3,072	1,438	3,144	2,234	3,735	2,893	1,691	845
Cfsm	12.3	32.1	15.6	9.73	11.6	5.45	11.9	8.46	14.1	11.0	6.41	3.20
In.	14.17	35.77	17.98	11.21	12.12	6.28	13.29	9.76	15.79	12.63	7.38	3.57
Ac-ft	199,500	503,700	253,100	157,900	170,600	88,410	187,100	137,400	222,300	177,900	104,000	50,300

Calendar year 1954: Max 28,700 Min 716 Mean 3,594 Cfsm 13.6 In. 184.80 Ac-ft 2,602,000
Water year 1954-55: Max 28,700 Min 604 Mean 3,111 Cfsm 11.8 In. 159.95 Ac-ft 2,252,000

Peak discharge (base, 12,000 cfs).--Nov. 18 (9 a.m.) 30,500 cfs (15.58 ft); Feb. 8 (8 a.m.) 13,400 cfs (9.87 ft).
* Discharge measurement made on this day.

Hoh River near Spruce, Wash.

Location.--Lat 47°48'20", long 124°06'20", in NE¼ sec. 34, T. 27 N., R. 11 W., on left bank 1 mile downstream from Maple Creek, 2½ miles west of Spruce, and 5 miles downstream from South Fork.

Drainage area.--208 sq mi.

Records available.--August 1926 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 320 ft (from river-profile map).

Average discharge.--29 years, 1,990 cfs (1,441,000 acre-ft per year).

Extremes.--Maximum discharge during year, 25,800 cfs Nov. 18 (gage height, 16.57 ft, from high-water mark in well), from rating curve extended above 13,000 cfs on basis of slope-area determination of peak flow; minimum, 548 cfs Sept. 30 (gage height, 1.25 ft).
1926-55: Maximum discharge, 38,700 cfs Nov. 26, 1949 (gage height, 22.2 ft, from rating curve extended above 13,000 cfs on basis of slope-area determination of peak flow; minimum, 247 cfs Nov. 14, 15, 1929; minimum gage height, 0.68 ft Oct. 18, 19, 1946.
Maximum stage known since at least 1891, that of Nov. 26, 1949.

Remarks.--Records good except those for period of no gage-height record, which are fair. No artificial regulation or diversion above station. Large diurnal fluctuation during summer months caused by melting glaciers at source.

Revisions (water years).--WSP 1182: 1935(M). WSP 1216: Drainage area. WSP 1286: 1934.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.3	565	7.0	5,300
2.0	840	8.0	7,000
3.0	1,350	10.0	11,000
4.0	2,000	12.0	15,000
5.0	2,850	14.0	19,400
6.0	4,000		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	772	1,150	2,440	4,140	1,760	872	5,600	894	*1,610	2,630	3,050	1,020
2	740	1,150	2,130	2,920	1,490	832	3,120	903	1,590	2,100	2,340	1,100
3	704	1,100	1,900	2,380	1,340	784	2,290	916	1,860	1,950	1,970	1,120
4	684	1,600	1,910	2,090	1,410	744	1,840	939	2,200	1,960	1,790	1,140
5	664	4,500	4,680	1,850	1,360	724	1,580	1,000	2,520	1,850	1,740	1,250
6	644	3,600	3,910	1,640	2,040	712	1,580	1,030	2,540	1,830	1,810	1,300
7	3,280	3,000	2,780	1,530	6,990	708	1,840	1,090	2,700	1,720	1,890	1,250
8	7,300	2,500	2,360	1,580	7,180	744	2,420	1,140	3,300	1,730	1,760	1,160
9	3,440	3,000	2,230	1,490	*3,630	776	5,130	1,080	4,190	1,900	1,570	1,080
10	3,240	4,000	1,930	1,370	2,610	990	3,580	1,090	4,580	2,190	1,500	1,040
11	5,570	3,400	1,740	*1,330	2,160	1,000	2,640	1,300	4,240	2,190	1,510	966
12	*3,510	3,500	3,400	1,260	1,960	1,140	3,180	1,680	3,700	2,390	1,420	876
13	2,530	4,000	3,080	1,550	1,900	990	2,980	1,420	2,940	2,540	1,290	1,280
14	2,080	6,000	4,620	1,310	1,730	903	2,380	1,250	2,450	2,700	1,240	1,620
15	2,000	8,600	4,470	1,270	1,600	844	2,040	1,250	2,070	2,650	1,210	1,400
16	1,850	11,000	2,920	1,330	1,470	*804	1,970	1,360	1,870	3,220	1,200	1,080
17	2,030	15,000	2,500	1,330	1,340	776	1,770	1,560	1,760	2,730	1,190	890
18	1,650	*18,000	2,260	1,210	1,240	768	1,580	1,970	1,850	2,380	1,250	780
19	3,800	*15,800	1,980	1,120	1,160	748	1,450	2,850	1,820	2,160	1,320	736
20	4,740	8,720	2,000	1,080	1,100	724	1,330	2,710	1,870	1,990	1,340	728
21	3,740	7,520	2,680	1,010	1,040	992	1,250	2,100	2,350	1,940	1,200	672
22	3,000	6,690	2,500	1,080	985	1,710	1,260	1,760	2,730	1,980	1,140	628
23	2,400	4,750	2,680	2,040	962	1,300	1,390	1,530	2,940	2,020	1,080	600
24	2,000	3,750	3,800	2,010	1,020	1,120	1,280	1,430	2,610	1,990	*1,020	582
25	1,800	7,200	2,710	2,100	934	1,070	1,160	1,530	2,240	1,760	975	572
26	1,650	9,400	2,170	1,690	880	1,080	*1,080	1,640	2,350	1,980	934	579
27	1,500	7,260	1,880	1,480	840	1,150	1,020	1,540	2,490	*2,350	916	656
28	1,400	4,740	2,140	1,360	926	1,340	962	1,390	2,360	1,990	930	632
29	1,350	3,570	2,510	1,270	-	1,930	930	1,840	2,490	2,380	990	593
30	1,250	*2,870	4,540	1,220	------	1,900	912	2,350	2,680	2,340	1,090	565
31	1,200	-----	5,780	1,750	-----	3,740	-----	1,890	------	2,450	1,060	------
Total	72,518	177,370	88,630	50,790	53,057	33,915	61,544	46,432	76,900	67,990	43,725	27,895
Mean	2,339	5,912	2,859	1,638	1,895	1,094	2,051	1,498	2,563	2,193	1,410	930
Cfsm	11.2	28.4	13.7	7.88	9.11	5.26	9.86	7.20	12.3	10.5	6.78	4.47
In.	12.97	31.71	15.85	9.08	9.49	6.06	11.00	8.30	13.75	12.16	7.82	4.99
Ac-ft	143,800	351,800	175,800	100,700	105,200	67,270	122,100	92,100	152,500	134,900	86,730	55,330

Calendar year 1954: Max 18,000 Min 644 Mean 2,606 Cfsm 12.5 In. 170.04 Ac-ft 1,886,000
Water year 1954-55: Max 18,000 Min 565 Mean 2,194 Cfsm 10.5 In. 143.18 Ac-ft 1,588,000

Peak discharge (base, 10,000 cfs).--Oct. 8 (12:30 a.m.) 10,000 cfs (9.50 ft); Nov. 18 (time unknown) 25,800 cfs (16.57 ft); Nov. 26 (9 p.m.) 10,700 cfs (9.83 ft); Feb. 7 (9:30 p.m.) 12,800 cfs (10.91 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 22 to Nov. 18; discharge estimated on basis of high-water mark and records for stations on nearby streams.

Soleduck River near Fairholm, Wash.

Location.--Lat 48°02'40", long 123°57'35", in lot 4, SW¼ sec. 35, T. 30 N., R. 10 W., on right bank 300 ft downstream from South Fork, 2.5 miles southwest of Fairholm, and 17 miles east of Beaver.

Drainage area.--83.8 sq mi.

Records available.--October 1917 to September 1921, October 1933 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,060 ft (from topographic map). October 1917 to September 1921, water-stage recorder and Oct. 4 to Nov. 4, 1933, staff gage, at same site at datum 1.2 ft higher.

Average discharge.--26 years, 618 cfs (447,400 acre-ft per year).

Extremes.--Maximum discharge during year, 10,800 cfs Nov. 18 (gage height, 10.57 ft); minimum, 101 cfs Sept. 25, 26, 30 (gage height, 1.18 ft).
1917-21, 1933-55: Maximum discharge, 23,500 cfs Nov. 26, 1949 (gage height, 16.42 ft, from high-water mark in well), from rating curve extended above 13,000 cfs on basis of slope-area determination of peak flow; minimum, 51 cfs Sept. 11, 12, 1944; minimum gage height, 0.79 ft Oct. 17-20, 1952.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1182: 1918-19, 1920(M), 1921, 1934-39, 1940(M), 1941-42, 1943(M), 1944-46, 1947-48(M). WSP 1216: Drainage area. WSP 1286: 1939, 1949.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 17

1.2	121	2.1	333
1.4	155	2.5	465
1.7	221		

Note.--Same as following table above 2.5 ft.

Nov. 18 to Sept. 30

1.1	90	2.5	465	5.0	2,440
1.3	120	3.0	695	6.0	3,670
1.6	180	3.5	1,000	7.0	5,100
2.0	288	4.0	1,410	8.0	6,670

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	139	286	864	1,290	620	270	1,400	288	*635	828	625	169
2	135	271	768	965	528	261	876	294	655	670	465	169
3	134	260	690	798	481	250	655	301	756	665	405	167
4	129	308	675	700	501	230	541	327	930	706	386	158
5	126	1,460	1,470	620	477	220	477	361	1,030	660	379	162
6	123	876	1,330	550	756	225	505	390	1,010	635	379	158
7	*443	582	993	523	3,060	217	675	416	1,130	590	386	150
8	1,200	501	840	572	*2,830	222	1,860	450	1,440	590	368	146
9	550	550	780	541	1,280	220	2,190	427	1,800	630	330	146
10	620	762	685	*501	906	250	1,340	454	1,890	665	314	138
11	1,350	610	630	465	739	241	979	625	1,600	680	314	133
12	882	665	1,270	454	670	250	1,040	810	1,380	728	301	127
13	600	717	1,150	546	650	230	924	635	1,090	739	279	150
14	489	2,240	1,640	469	600	214	739	541	900	792	267	178
15	462	2,350	1,660	450	554	204	620	559	762	762	258	182
16	403	2,210	1,070	450	505	*197	568	630	685	979	255	156
17	370	3,430	937	438	469	190	a530	739	665	706	252	134
18	333	*6,280	888	405	435	187	a495	951	706	615	252	125
19	894	5,020	798	379	408	180	a440	1,360	690	564	255	122
20	1,360	2,840	792	361	383	176	a430	1,110	712	523	255	118
21	1,120	2,500	986	340	358	302	a410	852	906	541	233	114
22	768	2,410	888	405	337	358	a390	712	1,010	559	225	110
23	600	1,590	993	834	327	291	a370	615	1,050	550	*217	107
24	505	1,210	1,310	756	327	264	a360	568	894	528	209	104
25	451	2,530	972	728	304	252	*337	610	768	469	197	103
26	410	3,700	786	600	285	247	323	655	858	*481	192	103
27	377	2,670	680	528	273	264	310	620	840	489	185	109
28	348	1,660	744	485	282	320	294	568	846	446	182	110
29	324	1,250	852	469	-	469	288	810	876	332	180	107
30	309	1,010	1,510	461	------	489	285	924	858	510	180	103
31	300	-----	2,000	625	-----	1,770	-----	717	------	514	176	------
Total	16,254	52,748	31,651	17,708	19,345	9,460	20,651	19,319	29,372	19,346	8,901	4,058
Mean	524	1,758	1,021	571	691	305	688	623	979	624	287	135
Cfsm	6.25	21.0	12.2	6.81	8.25	3.64	8.21	7.43	11.7	7.45	3.42	1.61
In.	7.21	23.41	14.05	7.86	8.59	4.20	9.16	8.57	13.04	8.59	3.95	1.80
Ac-ft	32,240	104,600	62,780	35,120	38,370	18,760	40,960	38,320	58,260	38,370	17,650	8,050

Calendar year 1954: Max 6,280 Min 123 Mean 804 Cfsm 9.59 In. 130.21 Ac-ft 582,000
Water year 1954-55: Max 6,280 Min 103 Mean 682 Cfsm 8.14 In. 110.43 Ac-ft 493,500

Peak discharge (base, 6,000 cfs).--Nov. 18 (2:30 a.m.) 10,800 cfs (10.57 ft); Feb. 7 (9 p.m.) 6,030 cfs (7.60 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.

Lake Mills at Glines Canyon, near Port Angeles, Wash.

Location.--Lat 48°00'05", long 123°36'00", on Elwha River, in SE¼ sec. 17, T. 29 N., R. 7 W., at Glines Canyon Dam 2 miles upstream from Griff Creek, 4 miles south of Elwha, and 11 miles southwest of Port Angeles.

Drainage area.--245 sq mi.

Records available.--April 1927 to September 1955. Prior to October 1950, monthly change in contents published with records for Elwha River at McDonald Bridge, near Port Angeles.

Gage.--Staff gage read twice daily. Datum of gage is 19.67 ft below mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum contents observed during year, 39,170 acre-ft Nov. 30, Dec. 1, Apr. 9 (gage height, 611.2 ft); minimum observed, 34,120 acre-ft May 3, 4 (gage height, 599.2 ft).

1927-55: Maximum contents observed, 39,940 acre-ft Dec. 22, 1936 (gage height, 613.0 ft); minimum observed (since reservoir first filled in May 1927), 24,290 acre-ft Nov. 14, 1929 (gage height, 574.4 ft).

Remarks.--Reservoir is formed by concrete dam, completed in 1927; storage began Apr. 1, 1927. Total capacity, 37,790 acre-ft at gage height 608 ft (top of gates). Figures given herein represent total contents. Water is used for power by Crown Zellerbach Corp.

Cooperation.--Gage heights furnished by Crown Zellerbach Corp.

Month-end gage height and contents, water year October 1954 to September 1955

Date	Gage height (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	606.1	36,990	-
Oct. 31	607.2	37,450	+460
Nov. 30	611.2	39,170	+1,720
Dec. 31	608.8	38,130	-1,040
Calendar year 1954	-	-	-180
Jan. 31	608.1	37,830	-300
Feb. 28	606.7	37,240	-590
Mar. 31	604.1	36,150	-1,090
Apr. 30	599.4	34,200	-1,950
May 31	609.3	38,350	+4,150
June 30	608.8	38,130	-220
July 31	610.5	38,860	+730
Aug. 31	607.9	37,750	-1,110
Sept.30	604.2	36,190	-1,560
Water year 1954-55	-	-	-800

† Gage height at 12 p.m. based on twice-daily staff-gage readings.

Elwha River at McDonald Bridge, near Port Angeles, Wash.

Location.--Lat 48°03'20", long 123°34'55", in NE¼NW¼ sec. 33, T. 30 N., R. 7 W., on right bank 300 ft upstream from site of McDonald Bridge (now removed), half a mile upstream from Little River, 7 miles upstream from mouth, and 8 miles southwest of Port Angeles.
Drainage area.--269 sq mi.
Records available.--October 1897 to December 1901, October 1918 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 200.00 ft above mean sea level, datum of 1929. Oct. 1, 1897, to Dec. 31, 1901, wire-weight gage at McDonald Bridge at different datum. Dec. 9, 1918, to May 1, 1936, water-stage recorder under McDonald Bridge at datum 7.4 ft higher.
Average discharge.--41 years, 1,469 cfs (1,064,000 acre-ft per year), adjusted for storage since April 1927.
Extremes.--Maximum discharge during year, 14,300 cfs Nov. 18 (gage height, 17.90 ft); minimum, 370 cfs Sept. 23 (gage height, 8.46 ft); minimum daily, 500 cfs Sept. 28-30. 1897-1901, 1918-55: Maximum discharge, 41,600 cfs Nov. 18, 1897 (gage height, 14.5 ft, from graph based on gage readings, site and datum then in use), from rating curve extended above 3,300 cfs on basis of 2 recent determinations of peak flow over dam referred to 1897 datum; minimum daily, 10 cfs Oct. 3, 1938.
Remarks.--Records excellent. Water is diverted through Glines Canyon powerhouse and returned to river above gage. Flow partly regulated by Lake Mills (see preceding page).
Revisions (water years).--WSP 1246: Drainage area. WSP 1286: 1898, 1899(M), 1900-1902, 1919, 1920-31(M), 1932, 1933(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 17				Nov. 18 to Sept. 30			
8.6	540	11.0	2,680	8.7	500	11.0	2,570
9.0	780	12.0	3,920	9.0	680	12.0	3,840
9.5	1,160	13.0	5,280	9.5	1,050	14.0	6,760
10.0	1,600			10.0	1,500	16.5	11,300

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	638	871	2,350	2,100	1,090	750	1,070	722	1,780	2,210	1,820	799
2	638	871	2,150	1,770	918	764	1,080	722	1,780	1,960	1,720	799
3	638	871	2,010	1,800	858	736	1,260	715	2,020	2,210	1,430	799
4	638	878	1,960	1,500	918	680	1,210	715	2,550	1,610	1,320	820
5	596	2,080	3,220	1,380	902	654	1,130	757	3,320	1,790	1,360	555
6	580	1,820	2,740	1,370	970	628	1,050	858	3,300	1,970	1,360	764
7	*794	1,600	2,250	1,260	2,810	622	1,070	918	3,280	1,860	1,490	940
8	2,100	1,280	1,970	1,190	*4,760	622	1,180	918	3,670	1,800	1,510	910
9	1,850	1,400	1,960	1,100	2,560	622	2,420	865	4,430	1,990	1,300	850
10	1,450	1,700	1,850	1,130	1,400	634	2,220	955	5,650	2,050	1,230	820
11	2,500	1,630	1,660	955	1,410	628	1,700	1,180	5,660	2,380	1,210	792
12	1,580	1,520	2,360	955	1,400	654	1,930	1,190	4,890	2,560	1,230	722
13	1,540	1,620	1,660	1,090	1,370	654	1,450	1,180	3,740	2,530	1,190	757
14	1,330	4,160	2,400	1,040	1,250	628	1,310	1,220	3,170	2,790	1,110	970
15	1,260	4,920	2,260	1,010	1,130	*591	1,300	1,210	3,150	2,610	1,070	902
16	1,250	4,850	1,850	1,100	1,110	567	1,280	1,360	2,750	3,010	1,030	813
17	1,240	*5,030	1,880	1,020	1,030	561	1,240	1,290	2,350	2,750	970	743
18	1,240	10,700	1,790	1,010	1,000	555	1,220	1,120	2,340	2,320	*1,010	634
19	1,690	10,100	1,760	948	948	550	1,200	2,510	2,630	*2,140	1,030	615
20	2,680	6,420	1,740	842	910	538	1,190	3,260	2,550	2,080	1,070	615
21	2,030	6,130	2,160	850	888	544	*1,180	2,630	2,650	1,890	1,100	573
22	1,770	5,060	2,350	910	858	573	1,180	2,100	3,340	1,970	1,070	550
23	1,600	3,520	2,320	994	842	715	1,110	1,750	3,910	2,080	970	544
24	1,370	3,310	2,310	1,060	813	680	1,070	1,490	3,080	2,130	918	544
25	1,300	5,540	2,030	1,020	806	701	858	1,880	2,450	1,830	902	538
26	1,240	5,480	1,570	910	806	667	764	2,000	2,340	1,720	872	506
27	1,110	4,680	1,510	925	785	654	722	1,800	2,980	1,980	872	506
28	1,030	3,600	*1,510	940	722	764	722	1,690	2,930	1,710	835	500
29	1,020	2,930	1,620	910	-	729	722	2,030	2,670	1,870	813	500
30	928	2,230	2,120	872	-------	778	715	2,190	2,420	1,870	806	500
31	878	-------	2,590	872	-------	842		*1,800	-------	1,750	799	-------
Total	40,508	106,801	63,910	34,833	35,264	20,285	36,553	45,025	93,780	65,420	35,417	20,880
Mean	1,307	3,560	2,062	1,124	1,259	654	1,218	1,452	3,126	2,110	1,142	696
Ac-ft	80,350	211,800	126,800	69,090	69,950	40,230	72,500	89,310	186,000	129,800	70,250	41,410
(†)	+460	+1,720	-1,040	-300	-590	-1,090	-1,950	+4,150	-220	+730	-1,110	-1,560

Adjusted for change in contents in Lake Mills

Mean	1,314	3,588	2,046	1,119	1,249	637	1,186	1,520	3,122	2,122	1,124	670
Cfsm	4.88	13.3	7.61	4.16	4.64	2.37	4.41	5.65	11.6	7.89	4.18	2.49
In.	5.63	14.88	8.77	4.79	4.85	2.73	4.92	6.51	12.95	9.10	4.82	2.78
Ac-ft	80,810	213,500	125,800	68,790	69,360	39,140	70,550	93,460	185,800	130,500	69,140	39,850

Observed

Calendar year 1954: Max 10,700 Min 545 Mean 2,067 Ac-ft 1,497,000
Water year 1954-55: Max 10,700 Min 500 Mean 1,640 Ac-ft 1,187,000

Adjusted

Calendar year 1954: Mean 2,067 Cfsm 7.68 In. 104.31 Ac-ft 1,496,000
Water year 1954-55: Mean 1,639 Cfsm 6.09 In. 82.71 Ac-ft 1,187,000

* Discharge measurement made on this day.
† Change in contents in Lake Mills, in acre-feet; furnished by Crown Zellerbach Corp.

Siebert Creek near Port Angeles, Wash.

Location.--Lat 48°05'35", long 123°17'00", in SE¼ sec. 14, T. 30 N., R. 5 W., on left bank 2¼ miles upstream from mouth and 6½ miles east of Port Angeles.

Drainage area.--17.2 sq mi.

Records available.--June 1952 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 225 ft (from topographic map).

Extremes.--Maximum discharge during year, 480 cfs Feb. 7 (gage height, 4.23 ft), from rating curve extended above 260 cfs on basis of computations of peak flow through culvert at gage heights 4.23 and 8.12 ft; minimum daily, 3.6 cfs Sept. 4-7, 22-30.
1952-55: Maximum discharge, 1,400 cfs Jan. 5, 1954 (gage height, 8.12 ft), from rating curve extended as explained above; minimum, 2.0 cfs Sept. 3-5, 1952; minimum gage height, 1.38 ft Aug. 14-19, Sept. 5-7, 9-12, 14-26, 1953.

Remarks.--Records good except those for periods of ice effect or doubtful or no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 1346: 1953(M).

Rating tables, water year 1954-55, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
2.3	3.1	2.7	35	2.3	2.8	2.8	45
2.4	7.2	2.9	67	2.4	6.0	3.0	84
2.5	14	3.1	108	2.5	11.5	3.3	158
2.6	23	3.3	158	2.6	19.5	3.7	285

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.3	6.2	25	34	12	13.5	63	13	9.7	37	8.0	3.8
2	5.3	6.2	21	30	11.5	12	56	12	10.5	27	7.5	3.8
3	4.8	6.2	19	26	*11	b11	42	13.5	11	26	7.0	3.8
4	4.8	6.2	14.5	23	10	b10	33	17	12	29	6.5	3.6
5	4.8	7.2	14	22	9.4	b10	28	17	13	45	6.0	3.6
6	4.8	8.2	25	19.5	10	b10.5	30	16	13	54	5.6	3.6
7	6.2	7.2	22	19	104	10.5	45	16	12	36	5.6	3.6
8	*23	6.6	20	21	267	12	56	15	11.5	28	5.2	3.8
9	14.5	6.6	19	25	127	16	67	13.5	11.5	25	5.2	3.8
10	11.5	11	17	24	76	*20	56	13	11.5	22	4.8	3.8
11	19	10	d16	22	54	20	40	15	11	17.5	4.8	3.8
12	17	8.8	d15	19.5	42	24	39	19.5	11	16	4.8	3.8
13	13	8.2	d14	19	34	22	39	22	10.5	13.5	4.8	3.8
14	11	17	29	18	30	20	33	20	10.5	11.5	4.5	3.8
15	9.4	30	69	17	29	17.5	28	19.5	10.5	10.5	4.5	3.8
16	8.2	*38	46	17	26	17	25	18.5	9.7	11.5	4.5	3.8
17	7.6	46	34	15.5	22	17	22	17.5	9.7	12	4.5	3.8
18	7.2	114	26	14.5	a20	18.5	20	17.5	9.7	10.5	*4.5	3.8
19	14	113	23	14.5	a19	17.5	19.5	18.5	9.1	9.7	4.5	3.8
20	21	78	21	14	a17.5	17	18.5	17	9.1	*9.1	4.5	3.8
21	25	50	19	d13	a16	16	20	14.5	8.5	8.5	4.2	3.8
22	19	41	17	d12	a15	26	*22	13	8.5	8.0	4.2	3.6
23	15.5	34	23	d13	14.5	22	22	12	13	7.5	4.2	3.6
24	12	27	137	13	15	20	20	11.5	17	7.5	4.2	3.6
25	11	56	106	12	14.5	18.5	19.5	12	13	7.5	4.2	3.6
26	9.4	101	67	11.5	13.5	17.5	17.5	*11.5	15	8.0	4.2	3.6
27	8.8	106	48	d11	12	19.5	17	11.5	22	8.0	4.2	3.6
28	7.6	64	40	d10	13.5	24	15	11	54	7.5	3.8	3.6
29	7.2	44	*32	9.4	-	30	13.5	11	42	8.5	3.8	*3.6
30	7.2	32	31	8.8	------	32	13	11.5	34	8.5	3.8	3.6
31	6.6	------	36	11	------	32	------	10.5	------	8.0	3.8	------
Total	341.7	1,089.6	1,045.5	539.2	1,045.5	573.5	939.5	461.0	443.5	538.3	151.9	111.4
Mean	11.0	36.3	33.7	17.4	37.3	18.5	31.3	14.9	14.8	17.4	4.90	3.71
Cfsm	0.640	2.11	1.96	1.01	2.17	1.08	1.82	0.866	0.860	1.01	0.285	0.216
In.	0.74	2.36	2.26	1.17	2.26	1.24	2.03	1.00	0.96	1.16	0.33	0.24
Ac-ft	678	2,160	2,070	1,070	2,070	1,140	1,860	914	880	1,070	301	221

Calendar year 1954: Max 660 Min 3.8 Mean 38.3 Cfsm 2.23 In. 30.25 Ac-ft 27,750
Water year 1954-55: Max 267 Min 3.6 Mean 19.9 Cfsm 1.16 In. 15.75 Ac-ft 14,430

Peak discharge (base, 300 cfs).--Feb. 7 (11:30 p.m.) 480 cfs (4.23 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge estimated as for footnote "a".

Dungeness River near Sequim, Wash.

Location.--Lat 48°00'55", long 123°07'50", in SW¼SE¼ sec. 12, T. 29 N., R. 4 W., on right bank three-quarters of a mile upstream from Canyon Creek, 4½ miles southwest of Sequim, and 11½ miles upstream from mouth.

Drainage area.--156 sq mi.

Records available.--June 1923 to September 1930, June 1937 to September 1955. July 1897 to July 1898 at site below Canyon Creek, published as "near Sequim," records not equivalent.

Gage.--Water-stage recorder. Datum of gage is 569.3 ft above mean sea level (from river-profile map). June 8, 1923, to Sept. 30, 1930, staff gage just above fish-hatchery diversion half a mile downstream at different datum. June 19 to Aug. 12, 1937, staff gage at present site and datum.

Average discharge.--25 years (1923-30, 1937-55), 360 cfs (260,600 acre-ft per year).

Extremes.--Maximum discharge during year, 3,570 cfs Nov. 18 (gage height, 6.18 ft), from rating curve extended above 2,000 cfs on basis of slope-area determination at gage height 7.3 ft; minimum, 144 cfs Mar. 5, 20 (gage height, 2.88 ft).
1923-30, 1937-55: Maximum discharge, 6,820 cfs Nov. 27, 1949 (gage height, 7.3 ft), from rating curve extended above 2,000 cfs on basis of slope-area determination of peak flow; minimum observed, 77 cfs Sept. 10, 1928.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1316: 1924-25(M), 1927(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.8	126	4.5	970
3.0	173	5.0	1,490
3.3	263	5.5	2,220
3.6	383	6.0	3,170
4.0	595		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	227	293	547	397	209	181	316	181	491	714	559	260
2	221	285	515	374	197	173	282	184	535	657	486	263
3	215	274	491	353	195	168	246	186	644	651	430	274
4	212	*270	465	340	*195	158	224	200	834	686	402	260
5	209	545	602	320	192	166	215	215	1,050	728	397	263
6	*203	547	679	304	197	173	240	243	1,060	707	411	274
7	450	416	565	296	497	166	316	267	1,030	651	435	270
8	906	402	508	293	1,010	168	392	270	1,120	644	435	267
9	541	486	470	285	530	166	553	270	1,360	672	397	253
10	435	553	435	270	388	*163	475	304	1,520	693	379	240
11	637	475	416	267	332	160	388	357	1,560	714	383	237
12	496	535	445	260	296	163	353	416	1,330	765	383	224
13	421	513	425	260	270	160	316	383	1,050	780	353	250
14	397	1,130	445	250	256	153	282	357	874	810	336	263
15	425	1,160	486	246	240	148	263	362	758	810	332	240
16	421	1,060	435	243	233	148	246	416	679	866	332	221
17	416	1,040	411	240	224	148	233	513	630	750	336	200
18	374	2,440	402	237	209	148	227	693	658	651	340	192
19	700	2,320	383	227	209	148	218	1,130	693	616	*349	186
20	758	1,580	416	224	206	146	212	1,120	693	*577	357	184
21	735	1,390	470	218	200	150	*212	788	788	571	324	178
22	589	1,490	508	218	197	170	209	644	898	583	300	170
23	491	970	513	224	192	163	206	565	1,040	602	293	166
24	430	772	547	218	195	153	203	524	866	595	289	166
25	402	1,120	486	215	186	153	197	547	758	530	274	160
26	374	988	435	209	181	148	197	*535	818	535	263	160
27	357	906	402	206	176	153	184	486	946	541	256	160
28	336	758	397	203	181	176	181	460	988	486	256	160
29	316	672	*388	206	-	224	181	583	938	541	256	*158
30	304	602	406	206	------	221	178	658	780	565	263	153
31	296	-----	430	212	-----	221	-----	541	------	541	267	-----
Total	13,294	25,992	14,521	8,021	7,593	5,136	7,945	14,398	27,389	20,212	10,873	6,452
Mean	429	866	468	259	271	166	265	464	913	652	351	215
Cfsm	2.75	5.55	3.00	1.66	1.74	1.06	1.70	2.97	5.85	4.18	2.25	1.38
In.	3.17	6.20	3.46	1.91	1.81	1.22	1.89	3.43	6.53	4.82	2.59	1.53
Ac-ft	26,370	51,550	28,800	15,910	15,060	10,190	15,760	28,560	54,330	40,090	21,570	12,800

Calendar year 1954: Max 2,440 Min 203 Mean 571 Cfsm 3.66 In. 49.72 Ac-ft 413,600
Water year 1954-55: Max 2,440 Min 146 Mean 443 Cfsm 2.84 In. 38.57 Ac-ft 321,000

Peak discharge (base, 1,700 cfs).--Nov. 18 (4 a.m.) 3,570 cfs (6.18 ft).
* Discharge measurement made on this day.

Snow Creek near Maynard, Wash.

Location.--Lat 47°56'30", long 122°53'05", in SE¼ sec. 2, T. 28 N., R. 2 W., on left bank 600 ft upstream from Andrews Creek and 3¼ miles south of Maynard.

Drainage area.--13.2 sq mi.

Records available.--May 1952 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 180 ft (from topographic map).

Extremes.--Maximum discharge during year, 129 cfs Dec. 6 (gage height, 2.61 ft); minimum, 2.9 cfs Sept. 24, 25, 26 (gage height, 1.53 ft).
1952-55: Maximum discharge not determined, probably occurred during period of doubtful gage-height record Feb. 13-21, 1954; minimum, 1.6 cfs Oct. 20, 1952; minimum gage height, 1.22 ft Sept. 18, 19, Oct. 16-20, 1952.

Remarks.--Records good. Some small diversion for irrigation. No regulation.

Rating table, water year 1954-55, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.5	2.7	2.0	31
1.6	5.4	2.1	42
1.7	9.5	2.3	70
1.8	15	2.5	106
1.9	22		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.1	6.1	17	27	14	12	48	18.5	27	75	11.5	4.2
2	5.1	6.1	15.5	25	13.5	11.5	50	17.5	25	48	10.5	3.9
3	5.1	6.1	15	23	*12.5	b11	41	18.5	24	38	9.5	3.6
4	4.8	6.1	14.5	22	12.5	b10.5	34	19	23	38	9.0	3.6
5	4.5	*6.1	52	19.5	12.5	b10	31	18.5	24	38	8.2	3.6
6	4.5	6.8	98	19	12.5	b10	32	18.5	22	36	7.2	3.6
7	6.1	6.4	64	17.5	20	b10.5	36	18.5	19.5	30	6.8	3.6
8	*8.2	6.8	46	17.5	51	11	40	19	17.5	30	6.8	3.9
9	6.1	9.0	35	18.5	36	12	42	17.5	16.5	23	6.8	4.2
10	5.8	11.5	30	17	29	12.5	41	17	14.5	19	6.1	4.2
11	9.0	9.5	25	16.5	24	*13.5	35	19.5	12.5	17	6.1	4.2
12	7.2	11.5	23	15.5	23	14.5	43	34	12	17	6.1	4.2
13	6.4	12	21	16.5	22	14.5	41	36	11.5	14.5	5.8	4.2
14	6.1	35	20	15.5	21	14.5	35	32	11.5	12	5.4	5.1
15	5.8	40	29	16.5	21	14.5	31	31	11.5	11.5	5.1	5.4
16	5.4	66	24	16.5	19.5	14	29	30	11	11.5	5.4	4.5
17	5.1	52	21	15.5	19	14.5	27	29	11	11.5	*5.4	4.2
18	5.1	52	19	15	17	14.5	26	28	10.5	10.5	5.1	3.9
19	11.5	100	17.5	14.5	16.5	14.5	26	29	10.5	10	4.8	3.6
20	14.5	75	17	14	15.5	14	*25	26	9.5	9.5	4.8	3.6
21	15	48	16.5	13.5	15	14	24	22	8.6	*9.0	4.8	3.9
22	12	34	15	13.5	14.5	17	25	19	8.6	9.0	4.5	3.4
23	11	31	19.5	14.5	14	15.5	33	19.5	25	8.6	4.5	3.4
24	10	25	35	15.5	14	14.5	33	17	40	8.6	4.8	3.1
25	9.0	23	31	15	13.5	14.5	29	18.5	27	9.0	4.8	3.1
26	8.2	23	24	14.5	12.5	14.5	26	27	28	11.5	4.8	3.1
27	7.7	24	*22	14	12.5	15.5	23	*31	41	12.5	4.5	3.6
28	7.2	20	23	13.5	12	18.5	20	27	68	10.5	4.2	*4.2
29	6.8	19.5	24	12.5	-	32	19	26	73	11.5	3.9	3.9
30	6.4	18.5	24	12.5	------	30	18.5	35	77	13.5	4.2	3.6
31	6.1	-----	29	12.5	-----	29	-----	32	-----	12	4.2	-----
Total	230.8	790.0	866.5	513.5	520.0	469.0	963.5	751.0	720.7	615.7	185.6	116.6
Mean	7.45	26.3	28.0	16.6	18.6	15.1	32.1	24.2	24.0	19.9	5.99	3.89
Cfsm	0.564	1.99	2.12	1.26	1.41	1.14	2.43	1.83	1.82	1.51	0.454	0.295
In.	0.65	2.23	2.44	1.45	1.47	1.32	2.71	2.12	2.03	1.73	0.52	0.33
Ac-ft	458	1,570	1,720	1,020	1,030	930	1,910	1,490	1,430	1,220	368	231

Calendar year 1954: Max 250 Min 3.4 Mean 21.8 Cfsm 1.65 In. 22.40 Ac-ft 15,770
Water year 1954-55: Max 100 Min 3.1 Mean 18.5 Cfsm 1.40 In. 19.00 Ac-ft 13,380

Peak discharge (base, 100 cfs).--Nov. 19 (10:30 a.m.) 125 cfs (2.59 ft); Dec. 6 (2 a.m.) 129 cfs (2.61 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Chimacum Creek near Chimacum, Wash.

Location.--Lat 47°58'25", long 122°46'35", in SW¼ sec. 26, T. 29 N., R. 1 W., on right bank 100 ft downstream from culvert, 3 miles south of Chimacum, and 3¼ miles upstream from East Fork.

Drainage area.--12.6 sq mi.

Records available.--June 1952 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 140 ft (from topographic map).

Extremes.--Maximum discharge during year, 125 cfs Apr. 12 (gage height, 4.23 ft); minimum, 0.8 cfs Nov. 15, Sept. 5; minimum gage height, 1.13 ft Sept. 5.
1952-55: Maximum discharge, 213 cfs Feb. 13, 1954 (gage height, 5.54 ft); minimum, 0.2 cfs Aug. 2, 1953 (gage height, 1.11 ft).

Remarks.--Records fair. Some regulation and diversions during summer months for irrigation.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18		Nov. 19 to Sept. 30			
1.4	2.8	1.2	1.4	2.0	22
1.6	7.0	1.3	2.7	2.5	40
1.9	16	1.4	4.6	3.0	61
2.3	30	1.6	9.4	3.5	84

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.2	4.8	11.5	27	12.5	22	29	10.5	16	31	4.9	3.0
2	4.4	5.1	10.5	24	11.5	20	36	10	13.5	21	4.2	3.0
3	4.4	5.1	10.5	19	11	16.5	26	10	13	18.5	4.0	2.9
4	4.4	5.1	10.5	20	*10.5	13.5	20	9.7	13	22	3.8	2.5
5	4.8	*5.3	43	19	11.5	10	17	8.9	13	17.5	3.6	2.2
6	4.6	6.0	70	16.5	10.5	12	15	8.5	11.5	13.5	3.6	2.9
7	5.3	5.6	37	16	15	13.5	13	8.2	9.4	11.5	3.6	3.0
8	*5.6	6.3	24	18	40	20	12.5	7.9	8.2	10.5	3.8	3.2
9	5.3	7.6	21	19	30	18	12	7.6	7.4	11.5	3.8	3.4
10	5.3	7.6	18	16	22	21	12	7.4	6.4	10.5	3.4	3.4
11	6.8	6.8	15.5	15	20	*22	11.5	8.2	6.2	9.2	3.4	3.4
12	5.8	11.5	15	15	18	44	72	17.5	6.2	8.2	3.4	3.6
13	5.3	11	14	18	16.5	35	54	19	6.2	6.9	3.4	4.0
14	5.1	25	17	17.5	16.5	34	46	18.5	6.2	6.2	3.2	4.2
15	5.1	22	35	29	16.5	30	36	13.5	6.2	5.5	3.0	4.0
16	4.8	28	21	30	15	25	38	11.5	5.8	6.2	3.2	4.2
17	4.6	24	17	25	14.5	22	26	9.9	6.0	5.8	3.2	4.2
18	4.6	27	15	22	13	19	22	9.2	6.2	5.3	3.2	3.8
19	6.5	70	14	18	12	17	21	8.6	6.2	4.9	*3.2	4.0
20	6.5	34	13.5	16	12	15.5	17.5	7.9	5.5	4.6	3.2	4.2
21	6.0	22	12.5	17.5	11.5	15	16	7.6	5.1	*4.2	3.0	4.2
22	5.8	19.5	12	15	11.5	15	*18	7.4	5.5	4.0	3.0	4.2
23	5.3	16	28	17.5	10.5	13	23	7.2	14	3.6	3.0	4.0
24	5.3	14.5	61	17	11.5	12	29	6.7	14.5	3.8	2.9	3.6
25	5.3	14.5	36	15.5	11.5	13.5	22	7.4	9.7	4.2	3.2	3.6
26	5.1	14.5	25	14.5	12	15.5	17.5	12.5	10.5	5.3	3.2	4.5
27	5.1	14.5	*20	14	11	14.5	15	*17.5	11	5.3	3.2	4.2
28	5.1	13.5	18	13.5	22	14.5	13.5	12	19	4.9	3.2	5.1
29	5.1	14	34	13	-	25	12	12	22	4.9	3.0	4.4
30	5.1	13	29	13	------	18	11	26	26	6.0	3.0	4.4
31	5.1	-----	25	13	-----	16	------	22	------	5.5	3.2	------
Total	161.7	473.8	733.5	563.5	430.0	602.0	713.5	350.7	309.4	282.0	105.0	111.3
Mean	5.22	15.8	23.7	18.2	15.4	19.4	23.8	11.3	10.3	9.10	3.39	3.71
Cfsm	0.414	1.25	1.88	1.44	1.22	1.54	1.89	0.897	0.817	0.722	0.269	0.294
In.	0.48	1.40	2.16	1.66	1.27	1.78	2.11	1.04	0.91	0.83	0.31	0.33
Ac-ft	321	940	1,450	1,120	853	1,190	1,420	696	614	559	208	221

Calendar year 1954: Max 205 Min 2.8 Mean 17.7 Cfsm 1.40 In. 19.02 Ac-ft 12,780
Water year 1954-55: Max 72 Min 2.2 Mean 13.3 Cfsm 1.06 In. 14.28 Ac-ft 9,590

Peak discharge (base, 90 cfs).--Nov. 19 (8 a.m.) 96 cfs (3.80 ft); Dec. 6 (1 a.m.) 90 cfs (3.67 ft); Apr. 12 (10 a.m.) 125 cfs (4.23 ft).
* Discharge measurement made on this day.

Little Quilcene River near Quilcene, Wash.

Location.--Lat 47°50'15", long 122°53'10", in NE¼ sec. 14, T. 27 N., R. 2 W., on left bank 60 ft downstream from bridge on U. S. Highway 101, 1¼ miles northwest of Quilcene, and 1½ miles upstream from mouth.

Drainage area.--19.6 sq mi.

Records available.--August 1926 to October 1927, July 1951 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 90 ft (from topographic map). Aug. 25, 1926, to Oct. 4, 1927, staff gage at site 120 ft upstream at different datum.

Average discharge.--5 years (1926-27, 1951-55), 52.5 cfs (38,010 acre-ft per year).

Extremes.--Maximum discharge during year, 407 cfs Nov. 19 (gage height, 3.22 ft); minimum, 13 cfs Sept. 25, 26 (gage height, 0.96 ft).
1926-27, 1951-55: Maximum discharge, 820 cfs Feb. 13, 1954 (gage height, 4.22 ft); maximum gage height, 4.40 ft Feb. 13, 1954 (backwater from debris); minimum discharge, 4.1 cfs Sept. 1, 1926 (gage height, 0.86 ft, site and datum then in use).

Remarks.--Records good. Some diversion above station for irrigation. No regulation.

Revisions (water years).--WSP 1216: Drainage area. WSP 1316: 1927(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 19				Nov. 19 to Sept. 30			
1.1	21	1.8	82	0.9	9.5	1.8	92
1.2	26	2.1	127	1.1	22	2.1	137
1.4	39	2.5	206	1.3	37	2.5	211
1.6	58	3.0	340	1.5	56	3.0	340

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	25	58	68	35	31	92	40	58	170	39	18
2	22	25	56	65	34	31	87	40	56	132	36	17.5
3	22	24	53	62	*33	28	77	42	56	109	35	17
4	22	23	52	60	33	27	69	42	57	108	33	15.5
5	22	*24	148	56	32	26	64	42	59	108	31	15.5
6	*21	24	240	54	32	27	64	42	58	98	30	15.5
7	28	23	183	52	47	27	68	42	55	88	30	17
8	33	24	121	53	102	28	71	43	55	82	30	18
9	29	30	105	52	83	*30	75	41	56	80	28	17.5
10	28	38	93	49	69	32	75	40	56	74	27	17
11	39	33	84	47	63	31	65	47	53	68	26	17
12	28	37	84	46	58	35	79	62	50	64	26	16
13	26	43	79	46	53	34	72	62	48	59	26	19.5
14	25	124	83	44	51	33	66	62	44	55	25	18
15	24	155	98	45	49	32	63	64	43	53	24	18
16	24	211	87	45	46	31	58	60	42	52	24	17.5
17	23	171	80	44	43	31	54	60	40	49	*23	16
18	22	199	74	44	40	31	52	68	39	47	23	15.5
19	44	338	71	42	39	31	50	73	39	45	23	15
20	59	229	67	41	38	31	*48	66	37	43	23	15
21	63	159	66	40	37	31	47	58	36	*42	22	15
22	48	121	*65	39	35	34	47	54	36	40	21	15
23	41	100	79	42	35	31	50	53	70	39	21	14.5
24	37	89	99	41	35	31	51	48	103	39	21	13.5
25	34	86	87	40	33	31	47	*51	79	39	21	13
26	31	79	78	39	32	30	45	64	78	42	21	13
27	30	78	72	38	31	31	42	71	98	40	20	14.5
28	28	69	68	35	32	35	42	62	139	40	19.5	*15.5
29	28	67	68	35	-	60	40	60	152	41	19	14.5
30	27	63	67	35	------	53	39	66	162	45	19	14.5
31	26	-----	69	35	-----	52	-----	62	------	41	19	------
Total	956	2,711	2,714	1,434	1,250	1,026	1,799	1,687	1,954	2,032	785.5	479.0
Mean	30.8	90.4	87.5	46.3	44.6	33.1	60.0	54.4	65.1	65.5	25.3	16.0
Cfsm	1.57	4.61	4.46	2.36	2.28	1.69	3.06	2.78	3.32	3.34	1.29	0.816
In.	1.81	5.14	5.15	2.72	2.37	1.95	3.41	3.20	3.71	3.86	1.49	0.91
Ac-ft	1,900	5,380	5,380	2,840	2,480	2,040	3,570	3,350	3,880	4,030	1,560	950

Calendar year 1954: Max 692 Min 21 Mean 69.4 Cfsm 3.54 In. 48.05 Ac-ft 50,230
Water year 1954-55: Max 338 Min 13 Mean 51.6 Cfsm 2.63 In. 35.72 Ac-ft 37,360

Peak discharge (base, 500 cfs).--No peak above base.
* Discharge measurement made on this day.

Duckabush River near Brinnon, Wash.

Location.--Lat 47°41'00", long 123°00'40", in SW¼SW¼ sec. 1, T. 25 N., R. 3 W., on left bank 4½ miles upstream from mouth and 5 miles west of Brinnon.

Drainage area.--66.5 sq mi.

Records available.--August to December 1910 (gage heights only), December 1910 to December 1911, June 1938 to September 1955. Published as "near Duckabush" 1910-11.

Gage.--Water-stage recorder. Datum of gage is 241.49 ft above mean sea level, datum of 1929. Aug. 19, 1910, to Dec. 31, 1911, staff gage at same site at different datum.

Average discharge.--17 years, 398 cfs (288,100 acre-ft per year).

Extremes.--Maximum discharge during year, 5,260 cfs Nov. 19 (gage height, 8.02 ft), from rating curve extended above 2,800 cfs on basis of slope-area determination at gage height 10.06 ft; minimum, 88 cfs Sept. 30 (gage height, 1.93 ft).
1910-11, 1938-55: Maximum discharge, 8,960 cfs Nov. 26, 1949 (gage height, 10.06 ft), from rating curve extended above 1,800 cfs on basis of slope-area determination of peak flow; minimum, 45 cfs Oct. 26, 28, 29, 1942; minimum gage height, 1.32 ft Sept. 30, 1939.

Remarks.--Records excellent. No regulation or diversion above station.

Revisions.--WSP 1216: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-7				Oct. 8 to Sept. 30					
2.0	83	3.0	395	1.9	83	3.2	500	5.0	1,770
2.2	128	3.5	640	2.1	121	3.6	710	6.0	2,750
2.5	215	4.0	950	2.4	195	4.0	960	8.0	5,230
				2.8	328	4.5	1,330		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	109	210	495	480	332	146	856	166	408	535	408	150
2	104	198	450	412	*284	141	485	173	442	475	364	153
3	100	187	416	368	257	136	344	182	510	455	321	156
4	98	*190	429	340	241	128	281	195	633	465	306	150
5	96	482	1,790	313	225	125	247	228	758	500	306	150
6	*91	384	1,480	295	251	128	257	257	734	455	310	153
7	817	324	876	281	1,010	125	332	281	794	437	317	150
8	1,230	696	650	274	1,510	*125	460	291	960	455	302	148
9	535	989	580	264	694	*125	856	271	1,140	500	274	136
10	414	1,170	505	247	485	130	622	298	1,250	530	264	134
11	688	836	455	235	392	132	455	396	1,250	540	264	130
12	480	824	622	225	340	139	455	490	1,100	595	254	123
13	356	1,090	590	235	313	139	412	388	914	655	231	231
14	310	3,210	735	222	288	134	340	336	740	694	219	231
15	298	3,140	812	219	267	130	302	336	644	655	213	222
16	264	2,480	560	225	244	128	277	396	565	694	213	222
17	274	2,090	490	225	225	123	257	485	520	550	*210	176
18	241	3,670	465	231	207	121	238	600	555	515	207	153
19	826	3,910	437	213	198	121	228	888	560	*475	216	139
20	1,120	1,910	485	204	187	117	*213	830	570	455	210	130
21	862	1,370	611	192	182	121	204	622	698	450	195	123
22	550	1,190	*606	192	173	182	198	520	794	455	184	115
23	416	862	699	260	168	163	195	460	960	460	179	109
24	352	704	800	291	166	153	184	425	722	450	173	105
25	310	1,140	600	284	158	143	176	*470	600	404	168	101
26	281	1,260	490	260	153	139	171	460	616	628	163	99
27	264	1,090	433	238	148	141	166	408	677	611	158	101
28	247	800	404	231	146	176	160	384	694	465	156	99
29	231	655	380	235	---	510	156	510	682	455	153	97
30	222	560	442	238	------	356	158	565	606	437	158	*92
31	216	-----	580	317	------	352	-----	455	------	416	158	------
Total	12,402	37,621	19,367	8,246	9,244	5,029	9,685	12,766	22,097	15,866	7,254	4,278
Mean	400	1,254	625	266	330	162	323	412	737	512	234	143
Cfsm	6.02	18.9	9.40	4.00	4.96	2.44	4.86	6.20	11.1	7.70	3.52	2.15
In.	6.94	21.04	10.83	4.61	5.17	2.81	5.42	7.14	12.36	8.87	4.06	2.39
Ac-ft	24,600	74,620	38,410	16,360	18,340	9,970	19,210	25,320	43,830	31,470	14,390	8,490

Calendar year 1954: Max 3,910 Min 91 Mean 539 Cfsm 8.11 In. 110.01 Ac-ft 390,200
Water year 1954-55: Max 3,910 Min 91 Mean 449 Cfsm 6.75 In. 91.64 Ac-ft 325,000

Peak discharge (base, 2,500 cfs).--Nov. 14 (6 p.m.) 4,190 cfs (7.23 ft); Nov. 19 (6 a.m.) 5,260 cfs (8.02 ft); Feb. 7 (11 p.m.) 2,680 cfs (5.93 ft).
* Discharge measurement made on this day.

Hamma Hamma River near Eldon, Wash.

Location.--Lat 47°35'20", long 123°07'00", in NW¼ sec. 7, T. 24 N., R. 3 W., on left bank a quarter of a mile downstream from Watson Creek, 4½ miles northwest of Eldon, and 6 miles upstream from mouth.

Drainage area.--51.3 sq mi.

Records available.--June 1951 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 510 ft (from topographic map).

Extremes.--Maximum discharge during year, 4,280 cfs Nov. 19 (gage height, 6.53 ft), from rating curve extended above 510 cfs; minimum, 77 cfs Sept. 29, 30 (gage height, 0.81 ft).

1951-55: Maximum discharge, that of Nov. 19, 1954; minimum, 42 cfs Oct. 21-23, Nov. 9, 1952; minimum gage height, 0.70 ft (from recorded range in stage) probably Sept. 23, 24, 1951.

Remarks.--Records good. No regulation or diversion above station.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 14-18)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30			
0.9	74	3.0	980	0.8	75	2.5	800
1.1	117	3.5	1,320	1.0	124	3.0	1,120
1.3	173	4.0	1,700	1.2	184	4.0	1,680
1.6	272	5.0	2,550	1.5	295	5.0	2,760
2.0	435	6.0	3,510	2.0	530	6.0	3,740
2.5	685						

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	103	198	445	455	326	127	670	153	344	390	291	98
2	101	188	403	385	*279	124	440	159	354	362	287	98
3	96	*179	372	344	244	116	313	165	385	344	248	96
4	92	173	372	308	225	114	248	172	440	340	233	96
5	90	311	995	283	204	108	218	191	510	336	225	93
6	88	306	1,020	263	229	108	225	218	515	318	218	93
7	484	276	686	248	676	106	263	240	560	308	215	91
8	942	454	555	236	1,100	106	372	251	655	308	208	91
9	505	718	500	225	585	106	660	240	758	331	194	89
10	394	794	445	215	421	108	545	251	830	344	187	89
11	540	646	403	204	349	111	403	308	866	340	181	84
12	458	615	505	198	304	114	394	376	812	362	178	82
13	374	771	530	204	279	111	358	322	692	390	165	134
14	322	2,530	570	194	255	106	308	287	580	412	159	153
15	295	2,870	704	191	236	103	283	279	510	398	153	172
16	262	2,380	520	194	222	101	263	318	460	416	*150	201
17	254	1,960	435	194	208	101	248	362	430	367	147	162
18	234	3,220	398	191	191	98	233	435	435	*354	144	138
19	454	3,460	372	184	184	98	*222	610	435	326	144	121
20	777	1,680	380	175	175	98	211	595	440	304	141	114
21	729	1,070	*465	165	168	103	201	495	485	295	133	106
22	510	848	480	162	159	141	194	440	535	291	130	101
23	408	680	515	191	153	*144	194	394	600	291	124	96
24	354	590	595	229	150	133	184	376	515	287	121	91
25	314	746	505	248	144	127	178	*385	450	267	116	89
26	287	878	426	233	138	119	168	380	445	409	114	86
27	265	866	376	218	130	119	162	358	460	470	106	84
28	248	670	354	211	130	166	156	336	465	385	106	82
29	230	570	331	208	-	435	150	398	455	354	103	80
30	217	495	380	208	------	349	147	426	430	322	103	*77
31	207	-----	530	267	-----	374	------	372	------	300	101	------
Total	10,634	31,142	15,567	7,231	7,864	4,374	8,631	10,292	15,841	10,721	5,105	3,187
Mean	343	1,038	502	233	281	141	288	332	528	346	165	106
Cfsm	6.69	20.2	9.79	4.54	5.48	2.75	5.61	6.47	10.3	6.74	3.22	2.07
In.	7.71	22.58	11.29	5.24	5.70	3.17	6.26	7.46	11.49	7.77	3.70	2.31
Ac-ft	21,090	61,770	30,880	14,340	15,600	8,680	17,120	20,410	31,440	21,260	10,130	6,320

Calendar year 1954: Max 3,460 Min 88 Mean 428 Cfsm 8.34 In. 113.31 Ac-ft 310,000
Water year 1954-55: Max 3,460 Min 77 Mean 358 Cfsm 6.98 In. 94.68 Ac-ft 259,000

Peak discharge (base, 1,700 cfs).--Nov. 14 (10 p.m.) 3,220 cfs (5.61 ft); Nov. 19 (6:30 a.m.) 4,280 cfs (6.53 ft).

* Discharge measurement made on this day.

North Fork Skokomish River below Staircase Rapids, near Hoodsport, Wash.

Location.--Lat 47°30'55", long 123°19'45", in NW¼ sec. 4, T. 23 N., R. 5 W., on left bank 1¼ miles upstream from Lake Cushman, 2 miles upstream from Dry Creek, and 11½ miles northwest of Hoodsport.

Drainage area.--58.1 sq mi.

Records available.--July 1924 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 762.26 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Nov. 1, 1934, water-stage recorder and Nov. 1, 1934, to Nov. 10, 1941, staff gages, on right bank at same datum.

Average discharge.--31 years, 479 cfs (346,800 acre-ft per year).

Extremes.--Maximum discharge during year, 9,400 cfs Nov. 18 (gage height, 8.71 ft); minimum, 92 cfs Sept. 30; minimum gage height, 1.79 ft Oct. 6, Sept. 30.
1924-55: Maximum discharge, 27,000 cfs Nov. 5, 1934 (gage height, 14.4 ft, from high-water mark), from rating curve extended above 9,800 cfs on basis of slope-area determination at gage height 12.2 ft; minimum recorded, 16 cfs Sept. 23, 1930 (gage height, 1.12 ft).

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1246: Drainage area. WSP 1286: 1932, 1935, 1937(M), 1942(M), 1945(M), 1947(P), 1948(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 15-20)

1.7	85	4.0	1,120
1.9	122	4.5	1,600
2.2	192	5.0	2,160
2.5	280	6.0	3,470
2.8	390	7.0	5,250
3.2	575	8.0	7,530
3.6	820		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	114	234	666	774	*510	192	809	208	500	586	414	137
2	110	222	597	614	408	184	475	222	545	525	358	140
3	106	*211	550	525	354	177	358	251	630	490	326	140
4	104	233	648	475	336	167	301	251	794	485	312	135
5	102	921	2,300	422	308	162	284	298	904	462	308	135
6	102	525	1,590	390	390	160	326	336	876	439	312	133
7	1,270	430	1,020	366	1,540	158	414	370	1,030	439	308	126
8	1,570	820	827	362	1,890	158	680	382	1,320	457	284	124
9	602	1,000	762	336	788	156	1,540	362	1,560	525	258	116
10	757	1,340	648	318	560	162	911	398	1,700	545	248	112
11	1,180	953	592	301	462	160	624	601	1,590	550	*248	108
12	729	841	883	290	430	160	586	666	1,360	602	236	102
13	500	1,450	841	315	402	153	520	490	1,070	684	216	257
14	406	3,650	1,170	287	374	144	*426	418	876	*729	208	206
15	362	3,100	1,070	284	346	142	374	434	748	660	206	394
16	318	2,940	703	277	326	140	343	602	660	742	206	279
17	340	3,520	*592	267	301	135	315	642	619	555	197	187
18	287	5,630	555	261	277	133	294	781	654	540	197	156
19	990	5,630	520	245	264	131	277	1,100	678	475	197	140
20	1,500	2,690	586	236	251	129	264	980	703	457	195	131
21	1,010	1,830	869	225	242	146	254	762	904	457	182	122
22	642	1,430	755	242	231	211	248	648	1,010	452	172	114
23	490	1,120	876	390	225	172	254	565	1,030	457	167	110
24	414	968	932	410	222	162	236	*540	768	430	160	104
25	366	1,550	703	406	211	156	225	586	654	390	153	102
26	336	2,010	565	358	206	149	216	565	696	757	149	100
27	312	1,610	495	329	195	156	208	505	696	636	146	102
28	290	1,110	475	312	197	223	200	470	703	462	144	*97
29	270	904	466	304	-	520	200	666	648	439	146	94
30	254	774	787	308	------	378	203	666	666	406	149	94
31	245	-----	1,020	523	------	516	-----	535	------	402	144	------
Total	16,078	49,646	25,041	11,152	12,044	5,892	12,365	16,260	26,592	16,235	6,946	4,297
Mean	519	1,655	808	360	430	190	412	525	886	524	224	143
Cfsm	8.93	28.5	13.9	6.20	7.40	3.27	7.09	9.04	15.2	9.02	3.86	2.46
In.	10.29	31.78	16.03	7.14	7.71	3.77	7.91	10.41	17.02	10.39	4.45	2.75
Ac-ft	31,890	98,470	49,670	22,120	23,890	11,690	24,530	32,250	52,740	32,200	13,780	8,520

Calendar year 1954: Max 5,630 Min 102 Mean 656 Cfsm 11.3 In. 153.23 Ac-ft 474,800
Water year 1954-55: Max 5,630 Min 94 Mean 555 Cfsm 9.55 In. 129.65 Ac-ft 401,800

Peak discharge (base, 3,000 cfs).--Nov. 14 (1 a.m.) 4,200 cfs (6.45 ft); Nov. 18 (2 a.m.) 9,400 cfs (8.71 ft); Feb. 7 (11 p.m.) 5,120 cfs (5.76 ft).
* Discharge measurement made on this day.

North Fork Skokomish River near Hoodsport, Wash.

Location.--Lat 47°25'20", long 123°13'10", in SW¼ sec. 5, T. 22 N., R. 4 W., at city of Tacoma dam, 4 miles northwest of Hoodsport.

Drainage area.--93.7 sq mi.

Records available.--August 1910 to September 1911 (fragmentary), February 1913 to September 1955 (monthly discharge only), in reports of Geological Survey. October 1911 to September 1953 (monthly discharge only), in State Water-Supply Bulletin 6.

Gage.--Discharge determined from record of power output and Lake Cushman elevations, plus spillway discharge when present. Prior to Sept. 23, 1911, staff gage and February 1913 to September 1923, water-stage recorder, at approximately same site at datum 486.4 ft above mean sea level (levels by city of Tacoma) prior to Sept. 2, 1918, and at datum 5.00 ft higher Sept. 2, 1918, to September 1923. October 1923 to September 1930, water-stage recorder 1 mile downstream at different datum.

Average discharge.--44 years (1911-55), 733 cfs (530,700 acre-ft per year), adjusted for storage.

Extremes.--Not determined since regulation began in Lake Cushman.

Remarks.--Records fair. No diversion of consequence. Flow regulated in Lake Cushman since October 1925 for power by city of Tacoma.

Cooperation.--Records of power output and elevations of Lake Cushman furnished by city of Tacoma.

Revisions.--WSP 1216: Drainage area.

Monthly discharge, water year October 1954 to September 1955

Month	Observed				Change in contents in Lake Cushman (acre-feet)	Adjusted for change in reservoir contents			
	Maximum (cfs)	Minimum (cfs)	Mean (cfs)	Runoff in acre-feet		Mean (cfs)	Per square mile	Runoff in inches	Runoff in acre-feet
October	2,140	169	990	60,840	-16,690	718	7.66	8.83	44,150
November	6,410	652	2,151	128,000	+18,080	2,455	26.2	29.24	146,100
December	2,290	560	1,353	83,180	-6,800	1,242	13.3	15.28	76,380
Calendar year 1954	6,410	0	953	689,600	+6,840	962	10.3	139.35	696,400
January	1,200	756	995	61,160	-26,580	562	6.00	6.92	34,580
February	1,120	123	721	40,050	-1,220	699	7.46	7.77	38,830
March	1,330	330	910	55,970	-32,030	389	4.15	4.79	23,940
April	763	0	427	25,400	+17,870	727	7.76	8.66	43,270
May	255	0	55.7	3,420	+38,800	687	7.33	8.45	42,220
June	1,150	0	524	31,190	+25,990	961	10.3	11.44	57,180
July	1,340	275	578	35,550	+1,000	594	6.34	7.31	36,550
August	944	0	422	25,950	-10,300	255	2.72	3.13	15,650
September	1,150	0	616	36,650	-25,370	190	2.02	2.26	11,280
Water year 1954-55	6,410	0	811	587,400	-17,250	788	8.41	114.08	570,100

Deer Meadow Creek near Hoodsport, Wash.

Location.--Lat 47°25'00", long 123°13'30", in NW¼ sec. 8, T. 22 N., R. 4 W., on left bank a quarter of a mile upstream from mouth and 4 miles west of Hoodsport.

Records available.--August 1950 to August 1951, October 1952 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 688.28 ft above mean sea level, datum of 1929, supplementary adjustment of 1947 (levels by city of Tacoma). Prior to Oct. 1, 1952, at datum 0.48 ft higher.

Extremes.--Maximum discharge during year, 244 cfs Nov. 19 (gage height, 2.63 ft); minimum, 0.4 cfs May 15 (gage height, 0.26 ft).
1950-51, 1952-55: Maximum discharge, that of Nov. 19, 1954; minimum, 0.2 cfs Oct. 8-11, 1952.

Remarks.--Records good except those for period December to June, which are fair. Since October 1953, records include large part of flow of McTaggart Creek, from which water is diverted at city of Tacoma diversion dam in N½ sec. 7, T. 22 N., R. 4 W. When flow of McTaggart Creek exceeds about 80 cfs, there is undiverted spill over dam. For discharges less than about 80 cfs the city allows up to 2 cfs to flow through pipe in dam and continue in McTaggart Creek, not to exceed natural flow of stream. No regulation.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.8	*1.9	7.1	20	8.5	4.8	30	4.6	2.0	1.6	1.2	0.8
2	.8	1.8	5.3	16	7.4	4.0	22	4.4	2.3	1.6	1.2	.9
3	.8	1.8	4.6	12.5	6.8	3.8	16.5	4.0	2.6	1.8	1.1	.9
4	.8	1.9	4.0	12	6.6	3.6	13	3.6	2.4	1.9	1.1	.9
5	.8	3.2	5.3	10	6.0	3.4	11	3.2	2.3	1.8	1.1	.9
6	.8	3.0	6.8	8.5	7.4	3.2	10	3.0	2.1	1.6	1.0	.9
7	1.4	2.9	6.8	7.6	22	*3.2	8.9	2.9	2.0	1.6	.9	.8
8	2.3	3.0	6.0	7.4	50	3.2	8.5	2.7	2.0	1.6	.9	.8
9	1.9	3.2	6.0	7.1	31	3.0	12	2.7	2.0	1.6	1.0	.8
10	1.8	3.6	4.0	6.0	23	3.4	12	2.6	1.9	1.4	1.0	.7
11	2.1	3.8	3.2	5.8	19.5	4.0	11	2.6	1.2	1.4	*.9	.7
12	1.9	3.8	5.6	5.6	17	4.8	16.5	2.3	1.6	1.4	.8	.8
13	1.8	4.8	9.6	6.0	15	4.3	19.5	2.1	1.6	1.4	.8	1.0
14	1.6	18	18	5.8	12.5	4.0	*16	2.1	1.6	1.1	.8	1.1
15	1.6	26	28	6.3	11	4.2	15	1.5	1.6	1.1	.8	1.2
16	1.4	27	*22	7.4	10.5	3.8	14.5	.7	*1.9	1.4	.8	1.0
17	1.6	42	16	7.6	8.9	3.6	13.5	1.3	1.6	1.4	.8	.9
18	1.6	100	13	7.9	7.9	3.4	12.5	1.9	1.6	*1.4	.9	.9
19	1.8	*143	10.5	7.1	7.4	3.2	12	2.4	1.8	1.3	.9	.8
20	2.7	61	8.9	6.3	6.8	3.0	11	2.7	1.6	1.0	1.0	.7
21	3.2	33	*7.6	5.6	6.3	3.4	9.6	2.6	1.8	1.0	1.0	.7
22	2.9	21	6.8	5.1	6.0	4.2	8.9	2.4	1.6	1.0	.9	.7
23	2.7	15	7.4	5.3	5.8	*4.4	8.9	*2.4	1.9	1.0	.9	*.7
24	2.4	12.5	11.5	6.8	6.0	4.6	7.9	2.4	1.8	1.0	.9	.8
25	2.3	15.5	11	9.2	5.3	4.6	7.4	2.3	1.8	1.1	.9	.8
26	2.1	16.5	8.5	9.2	5.1	4.4	6.6	2.3	1.8	2.0	.8	.8
27	2.1	18	7.9	*8.2	4.6	4.2	6.3	2.3	1.8	1.6	.8	.8
28	2.0	15	7.9	7.4	5.3	4.8	6.0	2.3	1.8	1.4	.8	.8
29	2.0	12	7.9	6.6	-	9.6	5.3	2.3	1.6	1.3	.9	.8
30	2.0	8.9	11	6.0	------	12.5	5.1	2.3	1.6	1.3	.8	.7
31	2.0	------	21	7.1	-------	19.5	------	2.1	-------	1.2	.8	------
Total	56.0	623.1	299.2	249.4	329.6	150.4	357.4	79.0	55.2	43.3	28.5	25.1
Mean	1.81	20.8	9.65	8.05	11.8	4.85	11.9	2.55	1.84	1.40	0.92	0.84
Ac-ft	111	1,240	593	495	654	298	709	157	109	86	57	50

Calendar year 1954: Max 143 Min 0.8 Mean 8.30 Ac-ft 6,020
Water year 1954-55: Max 143 Min 0.7 Mean 6.29 Ac-ft 4,560

* Discharge measurement made on this day.

North Fork Skokomish River near Potlatch, Wash.

Location.--Lat 47°19'40", long 123°14'30", in NE¼NW¼ sec. 7, T. 21 N., R. 4 W., on left bank 1 mile upstream from mouth, 6 miles southwest of Potlatch, and 7 miles downstream from city of Tacoma's Cushman Dam No. 2.

Drainage area.--117 sq mi, includes 99 sq mi above Cushman Dam No. 2 which is normally non-contributing.

Records available.--March 1944 to November 1949, February 1950 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 63.49 ft above mean sea level (levels by city of Tacoma). Prior to Nov. 27, 1949 (destroyed by flood of Nov. 27, 1949) and Mar. 18 to May 9, 1950, water-stage recorder at site 200 ft downstream at present datum.

Extremes.--Maximum discharge during year, 6,100 cfs Nov. 19 (gage height, 9.99 ft); minimum, 5.4 cfs Oct. 1, 2 (gage height, 2.16 ft).
1944-55: Maximum discharge, that of Nov. 19, 1954; minimum recorded, 1.3 cfs Sept. 5, 14, 16, 1951 (gage height, 2.02 ft).

Remarks.--Records good except those below 10 cfs, which are fair. Entire flow of river normally diverted at Cushman Dam No. 2 to supply powerplant which discharges directly into sea (Hood Canal). Main portion of McTaggart Creek is diverted into Cushman Reservoir No. 2, and may bypass this station. Flow regulated by Lake Cushman (see p. 43) and by pondage in Cushman Reservoir No. 2, from which spill and releases are infrequent.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 19, 20)

Oct. 1 to Nov. 17				Nov. 18 to Sept. 30					
2.1	3.2	3.5	200	2.2	4.0	3.3	118	6.0	1,420
2.3	12	4.0	340	2.3	7.0	3.6	190	7.0	2,240
2.6	38	4.5	525	2.5	16	4.0	320	8.0	3,220
3.0	99	5.0	750	2.7	29	4.5	520	9.0	4,370
				3.0	64	5.0	770	10.0	5,690

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.8	24	950	238	*96	61	368	66	28	19.5	17	8.2
2	5.8	22	818	185	87	60	247	63	29	19.5	16	7.8
3	5.8	21	315	157	84	*56	187	61	28	19	14.5	7.0
4	5.8	21	150	142	93	51	159	60	28	21	14	7.0
5	5.8	101	142	127	102	49	145	57	28	19	12.5	6.7
6	5.8	92	157	114	112	48	129	54	27	18	12	6.4
7	12	72	159	108	393	46	122	53	26	18.5	12	7.0
8	36	71	142	108	557	48	120	50	26	18	12.5	7.4
9	21	84	140	108	260	50	162	48	25	18.5	12.5	7.8
10	26	92	131	100	177	63	150	46	24	18.5	11.5	7.4
11	62	90	122	94	142	70	133	49	23	18	*11.5	7.0
12	42	85	199	91	127	93	235	46	23	16	11.5	6.7
13	31	124	260	102	114	94	241	44	23	15.5	11.5	15
14	24	389	*344	94	102	87	185	42	23	15	11.5	19.5
15	19.5	*389	*376	108	93	84	162	40	22	*15	10.5	23
16	17.5	420	250	129	85	78	172	39	22	18	10.5	22
17	17.5	688	196	157	80	74	164	38	22	17	10.5	16
18	16	2,790	167	157	75	70	*147	38	22	15.5	10	13
19	22	*5,660	147	136	70	67	138	38	21	15	9.8	10.5
20	68	4,310	131	120	67	66	129	*36	21	14	9.8	9.8
21	89	2,780	122	108	63	78	116	35	20	14	9.8	9.4
22	65	1,560	112	104	60	110	108	34	19.5	14.5	9.4	9.0
23	50	983	122	112	58	100	108	34	21	14	9.0	8.2
24	44	292	172	127	61	91	96	34	20	13.5	9.0	7.8
25	38	320	172	136	57	87	91	33	19.5	13	9.0	9.8
26	34	465	147	120	56	80	85	33	19.5	189	9.0	11.5
27	31	782	131	110	54	80	80	32	19.5	80	9.4	*10.5
28	28	1,220	136	*100	63	91	78	49	21	51	8.6	9.0
29	*26	842	150	94	-	138	75	38	19.5	30	7.8	8.2
30	25	782	226	91	------	142	70	33	21	23	7.4	7.8
31	24	------	299	98	------	283	------	30	------	20	7.8	------
Total	903.3	25,571	7,085	3,775	3,388	2,595	4,402	1,353	692.5	810.5	337.8	306.4
Mean	29.1	852	229	122	121	83.7	147	43.6	23.1	26.1	10.9	10.2
Ac-ft	1,790	50,720	14,050	7,490	6,720	5,150	8,730	2,680	1,370	1,610	670	608

Calendar year 1954: Max 5,660 Min 5.8 Mean 176 Ac-ft 127,400
Water year 1954-55: Max 5,660 Min 5.8 Mean 140 Ac-ft 101,600

* Discharge measurement made on this day.

South Fork Skokomish River near Potlatch, Wash.

Location.--Lat 47°23'10", long 123°18'30", in NW¼ sec. 22, T. 22 N., R. 5 W., on right bank at head of canyon, 1 mile upstream from Rock Creek, 3 miles downstream from Brown Creek, and 7½ miles west of Potlatch.

Drainage area.--65.6 sq mi.

Records available.--October 1923 to September 1932, September 1946 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 456 ft (by barometer).

Average discharge.--18 years, 582 cfs (421,400 acre-ft per year).

Extremes.--Maximum discharge during year, 14,800 cfs Nov. 18 (gage height, 14.96 ft), from rating curve extended above 7,800 cfs; minimum, 98 cfs Sept. 12 (gage height, 0.98 ft). 1923-32, 1946-55: Maximum discharge, 19,300 cfs Nov. 26, 1949 (gage height, 17.75 ft), from rating curve extended above 5,600 cfs on basis of logarithmic plotting; minimum, 38 cfs Sept. 15, 1926; minimum gage height, 0.74 ft Sept. 21, 22, 1953.

Remarks.--Records excellent. No regulation or diversion above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1950(P). WSP 1346: 1952.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 16				Nov. 17 to Sept. 30			
1.0	97	2.0	262	0.9	90	4.0	1,070
1.2	122	2.5	385	1.2	125	5.0	1,730
1.4	151	3.0	555	1.5	170	6.0	2,580
1.7	202	3.5	785	2.0	265	7.0	3,600
				2.5	386	9.0	5,980
				3.0	556	11.3	9,200
				3.5	785		

Note.--Same as following table above 3.5 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	114	237	750	1,350	968	296	1,870	381	425	359	406	113
2	113	*227	659	1,010	735	280	1,110	392	418	320	346	112
3	110	219	589	818	615	267	790	406	450	303	303	112
4	109	235	601	711	581	252	623	418	499	298	272	111
5	108	1,280	1,360	610	536	246	544	471	576	280	250	110
6	107	962	1,390	544	702	238	589	510	544	267	236	106
7	652	650	1,050	495	3,240	234	765	533	615	*259	224	105
8	1,790	729	862	495	3,290	232	964	548	735	257	214	106
9	862	1,000	840	474	1,490	230	2,270	499	818	263	205	105
10	901	1,170	765	444	1,070	280	1,460	506	856	263	196	102
11	1,520	944	678	415	851	292	1,020	739	796	257	187	100
12	934	812	1,160	400	750	285	1,150	895	701	257	182	99
13	650	1,180	1,300	492	716	267	1,100	664	597	269	173	187
14	492	3,680	1,930	464	664	250	873	548	495	280	167	200
15	409	3,050	1,980	461	619	240	740	525	437	267	162	394
16	349	3,120	1,230	450	568	230	682	576	392	294	*157	*411
17	339	4,170	962	447	513	222	*628	632	362	265	154	281
18	300	9,090	840	444	464	216	585	721	362	252	150	201
19	573	*7,150	745	406	428	211	560	900	362	238	146	172
20	1,390	3,080	*706	372	398	205	525	840	362	220	144	156
21	1,270	1,950	851	346	375	257	499	682	400	213	142	145
22	796	1,470	824	342	359	499	492	601	444	209	138	138
23	589	1,180	890	802	349	400	525	529	441	203	135	131
24	481	986	1,260	840	354	339	492	*485	386	200	132	125
25	415	1,580	980	980	329	310	450	499	344	191	129	121
26	363	2,490	770	735	317	*287	418	499	344	489	126	120
27	329	2,070	664	*606	301	294	392	474	342	610	125	122
28	302	1,350	637	548	312	446	370	441	354	434	122	117
29	282	1,030	669	525	-	1,260	359	495	336	367	120	113
30	264	878	1,300	517	------	962	359	560	389	339	117	111
31	249	-----	1,890	874	-------	1,250	-----	471	------	359	116	------
Total	17,162	57,969	31,132	18,217	21,894	11,277	23,204	17,440	14,582	9,082	5,676	4,506
Mean	554	1,932	1,004	588	782	364	773	563	486	293	183	150
Cfsm	8.45	29.5	15.3	8.96	11.9	5.55	11.8	8.58	7.41	4.47	2.79	2.29
In.	9.73	32.86	17.65	10.33	12.41	6.39	13.15	9.89	8.27	5.15	3.22	2.55
Ac-ft	34,040	115,000	61,750	36,130	43,430	22,370	46,020	34,590	28,920	18,010	11,260	8,940

Calendar year 1954: Max 9,090 Min 107 Mean 760 Cfsm 11.6 In. 157.28 Ac-ft 550,200
Water year 1954-55: Max 9,090 Min 99 Mean 636 Cfsm 9.70 In. 131.60 Ac-ft 460,500

Peak discharge (base, 3,800 cfs).--Nov. 14 (3 a.m.) 4,280 cfs (7.62 ft); Nov. 18 (3 a.m.) 14,800 cfs (14.96 ft); Feb. 7 (10:30 p.m.) 7,420 cfs (10.05 ft).
* Discharge measurement made on this day.

South Fork Skokomish River near Union, Wash.

Location.--Lat 47°20'30", long 123°16'30", in NE¼ sec. 2, T. 21 N., R. 5 W., on right bank 3½ miles upstream from confluence with North Fork and Vance Creek and 8 miles west of Union.

Drainage area.--79.6 sq mi.

Records available.--August 1931 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 110 ft (by barometer). Prior to Sept. 19, 1931, staff gage at same site at datum 2.32 ft higher.

Average discharge.--24 years, 700 cfs (506,800 acre-ft per year).

Extremes.--Maximum discharge during year, 15,500 cfs Nov. 18 (gage height, 8.74 ft), from rating curve extended above 9,100 cfs; minimum, 112 cfs Sept. 11-13 (gage height, 2.31 ft).

1931-55: Maximum discharge, 21,600 cfs Jan. 22, 1935, Nov. 26, 1949 (gage height, 11.0 ft), from rating curves extended above 11,000 cfs and 4,400 cfs, respectively; minimum, 62 cfs Sept. 18, 1938; minimum gage height, 2.31 ft Sept. 11-13, 1955.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1216: 1950, drainage area. WSP 1316: 1934(M), 1938(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18				Nov. 18 to Sept. 30			
2.3	97	3.6	1,020	2.3	108	4.0	1,680
2.4	127	4.0	1,510	2.5	186	4.5	2,580
2.5	164	4.5	2,260	2.7	293	5.0	3,670
2.7	259	5.0	3,170	3.0	510	6.0	6,400
2.9	382	6.0	5,400	3.3	800	7.2	10,700
3.1	533	7.0	8,300	3.6	1,140		
3.3	712	8.0	12,200				

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	127	276	1,020	1,710	1,160	372	2,380	430	454	387	408	126
2	124	*259	910	1,260	877	352	1,380	438	438	345	372	126
3	121	254	811	1,030	740	*338	976	454	470	326	326	126
4	118	265	800	899	690	319	780	462	502	319	287	122
5	118	1,260	1,850	770	650	312	680	510	591	300	270	119
6	118	1,080	1,790	690	800	306	690	537	555	281	247	119
7	483	722	1,340	640	3,680	300	888	573	610	276	235	119
8	1,850	739	1,130	630	4,540	293	1,020	582	730	270	225	119
9	956	1,080	1,100	610	1,860	293	2,480	537	833	276	215	119
10	830	1,220	1,020	573	1,290	345	1,710	528	866	276	201	115
11	1,700	1,010	910	537	1,020	387	1,180	770	800	276	196	115
12	1,080	863	1,500	519	899	394	1,380	987	730	270	191	112
13	742	1,140	1,790	630	855	372	1,310	720	620	*281	186	191
14	576	3,950	2,510	600	790	345	1,020	591	519	287	178	230
15	478	3,610	2,660	600	740	332	877	546	462	287	*173	380
16	411	3,680	*1,540	610	680	312	811	600	416	306	169	470
17	389	4,500	1,200	620	610	306	770	650	394	281	165	293
18	343	*10,600	1,040	610	546	293	720	730	387	264	161	230
19	579	*9,230	932	564	510	287	*670	*910	394	252	161	196
20	1,400	4,320	877	519	486	281	630	888	387	235	157	178
21	1,400	2,730	1,010	486	454	326	582	730	423	225	152	*165
22	873	2,010	987	470	430	640	573	650	462	220	148	152
23	656	1,580	1,030	730	416	528	610	564	454	215	144	148
24	542	1,310	1,520	1,020	438	446	564	510	408	210	140	144
25	470	2,100	1,210	1,260	401	416	519	519	372	201	140	137
26	418	3,280	976	954	387	380	494	528	365	466	137	133
27	382	2,730	822	780	365	380	462	502	365	650	133	137
28	343	1,740	800	720	387	509	438	470	372	470	133	133
29	324	1,390	844	660	-	1,470	423	510	365	394	130	130
30	305	1,180	1,600	650	------	1,180	416	591	408	358	130	126
31	288	-----	2,460	*954	-----	1,550	-----	510	------	380	126	------
Total	18,524	70,108	39,789	23,305	26,701	14,364	27,433	18,527	15,152	9,584	6,036	5,010
Mean	598	2,337	1,284	752	954	463	914	598	505	309	195	167
Cfsm	7.51	29.4	16.1	9.45	12.0	5.82	11.5	7.51	6.34	3.88	2.45	2.10
In.	8.65	32.76	18.59	10.89	12.48	6.71	12.82	8.66	7.08	4.48	2.82	2.34
Ac-ft	36,740	139,100	78,920	46,220	52,960	28,490	54,410	36,750	30,050	19,010	11,970	9,940

Calendar year 1954: Max 10,600 Min 118 Mean 905 Cfsm 11.4 In. 154.34 Ac-ft 655,300
Water year 1954-55: Max 10,600 Min 112 Mean 752 Cfsm 9.45 In. 128.28 Ac-ft 544,600

Peak discharge (base, 6,000 cfs).--Nov. 18 (4:30 a.m.) 15,500 cfs (8.74 ft); Feb. 7 (10:30 p.m.) 8,420 cfs (6.60 ft).

* Discharge measurement made on this day.

Vance Creek near Potlatch, Wash.

Location.--Lat 47°19'45", long 123°18'48", in NE¼NE¼ sec. 9, T. 21 N., R. 5 W., 1 mile downstream from Aristine Creek and 8½ miles southwest of Potlatch.

Drainage area.--15.6 sq mi.

Records available.--March to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 200 ft (from topographic map).

Extremes.--Maximum discharge during period, 1,350 cfs Apr. 1 (gage height, 5.71 ft, from floodmark); minimum, 15 cfs Sept. 12, 13 (gage height, 2.86 ft).
High water of Nov. 18, 1954, reached a stage of 8.1 ft, from floodmarks (discharge, 3,840 cfs), by slope-area determination.

Remarks.--Records good. No regulation or diversion above station.

Discharge, in cubic feet per second, March to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						-	a1,300	76	38	23	82	16.5
2						-	a970	78	36	22	67	16
3						-	a490	78	35	22	54	15.5
4						-	222	80	34	21	46	15.5
5						-	190	86	33	20	41	15.5
6						-	206	90	32	19	38	15.5
7						-	239	90	31	18.5	35	15.5
8						-	257	86	29	18.5	32	15.5
9						-	a790	78	29	18.5	30	15.5
10						-	a670	74	29	18	28	15.5
11						-	284	122	27	18	27	15.5
12						-	420	126	26	18	*25	15
13						-	a520	95	25	*16.5	25	29
14						-	335	82	*25	16.5	24	29
15						-	284	74	25	16.5	23	70
16						-	a260	70	25	18.5	22	67
17						-	a240	68	23	17	22	46
18		†3,840				-	214	70	22	18.5	22	37
19						-	198	*70	22	17	21	31
20						-	182	67	22	16.5	20	29
21						-	166	64	22	16	20	26
22						-	a130	57	21	16	20	25
23						-	a110	54	20	16	19	23
24						-	a90	50	20	15.5	18.5	22
25						65	a80	49	20	16	18.5	22
26						a62	74	46	20	64	18	22
27						a62	72	44	20	86	18	*22
28						100	70	41	21	67	18	21
29						340	70	42	21	53	17	20
30					------	*275	70	41	26	54	16.5	20
31		-----			-----	498	-----	39	------	72	16.5	------
Total						-	9,203	2,187	779	849.0	884.0	748.0
Mean						-	307	70.5	26.0	27.4	28.5	24.9
Cfsm						-	19.7	4.52	1.67	1.76	1.83	1.60
In.						-	21.94	5.21	1.86	2.02	2.11	1.78
Ac-ft						-	18,250	4,340	1,550	1,680	1,750	1,480

Calendar year	: Max	Min	Mean	Cfsm	In.	Ac-ft
Water year	: Max	Min	Mean	Cfsm	In.	Ac-ft

* Discharge measurement made on this day.
† Result of slope-area determination.
a No gage-height record; discharge estimated on basis of floodmarks and records for stations on nearby streams.

Skokomish River near Potlatch, Wash.

Location.--Lat 47°19'00", long 123°11'05", in NW¼NW¼ sec. 15, T. 21 N., R. 4 W., on left bank half a mile upstream from U. S. Highway 101, 2.8 miles downstream from confluence of North and South Forks, 4.7 miles southwest of Potlatch, and 5.5 miles upstream from mouth.

Drainage area.--230 sq mi.

Records available.--July 1943 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 19.35 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. May 22 to July 23, 1947, staff gage at site 50 ft downstream at same datum. Oct. 1, 1947, to Apr. 18, 1951, water-stage recorder at present site at datum 2.87 ft lower.

Extremes.--Maximum discharge during year, 20,000 cfs Nov. 18 (gage height, 12.21 ft); minimum, 159 cfs Sept. 11-13; minimum gage height, 0.43 ft Oct. 6, 7.
1943-55: Maximum discharge, that of Nov. 18, 1954; minimum, 125 cfs Sept. 14-17, 1944 (gage height, -0.01 ft).

Remarks.--Records good. Flow partly regulated by Lake Cushman and Cushman Reservoir No. 2. In normal years practically entire flow of North Fork is diverted at dam No. 2 and returned to sea through Cushman powerplant No. 2.

Revisions.--WSP 1216: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 5-20, Nov. 28 to Feb. 9)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30			
0.4	200	2.0	1,480	0.4	138	4.0	3,940
.6	295	2.5	2,040	.7	303	5.5	6,300
.8	410	3.0	2,650	1.0	495	7.0	8,800
1.0	555	4.0	4,000	1.5	895	9.0	12,600
1.5	980	5.5	6,300	2.0	1,390	11.0	17,300
				3.0	2,540		

Note.--Same as following table above 5.5 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	232	424	1,910	2,740	1,660	672	3,730	728	610	502	565	196
2	227	404	1,710	2,030	1,330	*632	2,310	737	572	468	530	190
3	227	386	1,210	1,630	1,140	602	1,710	737	602	435	475	185
4	*222	398	971	1,440	1,090	558	1,390	737	625	435	428	185
5	218	1,740	1,610	1,230	1,030	537	1,210	780	696	422	402	185
6	218	1,790	1,940	1,090	1,260	523	1,160	823	688	409	383	180
7	389	1,220	1,640	1,000	5,080	509	1,310	832	712	396	352	180
8	2,340	1,130	1,400	990	7,640	502	1,420	850	805	390	346	180
9	1,370	1,550	1,350	980	3,180	502	3,190	796	914	383	334	180
10	1,160	1,700	1,260	914	2,070	618	2,600	788	952	390	321	174
11	2,450	1,510	1,130	859	1,640	712	1,860	933	933	390	*315	164
12	1,600	1,330	1,760	814	1,440	796	2,190	1,240	850	383	309	159
13	1,150	1,440	2,310	952	1,350	780	*2,310	1,000	762	390	303	206
14	890	5,190	*3,050	933	1,240	712	1,820	841	672	*398	297	327
15	740	*5,350	*4,040	942	1,160	656	1,580	780	602	390	291	390
16	659	5,480	2,440	1,000	1,070	618	1,520	788	551	409	286	610
17	619	6,200	1,830	1,080	980	588	1,410	832	516	415	280	435
18	571	*16,300	1,530	1,090	895	565	1,310	895	495	377	274	358
19	732	16,800	1,350	971	832	544	1,240	1,060	495	377	262	315
20	1,760	9,900	1,220	886	780	523	1,170	1,100	488	358	257	286
21	2,160	6,040	1,250	805	746	602	1,090	924	509	346	251	*262
22	1,390	3,880	1,260	771	712	1,150	1,040	832	551	346	240	251
23	1,070	2,500	1,250	1,050	680	1,040	1,090	*737	558	340	240	234
24	881	1,580	1,970	1,500	728	886	1,020	696	530	327	234	228
25	774	2,390	1,760	1,880	664	805	952	688	482	315	228	223
26	691	3,860	1,420	*1,500	640	746	886	680	468	539	223	218
27	627	3,700	1,220	1,290	610	720	823	672	468	904	218	218
28	571	2,930	1,200	1,140	672	832	788	640	482	672	212	212
29	*518	2,250	1,290	1,060	-	1,990	746	648	468	558	206	201
30	480	1,930	2,320	1,010	------	1,860	728	495	509	201	196	
31	445	------	3,780	1,320	------	2,500	------	664	------	530	201	------
Total	27,381	111,302	54,381	36,897	42,319	25,280	45,603	25,186	18,551	13,501	9,464	7,328
Mean	883	3,710	1,754	1,190	1,511	815	1,520	812	618	436	305	244
Ac-ft	54,310	220,800	107,900	73,180	83,940	50,140	90,450	49,960	36,800	26,780	18,770	14,530

Calendar year 1954: Max 16,800 Min 218 Mean 1,410 Ac-ft 1,021,000
Water year 1954-55: Max 16,800 Min 159 Mean 1,143 Ac-ft 827,600

Peak discharge (base, 8,400 cfs).--Nov. 18 (6 a.m.) 20,000 cfs (12.21 ft); Feb. 8 (11:45 p.m.) 13,400 cfs (9.13 ft).

* Discharge measurement made on this day.

Purdy Creek near Union, Wash.

Location.--Lat 47°18'05", long 123°10'50", in NW¼NW¼ sec. 22, T. 21 N., R. 4 W., on left bank immediately downstream from county road bridge, 1 mile upstream from Weaver Creek and 5½ miles southwest of Union.

Drainage area.--1.43 sq mi.

Records available.--September 1954 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 28.76 ft above mean sea level (State Fisheries Department reference mark).

Extremes.--Maximum discharge during period September 1954 to September 1955, 70 cfs Feb. 7; maximum gage height, 1.57 ft Nov. 18; minimum discharge, 10.5 cfs Nov. 4, 7; minimum gage height, 1.10 ft Sept. 13, 14, 1954.

Remarks.--Records fair. Flow affected by springs. No regulation.

Discharge, in cubic feet per second, 1954

Day	Discharge	Day	Discharge	Day	Discharge	Day	Discharge
Sept. 1	a19	Sept. 9	a17	Sept.17	18	Sept.25	13
2	a18	10	*18	18	17	26	12
3	a18	11	17	19	16	27	*12
4	a19	12	16	20	16	28	12
5	a18	13	15	21	15	29	12
6	a17	14	16	22	14	30	12
7	a17	15	17	23	14		
8	a17	16	17	24	13		

Total	472
Mean	15.7
Runoff in acre-feet	936

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	11	23	28	27	28	32	28	23	22	19	15
2	12	11	22	27	28	27	29	28	23	22	17	15
3	13	11	21	27	28	26	29	28	23	22	17	15
4	12	12	21	26	32	*25	28	27	23	21	17	15
5	12	*16	21	26	32	25	28	27	23	19.5	17	15
6	12	12	23	25	38	26	28	27	23	19.5	17	15
7	13	11	21	25	50	26	28	27	23	21	16.5	15
8	13	12	20	24	37	26	29	26	22	21	17	15
9	12	13	*21	25	37	26	32	26	22	21	17	15
10	14	12	20	24	38	28	30	27	22	19.5	*16.5	15
11	14	13	19	23	37	28	31	28	22	19.5	17	14.5
12	13	12	23	23	36	29	36	27	22	*19	16.5	14
13	12	14	22	23	34	29	*32	26	*22	19.5	15.5	17
14	12	16	23	23	32	28	31	26	23	19.5	15.5	15.5
15	12	*15	*23	23	31	27	32	26	23	19.5	15.5	15.5
16	12	19	22	24	31	27	34	25	23	21	15.5	15
17	12	30	22	25	29	27	32	25	23	19.5	15.5	14.5
18	12	*39	22	25	29	27	32	*25	24	19.5	16.5	14.5
19	14	37	21	23	29	26	31	25	25	19.5	15.5	14.5
20	16	47	21	23	28	26	31	25	24	19	15.5	14.5
21	14	40	21	23	28	30	30	25	23	19	15.5	14.5
22	13	32	21	23	28	30	30	25	23	19.5	15.5	14.5
23	12	*28	21	23	27	28	31	25	23	19.5	15.5	14.5
24	12	26	24	25	27	27	30	25	23	19	15.5	14.5
25	*12	30	24	26	26	26	29	25	23	19.5	15.5	14.5
26	12	32	22	25	26	26	29	24	23	23	15.5	*14.5
27	11	28	21	24	26	26	28	24	23	19.5	15.5	14.5
28	*11	26	22	*23	29	27	28	24	23	19	15	14.5
29	11	25	23	23	-	28	28	24	23	19	15	14
30	11	24	26	25	------	29	28	24	23	19.5	15	14
31	11	------	29	25	------	32	------	23	------	19.5	15	------
Total	384	654	685	758	880	846	906	797	688	620.0	498.0	443.5
Mean	12.4	21.8	22.1	24.5	31.4	27.3	30.2	25.7	22.9	20.0	16.1	14.8
Cfsm	8.67	15.2	15.5	17.1	22.0	19.1	21.1	18.0	16.0	14.0	11.3	10.3
In.	9.99	17.01	17.81	19.71	22.89	22.00	23.56	20.73	17.89	16.12	12.95	11.53
Ac-ft	762	1,300	1,360	1,500	1,750	1,680	1,800	1,580	1,360	1,230	988	880

Calendar year 1954: Max	-	Min	-	Mean	-	Cfsm	-	In.	-	Ac-ft	-	
Water year 1954-55: Max	50	Min	11	Mean	22.4	Cfsm	15.7	In.	212.19	Ac-ft	16,190	

* Discharge measurement made on this day.

Union River near Bremerton, Wash.

Location.--Lat 47°31'45", long 122°47'05", in SW¼NE¼ sec. 34, T. 24 N., R. 1 W., on right bank 400 ft upstream from highway bridge, 1¼ miles upstream from Hazel Creek, and 7 miles west of Bremerton.

Drainage area.--3.16 sq mi.

Records available.--October 1945 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 395 ft (from topographic map). Prior to Jan. 30, 1952, at site 100 ft upstream at datum 398.0 ft above mean sea level (closed stadia traverse).

Average discharge.--10 years, 12.3 cfs (8,900 acre-ft per year).

Extremes.--Maximum discharge during year, 348 cfs Nov. 19 (gage height, 4.62 ft); maximum gage height, 5.10 ft Nov. 19 (backwater from drift); minimum daily discharge, 0.2 cfs June 2.

1945-55: Maximum discharge, 476 cfs Feb. 22, 1949 (gage height, 3.85 ft, site and datum then in use), from rating curve extended above 160 cfs by logarithmic plotting; minimum daily, that of June 2, 1955.

Remarks.--Records good October to March and fair thereafter except those for periods of no gage-height record, which are poor. No known regulation or diversion above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1948(M), 1949-50.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.35	0.2	3.1	30
2.4	.4	3.4	62
2.5	1.4	3.7	107
2.6	3.4	4.0	167
2.7	6.5	4.3	245
2.9	16.5		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.8	1.2	14.5	33	10.5	6.2	25	7.5	0.5	3.2	2.0	1.4
2	.8	1.2	13	25	9.3	5.8	23	7.1	.2	3.0	1.8	1.4
3	.8	1.2	11.5	19.5	8.8	5.8	17.5	6.8	.4	3.0	1.6	1.3
4	.8	1.3	10.5	17.5	8.8	5.8	12.5	6.5	.8	3.0	1.5	1.3
5	.8	5.4	13.5	15.5	8.8	5.4	11	6.2	1.0	2.6	1.5	1.2
6	.8	4.2	19	13.5	10.5	5.4	10.5	6.0	1.6	*2.2	1.4	1.3
7	.9	3.6	*23	12	31	5.8	8.4	5.8	2.2	2.2	1.4	*1.3
8	1.2	3.9	22	12.5	79	6.2	8.8	5.6	2.4	2.2	1.4	1.3
9	1.0	4.5	21	12	43	7.2	15.5	5.4	2.4	2.4	1.4	1.3
10	1.2	4.5	18.5	12	28	9.3	15.5	5.3	2.2	2.2	*1.4	1.3
11	1.4	4.8	16	11.5	21	11	16.5	5.2	2.2	2.0	1.6	1.2
12	1.0	5.4	27	10.5	17.5	20	*36	5.1	2.4	1.8	1.6	1.2
13	.9	6.5	36	11	14.5	22	36	4.5	2.4	1.6	1.6	1.4
14	.9	14.5	40	10	13	20	26	5.1	2.4	1.6	1.4	.6
15	.9	21	44	11	12	17.5	19.5	5.1	2.4	1.6	1.4	.7
16	.8	30	33	14	9.8	15.5	21	4.8	2.4	1.8	1.4	.6
17	.8	63	26	22	9.3	13	19	*4.2	2.2	1.4	1.6	.5
18	.8	191	21	24	8.0	12.5	17.5	3.4	2.2	1.4	1.6	.5
19	1.3	218	17	20	7.6	11.5	16.5	2.4	2.0	1.3	1.6	.9
20	2.2	80	14.5	*17	7.2	9.8	15.5	1.4	2.0	1.3	1.6	1.3
21	2.4	45	13	14	6.8	9.3	14.5	1.0	2.0	1.3	1.4	1.3
22	1.8	31	12	13	6.5	8.4	13	.8	2.4	1.3	1.4	1.3
23	1.6	23	14	12.5	6.2	7.2	12	.7	2.6	1.2	1.4	1.2
24	1.4	19	24	13.5	6.8	5.8	11.5	.6	2.2	1.2	1.4	1.2
25	1.4	30	28	13.5	6.5	5.8	10.5	.6	1.8	1.2	1.4	1.0
26	*1.3	28	24	13.5	6.2	5.8	10	.5	1.8	3.6	1.4	1.2
27	1.3	26	20	13	5.8	5.8	9.2	.3	1.6	3.0	1.4	1.4
28	1.3	23	22	12	*6.2	5.8	8.8	.4	7.5	2.6	1.4	1.3
29	1.3	19.5	25	11.5	-	8.8	8.4	.6	4.8	2.4	1.3	1.2
30	1.3	17	37	10.5	------	11	8.0	.6	3.6	2.6	1.4	1.2
31	1.3	-----	43	11.5	-----	21	-----	.6	------	2.4	1.4	------
Total	36.5	926.7	703.0	462.0	408.6	310.4	477.1	110.1	66.8	64.6	46.1	34.3
Mean	1.18	30.9	22.7	14.9	14.6	10.0	15.9	3.55	2.23	2.08	1.49	1.14
Cfsm	0.373	9.78	7.18	4.72	4.62	3.16	5.03	1.12	0.706	0.658	0.472	0.361
In.	0.43	10.91	8.27	5.44	4.81	3.65	5.61	1.30	0.79	0.76	0.54	0.40
Ac-ft	72	1,840	1,390	916	810	616	946	218	132	128	91	68

Calendar year 1954: Max 218 Min 0.7 Mean 14.0 Cfsm 4.43 In. 60.01 Ac-ft 10,120
Water year 1954-55: Max 218 Min 0.2 Mean 9.99 Cfsm 3.16 In. 42.91 Ac-ft 7,230

Peak discharge (base, 120 cfs).--Nov. 19 (5:30 a.m., 6:15 a.m.) 348 cfs (4.62 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Apr. 21 to May 11, Aug. 2-9; discharge estimated on basis of records for stations on nearby streams.

Union River near Belfair, Wash.

Location.--Lat 47°28'20", long 122°49'40", in NE¼ sec. 20, T. 23 N., R. 1 W., on left bank at highway bridge 1½ miles north of Belfair and 2 miles upstream from mouth.

Drainage area.--19.2 sq mi.

Records available.--July 1947 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 45.6 ft above mean sea level (closed stadia traverse).

Average discharge.--8 years, 55.6 cfs (40,250 acre-ft per year).

Extremes.--Maximum discharge during year, 665 cfs Nov. 19 (gage height, 4.99 ft); minimum, 16 cfs Sept. 11, 12; minimum gage height, 1.67 ft Oct. 28, Nov. 4.
1947-55: Maximum discharge, 1,610 cfs Feb. 22, 1949 (gage height, 7.81 ft), from rating curve extended above 700 cfs; minimum, 13 cfs Sept. 29, 1947, Sept. 11, 1953; minimum gage height, 1.06 ft Sept. 5, 6, 1949.

Remarks.--Records good. City of Bremerton diverts annually about 3,100 acre-ft from a point about 5 miles above station for municipal use. The diversion varies from almost no flow in August and September to as much as 10 cfs during winter months.

Revisions.--WSP 1216: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30			
1.6	11	2.2	67	1.7	14.5	3.0	203
1.8	28	2.4	92	1.9	28	3.5	307
2.0	46	2.6	124	2.1	47	4.0	418
				2.3	73	4.6	561
				2.6	124		

Note.--Same as following table above 2.6 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19	17.5	43	91	38	46	87	42	27	26	24	18
2	20	17.5	40	69	34	41	66	41	27	25	24	18
3	20	17.5	38	55	34	38	53	41	26	24	24	17
4	20	17.5	36	49	35	34	46	40	26	24	23	17
5	20	45	52	47	33	33	42	39	25	24	22	17
6	20	30	75	43	42	33	41	38	25	*23	22	*17
7	21	24	72	41	122	33	38	38	24	23	22	17
8	22	26	*58	44	261	34	39	36	24	23	*22	17
9	21	28	59	47	130	35	79	36	24	25	22	17
10	21	27	53	42	87	39	65	36	23	24	21	17
11	24	27	44	39	66	43	67	40	23	23	22	17
12	22	28	89	38	54	78	*124	38	23	22	22	16.5
13	21	32	117	38	48	76	130	38	23	22	22	22
14	20	56	126	34	43	72	106	38	23	21	21	22
15	20	67	130	41	42	65	96	36	23	21	21	24
16	20	68	92	58	39	59	104	34	23	22	21	22
17	21	140	69	78	36	53	94	*33	23	22	19.5	20
18	21	464	55	73	35	48	81	31	22	21	18.5	20
19	27	*538	47	59	34	41	73	31	22	20	19	20
20	34	252	40	49	34	38	69	30	22	20	18.5	20
21	30	149	38	43	34	38	62	30	22	19.5	18.5	20
22	23	103	36	39	34	40	57	29	22	20	18.5	19.5
23	22	75	47	41	34	36	55	29	26	19.5	18.5	19.5
24	21	57	98	45	40	35	52	28	25	19	19	19.5
25	19	114	96	*47	36	34	52	26	24	19.5	18.5	19
26	*19	101	72	42	35	33	49	28	24	33	18.5	19.5
27	19	91	58	39	34	33	47	28	23	33	18.5	20
28	18	70	72	36	*45	36	46	28	30	27	18.5	20
29	17.5	58	78	36	-	52	45	28	36	26	18.5	19.5
30	18	48	117	35	------	54	43	28	30	26	18.5	19.5
31	18	------	120	39	------	75	------	28	------	26	18.5	------
Total	658.5	2,788.0	2,167	1,477	1,539	1,405	2,008	1,048	740	723.5	634.5	571.5
Mean	21.2	92.9	69.9	47.6	55.0	45.3	66.9	33.8	24.7	23.3	20.5	19.0
Ac-ft	1,310	5,530	4,300	2,930	3,050	2,790	3,980	2,080	1,470	1,440	1,260	1,130

Calendar year 1954: Max 545 Min 17.5 Mean 60.4 Ac-ft 43,730
Water year 1954-55: Max 538 Min 16.5 Mean 43.2 Ac-ft 31,270

Peak discharge (base, 400 cfs).--Nov. 19 (9 a.m.) 665 cfs (4.99 ft).
* Discharge measurement made on this day.

Gold Creek near Bremerton, Wash.

Location.--Lat 47°33'20", long 122°48'35", in NE¼SW¼ sec. 21, T. 24 N., R. 1 W., on right bank 1¼ miles upstream from mouth and 8 miles west of Bremerton.

Drainage area.--1.54 sq mi.

Records available.--October 1945 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 750.9 ft above mean sea level (closed stadia traverse).

Average discharge.--10 years, 5.92 cfs (4,290 acre-ft per year).

Extremes.--Maximum discharge during year, 97 cfs Nov. 19 (gage height, 2.48 ft); minimum, 0.4 cfs Sept. 8 (gage height, 0.77 ft).
1945-55: Maximum discharge, 203 cfs Feb. 22, 1949 (gage height, 3.27 ft); minimum, 0.2 cfs Aug. 14, 1950; minimum gage height, 0.75 ft Oct. 2, 1945, Aug. 14, 1950.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1947-49(M), 1950(P).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30			
0.8	0.5	1.5	16.0	0.8	0.5	1.5	17
.9	1.1	1.7	26	.9	1.1	1.7	26
1.0	2.0	1.9	38	1.0	2.1	1.9	38
1.1	3.5	2.3	73	1.1	3.8	2.3	75
1.3	8.8			1.3	10		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	0.8	6.8	14.5	6.2	4.1	13.5	3.6	2.0	1.0	1.4	0.6
2	.6	.7	6.2	12	5.0	3.6	12	3.6	1.6	1.2	1.1	.5
3	.6	.7	5.6	10	5.0	3.4	10.5	3.6	1.6	1.4	1.0	.6
4	.6	.9	5.3	8.6	5.0	3.2	9.3	3.6	1.8	1.9	1.0	.6
5	.6	3.7	7.6	8.2	4.8	3.0	7.6	3.4	1.9	1.6	1.0	.6
6	.6	2.6	9.3	7.2	5.3	2.8	6.8	3.2	1.9	1.1	1.0	.6
7	.8	2.0	11.5	6.5	12	2.8	5.9	3.0	1.6	1.1	1.0	*.6
8	.8	2.3	*11	6.5	32	3.0	5.9	3.0	1.6	1.1	1.0	.5
9	.7	2.8	11	6.8	18.5	3.4	9.0	2.8	1.4	1.3	*.8	.6
10	.8	3.0	9.6	6.2	13.5	3.8	7.9	2.8	1.6	1.1	.8	.7
11	.9	3.2	8.2	5.9	11	5.0	*9.0	3.0	1.4	*1.0	.6	.7
12	.8	3.5	12	5.9	9.3	11.5	14	3.2	1.4	1.1	.8	.7
13	.7	4.3	14.5	5.9	8.2	12.5	16.5	3.2	1.1	1.1	.6	1.6
14	.7	8.1	17.5	5.3	7.2	10.5	14	3.0	1.0	1.1	.7	1.2
15	.6	11.5	19	6.2	6.2	9.0	12.5	3.2	1.1	.7	.8	1.6
16	.6	16.5	15	8.6	5.9	7.9	12.5	*3.0	1.3	1.0	.8	1.2
17	.7	30	12	12	5.3	6.8	12	2.7	1.3	.8	.8	1.0
18	.7	67	10	13.5	4.5	6.2	11.5	2.5	1.3	.9	.7	.9
19	1.0	67	8.6	12	4.5	5.6	10	2.7	1.2	1.0	.8	.8
20	1.5	*25	7.6	*9.6	4.3	5.0	9.3	2.7	1.1	.9	.8	.8
21	1.4	16	6.5	8.2	4.1	4.8	7.9	2.5	1.0	.9	.8	.8
22	1.1	12	6.2	7.2	3.8	5.3	6.8	2.5	1.0	.8	.6	.8
23	.9	9.6	7.2	6.8	3.8	4.8	6.8	2.2	1.8	.8	.6	.8
24	.8	8.2	10.5	7.6	*4.5	4.8	5.9	2.1	1.6	.8	.6	.8
25	.8	12	12	7.6	4.1	4.8	5.9	2.1	1.4	.8	.6	.8
26	*.8	13	11	6.8	3.8	4.5	5.3	1.9	1.4	3.0	.6	.8
27	.8	10.5	9.6	6.5	3.6	4.3	4.5	2.1	1.2	2.4	.6	.9
28	.8	9.6	11	6.2	4.5	4.5	4.5	2.0	1.8	1.8	.6	.8
29	.8	9.0	12	5.9	-	7.2	4.1	2.0	1.6	1.6	.6	.8
30	.8	7.9	16	5.6	------	7.6	3.8	1.9	1.4	1.4	.5	.8
31	.8	-----	17.5	6.5	------	10.5	-----	1.9	------	1.6	.6	------
Total	24.7	363.4	327.8	246.3	205.9	176.2	265.2	85.0	43.4	38.3	24.2	24.5
Mean	0.80	12.1	10.6	7.95	7.35	5.68	8.84	2.74	1.45	1.24	0.78	0.82
Cfsm	0.519	7.86	6.88	5.16	4.77	3.69	5.74	1.78	0.942	0.805	0.506	0.532
In.	0.60	8.78	7.92	5.95	4.97	4.26	6.40	2.05	1.05	0.92	0.58	0.59
Ac-ft	49	721	650	489	408	349	526	169	86	76	48	49

Calendar year 1954: Max 85 Min 0.6 Mean 6.94 Cfsm 4.51 In. 61.21 Ac-ft 5,020
Water year 1954-55: Max 67 Min 0.5 Mean 5.00 Cfsm 3.25 In. 44.07 Ac-ft 3,620

Peak discharge (base, 100 cfs).--No peak above base.
* Discharge measurement made on this day.

Tahuya River near Bremerton, Wash.

Location.--Lat 47°33'00", long 122°50'50", in SE¼ sec. 19, T. 24 N., R. 1 W., on right bank 100 ft downstream from bridge, 1½ miles downstream from Tahuya Lake, and 10 miles west of Bremerton.

Drainage area.--6.16 sq mi.

Records available.--May 1945 to September 1955. Published as Tahuyeh Creek near Bremerton, 1945 and as Tahuya Creek near Bremerton, 1946.

Gage.--Water-stage recorder. Altitude of gage is 540 ft (from topographic map). Prior to Sept. 16, 1954, at site a quarter of a mile upstream at datum 539 ft above mean sea level (closed stadia traverse).

Average discharge.--10 years, 21.4 cfs (15,490 acre-ft per year).

Extremes.--Maximum discharge during year, 330 cfs Nov. 19 (gage height, 4.98 ft); minimum, 1.3 cfs Nov. 3, 4, July 24; minimum gage height, 1.28 ft Nov. 3, 4.
1945-55: Maximum discharge, 460 cfs Feb. 9, 1951; maximum gage height, 5.58 ft Nov. 27, 1949, datum then in use; minimum discharge, 0.1 cfs Sept. 22-26, 1947, Sept. 1-10, 12, 13, 1949, Oct. 4-10, 1952.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Small diversions for domestic use.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.2	0.8	2.2	28
1.3	1.5	2.5	45
1.4	2.5	3.0	80
1.5	4.0	3.5	126
1.7	8.8	4.0	185
1.9	15.5	4.8	300

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.5	1.5	24	45	20	12	46	9.8	4.0	2.9	2.4	1.7
2	1.5	1.4	21	38	18	11	39	9.4	4.0	2.8	2.2	1.7
3	1.5	1.4	18.5	33	16.5	10	31	9.8	4.0	2.8	2.1	1.7
4	1.5	1.4	17	29	16.5	9.4	26	10.5	3.8	2.9	2.0	1.8
5	1.5	3.7	24	25	15.5	8.5	23	10	3.8	2.6	1.9	1.8
6	1.5	3.5	34	23	17.5	8.2	21	8.5	3.8	2.3	1.8	1.8
7	1.8	3.0	41	21	36	8.5	18	7.6	3.7	2.0	1.8	1.8
8	1.8	3.5	*39	21	108	9.1	16	7.3	3.5	2.0	1.8	1.8
9	1.8	4.4	37	21	76	10	17	6.8	3.2	2.2	*1.7	1.8
10	1.8	4.5	33	20	54	12.5	25	6.2	3.0	2.0	1.8	1.8
11	2.0	4.9	29	19	41	*14.5	*28	7.3	2.9	*2.0	1.8	1.8
12	1.8	6.0	39	18	33	32	45	7.0	2.8	2.0	1.7	1.8
13	1.8	9.0	55	18	28	40	52	7.0	2.8	1.8	1.8	2.3
14	1.8	22	66	17	24	36	44	6.8	2.5	1.8	1.7	2.3
15	1.8	15	81	18	22	31	40	6.2	2.5	1.7	1.7	2.5
16	1.7	23	62	25	19	27	41	*6.2	2.5	1.7	1.7	4.0
17	1.8	81	46	40	17.5	23	38	5.8	2.5	1.7	1.7	7.0
18	1.8	222	37	46	15	21	33	5.3	2.6	1.6	1.7	4.5
19	1.6	*294	31	*40	14	19	29	5.8	2.5	1.6	1.7	2.0
20	2.3	156	26	33	13	18	25	5.5	2.4	1.5	1.7	*1.8
21	2.0	82	22	28	12	17	22	5.3	2.3	1.5	1.7	1.8
22	2.0	55	20	25	11.5	17	21	7.4	2.3	1.4	1.7	1.8
23	1.7	41	20	24	11.5	16	21	6.8	3.2	1.4	1.7	2.0
24	1.7	32	35	25	13.5	16	18.5	5.5	3.0	1.4	1.7	4.0
25	1.7	42	42	25	12.5	15	18.5	4.7	2.9	1.4	1.7	10
26	1.6	41	37	23	11.5	15	19.5	4.7	2.9	2.5	1.7	4.5
27	*1.6	38	31	22	10.5	14	15	4.5	2.8	3.4	1.8	2.0
28	1.5	34	34	20	12	14	12.5	4.7	3.7	3.5	1.7	1.6
29	1.5	30	40	19	-	20	11	4.7	4.0	3.4	1.8	1.6
30	1.5	27	48	18	------	24	10.5	4.4	3.4	2.9	1.8	1.6
31	1.5	-----	55	20	-----	30	-----	4.2	------	2.6	1.7	------
Total	52.9	1,283.2	1,144.5	799	699.5	558.7	806.5	205.7	93.3	67.3	55.7	78.6
Mean	1.71	42.8	36.9	25.8	25.0	18.0	26.9	6.64	3.11	2.17	1.80	2.62
Cfsm	0.278	6.95	5.99	4.19	4.06	2.92	4.37	1.08	0.505	0.352	0.292	0.425
In.	0.32	7.75	6.91	4.82	4.22	3.37	4.87	1.24	0.56	0.41	0.34	0.47
Ac-ft	105	2,550	2,270	1,580	1,390	1,110	1,600	408	185	133	110	156

Calendar year 1954: Max 374 Min 0.8 Mean 26.8 Cfsm 4.35 In. 59.22 Ac-ft 19,370
Water year 1954-55: Max 294 Min 1.4 Mean 16.0 Cfsm 2.60 In. 35.28 Ac-ft 11,600

Peak discharge (base, 130 cfs).--Nov. 19 (7:30 a.m.) 330 cfs (4.98 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Dec. 16 to Jan. 19, Mar. 16 to Apr. 10, Apr. 12-21, Aug. 1-8, Sept. 15-19, 23-30; discharge estimated on basis of recorded range in stage and records for nearby stations.

Tahuya River near Belfair, Wash.

Location.--Lat 47°29'40", long 122°54'20", in SE¼SE¼ sec. 10, T. 23 N., R. 2 W., on left bank 3½ miles downstream from Panther Creek and 5 miles northwest of Belfair.

Drainage area.--16.1 sq mi.

Records available.--May 1945 to September 1955. Published as Tahuyeh Creek near Belfair, 1945, and as Tahuya Creek near Belfair, 1946.

Gage.--Water-stage recorder. Datum of gage is 353 ft above mean sea level (closed stadia traverse).

Average discharge.--10 years, 46.3 cfs (33,520 acre-ft per year).

Extremes.--Maximum discharge during year, 794 cfs Nov. 19 (gage height, 7.08 ft); minimum, 0.1 cfs Oct. 5, 15-19, Sept. 2-13, 17-30; minimum gage height, 1.92 ft Oct. 1-5.
1945-55: Maximum daily discharge, 1,000 cfs Jan. 22, 1950; no flow at times most years.

Remarks.--Records good except those below 5 cfs and those for periods of shifting control, which are fair. Small diversions for irrigation and domestic use. No regulation.

Revisions.--WSP 1246: Drainage area.

Rating tables, water year 1954-55, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30			
1.85	0.1	3.0	45	2.0	0.1	3.0	42
2.0	.8	3.5	91	2.1	.5	3.5	92
2.1	1.8	4.0	150	2.2	1.3	4.0	155
2.2	3.6	4.5	224	2.3	2.9	4.5	228
2.3	6.1	5.0	310	2.4	5.8	5.0	314
2.4	9.4	6.0	517	2.5	9.8	6.0	520
2.6	19	7.0	772	2.6	14.5	7.0	772
2.8	30			2.8	27		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.4	58	115	50	28	133	19	5.4	3.7	1.2	0.2
2	.2	.4	50	93	45	26	108	16	5.1	2.9	.9	.2
3	.2	.4	46	78	41	24	83	17	5.1	2.7	.7	.1
4	.2	.4	42	68	40	22	68	18	5.1	2.9	.6	.1
5	.1	.6	53	64	38	21	58	17	5.1	2.7	.6	.1
6	.2	3.6	84	57	42	19	50	16	4.8	2.3	.5	.1
7	.2	2.8	106	52	78	19	43	14	4.2	2.2	.5	.1
8	.2	2.8	90	52	291	20	40	13	3.7	1.8	.5	.1
9	.2	5.5	*83	53	182	22	60	13	3.2	1.8	.5	.1
10	.2	7.0	79	50	118	26	66	12	2.7	2.0	*.5	.1
11	.2	8.4	68	47	89	31	68	12	2.5	1.8	.5	.1
12	.2	11	89	44	70	68	*127	12	2.2	1.8	.4	.1
13	.2	15	140	44	60	89	156	12	2.0	1.5	.4	.2
14	.2	51	159	42	55	84	116	12	1.8	1.3	.4	.2
15	.2	93	202	43	49	74	96	11	1.8	*1.2	.4	.2
16	.1	120	145	62	42	64	100	10.5	1.7	1.2	.4	.2
17	.1	211	111	104	38	57	90	*9.8	1.5	1.0	.4	.2
18	.1	571	89	114	34	50	77	9.4	1.5	.9	.3	.1
19	.2	*662	74	94	31	45	66	9.0	1.4	.9	.3	.1
20	.3	361	64	*80	29	41	59	9.0	1.3	.9	.3	*.1
21	.4	206	55	68	26	38	51	8.6	1.2	.9	.3	.1
22	.3	138	50	62	26	40	45	8.2	1.2	.7	.3	.1
23	.2	103	51	57	24	38	41	9.4	1.5	.6	.3	.1
24	.2	85	96	59	26	34	36	8.6	1.8	.6	.3	.1
25	.2	108	109	64	26	33	33	7.8	2.2	.6	.3	.1
26	.2	114	92	59	23	31	33	6.9	2.2	1.0	.3	.1
27	*.2	109	78	54	22	30	30	6.6	2.0	.8	.3	.1
28	.2	89	83	50	*26	30	25	6.6	1.8	1.0	.3	.1
29	.3	78	99	47	-	48	22	6.6	8.2	1.5	.2	.1
30	.3	66	126	43	------	56	20	6.2	5.1	1.4	.2	.1
31	.3	-----	142	45	-----	80	-----	5.8	------	1.4	.2	------
Total	6.5	3,223.3	2,813	1,964	1,621	1,288	2,000	345.0	89.3	48.0	13.3	3.7
Mean	0.21	107	90.7	63.4	57.9	41.5	66.7	11.1	2.98	1.55	0.43	0.12
Cfsm	0.013	6.65	5.63	3.94	3.60	2.58	4.14	0.689	0.185	0.096	0.027	0.007
In.	0.02	7.45	6.50	4.54	3.74	2.98	4.62	0.80	0.21	0.11	0.03	0.01
Ac-ft	13	6,390	5,580	3,900	3,220	2,550	3,970	684	177	95	26	7.3

Calendar year 1954: Max 667 Min 0.1 Mean 53.7 Cfsm 3.34 In. 45.27 Ac-ft 38,870
Water year 1954-55: Max 662 Min 0.1 Mean 36.8 Cfsm 2.29 In. 31.01 Ac-ft 26,610

Peak discharge (base, 450 cfs).--Nov. 19 (8 a.m.) 794 cfs (7.08 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used Oct. 12 to Nov. 13, Dec. 3, 4, 22, Jan. 10-15, Jan. 28 to Feb. 6, Aug. 29 to Sept. 30.

Dogfish Creek near Poulsbo, Wash.

Location.--Lat 47°45'10", long 122°38'30", in SW¼ sec. 11, T. 26 N., R. 1 E., on left bank half a mile upstream from mouth and 1 mile north of Poulsbo.

Drainage area.--6.77 sq mi.

Records available.--July 1947 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 20 ft (from topographic map). Prior to Nov. 2, 1950, at site 200 ft downstream at datum 1.75 ft lower.

Average discharge.--8 years, 8.52 cfs (6,170 acre-ft per year).

Extremes.--Maximum discharge during year, 121 cfs Nov. 19 (gage height, 3.39 ft), from rating curve extended above 60 cfs on basis of contracted-opening determination at gage height 8.07 ft; minimum, 2.5 cfs Sept. 5; minimum gage height, 1.03 ft Sept. 5. 1947-55: Maximum discharge, 333 cfs Feb. 22, 1949 (gage height, 8.07 ft, present datum, from high-water mark on gage house), from rating curve extended above 50 cfs on basis of contracted-opening determination of peak flow; minimum, 1.8 cfs Aug. 13, 1947, July 30, 1951.

Remarks.--Records good. Small diversions for irrigation. No regulation.

Revisions (water years).--WSP 1122: 1947(M). WSP 1346: 1948-50(P), 1953(M). The figure of supplemental peak discharge for the water year 1950 has been revised as shown below, superseding figure published in WSP 1182.

Revised peak discharge.--1949-50: Mar. 5 (6 a.m.) 83 cfs.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18		Nov. 19 to Sept. 30			
1.3	3.5	1.0	2.3	1.7	20
1.5	10	1.1	3.1	2.0	34
1.8	25	1.3	7.4	2.3	52
2.1	42	1.5	13.5	2.6	72

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.9	4.9	8.6	10	8.0	11	11.5	6.1	4.6	7.4	4.1	3.0
2	4.2	4.9	8.6	9.5	6.9	9.2	9.8	5.6	4.8	5.6	3.9	3.0
3	4.2	5.2	8.3	8.3	6.6	8.0	9.5	5.6	5.4	5.6	3.9	2.9
4	4.2	5.2	8.6	9.5	6.9	6.9	7.7	5.4	5.6	7.1	3.5	2.8
5	4.2	8.6	19.5	11	7.4	6.6	6.9	5.1	5.8	5.4	3.3	2.7
6	4.4	6.3	22	9.2	7.1	7.4	6.6	4.8	5.1	4.8	3.1	2.7
7	4.6	5.4	*14.5	8.6	11.5	7.4	6.4	4.8	4.4	4.8	3.2	*3.0
8	4.6	6.6	11.5	10.5	13.5	7.7	6.6	5.4	3.7	4.8	3.4	3.1
9	4.4	7.7	12.5	9.8	9.2	7.7	8.6	4.8	3.4	4.8	*3.3	3.1
10	5.2	7.0	11.5	8.6	7.7	7.1	6.9	5.1	3.3	5.1	3.0	3.1
11	7.0	7.0	10	7.7	7.4	7.4	*6.4	5.8	3.3	4.6	3.1	3.1
12	5.4	11	28	7.4	7.1	12	22	5.6	3.4	4.1	3.3	2.9
13	5.2	13.5	18	8.9	6.9	9.5	10.5	5.6	3.4	3.9	3.2	4.8
14	4.9	19	25	7.4	7.4	8.3	8.9	6.6	3.5	3.4	3.1	4.4
15	4.6	13.5	22	12.5	8.0	7.4	8.6	5.6	3.5	3.3	3.1	4.4
16	4.4	16	13	13.5	6.9	7.1	9.5	5.4	3.5	3.9	3.2	4.4
17	4.2	22	11	13	6.4	6.9	7.7	5.1	3.7	3.4	3.1	3.9
18	4.4	38	9.5	10.5	6.1	6.9	6.9	4.8	3.9	3.3	3.0	3.5
19	5.4	58	8.9	*8.9	6.4	6.6	6.6	5.4	3.7	3.2	3.1	3.5
20	7.0	*15	8.3	8.0	6.4	6.4	6.4	4.8	3.5	3.1	3.1	3.7
21	6.6	10.5	8.0	7.4	6.4	6.6	6.1	4.8	3.3	3.1	3.0	3.5
22	5.4	10.5	7.7	7.4	6.1	6.6	6.9	4.8	3.7	*3.0	3.1	3.5
23	5.2	8.9	14	8.3	6.1	6.4	6.6	4.4	7.5	2.9	3.2	3.4
24	4.9	8.0	18	8.3	*6.6	6.1	5.8	4.4	6.1	3.1	3.3	3.3
25	4.9	13	11	7.7	6.6	7.1	5.8	4.6	4.6	3.2	3.3	3.3
26	4.6	10	9.2	7.1	7.1	7.1	5.6	5.4	5.8	5.6	3.2	3.5
27	*4.6	9.8	8.3	6.9	6.9	6.6	5.4	*5.4	5.4	5.4	3.1	3.7
28	4.6	9.5	11.5	6.9	16.5	8.3	5.6	5.1	6.9	4.4	3.0	4.6
29	4.6	9.8	11.5	6.9	-	12.5	5.6	5.1	7.1	4.4	3.0	3.9
30	4.6	9.2	13	6.9	------	9.8	5.4	5.1	6.9	4.6	3.0	3.5
31	4.6	-----	10.5	8.6	------	11.5	-----	4.6	------	4.4	3.0	------
Total	151.0	374.0	402.0	275.2	216.1	246.1	232.8	161.1	138.8	135.7	100.2	104.2
Mean	4.87	12.5	13.0	8.88	7.72	7.94	7.76	5.20	4.63	4.38	3.23	3.47
Cfsm	0.719	1.85	1.92	1.31	1.14	1.17	1.15	0.768	0.684	0.647	0.477	0.513
In.	0.83	2.05	2.21	1.51	1.19	1.35	1.28	0.88	0.76	0.75	0.55	0.57
Ac-ft	300	742	797	546	429	488	462	320	275	269	199	207

Calendar year 1954: Max 124 Min 2.7 Mean 11.6 Cfsm 1.71 In. 23.26 Ac-ft 8,400
Water year 1954-55: Max 58 Min 2.7 Mean 6.95 Cfsm 1.03 In. 13.93 Ac-ft 5,030

Peak discharge (base, 70 cfs).--Nov. 19 (4:45 a.m.) 121 cfs (3.39 ft).
* Discharge measurement made on this day.

Huge Creek near Wauna, Wash.

Location.--Lat 47°23'20", long 122°41'50", at north line sec. 20, T. 22 N., R. 1 E., on right bank at downstream side of bridge, an eighth of a mile upstream from mouth and 2½ miles west of Wauna.

Drainage area.--5.51 sq mi.

Records available.--July 1947 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 100 ft (from topographic map). Prior to June 26, 1951, at same site at datum 0.86 ft higher.

Average discharge.--8 years, 11.4 cfs (8,250 acre-ft per year).

Extremes.--Maximum discharge during year, 87 cfs about Feb. 8 (gage height, 1.63 ft, from recorded range in stage); minimum, 3.8 cfs Sept. 4, 5 (gage height, 0.54 ft).
1947-55: Maximum discharge, 391 cfs Feb. 9, 1951 (gage height, 3.64 ft); minimum, 3.2 cfs Sept. 1, 1950; minimum gage height, 0.54 ft Sept. 4, 5, 1955.

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation or diversion above station.

Revisions.--WSP 1216: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 31				Jan. 1 to Sept. 30			
0.6	3.7	1.1	23	0.5	3.0	0.9	15
.7	5.8	1.3	40	.6	4.9	1.1	26
.8	8.7	1.6	81	.7	7.4	1.4	54
.9	12.5			.8	10.5		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.0	4.6	8.7	15	9.2	*12.5	12	7.4	5.3	4.7	4.5	4.3
2	4.0	4.6	7.8	13	8.2	11.5	10.5	7.4	5.3	4.7	4.3	4.1
3	4.0	4.6	7.4	12	7.9	10.5	9.2	7.4	5.5	4.9	4.3	4.1
4	4.0	4.8	7.2	11.5	8.2	9.2	8.6	7.1	5.5	4.9	4.1	4.0
5	4.0	9.1	8.1	11	7.9	8.9	8.2	6.5	5.5	4.7	4.3	4.0
6	4.0	5.8	10	10.5	13	8.6	7.9	6.5	5.3	*4.7	4.3	*4.0
7	4.0	5.5	*9.7	10.5	25	8.6	7.9	6.2	5.1	4.7	4.5	4.1
8	4.2	6.0	8.1	10.5	53	8.6	8.9	6.2	4.9	4.7	*4.5	4.1
9	4.2	6.3	9.7	11	34	8.2	13	6.2	4.9	5.3	4.5	4.1
10	4.4	6.6	9.7	10.5	21	9.2	11	6.2	4.7	5.1	4.5	4.1
11	5.0	6.6	8.4	10	16	9.2	13.5	7.1	4.7	4.9	4.5	4.0
12	4.6	7.4	18	9.9	13	12.5	17.5	6.5	4.7	4.7	4.5	4.1
13	4.2	8.4	25	9.6	11	13.5	17.5	6.2	4.7	4.5	4.5	5.3
14	4.2	9.7	21	9.1	10	12	15.5	7.4	4.7	4.3	4.5	5.3
15	4.0	9.0	20	11	9.6	10.5	13.5	6.5	4.7	4.5	4.5	5.3
16	4.0	9.0	14	12.5	9.2	10	14	6.2	4.7	4.9	4.3	5.1
17	4.0	17	12	15	8.7	9.6	13.5	6.0	4.7	4.5	4.3	4.9
18	4.4	32	10.5	13	8.3	9.2	*12	*5.8	4.7	4.5	4.3	4.5
19	6.0	67	9.4	11	8.0	8.9	10.5	5.8	4.5	4.5	4.3	4.5
20	7.8	36	8.4	10.5	8.0	8.6	10.5	5.8	4.5	4.5	4.3	4.5
21	5.5	*22	8.1	9.9	8.0	9.2	10	5.5	4.5	4.3	4.3	4.5
22	4.6	15.5	7.8	9.8	8.0	10	9.2	5.5	4.5	4.1	4.3	4.5
23	4.6	12.5	8.7	10.5	8.0	8.6	9.2	5.5	4.9	4.1	4.3	4.5
24	4.8	11	14	11.5	10.5	8.2	8.6	5.5	4.9	4.3	4.3	4.5
25	*4.8	21	16	*12.5	9.2	8.2	8.2	5.5	4.9	4.3	4.3	4.5
26	4.6	20	13	11	8.6	8.2	8.2	5.5	4.9	5.3	4.3	4.7
27	4.6	17	11	10	8.5	8.2	7.9	5.3	4.9	5.3	4.3	4.9
28	4.6	13	11.5	9.2	12	8.9	7.9	5.3	5.1	4.7	4.1	4.9
29	4.6	11	11	8.9	-	10.5	7.6	5.5	4.9	4.7	4.1	4.7
30	4.6	9.7	16	8.2	------	10.5	7.6	5.5	4.9	4.7	4.3	4.7
31	4.6	-----	17	10	-----	11.5	-----	5.5	------	4.7	4.3	------
Total	140.9	412.7	367.2	338.6	362.0	301.8	319.6	190.5	147.0	144.7	134.7	134.8
Mean	4.55	13.8	11.8	10.9	12.9	9.74	10.7	6.15	4.90	4.67	4.35	4.49
Cfsm	0.826	2.50	2.14	1.98	2.34	1.77	1.94	1.12	0.889	0.848	0.789	0.815
In.	0.95	2.79	2.48	2.29	2.44	2.04	2.16	1.29	0.99	0.98	0.91	0.91
Ac-ft	279	819	728	672	718	599	634	378	292	287	267	267

Calendar year 1954: Max 152 Min 4.0 Mean 13.1 Cfsm 2.38 In. 32.23 Ac-ft 9,480
Water year 1954-55: Max 67 Min 4.0 Mean 8.20 Cfsm 1.49 In. 20.23 Ac-ft 5,940

Peak discharge (base, 50 cfs).--Nov. 19 (9 a.m.) 79 cfs (1.59 ft); about Feb. 8 (time unknown) 87 cfs (1.63 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Jan. 1-25, Feb. 6-28; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Mason Lake near Union, Wash.

Location.--Lat 47°19'15", long 122°57'15", in SE¼ sec. 8, T. 21 N., R. 2 W., on right shore 7½ miles southeast of Union.

Drainage area.--20.2 sq mi.

Records available.--July 1951 to September 1955 (fragmentary).

Gage.--Staff gage read once daily at various times. Altitude of gage is 190 ft (from topographic map).

Extremes.--Maximum gage height observed during year, 3.62 ft Nov. 21; minimum observed, 1.30 ft Sept. 4, 5, 6, 11, 12.

1951-55: Maximum gage height observed, 5.02 ft Feb. 2, 1953; minimum observed, 1.20 ft Oct. 1, 1952.

High water during period Mar. 25 to Apr. 1, 1951, reached a stage of 7.5 ft, from high-water marks.

Remarks.--No diversion above station. Beaver dams at outlet cause some change in lake elevation.

Gage height, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-	-	2.70	-	-	-	2.34	-	-	1.70	-
2	1.68	-	-	2.70	-	-	2.42	-	-	1.70	-	-
3	1.68	-	-	-	-	-	-	-	-	1.70	-	1.32
4	1.68	-	-	-	-	-	-	2.30	1.80	1.70	-	1.30
5	-	-	-	-	2.30	2.28	-	-	1.80	1.68	-	1.30
6	-	2.04	-	-	2.32	2.28	-	-	1.78	-	1.60	1.30
7	-	2.04	-	-	2.34	2.24	-	2.24	-	-	1.60	-
8	-	-	-	2.40	-	2.22	-	2.20	-	-	1.60	-
9	1.68	-	-	2.42	-	2.20	2.42	2.18	-	1.70	-	-
10	1.70	-	-	2.42	-	-	2.42	-	-	1.70	1.58	-
11	1.70	-	2.48	-	-	-	2.48	-	1.76	-	-	1.30
12	-	-	2.50	-	-	-	-	-	1.74	-	1.54	1.30
13	-	2.18	2.52	-	2.66	2.34	-	-	1.70	1.70	-	-
14	-	2.20	-	-	2.68	2.34	-	2.10	1.70	-	1.52	-
15	-	2.22	-	-	-	-	-	2.08	-	1.67	-	-
16	-	2.28	-	2.40	-	-	-	2.06	-	-	1.50	-
17	-	-	-	2.40	-	-	2.60	-	1.68	1.70	1.50	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	2.64	-	-	-	1.76	-	-	-
20	-	-	-	-	2.50	-	-	2.00	1.74	-	-	-
21	-	3.62	-	-	2.46	-	-	1.98	-	-	1.40	-
22	-	3.60	-	2.40	2.42	-	2.52	1.98	-	-	-	-
23	1.80	-	-	2.40	-	-	-	1.96	-	1.58	-	-
24	1.80	3.34	-	2.40	-	2.28	2.48	-	-	1.56	-	-
25	-	3.36	2.52	-	-	-	2.46	-	-	1.56	-	-
26	-	3.32	2.52	-	2.52	2.26	-	-	-	1.60	-	-
27	-	-	2.50	-	-	2.24	-	1.90	-	-	-	-
28	-	3.30	-	-	-	2.22	-	1.90	1.76	-	-	-
29	-	-	-	-	-	-	-	1.88	-	-	1.36	-
30	-	-	-	-	-	-	2.38	1.86	-	1.66	-	1.38
31	-	-	-	-	-	-	-	-	-	1.68	-	-

Goldsborough Creek near Shelton, Wash.

Location.--Lat 47°12'50", long 123°10'50", in SW¼ sec. 15, T. 20 N., R. 4 W., on right bank 3½ miles west of Shelton and 5½ miles upstream from mouth.

Drainage area.--42 sq mi, approximately.

Records available.--June 1951 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 205 ft (from topographic map).

Extremes.--Maximum discharge during year, 775 cfs Nov. 19 (gage height, 7.25 ft); minimum, 21 cfs Sept. 5-7; minimum gage height, 1.75 ft Oct. 1, 2, 6.
1951-55: Maximum discharge, 1,090 cfs Jan. 31, 1953 (gage height, 8.33 ft); minimum, 16 cfs Sept. 23, 1951, Sept. 22-25, 1952; minimum gage height, 1.75 ft Sept. 23, 1951, Oct. 1, 2, 6, 1954.

Remarks.--Records good except those for periods of shifting control, which are fair. No regulation or diversion above station.

Revisions.--WSP 1246: Drainage area.

Rating tables, water year 1954-55, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30			
1.75	23	3.0	158	1.8	20	3.5	194
1.8	26	3.5	226	1.9	26	4.0	258
1.9	35	4.0	300	2.1	43	5.0	400
2.1	54	4.5	378	2.4	71	6.0	560
2.4	85	5.0	459	2.7	102	7.1	748
2.7	120	6.0	633	3.0	135		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	37	124	413	125	148	306	95	50	40	45	23
2	23	36	106	320	100	133	263	91	49	38	37	22
3	24	38	94	228	92	117	214	88	49	36	34	22
4	24	38	88	182	105	100	172	87	48	36	32	22
5	24	156	108	172	102	93	145	81	47	34	31	22
6	23	154	135	151	158	91	127	77	46	34	30	21
7	27	95	139	135	320	91	114	75	45	33	29	22
8	42	95	102	139	572	*93	118	73	46	33	29	22
9	32	122	106	156	483	93	212	71	41	35	29	22
10	39	97	*113	125	344	153	171	70	40	35	28	22
11	98	93	94	113	236	218	227	81	40	34	*26	22
12	64	100	132	106	186	281	268	81	39	32	26	22
13	42	113	214	128	166	268	298	72	38	31	26	26
14	37	208	224	110	143	236	246	70	38	30	26	30
15	34	233	272	121	131	184	*194	66	38	*30	26	32
16	32	252	215	163	118	154	218	63	38	34	26	33
17	36	335	168	209	109	136	201	62	37	36	25	28
18	34	586	137	174	100	123	174	61	36	33	25	26
19	63	*734	120	145	95	110	160	60	36	32	24	24
20	130	531	106	137	91	102	156	*58	35	30	25	24
21	152	376	98	122	88	132	145	56	34	30	24	24
22	86	259	92	117	85	250	136	55	34	30	24	24
23	68	169	95	153	83	178	158	54	34	29	24	*23
24	56	131	145	184	106	146	139	53	35	29	24	22
25	51	255	233	193	91	145	127	52	34	29	24	22
26	46	323	170	152	88	147	121	54	34	40	24	22
27	43	342	137	135	84	127	114	54	35	47	24	26
28	*40	267	144	*124	143	132	116	52	40	39	23	24
29	40	193	194	115	-	193	106	52	38	39	23	24
30	40	151	284	105	------	200	101	56	39	41	23	23
31	38	-----	432	114	------	252	------	53	------	54	23	------
Total	1,511	6,519	4,821	4,941	4,544	4,826	5,247	2,073	1,193	1,083	839	721
Mean	48.7	217	156	159	162	156	175	66.9	39.8	34.9	27.1	24.0
Cfsm	1.16	5.17	3.71	3.79	3.86	3.71	4.17	1.59	0.948	0.831	0.645	0.571
In.	1.34	5.77	4.27	4.38	4.02	4.27	4.65	1.84	1.06	0.96	0.74	0.64
Ac-ft	3,000	12,930	9,560	9,800	9,010	9,570	10,410	4,110	2,370	2,150	1,660	1,430

Calendar year 1954: Max 904 Min 23 Mean 138 Cfsm 3.29 In. 44.52 Ac-ft 99,730
Water year 1954-55: Max 734 Min 21 Mean 105 Cfsm 2.50 In. 33.94 Ac-ft 76,000

Peak discharge (base, 400 cfs).--Nov. 19 (7 a.m.) 775 cfs (7.25 ft); Dec. 31 (7:30 p.m.) 446 cfs (5.29 ft); Feb. 8 (2 p.m.) 608 cfs (6.28 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used Nov. 16-18, Apr. 2-24.

Skookum Creek at Kamilche, Wash.

Location.--Lat 47°07'30", long 123°06'50", in NW¼ sec. 19, T. 19 N., R. 3 W., on right bank three-quarters of a mile southwest of Kamilche and 3 miles upstream from mouth.

Drainage area.--17.2 sq mi.

Records available.--June 1951 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 35 ft (from topographic map).

Extremes.--Maximum discharge during year, 429 cfs Feb. 8 (gage height, 8.16 ft); minimum, 1.6 cfs Sept. 5, 7 (gage height, 1.25 ft).
1951-55: Maximum discharge, 795 cfs Jan. 31, 1953 (gage height, 9.85 ft); minimum, 0.7 cfs Sept. 16, 1951; minimum gage height, 1.25 ft Sept. 5, 7, 1955.

Remarks.--Records good except those for period of no gage-height record, which are poor. No regulation or diversion above station.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 15		Nov. 16 to Sept. 30			
1.4	3.3	1.25	1.6	2.6	47
1.6	7.8	1.3	2.5	3.0	67
1.8	13.5	1.4	4.6	3.5	94
2.0	20	1.6	10	4.0	124
2.3	32	1.8	16.5	5.0	186
2.6	45	2.0	23	6.0	256
3.1	71	2.3	34	8.0	415

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.7	12.5	78	267	64	80	150	37	14	8.7	9.0	2.1
2	4.5	11	66	192	55	*77	130	35	12.5	8.7	6.6	2.1
3	4.9	11.5	58	144	51	71	105	33	13.5	6.6	5.8	1.9
4	4.9	11.5	52	120	54	61	90	31	13.5	7.2	5.3	1.9
5	4.5	45	50	103	52	55	84	30	12	6.6	4.6	1.9
6	4.5	48	56	86	90	52	72	29	11.5	6.1	4.2	1.9
7	4.5	37	53	75	185	51	62	27	11	5.8	3.9	1.7
8	5.8	36	46	76	395	52	62	26	9.6	*5.8	3.7	1.9
9	5.6	43	48	79	274	54	89	25	9.0	6.1	3.7	2.1
10	7.9	39	*49	68	174	82	85	24	8.4	6.1	3.5	2.1
11	36	40	44	63	134	110	107	31	8.1	5.6	*3.7	2.1
12	28	46	63	58	110	140	140	31	7.8	4.4	3.5	2.1
13	21	46	94	64	93	130	163	27	7.5	4.2	3.5	2.3
14	16	58	108	58	79	120	147	25	7.5	4.4	3.3	3.7
15	14	68	144	63	70	100	*125	23	7.5	5.6	3.3	4.9
16	12.5	124	117	75	62	84	129	20	7.2	5.8	3.1	6.1
17	13	184	98	94	55	74	113	20	6.9	5.6	3.1	3.7
18	12.5	260	82	86	50	66	95	*1.95	7.2	4.4	3.1	3.3
19	25	*269	72	76	46	59	83	19	6.9	4.4	2.9	3.3
20	36	200	63	73	42	56	74	17.5	6.4	4.4	2.9	3.1
21	38	145	57	66	40	70	66	16	6.1	4.2	2.9	2.7
22	31	113	53	64	38	130	62	15.5	6.1	4.2	2.7	2.7
23	28	89	52	83	36	95	70	14.5	6.1	4.4	2.3	2.7
24	24	74	86	102	53	80	62	15	6.4	4.2	2.3	2.5
25	21	144	132	111	46	70	55	17.5	5.8	3.7	2.3	2.5
26	19	173	103	*98	43	73	51	16	6.4	5.8	2.3	*2.3
27	18	172	86	87	42	60	46	14.5	6.6	5.3	2.5	2.9
28	*16.5	138	84	76	74	72	45	13.5	8.1	4.9	2.5	2.9
29	15	113	102	69	-	98	41	13	7.5	5.1	2.5	2.5
30	14	93	187	62	------	110	39	18	8.1	6.6	2.1	2.7
31	13.5	-----	280	62	-----	130	-----	16	------	13.5	2.1	------
Total	503.8	2,843.5	2,663	2,800	2,507	2,562	2,642	699.5	255.2	178.4	109.2	80.6
Mean	16.3	94.8	85.9	90.3	89.5	82.6	88.1	22.6	8.51	5.75	3.52	2.69
Cfsm	0.948	5.51	4.99	5.25	5.20	4.80	5.12	1.31	0.495	0.334	0.205	0.156
In.	1.09	6.15	5.76	6.05	5.42	5.54	5.71	1.51	0.55	0.39	0.24	0.17
Ac-ft	999	5,640	5,280	5,550	4,970	5,080	5,240	1,390	506	354	217	160

Calendar year 1954: Max 634 Min 2.8 Mean 59.1 Cfsm 3.44 In. 46.67 Ac-ft 42,800
Water year 1954-55: Max 395 Min 1.7 Mean 48.9 Cfsm 2.84 In. 38.58 Ac-ft 35,390

Peak discharge (base, 350 cfs).--Feb. 8 (12 m.) 429 cfs (8.16 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Mar. 4 to Apr. 6; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Deschutes River near Rainier, Wash.

Location.--Lat 46°51'10", long 122°40'00", in SW¼ sec. 22, T. 16 N., R. 1 E., on right bank 75 ft upstream from county road crossing, half a mile downstream from mouth of outlet from Reichel Lake, and 2½ miles southeast of Rainier.

Drainage area.--89.8 sq mi.

Records available.--June 1949 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 350 ft (from topographic map).

Average discharge.--6 years, 278 cfs (201,300 acre-ft per year).

Extremes.--Maximum discharge during year, 3,260 cfs Feb. 8 (gage height, 10.15 ft); minimum, 36 cfs Sept. 3-13 (gage height, 2.81 ft).
1949-55: Maximum discharge, 4,740 cfs Dec. 9, 1953 (gage height, 12.07 ft); minimum, 21 cfs Sept. 20, 1952; minimum gage height, 2.64 ft Sept. 20, Oct. 17, 1952.

Remarks.--Records good. Probably some small diversion for irrigation and domestic use. No regulation.

Revisions.--WSP 1246: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30			
2.8	38	4.5	421	2.8	35	5.5	790
3.0	62	5.0	580	3.0	62	6.0	990
3.3	110	5.5	758	3.3	115	6.5	1,190
3.6	170	6.0	955	3.6	178	7.0	1,430
4.0	275			4.0	279	8.0	1,950
				4.5	433	9.0	2,550
				5.0	600		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	61	213	1,150	411	259	1,030	233	190	121	64	38
2	39	58	190	758	332	230	850	225	171	115	64	38
3	39	*57	171	525	279	206	600	220	*169	106	61	38
4	41	62	158	414	248	192	459	218	176	98	58	36
5	39	72	152	354	238	174	385	218	183	92	56	36
6	39	105	223	299	238	171	354	223	183	94	54	36
7	39	95	317	262	634	165	388	225	185	89	54	36
8	47	82	265	268	2,380	183	446	241	194	83	51	36
9	50	91	225	341	1,070	208	702	230	215	106	49	36
10	46	105	230	299	635	332	898	215	215	109	48	36
11	98	121	208	262	473	496	738	241	194	100	48	36
12	166	128	244	238	382	593	1,110	323	171	*92	47	38
13	114	126	614	282	326	479	1,140	288	152	83	48	39
14	90	264	453	299	282	*357	730	417	131	80	47	70
15	74	335	656	282	257	299	542	379	119	75	*45	56
16	66	602	*496	311	235	262	459	314	109	73	44	172
17	66	792	363	347	215	238	404	276	106	70	44	115
18	64	955	294	311	199	223	357	271	107	65	44	78
19	126	1,420	254	259	185	215	323	326	104	62	44	62
20	264	945	228	233	176	203	302	338	100	61	43	*56
21	231	532	213	215	167	203	*302	279	98	43	52	
22	182	363	218	208	163	529	326	233	100	56	42	49
23	152	276	279	223	156	509	407	215	125	56	40	48
24	128	228	628	*243	187	417	398	190	107	56	40	45
25	110	320	535	302	194	350	341	176	98	55	40	45
26	96	391	369	282	187	329	344	187	98	62	40	44
27	88	446	288	251	180	323	347	196	104	83	39	47
28	80	372	265	233	233	382	305	180	113	70	39	56
29	72	296	382	223	-	922	273	185	107	65	39	49
30	68	248	795	215	------	818	246	223	102	65	38	47
31	65	-----	1,630	257	-----	750	-----	215	------	67	38	------
Total	2,818	9,948	11,556	10,146	10,662	11,017	15,506	7,700	4,226	2,467	1,451	1,568
Mean	90.9	332	373	327	381	355	517	248	141	79.6	46.8	52.3
Cfsm	1.01	3.70	4.15	3.64	4.24	3.95	5.76	2.76	1.57	0.886	0.521	0.582
In.	1.17	4.12	4.79	4.20	4.42	4.56	6.42	3.19	1.75	1.02	0.60	0.65
Ac-ft	5,590	19,730	22,920	20,120	21,150	21,850	30,760	15,270	8,380	4,890	2,880	3,110

Calendar year 1954: Max 2,560 Min 39 Mean 300 Cfsm 3.34 In. 45.41 Ac-ft 217,400
Water year 1954-55: Max 2,380 Min 36 Mean 244 Cfsm 2.72 In. 36.89 Ac-ft 176,600

Peak discharge (base, 2,000 cfs).--Feb. 8 (10 a.m.) 3,260 cfs (10.15 ft).
* Discharge measurement made on this day.

Woodland Creek near Olympia, Wash.

Location.--Lat 47°04'20", long 122°49'00", in SW¼ sec. 4, T. 18 N., R. 1 W., on left bank 1½ miles upstream from mouth and 4.4 miles northeast of Olympia.

Drainage area.--24.3 sq mi.

Records available.--June 1949 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 25 ft (from topographic map).

Average discharge.--6 years, 27.8 cfs (20,130 acre-ft per year).

Extremes.--Maximum discharge during year, 64 cfs Feb. 8 (gage height, 2.54 ft); minimum, 11 cfs Sept. 1 (gage height, 1.23 ft).
1949-55: Maximum discharge, 204 cfs Feb. 9, 1951 (gage height, 4.46 ft); minimum, 8.0 cfs Dec. 17-21, 1952; minimum gage height, 1.20 ft Aug. 7, 1953.

Remarks.--Records good. Some diversion for domestic use. No regulation.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 14)

1.18	11.5	1.9	35
1.4	17.5	2.3	52
1.6	24		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13.5	15	22	29	23	32	29	25	20	16	15	12.5
2	13	*14.5	22	27	22	32	28	24	20	16	15	12.5
3	13.5	14.5	22	26	22	30	27	24	20	16	15	12.5
4	13	14	21	25	22	28	26	24	20	16	15	12.5
5	13	17.5	22	25	22	27	26	24	20	16	14	12
6	13	15.5	23	25	24	27	26	24	19.5	15.5	14	12
7	13.5	15	25	24	32	27	25	23	*19	15.5	15	12
8	*13.5	15.5	23	25	51	27	26	23	19	15.5	15	12
9	13.5	16	24	26	37	27	29	23	19	15.5	15	12
10	14	15.5	24	25	33	*28	28	23	18.5	15.5	15	11.5
11	15.5	16.5	23	24	31	28	30	24	18.5	*15	*15	11.5
12	14.5	18	26	24	30	31	32	23	18.5	15	15	11.5
13	14	19	26	24	29	31	32	23	18.5	15	14.5	12.5
14	14	20	26	24	29	29	31	24	18	14.5	15	12.5
15	14	20	*28	24	28	28	29	23	17.5	14	14.5	13
16	14	23	25	24	28	27	30	23	17.5	14.5	14.5	13
17	14	26	24	25	27	27	30	23	17.5	14	14.5	12.5
18	14	29	23	24	27	26	29	22	17.5	14	14	12
19	17	35	23	23	26	26	29	22	17.5	14	14	*12
20	17	27	23	23	26	26	*28	22	17	14	14	12
21	17	24	23	*23	26	27	27	22	17	14	14	12
22	15.5	23	23	22	26	30	27	22	17	13.5	13.5	12
23	15.5	22	24	23	25	29	27	22	17	14	13.5	12
24	15.5	22	27	23	26	28	27	22	17	14	13.5	12
25	15.5	26	29	23	26	28	26	22	17	13.5	13.5	12
26	15.5	25	26	23	26	28	27	21	17	15	13	12.5
27	15.5	24	25	22	25	27	26	21	16.5	15	13	12.5
28	15	24	25	22	30	27	25	21	17	14.5	13	12
29	15	23	25	22	-	29	25	21	16	15	13	12
30	15	22	29	22	-----	28	25	21	16	15	13	12.5
31	15	-----	32	23	-----	28	-----	21	-----	15	12.5	-----
Total	451.5	621.5	763	744	779	873	832	702	540.5	460.0	438.5	365.5
Mean	14.6	20.7	24.6	24.0	27.8	28.2	27.7	22.6	18.0	14.8	14.1	12.2
Cfsm	0.601	0.852	1.01	0.988	1.14	1.16	1.14	0.930	0.741	0.609	0.580	0.502
In.	0.69	0.95	1.17	1.14	1.19	1.34	1.27	1.07	0.83	0.70	0.67	0.56
Ac-ft	896	1,230	1,510	1,480	1,550	1,730	1,650	1,390	1,070	912	870	725

Calendar year 1954: Max 96 Min 13 Mean 30.8 Cfsm 1.27 In. 17.22 Ac-ft 22,290
Water year 1954-55: Max 51 Min 11.5 Mean 20.7 Cfsm 0.852 In. 11.58 Ac-ft 15,010

Peak discharge (base, 110 cfs).--No peak above base.
* Discharge measurement made on this day.

McAllister Springs near Olympia, Wash.

Location.--Lat 47°01'45", long 122°43'25", in SE¼ sec. 19, T. 18 N., R. 1 E., on right side of stilling pool just above city of Olympia control gates, 8 miles east of Olympia.

Records available.--March 1951 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is about mean sea level. Auxiliary water-stage recorder 30 ft downstream from base gage.

Extremes.--Maximum daily discharge during year, 30 cfs Feb. 8, 28, Mar. 29; minimum daily, 18.5 cfs July 15.
1951-55: Maximum daily discharge, 38 cfs Mar. 25, 1951; minimum daily, 17.5 cfs Sept. 21, 1952, Aug. 12, 1953.

Remarks.--Records fair. City of Olympia diverts 2 to 8 cfs for municipal use. Gage pool regulated by low dam and flashboards. Backwater from tides occurs daily.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	*22	23	26	26	28	25	25	24	25	23	20
2	23	23	23	25	23	28	24	24	24	24	22	21
3	22	23	23	24	24	28	24	25	24	24	22	20
4	23	22	23	24	24	28	24	25	25	24	23	20
5	23	23	26	24	26	26	24	25	24	25	22	20
6	22	23	26	23	27	27	25	25	24	24	22	20
7	22	24	25	25	28	26	25	25	*23	24	22	20
8	24	24	24	26	30	28	26	25	23	25	22	20
9	23	24	24	27	28	28	25	26	22	24	22	21
10	24	24	24	26	25	*28	24	25	22	24	21	21
11	26	25	25	25	27	28	24	25	23	*25	*22	21
12	25	26	26	25	26	29	24	25	23	25	22	21
13	23	26	26	26	26	28	24	25	22	22	21	22
14	23	26	26	26	25	26	24	26	22	20	21	20
15	24	25	*26	25	25	26	24	25	24	18.5	20	22
16	24	25	24	24	25	26	24	25	23	25	21	22
17	23	24	23	23	26	26	26	24	22	24	21	22
18	23	25	22	24	27	27	26	24	26	26	21	22
19	24	25	21	24	26	25	25	24	24	24	22	*21
20	24	24	22	24	28	26	*26	24	24	23	22	22
21	22	23	22	*25	25	26	26	26	24	21	20	21
22	22	24	22	24	27	28	26	26	24	22	20	21
23	22	21	24	24	28	28	28	26	24	22	20	20
24	22	21	25	25	28	27	28	25	24	23	20	21
25	22	23	26	25	28	26	27	25	24	22	20	21
26	22	24	25	25	29	26	26	25	24	23	21	20
27	22	24	24	24	29	29	26	25	24	23	21	20
28	22	24	25	26	30	29	25	26	24	23	20	20
29	23	25	25	26	-	30	26	25	24	23	19.5	20
30	22	23	26	26	------	27	26	26	24	23	21	20
31	22	------	26	27	------	25	------	25	------	23	19.5	------
Total	712	715	752	773	746	843	757	777	708	723.5	656.0	622
Mean	23.0	23.8	24.3	24.9	26.6	27.2	25.2	25.1	23.6	23.3	21.2	20.7
Ac-ft	1,410	1,420	1,490	1,530	1,480	1,670	1,500	1,540	1,400	1,440	1,300	1,230

Calendar year 1954: Max 36 Min 21 Mean 27.0 Ac-ft 19,570
Water year 1954-55: Max 30 Min 18.5 Mean 24.1 Ac-ft 17,410

* Discharge measurement made on this day.
Note.--Rating not determined for conditions of backwater other than 6 and 8 boards on rectangular weir Nov. 19, 20, May 23, 24, June 12, 13, 20, 21, July 10, 11, 19, 20, 22, 23, Aug. 1, 2, 6-8, 27, 28, Sept. 4, 5, 25, 26; discharge estimated.

Nisqually River near National, Wash.

Location.--Lat 46°45'10", long 122°05'00", in SW¼SW¼ sec. 29, T. 15 N., R. 6 E., on right bank 100 ft downstream from railroad bridge, 1 mile west of National, 2½ miles west of Ashford, and 3 miles upstream from Mineral Creek.

Drainage area.--133 sq mi.

Records available.--May 1942 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,450 ft (from river-profile map).

Average discharge.--13 years, 755 cfs (546,600 acre-ft per year).

Extremes.--Maximum discharge during year, 3,740 cfs June 10 (gage height, 7.24 ft); minimum, 224 cfs Mar. 20 (gage height, 3.22 ft).
1942-55: Maximum discharge, 9,560 cfs Dec. 11, 1946 (gage height, 10.34 ft); minimum, 108 cfs Dec. 1, 3, 1952 (gage height, 2.76 ft).

Remarks.--Records good. No diversion. Slight regulation at low water by powerplant of Mount Rainier National Park on Paradise River.

Revisions (water years).--WSP 1286: 1947(P), 1950(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 19-30)

3.2	217	5.0	1,250
3.5	325	5.5	1,700
4.0	560	6.0	2,200
4.5	865	7.1	3,540

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	302	346	582	1,200	610	317	582	410	993	1,380	1,170	615
2	298	341	534	930	560	306	534	401	930	1,220	1,020	639
3	295	325	497	780	512	295	482	*406	1,070	1,120	768	651
4	283	314	467	687	502	276	443	438	1,350	1,060	768	645
5	269	366	472	627	492	265	424	502	1,660	986	800	639
6	262	457	534	560	582	258	452	582	1,690	979	872	633
7	273	443	482	518	1,300	262	528	669	1,910	979	924	651
8	341	379	438	502	2,490	273	687	780	2,430	993	898	534
9	291	*366	424	472	1,580	269	1,170	742	*3,240	1,160	768	528
10	302	358	415	443	1,100	287	1,300	794	3,470	1,210	754	534
11	576	341	379	424	891	287	1,050	1,050	3,170	1,230	774	507
12	497	370	415	406	754	287	1,050	1,360	2,660	1,370	723	462
13	410	366	448	429	681	276	937	1,180	2,110	1,600	657	507
14	384	438	424	401	615	258	794	1,030	1,720	1,980	657	539
15	397	549	507	388	571	241	687	917	1,400	2,030	663	443
16	397	687	438	379	534	*244	633	865	1,160	2,200	*663	576
17	410	1,060	419	366	482	237	582	865	1,090	1,660	699	424
18	370	2,190	419	350	438	241	534	1,020	1,070	*1,270	735	362
19	462	2,310	415	333	415	237	492	1,600	1,100	1,050	717	350
20	477	1,890	*429	325	406	231	462	1,840	1,230	1,010	693	358
21	588	1,250	487	317	388	241	467	1,510	1,660	1,020	675	317
22	571	1,060	675	392	384	295	497	1,240	1,980	1,060	657	*295
23	507	878	681	571	366	273	507	1,070	2,000	1,130	615	283
24	457	742	687	621	370	258	472	951	1,560	1,210	598	280
25	424	924	615	615	350	258	438	930	1,290	1,000	576	283
26	397	924	544	*566	337	262	443	937	1,250	884	544	302
27	384	924	497	528	321	280	410	910	1,310	878	566	482
28	362	813	482	497	321	333	392	865	1,480	774	604	457
29	350	717	518	472	-	615	397	1,060	1,520	944	645	375
30	346	645	916	462	------	518	397	1,340	1,340	1,160	657	341
31	346	-----	1,490	566	-----	482	-----	1,150	------	1,170	639	------
Total	12,028	22,573	16,730	16,127	18,362	9,162	18,243	29,414	50,843	37,717	22,499	14,012
Mean	388	752	540	520	656	296	608	949	1,695	1,217	726	467
Cfsm	2.92	5.65	4.06	3.91	4.93	2.23	4.57	7.14	12.7	9.15	5.46	3.51
In.	3.36	6.31	4.68	4.51	5.13	2.56	5.10	8.22	14.22	10.55	6.29	3.92
Ac-ft	23,860	44,770	33,180	31,990	36,420	18,170	36,180	58,340	100,800	74,810	44,630	27,790

Calendar year 1954: Max 2,310 Min 262 Mean 784 Cfsm 5.89 In. 79.95 Ac-ft 567,200
Water year 1954-55: Max 3,470 Min 231 Mean 733 Cfsm 5.51 In. 74.85 Ac-ft 530,900

Peak discharge (base, 2,600 cfs).--Nov. 18 (5 p.m.) 2,750 cfs (6.48 ft); Feb. 8 (5:30 a.m.) 2,990 cfs (6.68 ft); June 10 (2 a.m.) 3,740 cfs (7.24 ft).
* Discharge measurement made on this day.

Mineral Creek near Mineral, Wash.

Location.--Lat 46°44'20", long 122°08'40", in SW¼ sec. 35, T. 15 N., R. 5 E., on right bank three-eighths of a mile downstream from railroad bridge, 1 mile upstream from mouth, and 2½ miles northeast of Mineral.

Drainage area.--74.3 sq mi.

Records available.- June 1942 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,340 ft (from topographic map).

Average discharge.--13 years, 369 cfs (267,100 acre-ft per year).

Extremes.--Maximum discharge during year, 5,000 cfs Feb. 8 (gage height, 7.59 ft); minimum, 42 cfs Sept. 11, 12 (gage height, 2.00 ft).
1942-55: Maximum discharge, 7,600 cfs Dec. 9, 1953 (gage height, 9.02 ft); minimum, 19.5 cfs Sept. 22, 23, Oct. 6-10, 13, 14, 1952; minimum gage height, 1.40 ft Sept. 22, 23, 1950.

Remarks.--Records good. No regulation or diversion above station.

Revisions.--WSP 1246: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 1 to Feb. 6, Feb. 20 to Mar. 21, Mar. 24-27)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
2.3	64	4.0	650	2.0	42	3.6	470
2.5	85	4.5	1,110	2.2	63	4.0	680
2.8	131	5.0	1,650	2.4	95	4.5	1,010
3.1	200	6.0	2,860	2.7	158	5.0	1,430
3.5	350			3.0	239	6.0	2,600
				3.3	342	7.0	4,050

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	127	422	1,450	503	199	770	342	585	346	97	47
2	70	122	370	970	450	191	620	331	565	309	95	46
3	70	115	328	658	400	180	510	*331	615	271	93	45
4	69	110	305	534	375	163	430	374	692	242	85	44
5	68	170	289	455	355	153	395	480	782	222	78	43
6	67	248	395	406	446	158	430	555	782	222	75	43
7	*66	175	355	370	1,920	160	535	610	863	207	70	44
8	92	154	305	346	*3,470	170	674	656	996	207	68	45
9	75	*161	289	323	1,480	173	1,410	605	*1,140	265	68	44
10	78	168	289	293	968	239	1,260	615	1,110	268	64	44
11	319	157	262	273	746	258	940	821	975	249	63	43
12	385	185	360	258	626	261	954	947	828	236	62	43
13	254	195	485	289	570	227	870	788	680	224	61	53
14	190	281	473	258	500	202	692	692	550	219	59	80
15	157	467	608	254	452	186	580	626	448	210	58	83
16	139	847	479	254	408	*176	530	595	378	194	*58	199
17	139	1,650	416	254	366	168	470	605	346	176	59	108
18	122	2,660	370	237	327	168	425	752	342	*156	59	78
19	262	2,420	336	218	295	163	395	1,030	331	144	5[illegible]	68
20	332	1,640	*318	215	281	151	374	1,030	342	142	55	64
21	522	1,120	332	206	265	174	382	870	395	135	53	61
22	450	766	444	244	252	*404	425	758	416	129	52	*57
23	395	587	467	314	239	302	452	668	438	116	52	53
24	310	491	522	375	252	255	404	626	342	110	52	52
25	262	636	444	450	230	242	354	626	285	106	51	52
26	227	739	385	*395	216	233	350	644	271	135	52	51
27	200	847	346	360	205	249	312	638	258	129	51	95
28	178	698	355	336	202	369	291	600	274	108	50	104
29	159	574	450	323	-	752	302	692	265	106	49	85
30	146	485	1,280	328	------	600	309	776	281	108	48	76
31	135	-----	2,220	450	-----	650	-----	656	------	101	48	------
Total	6,008	18,995	14,699	12,096	16,799	7,976	16,845	20,339	16,575	5,792	1,942	1,950
Mean	194	633	474	390	600	257	562	656	552	187	62.6	65.0
Cfsm	2.61	8.52	6.38	5.25	8.08	3.46	7.56	8.83	7.43	2.52	0.843	0.875
In.	3.01	9.51	7.36	6.05	8.41	3.99	8.43	10.18	8.30	2.90	0.97	0.98
Ac-ft	11,920	37,680	29,160	23,990	33,320	15,820	33,410	40,340	32,880	11,490	3,850	3,870

Calendar year 1954: Max 3,000 Min 65 Mean 431 Cfsm 5.80 In. 78.75 Ac-ft 312,100
Water year 1954-55: Max 3,470 Min 43 Mean 384 Cfsm 5.17 In. 70.09 Ac-ft 277,700

Peak discharge (base 2,700 cfs).--Nov. 18 (2:30 p.m.) 3,110 cfs (6.19 ft); Dec. 31 (6 a.m.) 2,550 cfs (5.85 ft); Feb. 8 (4 a.m.) 5,000 cfs (7.59 ft).
* Discharge measurement made on this day.

Alder Reservoir at Alder, Wash.

Location.--Lat 46°48'05", long 122°18'30", in NW¼ sec. 9, T. 15 N., R. 4 E., near left end of Alder Dam on Nisqually River, 1 mile west of Alder and 4½ miles upstream from Mashel River.

Drainage area.--286 sq mi.

Records available.--November 1944 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 7.61 ft below mean sea level, datum of 1929 (levels by city of Tacoma). Prior to July 8, 1946, staff gage at same site and datum.

Extremes.--Maximum contents during year, 232,000 acre-ft Aug. 2 (gage height, 1,207.06 ft); minimum, 131,700 acre-ft Mar. 28 (gage height, 1,168.04 ft).

1944-55: Maximum contents, that of Aug. 2, 1955; minimum observed (since reservoir first filled), 93,990 acre-ft Feb. 16, 1949 (gage height, 1,147.61 ft).

Remarks.--Reservoir is formed by concrete arch dam; storage began Nov. 7, 1944; dam completed in 1945. Capacity, 99,170 acre-ft between gage heights 1,114 ft (lower limit of operating range) and 1,177 ft (gage height of spillway). Water can be controlled by spillway gates to gage height 1,207 ft, usable capacity, 179,600 acre-ft. Dead storage, 52,100 acre-ft. Figures given herein represent total contents. Water is used by city of Tacoma for power production.

Capacity table (gage height, in feet, and contents, in acre-feet)
(Prepared by city of Tacoma from project surveys and maps)

1,168	131,700	1,190	183,300
1,170	135,800	1,200	210,800
1,180	158,300	1,207	231,700

Contents, in acre-feet, at 12 p.m., water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	216,600	188,100	209,400	217,800	187,600	173,300	137,000	146,200	172,300	225,900	231,700	220,200
2	216,100	186,800	207,800	217,500	186,800	170,500	137,900	144,600	172,500	226,200	231,400	220,200
3	216,100	184,800	206,800	217,800	185,600	167,700	139,600	143,500	172,800	225,900	230,800	220,500
4	214,300	183,300	205,900	217,500	184,300	164,700	139,200	143,100	174,600	226,800	230,500	220,800
5	212,300	181,700	205,300	216,600	183,000	162,000	138,500	143,100	177,900	227,400	230,200	221,400
6	210,300	181,000	206,200	215,800	182,500	159,700	138,100	142,600	180,200	228,000	230,500	221,700
7	208,200	180,200	206,200	214,300	187,400	157,300	138,100	142,600	183,500	228,600	231,100	221,400
8	207,400	178,400	205,300	213,700	203,900	154,800	139,200	143,700	188,900	229,600	231,100	220,500
9	207,100	177,100	204,400	213,400	206,800	152,400	145,100	144,000	196,000	230,500	230,800	220,500
10	206,800	176,600	204,200	211,700	208,500	150,800	150,100	144,200	203,600	230,200	230,800	220,800
11	206,200	176,600	203,900	210,000	209,100	149,000	152,700	145,800	209,100	230,500	230,500	221,100
12	206,500	176,400	204,700	207,900	208,800	147,800	156,400	148,500	212,600	231,100	229,900	220,500
13	205,000	176,100	205,600	206,500	207,900	145,600	158,700	150,400	214,600	231,400	229,900	220,200
14	203,000	176,900	207,100	204,400	206,500	143,700	159,700	151,700	215,200	231,100	229,300	219,900
15	201,300	178,200	209,100	203,000	204,700	142,200	159,900	152,900	215,200	231,100	229,000	219,300
16	200,700	180,500	210,300	202,700	202,700	140,400	159,900	153,100	214,600	231,100	228,300	220,200
17	200,100	185,300	210,600	201,000	200,400	139,600	159,900	153,100	213,700	230,500	227,700	220,200
18	198,400	195,800	210,300	199,200	198,400	139,400	159,200	154,300	213,700	230,200	227,100	220,200
19	198,100	205,600	210,300	196,900	196,000	138,300	158,300	157,600	215,200	229,600	226,800	219,600
20	198,100	204,200	209,700	195,200	194,200	138,100	157,100	161,100	216,100	230,800	225,600	218,400
21	199,200	203,300	209,400	193,400	191,800	136,600	156,400	163,700	217,500	231,100	225,300	216,900
22	199,200	205,300	210,000	192,300	189,700	136,000	155,700	166,000	219,600	231,100	225,000	215,800
23	198,900	207,600	210,300	192,300	187,600	135,000	155,200	166,200	221,100	231,100	225,000	215,500
24	198,600	209,400	211,400	191,500	185,300	133,900	154,500	166,500	221,400	231,700	224,700	215,200
25	197,800	210,800	212,900	191,300	182,800	132,900	153,400	167,000	222,000	231,100	224,400	214,900
26	195,800	211,700	213,200	190,700	180,700	132,300	152,400	167,200	222,900	231,400	223,500	212,900
27	194,400	212,800	212,900	190,200	178,200	132,100	150,800	167,200	223,200	231,400	222,000	212,000
28	193,100	213,200	212,600	189,200	175,900	132,100	149,200	167,500	224,400	230,800	222,000	210,800
29	191,500	212,800	212,900	188,700	-	134,100	147,800	169,200	225,600	231,100	221,100	208,800
30	190,500	211,400	216,100	188,400	-------	134,500	147,200	171,500	225,900	231,400	220,800	207,100
31	190,000	-------	220,500	187,900	-------	135,200	-------	172,500	-------	231,700	220,800	-------

Monthly gage height and contents, water year October 1954 to September 1955

Date	Gage height (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	1,202.19	217,200	-
Oct. 31	1,192.56	190,000	-27,200
Nov. 30	1,200.18	211,400	+21,400
Dec. 31	1,203.33	220,500	+9,100
Calendar year 1954	-	-	+3,000
Jan. 31	1,191.81	187,900	-32,600
Feb. 28	1,187.14	175,900	-12,000
Mar. 31	1,169.74	135,200	-40,700
Apr. 30	1,175.20	147,200	+12,000
May 31	1,185.68	172,300	+25,100
June 30	1,205.14	225,900	+53,600
July 31	1,206.98	231,700	+5,800
Aug. 31	1,203.35	220,800	-10,900
Sept.30	1,198.69	207,100	-13,700
Water year 1954-55	-	-	-10,100

† Gage height at 12 p.m.

La Grande Reservoir at La Grande, Wash.

Location.--Lat 46°49'20", long 122°18'10", in SE¼ sec. 33, T. 16 N., R. 4 E., at left end of gate control structure 1 mile southeast of La Grande and 1½ miles downstream from Alder Dam.

Drainage area.--289 sq mi.

Records available.--January 1945 to September 1955. January 1945 to September 1951 included in combined adjustment to monthly flow of Nisqually River at La Grande. Month-end contents January 1945 to September 1950 published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 7.61 ft below mean sea level, datum of 1929 (levels by city of Tacoma). Prior to June 12, 1947, month-end gage heights furnished by city of Tacoma from temporary gages in pool above dam.

Extremes.--Maximum contents during year, 2,616 acre-ft Aug. 17 (gage height, 933.8 ft); minimum, 1,710 acre-ft May 28 (gage height, 912.7 ft).
1947-55: Maximum contents, 2,760 acre-ft May 14, 1950 (gage height, 936.4 ft); minimum (since reservoir first filled), 1,600 acre-ft June 21, 1953 (gage height, 908.8 ft).

Remarks.--Reservoir is formed by concrete dam completed in 1944; storage began February 1945. Usable storage, 1,050 acre-ft between gage heights 910 ft (minimum practical head) and 935 ft (normal reservoir level). Dead storage, 1,630 acre-ft. Figures given herein represent total contents. Water used by city of Tacoma for power production.

Month-end gage height and total contents, water year October 1954 to September 1955

Date	Gage height (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	931.5	2,494	-
Oct. 31	927.9	2,313	-181
Nov. 30	928.5	2,342	+29
Dec. 31	930.8	2,458	+116
Calendar year 1954	-	-	+111
Jan. 31	928.0	2,318	-140
Feb. 28	928.7	2,352	+34
Mar. 31	927.5	2,294	-58
Apr. 30	929.8	2,407	+113
May 31	930.1	2,422	+15
June 30	927.6	2,299	-123
July 31	929.8	2,407	+108
Aug. 31	928.3	2,333	-74
Sept.30	927.3	2,284	-49
Water year 1954-55	-	-	-210

† Gage height at 12 p.m.

Nisqually River at La Grande, Wash.

Location.--Lat 46°50'30", long 122°19'35", in SE¼ sec. 29, T. 16 N., R. 4 E., on right bank half a mile downstream from city of Tacoma powerplant, half a mile northwest of La Grande, and three-quarters of a mile upstream from Mashel River.
Drainage area.--292 sq mi.
Records available.--September 1906 to October 1911, November and December 1911 (gage heights only), October 1919 to September 1931, October 1943 to September 1955. Monthly discharge only for some periods, published in WSP 1316. Published as "below Little Nisqually River, near La Grande" 1906-10, and as "near La Grande" 1912, 1919-31.
Gage.--Water-stage recorder. Altitude of gage is 490 ft (from river-profile map). Sept. 5, 1906, to Sept. 8, 1910, staff gage just below site of diversion dam 4 miles upstream at different datum. January 1910 to December 1911, staff gage at La Grande powerhouse site, datum at mean sea level (levels by city of Tacoma). January 1920 to September 1931 water-stage recorder at approximately same site as that of first staff gage at datum 921.17 ft above mean sea level (levels by city of Tacoma). Dec. 7, 1943, to Feb. 8, 1945, water-stage recorder 600 ft downstream from La Grande powerhouse at different datum.
Average discharge.--29 years (1906-11, 1919-31, 1943-55), 1,350 cfs (977,400 acre-ft per year), adjusted for storage.
Extremes.--Maximum discharge during year, 6,740 cfs Nov. 21, Jan. 2 (gage height, 6.28 ft); minimum, 185 cfs Jan. 16 (gage height, 2.25 ft); minimum daily, 497 cfs Oct. 3. 1906-11, 1919-31, 1943-55: Maximum discharge, 19,500 cfs Dec. 12, 1921 (includes flow in power conduit); practically no flow on many occasions at site near La Grande as result of regulation.
Remarks.--Records excellent. Flow regulated by city of Tacoma powerplant at La Grande since December 1943, at Alder Reservoir (see p. 66) since November 1944, and by La Grande Reservoir (see p. 67) since February 1945. All diversions returned to river above gage.
Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1949-50. WSP 1316: 1927-28(M).

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	716	1,310	2,100	5,700	1,800	1,980	1,570	1,310	1,870	2,050	1,550	986
2	758	1,330	2,040	2,900	1,820	1,980	1,490	1,740	1,860	1,600	1,250	920
3	497	1,470	1,380	1,800	1,830	2,020	918	1,610	1,860	1,820	1,320	787
4	1,250	1,380	1,360	1,840	1,840	2,000	1,470	1,380	1,640	929	1,190	768
5	1,400	1,510	1,300	1,830	1,710	1,890	1,530	1,370	1,340	1,020	1,160	567
6	1,460	1,330	902	1,810	1,640	1,640	1,570	1,640	1,790	1,110	979	802
7	1,360	1,110	1,150	1,840	1,760	1,680	1,670	1,720	1,740	998	872	1,070
8	1,030	*1,590	1,340	1,360	1,820	1,840	1,560	1,490	*1,300	997	1,140	1,160
9	647	1,370	1,360	1,280	1,870	1,790	1,530	1,660	1,550	1,140	1,100	834
10	518	983	1,200	1,800	1,910	1,730	1,480	1,660	1,710	1,790	1,110	660
11	1,530	726	972	1,810	1,790	1,770	1,730	1,770	2,230	1,490	*1,120	560
12	916	913	847	1,810	2,000	1,720	1,780	1,820	2,230	1,480	1,130	920
13	1,620	935	854	1,820	2,050	1,640	1,800	1,780	2,200	*1,820	1,020	1,050
14	1,740	637	870	1,820	2,080	1,610	1,690	1,690	2,230	2,570	1,030	964
15	1,490	820	778	1,580	2,080	*1,440	1,800	1,410	2,220	2,680	1,090	976
16	950	1,020	844	1,080	2,120	1,450	1,670	1,800	2,200	2,670	1,130	822
17	1,010	1,220	*1,060	1,660	2,120	962	1,570	1,840	2,220	2,330	1,200	678
18	1,360	1,340	1,230	1,660	1,950	865	1,780	1,820	1,580	1,710	1,170	588
19	1,180	2,390	1,120	1,770	1,960	1,180	1,810	1,870	1,010	1,740	1,260	940
20	886	5,830	1,280	1,570	1,860	746	1,820	1,860	1,430	840	1,380	1,070
21	831	3,770	1,200	1,610	1,930	1,440	1,760	1,740	1,700	1,290	1,100	*1,080
22	1,250	1,180	1,200	1,410	1,900	1,390	1,690	1,400	1,800	1,580	905	1,000
23	1,250	733	1,500	1,180	1,920	1,580	1,770	1,890	1,970	1,430	828	935
24	1,000	808	1,370	1,720	1,930	1,380	1,590	1,880	1,980	1,270	836	539
25	1,420	1,260	896	*1,620	1,960	1,360	*1,770	1,840	1,440	1,530	956	532
26	1,440	1,730	1,060	1,550	1,950	1,100	1,840	1,850	1,290	1,240	1,010	1,300
27	1,520	1,780	1,370	1,550	1,880	1,000	1,800	1,950	1,620	1,240	1,410	1,130
28	1,410	1,610	1,180	1,550	1,890	1,270	1,830	1,770	1,320	1,360	742	1,320
29	1,380	1,890	1,220	1,350	-	1,430	1,820	1,130	1,440	1,180	1,260	1,450
30	1,210	2,020	1,530	1,260	- - - -	1,710	1,630	1,590	1,680	1,370	1,020	1,420
31	948	- - - -	3,190	1,730	- - - -	1,610	- - - -	1,870	- - - -	1,310	958	- - - -
Total	35,977	45,995	39,703	55,270	53,370	47,203	49,738	52,150	52,450	47,584	34,226	27,828
Mean	1,161	1,533	1,281	1,783	1,906	1,523	1,658	1,682	1,748	1,535	1,104	928
Ac-ft	71,360	91,230	78,750	109,600	105,900	93,630	98,650	103,400	104,000	94,380	67,890	55,200
(†)	-27,380	+21,430	+9,220	-32,740	-11,970	-40,760	+12,110	+25,120	+53,480	+5,910	-10,970	-13,750

Adjusted for change in reservoir contents

Mean	715	1,894	1,431	1,250	1,691	860	1,862	2,090	2,647	1,631	926	697
Cfsm	2.45	6.49	4.90	4.28	5.79	2.95	6.38	7.16	9.07	5.59	3.17	2.39
In.	2.82	7.24	5.65	4.94	6.03	3.39	7.11	8.25	10.11	6.44	3.65	2.66
Ac-ft	43,980	112,700	87,970	76,860	93,930	52,870	110,800	128,500	157,500	100,300	56,920	41,450

Observed

Calendar year 1954: Max 8,530 Min 460 Mean 1,620 Ac-ft 1,173,000
Water year 1954-55: Max 5,830 Min 497 Mean 1,484 Ac-ft 1,074,000

Adjusted

Calendar year 1954: Mean 1,625 Cfsm 5.57 In. 75.53 Ac-ft 1,176,000
Water year 1954-55: Mean 1,469 Cfsm 5.03 In. 68.29 Ac-ft 1,064,000

* Discharge measurement made on this day.
† Change in contents, in acre-feet in Alder and La Grande Reservoirs.

Mashel River near La Grande, Wash.

Location.--Lat 46°51'25", long 122°18'05", in NW¼SE¼ sec. 21, T. 16 N., R. 4 E., on right bank 50 ft below bridge, 1½ miles northeast of La Grande, and 3¼ miles upstream from mouth.

Drainage area.--80.7 sq mi.

Records available.--October 1940 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 619.53 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--15 years, 225 cfs (162,900 acre-ft per year).

Extremes.--Maximum discharge during year, 2,960 cfs Feb. 8 (gage height, 7.25 ft); minimum, 24 cfs Aug. 14 (gage height, 2.99 ft).
1940-55: Maximum discharge, 7,980 cfs Dec. 11, 1946 (gage height, 9.30 ft), from rating curve extended above 3,200 cfs; minimum, 4.5 cfs Sept. 24, 1952 (gage height, 1.72 ft).

Remarks.--Records fair. Small diversion for city of Eatonville water supply. Some regulation at low water by millpond in Eatonville.

Revisions (water years).--WSP 1246: Drainage area. WSP 1286: 1948.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 12 to Nov. 16, Nov. 22 to Dec. 29, July 30 to Sept. 30)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
3.2	45	4.0	194	2.9	27	4.3	318
3.4	67	4.3	310	3.1	44	4.6	450
3.6	97	4.6	450	3.3	65	5.0	670
3.8	138			3.5	93	5.5	1,020
Note.--Same as following table above 4.6 ft.				3.7	132	6.0	1,450
				4.0	213	7.0	2,620

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	56	75	164	688	382	137	744	256	266	522	77	32
2	54	70	146	460	266	128	577	235	242	516	70	33
3	54	61	129	324	208	119	475	252	334	355	64	34
4	53	*56	123	250	194	102	372	273	368	276	60	34
5	52	67	116	223	201	98	326	307	368	235	55	33
6	51	173	179	179	301	102	343	326	334	204	51	33
7	50	106	176	151	1,210	106	441	347	343	186	48	34
8	60	87	141	151	2,060	137	599	372	*417	170	45	34
9	57	97	123	170	912	186	964	334	455	242	42	35
10	55	97	123	156	599	262	1,000	330	431	284	40	33
11	158	91	108	a150	460	273	712	417	372	262	38	34
12	332	159	140	a145	368	338	1,040	490	303	216	*35	33
13	188	154	286	a170	310	242	849	412	239	186	32	36
14	136	194	194	a155	273	189	594	538	183	*170	31	60
15	106	212	382	a150	252	*156	460	450	149	146	31	60
16	94	286	254	a150	223	139	394	381	128	122	33	211
17	91	555	*201	a145	195	134	347	347	117	115	33	98
18	83	616	185	a130	167	142	307	394	126	104	33	61
19	162	800	164	a120	154	142	273	544	137	93	33	49
20	254	652	151	a120	146	126	259	495	128	84	33	47
21	191	440	151	a115	137	128	288	377	146	78	32	*42
22	198	332	191	a150	139	324	399	307	154	75	32	39
23	270	250	234	a200	134	273	426	259	229	72	31	36
24	188	188	391	a350	144	226	355	226	178	69	31	34
25	151	326	278	*a560	146	226	*299	219	137	66	31	33
26	131	346	198	350	137	242	334	232	132	73	31	33
27	114	391	156	270	126	266	310	248	172	95	31	52
28	103	302	146	238	126	403	262	223	267	88	30	87
29	92	242	274	212	-	856	256	252	422	82	30	64
30	86	191	742	212	------	555	248	368	363	87	29	52
31	78	-----	1,050	302	-----	465	------	330	------	86	32	------
Total	3,748	7,616	7,296	7,146	9,970	7,222	14,253	10,541	7,640	5,359	1,224	1,496
Mean	121	254	235	231	356	233	475	340	255	173	39.5	49.9
Cfsm	1.50	3.15	2.91	2.86	4.41	2.89	5.89	4.21	3.16	2.14	0.489	0.618
In.	1.73	3.51	3.36	3.29	4.59	3.33	6.57	4.86	3.52	2.47	0.56	0.69
Ac-ft	7,430	15,110	14,470	14,170	19,780	14,320	28,270	20,910	15,150	10,630	2,430	2,970

Calendar year 1954:	Max	2,060	Min	40	Mean	269	Cfsm	3.33	In.	45.31	Ac-ft	195,000
Water year 1954-55:	Max	2,060	Min	29	Mean	229	Cfsm	2.84	In.	38.48	Ac-ft	165,600

Peak discharge (base, 1,500 cfs).--Feb. 8 (4:30 a.m.) 2,960 cfs (7.25 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Ohop Creek near Eatonville, Wash.

Location.--Lat 46°52'50", long 122°16'45", in SE¼ sec. 10, T. 16 N., R. 4 E., on left bank 400 ft downstream from Lynch Creek, 600 ft downstream from outlet of Ohop Lake, and 1 mile northwest of Eatonville.

Drainage area.--35.5 sq mi.

Records available.--June 1927 to September 1932, September 1941 to September 1955.

Gage.--Water-stage recorder and concrete control. Datum of gage is 519.8 ft above mean sea level (stadia traverse). June 1, 1927, to Sept. 30, 1932, water-stage recorder at same site at datum 2.79 ft higher. Sept. 6, 1941, to Mar. 17, 1942, staff gage at present site and datum.

Average discharge.--19 years, 65.1 cfs (47,130 acre-ft per year).

Extremes.--Maximum discharge during year, 480 cfs Feb. 8 (gage height, 3.66 ft); minimum, 4.2 cfs Aug. 22; minimum gage height, 1.57 ft Sept. 11, 13.
1927-32, 1941-55: Maximum discharge, 1,740 cfs Dec. 9, 1953; maximum gage height, 5.97 ft Dec. 11, 1946; minimum discharge, 2.3 cfs Aug. 22, 23, 1944; minimum gage height observed, 1.12 ft Sept. 26, 1947.

Remarks.--Records good. No diversion above station. Natural regulation in Ohop Lake.

Revisions (water years).--WSP 1246: Drainage area. WSP 1286: 1946.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.5	2.8	2.1	44
1.6	5.9	2.4	87
1.7	10	2.7	147
1.8	16.5	3.0	225
1.9	24	3.5	400

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	27	55	283	76	55	229	79	51	121	27	16.5
2	30	26	51	222	68	55	217	73	50	105	26	14
3	29	25	48	166	64	55	187	74	55	81	25	14
4	27	*24	45	136	63	53	157	74	57	70	23	14
5	26	32	43	121	67	51	129	73	55	63	22	14
6	25	67	48	105	104	50	119	70	54	57	21	12
7	24	48	46	92	258	51	119	68	51	51	20	10.5
8	23	42	44	87	373	60	127	67	49	48	18	*7.3
9	22	46	42	94	252	71	180	61	45	64	17	7.5
10	22	44	40	89	181	91	240	60	*43	82	16.5	5.9
11	58	40	37	82	140	94	200	64	39	73	15	6.3
12	92	68	39	81	121	94	228	64	35	63	*9.7	4.8
13	53	61	53	84	101	87	205	61	33	*54	8.3	5.2
14	42	55	48	79	89	81	164	92	30	48	7.5	11.5
15	35	51	77	74	81	74	140	82	29	43	7.5	18.5
16	31	53	60	71	71	68	123	76	26	40	7.1	68
17	30	81	*53	71	65	65	107	70	26	37	7.1	48
18	28	92	50	68	61	65	100	67	27	32	7.1	36
19	47	105	46	63	58	64	92	67	26	29	7.5	30
20	61	87	43	60	54	60	89	63	25	27	7.1	28
21	53	73	42	58	51	*61	92	55	23	26	7.1	25
22	50	64	61	73	49	120	*125	53	24	25	6.3	23
23	55	58	68	117	46	113	138	50	42	24	6.7	20
24	51	53	92	132	48	107	119	49	33	23	6.7	18
25	44	82	81	121	48	105	103	48	29	22	7.1	18.5
26	39	84	70	101	48	113	107	49	31	24	7.1	16.5
27	35	89	61	*91	46	117	111	49	45	32	7.1	24
28	33	76	61	84	50	138	100	46	78	28	10.5	29
29	30	68	117	76	-	194	92	48	85	28	17	23
30	29	61	255	73	------	161	85	55	76	29	16.5	21
31	28	-----	308	74	-----	149	-----	58	------	30	17	------
Total	1,182	1,782	2,184	3,128	2,733	2,722	4,224	1,965	1,272	1,479	408.5	590.0
Mean	38.1	59.4	70.5	101	97.6	87.8	141	63.4	42.4	47.7	13.2	19.7
Cfsm	1.07	1.67	1.99	2.85	2.75	2.47	3.97	1.79	1.19	1.34	0.372	0.555
In.	1.24	1.87	2.29	3.28	2.86	2.85	4.43	2.06	1.33	1.55	0.43	0.62
Ac-ft	2,340	3,530	4,330	6,200	5,420	5,400	8,380	3,900	2,520	2,930	810	1,170

Calendar year 1954: Max 556 Min 10.5 Mean 75.5 Cfsm 2.13 In. 28.90 Ac-ft 54,680
Water year 1954-55: Max 373 Min 4.8 Mean 64.8 Cfsm 1.83 In. 24.81 Ac-ft 46,930

Peak discharge (base, 270 cfs).--Dec. 31 (6:30 a.m.) 325 cfs (3.26 ft); Feb. 8 (5 a.m.) 480 cfs (3.66 ft); Apr. 9 (11 p.m.) 280 cfs (3.13 ft).
* Discharge measurement made on this day.

Nisqually River near McKenna, Wash.

Location.--Lat 46°51'20", long 122°27'10", in SE¼ sec. 20, T. 16 N., R. 3 E., on right bank 800 ft downstream from Elbow Creek, three-quarters of a mile upstream from Tanwax Creek, and 7.4 miles southeast of McKenna.

Drainage area.--445 sq mi.

Records available.--August 1941 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 373.6 ft above mean sea level (stadia traverse). Prior to Sept. 30, 1941, staff gage at same site and datum.

Average discharge.--14 years, 1,736 cfs (1,257,000 acre-ft per year).

Extremes.--Maximum discharge during year, 6,620 cfs Jan. 1 (gage height, 8.01 ft); minimum, 314 cfs Sept. 24 (gage height, 3.26 ft); minimum daily, 526 cfs Sept. 11.
1941-55: Maximum discharge, 17,700 cfs Feb. 11, 1951 (gage height, 11.37 ft); maximum gage height, 11.45 ft Dec. 11, 1946; minimum discharge, 85 cfs Oct. 19, 1945 (gage height, 2.57 ft); minimum daily, 176 cfs Jan. 30, 1945.

Remarks.--Records good. Yelm Irrigation District Canal, 3.6 miles above station, abandoned in 1950. Major portion of flow regulated by Alder Reservoir and city of Tacoma powerplant at La Grande. Records of suspended sediment loads for the water year 1955 are given in WSP 1403.

Revisions (water years).--WSP 1286: 1947.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1)

3.7	520	5.5	1,950
4.0	690	6.0	2,590
4.5	1,020	7.0	4,350
5.0	1,440	8.0	6,600

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	744	1,460	2,410	6,130	2,410	2,290	2,710	1,750	2,190	2,880	1,720	*968
2	784	1,410	2,360	4,010	2,290	2,290	2,530	2,070	2,140	2,230	1,360	917
3	543	1,620	1,720	2,430	2,240	2,300	1,810	2,030	2,280	2,310	1,490	768
4	1,140	1,490	1,620	2,400	2,190	2,290	2,150	1,810	2,100	1,380	1,290	739
5	1,480	1,580	1,610	2,340	2,140	2,140	2,150	1,820	1,810	1,340	1,270	572
6	1,530	1,660	1,180	2,260	2,080	2,000	2,180	2,010	2,130	1,390	1,050	745
7	1,470	1,350	1,390	2,240	3,300	1,920	2,370	2,160	2,150	1,240	948	948
8	1,170	1,730	1,620	1,830	4,400	2,120	2,460	2,060	1,760	1,210	1,200	1,230
9	693	*1,630	1,610	1,730	*3,390	2,180	2,780	2,020	2,070	1,450	1,190	815
10	572	1,180	1,540	2,120	2,860	2,200	3,050	2,060	2,120	2,120	1,140	602
11	1,640	903	1,180	2,170	2,530	2,300	2,810	2,310	2,600	1,950	1,200	526
12	1,400	1,110	1,080	2,180	2,630	2,290	3,220	2,450	2,580	1,720	1,160	913
13	1,790	1,240	1,230	2,250	2,580	2,170	3,170	2,270	2,460	2,090	1,040	1,040
14	2,030	933	*1,160	2,210	2,560	2,070	2,680	2,490	2,440	2,700	1,050	1,010
15	1,680	1,090	1,260	1,990	2,550	1,840	2,570	2,100	2,380	2,860	1,130	1,010
16	1,120	1,380	1,200	1,530	2,530	1,760	2,390	2,280	2,360	2,820	1,160	1,070
17	1,130	1,770	1,370	2,050	2,490	*1,380	2,200	2,290	2,360	2,530	1,180	865
18	1,470	2,080	1,530	*1,980	2,290	1,030	2,290	2,320	1,810	1,960	1,210	714
19	1,380	3,060	1,430	2,060	2,290	1,470	2,270	2,490	1,270	1,920	1,220	966
20	1,270	5,810	1,450	1,920	2,190	1,070	2,280	2,520	1,570	984	1,370	1,130
21	1,040	4,350	1,550	1,900	2,210	1,630	2,250	2,250	1,910	1,320	1,130	1,220
22	1,510	1,790	1,500	1,820	2,200	1,940	2,290	1,830	1,960	1,660	912	1,080
23	1,550	1,110	1,820	1,940	2,210	2,060	2,440	2,150	2,230	1,520	809	1,070
24	1,290	1,050	1,960	2,600	2,220	1,870	2,240	2,140	2,250	1,390	817	565
25	1,590	1,690	1,350	2,400	2,250	1,820	*2,230	2,120	1,680	*1,630	966	542
26	1,600	2,190	1,360	2,130	2,250	1,590	2,360	2,110	1,470	1,400	942	1,240
27	1,680	2,300	1,660	2,090	2,180	1,490	2,360	2,240	1,900	1,390	1,400	1,220
28	1,580	2,090	1,500	2,000	2,160	1,930	2,260	2,240	1,650	1,510	793	1,450
29	1,520	2,270	1,690	1,760	-	2,630	2,220	1,270	2,060	1,340	1,260	1,580
30	1,370	2,360	2,490	1,650	------	2,600	2,050	2,030	2,090	1,450	1,050	1,540
31	1,090	------	4,220	2,150	------	2,370	------	*2,230	------	1,480	940	------
Total	40,856	55,686	51,040	70,270	69,620	61,040	72,770	65,920	61,780	55,174	35,397	29,035
Mean	1,318	1,856	1,646	2,267	2,486	1,969	2,426	2,126	2,059	1,780	1,142	968
Ac-ft	81,040	110,500	101,200	139,400	138,100	121,100	144,300	130,800	122,500	109,400	70,210	57,590

Calendar year 1954: Max 10,300 Min 498 Mean 1,943 Ac-ft 1,406,000
Water year 1954-55: Max 6,130 Min 526 Mean 1,832 Ac-ft 1,326,000

* Discharge measurement made on this day.

Nisqually River at McKenna, Wash.

Location.--Lat 46°56'00", long 122°33'35", in SE¼NW¼ sec. 28, T. 17 N., R. 2 E., on left bank 100 ft downstream from highway bridge at McKenna and 9.0 miles downstream from Tanwax Creek.

Drainage area.--517 sq mi.

Records available.--October 1947 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 275 ft (from topographic map).

Extremes.--Maximum discharge during year, 6,020 cfs probably Jan. 1 (gage height, 6.68 ft, from recorded range in stage); minimum, 79 cfs Sept. 26 (gage height, 1.24 ft).
1947-55: Maximum discharge, 16,900 cfs Feb. 11, 1951 (gage height, 11.30 ft); minimum, 42 cfs Sept. 19, 1948 (gage height, 0.98 ft).

Remarks.--Records good except those for periods of no gage-height record, which are fair. Major portion of flow regulated by Alder Reservoir and city of Tacoma powerplants at Alder Dam and at La Grande. Yelm Irrigation District canal, 12.9 miles above station, abandoned in 1950. Centralia power canal diverts 4.4 miles above station; water is returned to river at powerplant 4.5 miles below station. Periodic measurements of flow, in cubic feet per second, of Centralia power canal during water year 1955, made at site half a mile below head, are given in the following table:

Jan. 25.....401	July 24.....470
Mar. 14.....406	Aug. 15.....477
Apr. 22.....391	Sept.20.....518
June 6.....417	

Revisions.--WSP 1246: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.4	105	3.0	970
1.5	125	3.5	1,450
1.7	180	4.0	2,000
1.9	255	5.0	3,270
2.2	400	6.5	5,700
2.6	660		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	794	1,360	2,340	5,480	1,980	1,980	2,210	1,480	1,790	2,400	1,240	509
2	802	1,360	2,280	3,620	2,230	1,970	2,160	1,690	2,090	1,820	852	505
3	647	*1,580	1,790	2,210	2,110	1,980	1,590	2,060	2,150	1,870	1,030	308
4	1,040	1,430	1,620	2,190	1,840	1,930	1,710	1,840	1,780	920	808	298
5	1,500	1,490	1,620	2,100	1,760	1,800	1,750	1,830	1,430	880	760	260
6	1,490	1,710	1,280	2,030	1,660	1,690	1,790	1,970	*1,720	930	620	256
7	1,470	1,380	1,360	1,990	2,710	1,540	1,920	2,120	1,750	770	486	443
8	1,240	1,520	1,620	1,620	3,870	1,730	2,030	2,030	1,320	740	708	750
9	705	1,500	1,610	1,510	3,030	1,810	2,270	1,980	1,650	990	727	437
10	637	1,210	1,610	1,870	2,500	1,810	2,620	2,010	1,700	1,700	594	187
11	1,380	914	1,160	1,920	2,200	*1,910	2,390	2,260	2,120	1,530	692	192
12	1,460	1,080	1,150	1,910	2,260	1,940	2,650	2,350	2,100	*1,270	700	410
13	1,650	1,260	1,280	1,970	2,210	1,850	2,740	1,990	2,000	1,600	526	531
14	1,980	989	1,210	1,940	2,160	1,740	2,310	2,090	1,990	2,030	551	534
15	1,640	1,070	1,280	1,720	2,160	1,500	2,160	1,770	1,950	2,290	*674	624
16	1,160	1,330	*1,180	1,280	2,110	1,400	2,010	1,860	1,920	2,230	685	922
17	1,090	1,690	1,370	1,760	2,110	1,130	1,830	1,860	1,920	2,010	638	342
18	1,430	1,990	1,530	1,690	1,910	640	1,890	1,870	1,370	1,520	712	317
19	1,370	2,860	1,470	1,760	1,860	1,100	1,890	2,030	800	1,420	663	364
20	1,330	5,320	1,410	1,630	1,780	832	1,860	2,060	1,110	612	803	*596
21	1,010	4,270	1,360	1,610	1,810	1,120	*1,870	1,870	1,490	732	688	704
22	1,480	1,880	1,380	1,510	1,750	1,560	1,890	1,480	1,540	1,210	474	556
23	1,510	1,170	1,660	1,620	1,800	1,690	2,070	1,700	1,800	1,130	321	515
24	1,300	1,070	1,960	*2,230	1,820	1,550	1,900	1,730	1,830	958	325	230
25	1,520	1,620	1,460	2,050	1,870	1,460	1,860	1,690	1,230	1,140	376	116
26	1,550	2,080	1,350	1,800	1,850	1,300	1,970	1,690	1,000	975	455	542
27	1,620	2,230	1,520	1,750	1,780	1,190	2,020	1,800	1,480	968	777	752
28	1,540	2,050	1,410	1,640	1,820	1,460	1,930	1,920	1,200	1,010	474	883
29	1,470	2,200	1,540	1,440	-	2,170	1,860	800	1,650	889	592	1,010
30	1,360	2,290	2,280	1,290	------	2,170	1,690	1,610	1,690	967	630	992
31	1,090	------	3,840	1,710	------	1,980	------	1,760	------	1,040	432	------
Total	40,265	53,903	49,930	60,850	58,950	49,932	60,840	57,200	49,570	40,551	20,013	15,085
Mean	1,299	1,797	1,611	1,963	2,105	1,611	2,028	1,845	1,652	1,308	646	503
Ac-ft	79,860	106,900	99,030	120,700	116,900	99,040	120,700	113,500	98,320	80,430	39,700	29,920

Calendar year 1954: Max 10,600 Min 362 Mean 1,788 Ac-ft 1,294,000
Water year 1954-55: Max 5,480 Min 116 Mean 1,526 Ac-ft 1,105,000

* Discharge measurement made on this day.
Note.--No gage-height record Dec. 30 to Jan. 24, June 6 to July 12; discharge estimated on basis of recorded range in stage and records for station near McKenna.

Chambers Creek below Leach Creek, near Steilacoom, Wash.

Location.--Lat 47°11'55", long 122°31'40", in NE¼NE¼ sec. 27, T. 20 N., R. 2 E., on left bank a quarter of a mile downstream from Leach Creek, 1½ miles downstream from outlet of Steilacoom Lake, and 4 miles northeast of Steilacoom.

Drainage area.--104 sq mi.

Records available.--December 1937 to September 1940, July 1943 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 100 ft (from topographic map).

Average discharge.--14 years (1938-40, 1943-55), 111 cfs (80,360 acre-ft per year).

Extremes.--Maximum discharge during year, 245 cfs Feb. 8 (gage height, 1.91 ft); minimum, 39 cfs all or part of each day Aug. 27 to Sept. 12 (gage height, 1.18 ft).
1937-40, 1943-55: Maximum discharge, 661 cfs Feb. 11, 1951; maximum gage height, 3.32 ft Dec. 29, 1937 (from recorded range in stage); minimum discharge, 31 cfs Oct. 9-12, 1952 (gage height, 0.71 ft).

Remarks.--Records excellent except those for periods of shifting control, which are good, and those for period of no gage-height record, which are poor. Some regulation by gates at outlet of Steilacoom Lake. Some diversions from tributaries for domestic use and for use of Army air base above station. Records of suspended sediment loads for the water year 1955 are given in WSP 1403.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18		Jan. 19 to Sept. 30	
1.1	37	1.1	25
1.3	67	1.3	63
1.5	105	1.5	109
1.7	152	1.8	202

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62	54	85	112	128	152	150	155	102	72	61	39
2	61	54	85	109	125	155	155	155	102	72	59	39
3	59	53	85	109	122	139	155	152	102	70	59	41
4	59	53	85	114	122	125	155	152	*99	70	59	41
5	57	64	85	118	120	125	155	145	95	70	59	39
6	57	57	*87	116	125	128	160	142	92	67	59	39
7	57	51	87	116	157	128	160	142	92	65	51	41
8	56	48	83	127	188	128	160	139	90	65	43	41
9	54	51	93	130	164	128	165	139	85	65	43	41
10	54	48	91	127	158	131	165	133	85	65	51	41
11	57	48	87	125	158	133	170	136	85	65	61	41
12	61	51	97	125	158	139	170	139	83	65	61	41
13	57	51	95	127	158	139	170	136	83	63	59	45
14	56	56	95	125	155	*136	175	145	81	61	59	45
15	54	56	99	127	155	136	175	139	81	61	59	45
16	54	56	95	132	155	136	175	136	87	61	59	47
17	53	62	95	132	152	136	170	131	78	61	59	43
18	51	65	95	130	*148	133	170	128	63	*59	57	43
19	51	74	95	*131	142	131	*167	128	63	59	55	47
20	54	62	95	133	142	131	167	128	63	59	55	49
21	53	64	95	131	139	135	167	112	65	59	55	49
22	53	67	97	131	139	135	167	95	67	59	49	49
23	53	69	101	133	136	135	167	95	67	59	41	49
24	51	69	107	139	139	140	164	97	67	59	41	47
25	51	91	107	133	136	140	161	97	70	59	41	47
26	51	87	103	128	136	140	164	97	70	61	41	47
27	*51	89	101	128	131	145	161	99	70	61	41	53
28	51	91	109	128	148	145	161	99	72	59	41	51
29	56	89	109	125	-	145	158	104	72	59	39	49
30	54	87	116	125	------	145	155	104	72	59	*39	49
31	51	------	116	128	------	150	------	104	------	61	39	------
Total	1,699	1,917	2,975	3,894	4,036	4,249	4,914	3,903	2,403	1,950	1,595	1,338
Mean	54.8	63.9	96.0	126	144	137	164	126	80.1	62.9	51.5	44.6
Ac-ft	3,370	3,800	5,900	7,720	8,010	8,430	9,750	7,740	4,770	3,870	3,160	2,650

Calendar year 1954: Max 381 Min 45 Mean 132 Ac-ft 95,620
Water year 1954-55: Max 188 Min 39 Mean 95.5 Ac-ft 69,170

* Discharge measurement made on this day.
Note.--No gage-height record Mar. 21 to Apr. 18; discharge estimated on basis of recorded range in stage and records for stations on nearby streams. Shifting-control method used Oct. 1 to Dec. 27, Jan. 4-18.

Kapowsin Creek near Kapowsin, Wash.

Location.--Lat 46°59'30", long 122°11'30", in NE¼ sec. 5, T. 17 N., R. 5 E., on right bank half a mile downstream from Kapowsin Lake and 1½ miles east of Kapowsin.

Drainage area.--23 sq mi, approximately.

Records available.--June 1927 to October 1932, October 1941 to September 1955.

Gage.--Water-stage recorder and log control. Datum of gage is 561 ft above mean sea level (from stadia traverse). Prior to Oct. 8, 1932, water-stage recorder at same site at datum 3.23 ft higher. Oct. 1, 1941, to Mar. 31, 1942, staff gage at present site and datum (corrected).

Average discharge.--19 years, 48.5 cfs (35,110 acre-ft per year).

Extremes.--Maximum discharge during year, 293 cfs Feb. 8 (gage height, 4.18 ft); minimum, 5.2 cfs Sept. 12 (gage height, 1.93 ft).
1927-32, 1941-55: Maximum discharge, 605 cfs Dec. 12, 1946 (gage height, 5.69 ft); maximum gage height, 5.83 ft Dec. 12, 1946 (backwater from debris); minimum discharge, 0.9 cfs Aug. 23-27, 1951 (gage height, 1.72 ft).

Remarks.--Records fair. Natural regulation in Kapowsin Lake. No diversion. Records of suspended sediment loads for the water year 1955 are given in WSP 1403.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.9	3.8	2.5	42
2.0	6.7	2.8	77
2.1	11	3.2	138
2.3	24	3.8	250

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	24	47	228	64	48	197	68	36	38	24	*6.4
2	17	24	44	182	62	49	199	63	34	43	22	6.1
3	17	*22	42	138	58	47	160	59	34	40	21	6.4
4	17	21	40	111	56	42	135	57	38	38	19.5	7.0
5	15.5	24	38	104	56	38	114	53	36	35	18.5	7.8
6	14.5	33	38	91	60	38	102	50	34	32	17	7.8
7	*14	40	38	81	108	36	92	47	30	30	16	7.8
8	14.5	40	36	78	*246	36	92	46	28	28	14	*8.1
9	13.5	42	36	81	*238	36	141	44	28	30	13	9.0
10	13	42	36	73	162	42	191	42	26	35	12	7.4
11	19.5	42	34	67	125	54	173	45	22	35	11	6.7
12	44	45	34	64	108	65	152	50	21	34	11	5.8
13	47	48	38	63	92	67	148	51	18.5	31	10.5	6.1
14	38	48	38	63	81	63	138	74	17	28	9.4	6.7
15	33	47	*42	62	73	58	122	81	16.5	26	9.0	7.0
16	28	49	40	59	68	*54	106	70	15.5	24	8.6	14
17	25	52	38	59	59	52	97	63	14.5	22	8.1	16
18	25	64	35	*57	56	51	90	57	14	18.5	8.1	16
19	28	81	32	53	51	49	87	52	13	*15.5	7.8	15.5
20	44	78	30	52	48	48	83	49	13	13	7.0	14.5
21	49	67	31	50	46	*48	83	45	13	11.5	6.7	13.5
22	48	60	36	49	44	72	92	42	12.5	11	6.7	13
23	47	57	44	53	43	103	111	38	15.5	9.4	6.7	11.5
24	43	53	54	65	44	97	104	35	16	8.6	7.0	11
25	38	64	56	*84	45	90	*94	33	16	8.1	6.4	10.5
26	34	77	50	81	45	84	96	33	16.5	12	6.4	9.4
27	32	81	45	74	43	81	92	*34	19.5	19.5	7.8	10.5
28	28	70	43	68	46	87	84	32	28	23	7.4	10.5
29	28	59	62	64	-	122	81	32	28	24	6.7	10.5
30	27	50	163	62	------	138	74	36	31	24	7.0	10.5
31	25	-----	242	62	-----	155	-----	36	------	25	7.8	------
Total	884.5	1,504	1,582	2,478	2,227	2,050	3,530	1,517	685.0	772.1	344.1	293.0
Mean	28.5	50.1	51.0	79.9	79.5	66.1	118	48.9	22.8	24.9	11.1	9.77
Cfsm	1.24	2.18	2.22	3.47	3.46	2.87	5.13	2.13	0.991	1.08	0.483	0.425
In.	1.43	2.43	2.56	4.01	3.60	3.31	5.71	2.45	1.11	1.25	0.56	0.47
Ac-ft	1,750	2,980	3,140	4,920	4,420	4,070	7,000	3,010	1,360	1,530	683	581

Calendar year 1954: Max 348 Min 3.8 Mean 54.2 Cfsm 2.36 In. 32.03 Ac-ft 39,270
Water year 1954-55: Max 246 Min 5.8 Mean 48.9 Cfsm 2.13 In. 28.89 Ac-ft 35,440

Peak discharge (base, 160 cfs).--Dec. 31 (12 m. to 1:30 p.m.) 256 cfs (3.83 ft); Feb. 8 (3 p.m.) 293 cfs (4.18 ft); Apr. 1 (7 to 11 p.m.) 216 cfs (3.66 ft); Apr. 10 (5 to 10 a.m.) 197 cfs (3.56 ft).
* Discharge measurement made on this day.

Puyallup River near Orting, Wash.

Location.--Lat 47°02'20", long 122°12'25", in SW¼SW¼ sec. 17, T. 18 N., R. 5 E., on right bank 600 ft downstream from highway bridge, 4 miles south of Orting, and 9 miles upstream from Carbon River.

Drainage area.--172 sq mi.

Records available.--September 1931 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 357.5 ft above mean sea level (unadjusted). Prior to Feb. 6, 1946, at site 600 ft upstream at datum 3.93 ft higher. Supplementary water-stage recorder 200 ft upstream at datum 2.1 ft higher than present gage datum used at times during periods in 1942-46.

Average discharge.--24 years, 696 cfs (503,900 acre-ft per year).

Extremes.--Maximum discharge during year, 4,420 cfs Feb. 8 (gage height, 6.54 ft); minimum, 130 cfs Sept. 30; minimum gage height, 2.59 ft Oct. 6, 7, 9, 10; minimum daily discharge, 251 cfs Mar. 5.
1931-55: Maximum discharge, 12,800 cfs Dec. 10, 1933 (gage height, 11.87 ft, from recorded range in stage), from rating curve extended above 3,300 cfs; minimum, 25 cfs Nov. 28, 1952 (gage height, 2.16 ft); minimum daily, 59 cfs Nov. 29, 1952.
Note.--The maximum discharge for the 1934 water year, not previously published, has been determined as 12,800 cfs Dec. 10, 1933 (gage height, 11.87 ft, from recorded range in stage).

Remarks.--Records fair. Water diverted for Electron plant of Puget Sound Power & Light Co., returned to river above gage. Some regulation by Electron powerplant. Records for suspended sediment loads for the water year 1955 are given in WSP 1403.

Revisions (water years).--WSP 932: 1937-39: WSP 962: 1934. WSP 1246: Drainage area.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	300	320	488	1,720	672	340	1,030	450	712	1,230	1,040	466
2	291	300	450	1,250	577	325	881	433	680	1,120	792	504
3	282	*291	428	980	510	310	712	433	800	926	591	528
4	278	286	406	827	504	282	626	433	953	827	577	546
5	260	390	411	744	499	251	570	460	1,170	768	619	534
6	255	591	482	648	696	268	558	477	1,230	760	672	564
7	268	488	428	584	1,710	264	626	522	1,400	809	712	564
8	365	428	390	577	3,240	291	800	570	1,830	776	640	477
9	291	450	375	558	*1,620	320	1,280	534	2,310	899	584	472
10	291	411	375	510	1,110	400	1,400	558	*2,660	990	598	450
11	605	416	345	482	836	466	1,080	752	2,530	990	598	422
12	672	528	360	466	680	433	971	899	2,070	1,060	558	360
13	496	504	450	516	612	406	908	784	1,570	1,260	499	455
14	428	612	406	488	558	365	768	809	1,160	1,680	482	534
15	450	570	*522	455	528	335	688	712	899	1,860	488	422
16	472	688	*438	444	477	*325	619	648	720	1,860	488	664
17	494	890	411	*444	450	*315	570	619	664	1,360	499	416
18	411	1,620	395	406	406	305	540	728	728	1,100	534	345
19	516	2,050	390	390	380	296	516	1,120	760	*917	534	330
20	648	1,480	390	370	370	268	499	1,270	863	872	522	345
21	664	1,120	450	365	350	278	510	1,010	1,230	881	477	300
22	577	809	696	444	345	672	*598	854	1,390	926	482	286
23	528	612	680	776	335	510	656	760	1,440	1,030	460	268
24	466	528	728	890	360	450	598	664	1,070	980	428	264
25	444	776	626	881	340	416	540	640	872	*784	416	260
26	406	872	540	720	330	428	534	664	926	800	400	264
27	385	908	482	612	315	433	510	*640	1,060	800	355	370
28	355	720	488	577	310	510	477	598	1,180	720	411	406
29	350	619	720	540	-	809	482	744	1,300	990	438	360
30	330	534	1,680	534	------	720	455	990	1,140	1,020	482	282
31	320	-----	2,450	598	-----	720	------	836	------	1,050	*499	------
Total	12,901	20,811	17,880	19,796	19,120	12,511	21,002	21,611	37,317	32,045	16,875	12,458
Mean	416	694	577	639	683	404	700	697	1,244	1,034	544	415
Cfsm	2.42	4.03	3.35	3.72	3.97	2.35	4.07	4.05	7.23	6.01	3.16	2.41
In.	2.79	4.50	3.87	4.28	4.13	2.71	4.54	4.67	8.07	6.93	3.65	2.69
Ac-ft	25,590	41,280	35,460	39,260	37,920	24,820	41,660	42,860	74,020	63,560	33,470	24,710

Calendar year 1954: Max 2,580 Min 255 Mean 697 Cfsm 4.05 In. 54.99 Ac-ft 504,400
Water year 1954-55: Max 3,240 Min 251 Mean 669 Cfsm 3.89 In. 52.83 Ac-ft 484,600

Peak discharge (base, 4,500 cfs).--No peak above base.
* Discharge measurement made on this day.

Carbon River near Fairfax, Wash.

Location.--Lat 47°01'40", long 122°01'50", in SW¼SW¼ sec. 22, T. 18 N., R. 6 E., on left bank 1½ miles upstream from highway bridge, 1¼ miles northwest of Fairfax, and 2¼ miles downstream from Evans Creek.

Drainage area.--78.9 sq mi.

Records available.--November 1910 to July 1912, March 1929 to September 1955. Published as "at Fairfax" 1910-12.

Gage.--Water-stage recorder. Datum of gage is 1,212.6 ft above mean sea level (river-profile survey). Prior to July 13, 1912, staff gage at railroad crossing 1.7 miles upstream at different datum.

Average discharge.--26 years (1929-55), 413 cfs (299,000 acre-ft per year).

Extremes.--Maximum discharge during year, 2,490 cfs Feb. 8 (gage height, 4.47 ft); minimum, 96 cfs Mar. 5 (gage height, 1.08 ft).
1910-12, 1929-55: Maximum discharge, 11,000 cfs Dec. 9, 1933 (gage height, 10.2 ft), from rating curve extended above 700 cfs; minimum, 36 cfs Nov. 28, 29, 1952; minimum gage height recorded, 0.75 ft Nov. 20, 1944.

Remarks.--Records good except those below 200 cfs, which are fair. Diversions by lumber industry no longer exist. No regulation. Records of suspended sediment loads for the water year 1955 are given in WSP 1403.

Revisions (water years).--WSP 1246: Drainage area. WSP 1286: 1930, 1931-32(M), 1933-35.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-10		Oct. 11 to Sept. 30		
1.2	99	1.1	99	2.6	640
1.3	118	1.3	137	3.0	930
1.5	165	1.6	209	3.5	1,380
		1.9	302	4.0	1,910
		2.2	424	4.5	2,530

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	155	169	332	798	295	139	448	215	*530	962	775	*295
2	140	*161	278	574	262	135	347	209	508	790	622	309
3	133	161	252	443	234	129	292	220	640	653	508	328
4	129	157	240	368	231	121	252	231	820	592	462	278
5	122	245	229	328	223	115	237	271	1,050	552	493	285
6	118	364	246	282	395	121	249	313	1,000	574	546	292
7	114	295	231	262	1,170	121	309	364	1,160	592	580	295
8	120	285	215	262	*1,760	127	504	415	1,550	592	563	246
9	131	292	201	249	835	133	962	389	1,740	646	462	226
10	140	249	199	231	569	177	858	420	1,950	705	438	220
11	420	237	188	217	453	164	610	670	1,880	679	467	204
12	443	302	188	209	364	155	508	812	1,600	782	411	183
13	335	306	*215	220	309	139	438	610	1,210	978	328	191
14	292	335	206	201	278	133	372	514	994	1,210	309	246
15	339	306	229	191	259	123	309	458	686	1,270	313	215
16	360	347	201	186	237	121	275	429	569	1,400	309	384
17	368	446	196	178	217	117	249	424	535	978	313	234
18	299	1,120	201	166	196	*121	234	558	592	754	332	193
19	382	994	201	150	188	121	220	986	660	622	339	166
20	415	698	209	*161	181	112	212	1,030	733	*610	347	157
21	519	558	258	164	173	139	217	761	1,040	653	302	150
22	453	498	524	241	171	302	246	610	1,160	705	285	137
23	380	434	448	472	161	217	249	535	1,200	754	275	129
24	328	368	380	535	171	186	229	477	930	726	262	125
25	288	578	324	462	159	183	215	467	754	610	240	123
26	256	616	278	351	150	178	226	488	805	592	231	123
27	234	604	246	299	144	186	209	448	946	592	231	180
28	212	498	282	275	139	223	*204	415	962	552	237	215
29	196	411	380	256	-	332	206	601	1,050	808	256	196
30	186	368	959	252	------	309	204	874	962	842	285	173
31	178	-----	1,270	292	-----	332	-----	640	------	890	302	------
Total	8,185	12,402	9,806	9,275	9,924	5,211	10,090	15,854	30,216	23,665	11,823	6,498
Mean	264	413	316	299	354	168	336	511	1,007	763	381	217
Cfsm	3.35	5.23	4.01	3.79	4.49	2.13	4.26	6.48	12.8	9.67	4.83	2.75
In.	3.86	5.85	4.62	4.37	4.68	2.46	4.76	7.47	14.24	11.15	5.57	3.06
Ac-ft	16,230	24,600	19,450	18,400	19,680	10,340	20,010	31,450	59,930	46,940	23,450	12,890

Calendar year 1954: Max 1,270 Min 114 Mean 415 Cfsm 5.26 In. 71.46 Ac-ft 300,600
Water year 1954-55: Max 1,950 Min 112 Mean 419 Cfsm 5.31 In. 72.09 Ac-ft 303,400

Peak discharge (base, 1,800 cfs).--Feb. 8 (4 a.m.) 2,490 cfs (4.47 ft); June 11 (2 a.m.) 2,210 cfs (4.25 ft).
* Discharge measurement made on this day.

South Prairie Creek at South Prairie, Wash.

Location.--Lat 47°08'30", long 122°05'30", in NE¼NW¼ sec. 18, T. 19 N., R. 6 E., on right bank 0.3 mile northeast of South Prairie and 5 miles upstream from mouth.

Drainage area.--78.6 sq mi.

Records available.--June 1949 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 430 ft (from topographic map).

Average discharge.--6 years, 244 cfs (176,600 acre-ft per year).

Extremes.--Maximum discharge during year, 3,440 cfs Feb. 8 (gage height, 7.35 ft); minimum daily, 43 cfs Sept. 25, 26.
1949-55: Maximum discharge, 5,470 cfs Dec. 9, 1953 (gage height, 8.84 ft); minimum, 22 cfs Nov. 29, 1952 (gage height, 1.25 ft).

Remarks.--Records good except those for periods of no gage-height record, which are poor. Small amount of diversion for domestic use. No regulation. Records of suspended sediment loads for the water year 1955 are given in WSP 1403.

Revisions.--WSP 1286: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
1.6	54	3.5	456	1.4	41	3.5	505
1.8	79	4.0	640	1.7	74	4.0	725
2.1	124	4.5	885	2.0	116	4.5	985
2.6	219	5.0	1,190	2.3	167	5.0	1,280
3.0	313			2.6	228	6.5	2,530
				3.0	335		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	85	89	190	730	237	140	540	233	*257	570	180	*54
2	80	*85	172	504	206	134	440	219	242	475	156	51
3	79	82	155	372	186	121	360	226	315	365	137	49
4	78	79	148	308	180	108	300	240	378	306	124	49
5	75	99	139	281	182	108	270	257	407	273	118	48
6	72	223	155	241	264	107	280	278	371	273	113	48
7	69	145	139	215	1,030	110	350	289	407	284	108	47
8	65	127	127	221	2,240	126	470	303	558	257	102	46
9	65	159	126	217	*902	151	770	265	649	281	95	46
10	66	138	129	196	558	200	610	284	645	309	88	46
11	172	129	118	190	407	233	510	456	553	284	87	45
12	206	202	119	172	335	210	450	541	445	284	84	44
13	145	204	*170	182	289	190	390	421	350	309	80	46
14	116	213	145	172	252	175	350	456	270	326	78	60
15	118	182	202	165	240	158	320	394	219	286	75	55
16	111	198	165	159	210	*149	300	344	188	255	73	80
17	111	232	154	*161	192	139	280	323	176	198	70	60
18	96	392	152	148	175	140	270	368	217	178	69	52
19	134	456	145	138	163	140	260	541	247	162	68	50
20	230	358	141	136	156	130	260	497	255	*149	68	48
21	283	281	154	131	149	137	300	368	332	151	66	48
22	237	246	345	151	147	484	*360	298	329	154	63	46
23	211	219	276	352	140	318	411	252	362	156	61	45
24	174	184	269	483	147	250	359	224	278	144	61	44
25	154	366	228	446	144	230	300	215	221	132	61	43
26	136	372	198	342	135	233	306	257	246	168	60	43
27	122	386	176	278	126	235	273	247	400	196	59	50
28	111	313	184	243	135	292	245	219	431	167	56	70
29	104	262	387	219	-	486	247	278	475	176	55	55
30	96	221	908	208	------	435	238	438	450	173	54	48
31	93	-----	1,160	230	-----	407	-----	312	------	182	55	------
Total	3,894	6,642	7,276	7,991	9,527	6,476	10,819	10,043	10,673	7,623	2,626	1,516
Mean	126	221	235	258	340	209	361	324	356	246	84.7	50.5
Cfsm	1.60	2.81	2.99	3.28	4.33	2.66	4.59	4.12	4.53	3.13	1.08	0.642
In.	1.84	3.14	3.44	3.78	4.51	3.06	5.12	4.75	5.05	3.61	1.24	0.72
Ac-ft	7,720	13,170	14,430	15,850	18,900	12,840	21,460	19,920	21,170	15,120	5,210	3,010

Calendar year 1954: Max 1,170 Min 65 Mean 248 Cfsm 3.16 In. 42.78 Ac-ft 179,400
Water year 1954-55: Max 2,240 Min 43 Mean 233 Cfsm 2.96 In. 40.26 Ac-ft 168,800

Peak discharge (base, 2,000 cfs).--Feb. 8 (4:30 a.m.) 3,440 cfs (7.35 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Apr. 1-22, Sept. 7-30; discharge estimated on basis of recorded range in stage, 1 discharge measurement, and records for stations on nearby streams.

Puyallup River at Alderton, Wash.

Location.--Lat 47°11'05", long 122°13'45", on line between sec. 25, T. 20 N., R. 4 E., and sec. 30, T. 20 N., R. 5 E., on right bank at downstream side of bridge on State Highway 5E, 1 mile north of Alderton, 1 mile south of Sumner, and 2 miles upstream from Stuck River.

Drainage area.--438 sq mi.

Records available.--October 1914 to February 1927, October 1943 to September 1955.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, unadjusted. Prior to Feb. 2, 1927, staff or chain gages at practically same site at datum 50.00 ft higher prior to Aug. 5, 1918, and at datum 49.00 ft higher after that date.

Average discharge.--24 years (1914-26, 1943-55), 1,590 cfs (1,151,000 acre-ft per year).

Extremes.--Maximum discharge during year, 9,550 cfs Feb. 8 (elevation, 52.60 ft); minimum daily, 500 cfs Sept. 25.
1914-27, 1943-55: Maximum discharge, 22,600 cfs Dec. 11, 1946 (elevation, 56.80 ft); minimum daily, 150 cfs Nov. 29, Dec. 1, 1952.
Flood in 1906 reached a stage of 66.5 ft, from floodmarks (discharge not determined).

Remarks.--Records good except those for periods of no gage-height record, which are fair. Minor diversions for farm and domestic use. Some regulation by Electron powerplant of Puget Sound Power & Light Co. Records of suspended sediment loads for the water year 1955 are given in WSP 1403.

Revisions (water years).--WSP 870: Drainage area. WSP 1316: 1917(M), 1919-27(M). The figure of supplemental peak discharge for the water year 1945 has been revised as shown below, superseding that published in WSP 1042.

Revised peak discharge 1944-45: Feb. 8 (2 a.m.) 10,800 cfs.

Rating tables, water year 1954-55 (elevation, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30				Dec. 31 to Sept. 30			
47.5	440	48.5	1,490	47.2	440	49.0	2,310
47.8	700	49.0	2,160	47.6	740	50.0	3,860
48.1	1,020	50.1	3,950	48.0	1,100	51.0	5,740
				48.5	1,660	52.0	7,990

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	673	700	1,300	3,880	1,590	946	3,010	1,220	1,770	3,230	2,420	946
2	619	673	a1,150	2,840	1,400	928	2,640	1,160	1,620	2,900	1,990	982
3	646	637	a1,050	2,250	1,270	883	2,120	1,180	1,900	2,440	1,620	1,090
4	637	610	a1,000	1,940	1,210	796	1,790	1,210	2,270	2,120	1,500	1,130
5	574	760	a1,000	1,780	1,230	724	1,640	1,270	2,770	1,990	1,540	1,160
6	529	1,580	1,140	1,580	1,490	772	1,600	1,340	2,780	1,960	1,660	1,200
7	512	1,240	1,020	1,420	4,020	756	1,780	1,430	3,010	2,010	1,770	1,260
8	628	1,110	910	1,390	7,460	812	2,200	1,560	3,710	1,980	1,710	1,060
9	529	1,150	877	1,400	4,190	892	3,550	1,460	4,550	2,140	1,490	1,020
10	547	1,040	866	1,290	2,890	1,020	3,790	1,480	5,060	2,440	1,440	955
11	1,280	987	780	1,200	2,250	1,290	2,900	2,010	4,800	2,380	1,470	874
12	1,840	1,260	811	1,160	1,920	1,180	2,460	2,700	4,170	2,520	a1,380	692
13	1,380	1,290	1,100	1,240	1,680	1,100	2,340	2,250	3,460	2,890	a1,190	804
14	1,090	1,480	954	1,200	1,530	1,000	2,090	2,230	2,880	3,410	1,110	1,230
15	1,110	1,370	1,270	1,100	1,440	*928	1,910	1,990	2,370	3,640	1,110	946
16	1,180	1,520	*1,120	1,080	1,310	883	1,730	1,790	1,920	3,760	1,090	1,600
17	1,240	1,820	910	1,090	1,200	856	1,590	1,660	1,760	2,960	1,090	1,200
18	1,060	3,240	888	1,010	1,080	856	1,500	1,840	1,830	2,340	1,170	756
19	1,190	3,840	877	*937	1,030	865	1,420	2,740	2,070	1,980	1,210	645
20	1,790	2,860	855	919	991	820	1,320	3,150	2,140	1,830	1,190	660
21	1,910	2,170	965	901	955	847	*1,350	2,550	2,770	1,860	1,070	600
22	1,710	1,910	1,790	937	937	1,990	1,640	2,040	3,200	2,010	1,000	a550
23	1,500	1,700	1,720	1,730	910	1,590	1,780	1,780	3,410	2,180	946	a530
24	1,290	1,440	1,790	2,310	937	1,360	1,640	1,580	2,740	2,170	910	a510
25	1,170	2,100	1,530	*2,270	928	1,240	1,490	1,520	2,200	*1,880	812	a500
26	1,060	2,340	1,330	1,860	892	1,270	1,500	*1,550	2,200	1,820	748	a510
27	965	2,480	1,140	1,600	865	1,260	1,400	1,540	2,760	1,990	748	a900
28	899	2,020	1,150	1,440	892	1,440	1,290	1,360	2,890	1,780	756	946
29	*822	1,750	1,660	1,340	--	2,240	1,300	1,580	3,260	2,120	838	780
30	770	1,480	3,340	1,310	------	2,130	1,260	2,530	2,890	2,450	937	615
31	720	------	5,360	1,420	------	2,140	------	2,090	------	2,480	*1,020	------
Total	31,870	48,557	41,653	47,824	48,497	35,814	58,030	55,790	85,160	73,660	38,935	26,651
Mean	1,028	1,619	1,344	1,543	1,732	1,155	1,934	1,800	2,839	2,376	1,256	888
Cfsm	2.35	3.70	3.07	3.52	3.95	2.64	4.42	4.11	6.48	5.42	2.87	2.03
In.	2.71	4.12	3.54	4.06	4.12	3.04	4.93	4.74	7.23	6.25	3.31	2.26
Ac-ft	63,210	96,310	82,620	94,860	96,190	71,040	115,100	110,700	168,900	146,100	77,230	52,860

Calendar year 1954: Max 5,850 Min 512 Mean 1,650 Cfsm 3.77 In. 51.14 Ac-ft 1,194,000
Water year 1954-55: Max 7,460 Min 500 Mean 1,623 Cfsm 3.71 In. 50.31 Ac-ft 1,175,000

Peak discharge (base, 6,400 cfs).--Feb. 8 (7:30 a.m.) 9,550 cfs (52.60 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for station near Orting.

White River at Greenwater, Wash.

Location.--Lat 47°08'50", long 121°38'50", in SE¼ sec. 10, T. 19 N., R. 9 E., on right bank three-quarters of a mile southeast of Greenwater, three-quarters of a mile upstream from Greenwater River, 18½ miles east of and 25 miles upstream from Buckley.

Drainage area.--216 sq mi.

Records available.--December 1911 to May 1912 (fragmentary), March 1929 to September 1955. Published as "near Enumclaw" 1911-12.

Gage.--Water-stage recorder. Altitude of gage is 1,725 ft (from river-profile map). Prior to May 6, 1912, staff gage at site 2 miles upstream at different datum.

Average discharge.--26 years (1929-55), 826 cfs (598,000 acre-ft per year).

Extremes.--Maximum discharge during year, 5,160 cfs June 11 (gage height, 5.56 ft); minimum, 242 cfs Mar. 20 (gage height, 2.15 ft).
1911-12, 1929-55: Maximum discharge, 18,100 cfs Dec. 21, 1933 (gage height, 9.38 ft), from rating curve extended above 3,600 cfs by logarithmic plotting; minimum, 120 cfs Nov. 2, 1935 (gage height, 1.69 ft).

Remarks.--Records fair. No regulation or diversion above station. Records of suspended sediment loads for the water year 1955 are given in WSP 1403.

Revisions (water years).--WSP 1286: 1932-33(M), 1934, 1943(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 7, 8)

Oct. 1 to Nov. 18		Nov. 19 to June 8				June 9 to Sept. 30			
2.3	320	2.2	260	3.8	1,460	2.3	378	4.0	1,910
2.5	420	2.5	395	4.3	2,100	2.6	543	4.5	2,710
2.7	540	2.9	630	5.0	3,350	3.0	833	5.5	5,000
3.0	760	3.3	950			3.5	1,300		
3.5	1,220								

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	390	350	541	995	559	345	466	439	1,040	1,640	1,270	708
2	375	350	523	820	529	345	456	417	1,030	1,430	1,080	716
3	370	335	517	700	488	336	428	439	1,140	1,330	990	723
4	355	325	511	630	488	322	417	461	1,430	1,310	972	753
5	355	415	505	610	478	314	417	529	2,060	1,280	999	761
6	345	480	505	578	551	318	461	598	2,330	1,290	1,060	785
7	360	432	494	553	1,310	304	565	700	2,620	1,280	1,090	777
8	400	415	488	541	*3,040	314	700	878	3,330	1,330	1,030	708
9	365	450	*478	517	1,600	309	1,150	788	*4,470	1,430	936	686
10	350	*444	456	500	1,080	322	1,160	820	4,680	1,530	936	650
11	554	486	434	478	878	309	905	1,070	4,840	1,550	936	650
12	528	480	444	466	772	314	798	1,330	4,470	1,740	876	602
13	426	474	444	466	693	300	686	1,090	3,570	2,050	809	686
14	395	554	428	439	658	292	617	914	2,860	2,600	785	753
15	420	582	461	434	624	280	584	836	2,390	2,750	769	629
16	432	596	406	422	547	272	578	820	1,990	2,670	746	738
17	432	610	406	412	505	268	553	820	1,780	2,160	761	588
18	405	1,130	406	395	466	272	517	1,030	1,660	1,810	793	507
19	450	1,440	395	375	450	272	494	1,740	1,680	1,540	809	483
20	528	1,080	395	380	444	268	494	1,930	1,790	1,510	785	478
21	728	860	439	*365	434	*276	500	1,590	2,280	1,510	738	456
22	631	772	541	395	417	406	511	1,380	2,790	*1,510	723	434
23	547	686	565	523	395	345	529	1,230	2,620	1,590	716	418
24	486	617	565	598	400	314	500	1,070	2,140	1,550	708	408
25	456	780	523	584	385	309	478	1,060	1,840	1,380	693	403
26	426	796	483	547	370	300	478	1,020	1,750	1,260	686	403
27	410	844	461	523	355	300	*439	941	1,780	1,210	693	466
28	395	732	483	500	355	318	428	914	1,880	1,070	693	483
29	375	637	500	494	-	450	422	1,100	1,870	1,110	693	483
30	365	578	748	488	------	428	417	1,380	1,740	1,150	*723	408
31	350	-----	1,380	535	-----	406	-----	1,210	------	1,190	716	------
Total	13,404	18,730	15,925	16,263	19,271	9,928	17,146	30,544	71,850	48,760	26,214	17,743
Mean	432	624	514	525	688	320	572	985	2,395	1,573	846	591
Cfsm	2.00	2.89	2.38	2.43	3.19	1.48	2.65	4.56	11.1	7.28	3.92	2.74
In.	2.31	3.22	2.74	2.80	3.32	1.71	2.95	5.26	12.37	8.40	4.51	3.05
Ac-ft	26,590	37,150	31,590	32,260	38,220	19,690	34,010	60,580	142,500	96,710	51,990	35,190

Calendar year 1954: Max 2,480 Min 325 Mean 824 Cfsm 3.81 In. 51.79 Ac-ft 596,600
Water year 1954-55: Max 4,840 Min 268 Mean 838 Cfsm 3.88 In. 52.64 Ac-ft 606,500

Peak discharge (base, 2,000 cfs).--Feb. 8 (5 a.m.) 3,940 cfs (5.27 ft); May 20 (2 a.m.) 2,070 cfs (4.28 ft); June 11 (4 a.m.) 5,160 cfs (5.56 ft); June 22 (4:30 a.m.) 2,900 cfs (4.60 ft); July 15 (4 a.m.) 3,020 cfs (4.66 ft).
* Discharge measurement made on this day.

Greenwater River at Greenwater, Wash.

Location.--Lat 47°09'15", long 121°38'00", in NW¼NW¼ sec. 11, T. 19 N., R. 9 E., on left bank 1 mile upstream from mouth, 1 mile east of Greenwater, and 19 miles east of Buckley.

Drainage area.--73.9 sq mi.

Records available.--September 1911 to August 1912 (fragmentary), May 1929 to September 1955. Published as "near Enumclaw" 1911-12.

Gage.--Water-stage recorder. Altitude of gage is 1,725 ft (from topographic map). Prior to Aug. 10, 1912, staff gages at approximately same site at different datums. May 1, 1929, to Aug. 14, 1934, water-stage recorder at site 900 ft upstream at different datum.

Average discharge.--26 years (1929-55), 203 cfs (147,000 acre-ft per year).

Extremes.--Maximum discharge during year, 1,580 cfs June 11 (gage height, 5.25 ft); minimum, 49 cfs Oct. 6-8 (gage height, 2.26 ft).
1911-12, 1929-55: Maximum discharge, 4,280 cfs Dec. 11, 1946 (gage height, 7.50 ft), from rating curve extended above 2,000 cfs; minimum, 23 cfs Oct. 7, 1934; minimum gage height, 2.00 ft Nov. 28 to Dec. 2, 1952.

Remarks.--Records good. No regulation or diversion above station. Records of suspended sediment loads for the water year 1955 are given in WSP 1403.

Revisions (water years).--WSP 1246: Drainage area. WSP 1286: 1947(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.2	44	3.3	282
2.4	64	3.6	405
2.6	93	4.0	625
2.8	134	4.5	960
3.0	185	5.2	1,540

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	70	121	316	185	104	130	127	440	460	156	71
2	52	69	114	244	177	102	134	130	405	440	146	70
3	52	67	108	203	158	99	125	130	435	415	139	67
4	51	66	104	174	153	96	119	136	548	392	136	66
5	50	67	102	156	148	93	114	174	698	378	132	65
6	49	76	108	144	163	91	125	215	757	374	127	64
7	49	69	*102	132	486	90	172	250	876	369	123	62
8	50	66	99	125	*1,150	88	241	301	*1,130	352	119	62
9	50	67	93	121	655	88	392	268	1,400	348	114	62
10	50	*66	91	114	415	91	430	272	1,510	348	114	61
11	69	64	88	110	316	91	328	332	1,500	340	110	59
12	85	65	88	104	264	88	268	450	1,350	340	110	58
13	70	64	91	106	231	86	241	396	1,140	348	104	60
14	62	64	90	102	206	83	215	328	953	364	102	70
15	61	66	93	99	191	80	194	301	778	364	99	69
16	61	71	88	97	174	77	177	301	637	360	99	114
17	60	73	88	93	163	77	163	305	554	332	91	95
18	60	99	88	91	146	76	153	382	510	305	93	77
19	67	125	86	86	139	74	146	661	488	286	90	69
20	93	119	86	86	134	73	141	771	494	261	88	66
21	125	110	91	*83	130	74	146	643	589	247	86	66
22	110	104	123	93	125	*112	156	526	667	*231	85	62
23	104	99	130	214	121	108	166	460	667	221	82	60
24	97	95	127	312	119	99	161	410	613	206	80	58
25	91	125	119	272	114	91	151	396	543	194	80	56
26	86	151	112	234	108	86	148	387	499	185	78	56
27	83	180	106	203	104	85	*136	378	482	182	76	66
28	80	161	106	185	104	86	130	360	477	174	74	76
29	77	146	121	172	-	104	125	420	472	182	73	67
30	74	132	221	166	------	106	123	543	455	172	*73	65
31	73	---	420	174	-----	110	-----	499	------	161	73	------
Total	2,195	2,796	3,604	4,811	6,579	2,808	5,450	11,252	22,067	9,331	3,152	2,019
Mean	70.8	93.2	116	155	235	90.6	182	363	736	301	102	67.3
Cfsm	0.958	1.26	1.57	2.10	3.18	1.23	2.46	4.91	9.96	4.07	1.38	0.911
In.	1.10	1.41	1.81	2.42	3.31	1.41	2.74	5.66	11.11	4.70	1.59	1.02
Ac-ft	4,350	5,550	7,150	9,540	13,050	5,570	10,810	22,320	43,770	18,510	6,250	4,000

Calendar year 1954: Max 953 Min 49 Mean 216 Cfsm 2.92 In. 39.59 Ac-ft 156,100
Water year 1954-55: Max 1,510 Min 49 Mean 208 Cfsm 2.81 In. 38.28 Ac-ft 150,900

* Discharge measurement made on this day.

Mud Mountain Reservoir near Buckley, Wash.

Location.--Lat 47°08'30", long 121°55'50", in NE¼ sec. 17, T. 19 N., R. 7 E., on left bank of reservoir just upstream from Mud Mountain Dam on White River, 5 miles southeast of Buckley and 6 miles downstream from Clearwater River.
Drainage area.--400 sq mi.
Records available.--October 1943 to September 1955. Month-end contents only October 1943 to September 1944, published in WSP 1316.
Gage.--Staff gage read once daily. Datum of gage is at mean sea level (levels by Corps of Engineers).
Extremes.--Maximum contents observed during year, 21,500 acre-ft June 8 (elevation, 1,082.0 ft); minimum observed, 43 acre-ft on many days during October, November, December, and September (elevation, 908.0 ft).
1944-55: Maximum contents observed since dam was completed, 21,800 acre-ft June 8, 1953 (elevation, 1,082.6 ft); no pool at times most years.
Remarks.--Reservoir, for flood control, is formed by earth-fill dam. Embankment completed and storage began on small scale in 1942. Capacity, 106,000 acre-ft between elevations 895 ft (invert of outlet tunnel) and 1,215 ft (spillway crest). Storage is not retained but is dissipated as soon after a flood as is possible without creating damaging flows downstream in order to have the maximum capacity available for any following flood which might develop.
Cooperation.--Records of reservoir elevations and capacity table furnished by Corps of Engineers.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Prepared by Corps of Engineers)

908	43	970	1,520
910	52	990	2,910
915	77	1,020	6,260
920	107	1,050	11,850
930	191	1,090	24,690
950	641		

Contents, in acre-feet, at 12:30 p.m., water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	43	43	3,200	62	107	127	107	16,900	11,900	5,280	83
2	72	43	43	1,170	62	107	127	107	15,500	10,900	4,380	83
3	72	43	43	90	62	107	127	107	15,000	10,400	2,940	83
4	72	43	43	83	62	107	127	107	15,700	10,400	2,910	83
5	72	43	43	83	62	107	120	107	17,900	9,880	2,850	83
6	72	43	43	83	62	107	120	120	20,600	7,780	2,410	366
7	72	43	43	62	747	107	120	134	21,200	6,830	2,770	83
8	72	43	43	62	10,500	107	127	134	21,500	7,390	2,220	83
9	72	43	43	62	14,000	107	578	134	20,400	7,650	548	83
10	72	43	43	62	11,900	107	1,820	134	19,600	7,730	149	83
11	72	43	43	62	7,990	107	979	196	19,100	7,420	1,880	83
12	72	43	43	62	3,440	107	937	1,180	18,100	7,420	149	83
13	72	43	43	62	134	107	937	937	15,500	6,790	149	83
14	43	43	43	62	123	107	701	218	17,800	7,750	107	83
15	43	43	43	62	120	107	641	149	18,300	8,470	107	83
16	43	43	43	62	119	107	519	1,240	16,700	8,040	107	83
17	43	43	43	62	116	107	508	5,780	14,200	6,900	107	83
18	43	90	43	62	114	107	497	10,500	11,500	6,230	95	83
19	43	584	43	62	107	107	366	16,500	11,100	4,120	83	83
20	43	218	43	62	107	107	120	18,000	11,100	4,120	83	52
21	60	62	43	62	107	107	107	18,200	11,700	4,410	83	43
22	52	52	52	62	107	127	107	17,700	11,900	4,550	83	43
23	52	52	52	107	107	127	107	17,100	12,400	4,140	83	43
24	52	43	52	107	107	120	107	16,200	11,900	3,800	83	43
25	52	62	43	107	107	120	107	16,300	10,100	6,110	83	43
26	52	62	43	89	107	120	107	16,700	10,800	4,990	83	43
27	52	62	43	77	107	120	107	16,800	10,700	4,390	83	43
28	52	52	43	62	107	113	107	16,800	11,100	4,110	83	43
29	43	52	52	62	-	127	107	17,100	11,000	4,420	83	43
30	43	43	167	62	-------	127	107	18,500	11,000	5,040	83	43
31	43	-------	3,130	62	-------	127	-------	18,100	-------	5,060	83	-------

Monthly elevation and contents, water year October 1954 to September 1955

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	914.0	72	-
Oct. 31	908.0	43	-29
Nov. 30	908.0	43	0
Dec. 31	992.9	3,160	+3,120
Calendar year 1954	-	-	+3,050
Jan. 31	912.0	62	-3,100
Feb. 28	920.0	107	+45
Mar. 31	923.0	127	+20
Apr. 30	920.0	107	-20
May 31	1,070.5	17,540	+17,430
June 30	1,048.2	11,440	-6,100
July 31	1,011.8	5,160	-6,280
Aug. 31	916.0	83	-5,080
Sept.30	908.0	43	-40
Water year 1954-55	-	-	-29

† Elevation at 12 p.m. estimated from once-daily observation made at 12:30 p.m.

White River near Buckley, Wash.

Location.--Lat 47°09'05", long 121°57'00", in SW¼NW¼ sec. 8, T. 19 N., R. 7 E., on right bank 0.7 mile upstream from Red Creek, 1 mile downstream from Mud Mountain Dam, 4 miles east of Buckley, and 8 miles downstream from Clearwater River.

Drainage area.--401 sq mi.

Records available.--October 1928 to November 1933, October 1938 to September 1955.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929 (Corps of Engineers benchmark). Oct. 26 to Dec. 9, 1928, staff gage and Dec. 9, 1928, to Nov. 30, 1933, water-stage recorder, at site 3 miles upstream at different datum. Nov. 26, 1938, to Feb. 14, 1939, staff gage at present site and datum.

Average discharge.--22 years, 1,386 cfs (1,003,000 acre-ft per year), adjusted for storage since December 1943.

Extremes.--Maximum discharge during year, 7,210 cfs June 10 (elevation, 805.76 ft); minimum, 40 cfs Oct. 18 (elevation, 797.87 ft); minimum daily, 60 cfs May 17.
1928-33, 1938-55: Maximum discharge, 17,000 cfs Feb. 26, 1932 (gage height, 17.5 ft, site and datum then in use), from rating curve extended above 4,000 cfs; minimum, 10 cfs Sept. 26, 1948 (elevation, 796.92 ft); minimum daily, that of May 17, 1955.
Maximum stage known, 23.4 ft in December 1933, from floodmarks, at former site (discharge, 28,000 cfs, from rating curve extended above 3,000 cfs).

Remarks.--Records excellent. Diversion for some community use within basin. Flow regulated by Mud Mountain Reservoir for flood control (see preceding page). Storage is not retained and observed annual runoff closely represents natural runoff of basin. Records of suspended sediment loads for the water year 1955 are given in WSP 1403.

Cooperation.--Water-stage recorder inspected by employees of Corps of Engineers.

Revisions.--WSP 1246: Drainage area.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	604	606	1,060	2,890	1,160	740	1,300	926	2,550	2,980	1,840	840
2	588	582	980	2,440	1,100	730	1,210	902	2,400	3,020	2,090	845
3	580	570	938	1,520	998	700	1,080	926	2,270	2,410	1,870	855
4	572	558	896	1,310	968	650	962	980	2,140	2,230	1,270	860
5	560	635	879	1,190	938	614	926	1,140	2,120	2,670	1,540	870
6	544	824	956	1,070	1,070	645	1,010	1,350	2,870	2,690	1,400	902
7	552	695	874	992	2,360	645	1,280	1,530	3,660	2,100	1,440	932
8	592	665	830	956	3,390	665	1,690	1,830	5,270	1,980	1,840	835
9	580	705	*808	920	3,630	695	2,320	1,670	6,670	2,150	1,680	796
10	568	660	780	879	3,600	755	2,670	1,680	*7,090	2,300	860	770
11	805	660	730	846	3,440	780	2,240	2,030	7,050	2,360	1,140	747
12	935	735	735	824	3,040	755	1,710	2,530	7,030	2,570	1,400	724
13	755	735	786	835	1,870	705	1,610	2,520	5,400	2,720	1,090	867
14	676	874	735	796	1,320	665	1,480	2,060	3,000	2,950	1,040	1,060
15	680	962	840	775	1,250	630	1,350	1,780	3,920	3,430	1,010	788
16	692	1,030	745	760	1,130	618	1,220	676	3,880	3,540	987	1,090
17	700	1,090	735	740	1,070	602	1,120	*60	3,810	3,100	992	875
18	*653	1,770	730	715	968	*610	1,090	114	3,360	3,080	1,030	716
19	740	2,370	715	685	920	602	1,050	*1,340	2,600	2,410	1,030	651
20	945	2,100	715	690	896	578	974	3,280	2,670	1,990	1,030	647
21	1,360	1,590	786	*665	868	602	1,000	3,090	3,140	1,990	938	619
22	1,170	1,400	1,160	770	879	1,100	1,120	2,710	3,710	*2,110	926	575
23	1,040	1,250	1,150	1,440	835	926	1,230	2,510	3,740	2,070	900	552
24	914	1,110	1,110	1,910	840	808	1,150	2,230	3,710	1,630	875	534
25	846	1,520	1,010	1,670	808	760	1,060	1,900	3,070	*1,790	835	524
26	786	1,670	920	1,430	775	700	1,060	1,820	2,670	2,100	815	520
27	740	1,820	852	1,230	745	695	968	1,820	2,740	1,920	806	615
28	*705	1,550	874	1,110	750	740	*914	1,720	2,900	1,570	792	702
29	670	1,340	1,110	1,040	-	998	914	1,790	2,940	1,520	806	607
30	645	1,170	1,970	1,020	-------	1,030	890	2,260	2,740	1,630	855	559
31	622	-------	2,860	1,090	-------	1,050	-------	2,690	-------	1,750	*865	-------
Total	22,819	33,246	30,269	35,208	41,618	22,793	38,598	53,864	111,120	72,760	35,992	22,477
Mean	736	1,108	976	1,136	1,486	735	1,287	1,738	3,704	2,347	1,161	749
Ac-ft	45,260	65,940	60,040	69,830	82,550	45,210	76,560	106,800	220,400	144,300	71,390	44,580
(†)	-29	0	+3,120	-3,100	+45	+20	-20	+17,430	-6,100	-6,280	-5,080	-40

Adjusted for change in contents in Mud Mountain Reservoir

Mean	736	1,108	1,027	1,085	1,487	736	1,286	2,020	3,601	2,244	1,078	749
Cfsm	1.84	2.76	2.56	2.71	3.71	1.84	3.21	5.04	8.98	5.60	2.69	1.87
In.	2.11	3.08	2.95	3.12	3.86	2.11	3.58	5.81	10.02	6.45	3.10	2.08
Ac-ft	45,230	65,940	63,160	66,730	82,600	45,230	76,540	124,200	214,300	138,000	66,310	44,540

Observed

Calendar year 1954:	Max	4,350	Min	544	Mean	1,465	Ac-ft	1,061,000
Water year 1954-55:	Max	7,090	Min	60	Mean	1,427	Ac-ft	1,033,000

Adjusted

Calendar year 1954:	Mean	1,470	Cfsm	3.67	In.	49.74	Ac-ft	1,064,000
Water year 1954-55:	Mean	1,427	Cfsm	3.56	In.	48.27	Ac-ft	1,033,000

* Discharge measurement made on this day.
† Change in contents, in acre-feet, in Mud Mountain Reservoir, furnished by Corps of Engineers.

Stuck River near Sumner, Wash.

Location.--Lat 47°14'55", long 122°14'35", in NE¼SW¼ sec. 1, T. 20 N., R. 4 E., on right bank 300 ft downstream from county bridge, 3 miles north of Sumner, and 4½ miles upstream from mouth.

Drainage area.--470 sq mi, excludes that of Lake Tapps.

Records available.--January 1945 to September 1955.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (Intercounty River Improvement Commission benchmark).

Average discharge.--10 years, 598 cfs (432,900 acre-ft per year).

Extremes.--Maximum discharge during year, 7,380 cfs June 12 (elevation, 57.87 ft); minimum, 36 cfs Sept. 20, 21; minimum elevation, 51.54 ft Nov. 3.
1945-55: Maximum discharge, 13,100 cfs Dec. 14, 1946 (elevation, 59.74 ft); minimum, 32 cfs Nov. 29, 30, 1952; minimum elevation, 48.48 ft Feb. 1, 1945 (channel affected by dredging).

Remarks.--Records good except those for periods of shifting control, which are fair, and those for periods of no gage-height record, which are poor. An average of 600 to 900 cfs diverted from White River (head of Stuck River) above station into Lake Tapps for Dieringer powerplant of Puget Sound Power & Light Co. High flow influenced by regulation in Mud Mountain Reservoir (see p. 81). Records of suspended sediment loads for the water year 1955 are given in WSP 1403.

Revisions.--WSP 1216: Drainage area.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	89	81	140	1,160	183	169	255	190	703	1,130	216	99
2	89	79	133	902	169	164	219	190	590	1,270	266	96
3	88	72	124	340	176	155	173	190	505	709	250	80
4	86	*76	117	240	178	140	151	210	414	520	182	68
5	88	85	117	219	183	133	136	240	344	637	176	62
6	86	100	127	194	191	133	131	300	705	829	182	62
7	83	89	127	166	652	138	127	390	1,320	546	167	73
8	81	81	124	161	*2,380	146	138	500	2,420	272	189	66
9	82	90	124	155	2,340	159	456	360	*4,830	286	261	62
10	81	82	*129	146	2,200	161	966	350	6,620	405	980	62
11	94	82	124	142	1,910	166	779	900	6,960	465	221	*61
12	94	92	124	148	1,490	164	352	1,200	6,820	485	176	59
13	88	92	142	140	765	169	274	1,500	*5,670	794	160	53
14	82	120	131	136	344	155	237	920	2,900	808	136	53
15	78	150	151	136	240	*138	237	530	2,730	1,240	138	51
16	203	160	127	134	196	131	225	350	2,400	1,470	121	61
17	412	170	117	144	176	127	210	231	2,120	1,520	117	64
18	*101	210	118	133	166	127	196	*255	1,830	1,180	117	47
19	98	280	115	129	157	129	186	*563	892	722	112	40
20	120	270	114	*129	148	120	183	2,550	985	310	114	41
21	122	207	115	124	148	125	*188	2,860	1,130	*405	106	47
22	110	170	146	124	144	202	220	1,840	1,820	*440	108	53
23	106	153	146	140	146	161	260	780	1,830	436	104	50
24	100	144	155	264	142	153	230	625	1,820	310	104	50
25	96	228	138	243	146	144	210	332	1,460	194	92	50
26	94	213	124	*213	140	138	210	233	774	256	103	51
27	92	196	115	196	134	124	190	210	950	241	98	61
28	89	173	122	183	153	122	180	194	995	208	96	61
29	88	153	181	173	-	148	180	189	1,140	186	*96	61
30	83	148	344	173	------	157	180	296	2,440	197	94	57
31	83	------	1,020	173	------	164	------	774	------	224	98	------
Total	3,286	4,246	5,131	7,060	15,397	4,562	7,679	20,252	66,117	18,695	5,380	1,801
Mean	106	142	166	228	550	147	256	653	2,204	603	174	60.0
Ac-ft	6,520	8,420	10,180	14,000	30,540	9,050	15,230	40,170	131,100	37,080	10,670	3,570

Calendar year 1954: Max 2,210 Min 72 Mean 356 Ac-ft 257,900
Water year 1954-55: Max 6,960 Min 40 Mean 437 Ac-ft 316,500

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 5-20, 22, Apr. 22 to May 16; discharge estimated on basis of records for stations on nearby streams. Shifting-control method used Oct. 1 to Nov. 4, Nov. 21, Nov. 23 to Apr. 21, May 17 to June 12.

Lake Tapps near Sumner, Wash.

Location.--Lat 47°14'30", long 122°11'30", in NE¼ sec. 8, T. 20 N., R. 5 E., 1½ miles east of Dieringer and 3 miles northeast of Sumner.

Drainage area.--12.5 sq mi.

Records available.--November 1911 to September 1955. Prior to October 1950, change in contents published with records for Puyallup River at Puyallup. Month-end contents only November 1911 to September 1950, published in WSP 1316.

Gage.--Staff gage read hourly. Datum of gage is 0.7 ft above mean sea level (levels by Puget Sound Power & Light Co.).

Extremes.--Maximum contents observed during year, 50,490 acre-ft Nov. 1 (gage height, 541.04 ft); minimum, 9,690 acre-ft Mar. 18 (gage height, 517.27 ft).
1934-55: Maximum contents observed, that of Nov. 1, 1954; minimum, 7,620 acre-ft Mar. 21, 1953 (gage height, 515.00 ft).
The Puget Sound Power & Light Co. reports a minimum observed lake gage height of 505.70 ft June 24, 1912.

Remarks.--Reservoir is formed on natural lake into which a great part of the low-water flow of White River is diverted. Usable capacity, 50,400 acre-ft between elevations 505 and 541 ft. Storage used for power.

Cooperation.--Gage-height record and contents curve furnished by Puget Sound Power & Light Co.

Month-end gage height and contents, water year October 1954 to September 1955

Date	Gage height (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	539.10	46,120	-
Oct. 31	537.50	42,600	-3,520
Nov. 30	539.19	46,320	+3,720
Dec. 31	537.38	42,340	-3,980
Calendar year 1954	-	-	-2,920
Jan. 31	529.93	26,870	-15,470
Feb. 28	522.50	15,300	-11,570
Mar. 31	520.20	12,620	-2,680
Apr. 30	522.31	15,070	+2,450
May 31	532.66	32,220	+17,150
June 30	538.04	43,790	+11,570
July 31	539.49	46,980	+3,190
Aug. 31	538.81	45,480	-1,500
Sept.30	537.45	42,490	-2,990
Water year 1954-55	-	-	-3,630

† Gage height at 12 p.m.

Puyallup River at Puyallup, Wash.

Location.--Lat 47°12'30", long 122°19'35", in NW¼ sec. 20, T. 20 N., R. 4 E., on left bank 0.8 mile upstream from bridge at Clark Creek, 1 mile northwest of Puyallup, and 7 miles upstream from mouth.
Drainage area.--948 sq mi.
Records available.--May 1914 to September 1955.
Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Prior to Dec. 3, 1919, at sites 1½ miles upstream and 900 ft upstream at different datums. Dec. 3, 1919, to Nov. 9, 1935, at site 500 ft upstream at datum 9.61 ft higher than present datum.
Average discharge.--41 years, 3,265 cfs (2,364,000 acre-ft per year), adjusted for storage in Lake Tapps since October 1934 and Mud Mountain Reservoir October 1944 to September 1947.
Extremes.--Maximum discharge during year, 15,000 cfs Feb. 8 (elevation, 17.38 ft); minimum, 306 cfs Sept. 25 (elevation, 8.23 ft); minimum daily, 432 cfs Sept. 25.
1914-55: Maximum discharge, 57,000 cfs Dec. 10, 1933 (elevation, 31.0 ft, present datum); minimum, that of Sept. 25, 1955.
Remarks.--Records good. All diverted water returned to river above gage. Large part of flow of White River diverted into Lake Tapps (see preceding page) returned via Stuck River above station. Flood flow regulated by Mud Mountain Reservoir on White River (see p. 81). Some pondage on tributaries and upper Puyallup River. Diurnal fluctuations caused by powerplants and glacial melts above station. Records of suspended sediment loads for the water year 1955 are given in WSP 1403.
Revisions.--WSP 832: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

8.4	400	12.0	4,420
8.9	800	13.0	6,000
9.4	1,240	14.0	7,750
10.0	1,840	15.0	9,670
11.0	3,010	17.0	14,000

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,340	1,550	3,220	7,310	3,390	2,440	4,650	2,770	4,270	6,460	4,180	1,930
2	906	1,390	3,000	5,680	3,140	2,190	4,350	2,850	3,960	6,470	3,870	1,890
3	862	1,240	2,950	4,600	3,020	2,110	3,660	2,760	4,130	5,210	3,610	1,850
4	1,210	1,430	2,740	4,100	2,780	2,020	3,340	2,660	4,090	4,360	3,430	1,290
5	1,120	1,320	2,530	3,780	2,910	1,420	3,180	2,620	3,860	4,480	3,560	1,170
6	1,220	2,430	*2,910	3,500	2,690	1,080	3,060	2,660	5,260	4,590	3,620	1,990
7	1,170	1,410	2,410	3,280	6,260	1,900	3,190	2,600	6,480	4,310	3,310	2,140
8	1,510	2,110	2,190	3,160	*12,500	1,940	3,640	2,350	8,300	3,960	3,410	1,940
9	1,180	1,850	2,070	2,980	8,830	2,040	5,470	2,910	11,400	4,130	3,240	*1,890
10	766	1,870	1,960	3,110	7,200	2,220	6,290	2,960	13,300	4,460	4,060	1,730
11	2,210	1,800	1,180	3,120	6,260	2,580	5,510	3,590	13,200	4,580	2,770	1,010
12	2,830	2,120	1,170	3,050	5,350	2,210	4,620	4,930	11,900	4,830	2,470	1,600
13	2,520	2,090	2,320	3,160	4,300	1,530	4,390	4,780	11,000	5,600	2,030	1,730
14	1,940	1,630	1,950	2,780	3,610	*2,180	4,020	4,240	7,950	6,260	1,480	2,100
15	1,890	2,440	2,200	2,810	3,350	2,090	3,770	3,200	7,080	7,180	2,010	1,840
16	1,530	2,600	2,230	2,820	3,250	1,990	3,500	4,350	6,260	7,660	2,030	2,600
17	1,980	2,940	2,170	2,840	3,080	1,930	3,200	3,450	5,790	6,810	2,000	2,570
18	1,790	4,640	1,270	2,710	2,700	1,690	3,320	3,430	5,690	*5,490	2,030	859
19	1,880	6,260	1,190	2,620	2,740	1,040	*3,320	4,670	4,910	4,690	2,150	1,480
20	2,870	5,430	1,960	2,640	2,610	994	3,200	8,020	4,900	4,030	2,350	1,620
21	3,240	4,110	2,250	2,590	2,620	1,800	3,030	7,160	5,880	4,100	1,680	1,440
22	3,230	3,880	3,360	1,420	2,640	3,150	3,540	5,360	6,870	4,250	1,920	1,440
23	2,770	3,720	3,590	2,200	2,560	2,860	3,720	3,960	7,180	4,400	1,920	1,360
24	2,230	3,330	3,650	*4,090	2,630	2,590	3,470	3,510	6,480	4,100	1,920	1,160
25	2,670	3,900	3,030	4,190	2,520	2,240	3,370	3,260	5,410	3,710	1,850	432
26	2,700	4,220	2,700	3,720	2,480	1,650	3,380	*3,230	3,950	3,830	1,790	1,150
27	*1,960	4,390	2,220	3,420	2,470	1,470	3,230	3,090	5,340	4,240	1,580	1,400
28	1,740	3,910	2,340	3,250	2,660	2,520	2,980	2,510	6,000	3,730	1,250	1,760
29	1,690	3,720	3,420	3,030	-	3,490	2,990	2,500	6,560	4,090	1,850	1,680
30	1,030	3,440	5,530	2,880	-------	3,540	2,820	3,740	7,500	4,240	*1,920	1,570
31	964	-------	8,920	3,150	-------	3,620	-------	4,570	-------	4,110	2,000	-------
Total	56,948	87,170	84,630	103,990	110,550	66,524	112,210	114,690	204,900	150,360	77,290	48,621
Mean	1,837	2,906	2,730	3,355	3,948	2,146	3,740	3,700	6,830	4,850	2,493	1,621
Ac-ft	113,000	172,900	167,900	206,300	219,300	131,900	222,600	227,500	406,400	298,200	153,300	96,440
(†)	-3,520	+3,720	-3,980	-15,470	-11,570	-2,680	+2,450	+17,150	+11,570	+3,190	-1,500	-2,990

Adjusted for change in contents in Lake Tapps

Mean	1,781	2,968	2,666	3,103	3,740	2,101	3,781	3,978	7,025	4,902	2,469	1,570
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	109,500	176,600	163,900	190,800	207,700	129,200	225,000	244,600	418,000	301,400	151,800	93,450

Observed

Calendar year 1954: Max 9,970 Min 766 Mean 3,387 Ac-ft 2,452,000
Water year 1954-55: Max 13,300 Min 432 Mean 3,337 Ac-ft 2,416,000

Adjusted

Calendar year 1954: Mean 3,383 Cfsm - In. - Ac-ft 2,449,000
Water year 1954-55: Mean 3,332 Cfsm 3.51 In. 47.70 Ac-ft 2,412,000

* Discharge measurement made on this day.
† Change in contents in Lake Tapps, in acre-feet, based on information furnished by Puget Sound Power & Light Co.

Snow Creek near Lester, Wash.

Location.--Lat 47°15'00", long 121°24'00", in NW¼NW¼ sec. 3, T. 20 N., R. 11 E., on right bank at road crossing a quarter of a mile upstream from mouth and 5½ miles northeast of Lester.

Drainage area.--11.9 sq mi.

Records available.--October 1945 to September 1955.

Gage.--Water-stage recorder with concrete and woven-wire control. Altitude of gage is 1,950 ft (from topographic map).

Average discharge.--10 years, 67.5 cfs (48,870 acre-ft per year).

Extremes.--Maximum discharge during year, 950 cfs Feb. 8 (gage height, 4.63 ft); minimum, 7.3 cfs Sept. 12, 13 (gage height, 2.10 ft).
1945-55: Maximum discharge, 1,210 cfs Jan. 31, 1953 (gage height, 4.87 ft); minimum, 3.0 cfs Nov. 29, 30, 1952 (gage height, 1.99 ft).

Remarks.--Records good. No regulation or diversion above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 11-22)

2.1	7.3	3.1	135
2.2	12.5	3.4	213
2.3	19.2	3.7	315
2.5	38	4.1	517
2.8	77		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.7	19.2	59	102	36	20	27	38	135	241	57	10.7
2	9.7	17.8	50	74	*32	19.2	26	39	128	188	50	10.2
3	9.7	16.4	44	58	30	18.5	25	42	154	142	44	9.7
4	9.2	*15.7	40	49	30	17.8	24	52	207	124	40	9.7
5	8.7	19.2	37	42	30	17.8	25	68	238	117	38	9.2
6	8.7	19.2	34	38	48	17.1	30	86	241	117	36	9.2
7	8.2	17.1	32	36	395	16.4	44	102	289	111	34	*9.2
8	8.7	15.7	28	32	601	17.1	66	128	390	109	32	8.7
9	8.2	15.7	27	30	208	17.1	142	111	475	115	28	8.2
10	9.2	15.0	26	28	122	17.8	140	117	493	120	27	8.2
11	32	14.3	23	26	89	17.1	96	180	441	120	26	8.2
12	46	17.8	22	25	70	16.4	76	228	366	131	24	7.8
13	34	17.8	22	25	58	15.7	65	169	285	162	22	8.7
14	28	18.5	22	23	52	15.0	57	124	216	191	22	9.2
15	26	19.2	22	22	46	*14.3	50	104	169	175	20	8.7
16	23	51	20	20	41	14.3	46	102	137	149	19.2	13.7
17	22	71	19.2	19.2	38	13.7	41	107	126	109	18.5	13.1
18	20	204	17.8	18.5	34	13.7	39	166	133	91	17.1	9.7
19	26	185	17.1	17.8	32	13.7	37	*293	142	80	16.4	9.2
20	43	128	16.4	17.1	30	13.1	*36	285	175	74	16.0	8.7
21	61	91	*17.8	16.4	28	16.4	37	207	258	71	15.0	8.7
22	52	71	27	24	27	39	39	167	275	70	14.3	8.2
23	47	57	26	97	27	28	42	142	*235	68	13.7	8.2
24	41	48	24	96	26	23	39	131	175	64	13.1	7.8
25	36	83	23	82	24	21	37	142	140	56	13.1	7.8
26	32	227	22	68	22	19.2	34	154	140	52	12.5	7.8
27	28	241	21	58	22	17.8	32	159	142	53	12.5	9.2
28	26	140	21	50	21	17.8	30	145	149	*48	11.9	18.5
29	24	96	24	44	-	19.2	30	180	157	61	11.3	19.2
30	22	74	50	41	------	19.2	30	225	*169	61	10.7	15.7
31	21	-----	149	38	-----	22	-----	172	------	59	10.7	------
Total	780.0	2,025.6	983.3	1,317.0	2,219	568.4	1,442	4,365	6,780	3,329	726.0	301.1
Mean	25.2	67.5	31.7	42.5	79.2	18.3	48.1	141	226	107	23.4	10.0
Cfsm	2.12	5.67	2.66	3.57	6.66	1.54	4.04	11.8	19.0	8.99	1.97	0.840
In.	2.44	6.33	3.07	4.12	6.93	1.78	4.51	13.64	21.19	10.40	2.27	0.94
Ac-ft	1,550	4,020	1,950	2,610	4,400	1,130	2,860	8,660	13,450	6,600	1,440	597

Calendar year 1954: Max 353 Min 8.2 Mean 68.3 Cfsm 5.74 In. 77.87 Ac-ft 49,420
Water year 1954-55: Max 601 Min 7.8 Mean 68.0 Cfsm 5.71 In. 77.62 Ac-ft 49,270

Peak discharge (base, 350 cfs).--Feb. 8 (1:30 a.m.) 950 cfs (4.63 ft); June 9 (9 p.m.) 537 cfs (4.13 ft).
* Discharge measurement made on this day.

Friday Creek near Lester, Wash.

Location.--Lat 47°13'10", long 121°27'10", in SE¼NW¼ sec. 18, T. 20 N., R. 11 E., on left bank 0.4 mile upstream from mouth and 2 miles northeast of Lester.

Drainage area.--4.55 sq mi.

Records available.--October 1945 to September 1955.

Gage.--Water-stage recorder. Concrete control since Aug. 9, 1951. Altitude of gage is 1,760 ft (from topographic map).

Average discharge.--10 years, 27.8 cfs (20,130 acre-ft per year).

Extremes.--Maximum discharge during year, 424 cfs Feb. 8 (gage height, 4.34 ft); minimum, 4.8 cfs Oct. 7, 9, 10, Sept. 25, 26 (gage height, 2.61 ft).
1945-55: Maximum discharge, 497 cfs Dec. 11, 1946 (gage height, 4.90 ft); minimum, 1.3 cfs Sept. 26-29, Oct. 2, 3, 1949, Nov. 28, 29, 30, 1952; minimum gage height, 2.28 ft Sept. 29, 30, 1946.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Small diversion for domestic use. No regulation.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.6	4.6	3.2	45
2.7	7.4	3.4	75
2.8	11.5	3.6	115
2.9	17	3.8	170
3.0	24	4.0	250

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.1	7.7	25	40	17.2	10.1	16.6	17.2	48	128	22	5.9
2	5.4	7.4	21	26	*16.0	9.7	14.8	16.0	44	94	21	5.9
3	5.4	*7.1	19	21	14.8	9.3	11.0	16.6	51	67	19.2	5.9
4	5.1	7.0	17	17.8	14.8	.9.1	10.1	21	65	58	17.8	5.6
5	5.1	8.0	16	16.0	14.2	9.0	12.0	27	77	53	16.6	5.4
6	5.1	8.8	15	14.2	27	8.9	17.2	28	79	52	16.0	5.4
7	4.8	8.0	14	13.0	164	9.3	24	32	94	51	15.4	*5.4
8	5.1	7.5	12.5	12.5	250	9.7	32	38	132	49	14.2	5.4
9	4.8	7.3	11.5	11.5	87	9.7	61	32	161	52	13.0	5.4
10	5.1	7.2	11	11.0	51	11.5	51	34	*178	53	12.5	5.4
11	10.1	7.0	10	10.5	37	12.0	32	44	158	52	12.0	5.4
12	11.5	7.1	9.5	10.1	30	10.5	24	56	135	56	11.0	5.1
13	8.2	7.5	9.0	10.1	25	9.7	21	45	104	69	10.5	5.9
14	7.1	7.8	8.7	9.7	22	8.9	18.5	37	81	79	10.1	5.9
15	6.8	8.0	8.5	9.3	21	*8.5	16.6	34	65	73	9.7	5.9
16	6.5	10	8.0	8.9	19.2	8.2	16.0	35	53	61	9.3	8.2
17	6.8	17	7.9	8.5	17.2	7.8	15.4	36	48	49	8.9	6.8
18	6.5	45	7.8	8.2	15.4	8.2	14.2	48	51	42	8.5	5.9
19	10.4	50	7.7	8.2	14.8	7.8	13.6	77	55	37	8.2	5.6
20	18.4	39	7.8	8.2	13.6	7.8	13.6	*81	69	34	8.2	5.6
21	19.2	32	*8.2	7.8	13.0	8.5	*15.4	61	100	30	7.8	5.6
22	18	29	13.6	14.2	12.5	19.9	16.6	49	113	30	7.8	5.4
23	15	24	12.0	60	12.5	14.2	17.8	43	*100	28	7.4	5.1
24	14	22	10.1	53	12.0	11.0	16.0	40	77	25	7.1	5.1
25	13	35	9.3	43	11.5	9.3	14.2	42	62	23	7.1	4.8
26	11.5	59	8.5	32	10.5	8.5	13.6	44	61	23	6.8	4.8
27	10.5	72	8.2	26	10.1	8.2	12.5	45	61	22	6.8	6.2
28	9.8	52	8.2	23	9.7	8.5	12.0	43	65	*21	6.8	10.8
29	9.2	39	10.5	21	-	9.7	12.0	53	77	25	6.5	8.5
30	8.5	31	40	18.5	------	10.5	13.6	65	86	24	6.2	6.8
31	8.0	-----	77	17.8	-----	12.5	-----	55	------	23	6.2	------
Total	280.0	669.4	452.5	591.0	963.0	306.5	578.3	1,294.8	2,550	1,483	340.6	179.1
Mean	9.03	22.3	14.6	19.1	34.4	9.89	19.3	41.8	85.0	47.8	11.0	5.97
Cfsm	1.98	4.90	3.21	4.20	7.56	2.17	4.24	9.19	18.7	10.5	2.42	1.31
In.	2.29	5.47	3.70	4.83	7.87	2.51	4.73	10.58	20.84	12.12	2.78	1.46
Ac-ft	555	1,330	898	1,170	1,910	608	1,150	2,570	5,060	2,940	676	355

Calendar year 1954: Max 122 Min 4.8 Mean 26.8 Cfsm 5.89 In. 79.93 Ac-ft 19,400
Water year 1954-55: Max 250 Min 4.8 Mean 26.5 Cfsm 5.82 In. 79.18 Ac-ft 19,220

Peak discharge (base, 150 cfs).--Feb. 8 (2:30 a.m.) 424 cfs (4.34 ft); June 10 (9 p.m.) 186 cfs (3.84 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 22 to Nov. 2, Nov. 4 to Dec. 19; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Green River near Lester, Wash.

Location.--Lat 47°12'30", long 121°33'10", in NE¼SE¼ sec. 20, T. 20 N., R. 10 E., on right bank three-eighths of a mile downstream from Champion Creek, 1¼ miles downstream from McCain Creek, and 3 miles west of Lester.

Drainage area.--104 sq mi.

Records available.--October 1945 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,480 ft (from river-profile map).

Average discharge.--10 years, 424 cfs (307,000 acre-ft per year).

Extremes.--Maximum discharge during year, 5,280 cfs Feb. 8 (gage height, 9.91 ft); minimum, 46 cfs Oct. 9 (gage height, 3.40 ft).
1945-55: Maximum discharge, 10,200 cfs probably Dec. 11, 1946 (gage height, 12.7 ft, from high-water mark in well), from rating curve extended above 4,500 cfs; minimum, 22 cfs Nov. 30, 1952 (gage height, 2.92 ft).

Remarks.--Records excellent. No regulation or diversion above station.

Revisions (water years).--WSP 1286: 1947(M). WSP 1316: 1948(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 9				June 10 to Sept. 30			
3.4	46	5.5	640	3.3	47	4.3	200
3.6	65	6.0	920	3.5	64	4.6	284
3.9	107	7.0	1,670	3.7	86	5.0	420
4.2	165	8.0	2,670	4.0	134		
4.6	275	9.0	3,920	Note.--Same as preceding table above 5.0 ft.			
5.0	420						

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	53	101	359	806	289	168	338	317	830	944	226	72
2	52	96	310	555	263	157	328	324	770	830	213	71
3	53	*91	275	436	*242	149	278	331	884	690	198	68
4	51	87	248	370	239	143	251	388	1,170	625	186	67
5	50	94	224	320	236	139	260	516	1,420	580	176	65
6	48	104	224	278	308	135	334	630	1,420	565	167	64
7	48	93	205	251	1,830	131	480	720	1,620	536	158	*64
8	49	87	188	230	3,760	141	650	890	2,030	520	154	64
9	48	85	180	212	1,530	143	1,200	740	2,340	528	146	63
10	48	83	170	200	932	168	1,190	758	2,380	536	138	62
11	88	80	159	188	680	190	806	1,010	2,270	528	130	60
12	145	81	155	175	540	170	620	1,280	2,020	536	125	59
13	114	85	149	175	456	157	524	1,020	1,690	600	121	62
14	99	88	143	165	404	145	464	776	1,320	675	116	71
15	88	88	151	159	370	*139	404	670	1,060	645	113	68
16	83	131	135	153	342	131	370	675	860	580	110	98
17	80	200	129	147	314	129	342	715	764	472	106	86
18	76	685	125	141	275	129	324	1,040	746	399	103	74
19	87	720	120	145	254	129	303	*1,740	764	354	100	69
20	158	555	118	137	239	123	*303	1,780	854	323	99	67
21	286	432	*120	131	227	137	317	1,360	1,130	300	93	67
22	239	356	185	143	218	416	345	1,060	1,290	284	90	63
23	215	296	205	533	208	342	373	914	*1,160	272	87	60
24	190	254	195	746	208	260	359	812	938	254	86	58
25	170	366	182	645	195	215	324	854	746	237	86	57
26	155	835	170	532	182	188	314	854	700	229	84	57
27	141	1,050	159	448	170	175	272	860	695	223	80	66
28	131	720	159	392	168	170	254	794	705	208	78	90
29	120	528	198	352	-	205	248	987	725	*248	75	96
30	112	424	465	320	------	230	257	1,280	735	246	74	82
31	105	------	1,220	303	------	263	------	1,030	------	240	73	------
Total	3,382	8,895	7,025	9,788	15,079	5,517	12,832	27,125	36,036	14,207	3,791	2,070
Mean	109	296	227	316	539	178	428	875	1,201	458	122	69.0
Cfsm	1.05	2.85	2.18	3.04	5.18	1.71	4.12	8.41	11.5	4.40	1.17	0.663
In.	1.21	3.18	2.51	3.50	5.39	1.97	4.59	9.70	12.89	5.08	1.36	0.74
Ac-ft	6,710	17,640	13,930	19,410	29,910	10,940	25,450	53,800	71,480	28,180	7,520	4,110

Calendar year 1954: Max 1,860 Min 48 Mean 394 Cfsm 3.79 In. 51.40 Ac-ft 285,000
Water year 1954-55: Max 3,760 Min 48 Mean 399 Cfsm 3.84 In. 52.12 Ac-ft 289,100

Peak discharge (base, 1,500 cfs).--Feb. 8 (5 a.m.) 5,280 cfs (9.91 ft); May 19 (11:30 p.m.) 1,980 cfs (7.34 ft); June 9 (12 p.m.) 2,520 cfs (7.86 ft).
* Discharge measurement made on this day.

Smay Creek near Lester, Wash.

Location.--Lat 47°15'40", long 121°33'50", in SW¼ sec. 32, T. 21 N., R. 10 E., on right bank 3½ miles upstream from mouth and 4½ miles northwest of Lester.

Drainage area.--8.71 sq mi.

Records available.--September 1946 to September 1955.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 1,900 ft (from topographic map). Prior to Dec. 11, 1946, water-stage recorder at site 200 ft upstream at datum 4.28 ft higher (destroyed by high water of Dec. 11, 1946).

Average discharge.--9 years, 52.0 cfs (37,650 acre-ft per year).

Extremes.--Maximum discharge during year, 422 cfs Feb. 8 (gage height, 4.43 ft); minimum, 10 cfs Sept. 25, 26 (gage height, 2.64 ft).
1946-55: Maximum discharge not determined, probably occurred Dec. 11, 1946, when recorder was destroyed by high water; minimum, 4.2 cfs Nov. 21 to Dec. 1, 1952.

Remarks.--Records excellent. No regulation or diversion above station.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.6	8.4	3.4	91
2.8	18.8	3.7	157
3.0	36	4.0	247
3.2	59	4.3	366

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13.9	18.8	52	99	41	23	26	28	103	157	50	15.0
2	13.9	18.1	46	76	39	22	24	28	97	147	46	15.0
3	13.9	*17.4	44	60	*37	22	23	29	97	120	44	14.4
4	13.4	16.8	41	52	37	21	22	32	111	103	41	13.9
5	12.9	20	38	47	36	21	23	38	131	93	38	13.4
6	12.9	19.5	37	42	45	20	24	43	135	89	36	13.4
7	12.9	17.4	34	39	178	19.5	28	47	150	86	34	13.4
8	12.9	16.8	32	37	332	19.5	37	56	199	84	32	*13.4
9	12.4	16.2	30	34	170	18.8	70	58	244	84	30	12.9
10	12.9	16.2	28	32	113	19.5	79	58	276	86	28	12.9
11	19.5	15.6	26	30	88	19.5	66	77	269	84	26	12.4
12	21	16.8	26	28	72	18.8	56	101	230	86	26	11.9
13	18.1	19.5	25	28	62	17.4	50	95	193	91	25	13.9
14	17.4	22	25	26	55	*16.8	45	81	160	101	24	13.9
15	16.8	22	25	25	50	16.2	41	72	138	97	24	13.4
16	16.8	34	23	24	47	16.2	39	68	120	91	24	16.2
17	16.2	51	23	24	43	15.6	36	68	109	79	23	13.9
18	15.6	111	22	23	39	15.6	34	81	107	70	22	12.4
19	18.1	126	22	22	37	15.0	32	*129	107	62	22	11.9
20	24	97	*21	22	36	14.4	32	150	113	59	22	11.9
21	29	74	23	21	34	16.2	*32	126	145	55	21	11.4
22	29	60	30	25	32	26	34	107	*162	54	20	11.4
23	29	51	28	49	29	22	34	93	150	51	19.5	10.9
24	28	45	28	65	28	19.5	32	86	129	49	19.5	10.4
25	26	56	28	68	27	18.1	30	81	107	46	18.8	10.4
26	25	89	27	59	25	16.8	29	88	103	47	18.1	10.4
27	24	120	26	52	24	16.8	28	91	103	46	17.4	11.4
28	23	93	26	47	23	16.8	27	91	105	44	16.8	14.4
29	22	74	29	43	-	22	26	97	*113	*51	15.6	13.9
30	21	62	59	41	------	21	26	122	118	54	15.0	11.9
31	20	-----	126	42	------	23	-----	118	------	51	15.0	------
Total	591.5	1,416.1	1,050	1,282	1,779	590.0	1,085	2,439	4,324	2,417	813.7	386.0
Mean	19.1	47.2	33.9	41.4	63.5	19.0	36.2	78.7	144	78.0	26.2	12.9
Cfsm	2.19	5.42	3.89	4.75	7.29	2.18	4.16	9.04	16.5	8.96	3.01	1.48
In.	2.53	6.05	4.48	5.47	7.60	2.52	4.63	10.41	18.46	10.32	3.47	1.65
Ac-ft	1,170	2,810	2,080	2,540	3,530	1,170	2,150	4,840	8,580	4,790	1,610	766

Calendar year 1954: Max 179 Min 12.4 Mean 50.5 Cfsm 5.80 In. 78.74 Ac-ft 36,580
Water year 1954-55: Max 332 Min 10.4 Mean 49.8 Cfsm 5.72 In. 77.59 Ac-ft 36,040

Peak discharge (base, 200 cfs).--Feb. 8 (3:30 a.m.) 422 cfs (4.43 ft); June 10 (11 p.m.) to June 11 (4 a.m.) 283 cfs (4.10 ft).
* Discharge measurement made on this day.

Charley Creek near Eagle Gorge, Wash.

Location.--Lat 47°15'00", long 121°47'00", in SW¼NW¼ sec. 3, T. 20 N., R. 8 E., on left bank 300 ft downstream from Beaverdam Lake Creek, 1½ miles southwest of Eagle Gorge, and 1¾ miles upstream from mouth.
Drainage area.--11.0 sq mi.
Records available.--September 1946 to November 1955 (discontinued).
Gage.--Water-stage recorder. Altitude of gage is 1,350 ft (from topographic map).
Average discharge.--9 years, 72.4 cfs (52,420 acre-ft per year).
Extremes.--1954-55: Maximum discharge during water year, 1,280 cfs Feb. 8 (gage height, 5.32 ft), from rating curve extended above 570 cfs by logarithmic plotting; minimum, 13.7 cfs Sept. 25, 26 (gage height, 1.14 ft).
1955: Maximum discharge during period October to November, 400 cfs Nov. 26 (gage height, 3.60 ft); minimum, 16.7 cfs Oct. 3 (gage height, 1.22 ft).
1946-55: Maximum discharge, 2,440 cfs Dec. 9, 1953 (gage height, 6.6 ft), from rating curve extended above 570 cfs by logarithmic plotting; minimum, 7.2 cfs Oct. 19, 1946; minimum gage height, 1.12 ft Sept. 23, 24, 1951.
Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation or diversion above station.
Revisions (water years).--WSP 1216: 1950(M), drainage area. The figures of peak discharge for the water year 1950 have been revised as shown below, superseding those published in WSP 1182.

Revised peak discharge.--1949-50: Feb. 24 (6 a.m.) 710 cfs; Mar. 4 (7 a.m.) 810 cfs; Mar. 17 (5:30 p.m.) 348 cfs; Apr. 16 (1 a.m.) 374 cfs.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19.2	20	61	197	98	33	90	48	125	177	99	17.1
2	19.2	19.2	53	133	88	30	74	48	121	139	87	16.7
3	18.8	18.0	47	101	77	29	61	54	203	115	76	16.3
4	17.5	17.1	44	88	73	27	52	62	215	99	67	16.3
5	16.3	28	40	80	67	27	48	74	199	88	59	15.9
6	15.5	30	41	70	110	26	54	84	171	84	53	15.9
7	14.8	23	40	a65	689	26	73	91	177	78	47	15.5
8	14.4	22	36	a60	627	26	94	107	225	75	45	*15.9
9	14.0	*24	34	a55	208	28	194	93	275	76	39	15.5
10	16.3	22	33	a52	135	*45	179	98	*252	75	36	15.2
11	24	21	31	a49	106	42	124	185	225	71	33	14.8
12	24	40	37	a48	88	37	108	218	188	66	31	14.4
13	18.4	44	44	a46	77	33	97	154	154	68	30	18.8
14	17.1	58	*46	a43	72	30	84	124	125	68	28	22
15	16.3	62	54	a41	70	28	*76	115	115	64	27	20
16	15.9	63	45	a38	65	26	71	110	102	59	26	28
17	18.0	75	41	a36	60	24	65	111	98	52	25	20
18	15.9	93	38	a35	58	24	59	*139	111	51	24	17.1
19	30	157	36	a33	53	23	54	215	117	43	24	15.9
20	43	121	34	a32	49	21	54	199	118	40	24	16.7
21	60	93	53	a32	48	34	57	150	128	37	22	15.9
22	49	79	112	a70	46	108	69	124	127	36	21	15.5
23	44	64	101	a220	43	65	80	108	*125	34	21	14.4
24	40	55	88	a190	44	50	69	97	115	32	21	14.0
25	37	99	77	*169	40	42	60	97	104	31	20	13.7
26	34	127	67	127	37	37	55	138	104	37	20	14.0
27	31	125	58	101	34	33	49	136	111	41	19.2	18.8
28	28	106	61	90	34	33	45	121	125	*40	18.8	29
29	25	87	108	79	-	44	44	141	154	82	18.0	23
30	23	73	371	72	------	47	45	186	167	107	18.0	20
31	22	-----	332	91	-----	75	-----	157	------	112	17.5	------
Total	781.6	1,865.3	2,263	2,543	3,196	1,153	2,284	3,784	4,576	2,177	1,096.5	526.3
Mean	25.2	62.2	73.0	82.0	114	37.2	76.1	122	153	70.2	35.4	17.5
Cfsm	2.29	5.65	6.64	7.45	10.4	3.38	6.92	11.1	13.9	6.38	3.22	1.59
In.	2.64	6.31	7.65	8.60	10.81	3.90	7.72	12.79	15.47	7.36	3.71	1.78
Ac-ft	1,550	3,700	4,490	5,040	6,340	2,290	4,530	7,510	9,080	4,320	2,170	1,040

Calendar year 1954: Max 371 Min 14.0 Mean 66.4 Cfsm 6.04 In. 81.98 Ac-ft 48,080
Water year 1954-55: Max 689 Min 13.7 Mean 71.9 Cfsm 6.54 In. 88.74 Ac-ft 52,060

Peak discharge (base, 300 cfs).--Dec. 31 (2:30 a.m.) 460 cfs (3.77 ft); Feb. 8 (1 a.m.) 1,280 cfs (5.32 ft); June 9 (9 p.m.) 302 cfs (3.29 ft). * Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Discharge, in cubic feet per second, 1955

Day	Oct.	Nov.	Day	Oct.	Nov.	Day	Oct.	Nov.	Day	Oct.	Nov.
1	18.8	110	9	146	94	17	42	a54	25	165	205
2	17.5	127	10	177	115	18	37	a77	26	179	359
3	22	186	11	124	119	19	*37	127	27	145	284
4	78	167	12	97	102	20	33	101	28	211	213
5	70	139	13	77	90	21	30	92	29	263	171
6	53	121	14	66	a79	22	28	82	30	218	188
7	49	103	15	57	a66	23	26	78	31	146	-
8	51	96	16	50	a55	24	59	88			
Total										2,772.3	3,888
Mean										89.4	130
Cubic feet per second per square mile										8.13	11.8
Runoff in inches										9.37	13.14
Runoff in acre-feet										5,500	7,710

Peak discharge (base, 300 cfs).--Oct. 29 (3 p.m.) 356 cfs (3.47 ft); Nov. 26 (5:30 a.m.) 400 cfs (3.60 ft). * Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of reconstructed gage-height graph. Note.--Result of discharge measurement, Dec. 4, 1955, 99 cfs.

Bear Creek near Eagle Gorge, Wash.

Location.--Lat 47°17'00", long 121°48'10", in NW¼ sec. 28, T. 21 N., R. 8 E., on left bank a quarter of a mile upstream from mouth and 2½ miles northwest of Eagle Gorge.

Drainage area.--4.25 sq mi.

Records available.--September 1946 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,000 ft (from topographic map). Prior to Sept. 8, 1949, at site 25 ft upstream at same datum.

Average discharge.--9 years, 25.7 cfs (18,610 acre-ft per year).

Extremes.--Maximum discharge during year, 432 cfs Feb. 7 (gage height, 2.69 ft), from rating curve extended above 110 cfs on basis of slope-area determination at gage height 4.00 ft; maximum gage height, 2.84 ft Feb. 7 (temporary backwater); minimum discharge, 3.1 cfs Sept. 12, 13 (gage height, 0.48 ft).
1946-55: Maximum discharge, 830 cfs Feb. 11, 1951 (gage height, 4.00 ft), from rating curve extended above 110 cfs on basis of slope-area determination of peak flow; minimum daily, 0.5 cfs Oct. 17, 18, 1946; minimum gage height, 0.41 ft Sept. 16-24, 1951.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1246: 1946-47.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
0.58	4.0	1.4	75	0.48	3.1	1.2	51
.7	8.0	1.7	135	.6	6.2	1.4	79
.8	12.7	2.0	210	.7	10.0	1.7	136
1.0	27	2.3	300	.8	15.0	2.1	240
1.2	47			1.0	30		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.0	6.8	19.1	99	38	10.0	64	28	43	64	36	3.8
2	5.8	6.4	16.3	55	30	9.2	41	25	38	41	30	*3.8
3	5.7	6.1	15.1	38	25	8.8	28	27	55	29	23	3.8
4	*5.4	5.8	14.5	30	22	8.0	25	34	61	22	19.6	3.5
5	5.1	11.4	13.3	24	21	7.6	27	41	55	18.9	16.3	3.5
6	4.5	14.5	16.3	19.1	44	7.6	36	43	45	17	14	3.3
7	4.5	11.2	17	16.3	273	8.0	46	48	45	14.5	11.5	3.5
8	4.0	9.7	15.7	15.1	228	*9.2	63	50	51	13	11	3.5
9	4.0	10.7	15.1	13.3	79	13.5	143	42	58	13	9.6	3.3
10	5.1	9.7	14.5	12.2	45	29	93	45	49	12	8.8	3.3
11	10.2	9.2	13.3	11.7	32	26	56	92	38	10.5	8.4	3.3
12	9.2	*15.1	13.9	12.2	25	19.6	48	106	27	10	*7.6	3.1
13	7.2	17	*17.7	13.9	22	15.6	45	64	22	9.6	6.8	4.5
14	6.4	25	22	13.9	21	13.5	*36	52	18.9	9.2	6.5	6.2
15	5.8	29	36	12.2	23	11.5	29	46	15.6	*8.4	6.2	5.3
16	5.4	35	23	11.7	20	11	26	41	14	8.4	5.6	8.4
17	6.4	43	17.7	10.7	18.2	10	24	*41	12.5	7.6	5.3	6.2
18	5.4	52	15.7	10.7	15.6	11	23	54	14	7.6	5.3	5.0
19	15.2	101	13.9	10.2	15	11	22	78	13	7.2	5.3	4.5
20	31	63	13.3	10.7	13.5	11	23	61	13	6.5	5.3	5.0
21	38	40	20	10.2	13	17.6	27	43	13	6.2	5.0	4.5
22	25	32	57	11.7	13.5	94	40	34	13	5.9	4.5	4.2
23	19.8	25	43	84	13	34	52	28	14	5.6	4.5	4.0
24	16.3	21	36	*89	14.5	22	36	26	14	5.6	4.2	3.8
25	13.9	49	30	84	13.5	17.6	27	26	12.5	5.3	4.2	3.8
26	11.7	62	23	54	12	15	24	42	13	7.2	4.2	3.8
27	10.7	59	18.4	38	10.5	14.5	20	42	14.5	8.8	4.0	5.6
28	9.7	42	19.1	30	10.5	17	19.6	36	22	8.8	4.2	13.5
29	8.8	31	60	25	-	38	20	48	32	23	4.0	11.5
30	8.0	25	200	21	------	36	23	76	52	42	3.8	9.2
31	7.6	-----	192	32	-----	55	-----	60	------	41	3.8	------
Total	321.8	867.6	1,041.9	918.8	1,110.8	611.8	1,186.6	1,479	888.0	488.8	288.5	150.7
Mean	10.4	28.9	33.6	29.6	39.7	19.7	39.6	47.7	29.6	15.8	9.31	5.02
Cfsm	2.45	6.80	7.91	6.96	9.34	4.64	9.32	11.2	6.96	3.72	2.19	1.18
In.	2.82	7.59	9.12	8.04	9.72	5.35	10.38	12.94	7.77	4.28	2.52	1.32
Ac-ft	638	1,720	2,070	1,820	2,200	1,210	2,350	2,930	1,760	970	572	299

Calendar year 1954: Max 200 Min 2.8 Mean 24.9 Cfsm 5.86 In. 79.42 Ac-ft 18,000
Water year 1954-55: Max 273 Min 3.1 Mean 25.6 Cfsm 6.02 In. 81.85 Ac-ft 18,540

Peak discharge (base, 180 cfs).--Dec. 30 (5 p.m.) 261 cfs (2.17 ft); Feb. 7 (11 p.m.) 432 cfs (2.69 ft).
* Discharge measurement made on this day.

Green River near Palmer, Wash.

Location.--Lat 47°17'40", long 121°49'20", in SW¼NW¼ sec. 20, T. 21 N., R. 8 E., on right bank 1½ miles upstream from diversion dam and intake of Tacoma water-supply system, 2½ miles downstream from North Fork, and 3½ miles southeast of Palmer.

Drainage area.--230 sq mi.

Records available.--October 1931 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 912.6 ft above mean sea level (river-profile survey). Prior to Nov. 18, 1931, staff gage at same site and datum.

Average discharge.--24 years, 1,069 cfs (773,900 acre-ft per year).

Extremes.--Maximum discharge during year, 14,100 cfs Feb. 8 (gage height, 15.93 ft); minimum, 193 cfs Oct. 10; minimum gage height, 4.30 ft Sept. 26.

1931-55: Maximum discharge, 23,200 cfs Dec. 11, 1946 (gage height, 19.95 ft, from high-water mark in well); minimum, 81 cfs Sept. 4, 5, 1934; minimum gage height, 3.35 ft Sept. 2, 3, 1945.

Flood in December 1917 reached a stage of about 20 ft, from crest head over city of Tacoma diversion dam and gage-height relationship curve (discharge, about 25,000 cfs).

Remarks.--Records excellent. No regulation or diversion above station. Records of suspended sediment loads for the water year 1955 are given in WSP 1403.

Revisions (water years).--WSP 1062: 1932-34, 1935(M), 1938(M). WSP 1216: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 7		Feb. 8 to Sept. 30			
4.4	165	4.3	208	9.0	2,950
5.0	420	5.0	498	10.0	3,980
6.0	910	6.0	937	11.0	5,210
7.0	1,460	7.0	1,460	12.5	7,510
		8.0	2,120	14.5	11,200

Note.--Same as following table above 7.0 ft.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	226	310	1,030	3,270	1,080	600	1,500	946	2,050	2,450	824	251
2	221	297	900	2,240	982	579	1,330	937	1,890	2,140	740	*243
3	226	288	810	1,680	885	549	1,130	955	2,130	1,740	670	243
4	*217	280	745	1,360	865	506	1,000	1,060	2,570	1,510	613	239
5	209	322	685	1,170	850	485	974	1,300	2,860	1,360	574	235
6	201	375	690	1,020	1,120	494	1,080	1,540	2,800	1,290	540	231
7	197	322	650	910	5,950	485	1,390	1,710	3,070	1,240	515	235
8	197	301	595	840	10,900	*511	1,770	2,010	3,840	1,180	490	239
9	197	310	566	780	4,410	532	3,040	1,780	4,720	1,200	464	231
10	205	301	542	725	2,730	683	3,200	1,820	4,890	1,200	439	224
11	322	284	508	680	2,080	762	2,350	2,440	4,560	1,160	418	220
12	393	*327	518	655	1,690	701	1,940	3,160	3,960	1,160	*406	216
13	349	371	*542	660	1,430	635	1,720	2,600	3,240	1,240	393	231
14	314	471	542	630	1,260	592	*1,510	2,080	2,590	1,360	376	268
15	288	480	625	605	1,160	553	1,320	1,830	2,130	1,320	359	251
16	271	655	551	581	1,060	527	1,200	1,720	1,790	1,220	347	305
17	271	895	518	561	988	511	1,110	*1,740	1,600	1,040	338	288
18	263	1,980	494	542	888	511	1,050	2,180	1,590	910	326	259
19	292	2,670	471	518	838	506	992	3,440	1,620	824	317	239
20	490	2,020	457	523	793	490	974	3,600	1,720	767	313	239
21	750	1,470	499	499	762	519	1,000	2,860	2,190	718	305	235
22	635	1,170	900	532	749	1,600	1,130	2,360	2,460	688	296	228
23	590	971	890	1,430	714	1,240	1,300	2,050	2,320	666	292	224
24	527	825	835	*2,180	723	983	1,210	1,830	1,940	639	292	220
25	480	1,160	760	2,100	688	834	1,080	1,860	1,620	604	288	216
26	438	1,950	680	1,690	644	727	1,040	1,980	1,500	617	284	212
27	406	2,620	620	1,390	613	674	932	2,000	1,520	635	276	239
28	375	1,970	605	1,210	613	661	874	1,860	1,580	609	268	305
29	357	1,510	905	1,080	-	829	856	2,150	1,760	762	259	326
30	340	1,230	2,390	982	------	919	856	2,860	*1,870	865	255	280
31	322	-----	4,970	1,040	-----	1,160	-----	2,480	------	860	255	------
Total	10,569	28,135	26,493	34,083	47,465	21,358	40,858	63,138	74,380	33,974	12,532	7,372
Mean	341	938	855	1,099	1,695	689	1,362	2,037	2,479	1,096	404	246
Cfsm	1.48	4.08	3.72	4.78	7.37	3.00	5.92	8.86	10.8	4.77	1.76	1.07
In.	1.71	4.55	4.28	5.51	7.67	3.45	6.61	10.21	12.03	5.49	2.03	1.19
Ac-ft	20,960	55,800	52,550	67,600	94,150	42,360	81,040	125,200	147,500	67,390	24,860	14,620

Calendar year 1954: Max 4,970 Min 197 Mean 1,081 Cfsm 4.70 In. 63.78 Ac-ft 782,600
Water year 1954-55: Max 10,900 Min 197 Mean 1,097 Cfsm 4.77 In. 64.73 Ac-ft 794,000

Peak discharge (base, 6,000 cfs).--Feb. 8 (5:30 a.m.) 14,100 cfs (15.93 ft).
* Discharge measurement made on this day.

Newaukum Creek near Black Diamond, Wash.

Location.--Lat 47°16'30", long 122°03'30", in SW¼ sec. 28, T. 21 N., R. 6 E., on right bank three-quarters of a mile upstream from mouth and 3½ miles southwest of Black Diamond.

Drainage area.--25.5 sq mi.

Records available.--July 1944 to November 1950, September 1952 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 310 ft (from topographic map).

Average discharge.--9 years (1944-50, 1952-55), 65.2 cfs (47,200 acre-ft per year).

Extremes.--Maximum discharge during year, 860 cfs Feb. 7 (gage height, 3.00 ft); minimum, 18 cfs Sept. 24,25, 26; minimum gage height, 0.79 ft Oct. 7-10, 15-19.
1944-50, 1952-55: Maximum discharge, 1,820 cfs probably Feb. 17, 1949 (gage height, 3.54 ft, from recorded range in stage), from rating curve extended above 600 cfs; minimum, 8.0 cfs Oct. 13, 14, 1952; minimum gage height, 0.78 ft Aug. 13, Sept. 7, 1954.
Revisions.--The maximum discharge for the water year 1946 has been revised to 570 cfs Jan. 5, 1946, and the maximum gage height to 3.40 ft Dec. 28, 1945, superseding figures published in WSP 1062 and 1316.

Remarks.--Records good. Many small diversions above station for irrigation and domestic use. No regulation.

Revisions.--WSP 1286: Drainage area. The figure of peak discharge for the water year 1949 has been revised as shown below, superseding that published in WSP 1152.

Revised peak discharge.--1948-49: Feb. 22 (8:30 a.m.) 496 cfs.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 25				Nov. 25 to Sept. 30			
0.7	16	1.2	66	0.8	16	1.5	101
.8	22	1.4	100	.9	22	1.8	175
1.0	40	1.7	165	1.1	40	2.1	280
				1.3	66	2.4	420

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	*25	45	159	63	71	227	69	42	69	48	19.5
2	23	24	41	119	55	69	159	68	41	62	42	19
3	23	25	40	95	51	60	108	68	47	48	37	19
4	22	24	40	86	58	*53	92	65	55	44	32	19
5	23	32	40	95	55	47	80	60	52	40	30	19
6	22	53	45	77	79	50	74	58	48	*39	28	19
7	22	39	46	71	380	60	69	56	42	37	26	19
8	21	35	41	68	417	69	72	53	41	36	*26	20
9	21	42	44	65	178	77	168	51	37	38	26	19
10	22	37	50	60	108	86	128	53	36	47	25	19
11	26	33	41	55	88	80	114	72	36	42	25	18.5
12	25	47	47	55	79	90	112	79	35	38	24	18.5
13	24	47	66	53	74	82	112	101	35	36	24	21
14	24	58	52	51	71	71	*110	153	34	32	24	*22
15	22	55	*84	53	71	60	116	92	33	31	23	20
16	21	55	52	59	65	55	110	76	32	31	23	24
17	21	66	45	*63	60	50	101	69	31	30	23	21
18	21	80	41	53	55	51	90	62	35	28	23	19.5
19	28	134	37	47	53	50	82	60	32	28	22	19
20	51	96	38	52	51	46	90	59	31	27	22	19.5
21	53	68	44	50	52	55	90	52	30	27	21	19.5
22	40	63	86	50	52	138	153	51	30	26	21	19
23	47	55	84	79	50	80	148	47	33	26	21	19
24	37	50	82	123	58	74	105	*46	34	25	21	18.5
25	32	152	62	105	59	74	92	45	31	25	21	18.5
26	29	99	53	79	53	66	121	47	36	33	21	18
27	28	80	47	68	48	58	101	45	46	39	20	19.5
28	27	60	62	62	62	58	86	42	65	36	19.5	19.5
29	25	53	168	58	-	95	80	44	66	36	20	19.5
30	24	48	295	55	------	103	74	47	58	37	20	19
31	24	-----	276	68	-----	128	-----	50	------	42	20	------
Total	852	1,735	2,194	2,233	2,545	2,206	3,264	1,940	1,204	1,135	778.5	584.5
Mean	27.5	57.8	70.8	72.0	90.9	71.2	109	62.6	40.1	36.6	25.1	19.5
Cfsm	1.08	2.27	2.78	2.82	3.56	2.79	4.27	2.45	1.57	1.44	0.984	0.765
In.	1.24	2.53	3.20	3.26	3.71	3.22	4.76	2.83	1.76	1.66	1.14	0.85
Ac-ft	1,690	3,440	4,350	4,430	5,050	4,380	6,470	3,850	2,390	2,250	1,540	1,160

Calendar year 1954: Max 414 Min 21 Mean 59.5 Cfsm 2.33 In. 31.65 Ac-ft 43,070
Water year 1954-55: Max 417 Min 18 Mean 58.6 Cfsm 2.22 In. 30.16 Ac-ft 41,000

Peak discharge (base, 350 cfs).--Dec. 30 (7 p.m.) 390 cfs (2.26 ft); Feb. 7 (11 p.m.) 860 cfs (3.00 ft).
* Discharge measurement made on this day.

Lake Sawyer near Black Diamond, Wash.

Location.--Lat 47°20'00", long 122°02'15", in SE¼ sec. 4, T. 21 N., R. 6 E., on west shore about three-eighths of a mile south of lake outlet and 2 miles northwest of Black Diamond.

Drainage area.--9.77 sq mi (revised).

Records available.--April 1952 to September 1955.

Gage.--Staff gage read once daily. Datum of gage is 512.34 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum gage height observed during year, 6.84 ft Feb. 9; minimum observed, 6.12 ft Sept. 26, 30.
1952-55: Maximum gage height observed, 6.98 ft Dec. 11, 12, 1953, Jan. 7, 1954; minimum observed, 3.04 ft Dec. 1, 2, 1952.

Remarks.--Lake controlled for elevation by concrete dam at outlet constructed during July and August 1952. No known diversion.

Gage height, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.24	6.22	6.42	6.70	6.48	6.50	6.58	6.54	6.44	6.48	6.40	6.24
2	6.22	6.20	6.40	6.70	6.48	6.52	6.58	6.54	6.44	6.48	6.40	6.24
3	6.22	6.20	6.40	6.66	6.46	6.48	6.58	6.54	6.46	6.46	6.38	6.22
4	6.20	6.20	6.38	6.62	6.46	6.48	6.58	6.52	6.44	6.44	6.36	6.22
5	6.18	6.26	6.38	6.62	6.46	6.48	6.56	6.50	6.44	6.42	6.36	6.22
6	6.18	6.30	6.40	6.60	6.48	6.46	6.56	6.50	6.42	6.42	6.36	6.20
7	6.16	6.30	6.42	6.58	6.52	6.46	6.56	6.48	6.42	6.42	6.34	6.18
8	6.16	6.30	6.40	6.56	6.76	6.46	6.54	6.48	6.40	6.42	6.34	6.18
9	6.16	6.32	6.38	6.54	6.84	6.46	6.56	6.48	6.38	6.42	6.32	6.16
10	6.16	6.30	6.40	6.54	6.78	6.48	6.60	6.48	6.38	6.42	6.32	6.16
11	6.20	6.30	6.40	6.52	6.74	6.48	6.62	6.50	6.38	6.42	6.30	6.14
12	6.20	6.32	6.38	6.50	6.68	6.50	6.62	6.52	6.40	6.42	6.30	6.14
13	6.22	6.32	6.42	6.46	6.64	6.50	6.62	6.54	6.40	6.40	6.30	6.17
14	6.22	6.32	6.42	6.50	6.62	6.52	6.64	6.56	6.40	6.40	6.30	6.20
15	6.20	6.32	6.44	6.48	6.60	6.50	6.66	6.56	6.38	6.38	6.28	6.22
16	6.20	6.32	6.44	6.52	6.58	6.48	6.66	6.54	6.38	6.38	6.28	6.24
17	6.18	6.34	6.42	6.50	6.56	6.48	6.64	6.54	6.38	6.38	6.28	6.24
18	6.18	6.38	6.42	6.48	6.54	6.48	6.62	6.52	6.40	6.36	6.28	6.22
19	6.20	6.44	6.40	6.46	6.52	6.48	6.60	6.52	6.40	6.36	6.28	6.22
20	6.24	6.44	6.40	6.48	6.52	6.48	6.60	6.50	6.40	6.36	6.28	6.22
21	6.26	6.44	6.38	6.46	6.50	6.48	6.60	6.50	6.40	6.36	6.26	6.20
22	6.28	6.42	6.42	6.46	6.50	6.48	6.62	6.48	6.40	6.34	6.26	6.20
23	6.28	6.42	6.46	6.48	6.50	6.48	6.62	6.48	6.40	6.34	6.26	6.18
24	6.28	6.42	6.48	6.50	6.50	6.48	6.60	6.48	6.38	6.32	6.26	6.16
25	6.28	6.46	6.48	6.52	6.50	6.48	6.58	6.46	6.38	6.34	6.26	6.14
26	6.28	6.48	6.48	6.50	6.48	6.46	6.62	6.46	6.40	6.38	6.26	6.12
27	6.26	6.48	6.46	6.50	6.48	6.46	6.60	6.46	6.42	6.40	6.24	6.14
28	6.24	6.46	6.46	6.50	6.50	6.46	6.58	6.44	6.44	6.40	6.24	6.14
29	6.24	6.46	6.50	6.48	-	6.50	6.58	6.44	6.44	6.38	6.24	6.14
30	6.22	6.44	6.58	6.48	-------	6.52	6.56	6.44	6.44	6.38	6.24	6.12
31	6.22	-------	6.68	6.50	-------	6.54	-------	6.46	-------	6.38	6.24	-------

Covington Creek near Black Diamond, Wash.

Location.--Lat 47°20'10", long 122°02'40", in NE¼SE¼ sec. 4, T. 21 N., R. 6 E., on left bank 1,000 ft east of outlet of Lake Sawyer, 3 miles northwest of Black Diamond, and 5 miles upstream from mouth.

Drainage area.--9.77 sq mi.

Records available.--January 1953 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 526.5 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 104 cfs Feb. 9 (gage height, 2.96 ft); no flow Oct. 4-19, Oct. 30 to Nov. 4, Sept. 7-30.
1953-55: Maximum discharge, 149 cfs Dec. 11, 1953 (gage height, 3.43 ft); no flow at times each year.

Remarks.--Records good except those below 2 cfs, which are fair. Natural regulation by Lake Sawyer. Probably some small diversions for domestic use.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 20 to Nov. 4, Jan. 18 to Feb. 6, Apr. 9 to May 6, Sept. 3, 4)

0.3	0	1.1	8.4
.4	.2	1.3	14.5
.5	.5	1.6	26
.6	1.0	2.0	46
.7	1.6	2.4	70
.9	4.1	2.9	106

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	0	18.5	76	30	37	46	41	23	26	11	0.7
2	.2	0	17.5	73	28	36	48	42	22	25	9.1	.6
3	.1	0	17	66	25	34	48	40	22	20	7.4	.5
4	0	0	16	60	25	31	48	38	24	17.5	5.8	.3
5	0	.4	17	57	24	27	45	35	22	*16	4.8	.3
6	0	1.6	18.5	52	25	26	42	32	19.5	14.5	4.3	.2
7	0	2.3	18	48	45	*26	40	32	18	13	3.8	0
8	0	2.3	17	45	92	26	40	30	16	12	4.0	0
9	0	2.5	16	42	101	26	49	28	13.5	12.5	3.5	0
10	0	2.1	17	39	90	28	52	29	11	13.5	3.0	0
11	0	1.8	15.5	36	77	29	52	36	14.5	13.5	*2.5	0
12	0	3.0	17.5	35	67	32	55	38	15	13	2.3	0
13	0	4.6	*21	33	62	34	56	40	14.5	12.5	2.0	*0
14	0	5.4	21	32	57	34	57	47	14	11	1.8	0
15	0	5.6	23	30	53	31	58	44	11.5	9.4	1.7	0
16	0	6.0	22	32	48	30	59	40	11	8.4	1.6	0
17	0	8.8	20	34	45	28	58	38	12.5	7.4	1.5	0
18	0	12	18.5	29	40	28	56	38	13	6.4	1.5	0
19	0	19.5	18	*27	38	28	*53	36	13.5	5.9	1.4	0
20	.2	21	18	27	36	28	53	34	12.5	5.8	1.4	0
21	.7	20	20	25	34	29	51	32	11.5	5.8	1.3	0
22	.8	18.5	26	25	33	32	56	30	11	5.2	1.2	0
23	.8	17	28	30	31	30	56	28	11	4.8	1.1	0
24	.8	14	29	34	32	29	53	28	10	4.4	1.1	0
25	.6	27	28	36	31	28	50	26	9.9	4.1	1.1	0
26	.4	32	27	34	29	27	53	*25	13	7.4	1.0	0
27	**.3	30	25	32	28	26	53	24	15.5	11	1.0	0
28	.2	27	27	30	34	28	50	23	17.5	10	1.0	0
29	.1	23	37	29	-	32	47	24	18.5	9.6	.9	0
30	0	21	55	28	------	33	44	25	18.5	8.8	.8	0
31	0	------	71	30	------	38	------	25	------	9.9	.7	------
Total	5.6	328.4	740.0	1,206	1,260	931	1,528	1,028	459.4	344.3	85.6	2.6
Mean	0.18	10.9	23.9	38.9	45.0	30.0	50.9	33.2	15.3	11.1	2.76	0.09
Ac-ft	11	651	1,470	2,390	2,500	1,850	3,030	2,040	911	683	170	5.2

Calendar year 1954: Max .34 Min 0 Mean 22.8 Ac-ft 16,500
Water year 1954-55: Max 101 Min 0 Mean 21.7 Ac-ft 15,710

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

Big Soos Creek near Auburn, Wash.

Location.--Lat 47°19'00", long 122°08'40", in SE¼ sec. 10, T. 21 N., R. 5 E., on right bank three-quarters of a mile downstream from Covington Creek, 2 miles upstream from mouth, and 4 miles east of Auburn.

Drainage area.--49.4 sq mi (excludes 3.95 sq mi in vicinity of Youngs Lake, flow from which has been diverted to Cedar River basin since about 1935).

Records available.--August 1944 to February 1951, August 1951 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 170 ft (from topographic map). Aug. 26, 1944, to Feb. 10, 1951, at site 700 ft upstream at different datum (gage destroyed by flood of Feb. 10, 1951).

Average discharge.--10 years (1944-50, 1951-55), 117 cfs (84,700 acre-ft per year).

Extremes.--Maximum discharge during year, 545 cfs Feb. 8 (gage height, 4.11 ft); minimum, 30 cfs Aug. 18 (gage height, 2.30 ft).
1944-55: Maximum discharge observed, 1,570 cfs Feb. 10, 1951 (gage height, 5.57 ft); minimum, 20 cfs July 23, 24, Sept. 19 to Oct. 12, 1952.

Remarks.--Records fair. Several small diversions for farm use above station. City of Seattle diverts between 2 and 5 cfs from Youngs Lake into Little Soos Creek, a tributary, except during periods of high flow.

Revisions.--WSP 1246: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.3	30	3.3	233
2.5	55	3.6	335
2.7	88	4.0	495
3.0	152		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	31	92	252	140	164	180	147	90	78	55	33
2	41	31	86	252	129	160	172	145	88	74	48	32
3	41	*31	83	227	127	152	160	145	88	68	44	31
4	41	31	81	207	120	*143	150	138	92	69	41	31
5	41	49	83	210	120	131	145	131	88	*63	39	33
6	41	57	92	193	120	131	145	129	85	*60	38	33
7	40	42	94	180	185	131	143	126	80	60	37	34
8	40	40	86	172	*487	131	150	122	78	*58	*39	34
9	41	45	86	172	431	131	193	118	69	57	38	34
10	40	42	99	164	355	136	210	120	66	58	37	34
11	51	39	86	157	304	138	218	131	61	57	36	34
12	45	42	96	150	265	145	236	134	61	55	37	32
13	40	44	131	147	243	150	252	136	63	51	36	39
14	39	55	120	143	224	145	*246	170	63	47	34	44
15	38	58	*127	140	210	138	233	150	65	44	33	41
16	37	60	107	152	188	129	243	136	63	42	33	*40
17	37	73	99	*157	180	122	265	129	60	42	33	37
18	37	88	92	147	174	118	239	127	61	41	31	34
19	38	118	90	136	162	118	218	120	63	40	31	34
20	45	105	88	134	157	114	210	116	58	39	33	33
21	48	83	90	129	150	116	201	111	55	38	33	34
22	40	78	111	127	147	127	207	109	54	38	33	34
23	40	74	116	138	138	122	207	109	55	38	32	33
24	39	69	143	157	143	118	193	*105	55	38	32	32
25	37	131	147	162	150	118	182	101	54	38	32	32
26	36	150	140	147	140	116	180	101	61	44	32	33
27	34	131	127	140	131	114	172	98	66	48	32	37
28	33	116	131	136	145	114	164	96	71	47	33	39
29	33	105	147	131	-	134	160	96	66	47	33	37
30	32	99	207	129	------	136	154	96	65	47	33	36
31	32	------	272	131	------	147	------	96	------	52	34	------
Total	1,217	2,117	3,549	5,019	5,465	4,089	5,828	3,787	2,044	1,578	1,112	1,044
Mean	39.3	70.6	114	162	195	132	194	122	68.1	50.9	35.9	34.8
Cfsm	0.796	1.43	2.31	3.28	3.95	2.67	3.93	2.47	1.38	1.03	0.727	0.704
In.	0.92	1.59	2.67	3.78	4.11	3.08	4.39	2.85	1.54	1.19	0.84	0.79
Ac-ft	2,410	4,200	7,040	9,960	10,840	8,110	11,560	7,510	4,050	3,130	2,210	2,070

Calendar year 1954: Max 690 Min 31 Mean 111 Cfsm 2.25 In. 30.58 Ac-ft 80,550
Water year 1954-55: Max 487 Min 31 Mean 101 Cfsm 2.04 In. 27.75 Ac-ft 73,090

Peak discharge (base, 400 cfs).--Feb. 8 (10:30 a.m.) 545 cfs (4.11 ft).
* Discharge measurement made on this day.

Green River near Auburn, Wash.

Location.--Lat 47°18'15", long 122°12'10", in lot 3, sec. 17, T. 21 N., R. 5 E., on left bank 1½ miles east of Auburn and 2 miles downstream from Big Soos Creek.

Drainage area.--382 sq mi (excludes 4 sq mi in the vicinity of Youngs Lake, flow from which has been diverted to Cedar River basin since about 1935).

Records available.--August 1936 to September 1955.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Prior to Oct. 19, 1936, staff gage at same site and datum.

Average discharge.--19 years, 1,293 cfs (936,100 acre-ft per year).

Extremes.--Maximum discharge during year, 15,500 cfs Feb. 8 (elevation, 65.91 ft); minimum, 210 cfs Sept. 26 (elevation, 54.51 ft).
1936-55: Maximum discharge, 22,000 cfs Dec. 11, 1946 (elevation, 68.16 ft); minimum, 81 cfs Sept. 23, 1952; minimum elevation, 54.21 ft Sept. 1-3, 1945.

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. City of Tacoma diverts about 110 cfs from river near Palmer, several miles above station, for municipal use. Minor regulation on Little Soos Creek, a tributary. Records of suspended sediment loads for the water year 1955 are given in WSP 1403.

Revisions.--WSP 1246: Drainage area.

Rating tables, water year 1954-55 (elevation, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30				Dec. 31 to Sept. 30			
54.7	225	56.5	1,680	54.5	205	57.0	2,300
55.0	400	57.0	2,200	55.0	465	59.0	4,520
55.5	760	58.0	3,300	55.5	830	61.0	7,100
56.0	1,190			56.0	1,280	65.0	13,600

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	280	376	1,310	4,420	1,500	1,040	2,080	1,300	2,360	2,800	1,000	300
2	269	358	1,140	3,210	1,400	991	1,970	1,320	*2,110	2,450	910	295
3	269	352	1,030	2,450	1,290	928	1,690	1,310	2,400	2,000	830	285
4	269	340	956	2,010	1,240	878	1,510	1,380	2,900	1,750	766	280
5	264	382	896	1,820	1,250	822	1,410	1,590	3,250	1,600	702	265
6	247	507	888	1,620	1,270	814	1,440	1,790	3,150	1,500	663	260
7	236	450	880	1,460	4,760	814	1,660	1,950	3,450	1,450	635	255
8	225	400	816	1,350	13,000	830	1,990	2,210	4,000	1,350	614	*260
9	230	380	784	1,270	*6,690	846	3,150	2,030	4,900	1,400	586	255
10	230	394	*792	1,180	4,060	919	3,900	2,040	5,000	1,400	551	250
11	310	376	736	1,120	3,030	1,140	3,080	2,620	4,750	1,350	530	246
12	413	388	728	1,080	2,500	1,090	2,590	3,410	4,500	1,350	517	232
13	452	439	872	1,050	2,160	1,030	2,410	2,970	3,700	1,450	484	250
14	388	570	816	1,040	1,920	955	2,180	2,590	2,950	1,600	472	310
15	358	620	956	991	1,820	*894	2,000	2,210	2,450	1,550	453	310
16	334	680	864	991	1,630	846	1,880	2,080	2,050	1,450	429	325
17	316	938	792	1,020	1,540	798	1,770	2,060	1,800	1,200	417	350
18	310	1,670	752	955	1,400	774	1,650	2,420	1,800	1,050	411	310
19	310	2,980	720	894	1,300	774	1,550	3,590	1,850	950	400	280
20	486	2,430	688	870	1,230	750	*1,500	3,880	1,950	900	394	260
21	744	1,770	680	854	1,170	766	1,490	3,190	2,500	*850	378	255
22	760	1,440	1,040	822	1,150	1,710	1,650	2,670	2,800	806	366	250
23	704	1,230	1,190	1,020	1,110	1,690	1,840	2,330	2,650	774	361	241
24	635	1,060	1,220	*2,430	1,100	1,390	1,770	2,080	2,200	750	350	218
25	584	1,350	1,120	2,610	1,080	1,180	1,600	2,070	1,850	726	350	214
26	542	1,920	1,040	2,160	1,040	1,060	1,580	2,150	1,700	750	345	210
27	500	2,960	947	1,850	973	982	1,460	2,210	1,750	766	335	228
28	*472	2,410	920	1,640	1,000	946	1,340	2,070	1,800	758	330	290
29	446	1,860	1,190	1,500	-	1,150	1,290	2,190	2,050	774	315	345
30	420	1,530	2,360	1,390	------	1,290	1,250	2,980	2,150	982	310	335
31	394	------	5,520	1,390	------	1,520	------	2,850	------	1,020	*305	------
Total	12,397	32,560	34,643	48,467	63,613	31,617	56,680	71,540	82,770	39,506	15,509	8,164
Mean	400	1,085	1,118	1,563	2,272	1,020	1,889	2,308	2,759	1,274	500	272
Ac-ft	24,590	64,580	68,710	96,130	126,200	62,710	112,400	141,900	164,200	78,360	30,760	16,190

Calendar year 1954: Max 5,520 Min 225 Mean 1,351 Ac-ft 977,800
Water year 1954-55: Max 13,000 Min 210 Mean 1,363 Ac-ft 986,700

Peak discharge (base, 6,000 cfs).--Dec. 31 (1 p.m.) 6,320 cfs (60.44 ft); Feb. 8 (1 p.m.) 15,500 cfs (65.91 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Nov. 7-9, June 3 to July 21; discharge estimated on basis of recorded range in stage, 1 discharge measurement, and records for station near Palmer.

North Fork Cedar River near Lester, Wash.

Location.--Lat 47°19'00", long 121°30'00", in SW¼ sec. 11, T. 21 N., R. 10 E., on right bank 120 ft downstream from falls, 1 mile upstream from confluence with South Fork, and 7½ miles north of Lester.

Drainage area.--8.81 sq mi.

Records available.--October 1944 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 2,320 ft (from topographic map). Prior to Nov. 30, 1951, at site 100 ft upstream and Nov. 30, 1951, to Sept. 23, 1953, at site 70 ft upstream at datum 2 ft higher than present datum.

Average discharge.--11 years, 70.8 cfs (51,260 acre-ft per year).

Extremes.--Maximum discharge during year, 556 cfs June 9 (gage height, 3.63 ft); maximum gage height, 3.65 ft June 9 (drift on control); minimum discharge, 11.6 cfs Sept. 26, 26 (gage height, 0.27 ft).
1944-55: Maximum discharge, 1,180 cfs Jan. 7, 1945 (gage height, 7.37 ft, site and datum then in use), from rating curve extended above 350 cfs; maximum gage height, 8.9 ft, site and datum then in use, probably Jan. 31, 1953 (from high-water mark, backwater from log jam); minimum daily discharge, 5.4 cfs Nov. 27-30, 1952.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1246: Drainage area. WSP 1286: 1945-47.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 19 to Nov. 17)

0.2	9.8	2.0	149
.4	15.2	2.5	236
.7	27	3.0	353
1.0	44	3.5	510
1.5	86		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*17.6	23	53	65	31	21	21	24	118	242	125	17.9
2	17.6	22	47	53	28	20	19.4	*23	109	205	101	17.6
3	17.9	21	43	47	27	21	17.9	26	132	169	87	16.9
4	16.6	19.8	39	42	27	19.8	17.6	28	190	152	81	16.6
5	15.5	24	36	39	26	17.9	17.9	33	224	146	78	15.9
6	14.9	24	34	36	32	17.2	21	40	220	154	78	15.5
7	14.6	21	32	33	169	16.9	25	48	264	152	74	15.2
8	14.9	19.8	29	30	*266	16.9	33	57	372	154	65	14.9
9	13.8	20	27	29	126	16.6	67	57	*477	174	57	14.6
10	15.9	19.8	25	27	83	17.2	72	60	503	182	54	14.0
11	33	19.4	23	26	65	16.6	57	104	468	183	50	13.5
12	36	22	23	25	57	16.2	50	160	416	218	45	13.5
13	30	29	22	24	49	15.2	45	119	327	295	42	*16.2
14	27	35	22	22	44	14.9	40	93	249	345	39	15.5
15	26	40	*21	22	40	14.3	37	80	197	317	37	15.2
16	25	87	19.8	21	37	14.0	34	75	158	275	35	21
17	24	*113	19.0	21	34	13.8	32	77	148	192	33	21
18	23	282	18.3	19.4	32	13.5	30	105	161	162	32	15.5
19	28	238	17.6	18.6	30	13.2	28	206	177	148	30	14.0
20	40	156	17.2	18.6	28	12.9	28	214	230	145	30	14.3
21	57	109	19.0	17.9	27	14.0	28	162	337	142	27	13.8
22	48	85	32	25	26	21	28	134	*350	146	26	12.9
23	44	69	28	61	25	16.6	27	112	307	148	25	12.3
24	41	57	26	60	24	*15.5	25	101	232	134	24	12.0
25	38	82	25	57	23	14.9	24	*99	187	110	23	11.8
26	35	122	24	50	22	14.3	24	107	190	*104	22	11.8
27	33	125	23	45	21	14.0	22	109	203	109	21	13.5
28	31	96	23	42	21	14.6	22	107	212	101	21	19.8
29	28	75	25	37	-	18.6	22	132	232	139	19.8	22
30	27	62	46	34	------	16.9	23	183	226	135	19.4	19.8
31	25	-----	92	33	-----	18.6	-----	145	------	135	18.6	------
Total	858.3	2,117.8	930.9	1,080.5	1,420	508.1	937.8	3,020	7,616	5,413	1,419.8	468.5
Mean	27.7	70.6	30.0	34.9	50.7	16.4	31.3	97.4	254	175	45.8	15.6
Cfsm	3.14	8.01	3.41	3.96	5.75	1.86	3.55	11.1	28.8	19.9	5.20	1.77
In.	3.62	8.94	3.93	4.56	5.99	2.14	3.96	11.75	32.15	22.85	5.99	1.98
Ac-ft	1,700	4,200	1,850	2,140	2,820	1,010	1,860	5,990	15,110	10,740	2,820	929

Calendar year 1954: Max 332 Min 13.8 Mean 72.3 Cfsm 8.21 In. 111.35 Ac-ft 52,330
Water year 1954-55: Max 503 Min 11.8 Mean 70.7 Cfsm 8.02 In. 108.86 Ac-ft 51,170

Peak discharge (base, 400 cfs).--Feb. 8 (1:30 a.m.) 404 cfs (3.18 ft); June 9 (10:30 p.m.) 556 cfs (3.63 ft); June 21 (9 p.m.) 401 cfs (3.17 ft).
* Discharge measurement made on this day.

South Fork Cedar River near Lester, Wash.

Location.--Lat 47°18'30", long 121°31'00", in SW¼NE¼ sec. 15, T. 21 N., R. 10 E., on left bank half a mile upstream from confluence with North Fork and 7 miles northwest of Lester.

Drainage area.--6.00 sq mi.

Records available.--October 1944 to September 1955.

Gage.--Water-stage recorder. Concrete control since Aug. 31, 1951. Altitude of gage is 2,300 ft (from topographic map).

Average discharge.--11 years, 40.9 cfs (29,610 acre-ft per year).

Extremes.--Maximum discharge during year, 497 cfs Feb. 8 (gage height, 5.74 ft); minimum, 5.3 cfs Sept. 25, 26 (gage height, 2.99 ft).
1944-55: Maximum discharge, 878 cfs Jan. 7, 1945 (gage height, 4.86 ft), from rating curve extended above 125 cfs; maximum gage height, 6.38 ft Feb. 17, 1949 (backwater from ice and debris); minimum discharge, 1.9 cfs Nov. 27, 28, 1952; minimum gage height, 1.25 ft Oct. 17-19, 1946.

Remarks.--Records good. No regulation or diversion above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 7, 8, June 9-11; stage-discharge relation affected by ice Mar. 23)

2.9	3.2	3.9	71
3.0	5.5	4.1	99
3.1	8.5	4.3	132
3.2	12.4	4.5	171
3.3	17.3	4.8	240
3.5	30	5.1	322
3.7	48		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*8.2	13.9	36	54	21	11.2	8.9	15.8	72	157	50	9.3
2	8.2	13.4	32	40	19.7	11.2	8.9	*14.8	69	130	43	8.9
3	8.5	12.4	28	34	18.5	11.2	8.5	15.3	74	102	38	8.5
4	7.9	11.6	25	30	18.5	11.2	8.5	17.3	95	92	35	8.5
5	7.6	13.4	23	26	17.9	11.2	8.5	19.1	120	84	34	7.9
6	7.3	12.9	21	23	26	10.8	10.1	23	129	84	32	7.9
7	7.0	11.6	19.1	22	182	10.1	12.0	24	157	82	31	7.9
8	7.3	10.8	17.9	20	*287	10.1	15.8	33	228	79	30	7.6
9	7.0	10.8	16.3	19.1	115	10.1	38	31	*299	84	27	7.6
10	7.3	10.1	15.8	17.9	74	10.1	45	38	319	87	24	7.3
11	16.3	9.7	14.4	16.3	57	9.7	36	59	288	87	23	7.3
12	23	10.4	13.9	15.8	45	9.3	32	89	240	95	21	7.0
13	19.1	12.0	13.4	15.8	38	8.9	28	75	182	113	20	*7.9
14	17.3	13.9	12.9	14.4	34	8.5	25	59	145	134	18.5	7.0
15	16.3	14.4	*12.4	13.9	30	8.5	23	51	107	127	17.3	7.0
16	15.8	31	11.6	13.4	27	8.2	21	47	95	105	16.8	8.9
17	15.3	*49	11.2	12.4	25	8.2	20	48	84	80	16.3	8.2
18	14.4	125	10.8	12.0	22	8.2	19.1	65	87	69	15.3	7.0
19	16.3	120	10.4	11.6	21	7.9	17.9	118	95	61	14.8	6.7
20	22	87	10.1	11.2	21	7.9	17.3	127	118	57	14.4	6.4
21	29	63	10.8	10.4	19.1	8.2	17.3	99	186	55	13.4	6.1
22	28	48	15.3	12.9	17.3	11.6	17.3	82	*202	54	12.9	5.8
23	27	38	13.9	29	16.8	10.0	17.3	72	173	54	12.4	5.5
24	25	34	13.9	31	16.3	*8.9	16.3	65	132	50	12.0	5.5
25	23	40	13.9	32	15.3	8.2	15.8	*64	107	43	11.6	5.3
26	21	97	13.9	30	14.8	7.9	15.3	67	104	*40	11.2	5.3
27	19.7	109	13.4	28	13.9	7.6	14.8	71	107	41	10.8	6.4
28	18.5	74	13.9	26	12.0	7.6	14.4	69	110	38	10.4	8.9
29	16.8	56	13.9	24	-	8.5	14.4	84	118	51	10.1	9.7
30	16.3	43	30	22	------	8.5	14.8	105	122	54	10.1	8.2
31	14.8	-----	69	22	-----	8.5	-----	89	------	52	9.3	------
Total	491.2	1,195.3	577.1	690.1	1,225.1	288.0	561.2	1,836.3	4,364	2,441	645.6	221.5
Mean	15.8	39.8	18.6	22.3	43.8	9.29	18.7	59.2	145	78.7	20.8	7.38
Cfsm	2.63	6.63	3.10	3.72	7.30	1.55	3.12	9.87	24.2	13.1	3.47	1.23
In.	3.04	7.41	3.58	4.28	7.59	1.79	3.48	11.38	27.05	15.13	4.00	1.37
Ac-ft	974	2,370	1,140	1,370	2,430	571	1,110	3,640	8,660	4,840	1,280	439

Calendar year 1954: Max 210 Min 7.0 Mean 39.9 Cfsm 6.65 In. 90.40 Ac-ft 28,920
Water year 1954-55: Max 319 Min 5.3 Mean 39.8 Cfsm 6.63 In. 90.10 Ac-ft 28,820

Peak discharge (base, 200 cfs).--Feb. 8 (2 a.m.) 497 cfs (5.74 ft); June 9 (10:30 p.m.) 337 cfs (5.25 ft); June 21 (12 p.m.) 223 cfs (4.73 ft).
* Discharge measurement made on this day.

Cedar River below Bear Creek, near Cedar Falls, Wash.

Location.--Lat 47°20'40", long 121°33'00", in SE¼SE¼ sec. 32, T. 22 N., R. 10 E., on right bank 500 ft downstream from Bear Creek and 12 miles southeast of Cedar Falls.

Drainage area.--25.4 sq mi.

Records available.--October 1945 to September 1955.

Average discharge.--10 years, 181 cfs (131,000 acre-ft per year).

Gage.--Water-stage recorder. Altitude of gage is 1,880 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,530 cfs Feb. 8 (gage height, 6.02 ft, from recorded range in stage); minimum, 17 cfs Mar. 22 (gage height, 2.69 ft), probably result of ice jam upstream.
1945-55: Maximum discharge, 1,940 cfs Dec. 11, 1946 (gage height, 6.32 ft); minimum, 12.5 cfs Nov. 27, 1952; minimum gage height, 2.59 ft Oct. 17-19, 1946.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.8	25	4.0	252
2.9	32	4.5	462
3.1	53	5.0	720
3.3	81	5.7	1,230
3.6	138		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*44	58	145	239	91	56	78	86	344	610	229	42
2	43	56	134	173	86	56	72	86	315	515	195	41
3	44	53	119	143	84	56	74	93	356	424	167	40
4	41	52	111	125	86	57	62	104	472	365	152	39
5	39	61	104	113	83	53	66	119	560	344	145	37
6	38	61	100	104	109	51	76	136	575	348	143	37
7	37	53	93	96	610	50	90	162	676	335	136	37
8	39	51	88	91	1,050	50	111	186	889	331	128	35
9	36	51	83	86	*452	54	231	184	*1,120	365	115	35
10	40	51	80	83	281	51	219	192	1,160	382	108	34
11	75	49	74	78	207	51	160	341	1,080	378	102	33
12	90	53	70	76	170	46	134	467	959	428	93	32
13	74	61	68	76	150	45	125	356	768	545	88	*37
14	68	72	66	70	135	43	113	263	600	643	83	*37
15	65	80	65	68	120	42	106	226	481	600	76	36
16	62	180	*61	63	110	40	96	207	396	525	74	44
17	62	*245	57	61	100	49	95	213	361	382	70	44
18	57	638	56	58	95	46	91	300	369	311	68	36
19	70	595	53	57	95	44	90	560	396	277	63	33
20	92	405	51	56	90	43	90	610	486	270	63	33
21	121	277	56	52	80	*42	95	481	*704	256	60	32
22	111	213	78	63	75	67	*98	400	762	263	57	31
23	104	170	74	138	70	50	102	344	682	263	54	30
24	108	145	74	145	66	46	95	*311	530	236	53	29
25	93	205	70	145	63	44	90	300	438	198	52	28
26	86	384	69	134	60	42	86	335	433	192	51	28
27	80	405	66	121	58	41	81	340	452	*198	48	32
28	74	288	68	113	57	42	80	327	*457	184	46	42
29	70	216	75	104	-	56	80	396	496	252	45	45
30	65	176	173	96	------	53	83	520	505	249	44	40
31	61	-----	374	96	-----	65	-----	424	------	249	43	------
Total	2,089	5,404	2,855	3,123	4,733	1,531	3,069	9,069	17,822	10,918	2,851	1,079
Mean	67.4	180	92.1	101	169	49.4	102	293	594	352	92.0	36.0
Cfsm	2.65	7.09	3.63	3.98	6.65	1.94	4.02	11.5	23.4	13.9	3.62	1.42
In.	3.06	7.91	4.18	4.57	6.93	2.24	4.49	13.28	26.09	15.99	4.17	1.58
Ac-ft	4,140	10,720	5,660	6,190	9,390	3,040	6,090	17,990	35,350	21,660	5,650	2,140

Calendar year 1954: Max 792 Min 36 Mean 179 Cfsm 7.05 In. 95.93 Ac-ft 129,900
Water year 1954-55: Max 1,160 Min 28 Mean 177 Cfsm 6.97 In. 94.49 Ac-ft 128,000

Peak discharge (base, 1,000 cfs).--Feb. 8 (time unknown) 1,530 cfs (6.02 ft); June 9 (9 p.m.) 1,210 cfs (5.68 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Feb. 7, 8, Feb. 12 to Mar. 20; discharge estimated on basis of recorded range in stage and records for nearby stations.

Cedar River near Cedar Falls, Wash.

Location.--Lat 47°22'20", long 121°37'30", in SE¼SW¼ sec. 23, T. 22 N., R. 9 E., on right bank 2 miles upstream from Cedar Lake and 8 miles southeast of Cedar Falls.

Drainage area.--41.8 sq mi.

Records available.--October 1945 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,560 ft (from topographic map).

Average discharge.--10 years, 280 cfs (202,700 acre-ft per year).

Extremes.--Maximum discharge during year, 3,080 cfs Feb. 8 (gage height, 8.20 ft); minimum, 46 cfs Sept. 26 (gage height, 2.22 ft).
1945-55: Maximum discharge, 3,850 cfs Dec. 11, 1946 (gage height, 9.34 ft); maximum gage height, 11.4 ft Feb. 11, 1951 (backwater from Cedar Lake); minimum discharge, 20 cfs Nov. 30 to Dec. 1, 1952 (gage height, 2.10 ft).

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1286: 1946-48, 1951-52.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from Cedar Lake June 13-16, June 23 to July 19)

2.2	44	4.0	485
2.4	66	4.5	695
2.7	114	5.0	940
3.0	175	6.0	1,540
3.5	312	7.0	2,240

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	98	247	517	198	107	216	160	493	810	348	62
2	72	93	218	373	186	105	180	157	457	736	299	60
3	73	90	198	299	173	98	155	166	489	654	262	59
4	69	85	182	253	175	94	141	191	614	593	242	58
5	64	105	168	223	173	90	141	218	722	553	226	55
6	62	112	171	200	202	90	160	253	718	517	218	54
7	61	94	160	184	*1,160	86	193	299	835	471	206	55
8	65	86	145	171	1,970	86	247	359	1,160	457	196	55
9	61	88	137	160	756	91	486	338	1,540	482	177	54
10	65	86	131	149	493	110	485	352	1,590	489	166	52
11	127	80	122	141	387	107	366	550	1,410	485	157	51
12	149	88	120	135	319	101	315	755	1,230	521	149	50
13	125	105	118	141	274	93	277	593	973	632	137	58
14	112	139	120	131	245	88	242	471	740	740	129	*65
15	105	143	129	124	226	80	216	408	*614	695	122	64
16	101	*303	*116	118	206	77	200	380	533	614	118	76
17	101	422	107	112	191	74	186	380	505	489	110	82
18	93	1,010	101	107	173	74	180	478	509	429	107	61
19	110	946	98	101	162	73	171	785	529	390	103	56
20	152	646	94	103	153	72	171	815	601	359	101	55
21	208	464	105	96	147	*79	177	646	840	342	94	55
22	191	370	175	109	143	155	*193	553	*940	338	90	52
23	182	299	166	241	137	118	210	485	850	342	85	50
24	171	253	164	286	137	107	191	*443	668	315	82	48
25	160	339	153	306	127	94	173	440	549	*277	80	47
26	149	536	141	274	118	88	168	471	541	271	77	47
27	137	605	133	242	112	85	153	485	561	280	73	55
28	127	457	133	223	110	93	145	457	573	265	70	73
29	120	356	171	206	-	139	147	537	610	348	67	80
30	112	293	369	193	------	143	147	722	636	366	67	69
31	105	-----	750	206	-----	175	-----	593	------	370	65	------
Total	3,501	8,791	5,342	6,124	8,853	3,072	6,432	13,940	23,030	14,630	4,423	1,758
Mean	113	293	172	198	316	99.1	214	450	768	472	143	58.6
Cfsm	2.70	7.01	4.11	4.74	7.56	2.37	5.12	10.8	18.4	11.3	3.42	1.40
In.	3.11	7.82	4.75	5.45	7.88	2.73	5.72	12.40	20.49	13.02	3.94	1.56
Ac-ft	6,940	17,440	10,600	12,150	17,560	6,090	12,760	27,650	45,680	29,020	8,770	3,490

Calendar year 1954: Max 1,090 Min 61 Mean 272 Cfsm 6.51 In. 88.35 Ac-ft 197,000
Water year 1954-55: Max 1,970 Min 47 Mean 274 Cfsm 6.56 In. 88.87 Ac-ft 198,200

Peak discharge (base, 1,000 cfs).--Nov. 18 (10 a.m.) 1,230 cfs (5.52 ft); Feb. 8 (3 a.m.) 3,080 cfs (8.20 ft); June 9 (10 p.m.) 1,770 cfs (6.33 ft); June 22 (1 a.m.) 1,010 cfs (5.13 ft).
* Discharge measurement made on this day.

Rex River near Cedar Falls, Wash.

Location.--Lat 47°21'10", long 121°39'50", in NE¼NW¼ sec. 33, T. 22 N., R. 9 E., on right bank 2½ miles upstream from mouth and Cedar Lake and 7 miles southeast of Cedar Falls.

Drainage area.--13.0 sq mi.

Records available.--October 1945 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,600 ft (from topographic map).

Average discharge.--10 years, 105 cfs (76,020 acre-ft per year).

Extremes.--Maximum discharge during year, 1,770 cfs Feb. 8 (gage height, 6.24 ft), from rating curve extended above 1,100 cfs; minimum, 13.5 cfs Sept. 13 (gage height, 2.73 ft).
1945-55: Maximum discharge, 2,140 cfs Dec. 9, 1953 (gage height, 6.55 ft), from rating curve extended above 1,100 cfs; minimum, 4.3 cfs Nov. 29, 1952 (gage height, 2.43 ft).

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1286: 1946, 1948(P), 1949(M), 1950(P), 1951, 1952(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.7	12	3.8	169
2.8	17	4.0	230
3.0	31	4.3	344
3.2	51	4.6	485
3.4	80	5.0	720
3.6	119	5.5	1,090

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	28	74	204	100	31	69	49	184	384	159	19
2	25	26	61	129	85	30	56	49	169	288	126	18.5
3	26	25	55	96	77	29	48	52	204	217	108	17.5
4	23	24	52	78	74	28	42	61	251	184	94	17
5	21	42	49	66	70	27	42	80	258	169	85	16
6	20	38	51	58	120	26	51	94	251	169	80	16
7	19.5	30	47	52	*824	26	69	111	295	164	74	15.5
8	21	30	42	49	604	26	98	119	397	161	69	15.5
9	19	33	40	46	265	26	231	111	490	178	59	15.5
10	24	32	38	41	161	29	204	124	496	184	54	15
11	51	29	36	40	119	28	126	282	435	181	49	14.5
12	49	40	37	38	98	26	104	336	370	198	44	14
13	35	49	39	40	85	25	91	217	288	244	42	25
14	33	61	41	38	77	24	77	156	224	276	38	*26
15	30	64	46	36	70	23	66	138	184	244	36	25
16	28	*200	*39	34	64	22	59	131	159	204	35	30
17	30	227	38	33	59	21	54	133	153	159	33	27
18	26	407	37	32	51	21	49	186	186	136	31	20
19	46	353	36	30	47	20	48	307	198	124	30	18.5
20	71	237	38	30	44	20	48	284	230	117	30	19
21	82	156	69	29	42	23	52	220	*311	117	29	18.5
22	72	121	141	39	41	*48	59	184	315	117	26	17
23	67	93	113	144	38	36	61	153	319	113	26	16
24	59	75	93	138	37	32	56	*143	240	102	25	15.5
25	52	147	75	138	36	29	*50	148	204	87	24	15
26	47	273	63	113	34	26	48	192	208	104	24	15
27	42	244	56	91	32	26	42	189	220	*113	22	25
28	38	159	55	78	32	26	40	166	237	98	22	44
29	36	115	63	72	-	41	41	236	276	195	21	37
30	33	89	255	69	------	40	43	303	311	184	20	28
31	30	-----	366	93	-----	54	-----	220	------	172	19.5	------
Total	1,179.5	3,447	2,245	2,174	3,586	889	2,124	5,174	8,063	5,383	1,534.5	615.5
Mean	38.0	115	72.4	70.1	128	28.7	70.8	167	269	174	49.5	20.5
Cfsm	2.92	8.85	5.57	5.39	9.85	2.21	5.45	12.8	20.7	13.4	3.81	1.58
In.	3.37	9.86	6.42	6.22	10.26	2.54	6.08	14.80	23.07	15.40	4.39	1.76
Ac-ft	2,340	6,840	4,450	4,310	7,110	1,760	4,210	10,260	15,990	10,680	3,040	1,220

Calendar year 1954: Max 414 Min 17.6 Mean 99.9 Cfsm 7.68 In. 104.28 Ac-ft 72,300
Water year 1954-55: Max 824 Min 14 Mean 99.8 Cfsm 7.68 In. 104.17 Ac-ft 72,210

Peak discharge (base, 700 cfs).--Feb. 8 (1:30 a.m.) 1,770 cfs (6.24 ft).
* Discharge measurement made on this day.

Cedar River at Cedar Falls, Wash.

Location.--Lat 47°25'10", long 121°47'20", in SE¼ sec. 4, T. 22 N., R. 8 E., on right bank three-quarters of a mile downstream from Seattle municipal powerplant at Cedar Falls and 3 miles downstream from Cedar Lake.

Drainage area.--84.2 sq mi.

Records available.--April 1914 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 910 ft (from river-profile map).

Average discharge.--41 years, 300 cfs (217,200 acre-ft per year).

Extremes.--Maximum discharge during year, 1,240 cfs July 1 (gage height, 7.95 ft); minimum, 10.5 cfs Oct. 29 (gage height, 4.79 ft); minimum daily, 24 cfs Nov. 2.
1914-55: Maximum discharge, 6,440 cfs Dec. 22, 1933 (gage height, 11.5 ft); no flow part of each day Nov. 25, 1917, Aug. 18, 1923; minimum daily, 2 cfs Sept. 20, 1922.

Remarks.--Records good. All artificially diverted water returned to river above station. Some regulation by Cedar Lake for power.

Cooperation.--Gage-height record collected in cooperation with city of Seattle.

Revisions (water years).--WSP 722: 1930. WSP 1286: 1934(M), drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

5.0	23	6.2	260
5.2	41	6.6	410
5.4	67	7.0	610
5.6	101	7.6	1,000
5.9	172		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	175	25	60	120	274	553	139	63	626	931	332	76
2	241	24	74	101	132	551	83	402	686	718	232	130
3	305	133	61	150	144	557	80	156	718	724	96	54
4	200	122	45	369	274	627	369	114	664	682	211	161
5	250	37	147	160	247	475	445	108	575	647	235	149
6	239	69	234	117	341	123	446	358	627	958	350	184
7	277	30	152	248	315	463	439	444	580	866	171	182
8	218	116	135	162	592	473	354	503	540	768	315	167
9	212	154	262	194	308	*424	462	321	574	302	385	224
10	218	170	96	243	531	485	497	423	277	330	*216	116
11	215	155	70	194	352	452	448	434	250	767	292	45
12	185	159	374	170	484	323	541	260	192	696	291	109
13	231	154	544	170	305	134	450	466	714	680	160	248
14	212	162	*500	206	585	267	433	605	795	616	99	250
15	209	159	466	177	488	245	*438	607	822	384	294	275
16	209	167	461	154	488	259	480	680	834	362	399	*259
17	209	181	439	187	507	204	442	633	713	382	287	42
18	209	242	91	*171	464	78	428	684	701	704	310	41
19	209	198	75	214	131	77	454	660	720	812	336	40
20	212	61	200	173	101	73	472	487	700	576	73	40
21	215	51	190	199	444	474	455	494	730	554	a65	243
22	215	46	160	109	454	173	447	439	800	552	a290	72
23	215	42	366	128	417	227	72	686	746	153	a300	37
24	215	41	87	158	505	368	70	*617	496	124	a300	37
25	215	46	83	165	427	453	450	558	358	356	a280	36
26	215	58	80	138	486	70	434	546	398	346	258	117
27	215	72	217	127	736	69	393	524	434	324	286	204
28	215	69	193	146	518	140	397	706	786	113	96	244
29	*106	272	128	230	-	180	244	692	*693	308	212	244
30	25	116	155	135	------	104	63	371	565	105	265	354
31	25	------	181	387	------	128	------	570	------	110	109	------
Total	6,311	3,331	6,326	5,602	11,050	9,229	10,925	14,611	18,314	15,950	7,545	4,380
Mean	204	111	204	181	395	298	364	471	610	515	243	146
Ac-ft	12,520	6,610	12,550	11,110	21,920	18,310	21,670	28,980	36,330	31,640	14,970	8,690

Calendar year 1954: Max 1,190 Min 24 Mean 340 Ac-ft 246,200
Water year 1954-55: Max 958 Min 24 Mean 311 Ac-ft 225,300

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for station near Landsburg.

Cedar River near Landsburg, Wash.

Location.--Lat 47°23'35", long 121°56'50", in NE¼SW¼ sec. 17, T. 22 N., R. 7 E., on left bank 2 miles upstream from Landsburg and intake of Seattle water-supply system, 4¾ miles east of Maple Valley, 5 miles downstream from Taylor Creek, and 12 miles downstream from Cedar Lake.

Drainage area.--125 sq mi, excludes that of Rock Creek.

Records available.--July 1895 to September 1955 (prior to October 1948 flow of Rock Creek included). Monthly discharge only for some periods, published in WSP 1316. Published as "near Seattle" 1895-98, "near Maple Valley" 1902, and as "near Ravensdale" 1898-1901, 1903-12.

Gage.--Water-stage recorder. Altitude of gage is 600 ft (from river-profile map). Prior to Oct. 1, 1898, staff gage at site 2½ miles downstream at different datum. Mar. 24, 1901, to May 15, 1913, staff gage at site 2 miles downstream at datum 535.84 ft above mean sea level (levels by city of Seattle). Apr. 30, 1914, to Oct. 22, 1928, water-stage recorder a quarter of a mile downstream at different datum.

Average discharge.--60 years, 687 cfs (497,400 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 2,720 cfs Feb. 8 (gage height, 4.26 ft); minimum, 222 cfs Nov. 2, 3 (gage height, 0.90 ft).
1895-98, 1901-55: Maximum discharge, 14,200 cfs Nov. 19, 1911 (gage height, 10.0 ft, from graph based on gage readings, site and datum then in use), from computation of peak flow over dam; minimum observed, 83 cfs Sept. 19, 1898.

Remarks.--Records good except those for period of no gage-height record, which are fair. All diversions except Rock Creek returned to river above station. Rock Creek which entered naturally just above station prior to 1932 has been diverted to enter river at a point about 2 miles downstream from Seattle municipal water-supply intake. Some regulation by Cedar Lake.

Cooperation.--Gage-height record collected in cooperation with city of Seattle.

Revisions (water years).--WSP 313: 1895-98, 1902-9. WSP 1246: Drainage area. WSP 1286: 1912. WSP 1316: 1896-98(M), 1902-11(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.9	222	2.5	1,080
1.1	290	3.0	1,480
1.4	413	3.5	1,930
1.7	565	4.0	2,430
2.0	745		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	418	229	314	685	678	938	764	500	1,100	*1,490	682	376
2	460	225	316	560	582	924	631	784	1,130	1,190	611	434
3	565	315	306	542	515	909	571	624	1,190	1,170	486	355
4	441	290	290	720	598	976	751	528	1,170	1,100	536	409
5	480	280	322	516	692	820	919	530	1,060	1,040	546	485
6	475	296	492	446	743	570	910	766	1,100	1,320	666	475
7	511	238	434	562	1,120	788	912	810	1,060	1,280	514	441
8	446	280	374	491	1,940	830	930	944	1,030	1,180	630	482
9	436	348	436	494	1,030	814	1,090	764	a1,050	758	695	485
10	441	361	377	532	1,170	842	1,130	828	a850	721	552	420
11	460	340	297	495	908	877	1,080	1,010	a750	1,080	*592	356
12	417	353	574	489	898	742	1,070	812	a620	1,080	622	351
13	455	353	*742	479	819	526	1,060	979	a1,200	1,080	524	539
14	427	369	774	512	1,040	638	961	1,120	a1,250	1,030	424	*554
15	422	369	756	496	974	606	932	1,100	a1,300	740	558	564
16	418	418	678	464	932	626	945	1,180	1,240	715	715	566
17	418	452	666	500	929	574	962	1,080	1,100	739	602	378
18	413	585	404	470	918	446	914	1,160	1,100	985	624	336
19	422	649	309	*476	608	441	*906	1,160	1,120	1,220	648	332
20	446	469	404	517	526	432	900	1,000	1,100	864	449	328
21	451	373	464	480	798	756	944	932	1,120	860	382	464
22	436	348	454	476	824	694	990	892	1,190	849	534	410
23	436	320	578	560	852	626	630	1,120	1,140	502	550	320
24	427	301	485	626	913	728	560	1,030	956	436	553	320
25	422	404	373	647	*824	824	876	*984	739	616	526	317
26	418	413	348	572	849	490	916	990	784	662	540	385
27	*413	432	456	534	1,120	446	872	950	830	653	535	436
28	409	400	458	542	898	520	848	1,130	1,160	470	440	586
29	356	504	498	609	-	617	702	1,160	1,150	635	486	490
30	238	446	810	514	------	570	505	894	960	508	534	637
31	232	------	906	704	------	662	------	999	------	495	460	------
Total	13,209	11,161	15,095	16,710	24,698	21,252	26,181	28,760	31,549	27,468	17,216	13,031
Mean	426	372	487	539	882	686	873	928	1,052	886	555	434
Ac-ft	26,200	22,140	29,940	33,140	48,990	42,150	51,930	57,040	62,580	54,480	34,150	25,850

Calendar year 1954: Max 1,670 Min 225 Mean 724 Ac-ft 524,200
Water year 1954-55: Max 1,940 Min 225 Mean 675 Ac-ft 488,600

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for station at Cedar Falls.

Rock Creek near Maple Valley, Wash.

Location.--Lat 47°22'50", long 122°01'10", in NE¼ sec. 22, T. 22 N., R. 6 E., on left bank 650 ft upstream from mouth and 2 miles southeast of Maple Valley.

Drainage area.--14.0 sq mi.

Records available.--June 1945 to September 1955.

Gage.--Water-stage recorder and wood box culvert control. Altitude of gage is 425 ft (from topographic map). Prior to Mar. 16, 1953, at site 50 ft downstream at datum 0.82 ft higher.

Average discharge.--10 years, 21.4 cfs (15,490 acre-ft per year).

Extremes.--Maximum discharge during year, 39 cfs Apr. 21 (gage height, 1.92 ft); minimum, 6.5 cfs Sept. 23, 24, 25, 26, 29, 30 (gage height, 1.43 ft).
1945-55: Maximum discharge, 165 cfs Feb. 11, 1951 (gage height, 4.26 ft, datum then in use, from recorded range in stage); minimum, 2.7 cfs Dec. 23, 24, 1952; minimum gage height, 0.19 ft Oct. 9, 10, 11, 12, 14, 15, 1952, datum then in use.

Remarks.--Records good. No regulation or diversion above station.

Revisions.--WSP 1246: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.4	5.5
1.5	9.3
1.7	21
1.9	37

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.6	7.2	12	24	19.5	22	25	34	22	14.5	11	8.4
2	8.0	7.2	12	26	19	21	26	33	21	13.5	10.5	8.4
3	8.0	7.2	12	27	19	21	28	32	21	13.5	10.5	8.4
4	7.6	7.2	12	28	18	21	29	32	21	13.5	10.5	8.4
5	7.6	8.4	12	28	18	21	29	31	20	13.5	10.5	8.0
6	7.6	7.6	12	28	18	20	29	30	19.5	13.5	10	8.0
7	7.6	7.6	12	28	22	*20	29	29	19.5	13.5	10	7.6
8	7.6	8.0	12	28	32	19.5	30	28	19	*13.5	10.5	7.6
9	7.6	8.0	12	28	35	19.5	30	27	19	13.5	10	7.6
10	8.0	8.0	12	27	37	19.5	31	27	18	13.5	10	7.6
11	8.0	8.0	11.5	27	37	19.5	31	27	18	13.5	*10	7.6
12	8.0	8.0	12	26	37	19.5	33	26	17.5	13.5	10	7.6
13	7.6	8.4	*12	25	37	19.5	34	27	17.5	13.5	10	7.6
14	7.6	8.4	13	24	35	21	35	28	17	13.5	10	*7.6
15	7.6	8.4	12	23	34	21	36	28	16.5	13	10	7.6
16	8.0	8.4	13	23	33	21	37	28	16.5	13	10	8.0
17	8.0	8.9	13	22	32	21	37	28	15.5	13	10	7.6
18	8.0	9.7	13	22	31	21	37	28	15.5	13	9.7	7.2
19	8.4	10	13	*19.5	29	21	*37	28	15	13	9.7	7.2
20	8.0	10.5	13	19.5	28	21	37	27	15	12	9.7	7.2
21	7.6	10.5	13.5	19.5	27	21	37	27	15	12	9.3	6.9
22	7.6	11	13.5	19.5	26	21	37	26	14.5	11.5	9.3	6.9
23	7.6	10.5	13.5	19.5	26	21	37	26	14.5	11.5	9.3	6.9
24	7.2	10.5	13.5	19.5	25	21	37	26	14.5	11.5	9.3	6.9
25	7.2	13	14	19.5	24	21	37	*25	14	11	8.9	6.5
26	7.2	12	14	19.5	23	21	37	25	14.5	12	8.9	6.5
27	*7.6	13	14	19.5	22	21	37	24	14	11.5	8.9	6.9
28	7.2	13	14.5	19.5	23	21	36	23	14	11	8.9	6.9
29	7.2	13	15.5	19.5	-	22	36	23	13.5	11	8.4	6.9
30	7.2	13	18	19.5	------	22	35	23	13.5	11	8.4	6.5
31	7.2	-----	22	19.5	-----	23	-----	22	------	11	8.4	------
Total	237.2	284.6	411.5	717.5	766.5	645.0	1,006	848	506.0	392.0	300.6	223.0
Mean	7.65	9.49	13.3	23.1	27.4	20.8	33.5	27.4	16.9	12.6	9.70	7.43
Cfsm	0.546	0.678	0.950	1.65	1.96	1.49	2.39	1.96	1.21	0.900	0.693	0.531
In.	0.63	0.76	1.09	1.91	2.04	1.71	2.67	2.25	1.34	1.04	0.80	0.59
Ac-ft	470	564	816	1,420	1,520	1,280	2,000	1,680	1,000	778	596	442

Calendar year 1954: Max 72 Min 7.0 Mean 19.2 Cfsm 1.37 In. 18.59 Ac-ft 13,880
Water year 1954-55: Max 37 Min 6.5 Mean 17.4 Cfsm 1.24 In. 16.83 Ac-ft 12,570

* Discharge measurement made on this day.

Cedar River at Renton, Wash.

Location.--Lat 47°28'50", long 122°12'10", in NW¼ sec. 17, T. 23 N., R. 5 E., on left bank 125 ft downstream from bridge on U. S. Highway 10 at Renton and 2 miles upstream from mouth.

Drainage area.--197 sq mi (includes 4 sq mi in vicinity of Youngs Lake in Big Soos Creek basin).

Records available.--March 1901 to July 1903 (fragmentary), September 1906 to December 1907 (monthly discharge only), August 1945 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 15.20 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Jan. 1, 1908, staff gages within 1 mile of present site, at datum 10.67 ft below mean sea level (unadjusted). Aug. 7, 1945, to Aug. 15, 1947, water-stage recorder at site 700 ft upstream at datum 20.13 ft above mean sea level and Aug. 16, 1947, to Dec. 7, 1950, at datum 19.13 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--10 years (1945-55), 718 cfs (519,800 acre-ft per year).

Extremes.--Maximum discharge during year, 3,480 cfs Feb. 8 (gage height, 7.15 ft); minimum, 108 cfs Sept. 13 (gage height, 2.97 ft).
1901-3, 1906-7, 1945-55: Maximum discharge not determined, probably occurred Feb. 11, 1951, during period of no gage-height record (discharge measurement of 6,640 cfs, gage height, 9.48 ft, made Feb. 10, 1951); minimum, 49 cfs Nov. 20, 21, 28, 30, 1952.

Remarks.--Records good. Flow partly regulated by Cedar Lake for operation of powerplant. More than 250 cfs is diverted at Landsburg at times by the city of Seattle for municipal use.

Revisions (water years).--WSP 1246: Drainage area. WSP 1316: 1901-2.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
3.2	141	4.5	765	3.0	116	5.0	1,140
3.4	204	5.0	1,140	3.3	206	5.5	1,600
3.7	321	5.5	1,600	3.6	317	6.0	2,110
4.0	470			4.0	498	7.0	3,290
				4.5	775		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	296	168	334	1,090	724	940	1,000	502	1,010	1,340	452	223
2	287	159	281	899	691	917	852	604	*1,050	1,280	556	232
3	432	*165	264	706	536	907	763	742	1,130	1,170	448	230
4	348	204	233	684	524	948	726	536	1,130	1,080	340	187
5	326	240	228	661	748	813	842	488	1,030	1,010	411	328
6	357	229	374	528	696	685	856	620	1,060	1,120	502	238
7	362	194	438	507	1,120	*625	860	741	992	1,250	448	250
8	376	168	355	560	2,840	781	907	912	947	*1,120	*437	288
9	334	263	332	450	*1,770	803	1,070	800	988	891	560	288
10	339	279	430	525	1,580	773	1,380	740	826	682	422	289
11	381	308	296	479	1,310	832	1,250	1,140	596	830	378	212
12	352	308	371	476	1,060	796	1,230	1,060	508	961	480	136
13	395	287	790	454	1,000	614	1,240	1,130	706	916	474	*230
14	386	308	966	452	1,000	563	1,110	1,250	1,020	863	308	388
15	376	313	961	473	1,030	588	1,010	1,180	1,080	712	320	392
16	371	339	*816	476	972	580	1,020	1,230	1,100	560	539	*402
17	371	410	780	500	944	596	1,050	1,090	968	578	444	332
18	352	564	604	416	921	455	984	1,150	949	645	458	200
19	313	877	314	434	756	396	932	1,150	966	1,040	478	180
20	344	688	290	477	535	361	920	1,010	932	744	404	187
21	362	376	410	*452	607	512	*940	914	926	718	255	207
22	334	304	466	474	794	772	1,010	863	999	712	274	336
23	334	271	510	485	825	542	860	1,060	947	610	400	206
24	317	236	620	597	880	624	591	978	938	346	362	193
25	308	371	405	683	814	760	721	924	594	402	402	190
26	300	415	366	646	824	634	936	902	616	529	326	194
27	296	426	381	590	1,070	428	906	869	666	542	363	264
28	292	371	454	546	897	458	856	1,020	838	446	351	423
29	287	352	536	614	-	511	810	1,050	1,100	383	250	379
30	191	486	845	558	------	578	561	897	859	477	348	498
31	178	------	1,350	630	------	606	------	876	------	381	359	------
Total	10,297	10,079	15,800	17,522	27,468	20,398	28,193	28,428	27,473	24,338	12,549	8,102
Mean	332	336	510	565	981	658	940	917	916	785	405	270
Ac-ft	20,420	19,990	31,340	34,750	54,480	40,460	55,920	56,390	54,490	48,270	24,890	16,070

Calendar year 1954: Max 2,220 Min 159 Mean 687 Ac-ft 497,200
Water year 1954-55: Max 2,840 Min 136 Mean 632 Ac-ft 457,500

* Discharge measurement made on this day.

Issaquah Creek near Issaquah, Wash.

Location.--Lat 47°28'55", long 122°02'10", in NW¼ sec. 15, T. 23 N., R. 6 E., on left bank 3½ miles south of Issaquah and 4 miles upstream from East Fork Issaquah Creek.

Drainage area.--26.0 sq mi.

Records available.--June 1945 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 210 ft (from topographic map). Prior to Oct. 1, 1948, at datum 0.99 ft higher. Oct. 1, 1948, to July 6, 1952, at site 70 ft upstream at datum 0.41 ft lower.

Average discharge.--10 years, 70.7 cfs (51,180 acre-ft per year).

Extremes.--Maximum discharge during year, 740 cfs Feb. 8 (gage height, 3.37 ft); minimum, 16.5 cfs Sept. 12, 24-26 (gage height, 0.81 ft).
1945-55: Maximum discharge, 2,610 cfs Feb. 9 or 10, 1951 (gage height, 6.08 ft, site and datum then in use); minimum, 10.5 cfs Sept. 1, 3, 4, 1952; minimum gage height, 0.81 ft Sept. 21, 22, 1953, Sept. 12, 24-26, 1955.

Remarks.--Records good. Many small diversions for irrigation and domestic use. No regulation.

Revisions (water years).--WSP 1092: 1946. WSP 1216: Drainage area. WSP 1286: 1950. WSP 1346: 1953(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.8	16	1.5	87
.9	22	1.7	123
1.0	30	2.0	195
1.1	38	2.5	355
1.3	59	3.0	560

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	18.5	53	190	72	66	203	68	58	88	65	20
2	22	18.5	49	164	65	62	155	64	54	69	53	19
3	23	*18.5	45	127	60	59	121	64	69	59	42	18.5
4	22	18.5	42	110	64	53	102	60	73	53	36	18.5
5	22	33	45	102	64	50	92	55	65	47	34	18
6	21	32	52	88	69	51	85	52	58	44	30	17.5
7	20	25	52	80	222	52	80	51	51	41	29	18
8	20	23	47	76	*532	54	92	53	46	37	*29	18.5
9	20	27	47	69	256	*59	147	51	41	41	28	18.5
10	22	24	51	64	179	68	125	51	37	45	25	18.5
11	33	23	45	60	141	68	123	81	35	*40	24	18
12	24	30	66	60	121	70	145	88	35	36	24	17.5
13	22	29	82	61	112	70	143	112	34	33	23	*25
14	20	37	73	62	100	69	130	157	34	31	22	30
15	19	36	76	66	102	64	117	127	33	30	22	26
16	19	45	*64	76	88	60	132	106	32	30	22	24
17	18.5	62	56	77	82	56	119	92	31	29	22	22
18	18.5	85	52	66	76	61	115	80	39	28	21	20
19	22	123	49	60	72	59	110	74	34	27	21	19
20	26	87	46	61	68	55	100	72	30	25	22	20
21	26	66	51	*56	64	64	*95	62	28	25	21	19
22	23	62	66	56	68	80	127	60	28	24	20	18.5
23	22	55	84	107	65	70	121	56	31	24	20	18
24	21	48	90	119	69	66	104	53	34	24	21	17.5
25	20	131	85	121	62	65	94	*52	30	24	20	17.5
26	20	110	73	102	60	62	102	53	39	32	20	17.5
27	20	97	65	88	55	60	88	50	43	39	20	21
28	19	79	69	79	68	64	82	47	56	33	19	25
29	19	69	110	72	-	90	77	50	58	41	18.5	21
30	19	61	260	68	------	104	70	64	54	41	19	20
31	19	-----	250	76	-----	143	-----	74	------	56	20	------
Total	664.0	1,573.0	2,295	2,663	3,056	2,074	3,396	2,179	1,290	1,196	812.5	601.5
Mean	21.4	52.4	74.0	85.9	109	66.9	113	70.3	43.0	38.6	26.2	20.0
Cfsm	0.823	2.02	2.85	3.30	4.19	2.57	4.35	2.70	1.65	1.48	1.01	0.769
In.	0.95	2.25	3.28	3.81	4.37	2.97	4.86	3.12	1.85	1.71	1.16	0.86
Ac-ft	1,320	3,120	4,550	5,280	6,060	4,110	6,740	4,320	2,560	2,370	1,610	1,190

Calendar year 1954: Max 530 Min 18 Mean 63.1 Cfsm 2.43 In. 32.95 Ac-ft 45,700
Water year 1954-55: Max 532 Min 17.5 Mean 59.7 Cfsm 2.30 In. 31.19 Ac-ft 43,230

Peak discharge (base, 400 cfs).--Feb. 8 (3 a.m.) 740 cfs (3.37 ft).
* Discharge measurement made on this day.

Sammamish Lake near Redmond, Wash.

Location.--Lat 47°38'40", long 122°06'10", in NE¼ sec. 24, T. 25 N., R. 5 E., on west shore 0.6 mile upstream from outlet and 1.8 miles south of Redmond.

Drainage area.--93.6 sq mi.

Records available.--January 1939 to September 1955.

Gage.--Staff gage. Datum of gage is 24.04 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to June 22, 1942, staff gage 1,000 ft downstream at datum 1.00 ft higher. June 22, 1942, to Aug. 22, 1951, staff gage at present site at datum 1.00 ft higher.

Extremes.--Maximum gage height observed during year, 5.10 ft Feb. 13; minimum observed, 1.80 ft Nov. 4.

1939-55: Maximum gage height observed, 9.40 ft Feb. 12, 1951 (present datum); minimum observed, 1.09 ft Aug. 25-27, 1951.

A stage of 10.83 ft (present datum) was observed on Dec. 22, 1933, from information by Corps of Engineers.

Remarks.--Many small diversions from tributaries for irrigation and domestic use. Slight regulation on tributaries.

Revisions.--WSP 1216: Drainage area.

Gage height, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.08	1.83	3.15	4.28	3.89	4.28	3.85	4.22	3.48	2.76	2.56	2.08
2	2.07	1.82	3.12	4.40	3.88	4.22	3.98	4.16	3.46	2.78	2.56	2.07
3	2.05	1.81	3.08	4.46	3.86	4.16	4.04	4.10	3.42	2.80	2.56	2.06
4	2.03	1.80	3.06	4.48	3.82	4.12	4.02	4.04	3.42	2.80	2.55	2.04
5	2.01	1.89	3.06	4.49	3.83	4.06	4.00	4.00	3.46	2.80	2.53	2.04
6	2.00	1.90	3.10	4.48	3.82	3.98	4.00	3.95	3.40	2.78	2.52	2.03
7	1.99	1.90	3.12	4.46	3.86	3.94	4.02	3.88	3.36	2.77	2.52	2.02
8	1.98	1.94	3.10	4.42	4.36	3.90	4.02	3.84	3.31	2.76	2.50	2.01
9	1.98	1.94	3.10	4.40	4.86	3.84	4.08	3.78	3.27	2.75	2.49	2.00
10	1.97	1.94	3.15	4.36	4.96	3.86	4.16	3.72	3.22	2.76	2.47	1.99
11	1.97	1.93	3.15	4.32	5.08	3.84	4.22	3.70	3.18	2.75	2.45	1.98
12	1.95	1.96	3.18	4.26	5.08	3.82	4.32	3.74	3.14	2.75	2.43	1.98
13	1.94	1.98	3.30	4.22	5.10	3.84	4.40	3.78	3.08	2.73	2.41	1.98
14	1.94	2.00	3.40	4.18	5.06	3.82	4.46	3.92	3.04	2.71	2.38	1.98
15	1.93	2.04	3.46	4.14	5.03	3.80	4.48	3.96	2.98	2.71	2.36	1.99
16	1.91	2.10	3.50	4.14	5.01	3.78	4.50	3.95	2.96	2.70	2.35	1.99
17	1.91	2.16	3.50	4.14	4.96	3.77	4.56	3.98	2.92	2.68	2.34	2.00
18	1.90	2.28	3.50	4.11	4.92	3.76	4.57	3.98	2.88	2.64	2.32	2.00
19	1.90	2.36	3.49	4.08	4.84	3.72	4.55	3.96	2.86	2.61	2.30	1.99
20	1.92	2.73	3.47	4.05	4.78	3.68	4.53	3.94	2.82	2.59	2.29	1.98
21	1.94	2.75	3.46	4.01	4.72	3.66	4.52	3.90	2.80	2.56	2.27	1.96
22	1.98	2.83	3.45	3.98	4.67	3.64	4.51	3.85	2.78	2.53	2.24	1.95
23	1.98	2.85	3.48	3.95	4.60	3.63	4.50	3.81	2.77	2.50	2.22	1.94
24	1.96	2.90	3.60	3.98	4.54	3.62	4.48	3.77	2.75	2.48	2.20	1.93
25	1.92	2.94	3.63	4.02	4.48	3.60	4.46	3.72	2.72	2.47	2.19	1.92
26	1.89	3.06	3.65	4.02	4.44	3.56	4.44	3.68	2.71	2.47	2.18	1.90
27	1.87	3.10	3.66	4.00	4.39	3.52	4.42	3.68	2.70	2.50	2.16	1.92
28	1.86	3.15	3.66	3.98	4.36	3.50	4.38	3.69	2.71	2.49	2.15	1.92
29	1.85	3.17	3.67	3.95	-	3.54	4.33	3.60	2.73	2.50	2.14	1.92
30	1.85	3.17	3.82	3.93	------	3.58	4.28	3.68	2.74	2.50	2.12	1.91
31	1.84	------	4.10	3.90	------	3.66	------	3.52	------	2.52	2.10	------

Note.--Gage read once daily between 8 a.m. and 12 m. except during period May 27 to June 9 gage read between 2:45 and 7:30 p.m.

Sammamish River near Redmond, Wash.

Location.--Lat 47°40'10", long 122°07'50", in NE¼ sec. 11, T. 25 N., R. 5 E., on right bank at highway crossing 500 ft downstream from Bear Creek, half a mile west of Redmond, and 1¼ miles downstream from outlet of Sammamish Lake.

Drainage area.--144 sq mi.

Records available.--January 1939 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 23.08 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Nov. 14, 1946, and May 30 to Nov. 15, 1950, staff gages at sites 1¾ miles or 2 miles upstream on west shore of lake at datum approximately 2.0 ft higher. Nov. 14, 1946, to July 8, 1947, water-stage recorder at present site at datum 1.52 ft higher.

Average discharge.--16 years, 280 cfs (202,700 acre-ft per year).

Extremes.--Maximum discharge during year, 602 cfs Feb. 9 (gage height, 5.35 ft); minimum, 85 cfs Sept. 12, 13 (gage height, 1.37 ft).
1939-55: Maximum discharge, 1,520 cfs Feb. 11, 1951 (gage height, 9.17 ft); minimum, 43 cfs Aug. 20, 21, 24, 1951.

Remarks.--Records good except those for period of shifting control, which are fair. Some small diversions from tributaries for irrigation and domestic use. Slight regulation on some tributaries.

Revisions.--WSP 1246: Drainage area.

Rating table, water year 1954-55, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

1.3	77	3.0	295
1.6	110	4.0	430
2.0	160	5.4	608
2.5	225		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	103	98	247	473	369	421	398	399	292	215	146	94
2	103	97	243	473	369	410	401	388	282	186	134	91
3	102	97	236	465	364	405	400	381	277	178	129	89
4	101	97	232	459	368	392	395	372	274	178	126	89
5	101	120	242	469	387	382	388	361	266	169	124	88
6	101	124	271	457	387	375	383	351	256	164	120	87
7	101	116	285	448	421	370	379	343	245	161	118	90
8	100	114	273	442	576	*362	382	345	238	152	118	90
9	99	121	271	435	*600	362	412	333	226	154	115	90
10	100	117	*298	426	586	359	418	324	216	161	*111	89
11	102	115	278	414	574	357	427	336	209	*154	111	88
12	100	138	315	408	562	362	459	341	202	147	111	87
13	100	134	372	408	555	362	465	355	196	*140	109	91
14	99	144	359	400	544	373	459	413	190	139	108	*96
15	98	143	381	399	546	373	456	400	183	137	107	97
16	97	157	357	413	530	364	465	390	176	135	106	96
17	97	186	341	412	522	354	465	382	169	134	104	99
18	96	229	329	400	509	348	*460	374	168	130	102	95
19	101	316	319	*387	496	343	453	368	164	127	102	92
20	103	301	310	384	485	334	447	362	159	124	103	94
21	104	264	305	377	473	333	444	352	152	123	102	92
22	103	260	301	373	462	334	461	347	151	120	101	91
23	102	245	334	374	452	333	457	337	161	120	100	90
24	101	231	354	382	447	329	446	326	151	120	100	89
25	100	296	344	383	435	327	436	317	143	120	100	88
26	100	292	336	379	425	322	434	*315	152	130	99	88
27	99	281	327	375	416	316	436	317	152	132	98	91
28	*99	268	326	372	429	313	425	308	159	130	98	100
29	99	264	377	366	-	333	414	301	186	128	97	97
30	98	254	460	361	------	354	408	312	170	126	96	92
31	98	-----	478	368	-----	361	-----	305	------	144	95	------
Total	3,107	5,619	9,901	12,682	13,289	11,063	12,873	10,855	5,965	4,478	3,390	2,750
Mean	100	187	319	409	475	357	429	350	199	144	109	91.7
Cfsm	0.694	1.30	2.22	2.84	3.30	2.48	2.98	2.43	1.38	1.00	0.757	0.637
In.	0.80	1.45	2.56	3.28	3.43	2.86	3.32	2.80	1.54	1.16	0.88	0.71
Ac-ft	6,160	11,150	19,640	25,150	26,360	21,940	25,530	21,530	11,830	8,880	6,720	5,450

Calendar year 1954: Max 855 Min 91 Mean 306 Cfsm 2.12 In. 28.83 Ac-ft 221,300
Water year 1954-55: Max 600 Min 87 Mean 263 Cfsm 1.83 In. 24.79 Ac-ft 190,300

* Discharge measurement made on this day.
Note.--Shifting-control method used May 31 to Aug. 27.

North Creek near Bothell, Wash.

Location.--Lat 47°47'30", long 122°11'45", on line between secs. 29 and 32, T. 27 N., R. 5 E., on left bank 2 miles north of Bothell and 2½ miles upstream from mouth.

Drainage area.--24.1 sq mi.

Records available.--June 1945 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 70 ft (from topographic map). Apr. 5, 1950, to Sept. 30, 1951, at datum 0.59 ft higher.

Average discharge.--10 years, 35.8 cfs (25,920 acre-ft per year).

Extremes.--Maximum discharge during year, 258 cfs Feb. 8 (gage height, 4.03 ft); minimum, 5.0 cfs Sept. 5 (gage height, 0.79 ft).
1945-55: Maximum discharge, 680 cfs Mar. 5 or 6, 1950 (gage height, 7.0 ft, present datum, from high-water elevation pointed out by local resident); minimum, 1.0 cfs Aug. 10, 1946 (gage height, 0.45 ft, present datum).

Remarks.--Records good. Many small diversions for irrigation and domestic use. Slight regulation for farm use.

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1950(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.8	5.3	2.0	80
.9	8.7	2.5	120
1.1	18	3.0	164
1.5	45	3.5	209

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.7	11	39	108	40	45	56	28	26	67	14.5	7.2
2	8.3	10.5	34	91	44	40	60	27	23	31	11	6.5
3	8.7	10.5	32	72	39	37	53	28	24	30	9.5	6.5
4	8.7	11	32	67	44	33	44	27	24	28	8.7	6.2
5	8.7	37	50	70	44	33	38	26	22	22	8.3	5.9
6	9.1	30	82	59	49	32	34	25	19.5	18	7.6	6.2
7	8.7	17	74	53	94	32	32	24	17	16	7.2	6.5
8	8.7	16.5	58	56	187	*34	33	25	15	14.5	7.2	7.2
9	8.7	22	72	53	126	37	43	24	13	16.5	*7.2	7.2
10	9.9	19	*71	47	88	39	61	23	11.5	17.5	6.9	7.2
11	16.5	19	57	43	70	47	56	28	9.9	15.5	7.2	6.9
12	13.5	43	94	41	60	51	86	26	11	13.5	7.6	6.5
13	11.5	36	95	49	53	47	71	43	11.5	*11	7.2	9.5
14	11	46	86	45	53	52	56	66	11.5	10.5	6.9	*10.5
15	12	46	98	57	56	49	49	42	11.5	9.5	6.9	9.5
16	9.9	78	71	65	48	43	49	33	11	10.5	6.9	10.5
17	9.9	81	59	62	45	39	42	30	11	10.5	6.9	12.5
18	9.9	129	51	53	39	36	*37	27	14	8.7	6.5	8.7
19	14	185	45	*45	34	32	34	28	13	7.9	6.9	7.9
20	13.5	105	42	44	33	30	32	27	11	7.2	7.2	7.9
21	13	74	40	39	32	31	32	26	9.9	7.2	6.5	8.3
22	12.5	70	37	39	30	36	53	24	10.5	7.2	6.5	7.9
23	12	56	85	48	29	32	48	23	16	6.9	6.9	7.6
24	11.5	49	79	45	32	29	53	22	13.5	7.2	7.2	7.2
25	11	81	62	41	31	30	42	22	12	7.6	7.2	7.2
26	12	63	54	37	30	29	41	22	19.5	13	7.2	7.9
27	11	59	48	35	28	28	39	*32	17	15	6.9	10.5
28	*11	51	52	34	53	30	33	25	26	12	6.5	12.5
29	11	47	104	32	-	40	30	24	39	11	6.5	10.5
30	11	43	162	31	------	37	29	46	37	11.5	6.9	9.5
31	11	-----	117	39	-----	37	----	34	------	15	7.2	------
Total	336.9	1,545.5	2,082	1,600	1,511	1,147	1,366	907	510.8	478.9	233.8	246.1
Mean	10.9	51.5	67.2	51.6	54.0	37.0	45.5	29.3	17.0	15.4	7.54	8.20
Cfsm	0.452	2.14	2.79	2.14	2.24	1.54	1.89	1.22	0.705	0.639	0.313	0.340
In.	0.52	2.38	3.21	2.47	2.33	1.77	2.11	1.40	0.79	0.74	0.36	0.38
Ac-ft	668	3,070	4,130	3,170	3,000	2,280	2,710	1,800	1,010	950	464	488

Calendar year 1954: Max 325 Min 8.3 Mean 42.6 Cfsm 1.77 In. 24.02 Ac-ft 30,870
Water year 1954-55: Max 187 Min 5.9 Mean 32.8 Cfsm 1.36 In. 18.46 Ac-ft 23,740

Peak discharge (base, 250 cfs).--Feb. 8 (12:30 a.m.) 258 cfs (4.03 ft).
* Discharge measurement made on this day.

Sammamish River at Bothell, Wash.

Location.--Lat 47°45'20", long 122°11'35", in NW¼SE¼ sec. 8, T. 26 N., R. 5 E., on left bank in Bothell a quarter of a mile downstream from North Creek and 3½ miles upstream from mouth.

Drainage area.--205 sq mi.

Records available.--October 1939 to September 1955.

Gage.--Water-stage recorder. Datum of gage is at mean lower low water at Seattle (Corps of Engineers benchmark), or 6.54 ft below mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Dec. 28, 1939, staff gages at same site and datum.

Average discharge.--16 years, 357 cfs (258,500 acre-ft per year).

Extremes.--Maximum discharge during year, 1,100 cfs Feb. 8 (gage height, 29.10 ft); minimum, 104 cfs Sept. 5, 6, 25 (gage height, 23.27 ft).
1939-55: Maximum discharge, about 1,900 cfs Feb. 12 or 13, 1951; maximum gage height, 32.12 ft Feb. 22, 1949; minimum discharge, 62 cfs Aug. 22, 23, 1951 (gage height, 22.92 ft).

Remarks.--Records excellent. Some small diversions from tributaries for irrigation and domestic use. Slight regulation on some tributaries.

Revisions.--WSP 1246: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

23.2	96	26.0	502
24.0	192	27.0	686
25.0	335	29.0	1,080

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	138	131	329	690	467	529	534	465	338	354	193	112
2	137	130	320	661	472	504	536	455	322	268	178	108
3	137	130	308	614	460	489	520	448	320	255	169	107
4	135	132	305	588	472	467	498	436	318	257	165	107
5	134	200	338	616	506	447	481	419	306	237	160	107
6	135	209	447	581	516	450	467	406	296	223	156	105
7	135	171	472	556	628	447	458	397	286	218	153	108
8	131	162	409	551	1,070	*443	469	406	276	211	152	110
9	131	180	421	547	946	452	527	389	268	211	150	111
10	132	175	*460	518	820	452	547	380	261	219	*144	110
11	143	167	404	498	758	457	554	406	251	213	142	109
12	141	234	524	486	722	474	648	411	247	204	142	107
13	135	222	610	500	696	469	635	440	244	*192	140	116
14	134	258	549	486	676	489	592	572	237	187	137	*129
15	134	254	601	506	694	489	570	502	233	183	134	125
16	130	328	518	556	658	465	578	469	227	183	131	124
17	130	359	469	547	638	448	569	450	222	182	129	130
18	129	502	440	513	614	435	*552	435	225	174	124	122
19	140	734	414	*484	592	423	540	430	222	169	123	117
20	143	554	397	481	574	409	531	419	211	166	125	116
21	144	436	389	464	560	413	522	404	202	164	122	115
22	142	411	380	457	543	423	579	397	201	160	119	112
23	141	373	472	477	531	413	569	385	225	159	119	110
24	138	340	538	481	527	406	563	373	211	159	120	107
25	137	476	479	476	515	404	534	364	202	158	119	105
26	136	438	448	460	502	401	533	*364	216	176	118	107
27	135	414	426	452	486	391	540	378	218	188	115	115
28	*134	377	424	447	551	393	513	354	233	179	114	129
29	*134	365	570	438	-	433	491	343	284	171	111	124
30	134	345	789	433	------	450	479	389	262	170	111	118
31	132	-----	747	455	-----	462	-----	365	------	195	114	------
Total	4,211	9,207	14,397	16,019	17,194	13,827	16,129	12,851	7,564	6,185	4,229	3,422
Mean	136	307	464	517	614	446	538	415	252	200	136	114
Cfsm	0.663	1.50	2.26	2.52	3.00	2.18	2.62	2.02	1.23	0.976	0.663	0.556
In.	0.76	1.67	2.61	2.91	3.12	2.51	2.93	2.33	1.37	1.12	0.77	0.62
Ac-ft	8,350	18,260	28,560	31,770	34,100	27,430	31,990	25,490	15,000	12,270	8,390	6,790

Calendar year 1954: Max 1,470 Min 120 Mean 415 Cfsm 2.02 In. 27.48 Ac-ft 300,400
Water year 1954-55: Max 1,070 Min 105 Mean 343 Cfsm 1.67 In. 22.72 Ac-ft 248,400

* Discharge measurement made on this day.

South Fork Skykomish River near Index, Wash.

Location.--Lat 47°48'20", long 121°32'40", in NE¼ sec. 29, T. 27 N., R. 10 E., on right bank 600 ft upstream from Sunset Falls, 1 mile southeast of Index, and 2 miles upstream from confluence with North Fork. Discharge measurements made about 2 miles upstream from gage.

Drainage area.--355 sq mi.

Records available.--October 1902 to September 1905, April 1911 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 574.80 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Mar. 15, 1934, at site 300 ft downstream. Oct. 6, 1902, to Sept. 30, 1905, staff gage at datum 0.39 ft higher and Apr. 26, 1911, to Sept. 30, 1913, at datum 1 ft higher. Oct. 1, 1913, to Sept. 13, 1920, staff gage, Sept. 14, 1920, to Oct. 1, 1921, water-stage recorder, and Jan. 23, 1922, to Mar. 14, 1934, staff gage, at present datum.

Average discharge.--47 years, 2,367 cfs (1,714,000 acre-ft per year).

Extremes.--Maximum discharge during year, 18,900 cfs Feb. 8 (gage height, 14.47 ft); minimum, 460 cfs Sept. 26, 27 (gage height, 2.15 ft).
1902-5, 1911-55: Maximum discharge, 55,000 cfs Dec. 12, 1921 (gage height, 22.8 ft, from high-water marks, site then in use), from rating curve extended above 14,000 cfs by logarithmic plotting; minimum, 165 cfs Nov. 29, 1952 (gage height, 1.35 ft).
Flood of 1897 reached a stage about 5 ft higher than that of Dec. 12, 1921 (discharge, about 70,000 cfs).

Remarks.--Records excellent. Small diversion for domestic use. No regulation.

Revisions (water years).--WSP 512: 1903-5, 1911-14. WSP 572: Drainage area. WSP 792: 1934. WSP 1286: 1903-5(M), 1912(M), 1914-29(M), 1931-34(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.1	435	6.0	3,420
2.5	660	7.0	4,490
3.0	965	9.0	7,150
4.0	1,660	11.0	10,500
5.0	2,480	13.0	15,000

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	726	894	2,470	3,780	1,570	864	2,270	1,390	3,810	6,040	4,250	798
2	684	852	2,160	2,710	1,440	852	1,950	1,420	3,440	4,600	3,400	774
3	732	822	1,950	2,140	1,280	828	1,590	*1,410	3,750	4,150	2,790	774
4	*684	792	1,800	1,810	1,270	792	1,390	1,490	4,870	4,060	2,580	762
5	636	1,650	1,700	1,600	1,400	822	1,350	1,870	5,910	3,890	2,510	756
6	606	2,360	1,920	1,460	1,660	768	1,510	2,060	6,010	3,980	2,470	756
7	600	1,640	1,870	1,410	*8,750	726	2,000	2,290	*6,970	3,920	2,470	750
8	834	1,370	1,650	1,240	12,100	732	2,750	3,010	9,000	3,940	2,290	720
9	792	1,370	1,570	1,160	4,670	756	5,050	2,560	11,800	4,410	2,040	684
10	871	1,320	1,490	1,080	2,980	900	4,600	2,510	13,100	4,720	1,940	648
11	4,370	1,360	1,390	1,020	2,300	958	3,320	5,090	13,000	4,690	1,890	630
12	3,420	1,420	1,350	972	1,930	920	2,740	7,460	12,000	5,380	1,760	594
13	2,340	1,600	1,400	1,060	1,800	852	2,520	5,040	9,490	6,670	1,580	600
14	1,820	2,040	1,440	998	1,710	798	2,130	3,740	7,320	8,080	1,480	846
15	1,670	*1,990	2,010	939	1,720	768	1,850	3,200	5,980	7,890	1,420	900
16	1,580	5,250	1,650	913	1,600	732	1,680	3,040	4,800	7,320	*1,330	840
17	1,570	5,920	1,460	894	1,510	708	1,540	2,990	4,500	5,490	1,290	822
18	1,440	11,600	1,370	852	1,320	714	1,460	3,770	4,480	*4,560	1,240	678
19	1,580	9,000	1,280	810	1,230	708	1,370	6,370	4,790	3,910	1,240	600
20	2,290	6,010	1,250	822	1,160	678	1,360	6,630	5,540	3,950	1,240	606
21	3,380	4,250	1,600	780	1,100	*756	1,430	5,450	7,900	3,930	1,170	630
22	2,480	3,890	3,320	786	1,040	1,540	1,550	4,550	9,200	4,080	1,090	564
23	2,080	3,370	2,630	1,460	998	1,240	1,740	3,840	7,980	4,100	1,040	529
24	1,790	2,730	2,430	1,600	1,060	1,040	1,590	3,460	6,230	3,900	991	496
25	1,580	4,170	2,140	1,790	998	913	1,420	3,730	5,160	3,300	958	475
26	1,430	7,900	1,850	1,560	926	840	1,430	3,930	5,050	2,950	900	465
27	1,300	7,940	*1,620	1,380	864	828	1,380	3,800	5,280	3,300	864	*502
28	1,190	4,930	1,560	1,270	876	864	1,300	3,380	5,790	3,270	834	606
29	1,100	3,680	1,940	1,200	-	1,220	1,240	4,290	6,600	4,040	828	648
30	1,020	2,940	2,910	1,170	------	1,410	1,230	6,390	6,190	4,260	834	600
31	952	-----	5,220	1,320	-----	1,770	-----	4,860	------	5,140	834	------
Total	47,547	105,060	60,400	41,986	61,262	28,297	58,920	115,020	205,940	143,920	51,553	20,053
Mean	1,534	3,502	1,948	1,354	2,188	913	1,964	3,710	6,865	4,643	1,663	668
Cfsm	4.32	9.86	5.49	3.81	6.16	2.57	5.53	10.5	19.3	13.1	4.68	1.88
In.	4.98	11.01	6.33	4.40	6.42	2.96	6.17	12.05	21.57	15.08	5.40	2.10
Ac-ft	94,310	208,400	119,800	83,280	121,500	56,130	116,900	228,100	408,500	285,500	102,300	39,770

Calendar year 1954: Max 11,600 Min 600 Mean 2,894 Cfsm 8.15 In. 110.67 Ac-ft 2,095,000
Water year 1954-55: Max 13,100 Min 465 Mean 2,575 Cfsm 7.25 In. 98.47 Ac-ft 1,864,000

Peak discharge (base, 10,000 cfs).--Nov. 18 (8:40 a.m.) 14,500 cfs (12.80 ft); Nov. 27 (1 a.m.) 10,900 cfs (11.18 ft); Feb. 8 (2 a.m.) 18,900 cfs (14.47 ft); June 11 (12 to 1 a.m.) 14,600 cfs (12.82 ft); June 22 (1 a.m.) 10,300 cfs (10.89 ft).
* Discharge measurement made on this day.

Skykomish River near Gold Bar, Wash.

Location.--Lat 47°50'15", long 121°40'00", in SW¼ sec. 9, T. 27 N., R. 9 E., on right bank 2 miles southeast of Gold Bar and 5 miles upstream from Wallace River and Startup.

Drainage area.--535 sq mi.

Records available.--September 1928 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 209.26 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--27 years, 3,795 cfs (2,747,000 acre-ft per year).

Extremes.--Maximum discharge during year, 30,600 cfs Feb. 8 (gage height, 13.45 ft); minimum, 817 cfs Sept. 26 (gage height, 3.59 ft).
1928-55: Maximum discharge, 88,700 cfs Dec. 21, 1933 (gage height, 21.3 ft), from rating curve extended above 32,000 cfs by logarithmic plotting; minimum, 315 cfs Nov. 29, 1952; minimum gage height, 2.73 ft Dec. 1, 1936.

Remarks.--Records excellent. No regulation or diversion above station.

Revisions (water years).--WSP 1286: 1934(M). WSP 1316: 1932-33(M), 1935(M), 1944(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

3.6	825	7.0	5,820
4.0	1,200	8.0	8,320
4.5	1,770	9.0	11,300
5.0	2,420	10.0	14,800
6.0	3,940	12.0	23,300

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,260	1,570	3,940	6,060	2,590	1,410	3,620	2,160	5,560	9,680	6,980	1,330
2	1,200	1,490	3,440	4,370	2,320	1,380	3,150	2,240	5,030	7,140	5,440	1,310
3	1,200	1,440	3,140	3,490	2,080	1,330	2,530	2,230	5,460	6,360	4,480	1,310
4	1,170	1,380	2,880	2,970	2,050	1,230	2,200	*2,380	7,140	6,260	4,160	1,310
5	*1,090	3,370	2,790	2,640	2,230	1,230	2,110	2,960	8,780	6,040	4,110	1,300
6	1,040	4,530	3,120	2,390	2,560	1,220	2,360	3,160	8,810	6,170	4,080	1,310
7	1,030	3,030	3,090	2,180	13,300	1,180	3,140	3,540	10,500	6,080	4,090	1,290
8	1,550	2,480	2,730	2,050	*19,200	1,190	5,260	4,570	*13,600	6,150	3,780	1,230
9	1,410	2,460	2,560	1,900	7,160	1,210	7,760	3,890	18,300	6,840	3,330	1,180
10	1,520	2,380	2,460	1,790	4,620	1,500	7,400	3,810	20,400	7,210	3,240	1,120
11	7,510	2,190	2,270	1,700	3,600	1,550	5,120	8,070	20,100	7,160	3,160	1,080
12	5,840	2,420	2,290	1,630	3,100	1,540	4,210	11,000	18,600	8,430	2,940	1,020
13	3,960	2,700	2,420	1,760	2,920	1,410	3,860	7,340	14,800	10,600	2,570	1,060
14	3,040	3,540	2,460	1,650	2,780	1,330	3,320	5,540	11,300	12,800	2,420	1,420
15	2,800	3,560	3,440	1,550	2,730	1,260	2,880	4,860	9,200	12,500	2,310	1,520
16	2,690	*9,250	2,800	1,520	2,530	1,200	2,670	4,620	7,240	11,700	2,220	1,450
17	2,670	10,200	2,460	1,500	2,360	1,150	2,430	4,500	6,860	8,600	*2,120	1,420
18	2,420	19,400	2,320	1,410	2,100	1,170	2,280	5,840	6,980	7,110	2,070	1,180
19	2,690	15,300	2,190	1,340	1,960	1,150	2,150	9,770	7,450	*6,040	2,100	1,080
20	3,940	9,860	2,140	1,350	1,850	1,100	2,120	9,860	8,750	6,130	2,120	1,030
21	5,540	6,860	2,760	1,320	1,770	1,180	2,240	7,980	12,500	6,260	1,970	1,070
22	4,110	6,450	5,480	1,300	1,710	*2,490	2,410	6,600	14,500	6,500	1,850	982
23	3,430	5,480	4,420	2,210	1,670	2,050	2,700	5,670	12,600	6,500	1,760	910
24	2,920	4,410	3,990	2,560	1,760	1,670	2,500	5,100	9,770	6,170	1,650	876
25	2,590	7,100	3,510	2,860	1,630	1,490	2,220	5,620	7,930	5,160	1,550	834
26	2,340	13,000	3,040	2,520	1,520	1,340	2,230	5,930	7,840	4,660	1,480	825
27	2,150	13,700	2,660	2,340	1,430	1,310	2,180	5,690	8,260	5,320	1,410	*884
28	1,970	8,070	*2,550	2,050	1,490	1,380	2,030	5,090	8,990	5,220	1,390	1,030
29	1,830	5,820	3,100	1,920	-	1,900	1,960	6,570	10,500	6,360	1,380	1,100
30	1,750	4,710	4,630	1,850	------	2,200	1,920	9,590	9,890	6,740	1,410	1,030
31	1,660	-----	8,350	2,140	-----	2,800	-----	7,110	------	8,540	1,410	------
Total	80,320	178,150	99,430	68,320	97,020	45,550	92,960	173,290	317,640	226,430	84,980	34,491
Mean	2,591	5,938	3,207	2,204	3,465	1,469	3,099	5,590	10,590	7,304	2,741	1,150
Cfsm	4.84	11.1	5.99	4.12	6.48	2.75	5.79	10.4	19.8	13.7	5.12	2.15
In.	5.58	12.38	6.91	4.75	6.74	3.17	6.46	12.05	22.08	15.74	5.91	2.40
Ac-ft	159,300	353,400	197,200	135,500	192,400	90,350	184,400	343,700	630,000	449,100	168,600	68,410

Calendar year 1954: Max 19,400 Min 1,030 Mean 4,609 Cfsm 8.61 In. 116.93 Ac-ft 3,337,000
Water year 1954-55: Max 20,400 Min 825 Mean 4,106 Cfsm 7.67 In. 104.17 Ac-ft 2,972,000

Peak discharge (base, 19,000 cfs).--Nov. 18 (9 a.m.) 24,000 cfs (12.15 ft); Feb. 8 (2 a.m.) 30,600 cfs (13.45 ft); June 11 (12:30 a.m.) 22,300 cfs (11.77 ft).
* Discharge measurement made on this day.

Wallace River at Gold Bar, Wash.

Location.--Lat 47°51'50", long 121°41'45", in NE¼ sec. 6, T. 27 N., R. 9 E., on left bank 30 ft downstream from highway bridge, a quarter of a mile north of Gold Bar, and 1¼ miles upstream from Olney Creek.

Drainage area.--19.8 sq mi.

Records available.--October 1928 to September 1933, July 1946 to September 1955. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Altitude of gage is 200 ft (from topographic map). December 1928 to Sept. 30, 1933, staff gage at site 50 ft upstream at different datum.

Average discharge.--14 years (1928-33, 1946-55), 156 cfs (112,900 acre-ft per year).

Extremes.--Maximum discharge during year, 1,720 cfs Nov. 16 (gage height, 7.70 ft); minimum, 21 cfs Sept. 11-13; minimum gage height, 3.46 ft Sept. 12, 13.
1928-33, 1946-55: Maximum discharge, 2,740 cfs Feb. 26, 1932 (gage height, 8.5 ft, from graph based on gage readings, site and datum then in use); minimum, 9.2 cfs Oct. 18, 19, 1952; minimum gage height observed, 0.32 ft Aug. 27, Sept. 3-5, 1930, site and datum then in use.

Remarks.--Records good. No regulation or diversion above station.

Revisions.--WSP 1062: Drainage area. WSP 1286: 1932(M). WSP 1316: 1930(M), 1933(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 7, 8)

Oct. 1 to Nov. 15				Nov. 16 to Sept. 30			
3.7	29	4.4	150	3.4	17	4.7	238
3.8	39	4.7	235	3.5	24	5.0	340
4.0	64	5.0	340	3.7	40	5.5	540
4.2	101	5.5	540	3.9	61	6.0	770
				4.1	89	6.5	1,020
				4.4	154		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	49	36	136	277	167	54	202	114	211	545	359	28
2	47	35	118	214	120	52	159	109	205	340	238	27
3	43	35	103	167	102	50	132	*111	318	277	180	27
4	41	35	98	136	98	48	114	125	386	251	164	26
5	*39	416	132	118	96	47	114	170	398	229	149	26
6	37	293	175	102	213	47	139	172	355	226	144	26
7	36	130	142	89	*644	45	214	208	*426	232	127	26
8	71	95	114	83	787	46	328	264	592	226	105	26
9	51	130	105	77	333	50	642	205	830	238	91	25
10	108	111	100	71	220	54	463	229	810	232	91	23
11	512	85	91	66	162	58	277	608	652	220	83	22
12	245	132	143	65	132	61	238	593	498	254	71	21
13	135	128	159	73	122	58	214	329	351	322	61	28
14	93	176	156	65	125	57	172	254	260	340	59	59
15	83	158	217	61	129	53	146	235	223	277	57	90
16	71	*860	146	59	111	50	129	217	191	232	53	70
17	72	532	132	59	100	48	116	214	208	162	*49	53
18	64	692	144	56	86	48	105	301	319	152	48	40
19	154	621	142	53	78	47	98	482	287	125	47	33
20	182	344	144	54	76	45	100	378	346	*154	51	35
21	160	254	291	52	70	*47	105	273	430	170	43	44
22	97	251	343	53	68	*94	120	226	378	170	40	33
23	83	197	226	196	65	78	122	200	402	162	38	30
24	64	154	191	172	67	66	114	186	287	136	35	29
25	57	312	149	200	65	58	105	220	238	107	34	26
26	53	691	127	149	61	56	109	260	297	148	33	*26
27	48	369	*109	122	57	56	103	238	301	270	32	56
28	46	264	102	114	57	63	96	202	358	232	30	74
29	42	200	146	105	-	103	98	308	658	600	30	57
30	40	167	415	105	------	102	98	386	590	412	30	47
31	37	-----	410	168	-----	125	-----	254	------	534	29	------
Total	2,860	7,903	5,206	3,381	4,411	1,866	4,172	8,071	11,805	7,975	2,601	1,133
Mean	92.3	263	168	109	158	60.2	172	260	394	257	83.9	37.8
Cfsm	4.66	13.3	8.48	5.51	7.98	3.04	8.69	13.1	19.9	13.0	4.24	1.91
In.	5.37	14.84	9.78	6.35	8.29	3.50	9.71	15.16	22.17	14.98	4.89	2.13
Ac-ft	5,670	15,680	10,330	6,710	8,750	3,700	10,260	16,010	23,410	15,820	5,160	2,250

Calendar year 1954: Max 860 Min 35 Mean 169 Cfsm 8.54 In. 115.74 Ac-ft 122,200
Water year 1954-55: Max 860 Min 21 Mean 171 Cfsm 8.64 In. 117.17 Ac-ft 123,800

Peak discharge (base, 1,350 cfs).--Nov. 16 (10 a.m.) 1,720 cfs (7.70 ft).
* Discharge measurement made on this day.

Sultan River near Startup, Wash.

Location.--Lat 47°58'30", long 121°46'30", in NE¼ sec. 28, T. 29 N., R. 8 E., on left bank 1½ miles upstream from intake of Everett water-supply system and 7½ miles north of Startup.

Drainage area.--74.5 sq mi.

Records available.--May 1934 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 750 ft (from topographic map). Prior to July 2, 1934, staff gage at same site at datum 3.29 ft higher.

Average discharge.--21 years, 771 cfs (558,200 acre-ft per year).

Extremes.--Maximum discharge during year, 15,000 cfs Feb. 7 (gage height, 13.50 ft), from rating curve extended above 5,000 cfs on basis of slope-area determination at gage height 17.22 ft; minimum, 124 cfs Sept. 26; minimum gage height, 3.89 ft Mar. 5.
1934-55: Maximum discharge, 34,600 cfs Feb. 9, 1951 (gage height, 17.22 ft, from high-water mark in well), from rating curve extended above 5,000 cfs on basis of slope-area determination of peak flow; minimum, 48 cfs Sept. 25, 27, 29, 30, 1942; minimum gage height, 3.32 ft Sept. 22, 23, 24, 1938, Oct. 19, 20, 1952.

Remarks.--Records excellent except those for period of no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 1182: 1935, 1936(M), 1937-39, 1940(M), 1941, 1942(P), 1943-49. WSP 1216: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

3.8	116	6.5	1,090
4.0	148	7.0	1,420
4.3	210	8.0	2,250
4.6	280	9.0	3,400
5.0	390	10.0	5,000
5.5	570	11.0	7,100
6.0	810		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	201	219	579	1,610	958	214	1,230	430	1,500	2,020	1,800	197
2	186	208	486	953	633	206	740	427	1,000	1,320	1,140	192
3	173	195	430	680	494	188	518	458	1,200	1,090	865	201
4	163	192	393	546	480	173	434	*530	1,600	1,000	770	203
5	156	2,560	515	472	462	165	417	715	1,900	887	740	206
6	*146	1,840	821	405	744	173	534	755	1,600	887	760	206
7	146	821	685	369	6,820	165	887	887	1,800	865	730	197
8	495	566	526	339	*5,250	169	1,520	1,220	*2,600	860	615	182
9	348	597	472	318	1,440	199	3,240	900	3,620	964	510	165
10	735	558	448	295	870	260	2,080	850	3,490	992	518	156
11	3,560	466	390	275	651	255	1,210	2,000	2,960	958	502	146
12	1,690	562	728	285	538	230	997	3,600	2,470	1,100	434	138
13	942	546	775	357	597	208	882	2,000	1,840	1,430	372	251
14	633	898	723	310	633	190	665	1,300	1,350	1,640	354	371
15	602	843	926	285	675	171	534	1,000	1,100	1,500	342	430
16	510	4,500	606	270	542	165	494	920	909	1,380	322	360
17	494	*3,240	522	280	462	158	448	870	920	970	*310	308
18	408	5,140	550	255	390	158	414	1,500	1,260	838	318	228
19	856	4,030	546	237	354	154	411	2,100	1,280	*700	328	192
20	1,130	2,020	562	232	325	148	434	2,800	1,440	740	348	201
21	1,180	1,230	1,220	217	308	172	476	2,100	1,940	810	305	208
22	821	1,330	1,640	239	288	682	542	1,600	1,900	870	280	171
23	628	936	1,160	845	278	372	624	1,200	1,720	865	262	150
24	494	685	970	783	302	272	494	970	1,400	785	241	136
25	417	2,310	705	970	270	232	420	1,100	1,120	620	223	130
26	366	5,720	562	633	248	212	396	1,200	1,250	718	208	125
27	328	3,020	469	472	225	210	366	1,100	1,420	1,250	201	195
28	298	1,540	*466	430	225	258	342	1,000	1,470	964	201	*278
29	270	1,020	770	411	-	510	348	1,900	2,040	2,060	212	310
30	248	755	2,480	448	------	*526	363	2,500	2,140	1,640	223	253
31	230	------	2,860	866	------	865	------	2,000	------	2,250	212	------
Total	18,854	48,547	24,985	15,087	25,262	8,060	22,460	41,932	52,239	34,973	14,646	6,486
Mean	608	1,618	806	487	902	260	749	1,353	1,741	1,128	472	216
Cfsm	8.16	21.7	10.8	6.54	12.1	3.49	10.1	18.2	23.4	15.1	6.34	2.90
In.	9.41	24.23	12.47	7.53	12.61	4.02	11.21	20.93	26.08	17.46	7.31	3.24
Ac-ft	37,400	96,290	49,560	29,920	50,110	15,990	44,550	83,170	103,600	69,370	29,050	12,860

Calendar year 1954: Max 5,720 Min 146 Mean 898 Cfsm 12.1 In. 163.68 Ac-ft 650,400
Water year 1954-55: Max 6,620 Min 125 Mean 859 Cfsm 11.5 In. 156.50 Ac-ft 621,900

Peak discharge (base, 6,000 cfs).--Nov. 16 (9:30 a.m.) 8,350 cfs (11.50 ft); Nov. 18 (8:30 a.m.) 7,580 cfs (11.19 ft); Nov. 26 (8 p.m.) 8,300 cfs (11.48 ft); Feb. 7 (12 p.m.) 15,000 cfs (13.50 ft).
* Discharge measurement made on this day.
Note.--No gage-height record May 9 to June 8; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Woods Creek near Monroe, Wash.

Location.--Lat 47°52'20", long 121°55'10", in W½ sec. 33, T. 28 N., R. 7 E., on left bank 200 ft downstream from West Fork and 2½ miles northeast of Monroe.

Drainage area.--55.0 sq mi.

Records available.--July 1946 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 100 ft (from topographic map).

Average discharge.--9 years, 152 cfs (110,000 acre-ft per year).

Extremes.--Maximum discharge during year, 1,310 cfs Nov. 17; maximum gage height, 6.16 ft Nov. 16; minimum discharge, 25 cfs Sept. 13 (gage height, 2.16 ft).
1946-55: Maximum discharge, 1,710 cfs Feb. 26, 1950 (gage height, 7.18 ft), from rating curve extended above 770 cfs; minimum, 12 cfs Aug. 22, 1951, Sept. 27, Oct. 10, 1952; minimum gage height, 1.97 ft Aug. 22, 1951, Oct. 10, 1952.

Remarks.--Records good except those for period of no gage-height record, which are fair. Several small diversions above station for domestic use. No regulation.

Revisions.--WSP 1286: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 16				Nov. 17 to Sept. 30			
2.2	28	3.5	211	2.1	21	3.5	220
2.4	45	4.0	332	2.3	36	4.0	355
2.7	77	4.5	482	2.5	55	4.5	520
3.0	119	5.1	705	2.8	91	5.0	725
				3.1	137	6.0	1,230

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	49	274	652	218	184	360	167	120	277	120	28
2	42	48	239	628	197	171	474	151	110	215	95	27
3	41	47	213	460	179	161	432	150	122	182	76	27
4	42	48	186	355	184	155	343	*141	117	167	65	27
5	*42	132	182	308	202	155	277	125	116	142	62	27
6	40	249	220	272	206	150	234	114	108	120	53	27
7	38	198	254	239	275	150	204	106	*94	108	49	27
8	34	157	225	211	640	160	202	117	83	98	46	30
9	33	147	206	190	*572	180	242	102	74	92	44	28
10	34	144	246	177	409	240	372	101	67	88	44	27
11	92	132	218	159	325	280	322	106	63	83	42	27
12	98	159	246	150	272	250	331	117	60	76	41	26
13	74	166	322	171	239	230	328	170	60	73	40	28
14	66	184	293	184	218	200	277	288	57	67	39	33
15	64	188	409	169	246	180	254	249	55	58	37	33
16	59	*673	379	184	213	160	234	206	52	59	36	33
17	58	1,000	313	222	202	150	215	175	47	54	34	30
18	55	752	256	199	182	140	199	153	62	50	*33	29
19	57	846	232	177	167	135	193	142	63	48	33	28
20	60	694	195	175	153	135	184	137	52	*45	34	29
21	63	464	177	186	144	160	186	122	42	43	34	30
22	60	382	169	171	141	*280	274	111	46	41	32	30
23	58	331	184	220	134	239	291	102	53	40	32	30
24	56	272	211	249	161	225	364	94	51	39	32	30
25	56	364	182	288	182	202	325	87	48	40	32	30
26	56	471	171	262	184	184	322	92	56	45	32	30
27	53	482	161	227	169	169	299	106	76	53	31	*33
28	53	468	153	204	186	161	254	91	92	48	30	34
29	51	397	*332	184	-	193	225	86	161	68	30	32
30	51	328	598	169	------	225	199	153	159	84	29	30
31	50	-----	738	179	-----	230	-----	141	------	117	29	------
Total	1,680	9,972	8,184	7,621	6,600	5,834	8,416	4,202	2,366	2,720	1,366	880
Mean	54.2	332	264	246	236	188	281	136	78.9	87.7	44.1	29.3
Cfsm	0.985	6.04	4.80	4.47	4.29	3.42	5.11	2.47	1.43	1.59	0.802	0.533
In.	1.14	6.74	5.53	5.15	4.46	3.94	5.69	2.84	1.60	1.84	0.92	0.60
Ac-ft	3,330	19,780	16,230	15,120	13,090	11,570	16,690	8,330	4,690	5,400	2,710	1,750

Calendar year 1954: Max 1,120 Min 31 Mean 174 Cfsm 3.16 In. 42.95 Ac-ft 126,000
Water year 1954-55: Max 1,000 Min 26 Mean 164 Cfsm 2.98 In. 40.45 Ac-ft 118,700

Peak discharge (base, 700 cfs).--Nov. 17 (1 a.m.) 1,310 cfs (6.13 ft); Dec. 31 (1 a.m.) 797 cfs (5.16 ft); Feb. 8 (2 to 4 p.m.) 716 cfs (4.98 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Mar. 4-22; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Griffin Creek near Carnation, Wash.

Location.--Lat 47°37'00", long 121°54'15", in SW¼SW¼ sec. 27, T. 25 N., R. 7 E., on left bank a quarter of a mile upstream from bridge on State Highway 15B, three-quarters of a mile upstream from mouth, and 2 miles south of Carnation.

Drainage area.--17.1 sq mi.

Records available.--June 1945 to September 1955. Prior to October 1951, published as "near Tolt."

Gage.--Water-stage recorder. Altitude of gage is 120 ft (from topographic map). Prior to Sept. 21, 1951, at site 1,000 ft downstream at different datum.

Average discharge.--10 years, 42.2 cfs (30,550 acre-ft per year).

Extremes.--Maximum discharge during year, 257 cfs Feb. 8 (gage height, 3.34 ft); minimum, 4.9 cfs Sept. 12 (gage height, 1.50 ft).
1945-55: Maximum discharge, 738 cfs Feb. 10, 1951 (gage height, 5.03 ft, site and datum then in use); minimum, 2.2 cfs Aug. 20, 1953; minimum gage height, 0.75 ft Aug. 22, 23, 1945 (site and datum then in use).

Remarks.--Records fair October to December, and good thereafter. Some small diversions for irrigation and domestic use. No regulation.

Revisions.--WSP 1286: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30				Dec. 31 to Sept. 30			
1.5	5.6	2.2	50	1.5	4.9	2.2	41
1.6	8.8	2.5	86	1.6	7.3	2.5	76
1.7	13	2.8	134	1.7	10.5	2.8	125
1.8	18	3.0	175	1.8	14.5	3.3	245
2.0	31			2.0	25		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.2	6.2	57	137	43	35	120	47	31	47	32	6.2
2	9.2	*6.1	48	116	43	31	120	41	30	51	31	6.0
3	9.6	5.9	42	94	41	31	102	36	32	45	27	6.0
4	9.2	5.9	37	76	45	28	80	32	34	39	23	6.0
5	8.8	11	36	70	57	25	67	29	32	32	20	6.0
6	8.4	15.5	43	61	68	24	58	27	29	28	19	6.0
7	7.7	14	46	52	93	25	48	25	25	24	16.5	6.0
8	7.7	14	48	45	242	*24	48	28	23	21	15	6.0
9	7.7	16.5	49	42	*194	28	62	24	21	21	*13.5	5.8
10	8.1	16.5	54	39	135	38	66	23	19	21	12	5.6
11	9.6	16	50	36	102	42	70	31	17.5	*20	11.5	5.6
12	8.4	22	*57	32	84	51	82	55	16.5	18.5	10.5	5.3
13	7.7	26	76	33	76	55	88	96	15.5	17	9.8	7.0
14	7.4	36	76	31	68	55	82	152	15.5	15.5	9.4	9.8
15	6.7	42	87	32	70	51	73	135	14	14.5	9.1	*9.4
16	6.4	57	81	37	63	47	76	99	13.5	13.5	8.2	9.4
17	6.4	74	68	38	58	42	73	78	13.5	13	8.4	13
18	6.1	105	59	36	51	39	67	63	16.5	12	7.9	10.5
19	7.4	142	50	34	45	36	61	53	15.5	11.5	7.9	8.8
20	8.4	129	43	36	41	34	55	45	13.5	10	8.4	8.8
21	8.4	96	39	*32	38	35	*53	39	14	9.8	8.2	8.2
22	8.1	80	*39	31	39	43	58	35	12.5	9.4	7.9	7.9
23	7.7	68	45	35	36	55	66	31	14.5	8.8	7.0	7.3
24	7.4	57	60	44	36	66	63	28	13	8.8	7.0	6.8
25	7.4	71	61	58	36	66	59	*26	11.5	8.2	7.3	6.5
26	7.0	78	56	59	33	63	64	26	13.5	11.5	7.3	6.5
27	6.7	94	49	55	30	58	68	31	15.5	15.5	7.0	7.3
28	6.7	97	45	47	34	55	63	27	19	14.5	7.0	9.1
29	6.4	81	61	42	-	63	59	24	27	17	6.8	8.8
30	6.4	68	123	38	------	73	53	31	31	18	6.8	7.9
31	6.4	-----	160	40	-----	94	-----	35	------	28	6.2	------
Total	238.7	1,550.6	1,845	1,558	1,901	1,412	2,104	1,452	599.0	624.0	378.6	223.5
Mean	7.70	51.7	59.5	50.3	67.9	45.5	70.1	46.8	20.0	20.1	12.2	7.45
Cfsm	0.450	3.02	3.48	2.94	3.97	2.66	4.10	2.74	1.17	1.18	0.713	0.436
In.	0.52	3.37	4.01	3.39	4.13	3.07	4.58	3.16	1.30	1.36	0.82	0.49
Ac-ft	473	3,080	3,660	3,090	3,770	2,800	4,170	2,880	1,190	1,240	751	443

Calendar year 1954: Max 315 Min 4.4 Mean 37.4 Cfsm 2.19 In. 29.71 Ac-ft 27,110
Water year 1954-55: Max 242 Min 5.3 Mean 38.0 Cfsm 2.22 In. 30.20 Ac-ft 27,550

Peak discharge (base, 220 cfs).--Feb. 8 (1 p.m.) 257 cfs (3.34 ft).
* Discharge measurement made on this day.

North Fork Tolt River near Carnation, Wash.

Location.--Lat 47°42'40", long 121°47'35", in SE¼NW¼ sec. 28, T. 26 N., R. 8 E., on right bank 2¾ miles upstream from confluence with South Fork and 7 miles northeast of Carnation.

Drainage area.--39.2 sq mi.

Records available.--October 1952 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 600 ft above mean sea level (from river-profile map).

Extremes.--Maximum discharge during year, 4,640 cfs Feb. 7 (gage height, 10.15 ft), from rating curve extended above 2,800 cfs; minimum daily, 90 cfs Sept. 25, 26.
1952-55: Maximum discharge, 5,850 cfs Jan. 23, 1953 (gage height, 10.94 ft), from rating curve extended above 2,800 cfs; minimum, 40 cfs Nov. 30, Dec. 1, 1952, but may have been less sometime during period of no gage-height record in October 1952; minimum gage height, 3.77 ft Sept. 22, 1953.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
4.0	105	6.0	790	3.8	68	5.5	590
4.3	169	6.5	1,050	4.0	105	6.0	830
4.6	248	7.0	1,370	4.3	169	6.5	1,110
5.0	375	8.5	2,620	4.6	248	7.0	1,430
5.5	570			5.0	380	8.0	2,190

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	148	*117	303	650	410	186	527	269	487	945	740	110
2	142	113	278	470	315	184	355	260	492	590	466	105
3	153	111	260	386	272	176	288	272	715	504	373	105
4	142	107	251	344	278	172	257	291	775	450	337	100
5	138	429	263	321	275	164	257	334	760	410	313	100
6	131	482	340	294	504	162	297	341	690	403	304	98
7	129	231	328	275	2,480	160	407	376	820	410	288	96
8	158	179	284	272	*1,870	169	603	522	1,080	403	257	96
9	144	197	272	263	695	186	1,250	384	1,280	434	*237	96
10	242	186	269	245	492	*182	802	410	1,230	426	234	94
11	616	174	*251	231	410	176	483	1,320	1,080	407	223	92
12	334	475	349	242	373	172	434	1,180	890	438	210	91
13	240	386	406	260	380	164	430	644	680	536	200	100
14	197	430	368	237	384	160	355	522	532	558	190	150
15	176	334	438	226	391	153	317	492	450	509	185	*169
16	162	1,550	318	220	344	148	304	454	407	446	180	150
17	164	1,040	306	215	317	146	288	462	422	344	175	150
18	153	1,740	318	204	288	146	272	632	617	320	170	120
19	237	1,150	318	197	272	142	*266	954	558	288	165	105
20	294	619	321	*197	257	140	269	755	629	288	180	105
21	303	438	514	186	248	144	284	563	755	297	170	105
22	240	403	645	223	240	179	304	475	705	297	160	100
23	202	350	482	562	231	172	327	*426	750	294	150	96
24	179	303	400	486	228	153	284	399	608	272	140	93
25	164	625	321	538	215	148	263	438	475	242	135	90
26	153	942	278	378	204	148	266	590	568	298	130	90
27	144	855	257	312	197	153	254	586	581	576	125	100
28	138	486	269	297	194	186	251	475	754	483	120	130
29	131	386	418	284	-	291	251	684	1,220	1,470	115	120
30	129	334	1,530	294	------	272	254	942	*910	969	115	110
31	123	-----	990	442	-----	390	-----	612	------	1,060	110	------
Total	6,006	15,172	12,345	9,751	12,764	5,524	11,199	17,064	21,920	15,367	6,897	3,266
Mean	194	506	398	315	456	178	373	550	731	496	222	109
Cfsm	4.95	12.9	10.2	8.04	11.6	4.54	9.52	14.0	18.6	12.7	5.66	2.78
In.	5.70	14.39	11.71	9.25	12.11	5.24	10.62	16.19	20.80	14.58	6.54	3.10
Ac-ft	11,910	30,090	24,490	19,340	25,320	10,960	22,210	33,850	43,480	30,480	13,680	6,480

Calendar year 1954: Max 1,740 Min 107 Mean 372 Cfsm 9.49 In. 128.74 Ac-ft 269,100
Water year 1954-55: Max 2,480 Min 90 Mean 376 Cfsm 9.59 In. 130.23 Ac-ft 272,300

Peak discharge (base, 3,000 cfs).--Nov. 16 (11 a.m.) 3,370 cfs (9.18 ft); Feb. 7 (8:30 p.m.) 4,640 cfs (10.15 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Aug. 13 to Sept. 14, Sept. 16-30; discharge estimated on basis of recorded range in stage and records for Tolt River near Carnation and South Fork Tolt River near Carnation.

South Fork Tolt River near Carnation, Wash.

Location.--Lat 47°41'20", long 121°42'35", in SW¼SW¼ sec. 31, T. 26 N., R. 9 E., on left bank 7 miles upstream from confluence with North Fork and 10 miles northeast of Carnation.

Drainage area.--19.7 sq mi.

Records available.--October 1952 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,300 ft (from river-profile map).

Extremes.--Maximum discharge during year, 3,230 cfs Feb. 8 (gage height, 6.15 ft); minimum, 31 cfs Sept. 12, 13 (gage height, 1.16 ft).
1952-55: Maximum discharge, that of Feb. 8, 1955; maximum gage height, 6.26 ft Jan. 23, 1953; minimum daily discharge, 14 cfs Oct. 18, 1952.

Remarks.--Records good. No regulation or diversion above station.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
1.2	33	3.0	395	1.1	27	2.5	249
1.5	60	3.5	610	1.3	42	3.0	405
1.8	96	4.0	880	1.5	62	3.5	610
2.1	144	4.5	1,230	1.8	102	4.0	880
2.5	236	5.1	1,800	2.1	154	4.7	1,400

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	47	121	357	231	61	300	112	271	563	384	40
2	52	45	107	223	160	60	200	110	263	332	283	40
3	63	43	99	162	130	56	143	118	374	257	191	39
4	55	41	91	135	146	52	121	130	436	228	158	38
5	50	204	93	120	124	52	115	162	430	200	146	37
6	47	304	135	107	252	51	139	173	384	196	139	37
7	46	139	140	100	1,780	49	206	200	452	198	132	37
8	59	104	113	96	*1,380	53	320	283	625	193	118	36
9	54	109	106	91	369	61	788	210	740	210	*102	36
10	92	103	103	83	236	*66	552	226	715	213	96	34
11	370	91	*95	79	182	64	283	758	606	200	93	33
12	203	234	136	79	158	60	228	820	476	206	86	32
13	137	258	177	92	169	55	231	377	350	260	78	40
14	99	220	160	82	167	52	180	286	269	294	72	64
15	88	179	210	77	175	48	150	249	226	266	68	*92
16	77	892	146	76	152	47	141	228	198	236	64	82
17	78	680	126	73	135	46	130	231	206	169	62	86
18	71	1,040	126	69	118	46	116	336	292	150	61	63
19	120	615	121	66	108	46	*110	552	303	132	60	52
20	168	330	123	*66	98	44	110	422	303	130	64	51
21	186	210	198	61	90	46	121	300	388	133	59	52
22	128	179	384	77	87	75	144	252	377	139	54	47
23	106	158	223	252	82	66	171	*223	360	137	52	44
24	92	128	186	258	86	59	137	203	312	125	49	40
25	81	312	146	279	77	53	116	231	239	112	48	38
26	*72	590	120	191	72	50	112	334	255	130	46	36
27	66	540	106	148	67	52	104	325	283	233	45	44
28	61	264	106	133	64	66	100	260	338	239	43	67
29	57	184	191	124	-	133	102	388	690	729	42	66
30	53	146	771	130	------	132	100	596	*524	574	42	58
31	49	-----	696	218	-----	214	-----	357	------	643	41	------
Total	2,934	8,389	5,655	4,104	6,895	2,015	5,770	9,452	11,685	7,827	2,958	1,461
Mean	94.6	280	182	132	246	65.0	192	305	390	252	95.4	48.7
Cfsm	4.80	14.2	9.24	6.70	12.5	3.30	9.75	15.5	19.8	12.8	4.84	2.47
In.	5.54	15.84	10.68	7.75	13.02	3.80	10.89	17.84	22.06	14.78	5.58	2.76
Ac-ft	5,820	16,640	11,220	8,140	13,680	4,000	11,440	18,750	23,180	15,520	5,870	2,900

Calendar year 1954: Max 1,040 Min 41 Mean 182 Cfsm 9.24 In. 125.10 Ac-ft 131,400
Water year 1954-55: Max 1,780 Min 32 Mean 189 Cfsm 9.59 In. 130.54 Ac-ft 137,200

Peak discharge (base, 2,000 cfs).--Feb. 8 (12:15 a.m.) 3,230 cfs (6.15 ft).
* Discharge measurement made on this day.

Tolt River near Carnation, Wash.

Location.--Lat 47°41'45", long 121°49'30", in S½NE¼ sec. 31, T. 26 N., R. 8 E., on right bank 500 ft downstream from the forks, a quarter of a mile upstream from Stossel Creek, and 5 miles northeast of Carnation.

Drainage area.--79.7 sq mi.

Records available.--August 1928 to January 1932, September 1937 to September 1955. Prior to October 1951, published as "near Tolt."

Gage.--Water-stage recorder. Datum of gage is 348 ft above mean sea level (river-profile survey). Prior to Oct. 31, 1928, staff gage and Oct. 31, 1928, to Jan. 3, 1932, water-stage recorder, at site 350 ft upstream at datum 7.1 ft higher (by river-profile survey). Sept. 1 to Oct. 6, 1937, staff gage at present site at datum 1.64 ft higher.

Average discharge.--21 years (1928-31, 1937-55), 586 cfs (424,200 acre-ft per year).

Extremes.--Maximum discharge during year, 9,190 cfs Feb. 8 (gage height, 10.93 ft); minimum, 130 cfs Sept. 26 (gage height, 4.29 ft).
1928-32, 1937-55: Maximum discharge, 16,800 cfs Feb. 9, 1951 (gage height, 12.92 ft), from rating curve extended above 7,600 cfs on basis of slope-area determination of peak flow; minimum, 53 cfs Sept. 22, 23, 1951 (gage height, 3.84 ft).

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1929(M), 1930, 1938(M), 1939, 1943(M), 1945(M), 1951(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

4.3	132	6.0	740
4.5	175	7.0	1,480
5.0	315	8.0	2,650
5.5	495	9.2	4,810

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	225	192	523	1,250	782	318	1,080	491	*884	1,750	g1,220	175
2	217	*185	511	902	590	312	782	472	860	1,100	g854	171
3	233	177	446	729	503	299	610	484	1,190	902	g663	168
4	222	175	427	636	511	283	527	511	1,290	800	g562	164
5	209	695	438	585	540	271	507	585	1,290	702	g511	162
6	204	810	576	527	806	271	548	600	1,160	690	490	157
7	199	420	600	487	4,650	271	718	658	1,310	685	460	155
8	233	325	515	472	4,300	283	1,030	902	1,760	663	420	155
9	231	356	491	450	1,360	*325	2,160	690	2,070	702	*g384	153
10	659	332	487	420	927	332	1,490	712	2,000	702	g370	149
11	1,040	299	453	406	764	342	934	2,170	1,780	663	g352	147
12	615	804	*562	400	668	322	818	2,180	1,430	*685	g335	142
13	431	729	752	460	680	315	830	1,200	1,080	836	310	159
14	346	746	674	430	663	305	690	997	860	890	300	250
15	305	605	836	400	690	286	595	896	734	818	g283	*283
16	274	2,640	610	390	605	277	580	830	646	734	g277	259
17	274	1,920	548	380	562	265	544	824	680	558	g262	259
18	253	3,050	548	365	503	271	507	1,050	927	515	g259	202
19	350	2,000	535	350	468	262	484	1,630	920	468	g253	173
20	519	1,150	535	*352	442	253	*487	1,280	934	485	270	173
21	548	806	785	335	424	268	511	948	1,170	470	250	175
22	424	734	1,160	388	413	349	571	842	1,120	490	235	162
23	360	630	824	916	398	346	630	746	1,140	480	225	151
24	312	531	712	914	402	315	548	685	969	440	215	140
25	280	1,080	580	1,040	377	299	491	752	752	370	207	134
26	256	1,690	507	764	360	289	503	1,000	830	g395	199	132
27	242	1,490	457	620	339	293	484	1,020	914	g674	194	155
28	228	884	465	566	339	349	472	830	1,030	700	189	225
29	217	702	794	527	-	566	468	1,120	2,060	2,100	180	207
30	207	595	2,650	523	------	580	468	1,680	1,520	1,600	180	180
31	199	-----	1,990	752	-----	794	-----	2,080	------	1,800	177	------
Total	10,312	26,752	21,991	17,736	24,066	10,311	21,067	30,865	35,310	24,847	11,086	5,317
Mean	333	892	709	572	860	333	702	996	1,177	802	358	177
Cfsm	4.18	11.2	8.90	7.18	10.8	4.18	8.81	12.5	14.8	10.1	4.49	2.22
In.	4.81	12.48	10.26	8.28	11.23	4.81	9.83	14.40	16.48	11.59	5.17	2.48
Ac-ft	20,450	53,060	43,620	35,180	47,730	20,450	41,790	61,220	70,040	49,280	21,990	10,550

Calendar year 1954: Max 3,050 Min 172 Mean 628 Cfsm 7.88 In. 106.99 Ac-ft 454,800
Water year 1954-55: Max 4,650 Min 132 Mean 657 Cfsm 8.24 In. 111.82 Ac-ft 475,400

Peak discharge (base, 3,400 cfs).--Nov. 16 (11 a.m.) 5,370 cfs (9.46 ft); Nov. 18 (8:30 a.m.) 4,380 cfs (8.99 ft); Dec. 30 (6 p.m.) 4,200 cfs (8.90 ft); Feb. 8 (1 a.m.) 9,190 cfs (10.93 ft); May 11 (11:30 p.m.) 3,570 cfs (8.56 ft).

* Discharge measurement made on this day.

g Computed from once- or twice-daily staff-gage readings.

Note.--No gage-height record Jan. 12-19, July 21-25, 28-31, Aug. 6-8, 13, 14, 20-24; discharge estimated on basis of records for stations on nearby streams.

Snoqualmie River near Carnation, Wash.

Location.--Lat 47°39'55", long 121°55'30", in W½ sec. 9, T. 25 N., R. 7 E., on left bank 40 ft downstream from highway bridge, 1 mile northwest of Carnation, and 2 miles downstream from Tolt River.

Drainage area.--608 sq mi.

Records available.--October 1928 to September 1955. Prior to October 1951, published as "near Tolt."

Gage.--Water-stage recorder. Datum of gage is at mean sea level, unadjusted. Prior to Dec. 20, 1933, chain or wire-weight gage on old bridge, 100 ft upstream at datum 42.96 ft higher. Dec. 20, 1933, to Sept. 30, 1939, water-stage recorder at present site at datum 42.96 ft higher than present datum. Auxiliary water-stage recorder 1¼ miles upstream from base gage.

Average discharge.--27 years, 3,707 cfs (2,684,000 acre-ft per year).

Extremes.--Maximum discharge during year, 25,300 cfs Feb. 8 (elevation, 55.33 ft); minimum, 461 cfs Sept. 13 (elevation, 44.43 ft Sept. 13); minimum daily, 874 cfs Sept. 26. 1928-55: Maximum discharge, 59,500 cfs Feb. 27, 1932 (elevation, 59.88 ft, from graph based on gage readings); maximum elevation observed, 59.93 ft Nov. 13, 1932; minimum discharge, 239 cfs Aug. 21, 1945, but may have been less sometime during period of faulty intake action Sept. 13 or 14, 1949; minimum elevation recorded, 43.30 ft Sept. 11, 1930; minimum daily discharge, 396 cfs Sept. 24, 1938.

Remarks.--Records excellent except those for period of no gage-height record, which are fair. Several small diversions for irrigation and domestic use above station. Low flow diverted for operation of powerplant at Snoqualmie Falls but returned to river above station. Some pondage at Snoqualmie Falls and some diurnal fluctuation caused by powerplant.

Revisions (water years).--WSP 1246: Drainage area. WSP 1286: 1932(M). WSP 1316: 1933(M).

Rating tables, water year 1954-55 (elevation, in feet, and discharge, in cubic feet per second)
(Fall used as a factor Feb. 7-9)

Oct. 1-11		Oct. 11 to Sept. 30			
45.2	1,030	44.9	820	47.0	3,690
45.5	1,340	45.2	1,100	48.0	5,610
46.0	1,950	45.6	1,540	50.0	10,200
		46.0	2,060	52.0	15,600
		46.5	2,820	54.5	24,600

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,270	*1,300	3,380	8,540	3,920	2,160	5,920	2,770	*5,800	10,400	a6,000	1,150
2	1,200	1,180	3,020	6,110	3,280	2,020	5,070	2,820	5,190	7,930	a4,500	1,090
3	1,190	1,090	2,710	4,770	2,850	2,000	4,050	2,720	6,030	6,160	a4,000	1,060
4	1,140	1,020	2,500	4,000	2,690	1,880	3,460	2,800	7,330	5,510	a3,600	1,060
5	1,180	1,650	2,440	3,580	3,040	1,740	3,090	3,140	8,200	4,930	a3,300	1,040
6	1,040	3,870	2,920	3,180	3,160	1,790	3,110	3,420	7,790	4,730	a3,100	1,060
7	1,040	2,600	3,090	2,900	10,600	1,740	3,740	3,670	8,370	4,720	a2,900	973
8	1,080	2,050	2,820	2,680	23,200	*1,760	4,730	4,880	10,200	4,640	a2,800	1,020
9	1,170	1,880	2,560	2,530	14,100	1,880	8,470	4,300	12,700	4,910	*2,690	919
10	1,130	1,840	2,560	2,350	7,130	2,280	9,450	3,980	14,200	5,230	2,530	955
11	3,550	1,760	2,440	2,190	5,430	2,580	6,600	7,110	13,600	5,070	2,460	910
12	3,820	2,300	*2,440	2,140	4,540	2,480	5,510	12,000	12,000	*5,250	2,340	910
13	2,820	3,350	3,420	2,290	4,240	2,400	5,430	8,880	9,620	6,280	2,160	883
14	2,240	3,820	3,160	2,240	4,010	2,290	4,680	7,040	7,610	7,440	1,980	1,240
15	1,980	3,560	3,910	2,240	4,110	2,130	4,030	6,050	6,300	7,470	1,840	*1,380
16	1,720	7,610	3,380	2,200	3,730	2,000	3,850	5,390	5,290	7,000	1,720	1,420
17	1,660	8,800	2,870	2,230	3,470	1,830	3,650	5,050	4,950	5,510	1,750	1,610
18	1,710	13,100	2,710	2,120	3,130	1,800	3,350	5,690	5,150	4,620	1,670	1,490
19	1,720	13,100	2,600	1,950	2,890	1,790	3,090	8,780	5,970	3,980	1,650	1,300
20	2,530	9,350	2,470	*1,950	2,710	1,690	*3,010	9,280	6,070	3,910	1,670	1,130
21	3,580	6,070	2,820	1,830	2,550	1,740	3,040	7,240	8,070	3,890	1,610	1,150
22	3,060	4,990	5,390	1,920	2,500	2,500	3,440	5,970	8,950	3,940	1,490	1,160
23	2,520	4,510	4,490	3,370	2,410	2,660	3,980	5,170	8,590	4,030	1,430	1,080
24	2,160	3,690	4,260	4,720	2,470	2,440	3,670	4,660	7,090	3,920	1,290	964
25	1,960	5,170	3,650	*5,010	2,410	2,190	3,210	4,790	5,740	3,490	1,320	883
26	1,720	7,470	3,180	4,110	2,290	2,060	3,140	5,290	5,570	3,310	1,330	874
27	1,550	9,350	2,790	3,420	2,160	2,000	3,090	6,090	6,180	4,410	1,220	937
28	1,520	6,240	2,580	3,090	2,120	2,070	2,900	5,070	6,410	4,220	1,220	1,230
29	1,440	4,810	3,740	2,850	-	2,920	2,820	5,510	8,920	a9,800	1,120	1,480
30	1,290	3,960	7,160	2,740	------	3,580	2,680	8,970	8,250	a8,600	1,190	1,400
31	1,230	-----	11,600	3,080	-----	4,160	-----	7,840	------	a9,200	1,120	------
Total	57,120	141,490	109,060	98,330	131,140	68,560	126,240	175,970	236,140	174,500	69,000	33,738
Mean	1,843	4,716	3,518	3,172	4,684	2,212	4,208	5,676	7,871	5,629	2,226	1,125
Cfsm	3.03	7.76	5.79	5.22	7.70	3.64	6.92	9.34	12.9	9.26	3.66	1.85
In.	3.49	8.65	6.67	6.01	8.02	4.19	7.72	10.76	14.44	10.67	4.22	2.06
Ac-ft	113,300	280,600	216,300	195,000	260,100	136,000	250,400	349,000	468,400	346,100	136,900	66,920

Calendar year 1954: Max 13,100 Min 1,020 Mean 3,963 Cfsm 6.52 In. 88.46 Ac-ft 2,869,000
Water year 1954-55: Max 23,200 Min 874 Mean 3,894 Cfsm 6.40 In. 86.90 Ac-ft 2,819,000

Peak discharge (base, 16,000 cfs).--Feb. 8 (5 p.m.) 25,300 cfs (55.33 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.

Pilchuck River near Granite Falls, Wash.

Location.--Lat 48°03'15", long 121°57'25", in SE¼ sec. 30, T. 30 N., R. 7 E., on right bank 200 ft upstream from county road bridge and 2 miles southeast of Granite Falls.

Drainage area.--53.5 sq mi.

Records available.--May to October 1911, January 1943 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 340 ft (from topographic map). Prior to Oct. 13, 1911, staff gage at approximately same site at different datum. Jan. 14, 1943, to July 9, 1946, several staff gages within 150 ft of present site at same datum.

Average discharge.--12 years, 340 cfs (246,100 acre-ft per year).

Extremes.--Maximum discharge during year, 5,510 cfs Feb. 8 (gage height, 8.17 ft); minimum, 56 cfs Sept. 11, 12, 13, 26 (gage height, 2.34 ft).
1911, 1943-55: Maximum discharge, 10,500 cfs Oct. 25, 1945 (gage height, 10.4 ft, from graph based on gage readings), from rating curve extended above 4,100 cfs on basis of slope-area determination at gage height 8.00 ft; minimum, 27 cfs Oct. 19, 20, 1952; minimum gage height, 1.89 ft Aug. 23, 24, 1945.

Remarks.--Records good. City of Snohomish diverts about 5 cfs, 5 miles above station, for municipal use. Slight regulation at low flow from manipulation of diversion gates.

Revisions (water years).--WSP 1286: Drainage area, 1943(M), 1944, 1945(M), 1946, 1947-48(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.2	48	4.0	590
2.4	72	4.5	900
2.7	123	5.0	1,300
3.0	194	6.0	2,260
3.5	365	7.0	3,550

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	99	82	361	1,380	676	206	1,170	333	381	738	773	66
2	94	78	308	900	464	191	858	318	361	423	397	63
3	90	75	271	*585	377	184	652	337	504	357	281	62
4	89	85	248	454	393	168	522	361	482	314	232	60
5	86	1,100	271	389	418	158	468	*369	464	268	200	59
6	82	1,030	385	329	668	158	504	341	401	251	184	58
7	*78	401	490	295	2,170	156	600	353	418	229	154	58
8	106	274	353	271	2,530	166	774	436	490	214	149	58
9	94	278	310	261	843	214	1,470	329	*550	223	136	58
10	138	264	337	235	*550	351	963	349	518	217	129	58
11	910	223	295	220	432	450	640	681	459	203	121	57
12	371	288	447	238	365	401	635	682	385	214	117	57
13	217	257	550	321	365	349	625	513	303	245	106	63
14	171	281	450	310	397	303	472	610	248	245	101	106
15	144	285	560	278	540	268	389	540	220	226	99	112
16	129	2,630	432	281	423	242	377	432	200	211	97	110
17	117	1,190	369	345	353	223	361	389	211	173	94	92
18	110	*1,270	349	306	299	223	325	450	377	161	*90	75
19	121	1,260	318	278	264	214	314	590	306	142	89	71
20	166	734	292	261	245	206	329	472	292	*142	96	74
21	186	490	356	235	226	211	373	345	345	151	84	96
22	149	513	424	242	223	447	432	288	314	151	80	72
23	149	423	407	954	226	*365	536	264	397	149	76	66
24	127	133	410	732	242	303	508	248	337	136	75	60
25	115	1,300	349	970	235	264	446	274	251	134	76	58
26	108	1,470	299	590	229	245	432	394	338	154	74	59
27	99	1,120	254	428	208	248	410	381	454	321	72	80
28	96	851	245	365	214	299	361	288	526	261	68	112
29	89	590	*872	318	-	595	333	382	730	1,130	68	*123
30	86	450	2,200	306	------	600	314	712	706	604	67	94
31	82	------	1,720	469	------	712	------	518	------	947	67	------
Total	4,698	19,625	14,730	13,546	14,575	9,120	16,593	12,979	11,968	9,334	4,452	2,237
Mean	152	654	475	437	521	294	553	419	399	301	144	74.6
Ac-ft	9,320	38,930	29,220	26,870	28,910	18,090	32,910	25,740	23,740	18,510	8,830	4,440

Calendar year 1954: Max 2,630 Min 66 Mean 362 Ac-ft 262,400
Water year 1954-55: Max 2,630 Min 57 Mean 367 Ac-ft 265,500

Peak discharge (base, 2,500 cfs).--Nov. 16 (12 m.) 5,530 cfs (8.18 ft); Nov. 25 (1 p.m.) 2,500 cfs (6.22 ft); Dec. 30 (5:30 p.m.) 3,720 cfs (7.11 ft); Feb. 8 (1:30 a.m.) 5,510 cfs (8.17 ft).
* Discharge measurement made on this day.

Little Pilchuck Creek near Lake Stevens, Wash.

Location.--Lat 48°02'00", long 122°03'00", in NW¼NW¼ sec. 4, T. 29 N., R. 6 E., on right bank just downstream from highway crossing, 1½ miles northeast of Lake Stevens and 2 miles upstream from Stevens Creek.

Drainage area.--17.5 sq mi.

Records available.--June 1946 to September 1955 (discharge measurements only, October 1951 to August 1952).

Gage.--Water-stage recorder and wooden control. Altitude of gage is 200 ft (from topographic map).

Average discharge.--8 years (1946-51, 1952-55), 32.5 cfs (23,530 acre-ft per year).

Extremes.--Maximum discharge during year, 382 cfs Jan. 1 (gage height, 5.11 ft); minimum, 1.8 cfs Sept. 13 (gage height, 0.83 ft).
1946-55: Maximum discharge, that of Jan. 1, 1955; minimum, 1.0 cfs Aug. 18, 24-26, 1951, Aug. 22, Sept. 9-11, 13, 15, 16, 18-22, 1953; minimum gage height, 0.70 ft Aug. 18, 24-26, 1951.

Remarks.--Records good. Several small diversions above station for farm use. No regulation.

Revisions.--WSP 1286: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Mar. 4, 5)

Oct. 1 to Dec. 31

0.9	3.2	1.3	13.5
1.0	5.1	1.6	26
1.1	7.5	1.9	40

Note.--Same as following table above 1.9 ft.

Jan. 1 to Sept. 30

0.85	2.0	2.2	55
.9	2.5	2.6	79
1.0	4.1	3.0	112
1.1	6.2	3.5	161
1.3	11.5	4.0	222
1.6	25	4.5	292
1.9	40	5.0	365

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.7	4.5	57	298	73	42	50	24	49	71	22	2.3
2	4.5	4.7	46	317	65	40	71	21	40	52	17	2.0
3	4.3	4.7	38	198	54	36	54	22	38	42	12.5	2.0
4	4.3	7.8	34	124	54	30	44	20	34	37	9.7	2.0
5	4.1	53	36	98	56	26	38	18	31	29	8.1	2.0
6	4.1	98	54	*80	62	26	32	16.5	27	22	7.3	2.0
7	3.7	66	62	65	78	28	29	15.5	22	17.5	5.9	2.2
8	3.9	46	57	55	131	30	29	16.5	17.5	16.5	4.9	2.3
9	3.9	45	54	48	123	38	32	14.5	14.5	16	4.5	2.2
10	4.2	42	58	41	88	53	32	14	11.5	14	3.9	2.0
11	13	35	48	36	66	73	36	*14.5	9.4	12.5	3.5	2.0
12	10.5	42	56	36	54	70	54	18	8.6	10.5	3.7	2.0
13	*8.5	41	62	47	46	66	50	34	8.3	9.2	3.5	2.5
14	7.2	43	58	58	46	70	42	54	7.8	7.8	3.2	2.9
15	6.5	46	106	54	64	64	39	40	7.3	6.8	2.9	2.8
16	5.8	158	88	54	54	55	35	32	5.9	6.2	2.9	3.0
17	5.3	212	68	65	*49	49	31	28	5.7	5.7	2.8	2.9
18	5.1	163	51	57	42	42	28	24	7.6	5.1	2.6	2.8
19	5.3	186	42	47	36	38	31	24	7.8	4.7	2.6	2.5
20	5.5	150	37	46	32	35	28	25	6.8	4.3	2.6	2.6
21	5.8	101	34	47	30	35	28	21	5.7	3.7	2.5	2.8
22	5.8	81	31	43	30	38	37	18.5	5.1	3.5	2.4	2.6
23	5.5	65	44	60	28	39	54	17	*7.8	3.2	*2.4	2.5
24	5.3	*52	54	64	29	37	65	14.5	8.1	3.2	2.5	2.4
25	5.1	109	46	70	32	*34	53	13	7.1	3.4	2.5	2.3
26	4.9	130	44	60	33	32	48	17	9.5	4.5	2.5	2.5
27	4.9	126	41	50	32	30	40	19	19.5	*5.7	2.4	3.2
28	5.1	144	40	42	37	28	34	15.5	26	5.5	2.3	3.5
29	4.7	107	120	37	-	31	30	16.5	38	9.8	2.3	3.9
30	4.7	76	222	33	------	30	26	58	43	20	2.3	3.7
31	4.7	-----	257	36	------	28	-----	65	------	23	2.3	------
Total	170.9	2,438.5	2,045	2,366	1,524	1,273	1,200	750.5	529.5	475.3	152.5	76.4
Mean	5.51	81.3	66.0	76.3	54.4	41.1	40.0	24.2	17.6	15.3	4.92	2.55
Cfsm	0.315	4.65	3.77	4.36	3.11	2.35	2.29	1.38	1.01	0.874	0.281	0.146
In.	0.36	5.18	4.35	5.03	3.24	2.71	2.55	1.59	1.13	1.01	0.32	0.16
Ac-ft	339	4,840	4,060	4,690	3,020	2,520	2,380	1,490	1,050	943	302	152

Calendar year 1954: Max 257 Min 1.6 Mean 37.5 Cfsm 2.14 In. 29.06 Ac-ft 27,140
Water year 1954-55: Max 317 Min 2.0 Mean 35.6 Cfsm 2.03 In. 27.63 Ac-ft 25,790

Peak discharge (base, 150 cfs).--Nov. 17 (3 a.m.) 229 cfs (4.05 ft); Nov. 28 (7 a.m.) 154 cfs (3.44 ft); Jan. 1 (10:30 p.m.) 382 cfs (5.11 ft).
* Discharge measurement made on this day.

Snohomish River at Snohomish, Wash.

Location.--Lat 47°54'40", long 122°05'50", in SE¼ sec. 13, T. 28 N., R. 5 E., on downstream end of drawrest of bridge on State Highway 1A in Snohomish.

Drainage area.--1,720 sq mi, approximately.

Records available.--February 1941 to September 1955 (high-water discharges only). High-water elevations prior to 1932 and high-water profiles on flood peaks since that time are available at the Seattle office of Corps of Engineers.

Gage.--Water-stage recorder. Datum of gage is 10 ft below mean sea level, datum of 1929. Auxiliary water-stage recorder 2½ miles downstream from base gage.

Extremes.--Maximum discharge during year, 54,800 cfs Feb. 8 (gage height, 27.40 ft).
1941-55: Maximum discharge, 136,000 cfs (revised) Feb. 10, 1951 (gage height, 30.12 ft).

Revisions.--The maximum discharge for the water year 1951 has been revised to 136,000 cfs Feb. 10, 1951 (gage height, 30.12 ft), superseding figure published in WSP 1216.

Maximum stage known, 35 ft at base gage and 31 ft at auxiliary gage in 1906, from flood profile furnished by Corps of Engineers.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Large diurnal fluctuation because of tides. No appreciable regulation or diversion at stages for which discharges are published.

Revisions (water years).--WSP 1152: 1948(M). WSP 1216: Drainage area. WSP 1316: 1947(M).

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-	10,400	25,500	-		13,400	-	15,000	27,300	20,000	
2	-	-	-	18,900	-		13,900	-	12,400	21,600	15,600	
3	-	-	-	*13,800	-		10,500	-	13,300	16,400	11,700	
4	-	-	-	11,100	-		-	-	16,600	15,100	a10,500	
5	-	-	-	-	-		-	-	19,800	13,700	a10,000	
6	-	13,100	-	-	-		-	-	20,100	12,700	-	
7	-	-	-	-	15,300		-	-	21,500	12,500	-	
8	-	-	-	-	49,600		10,400	10,900	26,400	12,300	-	
9	-	-	-	-	*38,400		17,700	11,000	34,400	13,100	-	
10	-	-	-	-	24,000		26,400	-	40,500	13,900	-	
11	10,700	-	-	-	a16,000		19,300	13,400	41,400	13,600	-	
12	13,900	-	-	-	a12,000		14,100	28,000	39,500	14,100	-	
13	-	-	-	-	a11,000		13,700	24,400	33,300	17,400	-	
14	-	-	-	-	a10,500		11,600	18,700	25,100	21,400	-	
15	-	-	10,500	-	a10,500		-	15,300	19,600	23,300	-	
16	-	17,700	-	-	a10,000		-	13,300	15,400	21,400	-	
17	-	28,600	-	-	-		-	11,900	13,900	17,600	-	
18	-	36,200	-	-	-		-	12,700	13,700	13,600	-	
19	-	40,700	-	-	-		-	19,200	16,200	11,900	-	
20	-	34,500	-	-	-		-	24,500	16,200	11,500	-	
21	-	22,200	-	-	-		-	20,000	21,900	11,500	-	
22	-	16,600	11,200	-	-		-	15,800	26,800	11,500	-	
23	-	14,800	11,900	-	-		-	13,400	*25,600	11,800	-	
24	-	11,200	11,500	-	-		10,100	12,300	21,600	11,300	-	
25	-	12,900	10,200	10,900	-		-	12,200	16,800	-		
26	-	23,300	-	-	-		-	13,400	15,100	-	-	
27	-	33,100	-	-	-		-	14,500	16,900	10,300	-	
28	-	23,000	-	-	-		-	12,700	17,600	11,600	-	
29	-	16,000	-	-	-		-	12,900	23,300	12,700	-	
30	-	12,500	14,600	-	------		-	21,200	22,600	19,700	-	
31	-	------	28,700	-	------		------	20,400	------	21,200	-	------
Total	-	-	-	-	-		-	-	662,500	-	-	
Mean	-	-	-	-	-		-	-	22,080	-	-	
Ac-ft	-	-	-	-	-		-	-	1,314,000	-	-	

Calendar year	: Max	Min	Mean	Ac-ft
Water year	: Max	Min	Mean	Ac-ft

Peak discharge (base, 40,000 cfs).--Nov. 18 (5:30 p.m.) 43,500 cfs (25.31 ft); Feb. 8 (11 a.m.) 54,800 cfs (27.40 ft); June 11 (9:30 a.m.) 42,500 cfs (24.84 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for Snoqualmie River near Carnation and Skykomish River near Gold Bar.

Quilceda Creek near Marysville, Wash.

Location.--Lat 48°06'20", long 122°09'40", in NE¼NE¼ sec. 9, T. 30 N., R. 5 E., on right bank 300 ft downstream from Middle Fork and 3½ miles north of Marysville.

Drainage area.--13.9 sq mi.

Records available.--June 1946 to September 1955.

Gage.--Water-stage recorder and wooden control. Datum of gage is 28.2 ft above mean sea level (stadia traverse).

Average discharge.--9 years, 24.9 cfs (18,030 acre-ft per year).

Extremes.--Maximum discharge during year, 229 cfs Dec. 31 (gage height, 6.68 ft); minimum, 4.6 cfs Sept. 4, 5, 6, 13 (gage height, 1.57 ft).
1946-55: Maximum discharge, that of Dec. 31, 1954; minimum, 2.2 cfs July 16, 1951; minimum gage height, 1.49 ft Sept. 19, 1953.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Several diversions above station for irrigation and domestic use. No regulation.

Revisions (water years).--WSP 1286: 1950, drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 30				Dec. 31 to Sept. 30			
1.7	6.3	4.0	80	1.5	3.7	3.0	43
2.0	12.5	4.5	103	1.6	5.4	3.5	58
2.5	26	5.0	128	1.8	9.8	4.0	78
3.0	42	6.0	188	2.0	15	4.5	103
3.5	60			2.3	23	5.0	128
				2.6	31	6.1	194

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.4	8.0	37	186	58	40	43	22	38	37	14.5	5.1
2	7.4	8.0	29	159	46	36	47	20	34	27	11.5	4.9
3	7.4	8.0	25	102	39	32	39	21	31	28	10	4.7
4	7.2	10	23	72	44	29	32	19	30	26	9.8	4.7
5	7.2	48	26	74	47	27	28	17	26	21	9.8	4.6
6	7.6	64	50	*58	60	26	26	16	23	18	10	4.7
7	7.4	42	53	50	75	27	23	15	20	15.5	8.1	4.9
8	7.6	33	43	46	108	28	25	15	17.5	14.5	7.6	5.1
9	7.4	40	43	42	76	40	27	*13.5	15	14	7.2	5.1
10	7.8	38	47	39	65	52	28	13	13.5	14	6.8	4.9
11	*11.5	32	36	36	52	70	30	*13.5	12.5	13	6.6	5.1
12	11.5	43	48	38	45	64	50	16.5	11.5	11.5	6.8	4.9
13	9.8	39	51	64	40	60	42	29	11.5	10.5	6.4	5.8
14	9.2	40	50	67	38	66	37	35	11	9.6	6.0	6.0
15	8.8	46	82	57	*67	54	33	28	10.5	9.1	5.8	6.0
16	8.6	139	55	54	53	45	30	24	10	8.8	5.6	6.0
17	8.0	102	42	64	45	38	28	22	9.6	8.6	5.6	5.6
18	8.2	78	34	50	38	34	27	21	10.5	8.1	5.1	5.4
19	9.0	94	28	42	34	32	29	21	10	8.4	5.2	5.4
20	8.4	67	26	42	31	31	26	22	12.5	7.4	5.2	5.8
21	8.4	48	24	42	29	30	25	19	*9.3	7.2	5.1	5.8
22	8.8	*46	22	40	28	34	30	17	9.4	7.0	*5.1	6.0
23	8.6	38	44	58	27	36	42	15.5	*19	6.8	5.1	5.1
24	8.4	30	58	56	29	32	60	14.5	13	6.8	5.2	5.2
25	8.4	61	45	58	33	*28	48	14	11.5	*7.0	5.2	5.1
26	8.2	70	47	48	31	26	40	16	15	9.1	5.2	5.2
27	8.2	74	41	42	30	25	33	18	18	9.8	5.2	6.2
28	8.0	78	39	38	36	25	29	16	23	9.3	5.1	6.4
29	8.2	61	118	35	-	26	27	17	26	13	5.1	6.0
30	8.2	47	163	32	------	24	24	50	32	18	5.2	5.6
31	8.2	-----	194	37	-----	24	-----	70	------	15.5	5.1	------
Total	259.0	1,532.0	1,623	1,828	1,306	1,141	1,008	670.5	533.8	419.5	210.2	161.3
Mean	8.35	51.1	52.4	59.0	46.6	36.8	33.6	21.6	17.8	13.5	6.78	5.38
Cfsm	0.601	3.68	3.77	4.24	3.35	2.65	2.42	1.55	1.28	0.971	0.488	0.387
In.	0.69	4.10	4.34	4.89	3.49	3.05	2.70	1.79	1.43	1.12	0.56	0.43
Ac-ft	514	3,040	3,220	3,630	2,590	2,260	2,000	1,330	1,060	832	417	320

Calendar year 1954: Max 194 Min 5.3 Mean 29.6 Cfsm 2.13 In. 28.91 Ac-ft 21,440
Water year 1954-55: Max 194 Min 4.6 Mean 29.3 Cfsm 2.11 In. 28.59 Ac-ft 21,210

Peak discharge (base, 110 cfs).--Nov. 16 (10 a.m.) 183 cfs (5.92 ft); Nov. 19 (10 a.m.) 110 cfs (4.88 ft); Dec. 31 (1 a.m.) 229 cfs (6.68 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Feb. 10-14, Feb. 18 to Mar. 24, Apr. 9 to May 8, May 10, 17-23, 25-31, June 2; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Lake Goodwin near Silvana, Wash.

Location.--Lat 48°08'35", long 122°18'00", in NW¼SE¼ sec. 28, T. 31 N., R. 4 E., on west side of lake, 4.7 miles southwest of Silvana and 6 miles north of channel connecting Lake Goodwin and Lake Shoecraft. Prior to Feb. 15, 1955, at site 0.8 mile north of present site.

Drainage area.--4.51 sq mi.

Records available.--April 1953 to September 1955.

Gage.--Staff gage. Altitude of gage is 321 ft (from topographic map). Prior to Feb. 15, 1955, at site 0.8 mile north of present site at datum 3.00 ft higher prior to Oct. 1, 1954, and at present datum thereafter.

Extremes.--Maximum gage height observed during year, 6.42 ft Dec. 30; minimum observed, 5.46 ft Oct. 8.
1953-55: Maximum gage height observed, 6.61 ft (present datum) Jan. 14, 1954; minimum observed, 5.12 ft (present datum) Sept. 25-28, 1953.

Remarks.--Level of Lake Goodwin is controlled by flashboards in a wooden flume at mouth of Lake Shoecraft. No known diversion.

Gage height, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-			-	6.34	6.34	6.16	6.20	6.10	5.96	5.64
2	-	-			-	6.36	6.34	6.14	6.20	6.10	5.96	5.64
3	-	-			-	6.38	6.32	6.14	6.20	6.10	5.94	5.62
4	-	-			-	6.38	6.32	6.14	6.20	6.10	5.94	5.62
5	-	-			-	6.36	6.30	6.12	6.20	6.10	5.92	5.60
6	-	5.60		6.50	-	6.34	6.28	6.10	6.18	6.08	5.92	5.58
7	-	-			-	6.32	6.26	6.10	6.18	6.08	5.90	5.58
8	5.46	-			-	6.32	6.26	6.08	6.16	6.08	5.90	5.58
9	-	-			-	6.34	6.24	6.08	6.14	6.08	5.88	-
10	-	5.60			-	6.36	6.24	6.06	6.12	6.06	5.86	-
11	-	-			-	6.36	6.24	6.06	6.10	6.06	5.86	-
12	-	-			6.38	6.36	6.28	6.10	6.08	6.06	5.84	-
13	5.54	-			-	6.36	6.30	6.16	6.06	6.04	5.82	-
14	-	-			-	6.36	6.30	6.18	6.04	6.04	5.82	5.54
15	-	-			6.40	6.36	6.30	6.18	6.02	6.04	5.80	5.54
16	-	-			6.38	6.36	6.30	6.18	6.00	6.02	5.80	5.54
17	-	-			6.38	6.34	6.28	6.18	6.00	6.00	5.78	5.52
18	5.50	-			6.36	6.34	6.26	6.16	6.00	5.98	5.78	5.52
19	-	5.94			6.36	6.32	6.26	6.18	6.00	5.96	5.76	5.52
20	-	-			6.36	6.30	6.26	6.18	5.98	5.94	5.76	5.52
21	-	-			6.34	6.30	6.26	6.16	5.98	5.94	5.74	5.50
22	-	-			6.32	6.30	6.26	6.14	5.98	5.92	5.74	5.50
23	-	5.92			6.32	6.30	6.26	6.12	6.04	5.92	5.72	5.50
24	-	-			6.32	6.30	6.26	6.12	6.04	5.90	5.70	5.50
25	-	-			6.32	6.29	6.24	6.10	6.04	5.87	5.70	5.48
26	-	-			6.32	6.28	6.22	6.10	6.04	5.90	5.68	5.48
27	-	5.93			6.30	6.28	6.20	6.10	6.06	5.90	5.68	5.48
28	-	-			6.34	6.28	6.18	6.10	6.08	5.90	5.66	5.48
29	-	5.98			-	6.28	6.18	6.12	6.08	5.92	5.66	5.48
30	-	-	6.42		-------	6.26	6.16	6.20	6.10	5.94	5.66	5.48
31	-	-------			-------	6.24	-------	6.20	-------	5.94	5.64	-------

Note.--Gage read once daily at various times prior to Feb. 15; between 3:30 p.m. and 6 p.m. thereafter.

Lake Shoecraft near Tulalip, Wash.

Location.--Lat 48°07'35", long 122°18'15", in SW¼ sec. 33, T. 31 N., R. 4 E., on piling 12 ft shoreward from boathouse on southwest shore, a quarter of a mile east of outlet, and 4¼ miles north of Tulalip.

Drainage area.--5.57 sq mi.

Records available.--April 1953 to September 1955.

Gage.--Staff gage. Altitude of gage is 324 ft (from topographic map).

Extremes.--Maximum gage height observed during year, 2.28 ft Jan. 5; minimum observed, 1.29 ft Sept. 26.
1953-55: Maximum gage height observed, 2.36 ft Jan. 8-10, 1954; minimum observed, 0.96 ft Sept. 23-27, 1953.

Remarks.--Level of Lake Shoecraft is controlled by planks in wooden flume at outlet. No known diversion.

Gage height, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.35	-	1.80	2.17	2.13	2.11	-	1.96	2.00	1.93	1.77	1.45
2	1.35	-	1.80	2.22	2.11	2.11	2.10	1.95	2.00	1.85	-	1.45
3	1.34	-	1.80	2.26	2.10	2.12	2.10	1.95	2.01	1.93	-	1.44
4	1.33	-	1.79	2.26	2.10	2.12	2.09	1.94	2.01	1.92	-	1.43
5	1.32	-	1.81	2.28	2.09	2.11	2.08	1.93	2.00	1.91	-	1.42
6	1.31	-	1.89	2.26	2.10	2.11	2.07	1.91	1.99	1.90	1.74	1.40
7	1.31	-	1.88	2.25	2.14	2.09	2.07	1.90	1.98	1.89	1.73	1.39
8	1.32	1.50	1.89	2.25	2.17	2.11	2.06	1.90	1.96	1.88	1.72	1.39
9	1.33	1.53	1.89	2.25	2.16	2.11	2.07	1.89	1.95	1.87	1.70	1.38
10	1.34	1.54	1.89	2.24	2.17	2.09	2.06	1.88	1.93	1.88	1.69	1.37
11	1.37	1.56	1.89	-	2.16	2.11	2.06	1.88	1.91	1.87	1.67	1.36
12	1.39	1.59	1.89	-	2.15	2.11	2.09	1.92	1.88	1.86	1.66	1.36
13	1.39	1.59	1.90	-	2.14	2.12	2.09	1.96	1.87	1.85	1.64	1.36
14	-	1.62	1.90	-	2.14	2.14	2.10	1.98	-	1.84	1.63	1.35
15	-	1.64	1.96	2.22	2.17	2.14	2.10	1.98	-	1.82	1.62	1.35
16	-	1.70	1.94	2.22	2.16	2.13	2.10	1.98	-	1.80	1.81	1.35
17	-	1.75	1.94	2.22	2.16	2.11	2.09	1.97	-	1.80	1.60	1.34
18		1.77	1.92	2.21	2.15	2.12	2.08	1.96	1.82	1.79	1.59	1.33
19	1.39	1.81	1.91	2.19	2.12	2.12	2.07	1.98	1.80	1.78	1.58	1.32
20	1.38	1.81	1.90	2.18	2.11	2.09	2.06	1.97	1.80	1.76	1.57	1.32
21	1.37	1.80	1.90	2.18	2.10	2.09	2.05	1.96	1.79	1.75	1.56	1.32
22	1.37	1.80	1.89	2.17	2.09	2.10	2.07	1.96	1.78	1.74	1.55	1.32
23	1.37	1.80	1.92	2.19	2.08	2.09	2.08	1.94	1.87	1.73	1.54	1.31
24	1.36	1.79	1.93	2.18	2.08	2.08	2.08	1.93	1.87	1.71	1.52	1.31
25	1.36	1.82	1.93	2.17	2.09	2.08	2.05	-	1.86	1.70	1.51	1.30
26	1.35	1.81	1.95	2.16	2.09	2.07	2.05	-	1.87	1.71	1.50	1.29
27	1.35	1.80	1.95	2.15	2.08	2.06	2.01	1.91	1.86	1.72	1.50	-
28	-	1.80	1.96	2.14	2.11	2.06	2.00	1.91	1.89	1.72	1.49	-
29	-	1.81	2.03	2.13	-	2.07	1.99	1.94	1.90	1.73	1.48	-
30	-	1.81	2.06	2.12	-------	2.06	1.98	1.99	1.92	1.76	1.47	-
31	-	-------	2.13	2.11	-------	-	-------	2.01	-------	1.76	1.46	-------

Note.--Gage read once daily usually between 6 a.m. and 9 a.m.

South Fork Stillaguamish River near Granite Falls, Wash.

Location.--Lat 48°06'10", long 121°56'40", in SW¼NW¼ sec. 8, T. 30 N., R. 7 E., on right bank a quarter of a mile upstream from county road bridge, 1½ miles upstream from Canyon Creek, and 2 miles northeast of Granite Falls.

Drainage area.--119 sq mi.

Records available.--December 1902 to July 1903 (gage heights only), July 1928 to September 1955. Published as "at Robe" 1902-3.

Gage.--Water-stage recorder. Altitude of gage is 310 ft (from river-profile map). Prior to Aug. 31, 1928, staff gage at site 8 miles upstream at different datum.

Average discharge.--27 years, 1,044 cfs (755,800 acre-ft per year).

Extremes.--Maximum discharge during year, 16,300 cfs Feb. 8 (gage height, 13.29 ft); minimum, 166 cfs Sept. 26 (gage height, 3.49 ft).
1928-55: Maximum discharge, 38,800 cfs Feb. 26, 1932 (gage height, 19.7 ft, from graph based on gage readings), from rating curve extended above 15,000 cfs; minimum, 55 cfs Sept. 23, 24, 1938; minimum gage height, 2.99 ft Aug. 19-21, 1941.

Remarks.--Records excellent. No regulation or diversion above station.

Revisions (water years).--WSP 902: 1939. WSP 1286: 1929-31(M), 1932, 1933-34(M), 1935, 1937(M), 1938-39(P), 1940-41(M), 1943(P), 1944(M), 1945(P), 1946(M), 1947(P), 1948(M), 1951(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

3.4	144	5.5	1,290
3.6	195	6.0	1,780
3.9	297	7.0	2,980
4.2	426	8.0	4,430
4.6	640	9.0	6,130
5.0	895	10.0	8,070

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	252	267	832	2,620	1,500	355	2,340	682	1,370	2,420	2,660	256
2	232	252	718	1,450	972	342	1,340	700	1,270	1,510	1,460	242
3	219	242	640	1,020	754	326	944	706	1,410	1,290	1,030	245
4	213	252	574	832	754	293	773	780	1,800	1,220	895	249
5	204	4,210	700	730	780	293	718	*951	2,090	1,090	846	249
6	*198	3,290	1,240	646	1,070	297	839	980	1,970	1,050	839	256
7	204	1,200	1,070	580	6,760	282	1,240	1,100	2,280	1,020	832	249
8	1,020	806	792	536	6,730	293	2,100	1,600	2,970	1,020	748	235
9	598	860	694	515	1,920	334	4,990	1,190	*3,640	1,140	628	219
10	955	812	688	474	*1,180	464	2,980	1,220	3,790	1,200	610	207
11	4,280	670	598	440	916	469	1,760	3,160	3,520	1,150	610	195
12	2,110	799	1,140	440	786	469	1,670	3,350	3,010	1,310	542	187
13	1,140	712	1,340	652	881	404	1,510	1,980	2,410	1,720	469	210
14	786	1,030	1,250	542	972	355	1,100	1,560	1,670	2,000	445	578
15	670	1,140	1,900	484	1,130	322	902	1,390	1,340	1,860	422	663
16	598	5,990	1,040	484	867	297	839	1,260	1,110	1,680	404	530
17	569	*3,980	825	564	742	282	766	1,220	1,120	1,210	386	436
18	500	6,090	806	474	622	289	694	1,690	1,620	1,040	*386	309
19	862	4,940	766	417	564	278	688	2,840	1,660	881	408	259
20	1,200	2,660	748	399	515	259	712	2,550	1,730	909	464	252
21	1,510	1,550	1,300	372	474	297	792	1,890	2,300	*980	390	259
22	916	1,640	2,070	368	464	1,160	874	1,490	2,410	1,040	360	228
23	786	1,250	1,560	1,160	431	*636	1,030	1,270	2,420	1,030	330	207
24	598	930	1,510	1,120	525	455	853	1,140	1,850	988	297	190
25	510	4,270	1,060	1,740	464	381	748	1,370	1,390	792	286	176
26	440	6,150	839	988	431	351	742	1,770	1,520	888	267	168
27	394	4,640	694	748	377	368	670	1,660	1,810	1,820	256	280
28	355	2,170	658	670	364	460	604	1,300	1,900	1,310	249	*386
29	330	1,390	*1,140	610	-	965	592	1,870	2,400	3,010	252	417
30	301	1,040	3,700	640	------	951	598	2,940	2,590	2,350	263	313
31	286	-----	4,660	1,370	-----	1,340	-----	1,890	------	3,240	263	------
Total	23,236	65,232	37,552	24,085	33,945	14,067	36,408	49,499	62,370	44,168	18,297	8,650
Mean	750	2,174	1,211	777	1,212	454	1,214	1,597	2,079	1,425	590	288
Cfsm	6.30	18.3	10.2	6.53	10.2	3.82	10.2	13.4	17.5	12.0	4.96	2.42
In.	7.26	20.39	11.74	7.53	10.61	4.40	11.38	15.47	19.49	13.80	5.72	2.70
Ac-ft	46,090	129,400	74,480	47,770	67,330	27,900	72,210	98,180	123,700	87,610	36,290	17,160

Calendar year 1954: Max 6,150 Min 198 Mean 1,231 Cfsm 10.3 In. 140.47 Ac-ft 891,500
Water year 1954-55: Max 6,760 Min 168 Mean 1,144 Cfsm 9.61 In. 130.49 Ac-ft 828,100

Peak discharge (base, 8,700 cfs).--Nov. 16 (11 a.m.) 10,200 cfs (10.97 ft); Nov. 26 (10:45 p.m.) 8,800 cfs (10.35 ft); Feb. 8 (12:30 a.m.) 16,300 cfs (13.29 ft).
* Discharge measurement made on this day.

South Fork Stillaguamish River above Jim Creek, near Arlington, Wash.

Location.--Lat 48°10'05", long 122°04'05", in SW¼ sec. 17, T. 31 N., R. 6 E., on right bank 2 miles upstream from Jim Creek and 3 miles southeast of Arlington.

Drainage area.--199 sq mi.

Records available.--October 1936 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 80.00 ft above mean sea level, datum of 1929. Prior to Dec. 31, 1936, staff gage at same site and datum.

Average discharge.--19 years, 1,571 cfs (1,137,000 acre-ft per year).

Extremes.--Maximum discharge during year, 20,000 cfs Feb. 8 (gage height, 22.88 ft); minimum, 296 cfs Sept. 13 (gage height, 11.89 ft).
1936-55: Maximum discharge, 27,700 cfs Feb. 9, 1951 (gage height, 27.26 ft); minimum, 110 cfs Sept. 23, 24, 1951; minimum gage height, 10.44 ft Oct. 19, 20, 1952.

Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation. Some diversion for domestic use.

Revisions (water years).--WSP 1316: 1938-41(M), 1943-48(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 8 to Mar. 3, Mar. 24 to Apr. 8)

Oct. 1 to Nov. 25				Nov. 26 to Sept. 30			
11.9	305	14.0	2,260	11.9	300	14.0	2,120
12.2	460	15.0	3,850	12.2	444	15.0	3,660
12.6	720	16.0	5,860	12.6	680	16.0	5,550
13.0	1,060	17.5	9,110	13.0	990	17.0	7,750
13.5	1,600			13.5	1,500	19.0	12,300

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	410	395	1,350	4,610	2,600	680	3,610	1,080	2,230	3,710	4,330	393
2	390	380	1,140	2,740	1,640	660	2,220	1,120	2,070	2,400	2,370	379
3	370	370	999	1,910	1,260	654	1,570	1,130	2,260	2,030	1,690	383
4	360	390	914	*1,520	1,250	610	1,290	1,250	2,740	1,910	1,420	383
5	345	7,190	1,070	1,300	1,350	570	1,180	*1,540	3,170	1,660	1,350	379
6	330	5,540	1,790	1,140	1,680	560	1,390	1,540	2,900	1,600	1,280	383
7	*340	2,090	1,700	1,020	9,340	560	2,070	1,690	3,250	1,540	1,270	374
8	1,320	1,390	1,230	964	10,500	560	3,150	2,460	4,160	1,520	1,120	359
9	832	1,500	1,080	914	3,220	600	7,950	1,920	*5,280	1,670	930	350
10	804	1,400	1,060	833	*2,040	900	4,820	1,850	5,490	1,760	889	336
11	5,500	1,150	930	788	1,610	860	2,780	4,270	4,940	1,660	897	322
12	2,930	1,380	1,590	788	1,390	800	2,500	5,020	4,200	1,760	810	304
13	1,640	1,260	2,120	1,120	1,430	730	2,430	2,900	3,280	2,340	701	309
14	1,080	1,610	1,830	999	1,670	680	1,780	2,290	2,370	2,730	667	756
15	898	1,780	3,060	873	2,130	640	1,430	2,150	1,940	2,610	641	839
16	800	8,910	1,680	857	1,550	610	1,300	1,940	1,600	2,340	603	772
17	760	6,010	1,300	973	1,300	590	1,210	1,820	1,660	1,750	591	622
18	678	*8,890	1,280	849	1,090	580	1,090	2,480	2,130	1,490	585	476
19	899	7,260	1,200	765	982	570	1,080	4,130	2,370	1,220	*585	408
20	1,580	4,100	1,150	743	922	560	1,120	3,730	2,320	1,230	628	408
21	1,930	2,430	1,760	694	873	1,000	1,250	2,740	3,140	*1,350	573	449
22	1,190	2,620	3,060	694	833	2,000	1,360	2,180	3,300	1,410	515	388
23	1,020	2,010	2,230	2,080	788	*1,000	1,620	1,890	3,360	1,400	487	359
24	776	1,460	2,260	1,970	873	841	1,370	1,700	2,700	1,350	455	336
25	664	6,920	1,630	3,270	825	736	1,200	2,020	2,020	1,060	434	314
26	580	8,790	1,280	1,860	772	680	1,180	2,550	2,150	1,080	424	309
27	526	6,840	1,060	1,340	694	680	1,090	2,500	2,780	2,440	403	434
28	498	3,430	990	1,190	701	810	973	1,950	2,880	1,920	393	603
29	466	2,290	1,860	1,080	-	1,490	956	2,740	3,660	4,640	398	*654
30	444	1,690	6,080	1,110	------	1,560	939	4,440	3,610	3,950	403	526
31	416	-----	8,640	2,120	-----	1,960	-----	2,990	------	5,120	403	------
Total	30,774	101,475	59,323	43,114	55,315	25,731	57,908	74,010	89,960	64,650	28,245	13,307
Mean	993	3,382	1,914	1,391	1,975	830	1,930	2,387	2,999	2,085	911	444
Cfsm	4.99	17.0	9.62	6.99	9.92	4.17	9.70	12.0	15.1	10.5	4.58	2.23
In.	5.75	18.96	11.09	8.06	10.34	4.81	10.82	13.83	16.81	12.08	5.28	2.49
Ac-ft	61,040	201,300	117,700	85,520	109,700	51,040	114,900	146,800	178,400	128,200	56,020	26,390

Calendar year 1954: Max 8,910 Min 330 Mean 1,871 Cfsm 9.40 In. 127.66 Ac-ft 1,355,000
Water year 1954-55: Max 10,500 Min 304 Mean 1,764 Cfsm 8.86 In. 120.32 Ac-ft 1,277,000

Peak discharge (base, 12,600 cfs).--Nov. 16 (11 a.m.) 14,800 cfs (20.26 ft); Nov. 25 (2:30 p.m.) 13,000 cfs (19.37 ft); Feb. 8 (1:30 a.m.) 20,000 cfs (22.88 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Mar. 4-23; discharge estimated on basis of recorded range in stage and records for nearby stations.

Jim Creek near Arlington, Wash.

Location.--Lat 48°10'25", long 122°04'05", in W½ sec. 17, T. 31 N., R. 6 E., on right bank at abandoned bridge, 1¼ miles upstream from mouth and 3 miles southeast of Arlington.

Drainage area.--48.9 sq mi.

Records available.--October 1937 to September 1955 (discharge measurements only, October 1951 to August 1952).

Gage.--Water-stage recorder. Datum of gage is 103.4 ft above mean sea level (stadia traverse).

Average discharge.--17 years (1937-51, 1952-55), 204 cfs (147,700 acre-ft per year).

Extremes.--Maximum discharge during year, 2,600 cfs Dec. 31 (gage height, 7.13 ft); minimum, 18.5 cfs Sept. 12, 13 (gage height, 1.25 ft).
1937-55: Maximum discharge, 4,730 cfs Dec. 28, 1949 (gage height, 9.28 ft), from rating curve extended above 1,900 cfs; minimum, 5.9 cfs Sept. 16, 1943 (gage height, 0.62 ft).

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. Small diversions for irrigation and domestic use. No regulation.

Revisions (water years).--WSP 1042: 1938-44. WSP 1092: 1946.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.2	16	3.0	340
1.3	21	3.5	520
1.5	34	4.0	720
1.7	54	5.0	1,200
2.0	98	6.0	1,780
2.5	202		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57	41	247	1,100	470	126	720	149	310	574	497	26
2	54	40	212	729	300	122	560	142	280	334	286	25
3	53	39	188	452	220	111	384	149	289	277	190	25
4	52	44	170	*334	280	100	304	155	301	234	151	24
5	50	766	186	289	320	97	260	*166	289	195	122	23
6	47	628	266	244	450	93	252	149	260	170	102	22
7	*48	295	249	216	800	92	304	166	280	153	90	20
8	88	207	214	200	1,300	91	382	224	343	142	84	20
9	62	219	204	190	820	150	941	175	*370	144	72	20
10	57	193	195	166	*370	230	704	161	355	138	87	19.5
11	228	161	177	151	301	220	460	305	298	126	72	19
12	151	197	310	151	247	200	472	360	242	124	64	19
13	98	172	337	252	239	185	464	252	190	138	58	22
14	79	172	411	255	317	170	340	234	149	136	53	50
15	68	207	618	231	496	155	277	229	128	122	50	58
16	62	1,060	364	231	361	140	244	207	111	112	44	57
17	57	736	286	272	289	125	214	200	120	90	43	48
18	53	*729	247	236	229	115	190	244	153	82	41	38
19	60	891	216	207	195	115	184	386	155	74	*40	33
20	68	512	195	195	175	110	181	324	146	68	42	33
21	90	343	214	175	159	140	186	216	184	*70	40	40
22	72	364	236	168	151	180	209	179	184	67	38	32
23	73	280	265	456	136	230	234	159	204	66	35	28
24	63	229	292	486	144	*220	219	151	166	59	35	25
25	57	831	249	624	140	195	195	179	122	55	35	24
26	52	810	216	394	136	168	193	195	144	80	33	23
27	50	692	190	298	118	161	177	204	266	130	32	33
28	47	544	184	250	126	186	157	159	277	100	30	69
29	45	398	391	230	-	322	149	254	325	354	28	*66
30	43	307	1,210	220	------	343	138	564	531	516	26	45
31	41	-----	1,720	400	-----	355	-----	419	-----	508	26	------
Total	2,125	12,109	10,457	9,782	9,089	5,247	9,694	7,056	7,172	5,438	2,526	986.5
Mean	68.5	404	337	316	325	169	323	228	239	175	81.5	32.9
Cfsm	1.40	8.26	6.89	6.46	6.65	3.46	6.61	4.66	4.89	3.58	1.67	0.673
In.	1.62	9.21	7.95	7.44	6.91	3.99	7.37	5.37	5.45	4.14	1.92	0.75
Ac-ft	4,210	24,020	20,740	19,400	18,030	10,410	19,230	14,000	14,230	10,790	5,010	1,960

Calendar year 1954: Max 1,720 Min 24 Mean 241 Cfsm 4.93 In. 67.02 Ac-ft 174,800
Water year 1954-55: Max 1,720 Min 19 Mean 224 Cfsm 4.58 In. 62.12 Ac-ft 162,000

Peak discharge (base, 1,400 cfs).--Nov. 5 (9:30 p.m.) 1,420 cfs (5.40 ft); Nov. 16 (8:30 a.m.) 1,910 cfs (6.20 ft); Nov. 25 (11:30 a.m.) 1,520 cfs (5.57 ft); Dec. 31 (2 a.m.) 2,600 cfs (7.13 ft); probably Feb. 8 (time unknown) 2,080 cfs (6.46 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Jan. 28 to Feb. 10, Mar. 4-24; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Squire Creek near Darrington, Wash.

Location.--Lat 48°16'15", long 121°40'00", in SE¼ sec. 8, T. 32 N., R. 9 E., on left bank 150 ft upstream from road crossing, a third of a mile upstream from Ashton Creek, and 3½ miles northwest of Darrington.

Drainage area.--18.8 sq mi.

Records available.--June 1950 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 490 ft (from topographic map).

Average discharge.--5 years, 184 cfs (133,200 acre-ft per year).

Extremes.--Maximum discharge during year, 1,610 cfs Feb. 7 (gage height, 6.02 ft); minimum, 31 cfs Oct. 7 (gage height, 1.39 ft).
1950-55: Maximum discharge, 6,440 cfs Feb. 10, 1951 (gage height, 10.52 ft), from rating curve extended above 700 cfs by logarithmic plotting; minimum, 7.3 cfs Oct. 20-24, 1952 (gage height, 0.57 ft).

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation or diversion above station.

Revisions.--WSP 1286: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 11-26)

Oct. 1 to Nov. 22				Nov. 23 to Sept. 30			
1.4	32	3.0	316	1.6	31	3.0	255
1.6	49	3.5	501	1.8	48	3.5	390
2.0	95	4.0	732	2.0	69	4.0	555
2.5	181			2.3	112	4.5	760
				2.6	170		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	39	132	315	134	56	275	90	196	275	441	60
2	42	37	110	218	101	52	186	92	186	202	245	60
3	38	35	99	170	86	51	138	95	196	204	202	60
4	37	38	92	138	86	48	118	110	245	200	198	61
5	34	400	121	*119	85	45	107	136	280	186	196	62
6	32	230	172	104	92	42	130	136	275	192	208	61
7	86	130	136	95	663	40	194	156	308	186	196	60
8	346	115	109	88	645	43	302	190	393	194	168	56
9	108	140	99	81	248	62	683	152	488	218	150	53
10	315	110	88	74	174	100	402	*170	538	224	160	51
11	530	105	79	69	142	90	280	397	516	222	146	48
12	*282	120	138	66	125	81	250	388	457	270	119	44
13	158	105	170	74	136	75	226	245	357	347	109	79
14	126	100	230	67	138	70	184	210	278	408	104	102
15	132	240	272	64	134	62	156	206	222	369	99	124
16	105	450	168	62	*116	58	142	196	198	351	96	92
17	110	390	136	65	102	55	125	190	208	258	92	69
18	83	450	123	60	90	53	114	270	235	222	96	55
19	197	700	110	56	85	52	110	429	245	206	93	51
20	229	300	110	54	79	52	107	348	279	220	109	51
21	188	180	227	51	74	80	110	272	366	235	85	46
22	126	240	228	50	70	110	114	224	396	245	79	41
23	103	*190	206	82	68	97	128	196	*351	252	72	38
24	87	*162	224	89	77	84	114	186	275	214	*67	37
25	77	632	178	123	68	75	101	212	226	184	64	35
26	64	651	140	95	62	72	98	222	250	*282	60	33
27	56	437	117	81	58	92	89	204	278	334	58	51
28	52	260	117	77	59	130	85	182	265	222	80	64
29	47	196	158	72	-	*116	82	299	280	342	62	65
30	44	160	370	73	------	102	83	357	325	328	66	56
31	41	-----	540	117	-----	166	-----	245	------	513	61	------
Total	3,920	7,342	5,199	2,949	3,997	2,309	5,211	6,805	9,112	8,105	3,957	1,785
Mean	126	245	168	95.1	143	74.5	174	220	304	261	128	58.8
Cfsm	6.70	13.0	8.94	5.06	7.61	3.96	9.26	11.7	16.2	13.9	6.81	3.13
In.	7.75	14.52	10.28	5.83	7.91	4.57	10.31	13.46	18.03	16.03	7.83	3.49
Ac-ft	7,780	14,560	10,310	5,850	7,930	4,580	10,340	13,500	18,070	16,080	7,850	3,500

Calendar year 1954: Max 962 Min 32 Mean 197 Cfsm 10.5 In. 142.26 Ac-ft 142,600
Water year 1954-55: Max 700 Min 32 Mean 166 Cfsm 8.83 In. 120.01 Ac-ft 120,400

Peak discharge (base, 2,200 cfs).--No peak above base.
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 26 to Nov. 23, Mar. 6-28; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

North Fork Stillaguamish River near Darrington, Wash.

Location.--Lat 48°16'40", long 121°42'00", in NW¼ sec. 7, T. 32 N., R. 9 E., in pier at left bank at highway bridge, 1 mile downstream from Squire Creek and 5 miles northwest of Darrington.

Drainage area.--82.2 sq mi.

Records available.--June 1950 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 410 ft (from topographic map).

Average discharge.--5 years, 586 cfs (424,200 acre-ft per year).

Extremes.--Maximum discharge during year, 7,750 cfs Feb. 7 (gage height, 6.63 ft), from rating curve extended above 3,300 cfs by logarithmic plotting; minimum, 62 cfs Sept. 25, 26, 27 (gage height, 1.00 ft).
1950-55: Maximum discharge, 15,500 cfs Feb. 10, 1951 (gage height, 10.63 ft), from rating curve extended above 4,200 cfs by logarithmic plotting; minimum, 28 cfs Oct. 18-24, 1952 (gage height, 0.86 ft).

Remarks.--Records good except those for periods of doubtful or no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years). WSP 1286: 1950-52, drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
1.2	99	2.6	760	1.0	62	2.6	780
1.4	149	3.0	1,100	1.2	101	3.0	1,120
1.7	253	3.5	1,600	1.4	154	3.5	1,600
2.0	385	4.0	2,190	1.7	262	4.0	2,190
2.3	550	5.1	4,020	2.0	405	4.7	3,280
				2.3	580		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	127	149	380	1,300	650	215	1,220	344	671	717	844	104
2	117	138	340	800	479	204	844	354	652	550	520	104
3	115	133	300	610	400	193	652	374	690	556	422	101
4	108	133	260	500	380	180	544	427	852	520	380	101
5	104	1,700	310	*446	366	170	508	496	932	478	359	101
6	99	1,190	500	405	276	165	580	496	900	466	364	99
7	146	589	400	362	2,420	164	820	526	1,050	449	340	97
8	484	440	330	334	3,160	167	1,170	652	1,360	449	302	95
9	245	420	290	312	1,150	180	2,840	532	1,640	490	271	90
10	380	395	260	286	773	197	1,830	*544	1,740	514	271	88
11	1,210	343	250	261	626	204	1,110	1,170	1,600	496	254	84
12	*956	357	520	249	526	204	958	1,320	1,370	556	226	76
13	556	343	630	278	550	197	860	876	1,050	678	204	118
14	410	636	580	257	574	180	684	759	788	773	197	156
15	376	700	1,300	238	606	173	593	752	645	710	183	178
16	307	1,780	600	234	*526	167	544	731	568	671	180	154
17	286	2,020	440	238	454	160	478	704	568	502	170	121
18	242	3,940	390	223	395	167	444	916	626	438	170	99
19	372	3,540	370	208	359	160	422	1,500	632	390	167	90
20	582	1,670	340	204	335	154	410	1,270	717	395	186	88
21	655	1,070	700	190	306	167	427	958	940	410	160	84
22	435	974	900	184	284	359	444	766	*1,000	416	146	76
23	357	*685	700	371	266	288	484	645	876	416	137	73
24	307	563	740	330	288	242	438	606	678	374	*129	69
25	269	1,600	530	502	262	222	395	697	574	320	124	66
26	242	2,100	410	420	242	208	385	724	606	*434	116	62
27	223	1,600	350	371	222	218	349	658	690	612	111	87
28	201	1,200	320	347	226	271	325	586	658	427	111	104
29	184	700	500	334	-	*472	316	912	645	583	111	99
30	171	500	1,100	338	------	484	320	1,120	745	606	111	88
31	158	-----	2,200	550	-----	655	-----	812	------	892	108	-----
Total	10,424	31,608	17,240	11,722	17,201	7,187	21,394	23,227	26,463	16,288	7,374	2,952
Mean	336	1,054	556	378	614	232	713	749	882	525	238	98.4
Cfsm	4.09	12.8	6.76	4.60	7.47	2.82	8.67	9.11	10.7	6.39	2.90	1.20
In.	4.72	14.30	7.80	5.30	7.78	3.25	9.68	10.51	11.97	7.37	3.34	1.34
Ac-ft	20,680	62,690	34,200	23,250	34,120	14,260	42,430	46,070	52,490	32,310	14,630	5,860

Calendar year 1954: Max 3,940 Min 99 Mean 617 Cfsm 7.51 In. 101.89 Ac-ft 446,700
Water year 1954-55: Max 3,940 Min 62 Mean 529 Cfsm 6.44 In. 87.36 Ac-ft 383,000

Peak discharge (base, 4,400 cfs).--Nov. 18 (5 a.m.) 6,460 cfs (6.16 ft); Feb. 7 (11:45 p.m.) 7,750 cfs (6.63 ft).

* Discharge measurement made on this day.

Note.--Doubtful gage-height record Nov. 25 to Dec. 4, no gage-height record Dec. 5 to Jan. 4, Mar. 4-6; discharge estimated on basis of records for stations on nearby streams.

North Fork Stillaguamish River near Arlington, Wash.

Location.--Lat 48°15'40", long 122°02'50", in SE¼NW¼ sec. 16, T. 32 N., R. 6 E., on right bank 6 miles northeast of Arlington, 7 miles upstream from mouth, and 8 miles downstream from Deer Creek.

Drainage area.--269 sq mi.

Records available.--July 1928 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 89.34 ft above mean sea level, datum of 1929. Prior to Sept. 18, 1928, staff gage at same site and datum.

Average discharge.--27 years, 1,763 cfs (1,276,000 acre-ft per year).

Extremes.--Maximum discharge during year, 21,100 cfs Feb. 8 (gage height, 11.44 ft); minimum, 272 cfs Sept. 26 (gage height, 1.45 ft).
1928-55: Maximum discharge, 30,600 cfs Feb. 9, 1951; maximum gage height, 13.46 ft Feb. 10, 11, 1951; minimum discharge, 117 cfs Sept. 23, 1938; minimum gage height, 0.97 ft Sept. 10, 12, 1944.

Remarks.--Records good except those for period of no gage-height record, which are poor. No regulation. Small diversions for domestic use.

Revisions (water years).--WSP 832: Drainage area. WSP 1286: 1938-39.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30			
1.8	400	4.0	2,140	1.4	252	4.0	2,310
2.1	550	5.0	3,420	1.7	376	5.0	3,650
2.5	790	6.0	5,000	2.1	592	6.0	5,230
3.0	1,160	7.0	6,930	2.5	860	7.0	7,180
3.5	1,610	8.0	9,300	3.0	1,260	8.0	9,450
				3.5	1,740	9.0	12,000

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	510	600	1,680	5,230	2,990	1,050	4,750	1,260	2,480	3,680	4,050	395
2	490	560	1,450	3,300	1,950	1,010	3,090	1,280	2,350	2,560	2,300	386
3	470	520	1,280	2,380	1,560	962	2,380	1,300	2,570	2,250	1,630	381
4	460	500	1,170	1,980	1,560	860	1,990	1,370	2,960	2,070	1,380	376
5	440	6,000	1,270	1,740	1,570	839	1,860	1,570	3,260	1,830	1,230	381
6	425	3,900	1,820	1,510	1,890	867	2,060	*1,580	3,030	1,730	1,150	381
7	455	2,500	1,710	1,360	8,750	825	2,770	1,690	3,370	1,660	1,110	381
8	*1,220	1,850	1,390	1,260	11,800	888	3,640	2,190	4,310	1,600	1,030	376
9	1,080	1,800	1,250	1,220	4,210	1,090	9,130	1,840	5,350	1,710	916	363
10	772	1,600	1,190	1,110	2,810	1,380	6,600	1,800	*5,670	1,750	853	350
11	2,890	1,450	1,070	1,030	*2,250	1,320	3,880	3,480	5,260	1,680	832	332
12	2,920	1,550	1,810	1,040	1,960	1,230	3,240	4,590	4,590	1,730	776	316
13	1,720	1,450	2,620	1,470	2,030	1,160	2,960	3,060	3,640	2,090	694	328
14	1,230	2,200	2,690	1,340	2,370	1,080	2,330	2,420	2,730	2,360	674	586
15	1,060	2,900	4,450	1,160	2,780	1,020	2,040	2,310	2,210	2,250	630	720
16	944	5,800	2,380	1,120	2,140	962	1,820	2,180	1,930	2,120	605	727
17	853	7,100	1,850	1,230	1,820	909	1,650	2,110	1,950	1,660	580	562
18	772	8,200	1,740	1,100	1,580	962	1,530	2,650	2,240	1,460	562	450
19	860	*9,280	1,620	986	1,440	923	1,480	4,610	2,250	1,260	562	386
20	1,910	4,970	1,540	954	1,340	867	1,460	4,350	2,360	1,240	611	372
21	2,390	3,160	1,840	874	1,270	1,060	1,520	3,130	3,150	1,220	550	405
22	1,800	3,160	2,560	846	1,220	2,350	1,620	2,460	3,380	*1,290	510	345
23	1,450	2,430	2,260	2,810	1,150	1,560	1,800	2,090	3,620	1,250	*482	320
24	1,250	1,930	2,610	2,340	1,320	*1,270	1,600	1,900	2,620	1,220	466	296
25	1,100	6,650	2,050	3,360	1,240	1,110	1,400	2,170	2,110	1,080	450	284
26	1,000	7,520	1,670	2,110	1,160	1,050	1,400	2,380	2,170	1,140	440	280
27	930	6,460	1,440	1,590	1,060	1,080	1,260	2,320	3,100	2,110	419	400
28	850	3,580	1,340	1,420	1,100	1,300	1,180	1,920	3,150	1,550	405	636
29	770	2,560	2,150	1,320	-	2,020	1,150	2,850	2,920	3,830	395	580
30	710	2,040	*5,600	1,300	------	2,070	1,140	4,750	4,030	3,300	400	*450
31	650	-----	8,640	2,320	-----	2,380	-----	3,270	------	3,860	410	------
Total	34,381	104,220	68,140	52,810	68,320	37,454	74,730	76,880	94,760	60,540	27,102	12,545
Mean	1,109	3,474	2,198	1,704	2,440	1,208	2,491	2,480	3,159	1,953	874	418
Cfsm	4.12	12.9	8.17	6.33	9.07	4.49	9.26	9.22	11.7	7.26	3.25	1.55
In.	4.75	14.41	9.42	7.30	9.45	5.18	10.33	10.63	13.10	8.37	3.75	1.73
Ac-ft	68,190	206,700	135,200	104,700	135,500	74,290	148,200	152,500	188,000	120,100	53,760	24,880

Calendar year 1954: Max 9,780 Min 425 Mean 2,110 Cfsm 7.84 In. 106.50 Ac-ft 1,528,000
Water year 1954-55: Max 11,800 Min 280 Mean 1,950 Cfsm 7.25 In. 98.42 Ac-ft 1,412,000

Peak discharge (base, 11,500 cfs).--Probably Nov. 18 (time unknown) 12,100 cfs (9.02 ft); Dec. 30 (9:30 p.m.) 13,000 cfs (9.33 ft); Feb. 8 (1:30 a.m.) 21,100 cfs (11.44 ft); Apr. 9 (5 p.m.) 12,100 cfs (9.01 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 22 to Nov. 18; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Armstrong Creek near Arlington, Wash.

Location.--Lat 48°13'15", long 122°08'00", in NW¼ sec. 35, T. 32 N., R. 5 E., on right bank at Northern Pacific Railway culvert, 1 mile north of Arlington.

Drainage area.--7.33 sq mi.

Records available.--June 1950 to September 1955 (discharge measurements only, October 1951 to August 1952).

Gage.--Water-stage recorder and wooden control on concrete base. Datum of gage is 56.6 ft (stadia traverse).

Extremes.--Maximum discharge during year, 53 cfs Feb. 8 (gage height, 1.02 ft); maximum gage height, 1.19 ft Feb. 15 (backwater from drift); minimum discharge, 4.8 cfs Sept. 24 (gage height, 0.31 ft).
1950-55: Maximum discharge not determined, probably occurred sometime in December 1953; minimum, 1.2 cfs Sept. 14, 1951; minimum gage height, 0.14 ft July 5, 1951 (from outside gage, control leaking).

Remarks.--Records good except those for period of no gage-height record, which are poor. No regulation or diversion above station.

Revisions.--WSP 1286: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 13, 15; stage-discharge relation indefinite Feb. 14)

0.3	3.6	0.6	15.5
.4	6.3	.7	22
.5	10	.9	40

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.3	7.0	21	27	27	26	26	13	27	21	23	5.7
2	6.3	6.6	19	29	23	25	30	13	25	18	19.5	5.4
3	6.0	6.6	18	33	21	22	27	13.5	28	19	15.5	5.4
4	6.0	7.3	17	*29	22	20	24	13	25	18	13	5.4
5	5.7	26	17.5	28	24	19	22	12.5	22	15	11	6.3
6	6.0	28	21	28	30	19	21	11.5	20	13.5	10	4.8
7	6.8	21	21	26	32	20	19.5	11.5	17.5	12.5	9.7	5.1
8	7.0	17.5	18	23	40	22	20	13	15	12	8.9	5.1
9	8.5	17	19	21	32	26	22	*12	12.5	11	7.7	5.4
10	6.5	17	19.5	20	33	31	28	11.5	10.5	11	7.3	5.7
11	*9.1	15.5	18	19	33	30	28	13	10	10.5	7.3	5.7
12	9.7	17	19.5	21	29	32	29	18	9.7	10	7.3	5.7
13	8.1	15.5	17.5	27	26	30	28	24	9.3	9.5	7.0	5.4
14	7.0	15.5	21	31	32	32	25	22	9.3	9.2	6.8	5.7
15	6.8	17	32	30	34	28	25	18	8.9	8.6	6.3	6.3
16	6.8	31	28	32	34	27	23	17	8.5	8.2	6.0	6.6
17	6.8	32	24	35	*30	25	21	15.5	8.1	7.8	6.0	6.6
18	6.3	32	21	34	28	24	20	14.5	9.3	7.5	6.3	5.7
19	7.0	27	19	29	24	22	19.5	17	9.3	7.2	6.0	5.4
20	8.9	28	17.5	29	22	22	18	17	8.5	7.0	6.3	5.4
21	8.5	28	17	28	23	24	19	14.5	*7.7	6.6	6.0	5.4
22	8.1	*26	16	25	23	32	22	13	8.1	6.5	*5.7	5.1
23	8.5	22	19	28	21	30	21	13	25	6.4	6.3	5.1
24	7.3	21	22	33	24	*27	17.5	12	16	6.3	6.0	4.8
25	7.0	26	22	32	28	24	17	11.5	12	*6.3	6.0	4.8
26	6.8	32	23	34	24	22	16	13.5	15	8.5	6.0	5.1
27	6.8	31	21	30	22	21	15	14.5	17	13	5.7	6.3
28	6.8	28	21	26	24	21	13.5	12.5	20	11	5.7	6.3
29	7.0	28	29	24	-	21	13	15	16	22	5.7	6.0
30	7.0	24	31	22	------	19.5	12.5	28	18	28	5.7	5.7
31	7.0	-----	30	22	------	19	------	32	------	26	5.7	------
Total	221.0	650.5	659.5	855	765	762.5	642.5	480.0	448.2	377.1	255.2	167.4
Mean	7.13	21.7	21.3	27.6	27.3	24.6	21.4	15.5	14.9	12.2	8.23	5.58
Cfsm	0.973	2.96	2.91	3.77	3.72	3.36	2.92	2.11	2.03	1.66	1.12	0.761
In.	1.12	3.30	3.35	4.34	3.88	3.87	3.26	2.44	2.27	1.91	1.29	0.85
Ac-ft	438	1,290	1,310	1,700	1,520	1,510	1,270	952	889	748	506	332

Calendar year 1954: Max 98 Min 4.8 Mean 16.7 Cfsm 2.28 In. 30.93 Ac-ft 12,100
Water year 1954-55: Max 40 Min 4.8 Mean 17.2 Cfsm 2.35 In. 31.88 Ac-ft 12,460

* Discharge measurement made on this day.
Note.--No gage-height record June 27 to July 24; discharge estimated on basis of records for stations on nearby streams.

Pilchuck Creek near Bryant, Wash.

Location.--Lat 48°16'00", long 122°09'45", in NE¼ sec. 16, T. 32 N., R. 5 E., on right bank 500 ft upstream from highway bridge and 2 miles north of Bryant.

Drainage area.--49.7 sq mi.

Records available.--March 1929 to September 1931, June 1950 to September 1955 (discharge measurements only, October 1951 to August 1952).

Gage.--Water-stage recorder. Altitude of gage is 140 ft (from topographic map). Prior to Oct. 1, 1931, staff gage at site 100 ft downstream at different datum.

Average discharge.--6 years (1929-31, 1950-51, 1952-55), 266 cfs (192,600 acre-ft per year).

Extremes.--Maximum discharge during year, 4,370 cfs Feb. 8 (gage height, 6.54 ft); minimum, 8.5 cfs Sept. 6, 7, 12, 13 (gage height, 1.59 ft).
1929-31, 1950-55: Maximum discharge, that of Feb. 8, 1955; minimum observed, 0.5 cfs Aug. 29 to Sept. 1, 1931 (gage height, 0.90 ft, site and datum then in use).

Remarks.--Records excellent except those below 15 cfs, which are good, and those for period of ice effect, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 1286: Drainage area. WSP 1316: 1930-31(M).

Rating table, water year 1954-55, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.5	4.0	3.0	410
1.7	16	3.5	730
1.9	36	4.0	1,120
2.1	68	4.5	1,600
2.4	146	5.0	2,160
2.7	260		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	52	59	240	1,260	668	150	1,090	232	366	618	688	13
2	47	54	209	716	355	140	597	205	382	330	350	12
3	46	52	182	471	264	127	438	205	483	278	228	10.5
4	44	55	168	355	325	b120	394	236	416	251	175	9.7
5	42	1,040	178	320	366	b110	377	248	350	197	140	9.7
6	39	684	345	274	512	99	438	*232	296	171	118	8.5
7	40	320	366	244	1,960	94	538	248	305	157	99	8.5
8	*143	224	260	224	2,000	107	709	260	355	143	87	9.0
9	157	252	220	216	751	193	1,730	201	382	146	78	9.0
10	110	244	205	208	489	404	1,080	212	*345	137	72	9.0
11	320	201	182	168	*377	382	597	432	287	124	64	9.0
12	466	224	439	190	310	320	653	465	228	121	59	9.0
13	205	201	709	460	305	260	558	340	175	134	55	9.7
14	143	193	972	366	543	220	382	300	134	127	50	42
15	105	330	1,100	305	772	193	320	287	115	102	46	113
16	83	1,130	465	300	460	168	310	236	102	97	40	121
17	70	653	325	416	335	153	269	236	112	78	39	70
18	63	1,100	269	320	260	146	244	287	171	70	35	46
19	74	1,430	236	252	220	140	228	443	146	63	34	34
20	315	558	209	232	190	130	244	320	150	57	34	27
21	414	366	212	205	175	197	264	232	186	55	32	25
22	220	438	212	197	171	723	320	182	168	*52	29	22
23	201	335	283	1,080	160	372	377	164	506	47	*27	18.5
24	146	*252	471	826	244	*260	296	160	228	44	25	16
25	118	1,250	465	1,240	240	216	256	201	160	39	24	14.5
26	99	1,110	315	618	197	190	256	282	178	70	23	14
27	87	800	244	404	164	201	228	248	305	*267	22	50
28	78	477	224	330	150	287	193	175	488	164	21	115
29	72	372	579	278	-	544	190	348	443	1,290	18.5	89
30	68	292	*1,910	260	------	483	186	896	619	822	16	*54
31	63	-----	1,730	538	-----	544	-----	558	------	816	14.5	------
Total	4,130	14,696	13,924	13,273	12,963	7,673	13,742	9,071	8,581	7,067	2,743.0	997.6
Mean	133	490	449	428	463	248	458	293	286	228	88.5	33.3
Cfsm	2.68	9.86	9.03	8.61	9.32	4.99	9.22	5.90	5.75	4.59	1.78	0.670
In.	3.09	11.00	10.42	9.93	9.70	5.74	10.28	6.79	6.42	5.29	2.05	0.75
Ac-ft	8,190	29,150	27,620	26,330	25,710	15,220	27,260	17,990	17,020	14,020	5,440	1,980

Calendar year 1954: Max 1,910 Min 12.5 Mean 291 Cfsm 5.86 In. 79.41 Ac-ft 210,500
Water year 1954-55: Max 2,000 Min 8.5 Mean 298 Cfsm 6.00 In. 81.46 Ac-ft 215,900

Peak discharge (base, 2,000 cfs).--Nov. 16 (8 a.m.) 2,170 cfs (5.01 ft); Nov. 25 (9 a.m.) 2,340 cfs (5.15 ft); Dec. 14 (10 p.m.) 2,660 cfs (5.40 ft); Dec. 30 (8 p.m.) 3,640 cfs (6.09 ft); Jan 23 (12 m.) 2,020 cfs (4.88 ft); Feb. 8 (1 a.m.) 4,370 cfs (6.54 ft); Apr. 9 (3:45 p.m.) 2,450 cfs (5.24 ft); July 29 (11 a.m.) 2,150 cfs (4.99 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Skagit River near Hope, British Columbia

(International gaging station)

Location.--Lat 49°02'50", long 121°05'45", on left bank just downstream from Galena Creek, 4 miles upstream from international boundary and 27 miles southeast of Hope.

Drainage area.--357 sq mi.

Records available.--April to December 1915, April 1916 to September 1922, October 1934 to September 1955. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Chain gage. Altitude of gage is 1,670 ft (from topographic map). Prior to October 1934, water-stage recorder at site 550 ft downstream at different datum. October 1934 to June 11, 1955, water-stage recorder at present site and datum.

Average discharge.--27 years (1916-22, 1934-55), 999 cfs (723,200 acre-ft per year).

Extremes.--Maximum discharge observed during year, 9,760 cfs June 12 (gage height, 11.96 ft); minimum, 268 cfs Mar. 25.
1915-22, 1934-55: Maximum discharge observed, 10,200 cfs June 21, 1950 (gage height, 12.20 ft); minimum recorded, 81 cfs Feb. 9, 1937.

Remarks.--No regulation or diversion.

Cooperation.--This station is maintained with the cooperation of the city of Seattle and is one of the international gaging stations maintained by Canada under agreement with the United States.

Revisions.--WSP 1216: Drainage area.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	620	480	1,580	760	379	300	334	564	2,130	3,080	1,310	535
2	592	472	1,400	700	*373	293	358	592	1,960	3,000	1,120	535
3	560	457	1,330	660	366	288	354	628	1,940	2,950	1,150	528
4	536	457	1,240	652	364	286	350	695	2,250	g2,900	1,150	507
5	516	624	1,190	644	362	292	356	*835	3,040	2,830	1,140	500
6	*500	930	1,160	620	360	302	400	910	3,410	2,750	1,110	500
7	492	825	1,080	600	379	302	548	990	3,680	2,700	1,010	507
8	508	755	1,010	576	385	304	800	1,120	4,280	2,650	1,080	445
9	520	720	960	560	385	304	1,120	1,100	5,940	g2,630	1,060	430
10	500	675	915	528	358	302	1,270	1,040	*7,610	2,700	960	430
11	735	636	870	520	358	300	1,130	1,120	9,310	2,800	920	429
12	700	620	860	512	362	302	1,000	1,410	g9,760	2,950	910	429
13	620	616	850	504	362	296	910	1,450	7,900	g3,220	895	429
14	576	656	825	488	360	294	835	1,370	6,300	3,400	878	429
15	596	685	*845	472	356	290	770	1,380	5,400	*g3,620	860	430
16	620	705	785	460	354	290	720	1,480	g4,590	g3,470	855	430
17	612	730	745	448	350	290	680	1,630	4,050	3,180	760	430
18	592	960	710	439	338	288	648	1,880	3,700	3,000	740	440
19	588	1,400	690	430	330	284	628	2,680	3,550	2,750	740	448
20	665	1,620	680	424	338	282	648	3,830	3,550	2,550	740	448
21	715	1,640	725	415	334	278	660	*3,470	3,650	2,370	720	430
22	660	3,330	885	409	332	284	670	2,870	4,000	2,200	680	388
23	620	3,730	920	430	328	282	670	2,430	4,900	2,050	680	350
24	588	2,780	930	421	330	274	640	2,140	4,450	1,900	640	350
25	564	2,710	895	409	328	272	620	2,180	4,100	1,800	640	325
26	536	2,990	845	403	320	274	608	2,160	3,850	1,710	608	322
27	524	2,670	805	394	315	272	576	2,080	3,650	1,600	605	312
28	520	2,270	785	388	310	274	552	1,920	3,450	1,480	594	*300
29	508	1,960	770	376	-	284	540	2,050	3,250	1,490	570	290
30	496	1,750	750	373	------	292	*544	2,630	g3,130	1,370	570	280
31	484	-----	790	373	-----	298	------	2,460	------	1,410	563	------
Total	17,863	40,833	28,825	15,388	9,816	8,973	19,939	53,054	132,780	78,510	26,258	12,606
Mean	576	1,360	930	496	351	289	665	1,710	4,430	2,530	847	420
Cfsm	1.61	3.81	2.61	1.39	0.98	0.81	1.86	4.79	12.41	7.09	2.37	1.18
In.	1.86	4.25	3.01	1.60	1.02	0.93	2.08	5.52	13.85	8.17	2.73	1.32
Ac-ft	35,430	80,990	57,170	30,520	19,470	17,800	39,550	105,200	263,400	155,700	52,080	25,000

Calendar year 1954: Max 6,660 Min 412 Mean 1,640 Cfsm 4.59 In. 62.27 Ac-ft 1,185,000
Water year 1954-55: Max 9,760 Min 272 Mean 1,220 Cfsm 3.42 In. 46.34 Ac-ft 882,300

* Discharge measurement made on this day.
g Computed from staff-gage readings.
Note.--No gage-height record Feb. 25 to Mar. 3, June 13-15, 17-29, July 1-3, 5-8, 10-12, 14, 17-25, Aug. 14, Sept. 8-15, 29, 30; discharge estimated on basis of records for nearby stations.

Skagit River at international boundary, near Hope, British Columbia

(International gaging station)

Location.--Lat 49°00'05", long 121°04'15", on left bank 300 ft upstream from international boundary and 31 miles southeast of Hope, British Columbia. Prior to Apr. 15, 1955, at site 300 ft downstream.
Drainage area.--381 sq mi.
Records available.--December 1953 to September 1955 (gage heights only).
Gage.--Water-stage recorder. Datum of gage is 1,583.44 ft above mean sea level, datum of 1929, supplementary adjustment of 1947; 1,584.07 ft above city of Seattle 1936 datum; and 1,581.65 ft above city of Seattle Ross Dam datum. Prior to Apr. 15, 1955, staff gage 300 ft downstream at international boundary at present datum.
Extremes.--1953-54: Maximum gage height observed during period December to September, 18.37 ft Aug. 23; minimum observed, 1.75 ft Feb. 4.
1954-55: Maximum gage height recorded during water year, 18.20 ft Aug. 15; minimum observed, 1.25 ft Mar. 5.
Remarks.--No diversion above station. Gage height subject to backwater from Ross Reservoir.
Cooperation.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

Mean gage height, in feet, December 1953 to September 1954

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			-	2.75	1.90	3.09	2.18	3.02	6.35	8.50	17.93	18.35
2			-	2.68	1.87	2.95	2.11	3.00	6.15	-	18.00	18.00
3			-	2.76	1.81	2.83	2.22	2.95	6.20	8.20	18.00	17.88
4			-	2.76	1.75	2.73	2.30	3.20	6.45	8.10	17.97	17.83
5			-	2.65	1.84	2.58	2.55	3.55	6.60	8.14	17.82	17.95
6			-	3.06	1.95	2.60	2.78	3.95	6.30	8.30	17.68	18.03
7			-	3.03	2.06	2.53	2.78	4.35	6.05	8.37	17.60	17.93
8			-	2.95	2.38	2.51	2.76	4.98	5.80	8.54	17.93	17.83
9			-	2.86	2.65	2.51	2.75	6.29	6.05	8.60	18.20	17.75
10			-	2.73	2.75	2.74	2.70	7.20	6.60	8.80	17.97	17.63
11			-	2.63	2.73	2.83	2.63	7.40	6.80	9.85	17.77	17.53
12			3.09	2.54	2.76	2.75	2.68	7.17	7.05	11.30	17.59	17.68
13			-	2.47	2.80	2.73	2.84	6.77	7.35	12.43	17.73	17.89
14			-	2.41	2.80	2.69	3.16	6.45	7.20	13.53	-	17.78
15			2.99	2.28	2.79	2.63	3.24	6.30	7.08	14.80	-	17.64
16			2.85	2.03	2.79	2.55	3.20	6.67	7.10	15.70	18.27	17.58
17			2.80	2.04	2.77	2.53	3.65	7.43	6.90	16.40	18.19	17.49
18			2.75	2.06	2.93	2.51	4.15	7.85	6.41	16.80	18.17	17.55
19			2.72	2.01	2.90	2.48	4.10	8.74	6.25	17.03	18.25	17.70
20			2.76	1.97	3.09	2.43	3.90	8.88	6.20	17.15	18.35	17.95
21			2.80	2.03	3.18	2.40	3.79	8.18	7.03	17.20	18.01	17.89
22			2.84	2.01	3.24	2.35	3.74	7.70	7.75	17.20	17.97	17.79
23			2.89	2.01	3.15	2.43	3.67	7.70	7.98	17.33	18.37	17.63
24			2.83	2.00	3.30	2.40	3.67	7.80	7.80	17.75	18.23	17.42
25			2.81	1.97	3.60	-	3.63	7.80	7.78	18.23	17.95	17.27
26			2.74	1.98	3.45	2.39	3.63	7.40	7.90	18.03	17.75	17.29
27			2.71	1.98	3.38	2.40	3.48	6.90	8.25	18.00	17.83	17.38
28			2.66	1.93	3.23	2.27	3.36	6.28	8.12	17.95	17.93	17.00
29			2.75	1.86	-	2.25	3.25	6.20	7.78	17.88	17.97	16.74
30			2.65	1.85	-------	2.25	3.15	6.30	7.80	17.80	18.24	16.40
31		-------	2.67	1.89	-------	2.20	-------	6.38	-------	17.97	18.28	-------

Mean gage height, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16.00	9.88	5.20	-	1.95	-	-	3.22	5.37	7.54	18.12	17.14
2	15.77	9.46	5.02	-	-	-	1.88	3.21	5.16	7.58	17.95	17.22
3	15.47	9.02	4.87	-	1.94	-	-	3.30	5.10	7.89	17.35	17.40
4	15.22	8.68	4.64	2.80	-	-	-	3.43	5.30	8.24	16.47	17.60
5	14.87	8.40	4.50	-	-	1.25	1.90	3.62	5.96	8.59	16.47	17.76
6	14.36	8.85	4.42	-	-	-	-	3.73	6.32	9.04	16.70	17.94
7	14.00	9.15	4.28	2.72	-	-	-	3.88	6.52	9.74	17.05	17.90
8	-	9.15	4.18	-	-	-	-	4.08	6.83	10.22	17.38	17.73
9	-	9.00	4.02	-	2.10	-	3.70	4.10	7.56	10.77	17.58	17.66
10	-	8.90	3.85	2.50	-	1.30	-	4.02	8.35	11.53	17.73	17.58
11	-	8.67	3.79	-	-	-	-	4.11	8.60	12.60	17.86	17.56
12	-	8.51	3.72	-	-	-	-	4.48	8.76	13.81	17.95	17.37
13	-	8.40	3.60	2.45	-	-	3.56	4.60	8.65	15.26	18.02	16.97
14	-	8.28	-	-	1.90	-	-	4.55	8.08	16.95	18.12	16.68
15	-	8.10	3.50	-	-	-	3.60	4.54	7.52	17.59	18.20	16.38
16	-	7.95	-	-	-	1.40	3.55	4.65	7.14	17.38	18.12	16.09
17	-	7.87	3.50	-	-	-	3.49	4.84	6.99	17.10	18.00	16.10
18	-	7.80	-	2.50	1.88	-	3.44	5.13	6.86	16.46	17.96	16.20
19	12.52	8.30	-	-	-	-	3.37	5.86	6.84	16.00	17.95	16.16
20	12.47	8.74	3.01	2.30	-	-	3.38	6.83	6.82	16.03	17.97	15.88
21	12.67	9.68	-	-	2.03	-	3.39	6.65	7.12	16.17	18.08	15.66
22	12.57	9.40	-	-	-	-	3.43	6.16	7.77	16.45	18.02	15.45
23	12.42	9.36	3.35	-	-	-	3.44	5.73	8.42	16.91	17.83	15.29
24	12.22	9.30	-	2.15	2.00	1.36	3.42	5.40	8.00	17.23	17.70	15.21
25	11.57	9.30	-	-	-	-	3.38	5.38	7.57	17.10	17.56	15.27
26	11.58	9.42	-	-	-	-	3.37	5.36	7.40	16.72	17.45	15.14
27	10.74	9.08	3.27	2.10	-	-	3.37	5.23	7.30	16.97	17.38	14.83
28	10.53	7.42	-	-	1.35	-	3.35	5.10	7.40	17.17	17.41	14.48
29	10.40	6.00	-	-	-	-	3.29	5.24	7.50	17.23	17.35	14.05
30	10.30	5.84	3.05	-	-------	-	3.23	5.77	7.54	17.50	17.25	13.65
31	10.10	-------	-	-	-------	-	-------	5.67	-------	17.78	17.12	-------

Ruby Creek below Panther Creek, near Newhalem, Wash.

Location.--Lat 48°42'30", long 120°58'10", in NW¼ sec. 10, T. 37 N., R. 14 E. (unsurveyed), on right bank 200 ft downstream from Panther Creek, 4 miles upstream from mouth, and 13 miles northeast of Newhalem.

Drainage area.--199 sq mi.

Records available.--September 1948 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,640 ft (by barometer).

Average discharge.--7 years, 727 cfs (526,300 acre-ft per year).

Extremes.--Maximum discharge during year, 6,540 cfs about June 11 (gage height, 9.50 ft, from high-water mark in well); minimum, 57 cfs Mar. 20, 26, but may have been less during period of ice effect; minimum gage height, 1.52 ft Feb. 27, Mar. 3.
1948-55: Maximum discharge, 8,640 cfs Nov. 27, 1949 (gage height, 10.95 ft), from rating curve extended above 5,600 cfs; minimum, 46 cfs Feb. 10, 1949, Nov. 28, 1952; minimum gage height, 0.70 ft Feb. 10, 1949.

Remarks.--Records good except those for periods of ice effect and doubtful or no gage-height record, which are poor. No regulation or diversion above station.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 28-30, Mar. 26 to Apr. 30)

1.4	45	3.5	880
1.5	65	4.0	1,180
1.7	125	5.0	1,930
2.0	230	6.0	2,810
2.5	410	8.0	4,850
3.0	630		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	254	307	700	342	181	b105	170	282	1,280	1,590	d1,200	307
2	234	304	625	304	174	b100	153	272	1,180	1,420	d880	314
3	226	296	600	290	167	b98	128	304	1,200	1,610	*d700	321
4	209	293	560	279	167	b90	122	338	1,560	1,740	680	318
5	198	846	522	279	164	b92	142	422	a1,700	1,750	680	328
6	192	1,050	498	272	167	b99	223	466	a1,900	1,830	730	342
7	184	745	462	262	216	b100	324	526	a2,200	1,760	770	342
8	192	640	438	254	240	104	430	590	a2,600	1,690	725	338
9	192	615	414	251	240	104	650	526	a3,100	1,780	635	318
10	202	540	394	226	198	101	610	530	a4,000	2,060	615	293
11	360	498	366	244	202	95	478	670	a4,500	2,170	615	268
12	304	474	356	237	198	92	418	780	a3,700	2,350	555	244
13	251	442	346	234	188	86	374	725	a3,100	2,580	490	234
14	*240	438	338	226	184	80	346	670	a2,400	2,830	458	268
15	324	426	335	220	184	80	324	655	a2,000	2,880	450	234
16	386	450	318	220	181	74	307	675	a1,600	2,660	446	220
17	398	*470	304	209	167	71	290	735	a1,500	2,490	438	198
18	370	888	300	206	142	71	279	946	a1,600	1,820	438	174
19	386	988	293	202	153	68	276	1,690	a1,700	1,520	450	156
20	450	855	296	202	156	63	276	2,060	a1,900	1,390	466	164
21	458	815	332	188	150	65	276	1,750	a2,800	1,320	414	167
22	398	1,490	394	192	146	86	282	1,480	a3,300	1,380	390	153
23	360	1,300	374	202	142	77	279	1,290	*a3,700	1,480	*370	139
24	328	1,020	360	192	142	b69	262	1,260	2,880	1,400	352	125
25	314	1,360	342	192	*136	b62	254	1,370	2,350	1,210	335	116
26	304	1,350	324	184	125	59	251	1,320	2,220	d960	310	110
27	307	1,180	300	161	104	65	240	1,220	2,190	d840	300	113
28	314	994	304	181	b100	86	*230	1,220	2,530	d760	296	116
29	307	865	*304	*181	•	*113	226	1,600	2,260	d880	300	110
30	304	775	310	178	------	119	237	1,920	1,890	d950	318	104
31	307	-----	360	181	-----	119	-----	1,510	------	d1,100	324	------
Total	9,253	22,714	12,169	7,011	4,714	2,691	8,857	29,682	70,820	51,960	16,130	6,634
Mean	298	757	393	226	168	86.8	295	957	2,361	1,676	520	221
Cfsm	1.50	3.80	1.97	1.14	0.844	0.436	1.48	4.81	11.9	8.42	2.61	1.11
In.	1.73	4.24	2.27	1.31	0.88	0.50	1.66	5.55	13.24	9.71	3.01	1.24
Ac-ft	18,350	45,050	24,140	13,910	9,350	5,340	17,570	58,870	140,500	103,100	31,990	13,160

Calendar year 1954: Max 4,430 Min 150 Mean 922 Cfsm 4.63 In. 62.89 Ac-ft 667,400
Water year 1954-55: Max 4,500 Min 59 Mean 665 Cfsm 3.34 In. 45.34 Ac-ft 481,300

Peak discharge (base, 3,000 cfs).--About June 11 (time unknown) 6,540 cfs (9.50 ft); about June 23 (time unknown) 5,000 cfs (8.14 ft); July 17 (12:30 a.m.) 3,250 cfs (6.45 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge estimated as for footnote "a."

Ross Reservoir near Newhalem, Wash.

(International gaging station)

Location.--Lat 48°44'00", long 121°04'10", in SE¼ sec. 35, T. 38 N., R. 13 E., at Ross Dam on Skagit River 1 mile downstream from Ruby Creek and 9 miles northeast of Newhalem.
Drainage area.--980 sq mi, approximately.
Records available.--March 1940 to September 1955. Prior to October 1945, published as Ruby Reservoir near Newhalem. Prior to October 1946, monthly elevations and contents only.
Gage.--Water-stage recorder. Datum of gage is at mean sea level (city of Seattle benchmark). Prior to Sept. 24, 1940, staff gage on west shore at site just uplake from Ross Dam at same datum. Sept. 24, 1940, to June 28, 1943, water-stage recorder at present site and datum. June 29, 1943, to Apr. 29, 1948, staff gage on right bank at site 500 ft uplake from dam at present datum.
Extremes.--Maximum contents during year, 1,404,100 acre-ft Aug. 15 (elevation, 1,599.86 ft); minimum, 471,350 acre-ft May 7 (elevation, 1,493.21 ft).
1940-55: Maximum contents observed, 1,406,500 acre-ft Aug. 23, 1954 (elevation, 1,600.10 ft, from plant log); minimum not determined.
Remarks.--Reservoir is formed by concrete dam completed to elevation 1,615 ft in 1949; storage began Mar. 11, 1940. Capacity, 1,202,920 acre-ft between elevations 1,250 ft (lowest outlet) and 1,582 ft (spillway crest). Dead storage negligible. Water used for power and to supplement low flow of Skagit River through city of Seattle's Diablo and Newhalem powerplants. Figures given herein represent total contents.
Cooperation.--Elevation records collected in cooperation with city of Seattle.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Prepared by Geological Survey on basis of 15 contour areas furnished by city of Seattle)

1,490	454,480	1,570	1,078,800
1,510	571,110	1,590	1,291,700
1,530	718,200	1,600	1,405,300
1,550	888,320		

Elevation, in feet, at 12 p.m., water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	597.33	591.29	585.70	576.50	558.14	539.30	512.10	497.39	518.53	587.67	599.67	598.79
2	597.10	590.78	585.69	576.34	557.50	538.39	511.77	496.54	519.11	588.25	599.39	598.89
3	596.88	590.41	585.57	575.72	556.70	537.52	511.28	495.52	519.73	588.74	598.25	599.09
4	596.51	589.87	585.41	575.13	555.88	536.52	510.42	494.73	521.03	589.35	598.01	599.25
5	596.14	590.15	585.45	574.60	555.51	535.92	509.47	494.06	523.15	589.79	598.03	599.52
6	595.70	590.65	585.11	574.03	555.02	535.44	508.84	493.92	524.88	590.75	598.36	599.52
7	595.30	590.88	584.79	573.57	554.49	534.35	508.09	493.37	527.15	591.44	598.73	599.32
8	595.08	590.66	584.49	573.15	553.84	533.48	507.90	494.07	529.82	592.02	598.98	599.24
9	594.90	590.56	584.13	573.43	553.13	532.63	508.40	494.06	533.61	592.60	599.17	599.10
10	594.89	590.44	583.65	572.20	552.48	531.58	509.10	493.61	538.58	593.64	599.34	599.11
11	594.82	590.22	583.53	571.54	551.82	530.47	509.03	493.70	544.27	594.77	599.45	599.07
12	594.75	590.10	583.32	570.85	551.14	530.01	509.21	493.80	550.00	596.14	599.52	598.65
13	594.64	589.74	583.42	570.34	550.88	529.54	508.37	494.06	554.22	597.64	599.55	598.27
14	594.59	589.79	582.66	560.69	550.15	528.28	507.77	494.99	557.38	599.23	599.75	598.00
15	594.51	589.57	582.47	569.16	549.52	527.18	507.14	495.61	559.74	599.25	599.75	597.68
16	594.50	589.42	582.05	568.36	548.61	526.21	506.99	495.67	561.57	598.89	599.56	597.64
17	594.40	589.47	581.64	568.10	547.90	525.58	506.79	495.95	563.16	598.41	599.53	597.75
18	594.26	589.67	581.08	567.47	547.84	524.68	506.09	497.07	564.85	597.84	599.51	597.84
19	594.17	589.77	580.75	566.78	546.46	523.98	505.20	498.96	566.59	597.52	599.46	597.61
20	594.12	589.14	580.22	566.10	545.92	523.28	504.60	502.21	568.21	597.70	599.55	597.35
21	594.01	588.77	579.73	565.40	545.15	522.18	504.09	504.87	570.29	597.85	599.70	597.10
22	593.77	589.29	579.53	564.84	544.63	521.26	503.42	506.95	573.27	598.23	599.50	596.91
23	593.53	589.29	579.23	564.62	543.72	520.19	502.95	508.04	576.74	598.63	599.35	596.71
24	593.41	588.60	579.08	563.64	543.01	519.12	502.48	508.92	578.98	598.67	599.19	596.80
25	593.00	588.82	579.02	562.97	542.20	518.18	501.51	509.78	580.71	598.39	599.06	596.76
26	592.63	588.20	578.82	562.32	541.65	517.69	500.72	510.70	582.21	598.33	598.98	596.49
27	592.28	587.91	578.36	561.51	541.32	517.10	499.81	511.60	583.33	598.61	598.98	596.02
28	592.02	587.13	577.80	560.72	540.22	516.00	499.12	512.54	584.81	598.73	598.97	594.57
29	591.76	586.28	577.33	560.22	-	514.90	498.26	514.32	586.07	598.82	598.88	595.11
30	591.63	585.82	576.95	559.79	-------	513.80	497.76	516.59	587.02	599.20	598.75	594.71
31	591.65	-------	576.73	558.80	-------	512.84	-------	517.75	-------	599.48	598.75	-------

Note.--Add 1,000.00 ft to obtain elevation above mean sea level.

Monthly elevation and total contents, water year October 1954 to September 1955

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	1,597.75	1,379,800	-
Oct. 31	1,591.65	1,309,500	-70,300
Nov. 30	1,585.82	1,245,300	-64,200
Dec. 31	1,576.73	1,148,000	-97,300
Calendar year 1954	-	-	+66,100
Jan. 31	1,558.80	969,200	-178,800
Feb. 28	1,540.22	802,630	-166,600
Mar. 31	1,512.84	589,970	-212,700
Apr. 30	1,497.76	496,660	-93,310
May 31	1,517.75	625,180	+128,500
June 30	1,587.02	1,258,500	+633,300
July 31	1,599.48	1,399,500	+141,000
Aug. 31	1,598.75	1,391,400	-8,100
Sept.30	1,594.71	1,344,400	-47,000
Water year 1954-55	-	-	-35,400

† Elevation at 12 p.m.

Thunder Creek near Newhalem, Wash.

Location.--Lat 48°40'20", long 121°04'20", in SE¼ sec. 23, T. 37 N., R. 13 E. (unsurveyed), on right bank half a mile upstream from backwater from Diablo Reservoir, 8 miles east of Newhalem, and 20 miles northeast of Marblemount.

Drainage area.--98 sq mi, approximately.

Records available.--October 1930 to September 1955. Published as "above Colonial Creek, near Marblemount" 1930-31.

Gage.--Water-stage recorder. Altitude of gage is 1,220 ft (from river-profile map).

Average discharge.--25 years, 609 cfs (440,900 acre-ft per year).

Extremes.--Maximum discharge during year, 3,160 cfs July 16 (gage height, 7.79 ft); minimum, 82 cfs Mar. 20 (gage height, 1.79 ft).
1930-55: Maximum discharge, 9,630 cfs Nov. 27, 1949 (gage height, 12.14 ft), from rating curve extended above 2,900 cfs on basis of logarithmic plotting; minimum not determined, probably less than 50 cfs during period of ice effect or no gage-height record in February 1936.

Remarks.--Records excellent. No regulation or diversion above station.

Revisions (water years).--WSP 1012: 1943. WSP 1286: 1931(M), 1932, 1933(M), 1935(M), 1938-39(M), 1941-42(M), 1944-46(M), 1950(M), 1952 (annual runoff in acre-feet).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.8	83	4.0	610
2.0	108	4.5	815
2.3	156	5.0	1,050
2.6	213	6.0	1,640
3.0	303	7.5	2,870
3.5	439		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	306	258	480	263	125	104	116	184	622	928	1,930	842
2	281	254	427	241	123	104	117	193	568	797	*1,420	955
3	261	241	398	221	120	100	111	201	602	928	1,120	960
4	243	249	370	213	120	99	110	219	792	975	1,050	975
5	230	2,030	354	209	117	100	112	258	1,100	960	1,100	1,090
6	219	1,380	338	201	120	99	126	272	1,150	1,030	1,290	1,180
7	243	820	308	193	151	98	178	303	1,320	1,020	1,430	1,160
8	412	642	293	187	207	98	263	351	1,540	1,040	1,310	1,120
9	338	591	277	180	174	98	480	326	2,170	1,120	1,170	1,030
10	394	496	261	169	149	96	464	333	2,690	1,280	1,220	900
11	672	445	252	169	146	95	365	445	2,720	1,430	1,230	788
12	448	424	249	167	139	95	308	526	2,690	1,650	1,080	670
13	349	378	245	167	136	94	270	461	2,190	1,990	910	744
14	316	445	241	158	133	93	245	433	1,660	2,540	892	892
15	529	433	252	154	133	89	224	412	1,350	2,580	882	618
16	*554	470	228	149	128	88	209	409	1,120	2,790	905	536
17	565	480	213	148	125	87	197	445	1,060	2,310	928	433
18	439	*1,080	211	142	117	85	193	606	1,100	1,700	1,020	381
19	461	1,100	205	137	117	85	189	1,230	1,110	1,390	1,100	403
20	529	815	224	136	116	84	195	1,410	1,180	1,300	1,170	409
21	512	886	362	131	111	84	199	1,080	1,630	1,330	985	333
22	412	1,850	473	133	110	94	205	874	2,110	1,570	918	286
23	351	1,150	368	142	108	89	205	722	*2,270	1,810	858	272
24	308	820	325	134	108	85	193	674	1,560	1,830	*779	261
25	284	1,400	289	133	107	85	187	726	1,270	1,470	710	254
26	274	1,170	265	128	*103	84	184	690	1,270	1,220	666	303
27	279	1,010	249	125	100	84	174	610	1,350	1,160	666	421
28	284	788	245	123	104	85	169	572	1,540	970	694	351
29	265	658	241	*122	-	90	*167	865	1,380	1,110	779	277
30	256	550	*249	120	------	*93	170	1,000	1,140	1,310	900	247
31	256	-----	286	125	-----	96	-----	770	------	1,630	864	------
Total	11,270	23,313	9,176	5,020	3,547	2,860	6,325	17,600	44,254	45,158	31,956	19,091
Mean	364	777	296	162	127	92.3	211	568	1,475	1,457	1,031	636
Cfsm	3.71	7.93	3.02	1.65	1.30	0.942	2.15	5.80	15.1	14.9	10.5	6.49
In.	4.28	8.85	3.48	1.91	1.35	1.09	2.40	6.68	16.79	17.14	12.13	7.24
Ac-ft	22,350	46,240	18,200	9,960	7,040	5,670	12,550	34,910	87,780	89,570	63,380	37,870

Calendar year 1954:	Max	2,340	Min	110	Mean	673	Cfsm	6.87	In.	93.29	Ac-ft	487,600
Water year 1954-55:	Max	2,790	Min	84	Mean	602	Cfsm	6.14	In.	83.34	Ac-ft	435,500

Peak discharge (base, 2,400 cfs).--Nov. 5 (7 p.m.) 3,050 cfs (7.68 ft); June 11 (11 p.m.) 3,070 cfs (7.70 ft); July 16 (9 p.m.) 3,180 cfs (7.79 ft).
* Discharge measurement made on this day.

Stetattle Creek near Newhalem, Wash.

Location.--Lat 48°43'30", long 121°09'20", in NE¼ sec. 6, T. 37 N., R. 13 E., on left bank three-quarters of a mile upstream from mouth, 5½ miles northeast of Newhalem, and 18½ miles northeast of Marblemount.

Drainage area.--21.4 sq mi.

Records available.--December 1913 to November 1915 (fragmentary), September 1933 to September 1955. Published as "near Marblemount" 1913-15.

Gage.--Water-stage recorder. Altitude of gage is 925 ft (by barometer). Dec. 19, 1913, to Nov. 14, 1915, staff gage at site half a mile downstream at different datum. Sept. 7 to Oct. 20, 1933, staff gage and Oct. 21, 1933, to Aug. 26, 1937, water-stage recorder, at site 150 ft upstream at datum 1.69 ft higher.

Average discharge.--22 years (1933-55), 174 cfs (126,000 acre-ft per year).

Extremes.--Maximum discharge during year, 1,620 cfs Nov. 22 (gage height, 4.90 ft); minimum, 22 cfs Mar. 10 (gage height, 1.11 ft), result of freezeup.
1913-15, 1933-55: Maximum discharge, 8,580 cfs Nov. 26, 1949 (gage height, 9.70 ft), from rating curve extended above 1,600 cfs on basis of slope-area determination of peak flow; minimum, 9 cfs Nov. 9-11, 1936.

Remarks.--Records good except those above 700 cfs, which are fair, and those for periods of ice effect, which are poor. No regulation or diversion above station.

Revisions (water years).--WSP 1316: 1935(M)

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.2	25	2.6	235
1.4	34	3.0	370
1.6	49	3.5	610
1.8	72	4.0	900
2.1	117	5.0	1,640

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	66	98	121	121	67	b34	87	81	208	277	500	121
2	61	90	102	94	59	b33	76	92	192	241	295	130
3	57	78	92	82	54	b32	64	112	220	316	238	135
4	53	91	86	75	53	b31	59	135	320	316	229	135
5	48	888	90	68	57	b30	62	162	386	326	241	145
6	46	413	97	62	57	b29	89	155	406	306	268	149
7	72	217	88	57	143	b29	236	172	475	289	277	145
8	309	160	80	53	146	29	*223	205	621	309	250	133
9	182	165	75	50	94	30	410	162	804	354	214	121
10	316	130	70	46	73	32	354	160	888	406	223	110
11	478	115	62	44	61	32	217	328	864	442	223	97
12	300	126	65	42	57	31	160	330	804	505	182	84
13	*198	127	71	44	54	b31	130	241	599	610	151	107
14	169	235	90	39	58	b30	110	202	450	709	147	106
15	271	235	108	39	60	b29	94	198	312	648	147	100
16	205	*244	80	39	57	b28	86	214	274	670	147	105
17	227	344	71	39	50	b27	77	232	286	490	145	80
18	147	900	66	38	46	27	73	368	366	358	160	68
19	224	816	65	35	43	27	72	892	366	306	170	65
20	294	468	80	35	40	26	76	610	410	323	175	64
21	312	665	289	33	39	28	84	382	582	342	139	56
22	205	1,090	315	34	37	b30	88	277	*759	382	131	47
23	151	408	205	53	37	b29	90	226	664	402	126	45
24	126	259	180	49	37	b28	82	241	414	394	*117	43
25	107	844	139	50	34	b27	76	292	346	312	103	43
26	98	577	112	48	*34	b27	*72	277	338	301	97	53
27	105	415	94	46	34	28	68	226	374	316	94	98
28	108	265	*88	44	34	30	65	200	437	*268	97	81
29	97	195	88	42	-	37	64	505	394	428	110	68
30	92	149	95	*45	------	39	70	465	346	406	122	58
31	100	-----	143	61	-----	46	-----	277	------	535	122	------
Total	5,224	10,807	3,407	1,607	1,615	946	3,514	8,419	13,905	12,287	5,640	2,792
Mean	169	360	110	51.8	57.7	30.5	117	272	464	396	182	93.1
Cfsm	7.90	16.8	5.14	2.42	2.70	1.43	5.47	12.7	21.7	18.5	8.50	4.35
In.	9.08	18.78	5.92	2.79	2.81	1.64	6.11	14.63	24.16	21.35	9.80	4.85
Ac-ft	10,360	21,440	6,760	3,190	3,200	1,880	6,970	16,700	27,580	24,370	11,190	5,540

Calendar year 1954: **Max** 1,090 **Min** 34 **Mean** 235 **Cfsm** 11.0 **In.** 149.37 **Ac-ft** 170,500
Water year 1954-55: **Max** 1,090 **Min** 26 **Mean** 192 **Cfsm** 8.97 **In.** 121.92 **Ac-ft** 139,200

Peak discharge (base, 1,100 cfs).--Nov. 5 (6 p.m.) 1,360 cfs (4.58 ft); Nov. 18 (6:30 a.m.) 1,170 cfs (4.32 ft); Nov. 22 (5:30 a.m.) 1,620 cfs (4.90 ft); Nov. 25 (7 a.m.) 1,460 cfs (4.71 ft); May 19 (3:30 p.m.) 1,130 cfs (4.33 ft); June 10 (7 p.m.) 1,100 cfs (4.29 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Skagit River at Newhalem, Wash.

Location.--Lat 48°40'20", long 121°14'45", in SE¼ sec. 21, T. 37 N., R. 12 E., on right bank a quarter of a mile upstream from Newhalem Creek, half a mile downstream from city of Seattle powerplant at Newhalem, 11 miles upstream from Bacon Creek, and 13 miles northeast of Marblemount.

Drainage area.--1,160 sq mi, approximately, of which 400 sq mi is in Canada.

Records available.--October 1908 to May 1914 and October 1920 to September 1955 in reports of Geological Survey. October 1908 to September 1953 (monthly discharge only) in State Water-Supply Bulletin 6. Published as "near Marblemount" 1908-14, 1920-31.

Gage.--Water-stage recorder. Datum of gage is 401.5 ft above mean sea level (river-profile survey). Prior to May 24, 1914, staff gages at sites half a mile upstream at datum 91 ft higher. Nov. 15, 1920, to June 4, 1923, staff gage at site about 500 ft upstream at same datum.

Average discharge.--47 years (1908-55), 4,371 cfs (3,164,000 acre-ft per year), adjusted for storage in Diablo Reservoir since October 1929 and in Ross Reservoir since March 1940.

Extremes.--Maximum discharge during year, 20,100 cfs July 16 (gage height, 88.75 ft); minimum, 924 cfs Dec. 20 (gage height, 80.45 ft); minimum daily, 1,190 cfs Sept. 18. 1908-14, 1920-55: Maximum discharge, 63,500 cfs Nov. 29, 1909 (gage height, 22.0 ft, from floodmark, site and datum then in use); minimum, 54 cfs Nov. 1, 1943 (gage height, 78.15 ft); minimum daily, 136 cfs Aug. 24, 1930.

Remarks.--Records excellent. Water is diverted 3 miles above station and is returned to river at Seattle powerplant just above station. Flow regulated for power at Gorge Dam since August 1924 and by Diablo and Ross Reservoirs (see p. 153,139), having a combined capacity of 1,279,000 acre-ft.

Cooperation.--Gage-height record collected in cooperation with city of Seattle.

Revisions (water years).--WSP 512: 1909-14. WSP 1012: 1929. WSP 1316: 1914(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

80.7	1,120	85.0	7,410
81.3	1,630	86.0	10,000
82.0	2,350	87.0	13,200
83.0	3,610	88.5	19,000
84.0	5,290		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,580	4,360	5,170	3,580	5,060	5,040	5,030	2,930	4,060	5,870	7,240	2,390
2	3,370	4,340	5,240	4,010	4,950	5,140	4,360	4,650	4,460	5,930	8,680	2,270
3	2,560	4,490	5,160	5,190	5,000	4,850	2,640	4,780	4,350	6,080	11,100	2,050
4	4,230	4,930	4,880	5,310	5,000	5,000	4,560	5,020	3,560	5,950	7,530	2,350
5	4,100	6,020	3,670	5,260	4,610	4,850	3,930	5,060	3,540	5,970	4,620	1,950
6	3,930	5,300	4,940	5,160	3,580	4,180	4,390	4,940	4,510	5,950	3,380	3,960
7	3,970	4,000	5,010	5,220	5,090	4,550	4,070	2,640	4,910	6,040	2,880	4,450
8	4,360	4,840	5,050	4,210	5,530	4,990	*4,980	2,670	4,440	6,000	4,270	4,360
9	3,370	5,150	5,090	3,790	5,370	4,550	4,380	5,460	5,070	6,020	4,160	4,440
10	3,400	4,470	5,120	4,930	5,150	5,020	3,670	4,030	6,040	5,390	4,170	3,640
11	4,980	4,300	4,270	5,030	5,040	4,880	4,950	5,020	5,700	5,250	4,070	2,840
12	3,950	4,680	3,400	5,030	3,370	4,000	4,900	5,010	5,110	5,200	4,400	4,150
13	2,990	3,720	5,090	4,960	3,530	3,990	4,630	4,960	5,450	5,230	2,980	4,270
14	3,200	3,840	5,050	5,070	4,540	4,610	4,590	4,070	4,910	6,310	2,760	4,510
15	3,280	4,670	5,220	4,270	4,650	5,010	4,760	2,850	3,890	15,600	3,940	4,680
16	3,970	*4,950	5,190	4,030	4,740	4,710	4,050	4,560	3,880	17,900	4,180	3,620
17	2,800	5,320	5,060	4,930	4,750	4,660	2,970	4,260	4,160	17,100	4,360	1,220
18	4,200	6,170	4,450	5,010	4,730	4,610	4,840	4,820	3,650	14,500	4,400	1,190
19	3,720	10,800	3,890	5,000	4,320	3,920	4,480	5,040	3,000	11,400	4,260	3,190
20	4,210	11,800	5,040	5,010	3,510	3,100	4,570	5,800	4,340	7,110	3,750	3,260
21	4,770	10,900	5,280	5,060	4,940	4,750	4,570	4,330	*4,670	7,960	3,190	2,710
22	4,650	13,300	5,450	4,200	3,500	4,790	4,640	3,460	5,020	6,440	3,980	2,780
23	3,510	12,300	5,300	4,110	4,590	4,710	4,010	4,440	5,440	5,200	3,970	2,380
24	3,690	11,100	5,570	4,510	4,930	4,710	3,010	4,320	4,800	8,860	3,900	1,290
25	4,560	12,100	4,280	5,060	4,960	4,900	4,850	4,660	3,810	9,000	3,510	1,380
26	4,510	12,600	3,450	5,120	4,200	4,370	4,910	4,880	3,970	7,760	3,010	3,230
27	4,530	14,400	5,080	5,060	2,460	2,990	4,980	4,670	5,360	5,050	*3,590	4,310
28	3,850	12,800	5,130	5,090	4,710	4,520	4,780	1,530	5,700	4,810	1,660	4,380
29	3,310	10,900	5,620	3,960	-	4,670	4,050	2,720	5,580	5,150	3,880	4,230
30	2,500	8,340	5,600	*4,210	-------	4,870	3,550	3,890	5,930	4,090	3,600	4,030
31	2,580	-------	5,660	4,640	-------	4,980	-------	4,860	-------	5,160	3,110	-------
Total	117,630	226,890	152,410	146,020	126,810	141,920	130,100	132,330	139,310	234,260	134,530	95,510
Mean	3,795	7,563	4,916	4,710	4,529	4,578	4,337	4,269	4,644	7,557	4,340	3,184
Ac-ft	233,300	450,000	302,300	289,600	251,500	281,500	258,000	262,500	276,300	464,600	266,800	189,400
(†)	-70,120	-63,760	-98,800	-176,000	-166,700	-213,200	-95,970	+128,100	+634,400	+142,300	-7,290	-48,520

Adjusted for change in reservoir contents

Mean	2,654	6,490	3,310	1,848	1,527	1,111	2,723	6,353	15,300	9,870	4,220	2,368
Cfsm	2.29	5.59	2.85	1.59	1.32	0.958	2.35	5.48	13.2	8.51	3.64	2.04
In.	2.64	6.24	3.29	1.84	1.37	1.10	2.62	6.31	14.72	9.81	4.19	2.28
Ac-ft	163,200	386,200	203,500	113,600	84,800	68,300	162,000	390,600	910,700	606,900	259,500	140,900

Observed

Calendar year 1954: Max 16,400 Min 2,500 Mean 6,003 Ac-ft 4,346,000
Water year 1954-55: Max 17,900 Min 1,190 Mean 4,870 Ac-ft 3,526,000

Adjusted

Calendar year 1954: Mean 6,098 Cfsm 5.26 In. 71.35 Ac-ft 4,415,000
Water year 1954-65: Mean 4,821 Cfsm 4.16 In. 56.41 Ac-ft 3,490,000

* Discharge measurement made on this day.
† Change in contents in Ross and Diablo Reservoirs, in acre-feet.

Skagit River above Alma Creek, near Marblemount, Wash.

Location.--Lat 48°36'25", long 121°21'35", in NE¼ sec. 15, T. 36 N., R. 11 E., on right bank three-quarters of a mile upstream from Alma Creek and 7 miles north of Marblemount.

Drainage area.--1,260 sq mi, approximately, of which 400 sq mi is in Canada.

Records available.--October 1950 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 358.8 ft above mean sea level (from river-profile survey).

Average discharge.--5 years, 5,590 cfs (4,047,000 acre-ft per year).

Extremes.--Maximum discharge during year, 24,600 cfs July 16 (gage height, 13.44 ft); minimum, 1,350 cfs Mar. 12 (gage height, 4.91 ft); minimum daily, 1,530 cfs Sept. 18.
1950-55: Maximum discharge, 28,000 cfs Feb. 10, 1951 (gage height, 14.40 ft); minimum, 1,320 cfs Dec. 28, 1952 (gage height, 4.83 ft), but may have been less sometime during August or September 1952; minimum daily, 1,400 cfs Aug. 31, 1952.

Remarks.--Records good. All diversions returned to river above gage. Flow partly regulated by powerplants on upper Skagit River, and by Ross (see p. 139) and Diablo Reservoirs (see p. 153).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

5.0	1,450	9.0	9,430
5.5	2,090	10.0	12,400
6.0	2,830	11.0	15,500
7.0	4,690	12.0	19,000
8.0	6,910	13.0	22,800

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,940	4,560	5,930	4,420	5,390	5,160	5,540	3,280	4,970	7,130	8,920	2,880
2	3,650	4,580	5,940	4,550	5,300	5,280	4,970	4,850	5,330	6,980	10,500	2,740
3	2,940	4,810	5,790	5,620	5,260	5,110	3,040	5,100	5,220	7,170	12,500	2,510
4	4,560	5,270	5,500	5,740	5,240	4,950	4,750	5,390	4,740	7,170	9,320	2,740
5	4,460	8,700	4,330	5,630	4,980	4,980	4,370	5,500	4,920	7,220	5,600	2,520
6	4,070	7,040	5,440	5,500	3,850	4,410	4,740	5,450	5,810	7,220	4,400	4,350
7	4,360	5,210	5,600	5,560	5,590	4,620	4,700	3,320	6,580	7,250	3,910	4,930
8	5,430	5,230	5,490	4,580	6,250	5,090	5,580	3,350	6,830	7,200	5,180	4,840
9	4,070	5,840	5,480	4,110	5,900	4,740	6,140	5,810	8,250	7,390	4,990	4,880
10	3,980	5,120	5,560	5,180	5,590	5,160	5,120	4,630	9,790	7,100	5,050	4,170
11	6,980	4,680	4,770	5,310	5,420	5,010	5,730	5,940	9,230	6,890	4,870	3,180
12	5,380	5,330	3,820	5,300	3,990	4,300	5,660	6,190	8,330	7,050	5,100	4,420
13	3,880	4,240	5,430	5,270	3,840	4,210	5,270	5,920	7,910	7,510	3,680	4,690
14	3,980	4,910	5,570	5,380	4,800	4,690	5,070	4,990	6,720	8,620	3,390	5,020
15	4,310	5,570	5,830	4,680	5,020	5,090	5,120	3,580	5,340	*18,400	4,470	*5,140
16	4,710	6,060	5,710	4,180	5,120	4,840	4,570	5,230	5,080	21,800	4,760	4,290
17	3,680	6,760	5,570	5,150	5,050	4,770	3,420	5,140	5,410	19,700	4,970	1,620
18	4,860	9,700	4,940	5,200	5,050	4,730	4,870	5,890	5,030	16,800	5,020	1,530
19	4,480	14,600	4,360	5,180	4,670	4,140	4,840	7,430	4,520	13,500	4,990	3,350
20	5,320	14,900	5,460	5,220	3,810	3,260	4,840	7,990	5,960	8,350	4,530	3,640
21	5,980	13,600	6,180	5,260	5,060	4,770	4,940	5,930	*6,920	9,460	3,760	3,040
22	5,480	18,100	6,770	4,480	3,850	4,970	5,030	4,720	7,840	8,160	4,420	3,080
23	4,290	15,100	6,240	4,410	4,720	4,910	4,410	5,310	8,230	6,550	4,510	2,620
24	4,370	12,900	6,370	4,750	5,140	4,830	3,440	5,170	6,720	9,840	4,350	1,540
25	4,920	15,600	5,110	5,330	5,170	5,040	4,940	5,660	5,200	10,100	4,140	1,590
26	4,940	15,900	4,120	5,410	4,690	4,580	5,200	5,930	5,340	9,690	3,520	3,210
27	4,900	17,800	5,480	5,350	*2,580	3,220	5,140	5,700	6,940	6,450	3,700	4,580
28	4,210	15,300	*5,700	5,220	4,770	4,670	*5,050	2,360	7,580	5,770	2,220	4,710
29	3,550	12,700	6,100	4,220	-	4,820	4,420	4,020	7,180	6,680	4,170	4,480
30	2,870	9,750	6,120	*4,470	------	5,120	3,870	5,490	7,410	5,530	4,050	4,360
31	2,920	------	6,470	4,930	------	5,230	------	6,010	------	6,890	3,630	------
Total	138,470	279,860	171,180	155,590	136,100	146,700	144,780	161,280	195,330	285,570	158,620	106,650
Mean	4,467	9,329	5,522	5,019	4,861	4,732	4,826	5,203	6,511	9,212	5,117	3,555
Ac-ft	274,700	555,100	339,500	308,600	270,000	291,000	287,200	319,900	387,400	566,400	314,600	211,500

Calendar year 1954: Max 19,000 Min 2,870 Mean 6,921 Ac-ft 5,011,000
Water year 1954-55: Max 21,800 Min 1,530 Mean 5,699 Ac-ft 4,126,000

* Discharge measurement made on this day.

Cascade River at Marblemount, Wash.

Location.--Lat 48°31'25", long 121°23'00", in N½ sec. 16, T. 35 N., R. 11 E., on right bank 1½ miles downstream from Boulder Creek, 2 miles east of Marblemount, and 2½ miles upstream from mouth.

Drainage area.--171 sq mi.

Records available.--September 1928 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 380.3 ft above mean sea level (river-profile survey). Prior to Oct. 10, 1928, staff gage at same site at datum 0.76 ft higher.

Average discharge.--27 years, 998 cfs (722,500 acre-ft per year).

Extremes.--Maximum discharge during year, 6,290 cfs June 11 (gage height, 7.50 ft); minimum, 220 cfs Mar. 20 (gage height, 1.60 ft).
1928-55: Maximum discharge, 17,800 cfs Nov. 27, 1949 (gage height, 11.47 ft), from rating curve extended above 5,000 cfs by logarithmic plotting; minimum, 118 cfs Nov. 30, 1952; minimum gage height, 1.11 ft Feb. 8, 1937.

Remarks.--Records excellent except those for period of no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 832: 1936. WSP 1286: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 4				Nov. 5 to Sept. 30			
2.3	425	3.5	1,020	1.6	220	4.0	1,320
2.6	540	4.0	1,360	2.0	330	5.0	2,220
3.0	730	5.0	2,290	2.5	495	6.0	3,530
				3.0	710	7.2	5,670
				3.5	980		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	576	508	950	820	450	285	515	425	1,250	2,000	2,400	815
2	540	484	860	715	411	279	464	439	1,140	1,700	1,780	850
3	512	456	800	633	394	273	411	464	1,220	1,700	1,530	884
4	484	460	745	587	387	258	387	499	1,570	1,900	1,430	902
5	453	2,590	750	559	378	250	390	595	1,920	1,950	1,480	974
6	436	2,160	755	527	378	252	470	624	1,930	1,950	1,600	1,000
7	450	1,210	675	499	576	250	660	715	2,350	1,900	1,710	944
8	690	944	624	484	790	258	908	840	3,210	1,800	1,570	896
9	603	926	599	460	579	268	1,640	740	4,740	2,000	1,380	850
10	590	805	575	439	495	270	1,530	720	5,570	2,200	1,410	800
11	1,480	735	543	425	450	265	1,110	1,080	5,470	2,400	1,420	730
12	1,130	750	563	411	425	265	896	1,410	5,000	2,600	1,280	638
13	*870	725	563	428	414	258	780	1,120	4,000	3,000	1,100	681
14	746	1,020	571	400	422	248	675	1,020	2,920	3,800	1,050	890
15	1,050	1,010	660	387	432	245	607	986	2,290	4,100	1,020	700
16	1,100	*1,330	575	378	418	238	571	986	1,920	4,000	1,010	624
17	1,070	1,350	555	372	394	235	531	998	1,860	3,300	1,020	559
18	882	2,740	563	360	375	232	499	1,280	1,930	2,800	1,030	484
19	882	3,100	563	348	360	228	481	2,360	2,040	2,300	1,090	453
20	1,070	2,080	607	342	351	222	484	2,450	2,340	2,100	1,170	464
21	1,270	1,740	845	330	339	232	495	1,930	*3,470	2,100	1,020	446
22	972	2,940	1,090	330	330	270	503	1,550	4,310	2,200	944	404
23	824	1,940	896	394	321	252	515	1,280	3,920	2,300	878	378
24	720	1,420	815	381	324	238	484	1,170	2,730	2,300	825	363
25	645	2,430	715	390	315	232	460	1,340	2,220	*1,810	775	354
26	603	2,300	651	378	300	225	456	1,280	2,210	1,710	715	384
27	590	1,980	603	*366	285	230	428	1,170	2,560	1,650	*690	478
28	576	1,540	*587	363	*291	*255	*411	1,070	2,600	1,600	705	460
29	540	1,270	587	366	-	297	404	1,620	2,500	1,650	780	414
30	508	1,100	651	375	------	306	404	2,030	2,200	1,700	860	390
31	512	-----	938	422	-----	351	-----	1,540	------	2,000	860	------
Total	23,374	44,043	21,474	13,669	11,384	7,967	18,569	35,731	83,390	70,520	36,532	19,209
Mean	754	1,468	693	441	407	257	619	1,153	2,780	2,275	1,178	640
Cfsm	4.41	8.58	4.05	2.58	2.38	1.50	3.62	6.74	16.3	13.3	6.89	3.74
In.	5.08	9.58	4.67	2.97	2.48	1.73	4.04	7.77	18.14	15.34	7.95	4.18
Ac-ft	46,360	87,360	42,590	27,110	22,580	15,800	36,830	70,870	165,400	139,900	72,460	38,100

Calendar year 1954: Max 4,150 Min 349 Mean 1,322 Cfsm 7.73 In. 104.96 Ac-ft 957,400
Water year 1954-55: Max 5,570 Min 222 Mean 1,057 Cfsm 6.18 In. 83.93 Ac-ft 765,400

Peak discharge (base, 3,600 cfs).--Nov. 5 (10 p.m.) 4,200 cfs (6.42 ft); Nov. 19 (10 a.m.) 3,650 cfs (6.08 ft); Nov. 22 (12 m.) 3,710 cfs (6.12 ft); June 11 (12:30 a.m.) 6,290 cfs (7.50 ft); June 22 (12:30 a.m.) 4,740 cfs (6.72 ft); probably July 15 (time unknown) 5,020 cfs (6.87 ft).
* Discharge measurement made on this day.
Note.--No gage-height record June 28 to July 24, July 27 to Aug. 1; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Sauk River above Whitechuck River, near Darrington, Wash.

Location.--Lat 48°10'00", long 121°27'45", in NW¼ sec. 24, T. 31 N., R. 10 E., on right bank half a mile upstream from Whitechuck River and 9½ miles southeast of Darrington.

Drainage area.--152 sq mi.

Records available.--August to November 1910 (fragmentary gage heights and discharge measurements only), October 1917 to September 1922, August 1928 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 930 ft (from river-profile map). Prior to Nov. 18, 1910, staff gage three-eighths of a mile downstream at different datum.

Average discharge.--32 years (1917-22, 1928-55), 1,115 cfs (807,200 acre-ft per year).

Extremes.--Maximum discharge during year, 6,460 cfs June 10 (gage height, 6.96 ft); minimum, 225 cfs Mar. 20, 21 (gage height, 2.45 ft).
1917-22, 1928-55: Maximum discharge, 30,200 cfs Nov. 27, 1949 (gage height, 14.90 ft, in gage well), from rating curve extended above 6,200 cfs by logarithmic plotting; minimum, 115 cfs Nov. 15, 16, 30, Dec. 1, 1936.

Remarks.--Records excellent except those for period of no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 752: 1932. WSP 1286: 1918(M), 1920(M), 1921, 1922(M), 1932(M), 1934(M), 1946-47(M), 1949.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 17				Nov. 18 to Sept. 30			
2.6	290	4.0	1,320	2.4	210	4.5	1,810
3.0	510	4.5	1,910	2.6	275	5.0	2,500
3.5	860	5.0	2,620	3.0	460	6.0	4,290
				3.5	835	7.0	6,560
				4.0	1,260		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	402	450	950	840	573	311	835	468	1,500	2,420	2,320	532
2	375	426	870	780	493	303	664	486	1,370	1,940	1,770	538
3	350	408	790	730	450	287	532	500	1,390	1,760	1,440	566
4	330	396	740	680	456	283	468	552	1,800	1,740	1,350	566
5	315	1,520	930	*650	468	279	456	664	2,270	1,690	1,370	608
6	300	1,970	870	608	486	268	538	738	2,360	1,740	1,430	622
7	315	1,110	800	566	2,020	258	730	828	2,810	1,740	1,490	601
8	879	876	730	526	2,840	261	1,060	1,040	3,630	1,790	1,370	552
9	682	876	690	486	1,350	268	1,910	939	5,120	1,990	1,190	506
10	712	804	660	462	947	287	1,760	*915	6,010	2,270	1,180	468
11	2,560	731	680	432	775	283	1,260	1,710	5,940	2,380	1,180	444
12	*1,700	710	800	414	671	279	1,060	2,380	5,780	2,780	1,080	398
13	1,120	710	730	450	657	268	939	1,730	4,650	3,450	947	420
14	876	1,070	740	409	643	258	798	1,410	3,580	4,310	883	629
15	900	1,160	780	387	629	247	692	1,270	2,810	4,270	835	559
16	900	2,400	710	370	*580	240	657	1,220	2,280	4,140	812	500
17	908	2,590	640	365	532	234	594	1,190	2,270	3,180	790	462
18	780	4,630	610	355	468	234	566	1,480	2,080	2,500	782	370
19	932	4,630	600	340	438	231	532	2,620	2,210	2,080	835	340
20	1,290	3,270	700	325	414	228	526	2,890	2,520	2,130	867	350
21	1,710	2,310	840	315	398	244	552	2,380	3,580	2,210	768	340
22	1,180	2,620	1,000	311	382	426	573	1,940	*4,420	2,360	708	303
23	967	*2,080	920	414	365	325	615	1,630	4,020	2,410	650	279
24	828	1,700	850	432	387	275	573	1,470	3,090	2,350	*608	264
25	731	3,600	730	526	355	261	526	1,540	2,520	1,940	573	261
26	661	2,600	670	456	335	247	519	1,580	2,420	*1,700	519	254
27	612	1,900	650	404	315	258	468	1,490	2,640	1,940	500	283
28	570	1,500	630	387	315	291	444	1,370	2,810	1,680	493	307
29	528	1,300	620	376	-	*432	432	1,770	2,890	1,810	519	307
30	492	1,100	700	382	------	426	432	2,290	2,730	1,970	601	287
31	468	-----	920	468	------	580	-----	1,800	------	2,400	587	------
Total	25,373	51,447	23,550	14,646	18,742	9,072	21,711	44,290	93,500	73,070	30,447	12,916
Mean	818	1,715	760	472	669	293	724	1,429	3,117	2,357	982	431
Cfsm	5.38	11.3	5.00	3.11	4.40	1.93	4.76	9.40	20.5	15.5	6.46	2.84
In.	6.21	12.59	5.76	3.58	4.59	2.22	5.31	10.84	22.88	17.88	7.45	3.16
Ac-ft	50,330	102,000	46,710	29,050	37,170	17,990	43,060	87,850	185,500	144,900	60,390	25,620

Calendar year 1954: Max 4,630 Min 300 Mean 1,407 Cfsm 9.26 In. 125.68 Ac-ft 1,019,000
Water year 1954-55: Max 6,010 Min 228 Mean 1,147 Cfsm 7.55 In. 102.47 Ac-ft 830,600

Peak discharge (base, 4,000 cfs).--Nov. 18 (8 a.m.) 5,990 cfs (6.76 ft); probably Nov. 25 (time unknown) 4,540 cfs (6.12 ft); Feb. 7 (12 p.m) to Feb. 8 (1 a.m.) 4,480 cfs (6.09 ft); June 10 (9:30 p.m.) 6,460 cfs (6.96 ft); June 22 (2 a.m.) 4,540 cfs (6.12 ft); July 15 (12 a.m.) 5,010 cfs (6.33 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 25 to Jan. 4; discharge estimated on basis of recorded range in stage and records for nearby stations.

Sauk River near Sauk, Wash.

Location.--Lat 48°25'15", long 121°34'00", in NW¼ sec. 19, T. 34 N., R. 10 E., on left bank 5 miles upstream from mouth, 5 miles southeast of Sauk, and 8 miles downstream from Suiattle River.

Drainage area.--714 sq mi.

Records available.--August to October 1910 (fragmentary), March 1911 to August 1912, July 1928 to September 1955. Published as "near Suiattle Crossing, near Sauk" 1910-12.

Gage.--Water-stage recorder. Datum of gage is 266 ft above mean sea level (river-profile survey). Prior to Aug. 4, 1912, staff gages at several sites from 1 mile downstream to 5 miles upstream from present site at various datums.

Average discharge.--27 years (1928-55), 4,218 cfs (3,054,000 acre-ft per year).

Extremes.--Maximum discharge during year, 23,900 cfs June 11 (gage height, 9.56 ft); minimum, 1,240 cfs Sept. 26; minimum gage height, 3.11 ft (from recorded range in stage), sometime during period of no gage-height record Mar. 9-31.
1910-12, 1928-55: Maximum discharge, 82,400 cfs Nov. 27, 1949 (gage height, 16.93 ft); minimum, 572 cfs Dec. 5, 1929, but may have been less during period of ice effect Jan. 10-27, 1930.

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 1286: 1929, 1937, 1939.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 31 to Sept. 30)

3.0	1,230	5.0	4,820
3.3	1,600	6.0	7,800
3.6	2,010	7.0	11,500
4.0	2,640	8.0	15,800
4.5	3,630	9.2	21,900

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,080	1,970	4,600	6,200	2,840	1,720	3,800	2,180	5,630	9,110	8,800	2,640
2	1,980	*1,900	4,130	4,770	2,440	1,680	2,800	2,250	5,160	7,460	7,100	2,640
3	1,870	1,840	3,780	3,900	2,220	1,610	2,200	2,300	5,130	6,870	5,900	2,820
4	1,810	1,800	3,500	3,400	2,240	1,540	2,000	2,410	6,560	6,910	5,600	2,800
5	1,730	5,760	3,570	3,070	2,280	1,510	2,200	2,780	8,260	6,690	5,600	2,880
6	1,690	8,250	4,010	2,860	2,310	1,550	2,800	2,930	8,430	6,840	5,800	3,010
7	1,700	4,470	3,670	2,680	6,750	1,470	*3,550	3,170	10,000	6,780	6,000	2,900
8	2,810	3,550	3,270	2,590	12,100	*1,480	4,540	3,940	12,900	6,840	5,400	2,730
9	2,520	3,420	3,070	2,450	6,110	1,500	8,610	3,550	18,000	7,660	4,700	2,610
10	2,260	3,170	2,990	2,330	4,270	1,500	8,120	3,380	21,700	8,790	4,800	2,420
11	6,710	2,880	2,750	2,240	3,520	1,500	5,690	5,450	21,900	9,220	4,500	2,260
12	5,320	2,900	3,010	*2,180	3,070	1,500	4,720	8,120	21,200	10,700	4,000	2,070
13	3,870	2,800	3,520	2,300	2,990	1,500	4,270	6,030	17,800	13,300	3,600	2,000
14	3,070	3,810	*3,460	2,180	2,970	1,450	3,610	5,050	13,500	16,600	3,500	2,730
15	3,250	4,080	4,820	2,120	2,950	1,450	3,190	4,670	10,900	17,100	3,500	2,360
16	3,480	7,800	3,650	2,060	2,770	1,450	3,010	4,500	8,720	16,900	3,500	2,120
17	3,400	8,360	3,230	2,040	2,540	1,450	2,750	4,340	7,980	13,700	3,600	2,020
18	3,050	15,000	3,110	1,970	2,310	1,400	2,610	5,320	7,800	10,500	3,700	1,720
19	3,090	15,700	3,050	1,880	2,240	1,400	2,490	*9,080	8,180	8,500	3,900	1,570
20	4,060	11,300	3,090	1,870	2,140	1,400	2,450	10,400	8,930	8,290	4,200	1,630
21	5,320	7,940	3,760	1,790	2,080	1,400	2,540	8,500	12,600	8,400	3,400	1,690
22	3,900	9,150	5,520	1,760	1,980	1,400	2,610	6,840	16,200	8,750	3,100	1,510
23	3,340	7,840	4,670	2,180	1,940	1,400	2,750	5,770	15,500	9,040	2,900	1,390
24	2,930	5,970	4,540	2,220	2,040	1,400	2,590	5,220	11,800	9,220	2,900	1,330
25	2,680	9,230	3,900	2,590	1,910	1,400	2,420	5,600	9,520	7,940	2,800	1,280
26	2,470	12,000	3,440	2,300	1,840	1,400	2,390	5,630	8,820	*6,750	2,700	1,270
27	2,340	12,400	3,110	2,130	1,720	1,400	2,240	5,350	9,700	6,600	2,700	1,370
28	2,250	8,320	3,070	2,070	1,760	1,500	2,160	4,850	*10,500	6,200	2,700	1,470
29	2,140	6,410	3,460	2,020	-	1,750	2,130	6,290	11,100	6,500	2,700	1,470
30	2,070	5,380	4,220	2,040	------	1,700	2,080	8,790	10,100	6,400	3,000	1,390
31	2,000	-----	8,820	2,310	-----	2,400	-----	6,870	------	7,500	*2,770	------
Total	91,190	195,400	118,790	78,500	86,330	47,210	99,320	161,560	344,520	282,060	129,370	62,100
Mean	2,942	6,513	3,832	2,532	3,083	1,523	3,311	5,212	11,480	9,099	4,173	2,070
Cfsm	4.12	9.12	5.37	3.55	4.32	2.13	4.64	7.30	16.1	12.7	5.84	2.90
In.	4.75	10.18	6.19	4.09	4.50	2.46	5.17	8.42	17.94	14.69	6.74	3.23
Ac-ft	180,900	387,600	235,600	155,700	171,200	93,640	197,000	320,400	683,300	559,500	256,600	123,200

Calendar year 1954: Max 15,700 Min 1,690 Mean 5,364 Cfsm 7.51 In. 101.97 Ac-ft 3,883,000
Water year 1954-55: Max 21,900 Min 1,270 Mean 4,648 Cfsm 6.51 In. 88.36 Ac-ft 3,365,000

Peak discharge (base, 13,000 cfs).--Nov. 19 (3 p.m.) 17,600 cfs (8.38 ft); Nov. 27 (1 a.m.) 15,400 cfs (7.91 ft); Feb. 8 (2 a.m.) 17,800 cfs (8.41 ft); June 11 (2 a.m.) 23,900 cfs (9.56 ft); June 23 (5:30 a.m.) 16,900 cfs (8.23 ft); July 15 (3 a.m.) 19,300 cfs (8.72 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Mar. 9 to Apr. 6, July 27 to Aug. 30; discharge estimated on basis of recorded range in stage and records for nearby stations.

Baker River below Anderson Creek, near Concrete, Wash.

Location.--Lat 48°39'50", long 121°40'25", in SE¼ sec. 30, T. 37 N., R. 9 E., on right bank 100 ft downstream from Anderson Creek and 9½ miles northeast of Concrete.

Drainage area.--211 sq mi.

Records available.--September 1910 to October 1925, August 1928 to November 1931, January to September 1955.

Gage.--Water-stage recorder. Datum of gage is 521 ft above mean sea level (from river-profile survey). Prior to Oct. 22, 1910, staff gage at site an eighth of a mile upstream at different datum. Oct. 22, 1910, to Oct. 3, 1925, Aug. 30, 1928, to Nov. 11, 1931, staff gages and water-stage recorder at site 250 ft downstream at different datum.

Average discharge.--18 years (1910-25, 1928-31), 1,999 cfs (1,447,000 acre-ft per year).

Extremes.--Maximum discharge during period January to September 1955, 8,180 cfs June 10, 11 (gage height, 10.03 ft); minimum, 446 cfs Mar. 20 (gage height, 3.16 ft).
1910-25, 1928-31, 1955: Maximum discharge, 36,800 cfs Dec. 29, 1917 (gage height, 13.7 ft, site and datum then in use), from rating curve extended above 8,100 cfs; minimum recorded, 219 cfs Dec. 15, 16, 1919.
Flood of about 1815 reached a stage about 2 ft higher than that of Dec. 29, 1917. Flood in 1897 reached a stage about equal to that of Dec. 29, 1917. Flood in November 1909 reached a stage 1.6 ft higher than that of Dec. 29, 1917 (discharge, 46,200 cfs).

Remarks.--Records excellent except those for period of no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 1346: 1912-13(M), 1924, drainage area.

Discharge, in cubic feet per second, January to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				a2,000	1,260	566	1,490	805	2,330	3,750	6,610	1,640
2				a1,700	1,080	550	1,230	856	2,060	3,030	4,480	1,720
3				a1,500	960	526	1,030	905	2,140	3,120	3,340	1,800
4				a1,350	944	498	927	993	2,670	3,220	2,960	1,870
5				a1,200	888	488	883	1,160	2,980	3,190	2,930	2,010
6				a1,100	883	484	982	1,230	3,060	3,140	3,170	2,090
7				a1,050	1,410	481	1,370	1,360	3,540	2,980	3,370	2,030
8				a1,000	1,680	502	2,200	1,600	4,510	3,050	3,050	1,930
9				a950	1,250	523	3,950	1,460	6,060	3,390	2,670	1,820
10				a900	1,030	554	3,290	1,450	7,350	3,690	2,700	1,650
11				a860	905	542	2,340	2,200	7,370	3,870	2,750	1,470
12				a820	845	554	1,820	2,980	6,820	4,380	2,440	1,260
13				a900	856	530	1,500	2,380	5,660	5,160	2,100	1,560
14				a850	944	509	1,270	1,980	4,270	6,040	2,000	2,000
15				a800	1,010	488	1,180	1,980	3,400	6,130	1,940	1,820
16				a760	949	478	*1,030	1,990	2,930	5,870	1,920	1,560
17				a730	878	467	944	1,970	2,850	4,960	1,900	1,310
18				*700	800	467	910	*2,480	3,190	3,990	2,000	1,100
19				682	750	460	888	4,810	3,690	3,370	2,110	1,030
20				668	710	450	888	5,190	3,820	3,310	2,120	982
21				642	682	470	922	3,670	5,080	3,420	1,930	905
22				646	650	526	960	2,780	*5,990	3,690	1,780	835
23				850	*637	498	993	2,260	6,180	3,900	1,680	795
24				850	650	478	932	2,050	4,910	3,810	1,580	770
25				976	628	460	922	2,430	3,860	3,250	1,450	750
26				900	594	453	840	2,530	3,650	*3,160	1,340	790
27				*840	566	467	780	2,320	3,800	3,650	1,290	1,180
28				825	574	509	745	2,000	4,230	3,160	1,320	1,150
29				815	-	655	730	3,130	4,190	4,190	1,480	1,060
30				845	------	673	745	4,190	4,240	4,240	*1,690	960
31		-----		1,130	-----	912	-----	3,050	------	4,960	1,710	------
Total				29,839	25,013	16,218	38,691	70,189	126,830	121,070	73,810	41,847
Mean				963	893	523	1,290	2,264	4,228	3,905	2,381	1,395
Cfsm				4.56	4.23	2.48	6.11	10.7	20.0	18.5	11.3	6.61
In.				5.26	4.41	2.86	6.82	12.37	22.35	21.34	13.01	7.38
Ac-ft				59,180	49,610	32,170	76,740	139,200	251,600	240,100	146,400	83,000

Calendar year	: Max	Min	Mean	Cfsm	In.	Ac-ft
Water year	: Max	Min	Mean	Cfsm	In.	Ac-ft

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.

Baker River at Concrete, Wash.

Location.--Lat 48°32'35", long 121°44'35", on line between secs. 10 and 11, T. 35 N., R. 8 E., on left bank 800 ft downstream from Baker River powerplant, a quarter of a mile northeast of Concrete, and three-quarters of a mile upstream from mouth.
Drainage area.--297 sq mi.
Records available.--September 1910 to March 1915, September 1943 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 172.6 ft above mean sea level (from river-profile survey). Prior to Mar. 5, 1915, staff gage at site half a mile downstream at different datum.
Average discharge.--16 years (1910-14, 1943-55), 2,572 cfs (1,862,000 acre-ft per year), adjusted for storage.
Extremes.--Maximum discharge during year, 18,500 cfs Nov. 18 (gage height, 11.99 ft); minimum, 52 cfs Mar. 1 (gage height, 0.89 ft); minimum daily, 73 cfs Mar. 13.
1910-15, 1943-55: Maximum discharge, 35,200 cfs Nov. 27, 1949 (gage height, 20.32 ft, from high-water mark), from rating curve extended above 16,000 cfs on basis of computation of peak flow over dam; minimum, 21 cfs Feb. 7, 1949 (gage height, 0.20 ft); minimum daily, that of Mar. 13, 1955.
Remarks.--Records good. No diversions which are not returned to river above gage. Flow regulated by Baker River powerplant and Lake Shannon (see p. 153).
Revisions (water years).--WSP 1286: 1911-13(M), 1944(M), 1945-46, drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.0	64	4.5	1,550
1.3	100	5.0	2,050
1.6	145	6.0	3,360
2.0	225	7.0	5,010
2.5	360	8.0	7,130
3.0	550	9.5	11,100
3.5	800	11.0	15,500
4.0	1,140		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,530	2,570	2,650	2,510	1,970	956	1,020	712	3,390	4,680	8,180	1,890
2	2,530	2,570	2,640	2,510	1,910	177	1,400	1,450	2,660	3,750	5,250	1,900
3	2,520	2,570	2,600	2,510	1,890	211	1,090	1,400	2,650	4,320	3,540	1,860
4	2,520	2,560	2,570	2,510	2,090	197	1,020	1,280	3,280	4,130	3,210	862
5	2,060	*2,560	2,570	2,480	2,070	76	521	1,620	3,850	3,780	3,180	1,480
6	2,060	2,290	2,560	2,500	2,100	79	90	1,600	3,860	3,990	3,450	1,920
7	2,140	2,210	2,560	2,480	1,880	222	*277	1,300	4,610	3,770	3,730	1,960
8	2,080	2,580	2,550	2,480	1,520	*92	*1,100	956	5,950	3,530	3,330	1,950
9	2,120	2,600	2,550	1,980	2,280	87	1,650	1,640	8,460	4,120	2,620	1,960
10	2,610	2,580	2,550	2,470	2,200	212	2,080	1,810	9,740	4,850	2,770	1,950
11	4,150	2,600	2,530	2,460	1,950	151	2,150	1,870	9,960	4,640	3,060	1,760
12	4,350	2,600	2,530	2,450	1,900	74	2,280	2,020	9,390	5,490	2,780	1,980
13	3,090	2,580	2,530	2,440	2,170	73	2,070	2,710	8,000	6,290	2,460	2,040
14	2,600	2,600	2,520	2,440	1,810	165	2,040	3,090	5,010	7,600	1,810	2,010
15	2,600	4,130	2,520	2,300	1,460	94	1,930	2,570	4,510	7,880	2,480	2,210
16	2,580	4,830	2,520	2,400	1,410	101	1,830	2,580	3,830	7,280	2,280	2,260
17	2,580	5,340	2,520	2,390	1,460	95	1,320	2,560	3,780	6,890	2,320	2,090
18	2,580	15,000	2,520	2,280	1,480	108	1,670	2,580	3,810	4,450	2,370	1,990
19	2,580	14,200	2,520	*2,380	1,340	97	1,220	*4,840	3,960	3,260	2,440	2,010
20	2,920	8,590	2,510	2,100	1,130	99	1,650	6,890	4,320	4,120	2,360	2,260
21	3,360	7,940	2,500	2,160	1,400	598	1,250	5,630	6,870	4,070	2,120	2,270
22	2,700	11,500	2,510	2,180	1,330	99	1,360	4,710	7,880	4,390	2,080	1,980
23	2,550	6,210	2,520	2,210	1,410	97	1,620	3,400	8,020	5,060	2,280	2,000
24	2,610	4,220	2,510	2,230	1,170	97	632	3,030	4,540	4,200	1,920	1,910
25	2,650	7,680	2,500	2,230	1,080	94	1,670	2,990	4,690	4,050	1,860	1,870
26	2,570	7,300	2,510	2,220	1,030	87	1,220	3,400	4,590	3,420	1,950	1,980
27	2,530	5,950	2,510	2,170	101	99	1,200	3,700	4,460	4,490	1,750	2,000
28	2,580	4,150	2,480	2,180	1,160	128	1,120	3,150	5,170	3,380	1,430	1,900
29	2,580	3,240	2,510	2,210	-	90	1,010	2,960	*5,270	5,080	1,910	1,990
30	2,580	2,790	2,500	2,220	-------	99	993	4,990	5,570	5,140	*1,850	2,040
31	2,560	-------	2,500	2,100	-------	108	-------	4,960	-------	5,700	1,890	-------
Total	82,470	148,540	78,570	72,180	44,701	4,962	40,483	88,398	162,080	147,800	84,660	58,282
Mean	2,660	4,951	2,535	2,328	1,596	160	1,349	2,852	5,403	4,768	2,731	1,943
Ac-ft	163,600	294,600	155,800	143,200	88,660	9,840	80,300	175,300	321,500	293,200	167,900	115,600
(†)	-15,550	+18,970	-19,300	-62,290	-13,730	+41,270	+34,690	+10,240	+8,530	+90	-7,430	-29,250

Adjusted for change in contents in Lake Shannon

Mean	2,407	5,270	2,220	1,316	1,349	831	1,933	3,017	5,546	4,770	2,610	1,451
Cfsm	8.10	17.7	7.47	4.43	4.54	2.80	6.51	10.2	18.7	16.1	8.79	4.89
In.	9.34	19.80	8.62	5.11	4.73	3.23	7.26	11.71	20.83	18.52	10.13	5.45
Ac-ft	148,000	313,600	136,500	80,910	74,930	51,110	115,000	185,500	330,000	293,300	160,500	86,350

Observed

Calendar year 1954: Max	15,000	Min	1,470	Mean	3,156	Ac-ft 2,285,000
Water year 1954-55: Max	15,000	Min	73	Mean	2,776	Ac-ft 2,010,000

Adjusted

Calendar year 1954: Mean	3,133	Cfsm	10.5	In.	143.20	Ac-ft 2,268,000
Water year 1954-55: Mean	2,729	Cfsm	9.19	In.	124.73	Ac-ft 1,976,000

* Discharge measurement made on this day.
† Change in contents in Lake Shannon, in acre-feet, furnished by Puget Sound Power & Light Co.

Skagit River near Concrete, Wash.

Location.--Lat 48°31'30", long 121°46'10", in NE¼ sec. 16, T. 35 N., R. 8 E., on right bank at dalles 1½ miles southwest of Concrete and 2½ miles downstream from Baker River.

Drainage area.--2,700 sq mi, approximately, of which 400 sq mi is in Canada.

Records available.--September 1924 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 130.0 ft above mean sea level, datum of 1929. Prior to Dec. 10, 1924, staff gage 200 ft upstream and Dec. 10, 1924, to Sept. 30, 1937, water-stage recorder at present site; both gages at datum 12.7 ft higher.

Average discharge.--31 years, 14,530 cfs (10,520,000 acre-ft per year).

Extremes.--Maximum discharge during year, 56,300 cfs June 11 (gage height, 27.10 ft); minimum, 3,920 cfs Sept. 26 (gage height, 14.00 ft); minimum daily, 5,600 cfs Sept. 25.

1924-55: Maximum discharge, 154,000 cfs Nov. 27, 1949 (gage height, 40.8 ft); minimum, probably less than 2,160 cfs during period Oct. 1-24, 1925, when recorder was not operating and gates in Baker River Dam were first closed; minimum daily recorded, 2,610 cfs Nov. 14, 1936.

Maximum stage known, 69.3 ft, present datum, at site 200 ft upstream, from floodmarks (discharge, about 500,000 cfs); occurred about 1815. Records of other floods, at site 200 ft upstream, prior to establishment of station, are given in WSP 612.

Remarks.--Records excellent. Flow regulated by powerplants on Baker and upper Skagit Rivers, and by Ross Reservoir (see p. 139) and Diablo Reservoir and Lake Shannon (see p. 153).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

14.8	5,600	19.0	18,100
15.4	7,000	20.0	21,700
16.0	8,560	22.0	30,100
17.0	11,500	24.0	39,500
18.0	14,700	26.3	51,500

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11,100	9,580	17,400	18,100	12,600	9,140	13,200	7,890	18,600	26,500	30,600	9,480
2	10,200	*10,800	16,300	15,400	11,800	8,550	13,000	9,500	16,700	22,700	28,100	9,260
3	8,740	9,920	15,500	15,100	11,400	8,640	9,960	10,400	16,900	22,600	24,100	8,880
4	9,370	*10,800	14,700	14,600	11,400	7,650	9,610	10,900	19,000	22,800	24,000	8,140
5	9,360	20,300	13,800	14,100	11,300	7,610	9,780	12,000	21,700	22,200	18,300	9,140
6	8,800	25,600	15,000	13,600	10,400	7,240	8,900	12,200	22,500	22,500	17,600	10,100
7	9,470	16,500	14,900	13,200	14,600	7,030	*11,000	10,700	25,900	22,100	18,000	11,800
8	12,200	14,300	14,000	12,400	25,400	7,660	13,800	11,000	31,400	22,000	17,800	11,600
9	11,800	14,800	*13,800	10,600	18,300	7,590	21,800	12,900	40,800	23,800	16,100	11,400
10	10,500	14,000	13,500	11,800	15,100	8,120	22,000	12,500	50,300	25,900	16,000	10,700
11	21,900	12,600	12,500	11,900	13,700	8,080	18,000	15,700	51,200	25,700	16,300	9,220
12	20,200	13,100	11,900	*11,800	12,000	7,500	16,600	21,000	48,800	28,600	15,800	9,640
13	15,000	12,300	13,900	12,000	11,200	7,060	15,500	18,600	42,200	32,900	15,600	10,000
14	11,900	15,200	14,100	11,700	11,400	7,480	14,200	17,100	32,900	39,300	11,800	11,900
15	13,100	17,200	16,700	11,200	11,900	7,730	13,200	14,500	27,100	*47,300	12,700	11,600
16	13,500	22,700	14,900	10,200	11,500	7,380	12,400	15,200	22,900	49,700	13,200	11,100
17	13,300	24,700	14,100	11,200	11,200	7,340	10,500	15,700	22,300	45,600	13,300	7,910
18	12,600	46,200	13,000	11,000	10,900	7,400	10,800	*16,800	21,600	38,000	13,400	6,480
19	12,300	51,100	12,800	11,000	10,100	6,720	10,900	25,800	22,500	30,000	13,700	7,090
20	15,600	43,200	13,100	10,700	9,020	5,930	11,000	32,000	23,700	25,400	13,800	8,400
21	19,000	34,600	15,100	10,600	9,540	7,040	10,900	26,100	32,600	26,500	12,200	8,480
22	15,700	44,600	18,700	10,100	9,140	8,260	10,900	21,600	*39,800	26,900	11,700	7,680
23	13,500	34,800	17,000	10,300	*9,060	8,080	11,000	18,200	40,600	26,400	12,000	7,010
24	11,900	28,100	17,000	10,700	9,800	7,730	8,960	17,300	30,100	27,200	11,200	6,200
25	12,500	37,200	15,200	12,000	9,730	7,770	10,300	18,100	25,600	26,400	10,900	5,600
26	12,000	40,300	13,000	11,800	9,080	7,070	10,700	18,700	24,100	25,300	10,100	6,240
27	11,600	41,400	13,400	11,300	6,020	6,440	10,500	18,700	26,800	23,700	9,200	8,470
28	11,400	32,900	13,700	11,300	8,380	6,790	10,000	15,100	29,500	20,600	8,640	9,380
29	10,200	27,300	14,700	10,500	-	8,140	9,280	16,100	29,900	22,900	9,380	9,000
30	8,880	23,300	15,300	10,200	------	8,880	8,720	24,500	28,500	23,700	10,400	8,790
31	9,110	-----	22,200	10,900	-----	9,530	-----	22,600	------	26,100	*10,600	------
Total	386,730	749,400	461,200	371,300	325,970	237,580	367,410	519,390	886,500	871,300	464,520	270,690
Mean	12,480	24,980	14,880	11,980	11,640	7,664	12,250	16,750	29,550	28,110	14,980	9,023
Ac-ft	767,100	1,486,000	914,800	736,500	646,600	471,200	728,700	1,030,000	1,758,000	1,728,000	921,400	536,900

Calendar year 1954: Max 51,100 Min 8,740 Mean 19,290 Ac-ft 13,960,000
Water year 1954-55: Max 51,200 Min 5,600 Mean 16,200 Ac-ft 11,730,000

* Discharge measurement made on this day.

Alder Creek near Hamilton, Wash.

Location.--Lat 48°31'40", long 121°57'00", in NE¼ sec. 18, T. 35 N., R. 7 E., on left bank at railroad trestle a quarter of a mile upstream from highway bridge, three-quarters of a mile upstream from mouth, and 2 miles east of Hamilton.

Drainage area.--10.7 sq mi.

Records available.--August 1943 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 125 ft (by barometer). Prior to Nov. 15, 1945, at site 80 ft upstream at datum 2.46 ft higher. Nov. 15, 1945, to Jan. 7, 1947, at present site at datum 2.56 ft higher. Jan. 8, 1947, to Aug. 24, 1951, at present site at datum 0.98 ft higher.

Average discharge.--12 years, 35.0 cfs (25,340 acre-ft per year).

Extremes.--Maximum discharge during year, 300 cfs Feb. 8 (gage height, 3.79 ft); minimum, 9.0 cfs Sept. 25, 26; minimum gage height, 2.39 ft Oct. 16, 17, Nov. 2, 3.
1943-55: Maximum discharge, 670 cfs Jan. 7, 1945 (gage height, 4.28 ft, site and datum then in use); minimum, 5.9 cfs Oct. 19, 1952 (gage height, 1.87 ft).

Remarks.--Records good except those for periods of no gage-height record or shifting control, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 1286: 1945(M), 1947, drainage area.

Rating table, water year 1954-55, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

2.27	9.5	3.0	100
2.3	11	3.2	140
2.4	18	3.4	185
2.6	39	3.6	235
2.8	67		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a13.5	15	a61	162	69	34	97	40	60	32	20	14
2	a13.5	*14.5	a52	115	61	34	86	39	56	29	18	13
3	a13.5	14.5	a46	92	58	33	70	40	54	30	18	13
4	a13	17.5	a42	75	61	31	61	40	51	28	17.5	12.5
5	13	47	a38	67	64	31	60	43	48	26	17.5	11.5
6	11.5	49	37	60	82	30	*82	43	46	25	16.5	11.5
7	11.5	38	37	55	156	30	73	46	43	25	16	10.5
8	13	34	33	52	*215	*31	81	48	40	23	16	10.5
9	16	33	*30	49	130	38	130	46	38	23	16	10.5
10	14	31	29	47	98	49	144	48	37	23	16	10.5
11	19	29	28	46	80	49	117	55	36	24	16	11
12	16.5	29	34	44	69	48	108	61	33	24	15	10.5
13	14.5	29	40	*55	64	44	90	60	31	24	15	10.5
14	13	29	44	52	67	39	77	54	30	24	15	*11.5
15	13	31	56	49	69	37	70	52	29	23	14.5	11.5
16	11	46	48	49	64	36	64	49	28	22	14.5	11
17	10.5	51	a42	52	60	36	58	48	27	21	14.5	11.5
18	11.5	67	37	48	52	36	54	48	29	21	14.5	11
19	14	90	36	46	51	33	51	*54	27	21	14.5	10
20	20	*70	33	44	47	33	48	54	26	19	15	10
21	18	67	31	42	44	39	49	51	24	19	14.5	10
22	17.5	73	30	42	42	61	51	47	24	19	14	10
23	17.5	66	31	69	40	49	49	44	25	19	14	10
24	17.5	58	32	69	44	43	47	42	*23	18	14	10
25	17.5	109	36	86	42	39	46	42	23	18	14	9.5
26	16	158	32	75	38	39	44	46	25	19	14	9.5
27	16	158	29	67	36	40	43	42	25	20	14	10
28	17.5	111	31	62	37	44	40	39	26	17.5	14	10
29	14.5	a90	52	58	-	52	39	51	24	*21	14	10
30	14.5	a70	72	55	------	54	39	73	26	20	14	9.5
31	14.5	-----	169	61	-----	61	-----	69	------	20	14	------
Total	456.5	1,724.5	1,348	1,945	1,940	1,253	2,048	1,514	1,014	697.5	474.5	324.5
Mean	14.7	57.5	43.5	62.7	69.3	40.4	68.3	48.8	33.8	22.5	15.3	10.8
Cfsm	1.37	5.37	4.07	5.86	6.48	3.78	6.38	4.56	3.16	2.10	1.43	1.01
In.	1.59	5.99	4.69	6.76	6.74	4.36	7.12	5.26	3.52	2.42	1.65	1.13
Ac-ft	905	3,420	2,670	3,860	3,850	2,490	4,060	3,000	2,010	1,380	941	644

Calendar year 1954: Max 169 Min 10.5 Mean 38.1 Cfsm 3.56 In. 48.36 Ac-ft 27,590
Water year 1954-55: Max 215 Min 9.5 Mean 40.4 Cfsm 3.78 In. 51.23 Ac-ft 29,230

Peak discharge (base, 140 cfs).--Nov. 26 (8 p.m.) 190 cfs (3.43 ft); Dec. 31 (6:30 p.m.) 198 cfs (3.49 ft); Feb. 8 (12:30 a.m.) 300 cfs (3.79 ft); Apr. 9 (11 p.m.) 162 cfs (3.28 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Note.--Shifting-control method used Oct. 5-17, July 16 to Sept. 30.

Day Creek near Lyman, Wash.

Location.--Lat 48°30'05", long 122°02'45", in NW¼ sec. 28, T. 35 N., R. 6 E., on left bank at highway bridge 1 mile upstream from mouth and 1¼ miles southeast of Lyman.

Drainage area.--36.3 sq mi.

Records available.--July 1943 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 90 ft (from topographic map).

Average discharge.--12 years, 266 cfs (192,600 acre-ft per year).

Extremes.--Maximum discharge during year, 3,750 cfs Feb. 7 (gage height, 6.47 ft), from rating curve extended above 1,600 cfs on basis of logarithmic plotting; minimum, 17 cfs Sept. 12, 13; minimum gage height, 0.27 ft Sept. 6, 12, 13.
1943-55: Maximum discharge, 5,570 cfs Dec. 28, 1949 (gage height, 8.35 ft), from rating curve extended above 3,000 cfs on basis of logarithmic plotting; minimum, 5.9 cfs Feb. 1, 1945.

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation or diversion above station.

Revisions (water years).--WSP 1286: Drainage area. WSP 1316: 1944(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 25				Nov. 25 to Sept. 30			
0.3	27	2.0	480	0.2	16	2.0	530
.5	53	2.5	690	.4	42	2.5	765
.7	89	3.0	920	.7	96	3.0	1,040
1.0	158	4.0	1,470	1.0	171	4.0	1,660
1.5	298			1.5	330	5.0	2,430

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	60	183	730	321	90	862	237	326	500	669	26
2	38	57	154	405	292	84	457	219	351	390	295	22
3	39	*58	136	285	219	82	298	231	429	300	204	23
4	37	84	126	234	231	71	*225	295	477	270	151	23
5	36	1,170	186	192	204	72	222	316	445	250	126	21
6	35	546	350	160	295	71	278	316	433	230	109	20
7	37	268	269	140	1,770	*67	421	354	485	220	98	21
8	350	189	183	136	1,170	80	744	397	598	200	88	21
9	170	282	154	136	469	105	1,860	316	705	260	82	21
10	210	225	136	120	306	146	938	365	715	250	72	21
11	680	166	123	111	234	128	562	789	606	240	67	20
12	300	214	572	120	201	140	548	646	498	300	65	18.5
13	200	171	647	*268	265	118	445	409	385	334	58	36
14	150	211	*1,160	177	421	100	330	369	306	320	55	*76
15	125	358	802	146	365	90	265	389	253	272	55	338
16	110	1,020	385	143	250	80	262	369	228	234	52	126
17	100	729	285	165	189	76	225	409	234	165	48	84
18	90	1,340	259	130	154	78	207	562	340	151	47	58
19	110	1,180	231	111	136	74	207	785	288	133	44	45
20	350	*545	234	105	126	69	231	575	340	126	45	41
21	290	365	344	92	116	123	250	421	*417	120	39	36
22	160	432	326	98	105	314	282	344	385	114	39	31
23	120	283	477	608	105	163	330	312	693	109	38	27
24	105	222	503	521	138	116	237	323	*348	100	36	23
25	98	1,270	351	660	123	94	201	358	278	92	35	22
26	90	1,210	250	348	105	90	186	*490	312	170	35	21
27	82	713	204	240	90	98	160	362	365	303	32	107
28	76	405	210	201	90	157	157	312	530	171	29	96
29	72	278	316	180	-	381	171	640	389	*810	27	67
30	69	225	1,340	198	------	320	192	656	669	575	27	50
31	65	-----	1,140	702	-----	456	-----	417	------	629	27	------
Total	4,434	14,276	12,036	7,862	8,690	4,133	11,753	12,983	12,828	8,338	2,794	1,541.5
Mean	143	476	388	254	310	133	392	419	428	269	90.1	51.4
Cfsm	3.94	13.1	10.7	7.00	8.54	3.66	10.8	11.5	11.8	7.41	2.48	1.42
In.	4.54	14.63	12.33	8.05	8.90	4.23	12.04	13.30	13.14	8.54	2.86	1.58
Ac-ft	8,790	28,320	23,870	15,590	17,240	8,200	23,310	25,750	25,440	16,540	5,540	3,060

Calendar year 1954: Max 1,340 Min 29 Mean 263 Cfsm 7.25 In. 98.44 Ac-ft 190,600
Water year 1954-55: Max 1,860 Min 18.5 Mean 279 Cfsm 7.69 In. 104.14 Ac-ft 201,600

Peak discharge (base, 3,000 cfs).--Dec. 30 (6:30 p.m.) 3,380 cfs (6.08 ft); Feb. 7 (9:30 p.m.) 3,750 cfs (6.47 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1 to Nov. 2, July 1-12; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Skagit River near Mount Vernon, Wash.

Location.--Lat 48°26'40", long 122°20'00", in SE¼ sec. 7, T. 34 N., R. 4 E., on drawrest of, and 150 ft downstream from bridge on U. S. Highway 99 and 1 mile north of Mount Vernon.

Drainage area.--3,060 sq mi, approximately.

Records available.--October 1940 to September 1955. Monthly discharge only October 1940, published in WSP 1316.

Gage.--Water-stage recorder and crest-stage indicator. Datum of gage is at mean sea level, datum of 1929.

Average discharge.--15 years, 15,920 cfs (11,530,000 acre-ft per year).

Extremes.--Maximum discharge during year, 60,800 cfs Nov. 20 (elevation, 27.10 ft); minimum, 5,470 cfs Sept. 26 (elevation, 10.47 ft).
1940-55: Maximum discharge, 144,000 cfs Feb. 11, 1951 (elevation, 36.85 ft); minimum, 2,740 cfs Oct. 26, 1942 (elevation, 7.37 ft).
Maximum stage known, 37 ft in 1906, from Great Northern Railway high-water profile.

Remarks.--Records good. Flow regulated by powerplants on Baker and upper Skagit Rivers, and by Ross Reservoir (see p. 139) and by Diablo Reservoir and Lake Shannon (see following page). Small diversions for domestic and municipal use.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11,100	9,440	20,300	24,100	14,500	10,100	14,100	9,680	20,800	29,700	30,600	10,100
2	11,000	10,700	17,400	18,800	13,600	10,200	15,700	9,170	17,600	24,700	31,600	9,340
3	9,880	10,500	16,100	16,900	12,700	9,650	13,400	10,900	17,500	22,500	24,400	9,400
4	9,130	10,800	15,300	16,300	12,600	9,090	10,900	11,400	18,600	22,900	24,700	8,970
5	8,760	15,000	14,600	15,500	12,700	9,070	11,700	12,000	21,400	22,300	18,800	8,770
6	9,550	29,300	14,800	14,800	12,300	8,910	10,500	12,700	22,400	22,000	17,300	9,210
7	9,630	19,700	15,400	14,200	14,300	8,230	12,200	12,700	24,400	21,900	17,500	11,100
8	10,800	15,500	*14,500	13,800	31,600	8,770	14,100	11,800	30,100	21,600	17,200	11,200
9	13,600	15,100	14,000	12,400	23,500	9,190	22,800	12,400	39,700	22,300	16,300	11,000
10	11,300	14,800	13,700	12,200	18,300	9,530	29,200	13,400	52,200	24,400	15,600	10,800
11	16,800	13,600	13,100	12,700	15,900	9,910	21,800	14,700	57,500	25,100	15,800	9,880
12	22,500	13,300	12,800	12,600	14,400	9,860	19,500	21,400	55,800	26,500	15,500	9,210
13	17,200	13,500	14,300	12,900	13,100	9,230	*18,000	20,200	50,800	31,400	14,300	9,860
14	13,400	13,800	15,200	*13,100	13,100	8,910	16,200	18,600	39,600	37,300	12,300	11,000
15	12,600	16,200	18,800	12,400	14,100	9,210	14,900	16,300	30,200	46,000	11,900	11,700
16	13,400	21,900	16,700	11,700	13,500	9,090	14,200	15,100	24,200	51,700	12,800	11,400
17	13,600	26,100	15,000	11,700	13,000	8,850	12,900	16,300	22,300	52,600	13,000	9,680
18	12,500	42,100	14,400	12,000	12,300	8,830	11,600	16,700	21,900	44,800	12,900	7,800
19	12,600	55,700	13,700	11,800	11,800	8,710	12,200	22,000	22,500	33,600	13,000	7,130
20	14,900	56,400	13,100	11,700	11,100	7,830	11,700	*30,400	22,100	27,400	13,100	8,530
21	18,700	40,300	14,500	11,500	*10,400	7,540	12,000	30,000	28,700	26,000	12,400	8,850
22	16,900	44,600	18,100	11,300	11,000	9,880	11,900	23,900	39,500	25,700	11,300	7,980
23	15,000	44,700	18,100	12,200	9,930	9,860	12,200	19,400	*44,400	25,300	11,800	7,750
24	13,000	32,500	18,400	12,800	10,800	9,380	11,800	18,000	36,400	26,000	11,100	7,280
25	12,200	34,600	17,400	14,200	10,900	9,070	9,950	17,600	28,300	*27,400	10,900	6,370
26	12,400	46,900	15,100	14,100	10,700	8,890	11,700	19,00	24,400	24,900	10,200	6,320
27	12,000	50,600	13,700	13,200	9,530	8,490	11,400	19,200	26,400	22,700	9,780	7,920
28	*11,900	40,600	14,400	12,700	7,960	7,750	10,900	17,500	28,700	21,700	9,880	9,230
29	10,900	31,800	15,400	12,400	-	9,510	10,400	14,900	31,200	21,000	*8,450	9,300
30	10,300	26,000	16,700	11,500	------	10,600	9,820	23,400	30,600	24,800	10,300	9,150
31	9,440	------	25,200	12,400	------	10,800	------	23,900	------	24,800	10,500	------
Total	397,990	816,040	490,200	419,900	379,620	284,940	419,670	534,650	930,200	881,000	465,170	276,030
Mean	12,840	27,200	15,810	13,550	13,560	9,192	13,990	17,250	31,010	28,420	15,010	9,201
Ac-ft	789,400	‡1,619	972,300	832,900	753,000	565,200	832,400	‡1,060	‡1,845	‡1,747	922,700	547,500

Calendar year 1954: Max 56,400 Min 9,130 Mean 20,720 Ac-ft 15,000,000
Water year 1954-55: Max 57,500 Min 6,320 Mean 17,250 Ac-ft 12,490,000

Peak discharge (base, 55,000 cfs).--Nov. 20 (6 a.m.) 60,800 cfs (27.10 ft); June 11 (3 p.m.) 59,600 cfs (26.93 ft).
* Discharge measurement made on this day.
‡ Expressed in thousands.

Reservoirs in Skagit River basin, Wash.

Ross Reservoir.--See page 139.

Diablo Reservoir.--Lat 48°43'00", long 121°08'00", in SE¼ sec. 5, T. 37 N., R. 13 E. (unsurveyed), in Diablo Dam on Skagit River, 1 mile downstream from Thunder Creek and 6 miles northeast of Newhalem. Drainage area, 1,100 sq mi, approximately. Records available, October 1929 to September 1955. October 1929 to September 1938, monthly change in reservoir contents published with records for Skagit River at Newhalem. Gage, water-stage recorder. Datum of gage is at mean sea level, subject to adjustment to datum of 1929. Maximum contents during year, 90,040 acre-ft Mar. 24 (elevation, 1,205.89 ft); minimum, 81,340 acre-ft July 3 (elevation, 1,196.02 ft). Maximum contents during period 1929-55, 90,600 acre-ft July 14, 1933 (elevation, 1,206.5 ft).

Reservoir is formed by concrete dam, completed in 1930; storage began in October 1929. Usable capacity, 76,220 acre-ft between elevations 1,040 ft (bottom of outlet pipes) and 1,205 ft (top of taintor gates). Dead storage, 13,000 acre-ft. Crest of spillway is at elevation 1,187 ft. Water is used by city of Seattle for power development at Diablo and Newhalem powerplants. Gage-height record collected in cooperation with city of Seattle. Figures given herein represent total contents.

Lake Shannon.--Lat 48°32'55", long 121°44'25", in SW¼ sec. 2, T. 35 N., R. 8 E., at Baker Dam on Baker River near left bank, half a mile north of Concrete and 1 mile upstream from mouth of Baker River. Drainage area, 297 sq mi. Records available, November 1925 to September 1955. Gage, water-stage recorder. Datum of gage is at mean sea level, subject to adjustment to datum of 1929. Maximum contents during year, 160,570 acre-ft Nov. 18 (elevation, 436.91 ft); minimum, 63,980 acre-ft Feb. 25 (elevation, 387.34 ft). Maximum contents during period 1925-55, that of Nov. 18, 1954.

Reservoir is formed by concrete dam, completed in June 1927. Capacity, 132,500 acre-ft between elevations 360 ft (lowest elevation for capacity operation) and 435 ft (spillway crest). Dead storage unknown. Water is used by Puget Sound Power & Light Co. for power development. Gage-height records furnished by Puget Sound Power & Light Co. Figures given herein represent contents above elevation 340 ft (center line of outlet tunnel).

Month-end elevation and contents, water year October 1954 to September 1955

Date	Diablo Reservoir			Lake Shannon		
	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	1,202.0	86,520	-	435.24	156,780	-
Oct. 31	1,202.2	86,700	+180	428.21	141,230	-15,550
Nov. 30	1,202.7	87,140	+440	436.75	160,200	+18,970
Dec. 31	1,201.0	85,640	-1,500	428.06	140,900	-19,300
Calendar year 1954	-	-	+2,700	-	-	-16,560
Jan. 31	1,204.2	88,490	+2,850	396.10	78,610	-62,290
Feb. 28	1,204.1	88,400	-90	387.89	64,880	-13,730
Mar. 31	1,203.5	87,860	-540	411.11	106,150	+41,270
Apr. 30	1,200.5	85,200	-2,660	428.03	140,840	+34,690
May 31	1,200.0	84,760	-440	432.70	151,080	+10,240
June 30	1,201.2	85,820	+1,060	436.49	159,610	+8,530
July 31	1,202.7	87,140	+1,320	436.53	159,700	+90
Aug. 31	1,203.6	87,950	+810	433.23	152,270	-7,430
Sept.30	1,201.9	86,430	-1,520	419.57	123,020	-29,250
Water year 1954-55	-	-	-90	-	-	-33,760

† Elevation at 12 p.m.

Samish River near Burlington, Wash.

Location.--Lat 48°32'45", long 122°20'15", in SE¼ sec. 6, T. 35 N., R. 4 E., on left bank 500 ft downstream from bridge on U. S. Highway 99, half a mile downstream from Friday Creek, and 5 miles north of Burlington.

Drainage area.--87.8 sq mi.

Records available.--July 1943 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 45 ft (from topographic map). Prior to Dec. 1, 1948, at site 500 ft upstream at different datum. Dec. 1, 1948, to Jan. 7, 1949, staff gage 200 ft upstream at datum 3.14 ft higher than present datum.

Average discharge.--12 years, 241 cfs (174,500 acre-ft per year).

Extremes.--Maximum discharge during year, 2,420 cfs Feb. 8 (gage height, 8.02 ft); minimum, 27 cfs Sept. 26 (gage height, 2.26 ft).
1943-55: Maximum discharge, 5,830 cfs Dec. 28, 1949 (gage height, 11.89 ft); minimum recorded, 11 cfs July 10, 1951 (gage height, 2.01 ft).

Remarks.--Records good. State fish hatchery on Friday Creek diverts about 4 cfs which is returned above station. There is evidence of slight regulation and there may be some pumping for irrigation.

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1944(M), 1945.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 26 to Nov. 18)

Oct. 1 to Nov. 18				Nov. 19 to Sept. 30			
2.4	42	3.5	262	2.2	22	3.5	250
2.6	67	4.0	425	2.3	31	4.0	395
2.8	100	4.5	600	2.5	54	5.0	750
3.1	163			2.7	82	6.0	1,200
				3.0	135	7.3	1,940

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	63	*63	350	1,230	407	268	558	192	275	255	195	38
2	62	62	320	878	329	262	523	185	293	202	141	*36
3	62	60	284	635	284	238	422	185	326	240	110	34
4	60	63	262	509	311	210	368	198	296	228	94	33
5	58	256	242	460	308	195	338	198	278	182	84	33
6	54	277	245	392	371	195	329	192	245	157	76	32
7	52	181	242	356	1,120	195	353	190	228	143	68	32
8	53	148	220	323	1,900	235	*377	182	225	141	66	32
9	63	152	220	296	981	341	607	141	228	128	63	32
10	63	137	210	270	649	540	600	133	220	126	60	31
11	139	118	192	252	530	512	456	294	200	119	58	30
12	161	168	198	250	453	453	404	460	169	112	59	33
13	126	159	270	278	416	436	432	395	137	106	62	39
14	102	156	260	*281	470	401	425	335	130	97	58	60
15	93	152	*371	255	540	362	368	275	122	94	60	48
16	86	334	296	245	453	323	329	248	119	92	57	47
17	82	470	252	255	416	293	296	235	117	87	54	42
18	80	518	230	230	359	275	272	252	131	82	50	39
19	87	960	210	215	326	258	255	314	131	76	49	38
20	165	679	200	225	299	242	242	*272	122	73	55	35
21	225	544	202	212	*287	356	245	228	128	68	52	35
22	159	798	220	205	281	554	255	200	124	66	48	34
23	130	638	215	478	260	428	299	161	*143	62	46	34
24	110	470	344	468	284	359	272	133	*122	60	44	32
25	96	911	523	850	290	317	258	137	108	58	49	30
26	89	1,060	419	600	270	293	238	223	117	62	46	34
27	80	1,080	341	453	238	281	225	215	137	*66	42	44
28	*74	710	311	377	242	290	215	173	210	60	40	44
29	72	540	500	329	-	395	202	263	171	157	46	42
30	68	436	806	302	------	401	192	470	192	137	42	39
31	66	-----	1,220	335	-----	410	------	350	------	139	39	------
Total	2,880	12,300	10,175	12,444	13,074	10,318	10,355	7,429	5,444	3,675	2,013	1,112
Mean	92.9	410	328	401	467	333	345	240	181	119	64.9	37.1
Cfsm	1.06	4.67	3.74	4.57	5.32	3.79	3.93	2.73	2.06	1.36	0.739	0.423
In.	1.22	5.21	4.31	5.27	5.54	4.37	4.39	3.15	2.31	1.56	0.85	0.47
Ac-ft	5,710	24,400	20,180	24,680	25,930	20,470	20,540	14,740	10,800	7,290	3,990	2,210

Calendar year 1954: Max 1,510 Min 35 Mean 239 Cfsm 2.72 In. 37.01 Ac-ft 173,300
Water year 1954-55: Max 1,900 Min 30 Mean 250 Cfsm 2.85 In. 38.65 Ac-ft 180,900

Peak discharge (base, 1,100 cfs).--Nov. 19 (10 a.m.) 1,160 cfs (5.93 ft); Nov. 27 (12:15 a.m.) 1,270 cfs (6.14 ft); Jan. 1 (7 a.m.) 1,300 cfs (6.21 ft); Feb. 8 (1:15 a.m.) 2,420 cfs (8.02 ft).
* Discharge measurement made on this day.

Whatcom Creek below hatchery, near Bellingham, Wash.

Location.--Lat 48°45'10", long 122°25'40", in NW¼SE¼ sec. 28, T. 38 N., R. 3 E., on right bank in Whatcom Falls Park, seven-eighths of a mile downstream from Lake Whatcom and 2 miles east of Bellingham.

Drainage area.--55.5 sq mi.

Records available.--October 1945 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 252.55 ft above mean sea level (city of Bellingham datum).

Average discharge.--10 years, 84.8 cfs (61,390 acre-ft per year).

Extremes.--Maximum discharge during year, 614 cfs Feb. 8 (gage height, 4.37 ft); minimum, 1.1 cfs Oct. 2 (gage height, 1.46 ft).
1945-55: Maximum discharge, 1,350 cfs about Dec. 29, 1949 (gage height, 6.0 ft, from recorded range in stage); minimum, 0.7 cfs Nov. 24, 1952 (gage height, 1.37 ft).

Remarks.--Records good except those for period Oct. 1-26, which are fair. Flow completely regulated by Lake Whatcom (usable capacity, about 28,800 acre-ft under normal operating conditions). City of Bellingham diverts about 30 cfs from lake for municipal supply.

Cooperation.--Gage-height record collected in cooperation with city of Bellingham.

Revisions.--WSP 1286: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.49	1.4	2.7	120
1.6	3.0	3.0	192
1.7	5.6	3.3	274
1.8	9.6	3.6	360
2.0	22	4.0	485
2.2	40	4.4	625
2.4	66		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	2.3	8.2	436	14.5	16.5	15.5	19	13	11.5	10	7.7
2	1.4	2.5	7.7	506	14.5	16.5	15.5	18.5	14	11.5	9.6	7.7
3	1.7	2.5	7.7	555	14	16.5	15.5	18	13	11.5	9.6	7.7
4	1.6	*2.8	5.9	558	14	16.5	15.5	18	12.5	11	9.6	7.7
5	1.7	3.5	5.6	527	14	16.5	15.5	18.5	14	14	9.6	7.7
6	2.0	3.3	5.6	502	14	16.5	15.5	18.5	14.5	13	10	7.7
7	2.2	2.8	5.3	478	201	16.5	16.5	18.5	13	11.5	10	7.7
8	2.5	2.8	5.3	450	590	16.5	51	18.5	13	8.7	9.6	7.7
9	2.2	3.0	5.3	432	600	*16.5	444	18	17	11.5	11	7.7
10	2.3	3.0	5.3	315	576	19	600	18.5	16.5	11.5	11	7.7
11	2.7	3.0	5.3	176	555	18	514	18.5	18	11.5	9.1	7.7
12	2.5	3.3	5.9	176	534	18	480	18.5	17	11.5	9.1	7.3
13	2.3	3.3	5.9	176	506	18	318	19	16.5	11.5	9.6	*7.3
14	2.3	3.3	6.2	174	485	18	*19	19	16.5	11.5	9.6	7.3
15	2.2	3.3	5.9	171	471	18	20	18.5	16.5	11.5	10	6.9
16	2.2	3.7	5.9	171	454	17	20	13.5	16.5	11.5	10	6.9
17	2.5	3.5	5.9	*174	438	17	21	*17	15.5	11	10	6.9
18	2.2	4.0	5.9	176	423	17	21	15.5	15.5	10.5	10	6.9
19	2.7	5.0	5.9	174	405	17	21	14.5	15.5	10.5	10	6.6
20	4.0	11	5.6	98	381	17	20	15.5	15	10.5	10	6.9
21	3.3	14.5	5.6	15.5	264	17	19	15.5	15	9.6	10	6.6
22	2.8	14	5.6	12	182	16.5	67	15.5	15	9.6	9.6	6.6
23	3.0	11.5	5.6	15	79	16.5	166	15.5	*14	10	9.1	6.2
24	3.0	10	6.2	15	17	16.5	166	15.5	14	10	8.6	6.2
25	2.8	10	7.3	15	16.5	15	265	15.5	14	10	8.6	6.2
26	*2.7	10	6.9	16.5	16.5	15	375	15	13	10	9.1	6.2
27	2.5	9.6	6.6	14.5	15.5	15.5	233	14.5	13	*10.5	9.1	6.6
28	2.3	9.6	6.9	14.5	16.5	14.5	21	14	12.5	10	9.1	6.2
29	2.5	8.6	6.9	14.5	-	15.5	20	13	12.5	10.5	9.1	6.2
30	2.5	*8.6	188	14.5	------	15.5	20	13	12	10.5	9.1	6.2
31	2.3	------	378	14.5	------	15	------	13	------	10.5	8.2	------
Total	74.3	178.3	743.9	6,586.5	7,311.0	515.0	4,010.5	513.5	438.0	338.4	297.0	210.9
Mean	2.40	5.94	24.0	212	261	16.6	134	16.6	14.6	10.9	9.58	7.03
Ac-ft	147	354	1,480	13,060	14,500	1,020	7,950	1,020	869	671	589	418

Calendar year 1954: Max 741 Min 1.3 Mean 52.1 Ac-ft 37,740
Water year 1954-55: Max 600 Min 1.4 Mean 58.1 Ac-ft 42,080

* Discharge measurement made on this day.

Nooksack River above Cascade Creek, near Glacier, Wash.

Location.--Lat 48°54'20", long 121°50'30", in NW¼ sec. 1, T. 39 N., R. 7 E., on right bank a quarter of a mile upstream from Cascade Creek, half a mile downstream from Dead Horse Creek, 4½ miles east of Glacier, and 6 miles upstream from Glacier Creek.

Drainage area.--105 sq mi.

Records available.--October 1937 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,245 ft (from river-profile map). Supplementary water-stage recorder on left bank at same datum (principal gage prior to Oct. 1, 1953).

Average discharge.--18 years, 746 cfs (540,100 acre-ft per year).

Extremes.--Maximum discharge during year, 6,460 cfs Nov. 22 (gage height, 9.09 ft), from rating curve extended above 1,600 cfs on basis of contracted-opening determination at gage height 8.75 ft; minimum, 158 cfs Oct. 5 (gage height, 3.22 ft).
1937-55: Maximum discharge, 10,300 cfs Nov. 26, 1949 (gage height, 10.50 ft, supplementary gage), from rating curve extended above 2,700 cfs on basis of contracted-opening determination at gage height 8.13 ft (supplementary gage); minimum, 73 cfs Feb. 16, 1949.

Remarks.--Records good except those for periods of shifting control, which are fair. No diversion above station. Some regulation at low flow by powerplant at Excelsior.

Revisions (water years).--WSP 1092: 1946.

Rating tables, water year 1954-55, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 19				Nov. 19 to Sept. 30			
2.7	225	5.0	1,600	3.4	162	5.0	845
3.0	325	6.0	2,500	3.7	240	6.0	1,680
3.5	560	7.0	3,560	4.0	336	7.0	2,970
4.0	860	8.0	4,800	4.5	545	8.0	4,540
4.5	1,210						

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	290	388	*730	485	322	209	351	261	873	1,360	3,280	*644
2	272	365	668	437	292	204	299	270	824	1,150	1,700	698
3	252	341	622	408	283	199	267	286	880	1,390	*1,240	692
4	240	415	585	381	276	199	252	305	1,190	1,410	1,090	710
5	228	2,060	749	366	270	199	*252	336	1,400	1,440	1,100	810
6	225	1,380	742	343	273	199	280	354	1,360	1,430	1,210	845
7	715	986	612	333	296	199	354	389	1,580	1,380	1,330	803
8	2,020	830	565	326	286	199	454	433	2,130	1,370	1,160	716
9	1,090	1,010	531	316	267	199	831	392	3,200	1,550	1,010	680
10	1,410	848	498	299	255	199	506	392	3,970	1,710	1,070	622
11	1,740	818	476	292	255	199	450	555	3,970	1,760	1,080	565
12	1,180	830	550	289	252	199	412	698	3,650	2,060	915	503
13	923	867	522	309	255	199	392	536	2,900	2,470	768	850
14	806	2,120	550	283	258	199	354	485	2,040	3,080	749	922
15	1,010	1,980	560	276	264	194	319	494	1,540	3,140	736	656
16	958	1,620	485	267	255	179	305	522	1,340	3,040	756	570
17	986	1,740	458	264	246	176	286	580	1,290	2,410	762	485
18	782	3,190	441	*255	234	179	280	880	1,400	1,960	817	441
19	1,010	4,120	429	252	232	174	276	2,090	1,410	1,650	873	441
20	1,170	2,020	446	249	229	174	276	2,000	1,560	1,580	938	441
21	1,030	2,640	692	243	226	176	283	1,340	2,260	1,570	756	400
22	788	4,270	908	255	*223	179	286	1,040	2,840	1,720	716	381
23	668	1,830	782	296	220	174	286	866	2,910	1,800	674	362
24	566	1,240	736	283	220	174	273	810	2,220	1,780	634	354
25	515	2,540	585	280	215	172	264	*922	1,770	1,490	585	347
26	465	1,810	526	273	209	169	261	915	1,660	1,430	565	373
27	*455	1,470	476	270	202	174	249	831	1,750	1,490	550	476
28	440	1,120	463	267	209	181	246	775	1,830	1,240	560	437
29	401	922	437	264	-	220	249	1,340	1,710	1,420	617	396
30	378	824	476	267	------	218	255	1,540	*1,540	1,340	686	373
31	388	-----	550	305	-----	223	-----	1,050	------	1,910	680	------
Total	23,401	46,594	17,850	9,433	7,024	5,937	9,848	23,687	58,997	54,530	29,607	16,993
Mean	755	1,553	576	304	251	192	328	764	1,967	1,759	955	566
Cfsm	7.19	14.8	5.49	2.90	2.39	1.83	3.12	7.28	18.7	16.8	9.10	5.39
In.	8.29	16.50	6.32	3.34	2.49	2.10	3.49	8.39	20.90	19.31	10.49	6.02
Ac-ft	46,420	92,420	35,400	18,710	13,930	11,780	19,530	46,980	117,000	108,200	58,720	33,710

Calendar year 1954: Max 4,270 Min 225 Mean 944 Cfsm 8.99 In. 122.06 Ac-ft 683,600
Water year 1954-55: Max 4,270 Min 169 Mean 833 Cfsm 7.93 In. 107.64 Ac-ft 602,800

Peak discharge (base, 3,600 cfs).--Nov. 19 (7:45 a.m.) 5,150 cfs (8.55 ft); Nov. 22 (7 a.m.) 6,460 cfs (9.09 ft); Nov. 25 (6:30 a.m.) 3,750 cfs (7.41 ft); June 10 (10 p.m.) 4,680 cfs (7.83 ft); July 14 (9 p.m.) 3,790 cfs (7.54 ft); Aug. 1 (3:30 a.m.) 4,620 cfs (8.05 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used Oct. 1 to Nov. 19, Nov. 25 to Dec. 28, May 18 to June 13.

South Fork Nooksack River near Wickersham, Wash.

Location.--Lat 48°39'50", long 122°07'50", in lot 2, SW¼ sec. 26, T. 37 N., R. 5 E., on left bank three-quarters of a mile upstream from Skookum Creek and 4 miles east of Wickersham.

Drainage area.--103 sq mi.

Records available.--October 1933 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 385 ft (from river-profile map). Prior to July 9, 1934, staff gage at same site and datum.

Average discharge.--22 years, 728 cfs (527,100 acre-ft per year).

Extremes.--Maximum discharge during year, 8,840 cfs Nov. 18 (gage height, 8.98 ft); minimum, 118 cfs Sept. 26 (gage height, 2.21 ft).
1933-55: Maximum discharge, 15,800 cfs Nov. 27, 1949 (gage height, 12.01 ft); minimum, 66 cfs Oct. 9, 1940, Sept. 11-13, 1944; minimum gage height, 1.95 ft Sept. 24, 1951.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 832: 1935-36.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.2	116	4.5	1,450
2.4	165	5.0	1,980
2.7	261	6.0	3,300
3.0	385	7.0	4,980
3.5	650	8.0	6,830
4.0	1,000		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	200	261	650	1,430	968	272	1,380	518	888	1,670	1,590	*165
2	191	250	568	928	644	261	856	534	952	1,200	791	165
3	194	*244	524	710	529	250	617	540	1,180	1,160	595	165
4	191	261	480	600	546	233	518	628	1,390	1,080	534	162
5	180	2,570	512	540	502	244	518	710	1,420	1,000	507	165
6	174	1,550	628	480	568	230	628	674	1,350	952	512	165
7	185	746	556	435	2,030	220	904	777	1,550	912	490	162
8	1,550	590	470	415	2,100	236	1,380	904	2,060	848	435	160
9	826	704	435	415	896	295	3,890	698	2,730	1,000	376	149
10	955	595	*400	376	650	336	2,030	698	3,020	1,020	358	147
11	2,820	518	372	349	551	324	1,220	1,310	2,730	952	358	142
12	1,390	628	738	344	485	328	984	1,600	2,300	1,070	328	137
13	840	662	912	490	496	303	848	984	1,780	1,310	295	152
14	634	1,210	912	420	628	284	716	833	1,300	1,430	276	280
15	578	1,170	1,100	372	692	261	*628	960	1,030	1,350	269	320
16	518	1,880	692	362	562	250	578	952	928	1,250	261	320
17	502	2,050	584	372	470	240	524	1,010	960	872	250	244
18	410	5,480	546	340	400	236	490	1,330	1,200	770	244	188
19	522	5,540	518	311	367	230	480	2,200	1,210	650	247	162
20	1,110	2,290	546	*307	349	223	490	1,790	1,350	674	284	157
21	1,100	1,870	826	280	332	268	534	1,300	*1,830	704	230	152
22	698	2,540	1,130	288	315	518	568	984	1,960	722	216	139
23	590	1,460	1,030	838	303	354	612	848	1,940	722	200	134
24	490	1,060	1,060	686	*349	295	540	*856	1,350	680	194	128
25	435	2,740	840	928	324	269	470	1,070	1,100	551	188	123
26	385	3,110	656	668	295	261	440	1,180	1,230	529	177	144
27	358	2,150	573	540	272	288	410	1,020	1,450	686	171	295
28	340	1,250	562	485	272	400	380	864	1,540	*546	165	258
29	*315	952	680	450	-	728	385	1,630	1,300	1,320	165	226
30	295	770	1,710	460	------	639	415	1,850	1,340	904	171	197
31	284	-----	2,480	840	-----	764	-----	1,140	------	896	171	------
Total	19,260	47,101	23,690	16,459	16,895	10,040	24,433	32,392	46,368	29,430	11,048	5,503
Mean	621	1,570	764	531	603	324	814	1,045	1,546	949	356	183
Cfsm	6.03	15.2	7.42	5.16	5.85	3.15	7.90	10.1	15.0	9.21	3.46	1.78
In.	6.95	17.01	8.55	5.94	6.10	3.63	8.82	11.70	16.74	10.63	3.99	1.99
Ac-ft	38,200	93,420	46,990	32,650	33,510	19,910	48,460	64,250	91,970	58,370	21,910	10,920

Calendar year 1954: Max 5,540 Min 174 Mean 885 Cfsm 8.59 In. 116.62 Ac-ft 640,600
Water year 1954-55: Max 5,540 Min 123 Mean 774 Cfsm 7.51 In. 102.05 Ac-ft 560,600

Peak discharge (base, 4,800 cfs).--Nov. 5 (6 p.m.) 5,790 cfs (7.45 ft); Nov. 18 (3 a.m.) 8,840 cfs (8.98 ft).
* Discharge measurement made on this day.

Skookum Creek near Wickersham, Wash.

Location.--Lat 48°40'20", long 122°08'25", in NE¼ sec. 27, T. 37 N., R. 5 E., on left bank 100 ft upstream from private road crossing, 500 ft upstream from mouth, and 3½ miles northeast of Wickersham.

Drainage area.--23.1 sq mi.

Records available.--July 1948 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 400 ft (from river-profile map).

Average discharge.--7 years, 137 cfs (99,180 acre-ft per year).

Extremes.--Maximum discharge during year, 1,640 cfs Nov. 19 (gage height, 6.60 ft), from rating curve extended above 400 cfs; minimum, 34 cfs Sept. 25, 26 (gage height, 1.88 ft).

1948-55: Maximum discharge, 3,050 cfs Nov. 27 or Dec. 1, 1949 (gage height, 9.0 ft, from floodmark), from rating curve extended above 400 cfs by logarithmic plotting; minimum, 17 cfs Feb. 9, 10, 1949, Sept. 23, 24, 1951; minimum gage height, 1.70 ft Oct. 19, 20, 1952.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--WSP 1182: 1949. WSP 1286: 1950(M), drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 17-30)

1.8	28	3.5	346
1.9	35	4.0	504
2.1	53	4.5	690
2.3	78	5.0	890
2.6	126	5.5	1,090
3.0	214		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	44	132	214	172	46	248	73	161	324	275	41
2	41	43	117	164	117	44	148	73	183	221	150	*39
3	43	*41	108	132	95	41	108	75	224	264	112	40
4	40	51	97	117	98	39	91	88	269	212	98	39
5	37	343	117	105	84	41	88	100	272	188	92	40
6	36	189	128	92	95	40	108	102	261	179	91	41
7	100	108	103	85	288	38	168	128	310	170	91	41
8	372	95	91	85	300	48	240	146	400	164	84	41
9	155	146	86	85	159	59	494	108	524	179	74	40
10	160	103	*79	77	119	66	296	115	542	179	73	39
11	287	88	72	69	102	57	195	258	464	175	74	38
12	197	146	142	68	89	61	172	278	397	195	69	37
13	132	154	134	115	92	53	150	181	298	224	63	69
14	106	261	176	78	128	50	122	150	226	236	60	76
15	103	246	166	75	138	45	*105	172	186	219	58	75
16	84	403	115	74	102	43	98	170	177	202	55	70
17	75	442	108	66	85	41	92	188	179	157	55	58
18	68	780	110	59	73	41	85	298	246	142	54	47
19	107	1,010	105	52	69	38	81	480	207	122	58	41
20	226	411	121	*53	64	37	79	324	244	119	74	48
21	179	407	219	49	60	54	85	233	*340	122	58	45
22	119	491	192	57	57	68	92	179	329	121	52	40
23	95	285	215	179	54	50	95	150	338	122	50	37
24	81	214	188	134	*61	44	82	*153	243	112	48	36
25	70	403	148	155	54	42	74	186	209	97	45	34
26	64	448	122	115	50	41	73	207	269	106	43	52
27	59	312	106	94	46	46	68	179	269	110	41	69
28	55	221	105	88	46	70	64	155	296	*95	40	65
29	*52	177	112	82	-	144	64	300	243	181	39	58
30	50	150	272	86	------	108	65	276	285	144	41	50
31	48	-----	321	210	-----	132	-----	188	------	162	41	------
Total	3,284	8,212	4,307	3,114	2,897	1,727	3,930	5,713	8,591	5,243	2,258	1,446
Mean	106	274	139	100	103	55.7	131	184	286	169	72.8	48.2
Cfsm	4.59	11.9	6.02	4.33	4.46	2.41	5.67	7.97	12.4	7.32	3.15	2.09
In.	5.29	13.22	6.93	5.01	4.66	2.78	6.33	9.20	13.83	8.44	3.64	2.33
Ac-ft	6,510	16,290	8,540	6,180	5,750	3,430	7,800	11,330	17,040	10,400	4,480	2,870

Calendar year 1954: Max 1,010 Min 36 Mean 153 Cfsm 6.62 In. 89.82 Ac-ft 110,700
Water year 1954-55: Max 1,010 Min 34 Mean 139 Cfsm 6.02 In. 81.66 Ac-ft 100,600

Peak discharge (base, 850 cfs).--Nov. 5 (4:30 p.m.) 938 cfs (5.12 ft); Nov. 19 (5 a.m.) 1,640 cfs (6.60 ft).

* Discharge measurement made on this day.

Nooksack River at Deming, Wash.

Location.--Lat 48°48'40", long 122°12'15", in lot 12, sec. 6, T. 38 N., R. 5 E., on left bank 800 ft downstream from South Fork and 1 mile southeast of Deming.

Drainage area.--580 sq mi.

Records available.--September 1910 to March 1911 (gage heights only), July 1935 to September 1955. Published as "near Deming" 1910-11.

Gage.--Water-stage recorder. Datum of gage is 203.6 ft above mean sea level, datum of 1929. Prior to Dec. 5, 1910, staff gage at site 1 1/8 miles downstream at different datum. Dec. 5, 1910, to Mar. 31, 1911, staff gage at site 5 miles downstream at different datum. July 20 to Sept. 19, 1935, staff gage at present site and datum.

Average discharge.--20 years (1935-55), 3,200 cfs (2,317,000 acre-ft per year).

Extremes.--Maximum discharge during year, 23,300 cfs Nov. 19 (gage height, 11.70 ft); minimum, 980 cfs Sept. 26 (gage height, 4.94 ft).
1935-55: Maximum discharge, 43,200 cfs Feb. 10, 1951 (gage height, 15.69 ft), from rating curve extended above 25,000 cfs; minimum, 502 cfs Nov. 29, 1952 (gage height, 3.72 ft).

Remarks.--Records good except those for periods of shifting control, which are fair. No diversion. Slight regulation by powerplant at Excelsior.

Revisions (water years).--WSP 1286: 1951.

Rating tables, water year 1954-55, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 19				Nov. 20 to Sept. 30			
4.9	1,060	8.0	7,870	5.0	910	8.0	7,110
5.4	1,640	9.0	11,700	5.5	1,470	9.0	10,900
6.0	2,560	10.0	15,800	6.0	2,220	10.0	15,300
7.0	4,720	11.0	20,100	7.0	4,260	11.0	19,900

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,290	1,460	*3,920	5,910	3,460	1,540	4,400	1,910	4,360	6,720	9,300	1,910
2	1,240	1,400	3,550	4,480	2,730	1,460	3,570	1,970	4,240	5,230	5,560	*2,070
3	1,220	*1,350	3,280	3,720	2,420	1,370	2,790	2,020	4,580	5,500	4,170	2,140
4	1,180	1,340	3,030	3,300	2,420	1,230	2,450	2,240	5,230	5,310	*3,720	2,140
5	1,120	7,540	3,210	3,010	2,310	1,230	*2,360	2,540	5,560	4,960	3,590	2,310
6	1,110	7,680	3,510	2,750	2,310	1,290	2,620	2,530	5,420	4,780	3,680	2,470
7	1,470	4,260	3,090	2,540	4,710	1,240	3,440	2,810	6,090	4,620	3,880	2,400
8	5,710	3,420	2,770	2,440	7,720	1,360	4,120	3,230	7,450	4,400	3,460	2,260
9	3,590	3,970	2,640	2,380	4,260	1,560	8,830	2,690	10,900	4,980	2,990	2,050
10	2,990	3,290	2,510	2,200	3,360	*1,820	6,980	2,580	13,100	5,390	3,010	1,840
11	7,550	2,940	2,350	2,100	2,910	1,770	4,720	4,490	12,800	5,310	3,070	1,630
12	5,020	3,440	2,850	2,030	2,660	1,780	4,010	6,370	11,800	6,030	2,810	1,370
13	3,540	3,250	3,480	2,490	2,600	1,680	3,850	4,520	9,940	7,140	2,350	*1,960
14	2,920	6,080	3,210	2,290	2,930	1,570	3,340	3,830	7,110	8,380	2,220	3,130
15	3,070	6,020	3,940	2,120	3,340	1,500	*2,930	3,960	5,620	8,830	2,150	2,360
16	2,830	6,520	3,030	2,030	2,830	1,420	2,680	*3,940	4,910	8,570	2,140	2,050
17	2,670	7,020	2,770	2,000	2,530	1,370	2,440	4,030	4,830	6,910	2,150	1,590
18	2,310	15,700	2,680	*1,920	2,200	1,350	2,260	4,880	5,700	5,700	2,240	1,340
19	2,490	19,900	2,580	1,850	2,070	1,310	2,170	8,340	5,730	4,700	2,360	1,280
20	3,830	10,600	2,620	*1,780	1,950	1,280	2,140	8,270	*5,910	4,600	2,750	1,250
21	4,090	10,200	3,340	1,680	1,880	1,390	2,260	6,000	*8,340	4,620	2,190	1,230
22	2,920	17,100	4,450	1,700	*1,780	2,050	2,360	4,780	9,860	4,750	2,030	1,200
23	2,530	10,100	4,050	3,310	1,710	1,710	2,470	4,080	9,900	4,880	1,890	1,140
24	2,210	7,110	4,210	2,970	1,820	1,510	2,170	3,810	7,800	4,750	1,780	1,080
25	2,020	10,900	3,880	3,700	1,710	1,420	1,970	*4,330	6,210	4,050	1,630	1,020
26	1,860	11,000	3,380	3,030	1,590	1,390	1,910	4,600	6,370	3,680	1,540	990
27	*1,780	9,700	3,010	2,600	1,460	1,420	1,780	4,210	6,850	4,100	1,510	1,500
28	1,700	6,560	2,910	2,440	1,550	1,770	1,680	3,720	7,310	3,400	1,520	1,350
29	1,590	5,250	3,250	2,290	-	2,730	1,660	5,600	6,590	4,850	1,670	1,230
30	1,510	4,480	4,330	2,290	------	2,620	1,700	7,800	*6,340	4,480	1,970	1,190
31	1,490	-----	7,840	2,990	-----	2,730	-----	5,310	------	4,700	2,000	------
Total	80,850	209,580	105,670	82,340	75,220	49,870	92,060	131,390	216,850	166,320	87,330	51,480
Mean	2,608	6,986	3,409	2,656	2,686	1,609	3,069	4,238	7,228	5,365	2,817	1,716
Cfsm	4.50	12.0	5.88	4.58	4.63	2.77	5.29	7.31	12.5	9.25	4.86	2.96
In.	5.18	13.44	6.78	5.28	4.82	3.20	5.90	8.42	13.90	10.66	5.60	3.30
Ac-ft	160,400	415,700	209,600	163,300	149,200	98,920	182,600	260,600	430,100	329,900	173,200	102,100

Calendar year 1954: Max 19,900 Min 1,110 Mean 4,076 Cfsm 7.03 In. 95.41 Ac-ft 2,951,000
Water year 1954-55: Max 19,900 Min 990 Mean 3,696 Cfsm 6.37 In. 86.48 Ac-ft 2,676,000

Peak discharge (base, 13,000 cfs).--Nov. 5 (10:30 p.m.) 15,000 cfs (9.81 ft); Nov. 19 (7:30 a.m.) 23,300 cfs (11.70 ft); Nov. 22 (10:30 a.m.) 20,500 cfs (11.12 ft); Nov. 25 (12 m.) 15,800 cfs (10.11 ft); June 10 (11 p.m.) 15,200 cfs (10.08 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used Oct. 1-10, May 12-19, June 10-20, Aug. 25 to Sept. 30.

Nooksack River near Lynden, Wash.

Location.--Lat 48°55'10", long 122°29'10", in NE¼NE¼ sec. 36, T. 40 N., R. 2 E., on right bank 150 ft downstream from bridge on State Highway 1B, 1½ miles upstream from Fishtrap Creek, 2 miles southwest of Lynden, and 12 miles upstream from mouth.

Drainage area.--636 sq mi.

Records available.--October 1944 to September 1955. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 24.4 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--11 years, 3,715 cfs (2,690,000 acre-ft per year).

Extremes.--Maximum discharge during year, 25,300 cfs Nov. 19 (gage height, 18.53 ft); minimum, 1,050 cfs Sept. 26 (gage height, 5.82 ft).
1944-55: Maximum discharge, 46,200 cfs Feb. 10, 1951 (gage height, 21.76 ft); minimum, 595 cfs Nov. 30, 1952 (gage height, 5.01 ft).

Remarks.--Records good. No diversion above station. Slight regulation by powerplant at Excelsior.

Revisions (water years).--WSP 1286: 1945(P), 1947-48(P), 1950-51(P), 1952(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-9, Oct. 31 to Nov. 4)

Oct. 1 to Nov. 19				Nov. 20 to Sept. 30			
6.1	1,230	11.5	8,260	5.8	1,040	11.0	7,650
7.0	1,920	13.0	11,000	6.3	1,370	12.0	9,520
8.0	2,920	15.0	15,100	7.0	1,950	14.0	13,500
9.0	4,200	17.0	20,000	8.0	3,000	16.0	18,000
10.0	5,760			9.0	4,350	18.0	23,300
				10.0	5,910		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,470	1,470	4,350	7,520	4,240	1,660	4,620	1,940	4,700	*6,950	8,450	1,750
2	1,410	1,430	*3,800	5,570	3,170	1,620	4,260	2,050	4,340	5,810	6,080	1,790
3	1,360	1,380	3,440	4,260	2,670	1,530	3,110	2,080	4,680	5,460	4,290	1,860
4	1,340	*1,380	3,180	3,600	2,580	1,410	2,620	2,250	5,430	5,770	3,690	1,830
5	1,290	5,400	3,220	3,250	2,550	1,380	2,450	2,520	6,270	5,290	3,420	1,930
6	1,250	9,370	3,740	2,920	2,440	1,400	2,560	2,570	6,000	5,140	3,400	2,050
7	1,280	4,410	3,300	2,700	4,630	1,380	3,330	2,770	6,400	4,940	3,690	2,040
8	4,780	3,400	2,880	2,550	10,100	1,410	4,050	3,320	7,650	4,680	3,410	1,970
9	4,640	3,600	2,720	2,500	5,410	*1,620	6,820	2,990	10,300	5,170	2,960	1,870
10	2,770	3,150	2,590	2,330	3,830	1,870	9,040	2,660	*12,800	5,620	2,890	1,750
11	7,270	2,770	2,410	*2,200	3,160	2,000	5,670	4,000	13,200	5,570	3,010	1,650
12	5,650	3,040	2,550	2,130	2,770	1,890	4,400	7,560	12,200	6,000	2,810	1,480
13	3,850	2,960	3,940	2,470	2,860	1,820	4,240	5,270	10,100	7,020	2,450	*1,480
14	3,020	5,080	3,340	2,530	2,850	1,710	*3,690	4,120	7,520	7,970	2,290	2,680
15	2,950	5,790	4,760	2,260	3,660	1,820	3,180	4,060	6,030	8,530	2,250	2,010
16	2,850	6,130	3,560	2,180	3,010	1,540	2,840	4,010	5,190	8,150	2,200	1,990
17	2,620	6,580	3,020	2,150	2,640	1,500	2,620	*4,010	4,980	7,180	2,200	1,680
18	2,400	13,700	2,870	2,050	2,310	1,460	2,430	4,840	5,250	5,850	2,230	1,430
19	2,250	20,000	2,740	1,950	2,170	1,430	2,310	7,970	6,050	4,940	2,350	1,330
20	3,330	14,500	2,690	1,910	2,050	1,390	2,230	9,580	5,620	4,640	2,630	1,320
21	4,410	10,500	3,190	1,840	1,960	1,430	2,290	6,640	7,540	4,560	2,310	1,280
22	3,070	20,700	5,400	1,790	1,890	1,950	2,440	5,160	9,250	4,800	2,100	1,180
23	2,600	12,500	4,540	3,240	1,810	1,820	2,600	4,280	9,390	4,970	1,980	1,130
24	2,270	8,360	5,270	3,510	1,890	1,820	2,350	3,780	8,060	5,050	1,870	1,090
25	2,070	11,700	4,760	4,380	1,810	1,510	2,140	4,240	6,390	4,410	1,760	1,070
26	*1,920	12,500	3,870	3,830	1,680	1,470	2,040	4,530	6,270	3,850	1,660	1,060
27	1,790	12,200	3,290	3,000	1,600	1,470	1,940	4,480	6,980	*4,320	1,590	1,430
28	1,720	8,150	3,100	2,670	1,630	1,660	1,820	3,830	7,160	3,760	1,580	1,540
29	1,620	6,300	3,470	2,500	-	2,480	1,780	4,920	6,910	4,440	1,620	1,360
30	1,540	5,160	4,240	2,430	------	2,820	1,780	8,630	6,350	5,000	1,770	1,240
31	1,500	-----	9,620	2,860	-----	2,660	-----	6,050	------	4,650	1,830	------
Total	82,290	223,610	115,850	91,080	83,170	52,530	99,450	137,110	219,010	170,490	86,770	48,250
Mean	2,655	7,454	3,737	2,938	2,970	1,695	3,315	4,423	7,300	5,500	2,799	1,608
Cfsm	4.17	11.7	5.88	4.62	4.67	2.67	5.21	6.95	11.5	8.65	4.40	2.53
In.	4.81	13.08	6.77	5.33	4.86	3.07	5.82	8.02	12.81	9.97	5.07	2.82
Ac-ft	163,200	443,500	229,800	180,700	165,000	104,200	197,300	272,000	434,400	338,200	172,100	95,700

Calendar year 1954: Max 20,700 Min 1,250 Mean 4,232 Cfsm 6.65 In. 90.31 Ac-ft 3,064,000
Water year 1954-55: Max 20,700 Min 1,060 Mean 3,862 Cfsm 6.07 In. 82.43 Ac-ft 2,796,000

Peak discharge (base, 15,000 cfs).--Nov. 19 (5:30 p.m.) 25,300 cfs (18.53 ft); Nov. 22 (4 p.m.) 23,000 cfs (17.89 ft); Nov. 25 (3:30 p.m.) 16,400 cfs (15.34 ft).
* Discharge measurement made on this day.

Fishtrap Creek at Lynden, Wash.

Location.--Lat 48°57'50", long 122°26'00", on north line sec. 16, T. 40 N., R. 3 E., on right bank on downstream side of bridge on State Highway 1A, 1 mile north of Lynden.

Drainage area.--24.1 sq mi, of which 18.5 sq mi is in Canada.

Records available.--July 1948 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 110 ft (from topographic map).

Average discharge.--7 years, 36.2 cfs (26,210 acre-ft per year).

Extremes.--Maximum discharge during year, 354 cfs Nov. 22 (gage height, 5.49 ft); minimum, 4.7 cfs Sept. 18-20, 22, 23 (gage height, 1.38 ft).
1948-55: Maximum discharge, 550 cfs Feb. 11, 1951 (gage height, 6.59 ft); minimum, 0.4 cfs Sept. 10, 1949 (gage height, 1.00 ft).

Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation. Probably some small diversions for minor irrigation and domestic use. It is improbable that any flow has bypassed the station during high stages during period of record. Statements in previous reports regarding overflow were erroneous.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.3	3.7	3.0	80
1.5	8.1	3.5	120
1.7	14	4.0	168
2.0	25	5.1	298
2.5	49		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.2	6.0	51	121	54	a35	98	28	44	*19	13	5.8
2	6.2	6.0	*46	97	44	a33	72	27	34	16	11	5.8
3	6.2	6.2	42	67	38	a31	55	26	30	14.5	9.8	5.5
4	6.0	7.1	40	55	44	a30	46	26	27	14	8.9	5.5
5	6.0	30	38	53	46	a31	40	25	26	13	8.4	5.5
6	6.0	44	41	51	58	a29	36	24	24	12	8.1	5.3
7	6.0	26	44	51	151	a28	34	24	22	12	7.9	5.3
8	6.7	18	40	46	213	a35	36	25	20	12	7.6	5.3
9	7.4	19	36	42	122	*46	108	24	19	11.5	7.4	5.3
10	7.1	21	34	38	79	60	127	24	17.5	11.5	7.1	5.3
11	8.9	22	32	*36	63	72	72	38	16.5	11.5	7.4	5.3
12	8.7	21	34	37	56	54	63	44	16	11	7.1	5.1
13	7.4	23	60	44	58	46	63	34	16	10.5	7.1	*5.5
14	6.9	33	56	47	63	42	*73	31	15.5	10	7.1	5.5
15	6.9	55	56	42	74	38	62	27	15	10	6.9	5.3
16	6.7	56	47	38	62	36	52	26	14	10	6.9	5.3
17	6.9	57	38	40	51	33	48	*25	14	10	7.6	5.1
18	6.9	121	34	38	45	32	44	24	15.5	9.8	8.1	4.9
19	6.9	179	31	34	42	30	38	32	15	9.5	7.6	4.7
20	6.9	125	30	33	40	28	36	33	13.5	9.5	7.9	4.9
21	8.9	121	29	31	39	34	38	26	13.5	9.2	7.6	5.3
22	9.2	298	30	31	38	43	37	24	13	8.9	7.4	4.9
23	8.7	170	34	47	37	35	53	22	14	8.9	7.1	4.9
24	8.1	103	43	50	44	30	44	21	14	8.9	6.9	5.3
25	7.6	145	46	69	42	28	37	21	13	8.7	6.9	5.1
26	7.4	157	42	58	38	27	34	26	13.5	8.9	6.9	5.3
27	*7.4	152	36	46	a36	27	33	27	14	*9.5	6.7	6.2
28	6.9	96	39	40	a35	27	32	23	17	8.9	6.4	6.2
29	6.7	71	56	37	-	51	29	26	17	11.5	6.4	5.8
30	6.4	59	86	36	------	58	28	53	16.5	11	6.2	5.5
31	6.2	------	159	42	------	58	------	74	------	10.5	6.0	------
Total	220.4	2,247.3	1,430	1,497	1,712	1,187	1,568	910	560.0	342.2	237.4	160.7
Mean	7.11	74.9	46.1	48.3	61.1	38.3	52.3	29.4	18.7	11.0	7.66	5.36
Ac-ft	437	4,460	2,840	2,970	3,400	2,350	3,110	1,800	1,110	679	471	319

Calendar year 1954: Max 298 Min 6.0 Mean 37.5 Ac-ft 27,160
Water year 1954-55: Max 298 Min 4.7 Mean 33.1 Ac-ft 23,950

Peak discharge (base, 220 cfs).--Nov. 22 (5:30 a.m.) 354 cfs (5.49 ft); Feb. 8 (2 a.m.) 266 cfs (4.85 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

KOOTENAI RIVER BASIN

Kootenay River at Newgate, British Columbia

(International gaging station)

Location.--Lat 49°01', long 115°10', on left bank at old highway bridge site, 0.7 mile northwest of Newgate and 0.9 mile north of international boundary.

Drainage area.--7,660 sq mi, approximately.

Records available.--October 1930 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,310.23 ft above mean sea level (datum of Geodetic Survey of Canada, adjustment of 1945). Prior to Oct. 1, 1940, staff gage at same site at datum 1.00 ft higher. Oct. 1, 1940, to Apr. 30, 1947, staff gage at present site and datum.

Average discharge.--25 years, 10,100 cfs (7,315,000 acre-ft per year).

Extremes.--Maximum discharge during year, 70,800 cfs June 14 (gage height, 12.42 ft); minimum daily, 1,660 cfs Feb. 28.
1930-55: Maximum discharge, 98,200 cfs May 28, 1948 (gage height, 15.02 ft); minimum observed, 994 cfs Feb. 7, 1936; minimum gage height observed, 0.21 ft Jan. 11, 1944.

Remarks.--Records excellent except those for period of no gage-height record, which are good, and those for periods of ice effect, which are fair. Records give total flow of main channel and slough.

Cooperation.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.1	1,610	7.0	21,000
1.5	2,200	8.0	26,800
2.0	3,080	9.0	34,200
3.0	5,350	10.0	43,500
4.0	8,300	11.0	54,500
5.0	11,800	13.0	78,000
6.0	16,000		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,680	4,910	*a4,750	3,190	2,950	2,530	2,510	3,620	22,400	35,000	15,400	6,920
2	6,560	4,780	a4,500	3,210	2,930	2,550	2,510	4,300	*20,500	31,900	14,700	6,860
3	6,380	*4,710	a4,100	3,230	2,870	2,430	2,690	4,890	20,700	28,600	13,600	6,830
4	6,230	4,640	a3,650	2,980	2,620	2,200	2,690	5,770	22,900	26,700	14,200	6,860
5	6,080	4,610	a4,000	2,710	2,480	2,140	2,620	6,680	26,800	*28,000	13,500	7,010
6	5,880	4,610	a4,300	*2,690	2,430	2,140	2,580	7,340	32,400	31,200	12,600	6,920
7	5,770	4,840	4,490	2,620	*b2,800	2,260	2,710	7,670	36,400	32,900	12,100	6,800
8	5,690	5,100	4,460	2,660	b2,750	2,500	2,970	8,270	38,300	32,200	11,900	6,710
9	5,600	5,020	4,140	2,710	2,840	2,730	3,400	*8,720	39,200	30,700	11,800	6,650
10	5,600	4,940	3,900	2,530	b2,800	2,710	4,580	8,570	a44,000	30,500	11,800	6,620
11	5,690	4,840	3,810	b2,400	b2,540	2,670	5,290	8,450	a50,000	31,500	11,200	6,650
12	6,060	4,810	3,540	b2,300	b2,300	2,660	4,740	9,440	a58,000	31,600	10,600	6,500
13	6,060	4,660	3,680	b2,400	b2,470	2,580	4,280	11,000	64,200	32,800	10,200	6,200
14	5,910	4,660	3,790	b2,450	b2,540	2,570	3,880	11,100	*69,800	34,000	10,200	6,060
15	5,690	4,740	3,970	b2,520	2,600	2,550	3,600	10,400	68,600	34,100	9,920	5,940
16	5,550	4,940	3,860	b2,680	2,690	2,530	3,380	10,100	61,300	34,100	9,470	5,830
17	5,490	5,150	3,310	b2,770	2,750	2,440	3,290	10,400	52,800	34,200	9,260	5,770
18	5,430	5,130	3,270	b2,800	2,550	2,430	3,250	12,300	47,100	34,000	8,960	5,710
19	5,490	5,320	3,310	b2,700	2,390	2,410	3,210	15,800	44,200	32,600	8,840	5,550
20	5,550	5,460	3,100	b2,600	2,200	2,440	3,210	a23,000	42,600	29,500	8,720	5,520
21	5,630	5,350	2,980	b2,540	2,150	2,430	3,270	a33,000	41,300	25,700	8,900	5,520
22	6,000	5,150	3,180	b2,520	2,380	2,480	3,700	35,500	44,400	*23,100	9,230	5,410
23	6,350	5,040	3,360	b2,510	2,340	2,340	4,280	30,200	53,500	21,300	8,960	5,270
24	6,170	5,150	3,480	b2,550	2,340	2,070	4,250	24,500	63,900	21,000	*8,540	5,040
25	5,850	5,350	3,520	b2,650	2,350	b1,900	3,970	21,200	67,700	21,600	8,240	4,890
26	5,660	5,660	3,360	b2,700	b2,000	b1,950	3,810	20,200	68,800	20,600	8,060	4,860
27	5,410	5,740	2,800	2,820	b1,840	2,000	3,750	20,200	59,400	19,200	7,850	4,780
28	5,290	5,630	2,730	2,840	b1,660	2,200	3,580	19,500	48,600	18,200	7,640	4,860
29	5,240	5,240	2,980	2,890	-	*2,340	3,560	19,600	42,600	17,400	7,520	4,890
30	5,070	4,890	3,080	2,890	------	2,430	3,640	21,800	38,500	16,500	7,280	4,970
31	4,970	-----	3,040	2,970	-----	2,480	-----	24,100	------	16,000	7,040	------
Total	179,030	151,070	112,440	84,030	69,520	74,070	105,200	457,620	‡1,390.9	856,700	319,230	178,400
Mean	5,780	5,040	3,630	2,710	2,480	2,390	3,510	14,800	46,400	27,600	10,300	5,950
Cfsm	0.75	0.66	0.47	0.35	0.32	0.31	0.46	1.93	6.06	3.60	1.34	0.78
In.	0.86	0.74	0.54	0.40	0.33	0.36	0.51	2.23	6.76	4.15	1.55	0.87
Ac-ft	355,100	299,600	223,000	166,700	137,900	146,900	208,700	907,700	‡2,759	‡1,699	633,200	353,900

Calendar year 1954: Max 74,200 Min 2,000 Mean 14,300 Cfsm 1.87 In. 25.35 Ac-ft 10,350,000
Water year 1954-55: Max 69,800 Min 1,660 Mean 10,900 Cfsm 1.42 In. 19.30 Ac-ft 7,891,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
a No gage-height record; discharge estimated on basis of records for stations upstream and downstream.
b Stage-discharge relation affected by ice.

Fisher River near Jennings, Mont.

Location.--Lat 48°14'40", long 115°17'10", in NW¼SE¼ sec. 27, T. 29 N., R. 29 W., on right bank 80 ft below bridge, 1 mile downstream from Wolf Creek, 9 miles upstream from mouth, and 9 miles southeast of Jennings.

Drainage area.--780 sq mi.

Records available.--December 1950 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,443.23 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark).

Extremes.--Maximum discharge during year, 3,440 cfs May 22 (gage height, 5.83 ft); minimum recorded, 92 cfs Mar. 25 (gage height, 1.35 ft).
1950-55: Maximum discharge, 5,710 cfs May 20, 1954 (gage height, 7.39 ft); minimum daily, 60 cfs Nov. 30, 1952.
Maximum discharge known, 6,560 cfs about May 22, 1948, from slope-area determination of peak flow at site 7½ miles downstream.

Remarks.--Records excellent except those for periods of ice effect and no gage-height record, which are poor.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.3	80	3.0	795
1.5	129	4.0	1,520
1.7	183	5.0	2,480
2.0	280	6.0	3,670
2.5	510		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	161	180	266	198	a165	b170	161	687	1,550	631	226	109
2	158	175	245	177	a170	b180	175	892	1,440	592	213	106
3	155	172	248	169	a170	b170	169	1,280	1,520	548	204	104
4	150	169	235	b150	a165	b160	161	1,530	1,740	538	198	104
5	150	166	229	b120	a155	b140	163	1,630	1,810	543	189	102
6	147	169	226	b130	a155	b180	189	1,820	*2,020	532	183	102
7	147	213	235	b130	a160	b200	232	1,890	2,230	532	177	99
8	145	204	226	b130	a170	b220	308	2,030	2,140	505	175	99
9	145	195	210	b125	a175	b225	480	*2,040	1,960	475	169	99
10	142	192	210	b120	a170	229	658	1,870	1,880	521	163	97
11	163	192	192	b115	a160	216	783	1,790	1,890	510	161	97
12	198	189	b190	b110	a135	210	753	1,960	1,880	485	158	97
13	192	201	b190	b120	a140	b200	711	2,280	1,790	485	155	*94
14	180	204	201	b120	a160	b190	626	2,250	1,670	440	150	94
15	172	204	192	b115	a180	b150	532	2,020	1,400	415	147	102
16	169	245	186	b120	a170	b130	460	1,810	1,260	396	145	114
17	169	308	b180	b125	*150	b120	425	1,700	1,140	383	142	126
18	175	312	b180	*b125	129	132	460	1,670	1,050	*356	*137	116
19	172	312	b175	b125	b120	126	505	*1,830	964	329	134	109
20	180	312	b175	b125	b120	122	480	2,500	932	304	132	116
21	192	296	180	b120	b130	126	*510	3,340	906	284	132	137
22	387	*280	198	b110	b140	*137	620	3,230	944	276	129	132
23	365	280	175	b135	b140	132	699	2,670	997	270	126	122
24	296	273	172	b160	b140	b115	729	2,210	1,160	266	124	116
25	*259	273	172	161	b140	b95	693	1,920	1,280	280	124	114
26	235	360	166	145	b130	b115	675	1,910	990	280	124	112
27	223	378	b150	139	b100	b130	664	1,870	866	248	124	112
28	213	347	b165	132	b140	139	626	1,710	789	239	119	124
29	201	312	*b195	139	-	134	620	1,660	723	229	116	134
30	192	292	166	a145	------	150	609	1,800	681	248	114	134
31	189	-----	189	a160	-----	150	-----	1,770	------	242	112	------
Total	6,022	7,405	6,119	4,195	4,179	4,893	14,876	59,569	41,602	12,382	4,702	3,323
Mean	194	247	197	135	149	158	496	1,922	1,387	399	152	111
Cfsm	0.249	0.317	0.253	0.173	0.191	0.203	0.636	2.46	1.78	0.512	0.195	0.142
In.	0.29	0.35	0.29	0.20	0.20	0.23	0.71	2.84	1.98	0.59	0.22	0.16
Ac-ft	11,940	14,690	12,140	8,320	8,290	9,710	29,510	118,200	82,520	24,560	9,330	6,590

Calendar year 1954: Max 5,450 Min 80 Mean 726 Cfsm 0.931 In. 12.65 Ac-ft 525,700
Water year 1954-55: Max 3,340 Min 94 Mean 464 Cfsm 0.595 In. 8.06 Ac-ft 335,800

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records.
b Stage-discharge relation affected by ice.

Kootenai River at Libby, Mont.

Location.--Lat 48°24'00", long 115°33'10", in SE¼SW¼ sec. 34, T. 31 N., R. 31 W., on right bank 1,800 ft downstream from highway bridge at Libby and 1 mile downstream from Libby Creek.

Drainage area.--10,240 sq mi, approximately.

Records available.--October 1910 to September 1955. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 2,041.54 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Apr. 28, 1931, staff, chain and wire-weight gages 1,800 ft upstream at different datum.

Average discharge.--45 years, 11,780 cfs (8,528,000 acre-ft per year).

Extremes.--Maximum discharge during year, 70,700 cfs June 15 (gage height, 15.17 ft); minimum, 1,440 cfs Feb. 28 (gage height, 0.56 ft).
1910-55: Maximum discharge, 121,000 cfs June 21, 1916 (gage height, 20.7 ft, present datum, derived from gage-relation study); minimum observed, 895 cfs Jan. 11, 1930 (discharge measurement).

Remarks.--Records excellent except those for periods of ice effect, which are fair. Diversions for irrigation of about 4,200 acres from tributaries above station.

Revisions (water years).--WSP 1042: 1933. WSP 1246: 1912(M), 1915(M), 1916, 1918-19(M), 1924-27(M).

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.7	1,690	8.0	26,600
2.0	4,570	12.0	49,500
4.0	10,200	16.0	76,800
6.0	17,500		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7,850	6,120	6,230	4,130	3,770	b2,000	3,260	5,850	29,300	39,000	16,500	7,040
2	7,620	6,040	5,960	4,220	3,820	b2,350	3,370	6,310	26,600	36,100	15,700	7,010
3	7,480	5,930	5,580	4,180	3,700	b2,500	3,390	7,760	26,000	33,100	15,300	6,900
4	7,290	5,830	5,290	4,200	3,620	b2,350	3,530	8,940	28,400	30,200	15,100	6,900
5	7,180	5,740	5,160	3,670	3,210	b2,300	3,510	10,000	32,400	30,000	14,500	6,980
6	7,010	5,770	5,290	3,320	3,190	b2,600	3,480	11,300	37,700	32,900	13,600	6,980
7	6,840	5,960	5,640	3,480	3,230	2,990	3,620	12,300	*42,700	35,500	12,800	6,920
8	6,730	6,120	5,740	b3,500	3,700	3,120	4,010	13,000	44,900	35,500	12,400	6,840
9	6,620	6,230	5,640	b3,400	3,770	3,350	4,540	13,700	45,400	34,200	12,100	6,730
10	6,530	6,180	5,290	b3,300	3,580	b3,500	5,390	13,600	46,500	35,500	12,300	6,730
11	6,670	6,120	5,050	b3,250	b2,900	3,650	6,900	13,400	50,600	34,400	11,900	6,640
12	7,010	5,990	4,800	b3,200	b2,700	3,460	7,060	14,300	58,600	34,500	11,300	6,640
13	7,180	5,990	4,800	b3,400	b3,000	3,390	6,530	16,900	*64,500	34,700	10,700	*6,480
14	7,090	5,910	4,870	b3,400	3,260	3,350	6,040	17,700	68,400	35,700	10,600	6,260
15	6,870	5,910	5,000	b3,250	3,320	b3,320	5,530	16,900	69,900	36,000	10,300	6,180
16	6,760	6,120	5,050	b3,300	3,420	3,300	5,130	15,600	65,800	35,800	10,000	6,150
17	6,640	6,500	4,440	b3,350	*3,440	3,280	4,870	15,300	58,300	35,600	9,660	6,070
18	6,620	6,670	4,470	b3,400	b3,100	3,210	4,900	16,100	51,600	35,800	*9,360	6,020
19	6,590	6,640	4,340	*b3,350	b2,600	3,210	5,110	*19,600	47,900	*34,700	9,150	5,930
20	6,640	6,810	4,150	b3,300	b2,500	3,120	4,980	27,600	46,200	32,300	9,000	5,850
21	6,780	6,840	4,010	b3,100	b2,450	3,010	*4,980	40,100	44,800	28,800	8,940	6,070
22	7,710	*6,670	4,010	b2,800	b2,650	*3,030	5,500	44,900	45,700	25,300	9,240	5,930
23	7,910	6,530	4,250	b3,050	b2,600	3,010	6,180	40,800	51,800	23,100	9,540	5,800
24	7,790	6,420	4,370	b3,250	b2,600	b2,400	6,640	33,800	61,300	22,200	9,000	5,610
25	7,460	6,560	4,470	b3,500	b2,500	b2,100	6,370	28,600	66,300	22,700	8,640	5,420
26	*7,040	6,920	4,500	b3,600	b2,100	b2,300	6,100	26,600	67,700	22,200	8,340	5,310
27	6,780	7,260	3,980	3,740	b1,850	b2,500	5,990	26,400	63,800	20,900	8,170	5,340
28	6,620	7,230	b3,300	3,740	b1,700	b2,600	5,800	25,600	53,900	19,300	7,910	5,290
29	6,480	6,950	b3,500	3,670	-	2,770	5,610	25,000	46,500	18,600	7,680	5,480
30	6,390	6,530	*b3,800	3,720	------	3,030	5,580	27,300	43,300	18,000	7,600	5,560
31	6,230	-----	4,200	3,740	-----	3,190	-----	30,600	------	17,200	7,290	------
Total	216,410	190,490	147,180	108,510	84,280	90,290	153,900	625,860	‡1,486.8	927,800	334,620	187,060
Mean	6,981	6,350	4,748	3,500	3,010	2,913	5,130	20,190	49,560	29,930	10,790	6,235
Cfsm	0.682	0.620	0.464	0.342	0.294	0.284	0.501	1.97	4.84	2.92	1.05	0.609
In.	0.79	0.69	0.53	0.39	0.31	0.33	0.56	2.27	5.40	3.37	1.22	0.68
Ac-ft	429,200	377,800	291,900	215,200	167,200	179,100	305,300	‡1,241	‡2,949	‡1,840	663,700	371,000

Calendar year 1954: Max 86,000 Min 1,000 Mean 16,770 Cfsm 1.64 In. 22.21 Ac-ft 12,140,000
Water year 1954-55: Max 69,900 Min 1,700 Mean 12,470 Cfsm 1.22 In. 16.54 Ac-ft 9,030,000

Peak discharge (base, 37,000 cfs).--May 22 (10:30 a.m.) 45,500 cfs (11.34 ft); June 15 (5:30 a.m.) 70,700 cfs (15.17 ft); June 26 (2 p.m.) 68,000 cfs (14.79 ft).

* Discharge measurement made on this day.
‡ Expressed in thousands.
b Stage-discharge relation affected by ice.

Lake Creek at Troy, Mont.

Location.--Lat 48°26'40", long 115°52'30", in SW¼ sec. 18, T. 31 N., R. 33 W., on right bank a quarter of a mile downstream from powerplant, half a mile upstream from mouth, and 1¼ miles southeast of Troy.

Drainage area.--210 sq mi.

Records available.--January 1945 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,900 ft (from topographic map). Prior to Nov. 1, 1946, wire-weight gage at site a quarter of a mile upstream at different datum.

Average discharge.--10 years, 511 cfs (369,900 acre-ft per year).

Extremes.--Maximum discharge during year, 2,730 cfs June 13 (gage height, 6.88 ft); minimum daily, 116 cfs Mar. 26.
1945-55: Maximum discharge, 3,250 cfs May 30, 1948 (gage height, 8.28 ft); minimum, 2.0 cfs Sept. 1, 1947, Sept. 15, 1948; minimum daily, 55 cfs Nov. 27, 1952.

Remarks.--Records fair. Large diurnal fluctuation at low flows and some at high flows caused by small dam at powerplant diversion. Water diverted returns to stream at powerplant above station. Natural regulation by Bull and Spar Lakes.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

3.5	112	5.0	750
4.0	240	6.0	1,700
4.5	450	7.0	2,880

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	183	228	330	240	158	158	162	326	1,100	1,170	400	175
2	192	222	314	234	153	155	172	420	1,060	1,070	346	172
3	207	225	303	216	158	158	180	415	1,160	1,020	346	170
4	201	219	303	216	150	153	160	455	1,360	981	326	183
5	160	213	275	201	138	145	180	480	1,560	1,010	318	145
6	178	235	282	192	136	148	195	614	*1,730	981	303	175
7	186	228	296	207	162	155	234	626	1,880	945	272	170
8	204	219	289	192	254	143	254	662	1,920	876	346	170
9	175	213	282	190	232	170	314	729	1,930	844	289	170
10	165	226	272	186	183	162	346	656	1,990	844	286	158
11	222	204	250	180	170	170	430	708	2,160	792	258	183
12	237	213	254	186	189	175	415	806	2,330	778	282	150
13	225	210	247	201	170	123	410	918	2,380	750	258	162
14	216	222	250	189	183	165	380	892	*2,220	729	222	*150
15	207	237	272	172	162	148	355	820	1,980	694	289	172
16	213	296	264	192	172	143	334	771	1,850	656	237	170
17	210	330	237	175	170	150	318	757	1,760	614	244	155
18	210	338	222	*158	*160	129	375	792	1,620	596	216	178
19	216	365	225	172	138	123	375	852	1,560	542	*225	148
20	222	365	213	158	151	138	365	*1,190	1,520	*548	213	160
21	258	314	219	175	175	150	342	1,520	1,520	490	228	183
22	375	346	219	170	148	148	*410	1,520	1,620	506	219	160
23	342	*329	225	145	155	*160	425	1,360	1,690	480	201	148
24	296	322	207	172	155	138	425	1,180	1,640	455	216	138
25	*296	303	216	145	172	133	470	1,120	1,760	485	207	148
26	300	390	216	170	136	116	400	1,160	1,520	435	178	178
27	296	390	210	162	153	150	395	1,170	1,410	425	204	145
28	282	375	189	153	158	150	385	1,080	1,360	410	192	148
29	264	346	186	162	-	150	342	1,100	1,290	390	189	183
30	272	322	*213	139	------	160	346	1,250	1,210	380	195	165
31	247	-----	264	160	-----	175	-----	1,240	------	346	183	------
Total	7,257	8,445	7,744	5,610	4,641	4,641	9,894	27,589	50,090	21,242	7,888	4,912
Mean	234	282	250	181	166	150	330	890	1,670	685	254	164
Cfsm	1.11	1.34	1.19	0.862	0.790	0.714	1.57	4.24	7.95	3.26	1.21	0.781
In.	1.29	1.50	1.37	0.99	0.82	0.82	1.75	4.89	8.87	3.76	1.40	0.87
Ac-ft	14,390	16,750	15,360	11,130	9,210	9,210	19,620	54,720	99,350	42,130	15,650	9,740

Calendar year 1954: Max 2,970 Min 120 Mean 606 Cfsm 2.89 In. 39.19 Ac-ft 439,000
Water year 1954-55: Max 2,380 Min 116 Mean 438 Cfsm 2.09 In. 28.33 Ac-ft 317,300

* Discharge measurement made on this day.

Kootenai River at Leonia, Idaho

Location.--Lat 48°37', long 116°03', in NW¼NW¼ sec. 20, T. 33 N., R. 34 W., on right bank at Leonia, 450 ft east of Montana-Idaho State line and half a mile upstream from Boulder Creek.

Drainage area.--11,740 sq mi, approximately.

Records available.--March 1928 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,700.25 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Nov. 13, 1928, chain gage on bridge 250 ft upstream at datum 0.41 ft lower.

Average discharge.--27 years, 13,440 cfs (9,730,000 acre-ft per year).

Extremes.--Maximum discharge during year, 79,300 cfs June 15 (gage height, 117.30 ft); minimum, 2,040 cfs Feb. 28 (gage height, 100.78 ft).
1928-55: Maximum discharge, 123,000 cfs May 28, 1948 (gage height, 123.40 ft); minimum, 996 cfs Dec. 9, 1936; minimum gage height, 97.56 ft Dec. 10, 1929.
Floods of June 1894 and 1916 reached stages of 124.6 and 121.6 ft, respectively, from information by Great Northern Railway Co.

Remarks.--Records excellent except those for periods of ice effect, which are fair. No regulation or diversion above station.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 6 to Aug. 6)

100.7	1,970	106.0	19,400
101.0	2,520	109.0	30,700
101.5	3,820	112.0	45,500
102.0	5,480	115.0	64,900
103.0	8,750	118.0	85,600
104.0	12,100		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*8,100	6,480	6,900	4,600	3,990	2,400	3,670	7,320	35,100	42,100	18,000	7,810
2	7,900	6,340	6,570	4,600	3,960	2,650	3,860	8,040	32,400	39,000	17,200	7,680
3	7,740	6,200	*6,200	4,570	3,920	2,900	3,860	9,950	31,900	36,000	16,600	7,610
4	7,550	6,090	5,930	*4,540	3,760	2,800	3,960	12,000	34,800	33,200	16,300	7,550
5	7,420	*5,960	5,670	4,150	3,610	2,700	3,990	13,500	39,700	32,400	16,000	7,520
6	7,260	6,030	5,830	3,820	3,380	2,900	4,050	15,200	46,300	34,400	15,100	7,580
7	7,060	6,300	6,090	3,790	3,460	3,100	4,250	16,500	*53,300	36,800	14,200	7,520
8	6,900	6,440	6,300	3,890	3,890	3,380	4,800	17,800	56,000	37,000	13,600	7,420
9	6,800	6,570	6,160	3,860	4,080	3,580	5,600	18,700	56,500	35,800	13,300	7,320
10	6,670	6,540	5,860	3,670	3,820	3,790	6,830	18,300	57,500	34,800	13,300	7,260
11	6,800	6,440	5,600	3,550	b3,300	3,820	8,460	18,200	61,500	35,400	13,000	7,190
12	7,160	6,370	5,300	3,490	b3,100	3,700	8,980	19,900	*68,100	35,800	12,400	7,160
13	7,380	6,300	5,230	3,640	3,440	3,580	8,360	22,700	74,500	35,600	11,800	7,000
14	7,320	6,230	5,230	3,700	*3,550	3,550	7,640	23,800	77,800	36,700	11,400	6,770
15	7,120	6,300	5,340	3,640	3,520	3,490	6,960	22,400	*78,500	37,000	11,400	6,700
16	6,900	6,700	5,340	3,640	3,670	3,550	6,440	20,800	74,600	37,000	11,000	6,600
17	6,800	7,160	4,900	3,760	3,700	3,520	6,060	20,400	67,000	36,700	10,600	6,570
18	6,740	7,520	4,700	b3,800	3,520	3,550	6,000	21,200	59,700	36,600	10,200	6,510
19	6,700	7,520	b4,600	b3,700	b3,000	3,460	6,370	*25,100	54,800	35,500	10,000	6,370
20	6,770	7,610	b4,500	b3,600	b2,800	3,440	6,260	34,400	*52,300	33,600	9,790	6,260
21	6,900	7,610	b4,300	b3,500	b2,700	3,350	6,230	50,300	50,400	30,500	9,660	6,510
22	8,070	7,480	b4,300	b3,300	2,910	3,410	7,060	57,000	51,200	27,600	9,820	6,400
23	8,590	7,260	4,540	b3,400	b2,900	3,490	8,100	50,600	57,100	*25,200	10,100	6,200
24	8,420	7,120	4,700	3,670	2,930	b3,150	8,680	41,800	68,200	24,000	9,920	6,030
25	8,100	7,190	4,800	3,550	2,960	b2,800	8,520	35,700	74,200	24,000	9,500	5,830
26	7,640	7,710	4,830	3,920	2,590	2,880	7,970	33,700	74,200	24,000	*9,170	5,640
27	7,350	8,130	4,440	3,860	2,420	3,110	7,710	32,900	71,000	22,600	8,880	5,570
28	7,060	8,040	4,020	3,860	2,120	*3,080	*7,420	31,600	60,600	21,100	8,680	5,670
29	6,900	7,780	4,080	3,860	-	3,060	7,090	31,100	51,600	20,200	8,460	5,800
30	6,770	7,320	4,480	3,890	------	3,350	6,960	34,100	46,200	19,500	8,300	5,860
31	6,600	------	4,640	3,960	------	3,550	------	36,500	------	18,600	8,070	------
Total	225,490	206,740	161,380	118,780	93,000	101,090	192,140	801,510	‡1,717	978,700	365,750	201,910
Mean	7,274	6,891	5,206	3,832	3,321	3,261	6,405	25,860	57,230	31,570	11,800	6,730
Cfsm	0.620	0.587	0.443	0.326	0.283	0.278	0.546	2.20	4.87	2.69	1.01	0.573
In.	0.71	0.65	0.51	0.38	0.29	0.32	0.61	2.54	5.44	3.10	1.16	0.64
Ac-ft	447,300	410,100	320,100	235,600	184,500	200,500	381,100	‡1,590	‡3,406	‡1,941	725,500	400,500

Calendar year 1954: Max 103,000 Min 1,200 Mean 19,480 Cfsm 1.66 In. 22.53 Ac-ft 14,100,000
Water year 1954-55: Max 78,500 Min 2,120 Mean 14,150 Cfsm 1.21 In. 16.35 Ac-ft 10,240,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
b Stage-discharge relation affected by ice.

Boulder Creek near Leonia, Idaho

Location.--Lat 48°36', long 116°06', in NE¼ sec. 32, T. 61 N., R. 3 E., on right bank three-quarters of a mile downstream from McGinty Creek, three-quarters of a mile upstream from buildings of the Idamont Lead-Zinc Mines Co., 2½ miles southwest of Leonia, and 2¾ miles upstream from mouth.

Drainage area.--53 sq mi, approximately.

Records available.--April 1928 to September 1955. Monthly discharge only for September to November 1928, published in WSP 1316.

Gage.--Water-stage recorder. Altitude of gage is 2,600 ft (from topographic map). Prior to Nov. 20, 1928, staff gage at site 1 mile downstream at different datum. Nov. 20, 1928, to Nov. 29, 1933, Oct. 13, 1934, to Sept. 27, 1946, water-stage recorder and Dec. 30, 1933, to Oct. 12, 1934, staff gage, at site a quarter of a mile upstream at different datum.

Average discharge.--27 years (1928-55), 112 cfs (81,080 acre-ft per year).

Extremes.--Maximum discharge during year, 1,360 cfs May 20 (gage height, 5.66 ft); minimum, 10 cfs Sept. 8, 12, 13; minimum gage height, 2.62 ft Sept. 12, 13.
1928-55: Maximum discharge, 2,700 cfs Oct. 19, 1947 (gage height, 7.85 ft), from rating curve extended above 970 cfs on basis of contracted-opening determination of peak flow; minimum, 2 cfs Aug. 25, Sept. 5, 1931.
Revisions.--The maximum discharge for the water year 1936 has been revised to 1,100 cfs during period Apr. 19-22 (gage height, 3.75 ft, from recorded range in stage), superseding figure published in WSP 812 and 1316.

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation or diversion.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.6	7	3.6	173
2.7	12	4.0	335
2.9	24	4.5	575
3.1	48	5.0	880
3.3	85	5.5	1,230

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*16	27	b60	29	19	19	24	102	475	221	43	12
2	16	26	b58	28	19	18	29	140	555	304	40	11
3	16	24	69	27	b18	18	24	170	721	273	39	11
4	16	24	63	*27	b18	17	23	202	852	290	35	11
5	16	*26	56	b26	b18	17	24	252	922	261	33	11
6	16	36	60	b26	b18	17	30	294	922	221	31	11
7	16	42	55	b25	b20	18	44	312	908	198	30	11
8	16	36	50	b25	b22	19	63	362	838	173	28	11
9	16	36	47	b25	b20	19	100	344	824	156	26	12
10	16	44	48	b25	b19	20	156	322	*887	156	24	11
11	33	40	45	b24	b19	20	116	362	901	150	24	11
12	27	40	b45	b25	b20	19	90	465	838	140	22	11
13	22	40	b44	b24	20	18	77	420	764	128	22	11
14	21	45	42	b23	21	17	65	362	580	116	20	12
15	21	81	42	b23	*b20	17	60	322	480	105	19	14
16	20	116	b38	b24	18	17	56	317	450	100	18	16
17	20	100	b37	b23	b18	17	55	362	389	88	18	17
18	21	160	b36	b23	b18	18	55	465	371	79	17	14
19	24	163	b34	24	b18	18	56	*657	*344	73	16	13
20	35	137	b33	22	b18	18	55	1,030	330	65	16	15
21	53	102	b34	b22	b18	18	75	992	340	62	16	19
22	98	98	b34	b22	b19	17	119	797	371	56	15	15
23	58	92	35	b22	18	17	102	614	326	*51	15	14
24	45	81	33	b21	17	16	85	575	389	60	15	13
25	40	140	31	20	17	15	77	668	326	51	*15	13
26	36	137	b29	20	17	17	75	727	256	47	15	13
27	34	110	b32	20	18	18	67	619	248	50	14	14
28	33	90	b36	20	19	18	*67	586	217	55	14	51
29	31	83	b33	19	-	21	67	663	225	55	13	34
30	29	*75	b31	19	------	21	75	797	191	60	13	*22
31	28	-----	31	19	-----	20	-----	570	------	48	12	------
Total	889	2,251	1,321	722	524	559	2,011	14,870	16,240	3,892	678	454
Mean	28.7	75.0	42.6	23.3	18.7	18.0	67.0	480	541	126	21.9	15.1
Cfsm	0.542	1.42	0.804	0.440	0.353	0.340	1.26	9.06	10.2	2.38	0.413	0.285
In.	0.62	1.58	0.93	0.51	0.37	0.39	1.41	10.43	11.40	2.73	0.48	0.32
Ac-ft	1,760	4,460	2,620	1,430	1,040	1,110	3,990	29,490	32,210	7,720	1,340	900

Calendar year 1954: Max 1,640 Min 14 Mean 168 Cfsm 3.17 In. 42.97 Ac-ft 121,500
Water year 1954-55: Max 1,030 Min 11 Mean 122 Cfsm 2.30 In. 31.17 Ac-ft 88,070

Peak discharge (base, 800 cfs).--May 20 (7:30 p.m.) 1,360 cfs (5.66 ft); May 30 (2 a.m.) 915 cfs (5.05 ft); June 6 (7 p.m.) 1,190 cfs (5.44 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Feb. 13, 14, Feb. 23 to Mar. 28; discharge estimated on basis of weather records and records for other Kootenai River tributaries.

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Moyie River at Eastport, Idaho

(International gaging station)

Location.--Lat 49°00', long 116°11', in SE¼ sec. 10, T. 65 N., R. 2 E., on left bank at Eastport, 1,000 ft downstream from international boundary.

Drainage area.--570 sq mi.

Records available.--August 1929 to September 1955 in reports of Geological Survey. January 1915 to December 1916, and discharge measurements during 1914 and 1917, in reports of Water Resources Division, Department of Northern Affairs and National Resources, Canada.

Gage.--Water-stage recorder. Datum of gage is 2,620.06 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. January 1915 to December 1916 staff gage at site 0.2 mile upstream at different datum.

Average discharge.--26 years, 688 cfs (498,100 acre-ft per year).

Extremes.--Maximum discharge during year, 5,540 cfs May 21 (gage height, 8.60 ft); minimum, 50 cfs Mar. 26 (gage height, 3.48 ft).
1929-55: Maximum discharge, 9,400 cfs May 20, 1954 (gage height, 10.55 ft); minimum, 23 cfs Nov. 7, 1936 (gage height, 3.20 ft).

Remarks.--Records excellent except those for periods of ice effect, which are fair. No regulation or diversion above station.

Cooperation.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

3.5	54	5.5	1,150
3.7	104	6.0	1,690
4.0	201	7.0	3,020
4.5	425	8.5	5,370
5.0	740		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*156	266	*385	205	140	b120	144	650	3,340	1,680	361	*93
2	153	257	b340	201	b140	b120	166	831	3,280	1,770	337	90
3	150	249	352	198	b125	b115	166	1,110	3,420	1,650	324	85
4	147	244	356	198	b130	b105	166	1,400	3,700	1,530	310	82
5	144	236	352	b185	b130	b100	176	1,620	4,050	1,540	296	77
6	144	253	356	b180	b125	b105	217	1,670	4,260	1,470	279	70
7	140	*266	347	b175	b140	b110	306	1,880	4,400	1,320	266	70
8	140	257	333	*180	160	b120	430	2,240	4,290	1,200	249	70
9	140	253	310	b175	b145	b125	566	2,170	4,220	1,140	236	72
10	140	257	310	b180	b135	b120	943	2,080	4,320	1,150	224	70
11	163	249	301	b175	b135	125	755	2,230	4,430	1,180	217	68
12	190	253	274	b170	b140	119	624	2,710	4,500	1,100	201	66
13	187	249	279	b175	b145	b115	560	2,710	4,510	1,020	190	66
14	187	253	279	b170	147	b110	504	2,640	*4,210	935	187	66
15	190	274	279	b160	134	b105	474	2,290	3,760	863	180	66
16	190	337	266	b165	128	b110	452	2,210	3,430	808	170	63
17	194	347	b255	170	125	b105	430	2,370	3,080	740	163	63
18	198	385	257	b160	b120	110	442	2,910	2,820	677	156	59
19	201	442	b225	163	b115	b110	*464	3,550	2,780	624	150	56
20	213	464	b225	163	*b115	b110	447	4,820	2,570	572	144	68
21	224	458	b230	b150	b120	b105	480	*5,230	2,520	528	137	93
22	*328	442	240	b155	b125	104	612	4,830	2,540	492	134	80
23	337	442	220	b160	b120	b105	664	4,110	2,600	464	128	72
24	333	430	220	b150	b115	b100	631	3,680	3,560	447	125	70
25	333	452	220	153	b110	90	592	3,460	3,440	420	125	66
26	324	486	b210	150	b105	104	579	3,540	2,980	400	122	66
27	324	474	b210	150	b105	*113	553	3,370	2,630	395	116	70
28	310	442	b220	147	b110	107	522	*3,220	2,340	410	107	110
29	296	420	b250	147	-	113	510	3,380	2,100	385	104	131
30	288	415	236	140	------	125	*516	4,130	1,860	390	104	113
31	279	-----	220	140	-----	125	------	3,740	------	*375	99	------
Total	6,743	10,252	8,557	5,190	3,584	3,450	14,091	86,781	101,940	27,675	5,941	2,291
Mean	218	342	276	167	128	111	470	2,799	3,398	893	192	76.4
Cfsm	0.382	0.600	0.484	0.293	0.225	0.195	0.825	4.91	5.96	1.57	0.337	0.134
In.	0.44	0.67	0.56	0.34	0.23	0.23	0.92	5.66	6.65	1.81	0.39	0.15
Ac-ft	13,370	20,330	16,970	10,290	7,110	6,840	27,950	172,100	202,200	54,890	11,780	4,540

Calendar year 1954: Max 8,930 Min 70 Mean 983 Cfsm 1.72 In. 23.42 Ac-ft 711,900
Water year 1954-55: Max 5,230 Min 56 Mean 758 Cfsm 1.33 In. 18.05 Ac-ft 548,400

Peak discharge (base, 2,900 cfs).--May 21 (1 to 2 a.m.) 5,540 cfs (8.60 ft); May 30 (11 a.m.) 4,270 cfs (7.82 ft); June 13 (1 a.m.) 4,720 cfs (8.10 ft); June 24 (4 a.m.) 3,940 cfs (7.61 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Moyie River at Eileen, Idaho

Location.--Lat 48°46', long 116°10', NE¼ sec. 35, T. 63 N., R. 2 E., on right bank an eighth of a mile downstream from Skin Creek, a quarter of a mile southeast of Eileen, and 4 miles upstream from mouth.

Drainage area.--755 sq mi.

Records available.--October 1925 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,124.5 ft (river-profile survey). Prior to June 1, 1928, staff gage and June 1, 1928, to Sept. 30, 1944, water-stage recorder at same site at datum 1.0 ft higher.

Average discharge.--30 years, 848 cfs (613,900 acre-ft per year).

Extremes.--Maximum discharge during year, 6,550 cfs May 21 (gage height, 5.90 ft); minimum, 114 cfs Sept. 13 (gage height, 2.02 ft).
1925-55: Maximum discharge, 11,000 cfs May 20, 1954 (gage height, 6.99 ft); minimum, 40 cfs Nov. 27, 1936; minimum gage height, 0.50 ft Feb. 22, 1944, present datum.

Remarks.--Records good except those for periods of ice effect, which are fair. No regulation or diversion above station.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 11-26)

2.0	100	4.0	1,680
2.3	198	4.5	2,420
2.6	345	5.0	3,390
3.0	610	5.5	4,700
3.5	1,070	6.0	6,350

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	211	318	450	266	198	170	252	825	3,840	2,020	491	147
2	207	313	405	262	198	170	286	1,030	3,740	2,170	457	141
3	202	307	418	257	179	160	286	1,350	3,900	2,140	444	138
4	198	302	*418	*247	194	150	281	1,670	4,300	1,990	412	131
5	198	296	412	233	194	145	302	1,900	4,760	1,980	393	128
6	194	*307	438	233	187	150	357	1,950	5,090	1,900	381	125
7	190	329	418	229	207	160	464	2,120	5,210	1,720	363	122
8	190	318	399	238	242	170	603	2,420	5,030	1,590	340	122
9	194	313	381	233	218	180	744	2,400	4,940	1,510	318	122
10	190	318	375	235	190	175	1,170	2,310	5,060	1,460	302	122
11	207	313	369	230	200	180	1,030	2,400	5,210	1,500	291	120
12	238	307	345	220	205	170	852	2,850	5,340	1,410	281	117
13	238	307	351	230	210	160	753	2,680	5,180	1,300	262	114
14	238	318	345	220	220	155	682	2,850	4,760	1,200	257	117
15	238	340	357	210	207	150	642	2,570	4,160	1,110	247	117
16	242	387	323	215	*194	155	610	2,470	3,770	1,050	233	122
17	247	412	323	220	190	150	589	2,610	3,390	970	224	125
18	247	438	318	210	180	155	603	2,980	3,090	900	216	122
19	247	505	296	215	175	160	626	3,570	3,040	816	211	117
20	252	533	296	215	170	164	610	5,210	2,790	782	202	134
21	266	519	310	205	175	154	674	*6,240	*2,750	708	198	164
22	334	505	329	210	180	171	680	5,900	2,770	658	187	157
23	375	505	286	220	175	160	940	5,000	2,880	628	183	144
24	369	491	281	205	165	157	880	4,380	3,950	*610	175	134
25	369	512	276	210	160	150	825	4,100	3,950	589	175	131
26	357	547	262	210	155	170	807	4,210	3,350	561	175	128
27	357	547	266	207	150	180	771	3,950	2,940	561	*168	141
28	351	519	302	202	160	*168	726	*3,700	2,660	568	164	194
29	340	491	334	202	-	183	*890	3,900	2,420	540	157	229
30	334	484	302	198	------	194	690	4,730	2,180	540	154	207
31	329	-----	286	202	-----	207	-----	4,410	------	519	147	-----
Total	8,149	12,101	10,671	6,889	5,276	5,123	19,625	98,885	116,450	35,978	8,208	4,132
Mean	263	403	344	222	188	165	654	3,190	3,882	1,161	265	138
Cfsm	0.348	0.534	0.456	0.294	0.249	0.219	0.866	4.23	5.14	1.54	0.351	0.183
In.	0.40	0.60	0.53	0.34	0.26	0.25	0.97	4.87	5.74	1.77	0.40	0.20
Ac-ft	16,160	24,000	21,170	13,660	10,460	10,160	38,930	196,100	231,000	71,360	16,280	8,200

Calendar year 1954: Max 9,800 Min 110 Mean 1,178 Cfsm 1.56 In. 21.18 Ac-ft 852,900
Water year 1954-55: Max 6,240 Min 114 Mean 908 Cfsm 1.20 In. 16.33 Ac-ft 657,500

Peak discharge (base, 3,500 cfs).--May 21 (9 a.m.) 6,550 cfs (5.90 ft); May 30 (2 p.m.) 4,940 cfs (5.50 ft); June 12 (3 a.m.) 5,510 cfs (5.68 ft); June 24 (7 a.m.) 4,350 cfs (5.30 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 21, Jan. 10-26, Feb. 10-13, Feb. 18 to Mar. 18, Mar. 25-27.

Kootenai River at Boom Camp, near Bonners Ferry, Idaho

Location.--Lat 48°42'05", long 116°14'30", in NW¼ sec. 29, T. 62 N., R. 2 E., on left bank 600 ft east of Boom Camp, 3½ miles upstream from Bonners Ferry, and 4 miles downstream from Moyie River.

Drainage area.--12,950 sq mi, approximately.

Records available.--October 1927 to September 1955 (gage heights only) in reports of Geological Survey. April 1925 to September 1927 (gage heights only) in reports of Department of Northern Affairs and National Resources, Canada.

Gage.--Water-stage recorder. Datum of gage is 1,700.00 ft above mean sea level, levels by Topographic Branch in 1928. Gage readings have been reduced to elevations above mean sea level. Datum of 1929, supplementary adjustment of 1947, is 0.04 ft higher. Prior to Aug. 23, 1934, staff gage at same site. Datum of gage was 54.08 ft higher prior to Oct. 8, 1934.

Extremes.--Maximum elevation during year, 1,776.60 ft June 15; minimum, 1,756.44 ft Feb. 28.
1927-55: Maximum elevation recorded, 1,780.06 ft May 21, 1954; minimum, 1,755.53 ft Dec. 9, 1936.

Remarks.--Elevations affected by backwater from Kootenay Lake May 21 to July 22. All principal drainage district dikes in United States and Canada held during the year. Three small areas with substandard dikes north of District No. 10 and south of District No. 4 flooded.

Elevation, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59.19	58.62	58.88	57.84	57.51	56.90	57.39	59.15	66.01	68.74	61.89	59.10
2	59.11	58.58	58.72	57.82	57.50	57.00	57.48	59.45	65.49	67.79	61.70	59.07
3	59.06	58.52	58.60	57.81	57.48	57.20	57.50	60.10	65.37	66.99	61.56	59.02
4	58.99	58.47	58.50	57.80	57.43	57.44	57.56	60.74	65.88	66.10	61.47	59.01
5	58.92	58.43	58.38	57.66	57.39	57.30	57.55	61.17	66.78	65.62	61.37	59.00
6	58.88	58.44	58.43	57.49	57.30	57.18	57.62	61.59	67.99	65.83	61.20	59.06
7	58.80	58.54	58.53	57.45	57.28	57.17	57.79	61.89	69.46	66.24	60.95	59.03
8	58.76	58.61	58.60	57.50	57.50	57.25	58.08	62.22	70.34	66.31	60.83	58.99
9	58.72	58.66	58.56	57.60	57.63	57.39	58.46	62.42	70.72	66.05	60.75	58.95
10	58.69	58.67	58.44	57.54	57.55	57.53	59.05	62.34	71.09	65.72	60.74	58.92
11	58.74	58.61	58.32	57.46	57.58	57.55	59.55	62.31	71.93	65.76	60.67	58.90
12	58.91	58.60	58.20	57.75	57.42	57.44	59.70	62.70	73.39	65.83	60.52	58.90
13	59.00	58.57	58.19	57.60	57.30	57.53	59.47	63.22	74.89	65.73	60.37	58.86
14	58.97	58.55	58.21	57.58	57.33	57.35	59.21	63.46	76.01	65.89	60.26	58.78
15	58.90	58.60	58.28	57.45	57.30	57.40	58.96	63.20	76.51	65.95	60.24	58.75
16	58.82	58.75	58.27	57.45	57.38	57.34	58.78	62.84	76.20	65.95	60.13	58.72
17	58.79	58.93	58.10	57.48	57.38	57.30	58.61	62.79	74.94	65.88	60.01	58.71
18	58.76	59.09	58.07	57.80	57.35	57.31	58.60	63.00	73.15	65.83	59.91	58.68
19	58.76	59.12	58.14	57.63	57.34	57.25	58.72	63.78	71.67	65.66	59.83	58.64
20	58.80	59.18	58.26	57.58	57.36	57.24	58.70	65.51	70.73	65.27	59.76	58.61
21	58.84	59.16	58.20	57.68	57.25	57.16	58.71	68.01	70.20	64.67	59.71	58.71
22	59.20	59.11	57.88	57.62	57.00	57.21	59.08	69.54	70.13	64.01	59.75	58.68
23	59.39	59.01	57.85	57.26	57.31	57.24	59.42	69.09	71.11	63.50	59.86	58.60
24	59.34	58.96	57.93	57.51	57.11	57.09	59.60	67.50	73.21	63.19	59.78	58.52
25	59.23	58.99	57.95	57.32	57.28	56.95	59.54	66.18	75.16	63.14	59.65	58.44
26	59.07	59.21	57.98	57.52	56.92	56.94	59.35	65.70	75.61	63.13	59.55	58.38
27	58.95	59.33	57.82	57.50	56.85	57.05	59.29	65.49	75.45	62.88	59.46	58.35
28	58.86	59.30	57.74	57.48	56.55	57.06	59.16	65.21	73.93	62.59	59.39	58.42
29	58.80	59.20	57.66	57.47	-	57.02	59.02	65.14	71.74	62.35	59.32	58.51
30	58.75	59.02	57.83	57.48	-------	57.19	58.99	65.77	70.01	62.22	59.27	58.54
31	58.68	-------	57.89	57.52	-------	57.30	-------	66.22	-------	62.01	59.20	-------

Note.--Add 1,700 ft to obtain elevation above mean sea level.

Kootenai River at Bonners Ferry, Idaho

Location.--Lat 48°42'00", long 116°18'45", in NE¼ sec. 27, T. 62 N., R. 1 E., near right bank on upstream side of highway bridge at Bonners Ferry.

Drainage area.--13,000 sq mi, approximately.

Records available.--May to October 1904, October 1927 to September 1955 (gage heights only, prior to March 1928). Gage heights collected in this vicinity since 1904 are contained in reports of U. S. Weather Bureau.

Gage.--Wire-weight gage read once daily. Water-stage recorder 800 ft across channel from wire-weight gage at same datum used as supplementary gage during high stages since May 8, 1942. Datum of gage is 1,743.00 ft above mean sea level with respect to Geological Survey benchmark V-3-1929 at elevation 1,777.08 ft. Gage readings have been reduced to elevations above mean sea level. Datum of 1929, supplementary adjustment of 1947, is 0.02 ft higher. May 1 to Oct. 15, 1904, staff gage on railroad bridge three-quarters of a mile downstream at different datum. Oct. 1, 1927, to Nov. 30, 1929, staff gage near left bank. Dec. 1, 1929, to June 12, 1933, chain or wire-weight gages on old highway bridge 40 ft downstream. Datum of gages Oct. 1, 1927, to Jan. 2, 1931, was about 0.23 ft lower.

Average discharge.--27 years (1928-55), 14,530 cfs (10,520,000 acre-ft per year).

Extremes.--Maximum discharge during year, 86,200 cfs June 15; maximum elevation, 1,774.80 ft June 15; minimum discharge, 2,390 cfs Feb. 28, but may have been less during period of ice effect; minimum elevation, 1,742.12 ft Mar. 29.

1927-55: Maximum discharge, 139,000 cfs May 27, 1948 (affected by dike breakage downstream); maximum elevation, 1,778.55 ft May 21, 1954; minimum daily discharge, 1,300 cfs Feb. 8, 1936; minimum elevation, 1,741.14 ft Dec. 5, 1929, Dec. 29, 1930, datum then in use.

Flood in June 1894 reached a stage of 1,777.2 ft, present datum.

Remarks.--Records excellent except those for periods of ice effect, which are good. Backwater from Kootenay Lake usually present at Bonners Ferry. Discharge for periods of backwater at Boom Camp from Kootenay Lake, May 21 to July 22, computed on basis of fall between gages at Boom Camp and near Bonners Ferry; that for remainder of year on basis of stage-discharge relation for station at Boom Camp. Discharge measurements made at station near Bonners Ferry. See Remarks for Kootenai River at Boom Camp on preceding page. No regulation or diversion above station.

Elevation, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47.84	47.13	47.42	e46.54	45.41	44.82	42.59	44.81	61.14	66.76	53.32	46.40
2	47.77	47.05	47.23	e46.46	45.36	44.69	42.77	45.25	60.43	65.66	52.84	46.40
3	47.76	46.98	47.12	46.39	45.30	44.59	42.83	46.15	59.97	64.64	52.46	46.53
4	47.70	47.00	47.03	46.37	45.19	44.96	42.83	47.29	60.67	63.45	52.14	46.69
5	47.64	46.97	46.92	46.36	45.17	45.60	42.83	48.14	62.15	62.59	51.84	46.81
6	47.60	47.06	46.89	46.26	45.06	44.94	42.90	49.08	64.08	62.61	51.40	46.98
7	47.50	47.19	46.98	e46.28	45.05	44.54	43.07	49.83	66.05	62.90	50.90	47.07
8	47.40	47.14	47.06	46.34	45.07	44.22	43.46	50.62	67.29	63.06	50.52	47.20
9	47.43	47.12	46.97	46.45	45.21	44.02	43.93	51.21	67.96	62.67	50.27	47.24
10	47.37	47.15	46.93	46.93	45.22	43.95	44.85	51.28	68.45	62.18	50.06	47.26
11	47.47	47.16	46.81	46.82	45.33	43.96	45.52	51.20	69.40	62.01	49.83	47.28
12	47.56	47.15	46.66	46.97	45.22	43.94	45.83	51.85	70.99	62.09	49.52	47.29
13	47.62	47.12	46.68	46.96	44.80	43.60	45.51	53.01	72.73	61.89	49.23	47.30
14	47.53	47.12	46.68	47.15	44.73	43.56	45.12	53.93	74.10	62.00	48.90	47.14
15	47.46	47.19	46.75	47.34	44.56	43.40	44.70	53.75	74.70	62.11	48.71	47.08
16	47.40	47.31	46.78	47.26	44.45	43.39	44.38	53.08	74.52	62.12	48.42	47.13
17	47.35	47.49	46.66	47.05	44.41	43.29	44.18	52.77	73.31	61.96	48.17	47.08
18	47.35	47.62	46.55	46.96	44.47	43.18	44.10	53.08	71.46	61.90	e47.94	47.11
19	47.30	47.68	46.72	46.96	44.58	43.01	44.24	54.43	69.83	61.70	47.70	47.04
20	47.34	47.77	47.38	46.89	44.77	42.95	44.20	57.67	68.78	61.15	47.68	47.09
21	47.44	47.77	47.25	46.55	44.67	42.70	44.18	62.48	68.18	60.20	47.63	e47.10
22	47.75	47.66	47.24	46.50	44.31	42.80	44.65	65.45	67.99	58.97	47.56	47.10
23	48.00	47.65	46.77	46.34	44.39	42.86	45.31	65.52	68.95	57.95	47.60	47.11
24	47.95	47.57	46.57	46.28	44.75	42.53	45.59	63.55	70.99	57.14	47.42	47.05
25	47.83	47.52	46.46	46.11	44.37	42.80	45.57	61.45	73.32	56.73	47.29	47.00
26	47.65	47.79	46.58	46.18	45.10	42.40	45.27	60.34	73.96	56.57	47.11	46.93
27	47.51	48.00	46.53	46.00	44.93	42.38	45.10	59.86	73.88	56.04	47.00	46.92
28	47.43	47.96	46.46	45.82	44.76	42.41	44.92	59.49	72.43	55.38	46.97	47.02
29	47.34	47.79	46.86	45.70	-	42.19	44.73	59.24	70.17	54.74	46.79	47.05
30	47.27	47.60	46.90	45.60	-------	42.36	44.64	60.17	68.25	54.33	46.63	47.07
31	47.20	-------	e46.60	45.54	-------	42.50	-------	61.15	-------	53.85	46.50	-------

e Observer's readings in error. Gage height estimated on basis of records for station near Bonners Ferry and records for adjacent periods.

Note.--Add 1,700 ft to obtain elevation above mean sea level.

Kootenai River at Bonners Ferry, Idaho--Continued

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,350	6,800	7,510	4,830	4,160	b2,600	3,990	8,200	41,500	44,600	18,900	7,900
2	8,110	6,690	*7,080	4,780	4,140	b2,900	4,180	9,140	38,800	41,400	18,000	7,820
3	7,960	6,520	6,740	4,780	4,100	b3,100	4,220	11,400	38,700	38,900	17,200	7,880
4	7,760	6,390	6,470	4,740	3,990	b3,000	4,360	13,800	41,500	35,700	16,800	7,650
5	7,560	6,280	6,150	4,420	3,930	b2,900	4,330	15,600	45,600	34,300	16,300	7,620
6	7,450	*6,310	6,280	4,050	3,750	b3,100	4,490	17,700	51,200	36,400	15,500	7,790
7	7,230	6,580	6,550	3,970	3,710	b3,400	4,870	19,200	58,400	38,800	14,500	7,700
8	7,120	6,770	6,740	*4,080	4,160	b3,600	5,570	20,800	*62,000	39,200	14,000	7,590
9	7,010	6,900	6,630	b4,100	4,440	b3,800	6,550	22,000	62,700	38,100	13,700	7,480
10	6,930	6,930	6,310	b3,900	b4,200	b4,000	8,140	21,500	64,100	37,100	13,600	7,400
11	7,060	6,770	5,990	b3,800	b3,600	b4,100	9,710	21,400	68,200	37,600	13,300	7,340
12	7,540	6,740	5,680	b3,800	b3,400	b3,900	10,200	23,400	74,900	38,200	12,800	7,340
13	7,820	6,660	5,650	b3,900	3,770	b3,800	9,370	26,400	81,400	37,700	12,200	7,230
14	7,730	6,610	5,700	b4,000	3,830	b3,800	8,540	27,800	85,000	38,700	11,800	7,010
15	7,540	6,740	5,890	b3,900	3,770	b3,700	7,790	26,300	*85,600	39,000	11,700	6,930
16	7,310	7,150	5,860	b3,900	3,930	b3,800	7,280	24,200	81,300	38,800	11,300	6,850
17	7,230	7,650	5,420	4,050	*3,930	b3,750	6,820	24,000	73,300	38,600	10,900	6,820
18	7,150	8,110	b5,200	b4,100	b3,800	3,830	6,800	25,200	64,800	38,200	10,500	6,740
19	7,150	8,200	b5,000	b4,000	b3,200	3,710	7,120	29,800	59,400	37,400	10,300	6,630
20	7,260	8,380	b4,900	b3,900	b3,000	3,690	7,060	40,500	*56,100	35,400	10,000	6,550
21	7,370	8,320	b4,700	b3,800	b2,900	3,540	7,090	55,800	53,800	32,700	9,840	6,820
22	8,410	8,170	b4,700	b3,600	b3,100	3,640	8,110	62,200	54,600	30,300	9,980	6,740
23	9,010	7,880	4,850	3,640	b3,100	3,690	9,110	*57,100	60,300	27,600	10,400	6,520
24	8,850	7,730	5,040	b3,900	b3,200	b3,350	9,670	48,200	71,800	25,800	10,100	6,310
25	8,540	7,820	5,090	3,750	b3,200	b3,000	9,440	42,200	77,500	*25,500	9,640	6,090
26	8,050	8,470	5,180	4,160	b2,800	*3,170	8,820	40,700	77,000	25,500	9,300	5,940
27	7,700	8,850	4,780	4,120	b2,600	3,350	8,630	39,800	74,600	24,000	9,010	5,860
28	7,450	8,780	b4,400	4,080	b2,400	3,370	8,230	38,300	64,500	22,500	*8,790	6,040
29	7,280	8,440	4,420	4,080	-	3,300	7,820	37,900	55,700	21,200	8,570	6,280
30	7,150	7,900	4,800	4,100	------	3,600	*7,730	41,500	48,700	20,600	8,410	6,360
31	6,960	-----	4,950	4,180	-----	3,810	-----	43,100	------	19,500	8,200	------
Total	236,040	221,520	174,620	126,390	100,110	108,300	216,040	935,140	‡1,873	‡1,039.3	375,540	209,030
Mean	7,614	7,384	5,633	4,077	3,575	3,494	7,201	30,170	62,430	33,530	12,110	6,968
Cfsm	0.586	0.568	0.433	0.314	0.275	0.269	0.554	2.32	4.80	2.58	0.932	0.536
In.	0.68	0.63	0.50	0.36	0.29	0.31	0.62	2.68	5.36	2.97	1.07	0.60
Ac-ft	468,200	439,400	346,400	250,700	198,600	214,800	428,500	‡1,855	‡3,715	‡2,061	744,900	414,600

Calendar year 1954: Max 114,000 Min 1,400 Mean 20,950 Cfsm 1.61 In. 21.88 Ac-ft 15,170,000
Water year 1954-55: Max 85,600 Min 2,400 Mean 15,380 Cfsm 1.18 In. 16.07 Ac-ft 11,140,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
b Stage-discharge relation affected by ice.

Kootenai River near Bonners Ferry, Idaho

Location.--Lat 48°41'55", long 116°20'40", in NW¼ sec. 28, T. 62 N., R. 1 E., on left bank 1.6 miles downstream from highway bridge at Bonners Ferry.

Drainage area.--13,000 sq mi, approximately.

Records available.--May 1928 to September 1955 (gage heights only).

Gage.--Water-stage recorder. Datum of gage is 1,700.00 ft above mean sea level, levels by Topographic Branch in 1928. Gage readings have been reduced to elevations above mean sea level. Datum of 1929, supplementary adjustment of 1947, is 0.02 ft higher at Bonners Ferry. May 17 to July 20, 1928, water-stage recorder at same site at datum 43.42 ft higher. July 21 to Oct. 22, 1928, and for elevations below 1,742 ft prior to Jan. 2, 1931, staff gage at same site and datum.

Extremes.--Maximum elevation during year, 1,774.25 ft June 15; minimum, 1,741.18 ft Mar. 29.
1928-55: Maximum elevation, 1,777.63 ft May 21, 1954; minimum, 1,740.16 ft Mar. 29, 1944.

Remarks.--Elevations affected by backwater from Kootenay Lake and by flooding of small areas (see Remarks for station at Boom Camp, p. 170).

Elevation, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47.66	46.97	47.25	46.53	45.28	42.85	41.41	43.62	60.61	66.48	53.10	46.10
2	47.59	46.92	47.06	46.44	45.25	42.96	41.56	44.12	59.88	65.35	52.65	46.14
3	47.56	46.89	46.95	46.37	45.17	43.04	41.60	45.02	59.46	64.36	52.25	46.30
4	47.54	46.87	46.86	46.35	45.05	42.99	41.58	46.35	60.08	63.23	51.93	46.50
5	47.47	46.84	46.76	46.30	44.99	42.84	41.52	47.33	61.57	62.48	51.63	46.60
6	47.43	46.92	46.75	46.20	44.84	42.79	41.57	48.32	63.41	62.35	51.22	46.76
7	47.33	47.03	46.81	46.21	44.80	42.87	41.72	49.06	65.47	62.65	50.71	46.92
8	47.23	47.00	46.87	46.25	44.92	42.97	42.04	49.85	66.74	62.72	50.30	47.07
9	47.27	47.00	46.82	46.33	44.99	43.05	42.57	50.51	67.40	62.34	50.09	47.10
10	47.23	47.03	46.77	46.29	44.78	43.12	43.47	50.61	67.90	61.76	49.87	47.14
11	47.26	47.03	46.67	46.31	44.58	43.18	44.32	50.55	68.84	61.61	49.65	47.14
12	47.37	46.99	46.52	46.22	44.45	43.07	44.73	51.20	70.44	61.62	49.28	47.14
13	47.42	46.96	46.54	46.29	44.43	42.92	44.47	52.39	72.11	61.48	49.02	47.17
14	47.35	46.97	46.52	46.27	44.38	42.82	44.10	53.34	73.47	61.56	48.66	47.05
15	47.28	47.04	46.61	46.19	44.29	42.67	43.62	53.18	74.14	61.65	48.51	46.96
16	47.22	47.11	46.64	46.15	44.19	42.61	43.26	52.54	73.98	61.65	48.23	47.03
17	47.17	47.28	46.55	46.08	44.16	42.46	43.05	52.23	72.79	61.54	47.98	47.04
18	47.17	47.40	46.45	46.01	44.05	42.42	42.96	52.51	70.99	61.48	47.79	47.01
19	47.13	47.50	46.44	46.02	43.85	42.26	42.97	53.85	69.41	61.28	47.60	46.94
20	47.17	47.56	46.54	45.96	43.76	42.13	43.02	56.97	68.36	60.74	47.50	46.97
21	47.22	47.56	46.50	45.85	43.64	41.89	42.97	61.61	67.77	59.82	47.43	47.08
22	47.52	47.49	46.49	45.69	43.54	41.96	43.44	64.66	67.58	58.64	47.38	47.06
23	47.75	47.45	46.42	45.64	43.54	41.98	44.08	64.85	68.50	57.84	47.43	47.04
24	47.75	47.39	46.38	45.68	43.50	41.76	44.45	63.00	70.53	56.84	47.32	46.98
25	47.61	47.37	46.40	45.60	43.38	41.50	44.53	60.90	72.81	56.45	47.10	46.92
26	47.45	47.54	46.50	45.66	43.35	41.36	44.24	59.77	73.45	56.28	46.87	46.90
27	47.33	47.77	46.45	45.62	43.04	41.42	43.92	59.37	73.37	55.77	46.73	46.87
28	47.24	47.74	46.31	45.54	42.92	41.37	43.81	58.95	72.02	55.13	46.70	46.92
29	47.16	47.59	46.38	45.48	-	41.28	43.64	58.71	69.78	54.46	46.53	46.97
30	47.10	47.44	46.55	45.41	-------	41.31	43.47	59.57	67.94	54.07	46.38	46.99
31	47.03	-------	46.59	45.37	-------	41.34	-------	60.58	-------	53.56	46.22	-------

Note.--Add 1,700 ft to obtain elevation above mean sea level.

Deep Creek at Moravia, Idaho

Location.--Lat 48°38', long 116°24', in sec. 18, T. 61 N., R. 1 E., on downstream side of right abutment of highway bridge, 1 mile downstream from Ruby Creek and 1 mile southwest of Moravia.

Drainage area.--133 sq mi.

Records available.--May 1928 to September 1955. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Staff gage read once daily. Altitude of gage is 1,800 ft (from topographic map). Prior to Aug. 2, 1949, at datum 2.00 ft higher.

Average discharge.--28 years (1928-55), 138 cfs (99,910 acre-ft per year).

Extremes.--Maximum discharge observed during year, 804 cfs May 20 (gage height, 6.20 ft); minimum observed, 14 cfs Aug. 30 (gage height, 3.84 ft).
1928-55: Maximum discharge, 1,670 cfs May 18, 1954 (gage height, 7.40 ft, from graph based on gage readings); minimum discharge observed, 5 cfs Aug. 14, 22, 1940.

Remarks.--Records good except those for periods of ice effect or doubtful gage-height record, which are poor. Small diversions above station for irrigation. Occasional regulation above station at migratory waterfowl refuge near Elmira.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	d30	48	81	47	b55	125	272	490	190	53	16
2	25	29	64	74	b45	b54	125	316	485	224	50	16
3	25	29	60	70	b42	b52	125	349	540	218	47	16
4	25	29	57	64	b41	b45	121	385	546	224	47	16
5	25	29	54	60	b40	b45	129	445	540	224	44	*16
6	25	*32	96	b50	b43	b46	121	496	552	190	40	16
7	25	36	77	b53	79	b50	188	529	558	162	35	16
8	25	39	67	b54	102	b55	199	564	564	145	33	16
9	25	41	54	b48	83	b60	316	552	558	136	d32	23
10	d25	41	57	*b42	b70	b65	425	529	*502	116	d31	20
11	d40	41	b54	b42	b65	b63	358	507	512	112	d29	17
12	d35	41	b50	b44	b60	b60	316	552	502	112	27	16
13	32	44	b52	b44	b56	54	316	529	485	104	25	16
14	32	48	57	b43	62	44	279	529	470	94	23	18
15	32	77	57	b43	59	b40	259	564	420	90	23	d22
16	32	83	b53	b42	53	b43	239	455	390	86	23	d25
17	32	83	b57	b41	50	b46	239	518	336	86	22	d28
18	32	92	60	b41	b48	48	252	540	243	86	20	d22
19	34	96	b55	b41	b48	46	259	624	236	72	20	21
20	38	100	b52	b40	b48	b45	293	804	230	68	d19	d24
21	46	77	b56	b39	*b49	48	332	*751	224	65	d19	27
22	60	74	60	b40	51	51	425	612	218	60	d18	d22
23	44	67	60	b40	51	b48	400	502	224	53	d17	d21
24	41	64	64	b43	51	b45	324	507	420	57	16	d20
25	39	70	64	44	b48	b43	290	518	336	60	16	d19
26	d38	81	b60	43	b45	b45	272	512	243	65	16	d19
27	d37	84	b56	43	b44	54	255	496	218	60	16	29
28	d36	77	b60	43	b43	60	233	507	201	60	d15	60
29	d34	70	b65	41	-	84	*213	524	190	72	d15	*47
30	d33	*57	74	43	------	*96	246	600	207	62	14	38
31	d31	-----	88	44	-----	108	-----	475	------	*60	*16	------
Total	1,028	1,761	1,888	1,480	1,523	1,698	7,674	16,063	11,640	3,413	821	682
Mean	33.2	58.7	60.9	47.7	54.4	54.8	256	518	388	110	26.5	22.7
Cfsm	0.250	0.441	0.458	0.359	0.409	0.412	1.92	3.89	2.92	0.827	0.199	0.171
In.	0.29	0.49	0.53	0.41	0.43	0.47	2.15	4.49	3.25	0.95	0.23	0.19
Ac-ft	2,040	3,490	3,740	2,940	3,020	3,370	15,220	31,860	23,090	6,770	1,630	1,350

Calendar year 1954: Max 1,400 Min 22 Mean 204 Cfsm 1.53 In. 20.81 Ac-ft 147,600
Water year 1954-55: Max 804 Min 14 Mean 136 Cfsm 1.02 In. 13.88 Ac-ft 98,520

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge estimated on basis of weather records and records for nearby streams.

Kootenai River at Klockmann Ranch, near Bonners Ferry, Idaho

Location.--Lat 48°47'40", long 116°22'50", in SE¼ sec. 19, T. 63 N., R. 1 E., on right bank 0.3 mile downstream from dike of drainage district No. 5 and 8 miles north of Bonners Ferry.

Drainage area.--13,300 sq mi, approximately.

Records available.--May 1928 to September 1955 (gage heights only).

Gage.--Water-stage recorder. Datum of gage is 1,700.00 ft above mean sea level, levels by Topographic Branch in 1928. Gage readings have been reduced to elevations above mean sea level. Datum of 1929, supplementary adjustment of 1947, is about 0.03 ft higher.

Extremes.--Maximum elevation during year, 1,771.69 ft June 15; minimum, 1,740.79 ft Mar. 29, 31.
1928-55: Maximum elevation, 1,774.54 ft May 23, 1954; minimum, 1,738.76 ft Apr. 1, 1944.

Remarks.--Elevations affected by backwater from Kootenay Lake and by flooding of small areas (see Remarks for station at Boom Camp, p. 170).

Elevation, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47.09	46.52	46.75	46.24	44.92	42.58	40.83	42.42	58.89	65.12	52.07	45.43
2	47.02	46.47	46.61	46.16	44.91	42.63	40.94	42.80	58.19	64.02	51.64	45.52
3	47.02	46.45	46.51	46.09	44.84	46.65	40.94	43.52	57.78	63.08	51.25	45.71
4	47.01	46.43	46.45	46.06	44.72	42.63	40.91	44.65	58.40	62.03	50.92	45.92
5	46.95	46.42	46.37	46.02	44.66	42.44	40.85	45.59	59.80	61.25	50.62	46.04
6	46.93	46.50	46.37	45.97	44.52	42.42	40.89	46.51	61.51	61.08	50.24	46.22
7	46.86	46.60	46.41	45.96	44.50	42.45	41.01	47.26	63.37	61.23	49.77	46.40
8	46.79	46.56	46.43	45.98	44.59	42.50	41.24	48.07	64.63	61.27	49.40	46.55
9	46.83	46.55	46.38	46.03	44.62	42.54	41.63	48.72	65.27	60.92	49.17	46.62
10	46.78	46.58	46.37	46.01	44.43	42.58	42.38	48.87	65.78	60.46	48.93	46.67
11	46.81	46.58	46.30	46.02	44.23	42.60	43.03	48.81	66.65	60.24	48.72	46.68
12	46.87	46.57	46.17	45.93	44.13	42.48	43.38	49.35	68.11	60.25	48.39	46.70
13	46.88	46.54	46.20	45.98	44.08	42.34	43.19	50.46	69.66	60.07	48.15	46.71
14	46.81	46.53	46.18	45.96	44.03	42.26	42.89	51.45	70.91	60.12	47.84	46.63
15	46.77	46.59	46.26	45.88	43.95	42.12	42.49	51.40	71.56	60.21	47.64	46.56
16	46.72	46.67	46.27	45.83	43.88	42.04	42.19	50.78	71.51	60.21	47.40	46.59
17	46.69	46.80	46.21	45.76	43.85	41.92	42.02	50.49	70.64	60.11	47.19	46.60
18	46.68	46.88	46.12	45.69	43.72	41.90	41.93	50.71	69.13	60.04	47.01	46.58
19	46.68	46.96	46.09	45.67	43.53	41.80	41.92	51.94	67.69	59.85	46.82	46.51
20	46.68	46.99	46.12	45.62	43.44	41.71	41.93	54.93	66.70	59.40	46.73	46.55
21	46.72	47.02	46.11	45.53	43.34	41.56	41.93	59.38	66.12	58.55	46.68	46.64
22	46.92	46.94	46.11	45.40	43.24	41.56	42.26	62.34	65.93	57.45	46.59	46.63
23	47.11	46.94	46.07	45.35	43.19	41.54	42.78	62.68	66.74	56.51	46.60	46.61
24	47.12	46.89	46.03	45.35	43.17	41.33	43.14	61.09	68.46	55.75	46.53	46.58
25	47.02	46.89	46.07	45.28	43.08	41.10	43.19	59.16	70.51	55.33	46.32	46.55
26	46.88	47.02	46.17	45.31	43.01	40.96	42.99	58.08	71.20	55.10	46.12	46.54
27	46.81	47.19	46.16	45.26	42.80	40.99	42.72	57.68	71.23	54.61	45.98	46.53
28	46.73	47.16	46.02	45.20	42.68	40.93	42.60	57.29	70.17	54.01	45.98	46.59
29	46.66	47.03	46.08	45.12	-	40.83	42.44	57.06	68.23	53.39	45.79	46.60
30	46.61	46.90	46.21	45.06	-------	40.82	42.31	57.87	66.50	52.98	45.65	46.59
31	46.56	-------	46.27	45.00	-------	40.81	-------	58.86	-------	52.50	45.52	-------

Note.--Add 1,700 ft to obtain elevation above mean sea level.

Kootenai River near Copeland, Idaho

(International gaging station)

Location.--Lat 48°54'45", long 116°25'00", in NW¼NW¼SW¼ sec. 12, T. 64 N., R. 1 W., on right bank at Andrews Ranch, three-quarters of a mile downstream from Mission Creek and 1½ miles northwest of Copeland.

Drainage area.--13,400 sq mi, approximately.

Records available.--October 1927 to September 1955 (gage-height record only prior to May 1929) in reports of Geological Survey. April 1925 to September 1927 (gage heights only) in reports of Department of Northern Affairs and National Resources, Canada.

Gage.--Water-stage recorder. Datum of gage is 1,700.00 ft above mean sea level, referred to benchmark T-10-1914, elevation, 1,791.49 ft (datum of 1929, supplementary adjustment of 1947, is about 0.04 ft higher). Gage readings have been reduced to elevations above mean sea level. Prior to Nov. 20, 1929, staff or recording gage at site three-quarters of a mile upstream at same datum.

Average discharge.--26 years, 15,130 cfs (10,950,000 acre-ft per year).

Extremes.--Maximum daily discharge during year, 86,500 cfs June 15; maximum elevation, 1,767.93 ft June 27; minimum daily discharge, 2,600 cfs Feb. 28; minimum elevation, 1,740.34 ft Apr. 5.

1929-55: Maximum daily discharge, 124,000 cfs May 30, 1948; maximum elevation, 1,770.47 ft May 23, 1954; minimum daily discharge, 1,350 cfs Feb. 8, 1936; minimum elevation, 1,738.52 ft Apr. 2, 3, 1944.

Remarks.--Records excellent except those for periods of ice effect or wind effect, which are good. Discharge and elevations affected slightly by flooding of small area (see Remarks for station at Boom Camp, p. 170). Stage-discharge relation affected by backwater from Kootenay Lake. Discharge computed from fall-mean stage-discharge relations determined on basis of fall in reach between stations at Klockmann Ranch and at Porthill and discharge measurements made at station near Copeland.

Cooperation.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Elevation, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46.64	46.19	46.36	46.04	44.72	42.42	40.41	41.28	56.04	62.97	50.79	44.91
2	46.58	46.17	46.26	45.98	44.70	42.42	40.48	41.51	55.55	62.00	50.40	45.01
3	46.59	46.16	46.19	45.92	44.64	42.46	40.45	41.96	55.24	61.14	50.04	45.23
4	46.60	46.15	46.15	45.89	44.52	42.35	40.41	42.79	55.73	60.23	49.71	45.47
5	46.55	46.15	46.11	45.89	44.47	42.23	40.35	43.53	56.89	59.50	49.42	45.63
6	46.55	46.23	46.09	45.85	44.34	42.20	40.36	44.25	58.35	59.19	49.08	45.81
7	46.50	46.28	46.10	45.86	44.30	42.19	40.39	44.92	59.99	59.18	48.67	46.00
8	46.45	46.25	46.12	45.88	44.35	42.21	40.50	45.59	61.20	59.12	48.36	46.17
9	46.50	46.25	46.08	45.89	44.37	42.20	40.75	46.21	61.85	58.76	48.14	46.26
10	46.47	46.28	46.08	45.88	44.20	42.20	41.26	46.39	62.39	58.35	47.90	46.32
11	46.49	46.29	46.04	45.88	44.05	42.19	41.69	46.41	63.16	58.10	47.68	46.34
12	46.50	46.28	45.95	45.80	43.95	42.09	41.99	46.88	64.44	48.03	47.41	46.36
13	46.48	46.24	45.98	45.83	43.90	41.96	41.93	47.76	65.75	57.86	47.21	46.37
14	46.41	46.25	45.96	45.79	43.83	41.89	41.71	48.60	67.01	57.85	46.93	46.31
15	46.38	46.30	46.03	45.72	43.75	41.75	41.43	48.71	67.65	57.90	46.72	46.26
16	46.34	46.35	46.03	45.67	43.67	41.66	41.23	48.33	67.75	57.88	46.51	46.28
17	46.33	46.42	45.99	45.59	43.63	41.55	41.11	48.13	67.18	57.81	46.31	46.28
18	46.34	46.47	45.93	45.54	43.52	41.53	41.03	48.33	66.03	57.74	46.18	46.28
19	46.33	46.53	45.90	45.49	43.36	41.43	40.99	49.26	64.87	57.60	46.03	46.24
20	46.33	46.55	45.88	45.45	43.26	41.34	41.01	51.73	63.98	57.23	45.97	46.28
21	46.34	46.55	45.90	45.35	43.15	41.25	40.99	55.59	63.47	56.58	45.92	46.35
22	46.45	46.51	45.90	45.28	43.07	41.26	41.18	58.33	63.31	55.71	45.82	46.35
23	46.56	46.53	45.86	45.23	42.98	41.21	41.52	58.96	63.98	54.91	45.80	46.35
24	46.58	46.50	45.82	45.19	42.94	41.03	41.74	57.81	65.30	54.28	45.71	46.34
25	46.53	46.51	45.87	45.13	42.87	40.85	41.80	56.25	67.04	53.84	45.53	46.31
26	46.45	46.57	45.97	45.11	42.77	40.74	41.71	55.32	67.73	53.58	45.40	46.31
27	46.39	46.71	45.96	45.08	42.63	40.74	41.53	54.99	67.85	53.15	45.32	46.29
28	46.35	46.67	45.89	45.03	42.53	40.66	41.45	54.66	67.11	52.61	45.31	46.35
29	46.29	46.55	45.93	44.92	-	40.57	41.35	54.50	65.63	52.05	45.17	46.35
30	46.25	46.47	46.01	44.87	-------	40.51	41.24	55.17	64.16	51.64	45.06	46.35
31	46.23	-------	46.07	44.80	-------	40.42	-------	55.98	-------	51.21	44.94	-------

Note.--Add 1,700 ft to obtain elevation above mean sea level.

Kootenai River near Copeland, Idaho--Continued

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,360	6,960	7,820	5,100	4,300	2,800	4,200	8,640	44,200	49,900	19,700	7,750
2	8,220	6,740	*7,500	5,000	4,300	3,000	4,350	*9,450	41,200	46,100	18,800	7,550
3	8,020	6,610	7,020	5,000	4,300	3,200	4,500	11,100	39,500	43,100	18,000	7,520
4	7,960	6,510	6,730	4,900	4,200	3,100	4,600	13,500	41,700	39,700	17,500	7,690
5	7,800	6,440	6,320	4,600	4,100	3,100	4,700	15,400	46,200	37,500	17,200	7,520
6	7,600	6,480	6,400	4,300	4,000	3,200	4,920	17,300	51,800	38,600	16,400	7,630
7	7,410	*c6,800	6,690	4,100	3,900	3,500	5,320	18,800	58,200	40,600	15,400	7,590
8	7,170	6,990	6,810	4,200	4,400	3,700	5,880	20,600	62,100	41,800	14,700	7,480
9	7,090	6,910	6,770	*4,200	4,600	3,900	6,820	21,900	63,900	40,900	14,300	7,390
10	7,030	7,030	6,560	4,000	4,500	4,100	8,190	22,000	64,800	39,300	14,000	7,310
11	7,030	6,950	6,250	3,900	3,900	4,200	9,750	21,600	67,600	39,300	13,800	7,240
12	7,560	6,870	5,920	4,000	3,600	4,100	10,600	22,800	73,100	40,100	13,200	7,280
13	7,820	6,780	5,760	4,100	3,800	4,000	10,100	25,600	79,500	39,600	12,700	7,180
14	7,740	6,780	5,920	4,100	3,900	4,000	9,310	28,200	*84,300	40,300	12,200	7,030
15	7,640	6,810	5,940	4,100	4,000	3,900	8,440	27,600	86,500	*40,800	12,100	6,780
16	7,370	7,180	6,020	4,100	4,100	4,000	7,870	25,400	85,100	40,800	11,700	6,930
17	7,210	7,840	5,840	4,200	4,100	4,000	7,480	24,300	79,000	40,600	11,400	6,850
18	c7,200	8,180	5,470	4,300	*4,000	4,000	7,440	24,700	71,600	40,200	10,900	6,850
19	7,210	8,470	5,200	4,100	3,500	3,900	7,530	28,300	*64,100	39,600	10,500	6,630
20	c7,300	8,510	5,000	4,100	3,200	3,900	7,580	37,200	60,000	38,100	10,300	6,660
21	7,430	8,710	4,900	4,000	3,100	3,800	7,610	51,200	57,300	34,900	10,300	6,930
22	8,440	8,360	4,900	3,800	3,300	3,800	8,350	60,300	56,600	31,300	10,300	6,710
23	9,260	8,160	5,100	3,800	3,300	3,800	9,470	60,300	59,600	28,200	10,600	6,500
24	9,200	7,980	5,200	4,000	3,400	3,600	10,100	*53,400	67,900	26,200	10,500	6,380
25	8,750	7,980	5,200	3,900	3,400	3,300	10,100	46,300	77,100	25,800	10,100	6,270
26	8,100	8,590	5,200	4,200	3,000	3,400	9,680	42,500	80,000	*26,000	9,610	6,200
27	7,880	8,980	5,000	4,200	2,800	3,500	9,000	40,900	79,500	24,800	9,150	6,200
28	7,540	9,150	4,600	4,200	2,600	3,500	8,840	39,600	73,200	23,300	9,260	6,290
29	7,420	8,890	4,500	4,200	-	*3,500	8,520	38,400	63,000	22,100	*8,750	6,540
30	7,250	8,380	4,900	4,300	------	3,800	8,290	40,900	55,200	21,500	8,470	6,460
31	7,150	-----	5,100	4,300	-----	4,100	------	44,300	------	20,400	8,220	------
Total	239,160	227,020	180,540	131,300	105,600	113,700	229,540	942,490	‡1,933.8	‡1,101.4	390,060	209,340
Mean	7,715	7,567	5,824	4,235	3,771	3,668	7,651	30,400	64,460	35,530	12,580	6,978
Cfsm	0.576	0.565	0.435	0.316	0.281	0.274	0.571	2.27	4.81	2.65	0.939	0.521
In.	0.66	0.63	0.50	0.36	0.29	0.32	0.64	2.62	5.37	3.06	1.08	0.58
Ac-ft	474,400	450,300	358,100	260,400	209,500	225,500	455,300	‡1,869	‡3,836	‡2,185	773,700	415,200

Calendar year 1954: Max 99,900 Min 1,600 Mean 21,570 Cfsm 1.61 In. 21.84 Ac-ft 15,620,000
Water year 1954-55: Max 86,500 Min 2,600 Mean 15,900 Cfsm 1.19 In. 16.11 Ac-ft 11,510,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
c Channel conveyance affected by wind; discharge estimated on basis of records for station at Bonners Ferry corrected for inflow and channel storage.
Note.--Channel conveyance affected by ice Dec. 19 to Apr. 5.

Long Canyon Creek near Porthill, Idaho

Location.--Lat 48°57', long 116°32', in NW¼ sec. 36, T. 65 N., R. 2 W., on left bank 200 ft below U. S. Forest Service bridge at mouth of canyon and 4 miles southwest of Porthill. Prior to June 13, 1955, at site 200 ft upstream.
Drainage area.--29 sq mi, approximately.
Records available.--May 1928 to September 1955 (no winter records prior to 1931). Monthly discharge only for some periods, published in WSP 1316.
Gage.--Water-stage recorder. Altitude of gage is 1,830 ft (by barometer). Prior to Mar. 20, 1930, staff gages and Mar. 20, 1930, to Nov. 16, 1948, water-stage recorder, at several nearby sites and at various datums. July 25, 1951, to June 12, 1955, water-stage recorder at site 200 ft upstream at datum 9.79 ft higher (destroyed by flood).
Average discharge.--25 years (1930-55), 62.3 cfs (45,100 acre-ft per year).
Extremes.--Maximum discharge during year, 1,240 cfs June 12 (gage height, 5.94 ft, site and datum then in use); minimum, 5 cfs Feb. 18, but may have been less during period of ice effect.
1928-55: Maximum discharge, 1,300 cfs May 27, 1948 (gage height, 6.75 ft, site and datum then in use), by slope-area determination of peak flow; maximum gage height, 8.55 ft June 14, 15, 1933 (datum used Sept. 4, 1941, to Aug. 23, 1948), backwater from drift; minimum discharge, 1 cfs Nov. 29, 30, 1952, and possibly other days during period of no gage-height record in that year.
Remarks.--Records good except those for June 13 to Sept. 30, which are fair, and those for periods of ice effect, which are poor. No regulation or diversion above station.
Revisions (water years).--WSP 1316: 1939. Revised figures of discharge, in cubic feet per second, for water year 1942, superseding those published in WSP 962, are given herewith:

June 15, 1942..... 243

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
June 1942.....	5,356	286	106	179	6.17	6.87	10,620
Water year 1941-42.....	24,878	457	8	68.2	2.35	31.90	49,340
Calendar year 1942.....	19,000	457	6	52.1	1.80	24.37	37,680

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*12	*19	*21	14	9	7	8	18	208	222	42	8
2	12	19	22	14	9	7	8	22	204	211	38	8
3	12	18	32	13	8	7	7	*31	227	192	35	7
4	12	17	32	13	9	b7	7	36	290	215	32	7
5	12	18	30	13	9	b7	8	39	377	207	30	7
6	11	24	28	13	9	b7	9	41	*407	192	28	7
7	12	22	27	13	9	b7	13	44	486	185	26	7
8	12	20	25	12	9	7	20	52	536	172	24	7
9	11	20	22	12	9	7	45	51	536	169	22	8
10	11	21	24	*12	b9	7	60	52	*602	172	21	7
11	24	20	22	12	b9	7	37	61	761	159	20	6
12	17	21	19	11	b9	7	26	82	990	153	19	6
13	15	21	24	11	b9	7	21	82	831	148	18	6
14	13	22	22	11	8	7	19	85	589	137	17	7
15	13	28	21	11	8	7	17	85	442	129	16	7
16	13	36	15	11	8	7	16	89	393	124	15	7
17	14	30	16	10	8	7	15	90	*357	117	14	8
18	14	42	19	10	7	6	15	97	342	103	13	7
19	15	42	13	10	b8	6	16	123	337	89	13	6
20	19	40	17	10	*b8	6	16	*184	342	78	12	10
21	26	36	b20	10	8	6	20	231	381	73	12	20
22	52	36	b17	10	8	6	29	227	442	66	12	11
23	36	36	16	10	8	6	27	201	600	60	11	7
24	31	34	16	10	8	b6	22	176	555	57	11	6
25	28	38	16	10	8	b6	20	168	504	52	11	6
26	25	37	12	10	7	b6	19	179	422	48	10	6
27	24	36	13	10	7	*6	18	171	378	53	10	7
28	23	30	16	10	7	6	17	166	330	50	10	37
29	22	30	15	10	-	7	16	198	286	52	10	27
30	21	31	15	10	------	7	16	290	252	53	9	19
31	20	-----	14	9	-----	7	-----	240	------	*50	*9	------
Total	582	844	621	345	232	206	587	3,611	13,407	3,788	570	289
Mean	18.8	28.1	20.0	11.1	8.3	6.6	19.6	116	447	122	18.4	9.6
Cfsm	0.648	0.969	0.690	0.383	0.286	0.228	0.676	4.00	15.4	4.21	0.634	0.331
In.	0.75	1.08	0.80	0.44	0.30	0.26	0.75	4.63	17.19	4.86	0.73	0.37
Ac-ft	1,150	1,670	1,230	684	460	409	1,160	7,160	26,590	7,510	1,130	573

Calendar year 1954: Max 709 Min 6 Mean 86.3 Cfsm 2.98 In. 40.39 Ac-ft 62,450
Water year 1954-55: Max 990 Min 6 Mean 68.7 Cfsm 2.37 In. 32.16 Ac-ft 49,730

Peak discharge (base, 380 cfs).--June 12 (3 p.m.) 1,240 cfs (5.94 ft); June 22 (11:30 p.m.) 1,180 cfs (3.40 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--Stage-discharge relation indefinite June 23, Aug. 1-31; discharge estimated on basis of recorder graph, 2 discharge measurements, weather records, and records for other Kootenai River tributaries.

Smith Creek near Porthill, Idaho

Location.--Lat 48°57'40", long 116°33'20", in NE¼ sec. 26, T. 65 N., R. 2 W., on right bank at U. S. Forest Service bridge, 1 mile south of Smith Creek ranger station and 4 miles southwest of Porthill.

Drainage area.--70 sq mi, approximately.

Records available.--May 1928 to September 1955 (no winter records 1928-30). Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Altitude of gage is 1,770 (from topographic map). Prior to Apr. 20, 1929, staff gage at site 40 ft downstream at datum 2.67 ft lower.

Average discharge.--25 years (1930-55), 188 cfs (136,100 acre-ft per year).

Extremes.--Maximum discharge during year, 3,810 cfs June 23 (gage height, 7.65 ft), from rating curve extended above 1,600 cfs by logarithmic plotting; minimum, 16 cfs Sept. 11-14; minimum gage height observed, 0.75 ft Aug. 30.
1928-55: Maximum discharge, that of June 23, 1955; minimum daily, 3 cfs Nov. 29, 30, 1952.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No regulation or diversion above station.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 10 to Aug. 9, Aug. 30 to Sept. 28)

0.6	16	3.0	385
.9	26	3.5	570
1.2	44	4.0	800
1.6	88	5.0	1,380
2.0	146	6.0	2,160
2.5	245		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	74	*107	53	33	26	33	82	700	590	148	19
2	39	*70	102	50	32	26	36	98	696	628	130	18
3	38	65	124	48	30	25	31	*146	855	538	116	18
4	36	63	116	47	30	23	30	171	1,070	696	107	18
5	35	72	112	45	30	23	33	192	1,300	650	97	18
6	35	108	114	44	31	24	41	202	1,370	574	89	18
7	35	101	105	43	33	26	55	215	1,460	542	83	17
8	36	88	97	43	35	26	72	252	1,390	500	75	17
9	35	91	91	*40	31	26	124	241	*1,510	488	70	20
10	34	109	91	42	31	25	182	232	1,690	594	63	18
11	113	94	87	40	31	24	156	269	1,890	500	60	17
12	82	102	78	40	31	25	122	382	2,060	466	53	16
13	63	112	86	40	32	24	107	356	1,900	441	49	16
14	55	109	83	38	31	24	87	326	1,390	402	46	22
15	52	178	78	43	29	23	78	301	1,110	366	43	22
16	52	262	63	39	28	23	75	320	1,100	347	40	21
17	55	202	66	38	28	23	70	338	1,020	312	38	25
18	57	306	71	37	28	23	70	388	*995	252	36	20
19	66	335	52	36	*b28	22	70	603	1,070	221	34	19
20	102	279	b65	36	b29	22	66	*925	1,040	194	32	24
21	157	219	b75	36	29	22	84	970	1,190	172	30	35
22	283	202	71	36	28	23	114	825	1,550	160	28	27
23	167	190	64	36	27	23	102	642	1,660	149	28	23
24	133	174	63	35	26	22	89	586	1,420	176	27	20
25	116	192	57	35	25	*b21	83	637	1,190	146	26	19
26	105	184	51	35	25	b22	80	765	940	138	25	18
27	97	169	b52	34	25	22	76	705	885	*206	24	21
28	93	143	b54	34	26	22	72	614	785	204	23	100
29	86	133	57	34	-	25	69	874	735	188	21	86
30	82	135	55	33	------	28	71	1,230	642	206	*20	64
31	77	-----	53	33	-----	27	-----	845	------	171	19	------
Total	2,454	4,561	2,442	1,223	822	740	2,378	14,732	36,613	11,217	1,680	796
Mean	79.2	152	78.8	39.5	29.4	23.9	79.3	475	1,220	362	54.2	26.5
Cfsm	1.13	2.17	1.13	0.564	0.420	0.341	1.13	6.79	17.4	5.17	0.774	0.379
In.	1.30	2.42	1.30	0.65	0.44	0.39	1.26	7.83	19.45	5.96	0.89	0.42
Ac-ft	4,870	9,050	4,840	2,430	1,630	1,470	4,720	29,220	72,620	22,250	3,330	1,580

Calendar year 1954: Max 2,210 Min 20 Mean 266 Cfsm 3.80 In. 51.50 Ac-ft 192,300
Water year 1954-55: Max 2,060 Min 16 Mean 218 Cfsm 3.11 In. 42.31 Ac-ft 158,000

Peak discharge (base, 1,400 cfs).--May 30 (2 a.m.) 1,530 cfs (5.26 ft); June 12 (8 p.m.) 2,500 cfs (6.38 ft); June 23 (1 a.m.) 3,810 cfs (7.65 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Jan. 21 to Feb. 18, Feb. 21 to Mar. 24, Aug. 24-29; discharge estimated on basis of weather records and records for Boundary Creek near Porthill and other Kootenai River tributaries.

Boundary Creek near Porthill, Idaho

(International gaging station)

Location.--Lat 48°59'50", long 116°34'05", in SW¼ sec. 11, T. 65 N., R. 2 W., on left bank near mouth of canyon, 0.2 mile south of international boundary and 3 miles west of Porthill.

Drainage area.--97 sq mi, approximately.

Records available.--May 1928 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,770 ft (from topographic map). Prior to Apr. 24, 1929, staff gage at site 140 ft upstream at different datum.

Average discharge.--25 years (1930-55), 187 cfs (135,400 acre-ft per year).

Extremes.--Maximum discharge during year, 3,280 cfs June 23 (gage height, 5.80 ft, from rating curve extended above 2,000 cfs; minimum, 26 cfs Feb. 3, Mar. 20, but may have been less during period of ice effect; minimum gage height recorded, 0.71 ft Oct. 25. 1928-55: Maximum discharge, that of June 23, 1955; minimum, 5 cfs sometime between Nov. 10 and Dec. 3, 1936; minimum gage height, 0.24 ft Nov. 22, 1952.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

WSP	Water year	Date	Discharge (cfs)	Gage height (feet)
982,1316	1943	June 17, 1943	2,400	5.05
1042,1316	1945	May 31, 1945	1,840	4.54
1182,1316	1950	June 22, 1950	2,250	4.92
1286	1953	June 13, 1953	2,270	4.94

Remarks.--Records excellent except those for periods of ice effect, which are fair, and those for period of no gage-height record, which are poor. No regulation or diversion above station.

Cooperation.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.7	22	2.5	390
1.0	43	3.0	610
1.3	76	3.5	900
1.6	124	4.0	1,310
2.0	217	5.0	2,340

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	48	*76	55	37	b33	37	86	748	665	168	33
2	37	*47	82	53	36	b33	35	*100	764	655	151	32
3	36	47	b115	51	33	b32	34	132	872	600	138	32
4	35	51	b110	50	b33	b28	34	157	1,130	716	128	31
5	34	58	103	48	b33	b29	36	180	1,370	685	119	30
6	34	82	98	b48	b34	b30	41	198	*1,400	615	111	29
7	34	72	92	48	b38	b31	49	220	1,500	575	103	29
8	34	66	89	48	41	32	62	264	1,430	538	95	30
9	33	68	82	*46	37	32	115	260	1,520	524	89	40
10	34	76	83	b46	b35	31	136	250	1,720	615	84	32
11	80	70	80	b46	b36	30	128	273	1,890	542	80	30
12	55	75	75	b46	b37	31	117	366	2,010	497	75	29
13	48	80	76	b45	b38	30	113	382	*2,020	458	71	28
14	44	80	76	45	b37	30	104	358	1,510	*426	67	41
15	43	120	72	b44	35	29	92	346	1,220	386	63	37
16	43	210	63	b44	34	29	87	378	1,110	358	60	41
17	42	160	b68	43	34	29	82	406	1,010	326	56	48
18	42	250	b75	42	b34	29	80	434	978	280	53	36
19	48	270	b60	42	*b34	28	80	575	1,110	241	51	33
20	62	220	b70	41	b34	28	77	*893	1,040	209	49	42
21	103	180	b80	b40	b35	28	90	1,010	*1,180	190	48	66
22	138	170	b70	b40	b35	29	106	872	1,480	171	47	46
23	95	155	b62	b40	b34	29	104	690	1,740	180	44	39
24	80	145	62	b39	b32	b28	95	630	1,500	214	42	35
25	72	155	59	39	b30	*b27	89	665	1,370	*168	41	33
26	62	150	56	39	b30	b29	86	770	1,030	162	41	32
27	63	135	b54	38	b31	b29	82	752	963	232	40	38
28	59	120	b58	38	b32	29	80	680	851	229	38	101
29	54	110	b60	38	-	31	76	837	782	206	37	79
30	53	110	b56	37	------	32	77	1,240	700	209	36	61
31	49	-----	54	37	-----	32	-----	865	------	193	*34	------
Total	1,683	3,580	2,316	1,356	969	927	2,424	15,269	37,946	12,065	2,259	1,211
Mean	54.3	119	74.7	43.7	34.6	29.9	80.8	493	1,265	389	72.9	40.4
Cfsm	0.560	1.23	0.770	0.451	0.357	0.308	0.833	5.08	13.0	4.01	0.752	0.416
In.	0.65	1.37	0.89	0.52	0.37	0.36	0.93	5.85	14.55	4.63	0.87	0.46
Ac-ft	3,340	7,100	4,590	2,690	1,920	1,840	4,810	30,290	75,260	23,930	4,480	2,400

Calendar year 1954: Max 2,000 Min 23 Mean 257 Cfsm 2.65 In. 36.06 Ac-ft 186,400
Water year 1954-55: Max 2,000 Min 27 Mean 225 Cfsm 2.32 In. 31.45 Ac-ft 162,600

Peak discharge (base, 1,300 cfs).--May 30 (5 to 6 a.m.) 1,360 cfs (4.06 ft); June 13 (1:30 a.m.) 2,460 cfs (5.11 ft); June 23 (1 a.m.) 3,280 cfs (5.80 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Nov. 9-30; discharge estimated on basis of recorded range in stage, weather records, and records for Smith Creek and Long Canyon Creeks near Porthill.

Kootenai River at Porthill, Idaho

(International gaging station)

Location.--Lat 49°00'00", long 116°30'10", in SW¼ sec. 8, T. 65 N., R. 1 W., on right bank 300 ft south of international boundary at Porthill.

Drainage area.--13,700 sq mi, approximately.

Records available.--May to July 1904 and October 1927 to March 1928 (gage heights only), and April 1928 to September 1955 in reports of Geological Survey. October 1924 to September 1927 (gage heights only) in reports of Department of Northern Affairs and National Resources, Canada.

Gage.--Water-stage recorder. Datum of gage is 1,700.00 ft above mean sea level referred to benchmark 10-M-1928, at elevation 1,767.68 ft. Gage readings have been reduced to elevations above mean sea level. Datum of 1929, supplementary adjustment of 1947, and datum of Geodetic Survey of Canada, Pub. 24, 1951 edition, are 0.03 ft higher. Prior to May 17, 1928, staff gages at approximately same site. Datum of gages prior to July 28, 1928, was 38.34 ft higher, except in 1904 when different datum was used.

Average discharge.--27 years, 15,430 cfs (11,170,000 acre-ft per year).

Extremes.--Maximum daily discharge during year, 88,700 cfs June 15; maximum elevation, 1,764.13 ft June 27; minimum daily discharge, 2,720 cfs Feb. 28; minimum elevation, 1,740.09 ft Apr. 5.

1928-55: Maximum daily discharge, 125,000 cfs June 1, 1948; maximum elevation, 1,766.16 ft May 31, 1948; minimum daily discharge, 1,380 cfs Feb. 8, 1936; minimum elevation, 1,738.21 ft Apr. 3, 1944.

Maximum elevation known, 1,722.7 ft in June 1894, present datum.

Remarks.--Records excellent except those for periods of ice effect or wind effect at station near Copeland, which are good. Daily discharge represents entire flow passing international boundary, computed by adding tributary inflow, including that of Boundary Creek, to flow at station near Copeland and correcting for storage change in channel and flooded areas between stations near Copeland and at Porthill. Boundary dike of Reclamation Farm and U. S. Forest Service roadway dike (south side of Boundary Creek) remained intact and flow of river was confined throughout year to main channel on which gage and cableway are located. Elevations affected by backwater from Kootenay Lake and by flooding of small areas upstream (see Remarks for Kootenai River at Boom Camp, p. 170).

Cooperation.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Elevation, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46.29	45.92	46.04	45.79	44.47	42.22	40.18	40.64	53.55	60.80	49.89	44.55
2	46.24	45.90	45.94	45.72	44.44	42.18	40.21	40.80	53.21	60.01	49.55	44.69
3	46.27	45.90	45.90	45.65	44.38	42.16	40.17	41.15	53.00	59.28	49.23	44.90
4	46.27	45.89	45.88	45.64	44.28	42.13	40.14	41.76	53.38	58.53	48.93	45.10
5	46.23	45.89	45.85	45.64	44.23	42.00	40.11	42.36	54.31	57.91	48.63	45.27
6	46.24	45.97	45.84	45.63	44.13	41.95	40.11	42.93	55.48	57.51	48.33	45.45
7	46.19	45.99	45.84	45.63	44.10	41.94	40.13	43.47	56.80	57.35	47.97	45.65
8	46.16	45.96	45.85	45.65	44.11	41.94	40.22	44.02	57.79	57.21	47.68	45.83
9	46.21	45.96	45.80	45.66	44.12	41.92	40.38	44.55	58.40	56.91	47.49	45.93
10	46.17	45.98	45.82	45.66	43.96	41.90	40.82	44.74	58.95	56.58	47.26	46.00
11	46.20	45.99	45.79	45.66	43.82	41.87	41.09	44.80	59.63	56.31	47.03	46.02
12	46.19	45.99	45.70	45.58	43.72	41.79	41.24	45.20	60.66	56.16	46.78	46.04
13	46.15	45.97	45.75	45.60	43.64	41.67	41.20	45.95	61.71	56.05	46.61	46.06
14	46.09	45.96	45.71	45.57	43.58	41.58	41.07	46.63	62.67	55.95	46.35	46.00
15	46.07	46.02	45.79	45.50	43.49	41.47	40.84	46.76	63.20	55.96	46.15	45.96
16	46.06	46.05	45.79	45.44	43.40	41.37	40.68	46.55	63.43	55.98	45.94	45.97
17	46.05	46.09	45.75	45.36	43.38	41.25	40.60	46.46	63.30	55.92	45.77	45.99
18	46.07	46.12	45.70	45.30	43.26	41.23	40.51	46.68	62.52	55.88	45.67	45.97
19	46.04	46.16	45.67	45.24	43.12	41.14	40.45	47.40	61.83	55.78	45.53	45.93
20	46.05	46.19	45.65	45.19	43.01	41.05	40.44	49.35	61.20	55.51	45.49	45.97
21	46.05	46.19	45.65	45.13	42.91	40.96	40.43	52.46	60.85	55.02	45.43	46.03
22	46.11	46.16	45.65	45.05	42.83	40.96	40.57	54.75	60.73	54.32	45.33	46.05
23	46.18	46.19	45.61	45.01	42.72	40.91	40.83	55.34	61.30	53.70	45.27	46.06
24	46.20	46.16	45.58	44.96	42.69	40.74	41.02	54.60	62.24	53.16	45.21	46.05
25	46.17	46.17	45.82	44.91	42.64	40.59	41.06	53.45	63.46	52.74	45.06	46.03
26	46.12	46.21	45.70	44.88	42.52	40.48	40.97	52.81	63.96	52.42	44.94	46.03
27	46.08	46.33	45.70	44.83	42.41	40.45	40.87	52.60	64.10	52.03	44.88	46.02
28	46.05	46.27	45.65	44.76	42.32	40.39	40.79	52.35	63.69	51.56	44.86	46.07
29	46.00	46.17	45.70	44.69	-	40.32	40.70	52.27	62.75	51.04	44.75	46.05
30	45.97	46.11	45.75	44.62	------	40.28	40.63	52.82	61.73	50.66	44.65	46.05
31	45.93	------	45.82	44.55	------	40.19	------	53.45	------	50.27	44.56	------

Note.--Add 1,700 ft to obtain elevation above mean sea level.

Kootenai River at Porthill, Idaho--Continued

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,450	7,120	8,080	5,240	4,430	2,920	4,290	8,840	45,900	52,800	20,300	7,820
2	8,340	6,900	7,770	5,160	4,400	3,080	4,420	9,600	43,300	48,700	19,300	7,550
3	8,100	6,750	7,340	5,160	4,410	3,260	4,600	11,200	41,800	45,400	18,500	7,470
4	8,050	6,650	7,020	5,030	4,340	3,200	4,700	13,500	44,000	42,300	18,000	7,630
5	7,910	6,600	6,600	4,710	4,200	3,230	4,810	15,500	48,500	39,900	17,600	7,490
6	7,680	6,660	6,670	4,420	4,140	3,290	5,020	17,400	53,900	40,400	16,800	7,590
7	7,530	c6,990	6,920	4,210	4,010	3,580	5,440	19,000	60,300	42,100	15,800	7,540
8	7,280	7,200	7,030	4,300	4,480	3,760	6,000	20,900	64,400	43,200	15,100	7,440
9	7,140	7,100	7,000	4,290	4,680	3,980	7,030	22,200	67,000	42,500	14,600	7,410
10	7,140	7,230	6,770	4,110	4,670	4,170	8,360	22,500	68,400	41,100	14,300	7,340
11	7,250	7,140	6,470	4,000	4,060	4,280	9,930	22,200	71,500	40,800	14,100	7,290
12	7,720	7,080	6,160	4,150	3,740	4,220	10,800	23,500	77,000	41,400	13,500	7,320
13	7,960	7,030	5,940	4,190	3,920	4,130	10,400	26,000	83,000	40,900	12,900	7,220
14	7,900	7,000	6,120	4,220	4,020	4,110	9,630	28,600	86,500	41,400	12,500	7,140
15	7,770	7,120	6,080	4,240	4,120	4,030	8,780	28,300	88,700	41,700	12,300	6,880
16	7,500	7,700	6,170	4,230	4,220	4,110	8,160	26,400	87,600	41,700	11,900	7,000
17	7,330	8,220	6,020	4,340	4,200	4,120	7,720	25,300	82,000	41,500	11,600	6,920
18	c7,320	8,790	5,670	4,430	4,130	4,070	7,670	25,600	75,300	40,900	11,100	6,930
19	7,360	9,130	5,360	4,230	3,650	4,010	7,740	29,200	67,900	40,300	10,700	6,710
20	c7,490	9,060	5,170	4,210	3,330	4,000	7,760	38,100	63,500	38,900	10,400	6,720
21	7,730	9,170	5,080	4,130	3,240	3,910	7,840	50,800	60,700	35,900	10,400	7,020
22	8,900	8,810	5,070	3,930	3,420	3,860	8,550	60,000	60,400	32,400	10,400	6,790
23	9,530	8,550	5,270	3,910	3,430	3,890	9,580	61,300	63,000	29,200	10,700	6,570
24	9,450	8,370	5,370	4,110	3,490	3,750	10,200	55,800	70,100	27,100	10,600	6,440
25	9,000	8,380	5,320	4,020	3,500	3,440	10,300	49,000	78,400	26,500	10,300	6,350
26	8,340	8,960	5,280	4,300	3,130	3,520	9,930	44,900	81,700	26,600	9,760	6,260
27	8,100	9,270	5,130	4,310	2,930	3,570	9,270	42,800	81,700	25,600	9,260	6,280
28	7,750	9,490	4,770	4,320	2,720	3,600	9,070	41,400	76,000	24,100	9,350	6,520
29	7,620	9,240	4,620	4,340	-	3,610	8,750	40,500	66,500	22,900	8,880	6,750
30	7,430	8,710	5,000	4,420	------	3,900	8,520	43,300	58,400	22,200	8,600	6,610
31	7,320	------	5,200	4,420	------	4,230	------	45,800	------	21,100	8,340	------
Total	244,390	236,420	186,470	135,080	109,010	116,830	235,270	969,440	‡2,017.4	‡1,141.5	397,890	211,000
Mean	7,884	7,881	6,015	4,357	3,893	3,769	7,842	31,270	67,250	36,820	12,840	7,033
Cfsm	0.575	0.575	0.439	0.318	0.284	0.275	0.572	2.28	4.91	2.69	0.937	0.513
In.	0.66	0.64	0.51	0.37	0.30	0.32	0.64	2.63	5.48	3.10	1.08	0.57
Ac-ft	484,700	468,900	369,900	267,900	216,200	231,700	466,700	‡1,923	‡4,001	‡2,264	789,200	418,500

Calendar year 1954: Max 102,000 Min 1,730 Mean 22,220 Cfsm 1.62 In. 22.02 Ac-ft 16,090,000
Water year 1954-55: Max 88,700 Min 2,720 Mean 16,440 Cfsm 1.20 In. 16.30 Ac-ft 11,900,000

‡ Expressed in thousands.
c Channel conveyance for station at Copeland affected by wind.
Note.--Channel conveyance for station at Copeland affected by ice Dec. 19 to Apr. 5.

Kootenay Lake at Kuskonook, British Columbia

(International gaging station)

Location.--Lat 49°18', long 116°40', on east shore of Lake at Kuskonook.

Records available.--April 1936 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,735.20 ft above mean sea level, Geodetic Survey of Canada, datum of Pub. 24, 1951 edition, which is the same at Porthill as datum of 1929, supplementary adjustment of 1947, and 0.03 ft higher than datum in use at station Kootenai River at Porthill. Gage heights have been reduced to elevations above datum in use at station Kootenai River at Porthill. Prior to Apr. 25, 1938, staff gage at same site at datum 3.00 ft higher.

Extremes.--Maximum elevation during year, 1,758.28 ft June 28; minimum, 1,739.63 ft Apr. 19.
1936-55: Maximum elevation, 1,761.28 ft June 11, 1948; minimum daily, 1,737.86 ft Apr. 5, 6, 1944.

Remarks.--Elevation is subject to partial regulation by Corra Linn Dam below outlet. Practically no regulation or diversion above Kootenay Lake.

Cooperation.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

Mean elevation, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45.81	45.53	45.60	45.51	44.26	42.04	39.87	39.72	48.14	57.35	48.48	44.11
2	45.78	45.53	45.55	45.45	44.21	41.96	39.85	39.71	48.27	56.79	48.19	44.30
3	45.80	45.54	45.50	45.39	44.14	41.92	39.81	39.76	48.33	56.18	47.91	44.53
4	45.81	45.53	45.50	45.39	44.06	41.86	39.78	39.82	48.43	55.58	47.63	44.76
5	45.82	45 54	45.51	45.42	44.03	41.78	39.76	39.97	48.63	55.06	47.38	44.96
6	45.83	45.58	45.50	45.43	43.92	41.73	39.73	40.15	48.99	54.56	47.14	45.13
7	a45.80	45.56	45.48	45.45	43.86	41.69	39.71	40.33	49.46	54.13	46.90	45.34
8	a45.81	45.52	45.47	45.46	43.83	41.68	39.71	40.57	49.99	53.77	46.71	45.52
9	a45.82	45.52	45.44	45.46	43.79	41.63	39.75	40.79	50.54	53.46	46.51	45.65
10	a45.82	45.55	45.47	45.46	43.68	41.62	39.83	41.01	51.14	53.19	46.28	45.71
11	45.82	45.56	45.46	45.45	43.58	41.57	39.89	41.18	51.82	52.96	46.06	45.76
12	45.76	45.57	45.43	45.37	43.50	41.47	39.91	41.48	52.61	52.78	45.88	45.77
13	45.70	45.57	45.44	45.38	43.41	41.36	39.97	41.71	53.56	52.66	45.71	45.76
14	45.64	45.59	45.42	45.32	43.33	41.26	39.96	42.01	54.46	52.59	45.52	45.74
15	45.61	45.64	45.48	45.26	43.26	41.14	39.93	42.29	55.19	52.58	45.31	45.71
16	45.62	45.66	45.48	45.20	43.17	41.04	39.91	42.54	55.74	52.62	45.17	45.69
17	45.64	45.67	45.47	45.14	43.11	40.94	39.84	42.75	56.12	52.68	45.07	45.68
18	45.65	45.63	45.45	45.08	43.01	40.91	39.76	42.94	56.33	52.71	44.96	45.67
19	45.66	45.66	45.42	45.01	42.91	40.81	39.71	43.18	56.40	52.64	44.88	45.64
20	45.64	45.67	45.38	44.97	42.81	40.74	39.69	43.57	56.29	52.49	44.83	45.68
21	45.58	45.64	45.38	44.91	42.71	40.68	39.69	44.19	56.16	52.26	44.79	45.74
22	45.54	45.63	45.37	44.83	42.61	40.64	39.72	45.02	56.13	51.94	44.71	45.75
23	45.56	45.68	45.35	44.81	42.51	40.58	39.73	45.83	56.48	51.68	44.62	45.76
24	45.58	45.69	45.35	44.74	42.48	40.46	39.76	46.46	57.06	51.33	44.54	45.76
25	45.59	45.72	45.38	44.68	42.42	40.34	39.79	46.89	57.55	50.98	44.44	45.78
26	45.58	45.73	45.43	44.63	42.31	40.26	39.79	47.16	57.92	50.60	44.38	45.79
27	45.57	45.79	45.45	44.59	42.21	40.18	39.80	47.37	58.13	50.23	44.33	45.79
28	45.57	45.72	45.44	44.53	42.13	40.11	39.79	47.49	58.23	49.86	44.29	45.81
29	45.54	45.66	45.48	44.43	-	40.05	39.77	47.59	58.11	49.47	44.20	45.77
30	45.54	45.63	45.50	44.37	-------	39.96	39.74	47.74	57.80	49.12	44.13	45.76
31	45.54	-------	45.56	44.31	-------	39.88	-------	47.96	-------	48.78	44.08	-------

a Mean daily elevations estimated on basis of records for stations at Queens Bay and East Branch.
Note.--Add 1,700 ft to obtain elevation above mean sea level.

Columbia River at Birchbank, British Columbia

(International gaging station)

Location.--Lat 49°10', long 117°43', on right bank at Birchbank, British Columbia, 7 miles upstream from Trail, 11 miles downstream from Kootenay River, and 17 miles upstream from international boundary.

Drainage area.--34,000 sq mi, approximately.

Records available.--April 1913 to September 1955. Published as "at Trail, British Columbia" 1913-37.

Gage.--Water-stage recorder. Datum of gage is 1,329.90 ft above mean sea level, 1947 International joint adjustment, published as 1,338.00 ft prior to October 1948. Prior to Oct. 1, 1937, chain or cable gage on highway bridge at site 7 miles downstream at datum 16.27 ft lower.

Average discharge.--42 years, 70,020 cfs (50,690,000 acre-ft per year).

Extremes.--Maximum discharge during year, 324,000 cfs June 29 (gage height, 45.55 ft); minimum, 16,500 cfs Mar. 4 (gage height, 5.32 ft).
1913-55: Maximum discharge, 370,000 cfs June 11, 1948 (gage height, 50.62 ft); minimum observed, 8,940 cfs Feb. 3, 1937 (gage height, 6.27 ft, site and datum then in use).

Remarks.--Many small diversions above station for irrigation of about 25,000 acres. Fluctuation at low flow caused by powerplant on Kootenay River. Flow affected by internationally controlled storage in Kootenay Lake, as well as by natural and controlled regulation in other lakes.

Cooperation.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

Revisions (water years).--WSP 982: 1942. WSP 1216: 1949.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

5.4	16,900	16.0	66,500
6.0	19,300	22.0	103,500
7.0	23,600	30.0	161,000
9.0	32,500	38.0	232,000
12.0	46,000	46.0	330,000

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55,500	37,400	44,700	30,500	22,300	19,400	19,500	28,500	116,000	*309,000	181,000	62,900
2	55,900	35,600	44,200	30,000	22,600	18,900	19,900	28,900	118,000	298,000	173,000	58,100
3	54,600	34,800	42,200	26,400	22,100	18,500	19,100	29,400	120,000	287,000	168,000	58,400
4	50,500	34,300	39,500	23,500	22,100	17,700	17,600	30,200	122,000	276,000	163,000	57,000
5	48,100	34,300	39,100	22,800	22,200	17,300	17,200	31,300	125,000	267,000	157,000	57,800
6	47,600	35,600	39,200	22,400	22,000	17,300	18,100	32,300	129,000	258,000	151,000	56,600
7	46,800	36,330	41,200	22,300	22,100	17,200	19,000	34,000	134,000	251,000	145,000	57,100
8	44,700	35,600	38,900	21,600	22,600	17,100	19,900	35,100	139,000	245,000	140,000	62,400
9	43,600	34,300	37,300	21,300	23,400	16,900	21,700	37,000	144,000	239,000	*135,000	a55,200
10	45,500	34,200	36,000	*21,700	22,900	17,400	25,000	37,800	151,000	236,000	131,000	a57,300
11	47,300	34,200	34,800	21,900	22,300	19,300	26,300	39,800	160,000	232,000	127,000	a60,900
12	48,700	34,100	34,700	23,200	22,300	22,300	26,300	41,900	172,000	230,000	123,000	65,500
13	47,900	34,100	35,100	24,500	22,400	22,100	26,300	43,900	191,000	230,000	119,000	64,600
14	46,000	33,900	33,900	24,900	22,300	20,600	*26,700	45,700	208,000	232,000	116,000	64,600
15	43,900	34,300	33,700	24,700	22,200	20,300	26,800	47,600	225,000	*236,000	111,000	64,000
16	42,200	36,100	32,200	24,800	22,100	20,500	26,800	49,300	240,000	241,000	105,000	63,000
17	41,800	39,300	33,400	24,700	22,400	19,500	26,900	51,400	249,000	247,000	102,000	61,700
18	41,600	40,200	31,100	24,300	21,800	18,800	26,800	54,200	255,000	252,000	99,000	60,300
19	42,000	39,800	30,900	23,800	21,800	18,500	26,600	58,400	258,000	256,000	96,100	56,800
20	44,600	42,000	30,200	22,900	21,700	18,600	26,800	63,400	257,000	257,000	93,600	53,900
21	*47,100	42,000	29,800	22,700	21,300	18,500	27,100	69,300	255,000	254,000	92,300	50,800
22	45,300	40,200	29,300	22,700	21,400	19,600	27,500	75,200	*255,000	247,000	91,500	49,600
23	42,500	38,500	29,000	22,600	20,500	19,900	27,900	82,000	262,000	240,000	90,300	*a48,200
24	42,000	*40,400	26,100	22,500	20,400	19,800	28,000	88,400	273,000	232,000	88,900	a43,300
25	41,800	41,200	26,300	22,300	*20,100	18,300	28,600	93,800	290,000	226,000	86,300	a41,000
26	41,400	42,200	25,800	22,000	20,200	17,900	28,700	98,500	305,000	219,000	84,300	a39,300
27	41,100	43,700	25,300	22,700	19,900	17,500	28,300	102,000	317,000	213,000	82,900	a37,600
28	40,300	47,200	25,400	22,500	19,600	17,700	*28,500	105,000	322,000	207,000	80,900	a38,800
29	40,000	44,600	25,100	22,700	-	18,700	28,600	107,000	322,000	199,000	78,400	a41,100
30	38,600	44,500	25,000	23,100	------	20,200	28,700	112,000	316,000	193,000	76,000	a36,400
31	38,300	-----	26,300	23,100	-----	19,700	-----	114,000	------	187,000	73,800	------
Total	‡1,397.7	‡1,144.9	‡1,025.7	731,100	609,000	586,000	745,200	‡1,867.3	‡6,430	‡7,496	‡3,561.3	‡1,624.2
Mean	45,100	38,200	33,100	23,600	21,800	18,900	24,800	60,200	214,000	242,000	115,000	54,100
Cfsm	1.33	1.12	0.97	0.69	0.64	0.56	0.73	1.77	6.29	7.12	3.38	1.59
In.	1.53	1.25	1.12	0.80	0.67	0.65	0.81	2.04	7.02	8.21	3.90	1.77
Ac-ft	‡2,772	‡2,271	‡2,034	‡1,450	‡1,208	‡1,162	‡1,478	‡3,704	‡12,750	‡14,870	‡7,064	‡3,222

Calendar year 1954: Max 323,000 Min 17,400 Mean 89,700 Cfsm 2.64 In. 35.82 Ac-ft 64,920,000
Water year 1954-55: Max 322,000 Min 16,900 Mean 74,600 Cfsm 2.19 In. 29.77 Ac-ft 53,980,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
a No gage-height record; discharge estimated on basis of 1 discharge measurement and records for station at Trail, B. C.

German Gulch Creek near Ramsay, Mont.

Location.--Lat 46°01'10", long 112°47'20", in SE¼SW¼ sec. 12, T. 3 N., R. 10 W., 300 ft upstream from mouth and 6½ miles west of Ramsay.
Drainage area.--42 sq mi, approximately.
Records available.--April to September 1955.
Gage.--Staff gage read once daily.
Extremes.--Maximum discharge observed during period, 111 cfs June 8 (gage height, 1.96 ft); minimum daily, 3.2 cfs Aug. 24.
Remarks.--Records fair except those for period of no gage-height record, which are poor. Diversions for irrigation of about 250 acres, of which 240 lie below the station. Recorded diversions bypassing station are listed below:

Ditch No. 1

Month	Mean (cfs)	Runoff in acre-feet
May 1955.....	2.37	146
June.....	5.08	302
July.....	4.33	266
Aug.....	6.00	369
Sept.....	1.19	71
The period.....	3.80	1,154

Ditch No. 2 (discharge measurements only)

Date	Discharge (cfs)
May 25, 1955.....	1.2
June 14.....	5.9
July 29.....	2.3
Sept. 8.....	4.2

Rating table, Apr. 1 to Sept. 30, 1955 (gage height, in feet, and discharge, in cubic feet per second)

0.8	2.0	1.4	48
.9	6.0	1.6	69
1.0	12	1.8	91
1.2	28	2.0	116

Discharge, in cubic feet per second, April to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								14	68	43	11	4.0
2								20	65	37	11	4.0
3								22	62	36	9.6	4.0
4								20	62	50	9.0	4.0
5								26	62	47	11	4.0
6								34	65	37	8.4	4.0
7								35	70	37	8.4	4.0
8								38	111	36	8.4	*4.4
9								38	*84	37	7.2	4.0
10							a10	38	84	38	6.0	4.0
11								43	87	37	4.8	4.0
12								47	91	37	4.8	4.0
13								51	82	37	4.4	4.0
14								45	*78	37	4.4	4.0
15								37	78	36	4.4	4.0
16								35	93	35	4.8	4.0
17								37	84	35	4.8	4.0
18							*9.0	39	80	32	4.4	4.0
19							8.4	40	73	26	4.0	4.0
20							9.0	49	71	26	4.0	4.0
21							11	69	71	26	3.6	4.8
22							11	65	69	27	3.6	5.6
23							10	67	62	26	3.6	5.2
24							11	65	54	26	3.2	4.8
25							10	*59	47	25	3.6	4.8
26							*11	58	44	23	3.6	4.8
27							9.0	54	38	20	4.0	4.8
28							7.8	54	38	14	4.8	4.4
29							7.8	54	67	*14	4.8	4.4
30					------		8.4	73	53	18	4.4	4.4
31		------			------		------	69	------	18	4.8	------
Total							293.4	1,395	2,093	973	178.8	128.4
Mean							9.78	45.0	69.8	31.4	5.77	4.28
Ac-ft							582	2,770	4,150	1,930	355	255

Calendar year	: Max	Min	Mean	Ac-ft
Water year	: Max	Min	Mean	Ac-ft

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of adjacent record.

Flint Creek near Southern Cross, Mont.

Location.--Lat 46°14'00", long 113°17'40", in SE¼NW¼ sec. 36, T. 6 N., R. 14 W., on left wing of weir half a mile downstream from powerplant, 2 miles downstream from Georgetown Lake, 3 miles northwest of Southern Cross, and 6 miles south of Philipsburg.

Drainage area.--52.6 sq mi.

Records available.--October 1940 to September 1955.

Gage.--Staff gages and Cippoletti weir; gage read once daily. Altitude of gage is 5,630 ft (from topographic map).

Average discharge.--15 years, 32.2 cfs (23,310 acre-ft per year).

Extremes.--Maximum discharge during year, 43 cfs July 25-30 (gage height, 0.98 ft); probably no flow part of Oct. 6.
1940-55: Maximum discharge, 174 cfs June 13, 1942 (gage height, 1.86 ft); probably no flow parts of Aug. 20, 1943, May 23, 1952, Oct. 6, 1954, when generator was shut down.

Remarks.--Records good. Flow regulated by Georgetown Lake (see p. 230). Flow may be augmented by transbasin diversion from Silver Lake to Georgetown Lake or reduced by pumping from Georgetown Lake to Silver Lake.

Cooperation.--Gage-height record furnished by The Montana Power Co., under general supervision of Geological Survey, in connection with a Federal Power Commission project.

Revisions (water years).--WSP 1216: 1942(M). WSP 1246: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.2	3.8	0.7	22
.3	6.5	.9	32
.4	10	1.1	47
.5	14		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	9.3	5.4	4.6	4.6	6.8	*6.5	7.2	19	32	32	32
2	14	9.3	5.4	4.6	4.6	6.8	6.5	7.2	19	32	32	32
3	14	6.0	5.4	4.6	4.6	6.8	6.5	7.2	19	32	32	32
4	14	6.0	5.4	4.6	4.6	6.8	6.5	7.2	17	32	32	32
5	14	6.0	5.4	4.6	4.6	6.8	6.5	7.2	17	32	32	32
6	*11	6.0	5.4	4.6	5.2	6.8	6.5	9.3	17	32	32	32
7	14	6.0	5.4	4.6	5.4	7.2	6.5	9.3	17	32	32	32
8	14	*6.0	5.4	4.6	5.4	7.2	6.5	9.3	17	32	32	*32
9	14	6.0	5.2	4.6	5.4	7.2	6.5	9.3	*17	32	32	32
10	14	6.0	5.2	4.6	5.4	*7.2	6.5	9.3	17	32	32	32
11	14	6.0	4.6	4.6	5.4	7.2	6.5	9.3	27	33	32	32
12	14	6.0	4.6	4.6	5.4	6.8	6.5	9.3	30	33	32	32
13	14	6.0	4.6	4.6	5.4	6.8	6.5	9.3	30	33	32	32
14	14	6.0	4.6	4.6	5.4	6.8	6.5	9.3	30	33	32	32
15	14	5.7	*4.6	4.6	5.4	6.8	6.5	9.3	30	33	32	32
16	14	5.7	4.6	4.6	*5.4	6.8	6.5	9.3	30	33	32	32
17	14	5.7	4.6	4.6	*6.2	6.8	6.5	9.3	30	33	32	32
18	14	5.7	4.6	4.6	6.2	6.5	6.5	9.3	30	34	32	32
19	14	5.7	4.6	4.6	6.2	6.5	6.5	17	30	34	32	32
20	14	5.7	4.6	4.6	6.2	6.5	6.5	17	31	34	32	32
21	14	5.7	4.6	4.6	6.5	6.5	6.5	17	31	34	32	32
22	14	5.7	4.6	4.6	6.5	6.5	6.5	19	31	34	32	32
23	14	5.7	4.6	4.6	6.5	6.5	6.5	19	31	34	32	31
24	14	5.7	4.6	4.6	6.5	6.2	7.2	19	31	42	32	31
25	14	5.7	4.6	4.6	6.5	6.2	7.2	19	30	43	32	31
26	14	5.7	4.6	4.6	6.5	6.2	*7.2	19	30	43	32	31
27	14	5.4	4.6	4.6	6.5	6.2	7.2	19	30	43	32	31
28	14	5.4	4.6	4.6	6.8	6.2	7.2	19	30	*43	32	31
29	14	5.4	4.6	*4.6	-	6.2	7.2	19	30	43	32	31
30	9.3	5.4	4.6	4.6	------	6.0	7.2	19	30	43	32	31
31	9.3	------	4.6	4.6	------	6.0	-----	19	------	32	32	------
Total	421.6	180.6	150.2	142.6	159.3	205.8	199.9	397.9	778	1,087	992	952
Mean	13.6	6.02	4.85	4.60	5.69	6.64	6.66	12.8	25.9	35.1	32.0	31.7
Ac-ft	836	358	298	283	316	408	396	789	1,540	2,160	1,970	1,890

Calendar year 1954: Max 34 Min 4.6 Mean 17.4 Ac-ft 12,600
Water year 1954-55: Max 43 Min 4.6 Mean 15.5 Ac-ft 11,240

* Discharge measurement made on this day.

Flint Creek at Maxville, Mont.

Location.--Lat 46°28'00", long 113°14'30", in NW¼ sec. 9, T. 8 N., R. 13 W., on right bank 0.4 mile west of Maxville and 1 mile upstream from Boulder Creek.

Drainage area.--208 sq mi.

Records available.--August 1941 to September 1955. April 1939 to September 1941 at site half a mile upstream (above Maxville siding), records not equivalent owing to diversions.

Gage.--Water-stage recorder. Datum of gage is 4,828.44 ft above mean sea level, datum of 1929.

Average discharge.--14 years, 102 cfs (73,840 acre-ft per year).

Extremes.--Maximum discharge during year, 569 cfs June 30 (gage height, 4.93 ft); minimum daily, 25 cfs at times.
1941-55: Maximum discharge, 1,680 cfs Mar. 28, 1943 (gage height, 6.79 ft), from rating curve extended above 600 cfs; minimum daily, 25 cfs at times during 1953, 1955.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Diversions for irrigation of about 8,200 acres above station. During irrigation season, flow is supplemented by water from East Fork Rock Creek which is diverted in sec. 5, T. 4 N , R. 14 W., 500 ft below Rock Creek Dam, through a canal into Trout Creek, thence into Flint Creek. Some regulation by Georgetown Lake (see p. 230).

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 15)

1.6	33	4.0	360
2.0	66	5.0	586
3.0	180		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	94	58	b35	a35	a35	a25	*52	93	104	304	119	47
2	85	58	a40	a30	a30	a25	54	111	90	221	120	39
3	82	58	a45	a25	a30	a25	60	114	80	196	120	35
4	82	57	a45	a25	a30	a25	46	99	76	214	122	34
5	78	57	a45	a25	a30	a25	45	100	71	218	136	59
6	*77	56	a45	a25	a30	a25	44	118	83	208	122	83
7	77	55	43	a25	a35	a30	49	102	92	230	97	89
8	79	*52	41	a25	a35	a40	69	103	*116	209	108	*104
9	78	52	43	a25	a30	a40	187	93	126	196	114	132
10	76	54	45	a25	a25	a40	290	89	136	221	103	118
11	81	54	b45	a25	a25	*36	144	87	171	356	87	123
12	83	54	a45	a25	a25	34	102	93	203	431	75	124
13	81	54	a45	a25	a30	b34	106	109	183	382	89	131
14	76	53	a45	a25	a35	34	104	123	196	290	107	111
15	85	53	*42	a25	a35	a30	66	112	212	244	110	94
16	73	57	39	a25	a35	b30	59	109	264	220	136	108
17	72	56	b35	a25	a30	b35	67	104	230	194	135	144
18	70	53	b35	a25	a25	37	98	89	187	221	135	149
19	68	52	b35	a25	a25	b36	100	85	179	198	134	149
20	68	51	b30	a25	a25	b36	76	103	181	158	122	115
21	67	50	b30	a25	a25	36	86	141	184	152	124	129
22	66	50	b30	a25	a25	36	106	166	180	140	115	126
23	75	50	b35	a25	a25	34	82	135	180	135	118	123
24	72	48	b40	a30	a25	b30	77	115	187	170	122	116
25	70	49	b40	a30	a25	b30	71	106	160	163	131	110
26	66	49	a35	a30	a25	b30	*77	94	136	166	123	107
27	66	49	a30	a30	a30	b30	69	106	140	146	115	102
28	70	b40	a30	a30	a30	a35	62	84	135	*146	109	102
29	67	b35	a30	*30	-	a40	65	79	374	140	105	108
30	63	b35	a35	34	------	a45	75	97	464	130	103	105
31	62	------	a35	34	------	a50	------	112	------	123	82	------
Total	2,309	1,549	1,193	838	810	1,038	2,588	3,271	5,120	6,502	3,538	3,116
Mean	74.5	51.6	38.5	27.0	28.9	33.5	86.3	106	171	210	114	104
Ac-ft	4,580	3,070	2,370	1,660	1,610	2,060	5,130	6,490	10,160	12,900	7,020	6,180

Calendar year 1954: Max 202 Min 30 Mean 79.6 Ac-ft 57,590
Water year 1954-55: Max 464 Min 25 Mean 87.3 Ac-ft 63,230

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of 4 discharge measurements and weather records.
b Stage-discharge relation affected by ice.

Boulder Creek at Maxville, Mont.

Location.--Lat 46°28'30", long 113°14'00", in SE¼ sec. 4, T. 8 N., R. 13 W., on right bank an eighth of a mile upstream from mouth and three-quarters of a mile north of Maxville.

Drainage area.--71.3 sq mi.

Records available.--April 1939 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 4,750 ft (from topographic map). Apr. 15, 1939, to July 7, 1941, wire-weight gage at site 75 ft upstream at different datum. July 8-20, 1941, staff gage at site 175 ft upstream at datum 1.03 ft higher.

Average discharge.--16 years, 47.6 cfs (34,460 acre-ft per year).

Extremes.--Maximum discharge during year, 325 cfs June 12, 16; maximum gage height, 3.02 ft June 29; minimum daily discharge, 10 cfs at times during winter period.
1939-55: Maximum discharge, 764 cfs June 13, 1953; maximum gage height, 4.24 ft June 3, 1948; minimum discharge, 4.2 cfs Sept. 12, 13, 1954 (gage height, 0.74 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Diversions for irrigation of about 350 acres, all of which lie below station.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.0	11	1.8	66
1.2	20	2.0	88
1.4	31	2.5	169
1.6	47	3.0	305

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	15	14	16	16	12	*16	20	a90	210	56	14
2	14	15	18	12	14	10	16	23	a85	167	52	14
3	13	15	20	12	12	10	16	22	a80	161	51	15
4	13	15	20	12	12	10	16	22	a75	165	50	14
5	13	16	20	12	14	10	16	24	a90	174	47	13
6	*14	17	20	10	12	10	16	28	131	161	45	13
7	14	19	20	10	14	15	18	30	178	169	44	13
8	15	*18	19	10	16	20	20	33	*231	169	41	*16
9	16	18	18	10	14	20	22	33	204	152	38	27
10	14	18	18	10	12	18	22	35	207	187	37	20
11	15	18	20	10	10	*16	20	38	269	212	36	18
12	15	20	20	12	12	16	18	41	287	187	34	16
13	15	20	20	10	16	16	18	45	263	165	33	15
14	15	20	18	10	16	14	18	45	254	146	33	15
15	15	20	*18	10	16	12	18	48	295	129	32	16
16	15	20	16	10	16	12	18	46	296	119	28	15
17	16	20	14	10	14	16	18	45	239	113	24	15
18	16	19	14	10	12	16	18	45	194	116	24	13
19	16	18	16	10	10	14	17	59	194	124	22	13
20	15	18	18	10	10	12	16	76	194	105	22	14
21	15	18	20	10	10	12	17	121	192	99	22	18
22	15	18	22	10	10	14	18	144	194	93	22	17
23	18	19	22	12	10	14	16	124	200	93	20	16
24	16	19	20	14	10	12	16	100	210	112	20	18
25	16	18	18	16	10	10	16	87	163	98	18	17
26	15	18	16	16	10	12	*16	88	135	92	17	17
27	16	18	14	16	10	14	16	85	129	84	16	17
28	16	17	14	16	12	16	15	76	126	*78	17	17
29	16	14	14	*16	-	18	16	a75	257	72	16	17
30	16	12	16	16	------	17	18	a85	237	65	16	16
31	16	------	18	16	------	16	------	a100	------	62	16	------
Total	467	530	555	374	350	434	521	1,843	5,699	4,079	949	479
Mean	15.1	17.7	17.9	12.1	12.5	14.0	17.4	59.5	190	132	30.6	16.0
Ac-ft	926	1,050	1,100	742	694	861	1,030	3,660	11,300	8,090	1,880	950

Calendar year 1954: Max 242 Min 4.4 Mean 34.9 Ac-ft 25,270
Water year 1954-55: Max 296 Min 10 Mean 44.6 Ac-ft 32,280

Peak discharge (base, 150 cfs).--May 21 (12 p.m.) to May 22 (2 a.m.) 154 cfs (2.40 ft); June 12 (1:30 a.m.) 325 cfs (3.00 ft); June 16 (1:15 a.m.) 325 cfs (3.01 ft); June 29 (7 to 8 p.m.) 322 cfs (3.02 ft); July 11 (2 to 6 a.m.) 225 cfs (2.71 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for stations on nearby streams.

Note.--Stage-discharge relation affected by ice Nov. 29 to Dec. 4, Dec. 9 to Mar. 28 (no gage-height record Dec. 25-27, Dec. 31 to Jan. 28, Jan. 30 to Feb. 3, Feb. 5-10, Feb. 14 to Mar. 10; discharge estimated on the basis of 4 discharge measurements and weather records).

Middle Fork Rock Creek near Philipsburg, Mont.

Location.--Lat 46°11', long 113°30', in NE¼ sec. 17, T. 5 N., R. 15 W., on right bank a quarter of a mile upstream from East Fork, 2½ miles upstream from West Fork, and 15 miles southwest of Philipsburg.

Drainage area.--123 sq mi.

Records available.--September 1937 to September 1955.

Gage.--Wire-weight gage read twice daily. Altitude of gage is 5,450 ft (from topographic map). Sept. 21, 1937, to May 10, 1942, wire-weight gage at site 300 ft upstream at different datum. May 11, 1942, to May 11, 1954, staff or wire-weight gages at site an eighth of a mile downstream at different datum.

Average discharge.--18 years, 121 cfs (87,600 acre-ft per year).

Extremes.--Maximum discharge observed during year, 824 cfs June 12 (gage height, 3.48 ft); minimum daily, 10 cfs Mar. 24-26.
1937-55: Maximum discharge, 1,430 cfs June 13, 1953 (gage height, 3.92 ft, site and datum then in use); minimum observed, 4.5 cfs Dec. 9, 10, 23, 24, 1944 (gage height, 0.02 ft).

Remarks.--Records fair except those for periods of ice effect, which are poor. A few small diversions for irrigation above station.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 15, Apr. 24 to Sept. 30				Dec. 16 to Apr. 23	
1.1	22	2.5	340	0.4	12
1.4	61	3.0	560	.6	24
1.7	116	3.5	830	.9	53
2.0	185				

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	43	25	25	26	15	*41	43	330	500	172	63
2	40	42	25	20	26	15	45	56	326	460	170	61
3	43	43	30	20	26	15	46	60	308	361	160	61
4	41	42	32	20	26	15	30	61	308	368	151	61
5	41	43	35	20	26	20	35	63	326	358	147	61
6	*40	43	35	20	27	26	23	71	364	379	140	61
7	38	37	35	20	27	32	32	89	433	372	136	61
8	38	*38	35	20	35	33	37	94	515	368	131	*60
9	36	37	35	20	14	32	43	100	*635	364	125	58
10	40	38	35	20	14	*31	51	102	655	372	116	58
11	42	41	35	20	14	31	46	118	710	383	110	58
12	46	38	35	20	15	29	42	147	812	411	108	56
13	43	36	35	20	36	18	39	180	782	395	104	55
14	41	36	35	20	32	15	38	188	794	395	102	54
15	40	36	*35	20	31	15	30	180	782	395	100	54
16	41	36	30	20	33	19	40	165	806	399	96	54
17	41	38	30	20	32	24	40	156	764	407	92	56
18	41	38	30	20	18	25	39	156	675	368	89	56
19	42	36	30	20	15	26	39	175	535	312	83	52
20	43	36	30	20	15	17	40	228	550	277	80	52
21	43	36	30	20	15	15	39	316	645	270	80	55
22	43	36	30	20	15	15	38	322	650	267	83	64
23	46	34	30	20	15	15	39	333	625	252	83	64
24	46	36	30	20	15	10	32	340	560	246	80	61
25	45	34	29	25	15	10	33	316	540	240	76	58
26	37	37	26	30	15	10	*34	322	505	219	73	56
27	45	40	25	35	15	18	32	312	465	202	70	54
28	43	43	25	32	15	26	32	312	525	192	70	52
29	43	38	25	*25	-	42	33	333	685	*192	68	50
30	43	30	25	26	------	44	37	336	615	182	64	49
31	43	------	25	26	------	45	------	330	------	175	63	------
Total	1,292	1,141	947	684	608	703	1,125	6,004	17,225	10,081	3,222	1,715
Mean	41.7	38.0	30.5	22.1	21.7	22.7	37.5	194	574	325	104	57.2
Cfsm	0.339	0.309	0.248	0.180	0.176	0.185	0.305	1.58	4.67	2.64	0.846	0.465
In.	0.39	0.34	0.29	0.21	0.18	0.21	0.34	1.82	5.21	3.05	0.97	0.52
Ac-ft	2,560	2,260	1,880	1,360	1,210	1,390	2,230	11,910	34,170	20,000	6,390	3,400

Calendar year 1954: Max 950 Min 10 Mean 123 Cfsm 1.00 In. 13.52 Ac-ft 88,770
Water year 1954-55: Max 812 Min 10 Mean 123 Cfsm 1.00 In. 13.53 Ac-ft 88,760

Peak discharge (base, 450 cfs).--June 12 (6:10 p.m.) 824 cfs (3.48 ft); June 29 (5:15 p.m.) 690 cfs (3.24 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 30 to Dec. 24, Jan. 2-26, Feb. 19 to Mar. 5, Mar. 14, 15, 21-26.

Nevada Creek above reservoir, near Finn, Mont.

Location.--Lat 46°46'30", long 112°45'20", near south line of sec. 20, T. 12 N., R. 9 W., on right bank a quarter of a mile downstream from Gallagher Creek, 2 miles upstream from Buffalo Creek, and 3 miles west of Finn.

Drainage area.--116 sq mi.

Records available.--April 1939 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 4,720 ft (from topographic map). Prior to Apr. 30, 1942, wire-weight gage at site seven-eighths of a mile downstream at different datum. Apr. 30, 1942, to July 26, 1953, water-stage recorder at site 1 mile downstream at different datum.

Average discharge.--16 years, 36.3 cfs (26,280 acre-ft per year).

Extremes.--Maximum discharge during year, 416 cfs July 12 (gage height, 4.09 ft); maximum gage height, 5.18 ft Apr. 9 (backwater from ice); minimum daily discharge, 3 cfs Jan. 5, 6.

1939-55: Maximum discharge, 1,800 cfs June 2, 1953 (gage height, 6.00 ft, site and datum then in use), from rating curve extended above 400 cfs on basis of inflow-outflow study of Nevada Creek Reservoir; maximum gage height, 7.40 ft May 29, 1953, site and datum then in use (backwater from diversion dam); minimum discharge probably less than 2 cfs at times in January and February 1944.

Remarks.--Records good except those for periods of ice effect, no gage-height record, or backwater from beaver dams, which are poor. Diversions for irrigation of about 2,500 acres above station.

Rating tables, water year 1954-55, except periods of ice effect or backwater from beaver dams (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 17, Sept. 9-30				Apr. 18 to Sept. 8			
1.0	3.0	1.4	13	1.3	18	2.5	120
1.1	4.0	1.5	18	1.4	22	3.0	177
1.2	6.0	1.6	24	1.5	28	3.5	251
1.3	9.0			2.0	68		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.0	15	10	8	8	7.2	13	40	72	79	48	c11
2	8.7	16	10	7	8	7.5	13	61	69	58	46	c10
3	9.0	15	11	5	*8	7	13	54	85	54	43	c9
4	9.0	14	11	4	8	6.6	13	44	88	81	41	c8
5	*9.8	*15	11	3	9	5.8	13	44	77	93	40	c7
6	12	14	11	4	8	6.0	14	47	83	61	40	c6
7	12	14	11	4	8	6.0	*15	47	95	84	38	c5
8	13	14	10	4	8	6.6	16	48	*108	74	35	c4
9	14	14	10	4	8	10	18	47	111	85	33	*4.0
10	14	14	11	5	8	12	20	43	95	95	33	3.9
11	14	14	10	5	8	8.7	20	40	84	140	32	3.8
12	14	14	10	5	9	10	20	48	85	247	31	3.7
13	14	14	10	5	9	9.4	20	62	91	195	30	3.7
14	14	14	*10	5	9	*12	19	64	86	163	30	3.7
15	16	14	10	5	9	16	18	55	77	132	30	4.0
16	16	15	10	5	9	14	20	49	90	112	28	4.2
17	16	14	10	5	8	15	39	40	92	165	27	4.6
18	16	14	9	5	7.8	12	54	32	64	121	25	4.8
19	16	14	9	5	7.5	9.8	57	29	54	102	23	4.8
20	16	14	9	5	8.4	8.7	38	40	46	89	23	5.2
21	16	14	9	6	9.4	13	40	95	37	86	20	6.3
22	16	14	10	7	9	11	44	130	38	79	19	7.5
23	21	13	10	8	8.7	10	39	130	48	76	19	7.5
24	19	13	10	9	9.4	9	36	109	120	70	c19	7.5
25	18	14	9	9	10	8	34	84	66	81	c18	7.8
26	16	14	8	9	8.1	8	40	68	49	81	c17	8.1
27	16	14	8	8	7.2	8	*32	74	45	65	c15	8.1
28	17	14	9	7	7.2	9	25	64	46	*61	c14	8.1
29	16	12	9	8	-	10	*29	59	83	57	c14	9.4
30	16	11	9	8	------	11	33	62	82	54	c13	11
31	15	------	9	8	------	12	-----	70	------	51	c12	------
Total	448.5	419	303	184	235.7	299.3	805	1,879	2,264	2,991	856	191.7
Mean	14.5	14.0	9.8	5.9	8.42	9.65	26.8	60.6	75.5	96.5	27.6	6.39
Ac-ft	890	831	601	365	468	594	1,600	3,730	4,490	5,930	1,700	380

Calendar year 1954: Max 264 Min 4 Mean 32.6 Ac-ft 23,640
Water year 1954-55: Max 247 Min 3 Mean 29.8 Ac-ft 21,580

Peak discharge (base, 160 cfs).--June 24 (1 a.m.) 223 cfs (3.34 ft); July 12 (1 a.m.) 416 cfs (4.09 ft); July 17 (2 a.m.) 222 cfs (3.33 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 29 to Feb. 17, Feb. 22, Mar. 3, Mar. 23 to Apr. 17. No gage-height record Jan. 25 to Feb. 3, Mar. 25-30, Apr. 3-6, 15-17; discharge estimated on basis of 5 discharge measurements, engineer's notes, weather records, and records for stations on nearby streams.

c Backwater from beaver dams; discharge estimated on basis of records for Blackfoot River near Ovando.

Blackfoot River near Ovando, Mont.

Location.--Lat 47°01'10", long 113°13'40", in SE¼NW¼ sec. 34, T. 15 N., R. 13 W., on left bank a quarter of a mile upstream from Monture Creek and 5 miles west of Ovando.

Drainage area.--1,274 sq mi.

Records available.--September 1940 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 3,917.27 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark).

Average discharge.--15 years, 860 cfs (622,600 acre-ft per year).

Extremes.--Maximum discharge during year, 4,450 cfs June 14 (gage height, 5.12 ft); minimum daily, 160 cfs Mar. 25, 26.
1940-55: Maximum discharge, 14,600 cfs June 4, 1953 (gage height, 8.45 ft); minimum daily, 100 cfs Jan. 20, 1954.
Floodmarks indicate stage of 10 ft reached in recent years.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Diversions for irrigation of about 25,000 acres above station.

Revisions.--WSP 1216: Drainage area. WSP 1246: 1941.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.9	205	3.5	1,340
2.0	235	4.0	2,060
2.5	445	5.1	4,400
3.0	800		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	415	385	313	293	b270	b190	269	375	2,300	2,520	1,060	445
2	415	390	329	b285	b270	b190	289	450	2,240	2,260	1,020	435
3	415	390	345	b275	*b270	b190	301	524	2,280	2,010	990	425
4	405	390	325	b270	b265	b190	305	500	2,440	1,920	950	420
5	*400	*385	333	b270	b250	b190	293	456	2,500	1,980	920	420
6	395	385	317	b270	b255	b210	305	450	2,640	1,930	880	420
7	400	385	333	b275	b260	b240	*350	467	2,940	2,040	860	420
8	390	380	325	b280	b255	b270	440	554	*3,340	2,100	820	*430
9	385	375	321	b285	b250	273	548	595	3,400	1,950	791	420
10	380	375	309	b290	b240	253	638	638	3,400	1,980	773	410
11	385	375	289	b290	b230	250	524	670	3,750	2,100	755	400
12	380	375	b285	b285	262	247	430	755	4,110	2,240	728	400
13	385	375	b300	b280	293	247	405	1,020	4,330	2,150	710	390
14	395	370	*b310	b275	305	*244	400	1,240	4,350	1,930	686	380
15	390	375	317	b265	269	244	370	1,260	4,160	1,800	670	380
16	390	375	317	b255	265	244	329	1,160	3,970	1,700	654	400
17	395	375	293	b250	b260	238	329	1,070	3,800	1,660	630	410
18	395	375	b280	b250	b240	244	390	1,000	3,420	1,680	623	410
19	405	370	b270	b260	b230	b230	445	1,000	3,160	1,640	595	400
20	390	370	b270	b270	b220	b210	395	1,300	3,000	1,540	574	390
21	385	365	b275	b275	b210	232	365	2,280	2,960	1,490	560	390
22	385	360	b285	b275	b205	250	385	3,240	3,040	1,410	560	380
23	395	360	b295	b275	b200	232	395	3,080	3,200	1,350	554	380
24	410	355	b295	277	b195	b180	390	2,720	3,440	1,300	548	370
25	400	355	b290	269	b195	b160	385	2,320	3,240	1,300	536	370
26	395	355	b285	269	b195	b160	380	2,100	2,780	1,390	524	360
27	385	360	b280	b270	b195	b200	*380	2,060	2,480	1,300	484	350
28	380	355	b285	b270	b195	b240	365	1,930	2,220	*1,250	478	340
29	385	337	b295	b265	-	262	350	1,870	2,440	1,200	467	350
30	385	337	305	262	------	259	355	2,080	2,680	1,100	462	350
31	380	------	301	269	------	262	------	2,260	------	1,050	450	------
Total	12,195	11,114	9,372	8,449	6,749	7,031	11,505	41,424	94,030	53,270	21,312	11,845
Mean	393	370	302	273	241	227	384	1,336	3,134	1,718	687	395
Cfsm	0.308	0.290	0.237	0.214	0.189	0.178	0.301	1.05	2.46	1.35	0.539	0.310
In.	0.36	0.32	0.27	0.25	0.20	0.21	0.34	1.21	2.74	1.56	0.62	0.35
Ac-ft	24,190	22,040	18,590	16,760	13,390	13,950	22,820	82,160	186,500	105,700	42,270	23,490

Calendar year 1954: Max 6,810 Min 100 Mean 1,026 Cfsm 0.805 In. 10.94 Ac-ft 742,600
Water year 1954-55: Max 4,350 Min 160 Mean 790 Cfsm 0.620 In. 8.43 Ac-ft 571,900

Peak discharge (base, 1,600 cfs).--May 22 (11 a.m.) 3,300 cfs (4.63 ft); June 14 (5 to 8 a.m.) 4,450 cfs (5.12 ft).
b Stage-discharge relation affected by ice.
Note.--No gage-height record Sept. 8-30; discharge estimated on basis of rscords for station at Bonner.

Blackfoot River near Bonner, Mont.

Location.--Lat 46°53'40", long 113°46'50", in SW¼SW¼ sec. 8, T. 13 N., R. 17 W., on right bank 4 miles northeast of Bonner, 6 miles downstream from Union Creek, and 6 miles upstream from mouth.

Drainage area.--2,294 sq mi.

Records available.--July 1898 to September 1901, May 1903 to October 1905, October 1939 to September 1955. Published as Blackfoot River at Bonner 1898-99 and as Big Blackfoot River near Bonner 1903-5.

Gage.--Staff gage read once daily. Datum of gage is 3,322.94 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. July 7, 1898, to June 30, 1901, and May 15, 1903, to Oct. 31, 1905, chain gage at site 6 miles downstream at different datum.

Average discharge.--19 years (1899-1901, 1903-4, 1939-55), 1,563 cfs (1,132,000 acre-ft per year).

Extremes.--Maximum discharge during year, 7,060 cfs June 14 (gage height, 6.94 ft); minimum daily, 420 cfs Mar. 25, 26.
1898-1901, 1903-5, 1939-55: Maximum discharge, 18,300 cfs June 4, 1953 (gage height, 11.65 ft, from graph based on gage readings); minimum daily, 200 cfs Jan. 4, 5, 1950, but may have been less during periods of no gage-height record.

Remarks.--Records fair except those for period of ice effect, which are poor. Diversions for irrigation of about 35,000 acres above station.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1954-55, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 8-26)

1.1	503	3.0	1,800
1.2	553	5.0	3,980
1.5	720	7.0	6,990
2.0	1,040	7.5	7,860

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	750	666	600	600	530	440	543	984	4,250	4,080	1,670	792
2	750	672	610	600	530	440	543	1,330	4,080	3,760	1,660	786
3	768	666	620	600	520	440	538	1,460	4,220	3,420	1,600	774
4	780	660	620	590	520	440	538	1,470	4,390	3,270	1,580	762
5	774	660	630	580	520	440	528	1,580	4,500	3,240	1,520	750
6	774	654	630	570	510	440	589	1,720	*4,670	3,500	1,480	732
7	768	644	630	550	510	460	714	1,850	5,160	3,440	1,420	720
8	762	644	630	540	510	480	938	2,100	5,780	3,270	1,360	702
9	762	632	620	530	510	490	991	2,200	5,820	3,240	1,270	690
10	750	638	620	520	510	500	1,030	2,250	5,860	3,440	1,200	684
11	738	638	610	520	500	500	1,040	2,310	6,240	3,500	1,140	678
12	738	644	610	520	500	500	977	2,510	6,720	3,710	1,120	666
13	720	644	600	520	510	500	898	3,150	*7,010	3,580	1,100	649
14	714	632	600	510	510	500	840	3,440	7,060	3,470	1,080	644
15	702	644	*600	510	510	490	774	3,410	6,800	3,270	1,050	660
16	690	638	590	510	500	490	750	3,200	6,640	3,030	1,000	678
17	684	654	580	510	490	480	750	2,960	6,240	2,740	977	702
18	696	660	580	500	480	480	768	2,830	5,700	*2,790	938	702
19	702	660	580	500	470	470	780	2,850	5,280	2,670	912	690
20	690	654	580	500	470	470	810	3,500	5,040	2,530	898	696
21	696	649	580	510	460	460	822	6,610	5,030	2,450	879	684
22	690	*649	580	510	460	460	840	6,610	5,100	2,380	860	684
23	*702	654	570	520	460	440	846	6,210	5,400	2,240	846	678
24	690	660	570	530	460	430	872	5,600	5,860	2,120	*834	666
25	690	654	570	*530	*460	420	872	4,920	5,330	2,050	834	666
26	690	654	560	530	450	420	*886	4,640	4,600	2,000	828	*660
27	690	649	560	540	450	450	872	4,390	4,080	1,930	822	654
28	678	630	570	540	450	470	860	4,010	3,670	1,880	822	649
29	678	615	570	540	-	*480	840	3,880	4,220	1,840	828	654
30	672	600	580	530	------	518	866	4,190	4,430	1,780	810	654
31	678	-----	580	530	-----	528	-----	4,360	------	1,700	798	------
Total	22,266	19,418	18,430	16,590	13,760	14,526	23,915	102,524	159,180	88,320	34,136	20,806
Mean	718	647	595	535	491	469	797	3,307	5,306	2,849	1,101	694
Cfsm	0.313	0.282	0.259	0.233	0.214	0.204	0.347	1.44	2.31	1.24	0.480	0.302
In.	0.36	0.31	0.30	0.27	0.22	0.24	0.39	1.66	2.58	1.43	0.55	0.34
Ac-ft	44,160	38,520	36,560	32,910	27,290	28,810	47,430	203,400	315,700	175,200	67,710	41,270

Calendar year 1954: Max 12,500 Min 300 Mean 1,854 Cfsm 0.808 In. 10.98 Ac-ft 1,342,000
Water year 1954-55: Max 7,060 Min 420 Mean 1,463 Cfsm 0.638 In. 8.65 Ac-ft 1,059,000

Peak discharge (base, 2,500 cfs).--May 21 (8 p.m.) 6,610 cfs (6.69 ft); June 14 (7:45 p.m.) 7,060 cfs (6.94 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 28 to Mar. 29.

Clark Fork above Missoula, Mont.

Location.--Lat 46°52'40", long 113°55'40", in NW¼NW¼ sec. 19, T. 13 N., R. 18 W., on right bank 3 miles downstream from Blackfoot River and 3 miles east of Missoula.

Drainage area.--5,999 sq mi.

Records available.--March 1929 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 3,230 ft (from topographic map).

Average discharge.--26 years, 2,734 cfs (1,979,000 acre-ft per year).

Extremes.--Maximum discharge during year, 13,900 cfs May 23 (gage height, 8.22 ft); minimum, 610 cfs Mar. 26 (gage height, 1.97 ft).
1929-55: Maximum discharge, 31,500 cfs May 23, 1948 (gage height, 13.07 ft); minimum, 115 cfs Oct. 25, 1943 (gage height, 0.64 ft, powerplant shutdown); minimum daily, 340 cfs Sept. 27, 1937.

Remarks.--Records excellent except those for period of ice effect, which are fair. Diurnal fluctuation caused by powerplant at Bonner. Diversions for irrigation of about 120,000 acres above station.

Revisions (water years).--WSP 1042: 1936. WSP 1152: 1942. WSP 1246: Drainage area, 1929-30, 1935.

Rating table, water year 1954-55, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.0	630	4.0	3,230
2.5	1,060	6.0	7,280
3.0	1,680	8.0	13,200

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,630	1,510	1,150	1,350	1,250	1,050	1,650	2,100	7,100	8,820	3,470	1,270
2	1,640	1,510	1,150	1,300	1,210	1,100	1,750	2,590	6,740	8,220	3,230	1,240
3	1,610	1,490	1,390	1,150	1,150	1,120	1,650	2,990	6,570	7,330	3,070	1,170
4	1,640	1,490	1,210	1,000	1,120	1,010	1,510	3,050	6,790	6,930	2,910	1,190
5	1,600	1,480	1,340	900	1,150	892	1,420	3,050	6,890	7,080	2,760	1,160
6	1,570	1,480	1,360	1,000	1,170	990	1,490	3,280	*7,060	7,200	2,650	1,140
7	1,570	1,490	1,390	1,050	1,150	1,160	1,510	3,540	7,530	7,660	2,570	1,150
8	1,670	1,510	1,400	1,150	1,230	1,230	1,780	3,740	8,570	7,880	2,580	1,140
9	1,610	1,470	1,330	1,150	1,270	1,220	2,300	3,960	9,440	6,920	2,320	1,170
10	1,440	1,480	1,240	1,150	1,150	1,300	2,970	3,990	9,530	7,280	2,240	1,180
11	1,510	1,510	1,270	1,200	990	1,340	2,910	4,050	9,940	7,810	2,160	1,220
12	1,560	1,510	1,160	1,200	1,020	1,270	2,460	4,210	10,800	8,570	2,060	1,210
13	1,540	1,510	1,060	1,200	1,100	1,190	2,220	4,840	11,700	8,850	2,080	1,190
14	1,540	1,510	1,340	1,200	1,190	1,180	2,240	5,870	11,900	8,040	2,030	1,220
15	1,520	1,490	*1,380	1,150	1,180	1,150	2,040	5,840	11,800	7,260	2,120	1,220
16	1,510	1,510	1,280	1,150	1,170	1,100	1,880	5,440	*11,600	6,650	1,850	1,270
17	1,510	1,520	1,150	1,100	1,180	1,130	1,790	5,190	11,900	6,310	1,760	1,320
18	1,530	1,520	1,050	1,050	1,140	1,170	1,850	4,920	10,800	*6,410	1,740	1,290
19	1,530	1,510	1,000	1,000	1,090	1,160	2,080	4,820	9,580	6,310	1,710	1,300
20	1,530	1,480	900	1,150	1,020	1,070	2,120	5,380	8,960	5,820	1,670	1,320
21	1,520	1,470	850	1,200	1,120	1,020	1,900	7,480	8,650	5,380	1,610	1,420
22	1,490	*1,450	950	1,250	1,130	1,070	1,900	10,600	8,600	5,050	1,610	1,540
23	1,510	1,470	1,100	1,250	1,090	1,130	2,100	10,600	8,790	4,750	1,440	1,590
24	1,570	1,480	1,250	1,250	1,000	942	2,120	9,530	9,940	4,690	*1,450	1,630
25	1,630	1,450	1,300	*1,250	*1,050	870	2,040	8,570	9,850	4,820	1,290	1,610
26	*1,600	1,470	1,250	1,200	1,060	892	*1,980	7,760	8,410	4,860	1,330	1,640
27	1,570	1,450	1,150	1,200	933	982	2,080	7,460	7,460	4,780	1,400	1,710
28	1,540	1,470	1,000	1,150	1,010	1,120	1,970	6,960	6,740	4,330	1,350	*1,520
29	1,570	1,430	1,000	1,200	-	*1,230	1,960	6,500	6,980	4,050	1,330	1,630
30	1,540	1,220	1,100	1,250	------	1,350	1,960	6,620	9,050	3,880	1,290	1,600
31	1,540	------	1,200	1,250	------	1,680	------	7,130	------	3,640	1,280	------
Total	48,240	44,340	36,700	36,050	31,323	35,118	59,630	172,060	269,670	197,580	62,360	40,260
Mean	1,556	1,478	1,184	1,163	1,119	1,133	1,988	5,550	8,989	6,374	2,012	1,342
Ac-ft	95,680	87,950	72,790	71,500	62,130	69,660	118,300	341,300	534,900	391,900	123,700	79,850

Calendar year 1954: Max 17,100 Min 655 Mean 3,106 Ac-ft 2,248,000
Water year 1954-55: Max 11,900 Min 850 Mean 2,831 Ac-ft 2,050,000

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 16 to Feb. 1.

West Fork Bitterroot River near Conner, Mont.

Location.--Lat 45°44', long 114°17', in NE¼NW¼ sec. 26, T. 1 S., R. 22 W., on right bank half a mile downstream from West Fork Dam, 6 miles upstream from Nez Perce Creek, and 16 miles southwest of Conner.

Drainage area.--317 sq mi.

Records available.--April 1941 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 4,560 ft (by barometer).

Average discharge.--14 years, 292 cfs (211,400 acre-ft per year).

Extremes.--Maximum discharge during year, 2,090 cfs June 15 (gage height, 4.54 ft); minimum, 6.6 cfs Apr. 28 (gage height, 0.56 ft).
1941-55: Maximum discharge, 4,060 cfs May 9, 1947 (gage height, 6.18 ft); minimum, 0.2 cfs Nov. 25, 1942.

Remarks.--Records excellent except those for period of no gage-height record, which are good. Flow regulated by West Fork Bitterroot River Reservoir (see p. 230). Diversions for irrigation of about 200 acres above station.

Revisions.--WSP 1246: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.0	43	2.5	525
1.3	93	3.0	790
1.6	165	4.0	1,560
2.0	295	5.0	2,570

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	116	82	79	77	79	75	70	530	931	691	234	95
2	116	82	79	77	79	75	70	525	850	642	221	93
3	116	82	79	77	79	75	70	525	790	615	211	91
4	116	82	79	77	77	75	70	520	779	636	205	89
5	116	82	77	77	77	75	70	520	802	658	198	89
6	116	82	77	77	77	75	70	520	850	630	195	86
7	116	82	77	77	77	75	70	520	1,090	658	186	86
8	101	82	77	77	77	74	70	525	1,500	625	180	88
9	82	82	77	77	77	74	70	535	1,700	600	174	93
10	82	82	77	77	77	74	70	535	1,740	600	168	91
11	82	82	77	77	77	74	70	535	1,810	590	165	91
12	82	82	77	77	77	74	70	540	1,920	610	160	88
13	82	82	77	77	77	73	73	545	1,970	575	154	86
14	82	82	77	77	77	73	75	545	*1,860	550	149	84
15	82	82	77	77	77	73	75	545	1,890	515	152	88
16	82	82	77	77	77	73	75	545	1,730	485	143	93
17	82	80	*77	77	77	73	75	545	1,470	465	138	99
18	82	80	77	77	77	72	75	457	1,260	445	131	97
19	82	80	77	77	77	72	75	348	1,150	420	128	93
20	82	80	77	50	75	72	88	348	1,100	*394	126	93
21	84	80	77	50	75	72	110	319	1,100	376	121	99
22	84	80	77	79	75	72	110	250	1,090	362	119	99
23	84	*80	77	79	75	71	110	253	1,060	348	*116	97
24	84	80	77	79	75	71	110	257	1,090	353	112	93
25	84	80	77	79	75	71	110	*643	973	335	112	192
26	84	80	77	79	*75	71	110	945	838	315	110	270
27	84	80	77	*79	75	71	118	898	774	284	108	267
28	*84	80	77	79	75	70	*243	808	713	278	104	*267
29	84	79	77	79	-	70	540	779	746	267	101	267
30	84	79	77	79	------	70	535	850	724	257	101	267
31	82	------	77	79	------	*70	------	966	------	244	99	------
Total	2,819	2,430	2,395	2,353	2,144	2,255	3,547	17,176	36,300	14,823	4,821	3,731
Mean	90.9	81.0	77.3	75.9	76.6	72.7	118	554	1,210	478	149	124
Ac-ft	5,590	4,820	4,750	4,670	4,250	4,470	7,040	34,070	72,000	29,400	9,170	7,400

Calendar year 1954: Max 1,810 Min 0.6 Mean 233 Ac-ft 168,700
Water year 1954-55: Max 1,970 Min 50 Mean 259 Ac-ft 187,600

* Discharge measurement made on this day.
Note.--No gage-height record Mar. 6-30; discharge estimated on basis of recorded range in stage.

East Fork Bitterroot River at Conner, Mont.

Location.--Lat 45°56'00", long 114°07'30", in SE¼SE¼ sec. 7, T. 2 N., R. 20 W., on right bank 200 ft downstream from highway bridge at Conner and half a mile upstream from confluence with West Fork.

Drainage area.--405 sq mi.

Records available.--September 1910 to September 1916, fragmentary (gage heights only during 1916), April 1937 to September 1955. Published as "near Darby" 1910-16.

Gage.--Wire-weight gage read once or twice daily. Datum of gage is 4,014.29 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Sept. 20, 1910, to Sept. 17, 1916, staff gage at site 2½ miles upstream at different datum. Apr. 4, 1937, to Sept. 30, 1953, wire-weight gages at several sites in immediate vicinity, all at datum 1.00 ft higher.

Average discharge.--18 years (1937-55), 252 cfs (182,400 acre-ft per year).

Extremes.--Maximum discharge during year, 1,540 cfs June 15 (gage height, 4.76 ft, from graph based on gage readings); minimum daily, 20 cfs Dec. 1.
1910-15, 1937-55: Maximum discharge, 3,760 cfs May 29, 1948; maximum gage height, 6.78 ft, present datum, May 9, 1947; minimum discharge observed, 1.4 cfs Aug. 17, 1937.

Remarks.--Records good except those for periods of ice effect and those for June 8-30, which are poor. Diversions for irrigation of about 3,000 acres above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1246: 1912.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 8-19)

Oct. 1 to June 11				June 12 to Sept. 30			
1.3	25	2.5	258	1.7	39	3.0	465
1.5	37	3.0	500	1.9	65	4.0	1,100
1.8	67	4.0	1,150	2.2	130	4.5	1,500
2.1	123	4.5	1,540	2.5	233		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	84	72	20	90	75	70	105	160	856	939	210	46
2	84	63	30	80	70	70	110	218	797	825	203	47
3	82	72	45	60	65	75	100	218	764	780	184	47
4	79	66	55	50	65	60	95	200	778	832	170	49
5	78	76	65	45	65	55	76	218	784	832	160	45
6	78	76	78	65	70	65	66	296	875	773	151	46
7	73	71	86	75	75	75	79	309	*1,070	806	148	46
8	72	66	60	80	90	80	116	340	1,170	786	142	46
9	72	74	34	75	80	80	131	332	1,280	760	139	61
10	70	76	86	80	65	75	163	327	1,280	786	133	58
11	70	76	80	80	50	75	126	355	1,400	760	120	52
12	82	76	73	85	70	75	98	365	1,450	734	107	50
13	78	82	85	80	75	74	109	467	1,450	683	107	43
14	74	74	80	75	80	65	136	512	*1,400	653	107	41
15	70	82	75	70	70	70	91	462	1,440	605	109	67
16	80	80	55	75	70	70	91	415	1,400	581	102	67
17	80	84	*45	75	65	70	100	370	1,240	526	87	67
18	82	84	40	70	60	70	107	375	1,160	492	83	74
19	80	79	35	65	65	65	116	472	1,120	440	79	79
20	79	74	40	60	65	60	102	656	1,100	*415	79	79
21	82	76	55	45	65	75	107	927	1,100	420	76	112
22	82	74	75	65	60	75	136	1,020	1,090	395	74	109
23	87	*78	90	70	60	70	128	961	1,080	375	*76	100
24	84	74	95	70	70	60	131	927	1,120	360	72	96
25	79	74	85	75	65	50	123	*856	981	360	64	96
26	76	76	70	75	*70	55	123	810	870	338	61	85
27	76	82	60	*65	65	60	*121	790	844	316	54	*87
28	*82	74	50	70	60	65	109	706	832	293	54	81
29	78	72	75	70	-	75	112	712	1,110	271	52	87
30	78	27	90	70	------	80	134	882	981	254	52	83
31	72	-----	95	75	-----	*90	-----	908	------	230	51	------
Total	2,423	2,210	2,007	2,185	1,905	2,154	3,341	16,566	32,822	17,620	3,306	2,046
Mean	78.2	73.7	64.7	70.5	68.0	69.5	111	534	1,094	568	107	68.2
Cfsm	0.193	0.182	0.160	0.174	0.168	0.172	0.274	1.32	2.70	1.40	0.264	0.168
In.	0.22	0.20	0.18	0.20	0.17	0.20	0.31	1.52	3.01	1.62	0.30	0.19
Ac-ft	4,810	4,380	3,980	4,330	3,780	4,270	6,630	32,860	65,100	34,950	6,560	4,060

Calendar year 1954: Max 1,880 Min 20 Mean 248 Cfsm 0.612 In. 8.31 Ac-ft 179,700
Water year 1954-55: Max 1,450 Min 20 Mean 243 Cfsm 0.600 In. 8.12 Ac-ft 175,700

Peak discharge (base, 700 cfs).--May 22 (5 a.m.) 1,060 cfs (3.87 ft); June 15 (5 a.m.) 1,540 cfs (4.76 ft); June 29 (12 m.) 1,180 cfs (4.10 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 1-5, 8, Dec. 15 to Mar. 12, Mar. 14-16, Mar. 18 to Apr. 3.

Bitterroot River near Darby, Mont.

Location.--Lat 45°58'20", long 114°08'20", in E½ sec. 36, T. 3 N., R. 21 W., on left bank 25 ft downstream from bridge on U. S. Highway 93, a quarter of a mile downstream from Chaffin Creek, and 4 miles southeast of Darby.

Drainage area.--1,049 sq mi.

Records available.--April 1937 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 3,943.14 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Aug. 2, 1939, wire-weight gage at highway bridge 25 ft upstream at same datum.

Average discharge.--18 years, 884 cfs (640,000 acre-ft per year).

Extremes.--Maximum discharge during year, 6,770 cfs June 15 (gage height, 6.46 ft); minimum daily, 155 cfs Dec. 19, 20.

1937-55: Maximum discharge, 11,500 cfs May 9, 1947 (gage height, 8.18 ft); minimum observed, about 71 cfs Feb. 9, 1939; minimum gage height observed, 1.06 ft Dec. 9, 1937.

Remarks.--Records good except those for periods of ice effect, which are poor. Some regulation by West Fork Bitterroot River Reservoir (see p. 230). Diversions for irrigation of about 5,000 acres above station. Ditch bypassing station irrigates about 500 acres below.

Revisions.--WSP 1246: Drainage area.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 5 to June 8)

1.4	140	3.0	1,080
1.7	230	4.0	2,200
2.0	360	5.0	3,740
2.5	675	6.5	6,870

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	282	250	174	234	209	206	270	1,080	2,930	2,430	705	238
2	282	250	189	230	206	206	290	1,230	2,660	2,180	660	234
3	282	258	b200	b210	202	212	254	1,220	2,560	2,080	615	230
4	282	254	b210	b185	b200	b195	246	1,190	2,590	2,250	579	226
5	282	258	b220	b180	202	b190	230	1,290	2,680	2,260	558	223
6	282	254	230	b200	b204	b205	242	1,600	2,860	2,200	530	220
7	282	250	242	b210	206	212	242	1,670	*3,900	2,260	512	220
8	278	242	220	b220	242	216	345	1,830	4,880	2,100	494	220
9	254	254	189	b215	212	216	410	1,800	5,080	2,090	470	238
10	242	246	223	b215	b200	212	488	1,800	5,140	2,190	452	234
11	250	246	216	b220	b185	212	452	1,920	5,510	2,260	422	223
12	266	250	202	220	b205	209	390	2,180	6,010	2,360	395	216
13	262	254	238	220	212	209	390	2,430	6,080	2,140	385	209
14	250	250	226	216	216	202	410	2,330	*5,810	2,090	370	206
15	246	246	226	b210	206	206	355	2,070	6,040	1,970	370	216
16	262	254	b180	b215	206	209	345	1,840	5,320	1,910	365	238
17	274	250	*b165	b215	202	209	350	1,720	4,370	1,840	345	254
18	274	246	b160	b210	b195	206	365	1,670	3,900	1,720	325	250
19	266	246	b155	b205	b200	206	360	1,840	3,780	1,570	315	246
20	270	242	b155	b195	b200	198	350	2,570	3,920	*1,480	310	250
21	270	242	b190	180	202	216	380	3,650	4,050	1,470	302	278
22	274	242	b235	202	198	216	434	3,560	4,100	1,340	294	282
23	294	*242	242	209	198	212	440	3,000	4,050	1,250	*290	274
24	294	246	246	206	206	b200	440	2,630	4,120	1,210	282	270
25	278	242	b220	209	202	b185	434	2,590	3,290	1,180	282	284
26	270	254	b210	209	*206	b200	434	2,930	2,720	1,120	270	416
27	258	254	b200	*202	198	b210	*428	2,810	2,640	978	258	422
28	*270	242	b190	b203	198	220	422	2,530	2,520	910	254	*422
29	262	234	b210	b205	-	230	839	2,500	3,090	846	254	434
30	254	189	238	206	------	242	961	3,060	2,630	798	250	428
31	250	------	242	209	------	*242	------	3,110	------	750	238	------
Total	8,342	7,387	6,443	6,465	5,718	6,509	11,996	67,650	119,230	53,232	12,151	8,101
Mean	269	246	208	209	204	210	400	2,182	3,974	1,717	392	270
Ac-ft	16,550	14,650	12,780	12,820	11,340	12,910	23,790	134,200	236,500	105,600	24,100	16,070

Calendar year 1954: Max 6,990 Min 155 Mean 870 Ac-ft 629,800
Water year 1954-55: Max 6,080 Min 155 Mean 858 Ac-ft 621,300

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Blodgett Creek near Corvallis, Mont.

Location.--Lat 46°16'10", long 114°14'10", in NW¼NW¼ sec. 21, T. 6 N., R. 21 W., on right bank 4½ miles upstream from mouth and 7 miles southwest of Corvallis.

Drainage area.--26.4 sq mi.

Records available.--December 1946 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 4,050 ft (from topographic map).

Average discharge.--8 years (1947-55), 73.1 cfs (52,920 acre-ft per year).

Extremes.--Maximum discharge during year, 652 cfs June 12 (gage height, 5.44 ft); minimum, 4.5 cfs Feb. 9, 10 (gage height, 2.10 ft).
1946-55: Maximum discharge, 836 cfs May 16, 1949 (gage height, 6.42 ft); minimum, 1.2 cfs Nov. 9, 10, 23, 25, 1952; minimum gage height, 1.93 ft Nov. 9, 10, 1952.

Remarks.--Records good except those for periods of ice effect, which are poor. Some regulation for irrigation at low flow by High Lake and Blodgett Lake (combined capacity, 900 acre-ft).

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 7-26)

2.1	4.5	3.5	142
2.3	11	4.0	246
2.5	21	5.0	490
2.8	43	5.5	615
3.2	91		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	12	12	9.8	7.0	6.2	7.0	45	194	170	40	20
2	16	13	b13	b9.5	7.0	6.2	7.4	54	168	146	38	18
3	16	13	b14	b9.5	7.0	6.0	7.4	55	180	138	35	18
4	15	12	b15	b9	6.8	6.0	7.4	59	213	156	30	18
5	14	12	15	b9	6.8	b6	7.4	78	239	160	28	16
6	14	12	14	b9	6.8	b6.2	8.2	120	302	164	26	16
7	13	11	14	b9.5	6.8	6.2	10	131	445	192	25	16
8	12	10	12	b9	7.0	6.2	15	154	490	152	24	16
9	11	11	12	b8.5	5.8	6.5	22	126	452	158	23	14
10	11	11	14	b8.5	5.5	6.5	28	126	450	194	22	14
11	12	10	11	8.6	b5.5	6.2	25	164	520	194	33	13
12	14	11	12	8.6	b6.5	6.5	23	222	564	190	33	11
13	12	14	13	8.6	8.2	6.2	23	294	565	186	32	10
14	11	12	12	8.2	7.4	6.2	23	233	562	192	30	9.8
15	11	12	12	8.2	7.0	6.5	22	184	*522	188	30	11
16	14	15	*12	8.2	6.8	6.5	22	152	*380	192	28	11
17	18	16	9.8	8.2	6.8	6.5	22	138	323	186	28	11
18	18	14	b9.5	7.8	6.8	6.5	23	138	304	166	27	9.8
19	16	14	b9	7.8	7.0	6.2	22	196	350	*150	26	7.4
20	20	14	b9.5	7.4	7.4	6.2	22	322	400	124	24	6.5
21	20	14	b11	7.4	7.0	6.0	23	522	460	111	17	6.5
22	27	14	b13	7.4	6.5	6.2	26	442	470	100	24	9.0
23	29	*18	14	7.4	6.5	6.0	26	294	460	94	*24	8.6
24	23	18	13	7.0	6.2	b6	26	*235	422	83	24	7.4
25	20	18	12	7.0	6.2	b6	25	204	299	85	23	6.5
26	18	18	12	*7.0	6.2	b6	26	206	251	72	23	6.0
27	*17	16	11	7.0	*6.2	b6	*25	184	271	61	22	*5.8
28	17	15	11	7.0	6.2	6.5	23	162	267	54	22	5.8
29	16	12	11	7.0	-	6.5	25	178	294	49	21	5.8
30	14	12	9.8	7.0	------	*6.5	30	274	198	46	20	6.0
31	14	-----	9.8	7.0	-----	6.8	-----	228	------	43	20	------
Total	500	404	372.4	251.1	186.9	194.0	601.8	5,920	11,015	4,196	822	333.9
Mean	16.1	13.5	12.0	8.10	6.68	6.26	20.1	191	367	135	26.5	11.1
Cfsm	0.610	0.511	0.455	0.307	0.253	0.237	0.761	7.23	13.9	5.11	1.00	0.420
In.	0.70	0.57	0.52	0.35	0.26	0.27	0.85	8.34	15.52	5.91	1.16	0.47
Ac-ft	992	801	739	498	371	385	1,190	11,740	21,850	8,320	1,630	662

Calendar year 1954: Max 622 Min 4.0 Mean 78.4 Cfsm 2.97 In. 40.31 Ac-ft 56,790
Water year 1954-55: Max 565 Min 5.5 Mean 67.9 Cfsm 2.57 In. 34.92 Ac-ft 49,180

Peak discharge (base, 450 cfs).--May 22 (12:30 a.m.) 560 cfs (5.24 ft); June 8 (3 a.m.) 578 cfs (5.20 ft); June 12 (3 a.m.) 652 cfs (5.44 ft); June 23 (2 a.m.) 565 cfs (5.16 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Burnt Fork Creek near Stevensville, Mont.

Location.--Lat 46°27'50", long 113°56'40", in NW¼SW¼ sec. 11, T. 8 N., R. 19 W., on right bank 150 ft upstream from county road bridge and 8 miles southeast of Stevensville.

Drainage area.--74.0 sq mi.

Records available.--May 1920 to August 1924, April 1938 to September 1955.

Gage.--Staff gage read once daily except Sundays and holidays. Altitude of gage is 4,270 ft (from topographic map). May 8, 1920, to Aug. 23, 1924, staff gage at site 150 ft downstream at different datum. April 1938 to Mar. 18, 1953, staff gage and Mar. 19, 1953, to Mar. 15, 1955, wire-weight gage, at site 150 ft downstream at datum 2.00 ft lower.

Average discharge.--17 years (1938-55), 48.9 cfs (35,400 acre-ft per year).

Extremes.--Maximum discharge observed during year, 284 cfs June 15 (gage height, 3.28 ft); minimum daily, 12 cfs Mar. 26.
1920-24, 1938-55: Maximum discharge observed, 641 cfs May 28, 1938 (gage height, 2.92 ft, site and datum then in use); maximum gage height observed, 3.40 ft Jan. 6, 9, 1947, site and datum then in use (backwater from ice); minimum daily discharge, 2 cfs Mar. 11, 1948.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Diversion above station for irrigation of about 2,000 acres below station. During irrigation season natural flow of stream is augmented by release from Burnt Fork Lake (capacity, 510 acre-ft).

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 15		Mar. 16 to Sept. 30			
0.7	11	1.4	12	2.5	110
.8	15	1.6	19	3.0	214
1.0	26	1.9	38	3.5	342
1.2	49	2.2	68		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	18	b15	a17	b15	b15	15	a31	132	224	55	29
2	25	18	b16	a17	b14	b15	16	38	110	214	53	26
3	a24	18	b16	b16	b14	b14	a16	38	97	a180	57	26
4	24	18	b17	b15	b14	b13	15	37	94	a190	55	a26
5	23	18	a18	b14	b14	b13	15	45	a100	191	53	a25
6	22	18	b18	b15	a15	a14	15	68	*114	191	55	24
7	22	a18	b18	b15	b16	b15	16	66	169	224	a53	24
8	22	18	b17	b15	b15	b17	19	a66	205	214	51	24
9	21	18	b17	a14	b14	b17	21	66	214	214	49	30
10	a25	17	b17	b15	b14	b16	a20	66	214	a200	47	25
11	29	a17	b16	b15	b13	b16	20	67	238	187	45	a25
12	24	17	a16	b15	b14	b15	19	87	a260	214	45	24
13	24	18	b16	b15	a15	a15	19	110	279	200	45	25
14	25	a17	b17	b15	b16	b15	18	97	*279	187	a44	23
15	22	16	b17	b14	b16	b15	19	a85	284	182	43	27
16	22	20	*b17	a15	b16	b15	18	73	248	165	42	25
17	a22	18	b16	b15	b14	b15	a19	64	238	a155	40	26
18	22	17	b16	b15	b14	15	20	61	214	144	38	a26
19	21	18	a15	b15	b14	15	19	80	a205	*121	38	25
20	23	17	b16	b15	a15	a16	18	128	214	110	38	24
21	21	a18	b16	b15	b15	17	19	243	238	97	a36	28
22	23	18	b16	b15	a15	16	23	a215	233	86	35	26
23	28	*18	b17	a16	b14	16	22	187	233	80	34	26
24	a25	17	b17	b16	b14	b15	a22	*161	273	a80	*34	28
25	22	a17	a17	b16	b15	b14	21	128	233	80	33	a25
26	21	17	a16	*b16	*b14	b12	21	124	a210	78	32	24
27	*21	17	b15	b15	a14	a14	*20	110	191	70	31	24
28	21	a17	b16	b15	b15	b15	20	94	173	68	a30	24
29	21	b16	b17	b15	-	15	20	a105	248	61	30	24
30	20	b16	b17	a16	----	*15	24	a135	214	55	30	22
31	a19	-	b17	b16	- -	15	-----	148	- - - - -	a55	29	-- -
Total	708	525	512	473	408	465	569	3,023	6,154	4,515	1,300	758
Mean	22.8	17.5	16.5	15.3	14.6	15.0	19.0	97.5	205	146	41.9	25.3
Ac-ft	1,400	1,040	1,020	938	809	922	1,130	6,000	12,210	8,960	2,580	1,500

Calendar year 1954: Max 300 Min 10 Mean 43.6 Ac-ft 31,530
Water year 1954-55: Max 284 Min 12 Mean 53.2 Ac-ft 38,510

* Discharge measurement made on this day.
a No gage-height record; discharge interpolated or estimated on basis of weather records and records for nearby stations.
b Stage-discharge relation affected by ice.

Lolo Creek above Sleeman Creek, near Lola, Mont.
(Formerly published as Lolo Creek near Lolo)

Location.--Lat 46°45', long 114°09', in NW¼ sec. 5, T. 11 N., R. 20 W., on left bank 3 miles southwest of Lolo and 4 miles upstream from mouth.

Drainage area.--250 sq mi.

Records available.--November 1950 to September 1955. Prior to October 1954, published as Lolo Creek near Lolo, April 1911 to September 1915 at site 3½ miles upstream, published as "near Lolo"; records not equivalent owing to diversion and tributary inflow.

Gage.--Water-stage recorder. Altitude of gage is 3,290 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,480 cfs June 13 (gage height, 4.98 ft); minimum, 23 cfs Mar. 20, 25, Sept. 6.
1950-55: Maximum discharge, 1,980 cfs May 20, 1954 (gage height, 5.72 ft); minimum, 6.3 cfs Nov. 9, 1952 (gage height, 1.01 ft).

Remarks.--Records excellent except those for periods of ice effect or no gage-height record and those for Aug. 1-21, which are poor. Numerous small diversions mainly for irrigation of hay meadows above station.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 11		Mar. 12 to Sept. 30			
1.5	48	1.2	19	2.5	240
1.7	71	1.4	32	3.0	405
2.0	120	1.7	64	4.0	880
		2.0	112	5.0	1,490

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	48	50	66	57	55	58	256	635	512	142	30
2	67	50	52	63	56	55	60	343	584	457	125	30
3	67	64	55	60	55	55	56	346	616	417	114	29
4	65	64	58	56	55	53	54	346	640	433	103	28
5	64	66	62	52	54	50	52	388	665	413	92	28
6	64	64	65	55	56	53	59	481	755	398	86	24
7	64	63	70	58	58	56	70	490	946	635	83	24
8	63	60	65	60	62	60	88	534	1,070	498	81	26
9	63	61	64	59	57	56	114	477	1,080	437	75	25
10	64	65	63	60	54	53	174	461	1,120	534	70	25
11	66	66	62	61	52	51	179	490	1,240	526	65	26
12	84	65	62	62	54	49	142	570	1,330	562	60	27
13	86	65	64	61	56	47	135	710	1,380	503	56	26
14	78	65	65	60	57	46	122	705	1,320	469	50	26
15	74	65	65	58	56	45	101	606	*1,180	437	46	42
16	76	76	*64	58	55	46	94	521	1,030	417	41	49
17	78	86	62	58	54	46	96	490	968	391	40	50
18	74	78	61	57	53	45	110	473	820	363	39	49
19	64	76	60	56	54	42	105	562	786	*333	38	45
20	63	76	62	54	54	41	99	786	803	297	37	43
21	61	71	63	55	55	49	114	1,240	874	268	38	54
22	64	70	65	58	54	44	147	1,330	918	246	*37	63
23	71	*71	68	58	53	42	166	1,060	913	237	36	58
24	66	70	67	58	*54	35	166	*874	935	231	35	56
25	59	70	65	57	55	32	154	765	786	222	33	51
26	56	80	63	*56	54	35	156	735	645	219	34	46
27	*55	78	62	56	53	38	*156	670	611	190	34	*46
28	56	71	63	55	54	43	142	598	575	179	33	46
29	52	56	65	55	-	51	144	620	645	166	32	48
30	51	52	66	57	------	*52	166	740	566	161	31	48
31	49	------	67	58	------	54	------	705	------	149	30	------
Total	2,033	2,012	1,945	1,797	1,541	1,479	3,479	19,372	26,436	11,300	1,818	1,168
Mean	65.6	67.1	62.7	58.0	55.0	47.7	116	625	881	365	58.6	38.9
Ac-ft	4,030	3,990	3,860	3,560	3,060	2,930	6,900	38,420	52,440	22,410	3,610	2,320

Calendar year 1954: Max 1,910 Min 30 Mean 259 Ac-ft 187,800
Water year 1954-55: Max 1,380 Min 24 Mean 204 Ac-ft 147,500

Peak discharge (base, 1,000 cfs).--May 22 (6 to 8 a.m.) 1,420 cfs (4.89 ft); June 13 (6 a.m.) 1,480 cfs (4.98 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Jan. 2-10, 14-20, 24, 25, 28, 29, Feb. 2-10, 17, 18, Mar. 12-16; discharge estimated on basis of weather records and records for nearby streams. Stage-discharge relation affected by ice Nov. 30 to Dec. 5, Dec. 9 to Jan. 1, Jan. 11-13, 21-23, 26-31, Feb. 1, 11-16, 19-28, Mar. 1-11, 25-28.

Clark Fork below Missoula, Mont.

Location.--Lat 46°52'10", long 114°07'30", in NE¼SE¼ sec. 21, T. 13 N., R. 20 W., on right bank 2 miles downstream from Bitterroot River and 5 miles west of Missoula.

Drainage area.--9,003 sq mi.

Records available.--October 1929 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 3,090 ft (from topographic map).

Average discharge.--26 years, 5,013 cfs (3,629,000 acre-ft per year).

Extremes.--Maximum discharge during year, 27,500 cfs June 16 (gage height, 8.19 ft); minimum daily, 1,200 cfs Dec. 21.
1929-55: Maximum discharge, 52,800 cfs May 23, 1948 (gage height, 12.08 ft); minimum, 388 cfs Jan. 18, 1933 (gage height, 0.58 ft, backwater from ice).

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Some diurnal fluctuation at low flow caused by powerplant at Bonner. Diversions for irrigation of about 235,000 acres above station.

Revisions (water years).--WSP 1042: 1931. WSP 1246: Drainage area. WSP 1316: 1932(M) 1935(M), 1946(M).

Rating table, water year 1954-55, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.5	1,160	4.0	8,750
1.0	1,810	6.0	16,700
2.0	3,510	8.5	29,200
3.0	5,760		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,870	2,690	2,000	2,380	1,950	1,800	2,810	3,840	13,800	17,900	4,900	1,750
2	2,900	2,630	2,000	2,300	1,900	1,840	3,020	4,760	12,800	16,400	4,620	1,740
3	2,850	2,630	2,070	2,100	1,800	1,840	2,900	5,550	12,100	14,500	4,310	1,670
4	2,890	2,620	2,550	1,730	1,750	1,740	2,600	5,710	12,400	13,700	4,040	1,680
5	2,870	2,600	2,100	1,360	1,800	1,420	2,430	5,710	12,800	14,000	3,720	1,670
6	2,830	2,600	2,500	1,510	1,850	1,460	2,440	6,260	*13,600	13,900	3,590	1,640
7	2,800	2,580	2,410	1,770	1,800	1,800	2,530	7,200	15,600	14,900	3,450	1,630
8	2,890	2,580	2,450	1,950	1,950	1,980	2,800	7,750	19,000	15,400	3,340	1,620
9	2,800	2,580	2,450	1,960	2,100	2,070	3,430	8,200	21,400	13,900	3,210	1,640
10	2,630	2,560	2,200	1,980	1,850	2,350	4,200	8,170	22,000	14,500	3,020	1,640
11	2,720	2,580	2,300	1,980	1,550	2,380	4,600	8,200	22,800	15,900	2,890	1,680
12	2,810	2,580	2,100	2,000	1,750	2,270	4,100	8,860	24,700	16,900	2,800	1,680
13	2,830	2,580	1,900	2,080	1,850	2,100	3,760	10,700	26,400	17,700	2,710	1,680
14	2,800	2,600	*2,390	2,100	2,000	2,060	3,640	12,700	27,200	16,400	2,720	1,730
15	2,760	2,580	2,360	1,960	1,950	2,000	3,600	12,600	*27,300	15,000	2,780	1,770
16	2,720	2,600	2,280	1,950	1,900	1,920	3,340	11,300	27,300	13,700	2,500	1,880
17	2,720	2,620	2,100	1,940	1,950	1,920	3,190	10,400	26,200	12,800	2,410	1,960
18	2,740	2,620	1,700	1,780	1,850	1,950	3,190	9,700	23,200	*12,400	2,310	1,980
19	2,740	2,560	1,550	1,640	1,800	1,960	3,420	9,560	20,800	11,700	2,280	2,040
20	2,740	2,550	b1,400	1,810	1,750	1,800	3,510	11,100	20,300	10,400	2,200	2,060
21	2,720	2,500	b1,200	1,910	1,850	1,650	3,290	15,900	20,800	9,280	2,190	2,160
22	2,720	*2,480	b1,500	1,920	1,850	1,750	3,290	21,500	21,600	8,540	*2,160	2,390
23	2,740	2,460	b1,800	1,940	1,750	1,800	3,450	21,200	22,200	7,850	1,960	2,550
24	2,890	2,500	2,240	*2,000	*1,640	1,550	3,550	18,300	23,600	7,500	1,940	2,630
25	2,920	2,510	2,270	1,950	1,770	1,300	*3,530	16,200	23,600	7,560	1,780	2,670
26	*2,870	2,510	2,130	1,850	1,770	1,400	3,400	14,600	19,600	7,350	1,740	*2,670
27	2,810	2,560	1,920	1,800	1,600	1,500	3,420	14,200	17,000	7,110	1,870	2,740
28	2,760	2,550	1,660	1,800	1,680	1,700	3,360	13,200	15,900	6,460	1,840	2,680
29	2,760	2,530	1,740	1,850	-	*2,010	3,320	12,200	16,200	5,970	1,850	2,690
30	2,720	2,390	2,000	1,900	------	2,250	3,420	12,600	19,100	5,630	1,800	2,740
31	2,710	------	2,250	1,950	------	2,710	------	14,200	------	5,220	1,800	------
Total	86,530	76,930	63,520	59,150	51,010	58,280	99,540	342,370	601,300	370,470	84,730	61,060
Mean	2,791	2,564	2,049	1,908	1,822	1,880	3,318	11,040	20,040	11,950	2,733	2,035
Ac-ft	171,600	152,600	126,000	117,300	101,200	115,600	197,400	679,100	1,193,000	734,800	168,100	121,100

Calendar year 1954: Max 33,300 Min 1,200 Mean 5,820 Ac-ft 4,214,000
Water year 1954-55: Max 27,300 Min 1,200 Mean 5,356 Ac-ft 3,878,000

Peak discharge (base, 12,000 cfs).--May 14 (1:30 p.m.) 13,900 cfs (5.38 ft); May 22 (3 p.m.) 23,400 cfs (7.40 ft); June 16 (3 p.m.) 27,500 cfs (8.19 ft); July 13 (7 to 10 p.m.) 17,900 cfs (6.27 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Dec. 8-13, Jan. 25 to Feb. 23, Mar. 20-28; discharge estimated on basis of records for Clark Fork above Missoula.

Clark Fork at St. Regis, Mont.

Location.--Lat 47°18'05", long 115°05'15", in center of SW¼ sec. 19, T. 18 N., R. 27 W., on left bank at St. Regis, half a mile downstream from St. Regis River.

Drainage area.--10,709 sq mi.

Records available.--October 1910 to September 1955. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Altitude of gage is 2,600 ft (by barometer). Prior to Nov. 29, 1933, staff gage at same site and datum.

Average discharge.--45 years, 7,291 cfs (5,278,000 acre-ft per year).

Extremes.--Maximum discharge during year, 36,400 cfs June 14 (gage height, 14.73 ft); minimum, 1,830 cfs Mar. 5 (gage height, 4.33 ft).
1910-55: Maximum discharge observed, 68,900 cfs May 24, 1948 (gage height, 19.96 ft); minimum discharge, 1,000 cfs Dec. 17, 1940 (gage height, 3.36 ft), but may have been less during period of ice effect Feb. 19-22, 1929.

Remarks.--Records good. Some diurnal fluctuation at low flow caused by powerplant at Bonner. Diversions for irrigation of about 244,000 acres above station.

Revisions (water years).--WSP 1246: Drainage area. WSP 1316: 1916-17, 1920, 1929-31(M), 1933(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 1 to Mar. 19, Sept. 21-30)

4.5	2,010	9.0	12,200
5.0	2,670	12.0	23,500
7.0	6,630	15.0	37,700

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,310	3,500	3,210	3,010	2,490	2,310	3,260	5,370	19,800	22,700	6,970	2,790
2	3,380	*3,430	2,930	3,060	2,540	2,400	3,520	6,410	18,700	20,900	6,630	2,740
3	3,410	3,380	3,090	2,950	2,520	2,430	3,570	7,800	18,100	19,200	6,250	2,720
4	3,400	3,380	3,280	2,730	2,460	2,400	3,410	8,580	17,900	17,700	5,930	2,660
5	3,400	3,360	3,380	2,350	2,400	2,180	3,140	8,930	19,100	17,300	5,570	2,610
6	3,380	3,330	3,330	2,200	2,390	2,160	3,140	9,700	20,200	17,500	5,260	*2,600
7	3,340	3,340	3,460	2,250	2,450	2,210	3,330	10,900	22,800	18,100	5,040	2,570
8	3,330	3,310	3,410	2,420	2,700	*2,380	3,680	12,000	26,100	19,000	4,850	2,540
9	3,400	3,340	3,400	2,520	2,960	2,590	4,220	12,500	29,200	18,500	4,680	2,540
10	3,330	3,360	3,290	2,600	3,030	2,670	5,150	*12,700	30,600	17,500	4,480	2,540
11	3,310	3,340	3,160	2,570	2,600	2,950	*6,110	12,700	31,700	18,400	4,320	2,560
12	3,460	3,360	3,080	2,560	2,430	2,930	5,980	13,600	33,400	19,400	4,120	2,570
13	3,520	3,380	2,980	2,600	2,320	2,820	5,460	14,900	35,200	20,300	4,010	2,570
14	3,480	3,380	2,820	2,660	2,530	2,680	5,020	16,800	35,900	20,100	3,950	2,590
15	3,430	3,400	3,160	2,610	2,600	2,610	4,870	17,600	*35,300	18,800	3,880	2,670
16	3,410	3,480	3,210	2,560	2,600	2,540	4,620	16,300	34,500	17,500	3,940	2,740
17	3,410	3,520	3,060	2,530	2,600	2,460	4,380	14,900	33,700	16,400	3,700	2,870
18	3,430	3,550	2,760	2,390	2,560	2,460	4,420	14,200	31,500	15,500	3,590	2,920
19	3,460	3,610	2,430	2,430	2,450	2,490	4,480	14,100	28,100	14,900	3,480	2,920
20	3,500	3,570	2,360	*2,270	2,320	2,450	4,640	16,100	26,500	13,900	3,410	2,950
21	3,530	3,520	2,350	2,400	2,220	2,390	4,700	22,200	26,500	12,500	3,340	3,000
22	3,840	3,480	2,350	2,460	2,320	2,340	4,660	28,500	27,300	11,500	3,290	3,090
23	3,800	3,460	2,630	2,500	2,430	2,380	4,870	30,900	27,900	10,700	3,260	3,290
24	3,790	3,450	2,820	2,500	2,400	2,450	5,080	27,100	29,200	10,000	3,090	3,400
25	3,860	3,520	2,960	2,540	2,310	2,220	5,060	23,600	29,700	*9,930	3,010	3,480
26	3,900	3,660	2,980	2,560	2,380	2,030	5,020	21,500	27,200	9,700	2,900	3,500
27	*3,840	3,700	2,840	2,590	2,380	2,030	4,870	20,300	23,300	9,420	2,840	3,520
28	3,750	3,680	2,560	2,570	2,260	2,140	4,850	19,300	21,300	8,950	2,900	3,570
29	3,660	*3,640	2,530	2,500	-	2,300	4,720	18,200	20,200	8,290	2,880	3,520
30	3,620	3,530	2,540	2,430	------	2,520	4,750	18,300	21,600	7,800	2,850	3,550
31	3,550	------	2,800	2,450	------	2,780	------	19,600	------	7,420	2,800	------
Total	109,230	103,960	91,140	78,770	69,650	75,700	134,980	495,590	802,500	469,810	127,220	87,590
Mean	3,524	3,465	2,940	2,541	2,488	2,442	4,499	15,990	26,750	15,160	4,104	2,920
Ac-ft	216,700	206,200	180,800	156,200	138,100	150,100	267,700	983,000	1,592,000	931,900	252,300	173,700

Calendar year 1954: Max 48,500 Min 1,960 Mean 8,400 Ac-ft 6,081,000
Water year 1954-55: Max 35,900 Min 2,030 Mean 7,250 Ac-ft 5,249,000

* Discharge measurement made on this day.

Flathead River at Flathead, British Columbia

(International gaging station)

Location.--Lat 49°00', long 114°29', on left bank at highway bridge, 0.2 mile north of international boundary, 0.2 mile northwest of Flathead, British Columbia, and 7 miles northwest of Trail Creek, Mont.

Drainage area.--450 sq mi, approximately.

Records available.--March 1929 to September 1955 (no winter records prior to 1952). Prior to October 1934, published as "near Trail Creek, Mont."

Gage.--Water-stage recorder. Altitude of gage is 3,980 ft (from topographic map). Prior to Sept. 1, 1949, staff gage at same site and datum.

Extremes.--Maximum discharge during year, 8,260 cfs June 12 (gage height, 5.58 ft); minimum daily, 116 cfs Feb. 11.
1929-55: Maximum discharge, 14,600 cfs May 23, 1948 (gage height, 9.1 ft, from floodmark), from rating curve extended above 8,000 cfs; minimum observed, 65 cfs Apr. 9, 1929, but may have been less during periods of no record in winter.

Remarks.--Records good except those for period of ice effect, which are poor. No regulation or diversion above station.

Cooperation.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

Revisions (water years).--WSP 1092: 1933 (maximum gage height only).

Rating tables, water year 1954-55, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 31		Feb. 1 to Sept. 30			
0.5	140	0.5	165	2.5	1,460
.7	170	.7	190	3.0	2,080
1.0	255	1.0	290	3.5	2,820
1.3	395	1.3	450	4.0	3,750
1.6	590	1.6	645	5.0	6,450
2.0	920	2.0	950	6.0	9,600

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	346	362	362	253	185	131	*170	375	2,910	1,940	659	282
2	340	351	331	245	180	133	170	540	2,860	1,940	624	274
3	336	346	351	220	172	135	167	620	*3,500	1,800	603	270
4	326	*331	351	200	*130	133	169	752	4,190	1,880	582	266
5	322	326	340	202	138	120	171	*926	4,890	2,050	556	262
6	318	346	336	200	150	120	171	1,130	5,670	2,110	536	250
7	318	395	*336	*200	167	150	179	1,310	5,990	2,000	510	243
8	318	395	322	200	200	167	193	1,530	6,160	1,890	492	229
9	318	373	304	200	190	190	210	1,500	5,670	1,780	480	229
10	322	362	313	200	174	180	248	1,470	5,870	1,740	474	222
11	356	351	291	200	116	175	300	1,680	6,570	1,800	468	218
12	378	346	283	200	126	173	295	2,300	7,570	1,690	450	218
13	373	340	340	200	140	170	290	2,660	7,720	1,640	432	222
14	362	336	336	200	160	170	270	2,260	7,500	1,560	426	229
15	351	346	308	200	177	170	262	1,860	5,810	1,450	420	236
16	351	400	267	200	180	170	258	1,620	5,050	1,360	402	243
17	356	412	227	205	170	171	255	1,660	4,450	1,290	390	250
18	356	400	210	205	129	172	264	2,280	4,190	1,230	375	240
19	362	400	205	198	140	172	271	3,260	4,040	1,150	365	236
20	368	412	200	188	148	160	270	5,160	3,820	1,060	355	246
21	390	395	230	175	150	170	294	5,780	3,770	*970	345	250
22	520	378	250	148	150	170	340	4,760	4,220	918	330	246
23	611	378	250	162	128	156	410	3,520	5,160	782	*340	240
24	569	378	250	185	140	150	443	3,140	*4,680	830	335	236
25	506	378	250	198	120	140	400	2,820	4,240	830	335	232
26	464	464	245	200	120	152	400	2,890	3,500	782	335	232
27	444	450	230	200	129	160	430	2,790	2,930	730	325	232
28	434	406	195	190	130	169	420	2,640	2,620	722	315	250
29	412	400	225	185	-	170	405	3,050	2,400	701	305	254
30	395	368	245	183	------	170	385	3,580	2,140	722	295	254
31	378	-----	255	183	-----	170	-----	3,620	------	694	286	------
Total	12,000	11,325	8,638	6,125	4,239	4,939	8,510	73,483	140,090	42,041	13,145	7,291
Mean	387	378	279	198	151	159	284	2,370	4,670	1,360	424	243
Cfsm	0.86	0.84	0.62	0.44	0.34	0.35	0.63	5.27	10.38	3.11	0.94	0.54
In.	0.99	0.94	0.71	0.51	0.35	0.40	0.70	6.08	11.58	3.59	1.08	0.60
Ac-ft	23,800	22,460	17,130	12,150	8,410	9,800	16,880	145,800	277,900	83,390	26,070	14,460

Calendar year 1954: Max 11,200 Min 100 Mean 1,269 Cfsm 2.82 In. 38.28 Ac-ft 918,700
Water year 1954-55: Max 7,720 Min 116 Mean 909 Cfsm 2.02 In. 27.53 Ac-ft 658,200

* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 18 to May 3.

Flathead River near Columbia Falls, Mont.

Location.--Lat 48°28'20", long 114°05'20", in NE¼NE¼ sec. 12, T. 31 N., R. 20 W., on right bank 1 mile upstream from Middle Fork and 8 miles northeast of Columbia Falls.

Drainage area.--1,553 sq mi.

Records available.--September 1910 to September 1917, April 1929 to September 1955. Published as North Fork Flathead River near Columbia Falls September 1910 to September 1914.

Gage.--Water-stage recorder. Datum of gage is 3,109.70 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation). September 1910 to September 1917, staff gage at site 1,000 ft downstream at different datum.

Average discharge.--24 years (1910-12, 1913-15, 1935-55), 2,836 cfs (2,053,000 acre-ft per year).

Extremes.--Maximum discharge during year, 18,700 cfs June 14 (gage height, 9.86 ft); minimum daily, 350 cfs Feb. 26.
1910-17, 1929-55: Maximum discharge, 31,500 cfs May 21, 1954 (gage height, 12.25 ft); minimum, 198 cfs Jan. 8, 1953 (gage height, 0.86 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. A few small diversions from tributaries for irrigation of hay meadows above station. No regulation.

Revisions (water years).--WSP 1216: Drainage area. WSP 1246: 1911, 1912(M), 1915-17(M), 1929(M), 1938-39(M), 1946(M).

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 13 to Aug. 5)

1.2	330	4.0	2,720
1.5	475	6.0	6,160
2.0	775	8.0	11,800
3.0	1,560	10.0	19,600

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,470	1,650	1,280	1,000	716	b450	575	1,400	8,140	7,320	2,900	1,120
2	1,430	1,570	1,200	970	710	b475	600	1,780	7,370	7,170	2,770	1,080
3	1,420	1,480	1,300	900	698	b500	625	3,000	7,970	6,660	2,670	1,070
4	1,380	1,430	1,320	800	614	b500	625	2,950	9,310	6,090	2,580	1,060
5	1,350	1,380	1,350	780	620	525	*596	3,580	10,700	6,450	2,470	1,040
6	1,310	1,370	1,420	780	650	b550	650	3,850	12,500	7,090	2,350	1,030
7	1,300	1,400	1,380	800	680	b600	698	4,280	13,900	7,610	2,260	1,020
8	*1,280	1,380	1,310	800	808	b650	768	5,100	14,900	7,630	2,160	1,020
9	1,440	*1,370	1,280	780	756	b700	834	4,900	*14,600	7,190	2,080	*1,000
10	1,510	1,440	*1,200	750	578	*b670	980	4,880	14,600	6,880	2,020	1,000
11	1,620	1,400	b1,050	780	b450	b650	1,200	4,880	15,600	6,910	1,970	988
12	1,650	1,380	b900	770	b500	b650	1,180	*5,390	17,200	7,110	1,880	966
13	1,700	1,390	b1,050	*b780	b550	b625	1,150	6,690	18,300	6,860	1,820	938
14	1,680	1,410	1,190	b780	*b640	b625	1,080	6,400	18,600	6,640	1,770	924
15	1,550	1,450	1,160	b750	b700	b625	1,020	5,540	17,100	6,420	1,710	959
16	1,450	1,550	1,080	b780	730	b625	988	4,980	*15,200	6,140	1,660	988
17	1,450	1,700	903	b800	704	b625	973	4,780	13,700	5,900	1,590	1,010
18	1,450	1,750	896	b780	b500	b625	995	5,260	12,700	5,720	1,550	966
19	1,500	1,750	b850	b750	520	626	1,010	6,590	12,000	5,430	1,510	931
20	1,580	1,700	b800	b750	550	566	988	9,740	11,700	5,040	1,460	973
21	1,650	1,650	b900	b700	550	602	1,040	13,200	11,600	4,640	1,440	1,030
22	1,800	1,600	b1,000	b550	550	602	1,350	13,300	12,700	*4,360	1,420	988
23	2,600	1,550	b1,000	650	450	554	1,700	11,200	15,000	4,040	1,390	945
24	2,400	1,500	988	730	b475	453	1,750	9,520	16,000	3,900	1,360	910
25	2,300	1,520	995	775	b425	475	1,600	8,590	15,200	3,850	1,330	889
26	2,100	1,550	952	788	b350	500	1,650	8,050	13,300	3,840	1,310	875
27	2,000	1,600	882	775	b375	500	1,800	7,940	11,400	3,590	1,290	868
28	1,900	1,570	782	736	425	500	1,650	7,270	10,100	3,380	1,230	903
29	1,800	1,420	850	723	-	550	1,550	7,240	9,130	3,200	1,200	995
30	1,750	1,380	950	723	-----	575	1,500	8,190	8,190	3,110	1,180	1,020
31	1,700	-----	1,000	716	-----	575	-----	9,100	------	3,040	1,150	-----
Total	51,520	45,250	33,218	23,946	16,274	17,748	33,125	199,570	388,710	173,210	55,480	29,506
Mean	1,662	1,508	1,072	772	581	573	1,104	6,438	12,960	5,587	1,790	984
Cfsm	1.07	0.971	0.690	0.497	0.374	0.369	0.711	4.15	8.35	3.60	1.15	0.634
In.	1.23	1.08	0.80	0.57	0.39	0.43	0.79	4.78	9.31	4.15	1.33	0.71
Ac-ft	102,200	89,750	65,890	47,500	32,280	35,200	65,700	395,800	771,000	343,600	110,000	58,520

Calendar year 1954: Max 30,800 Min 350 Mean 4,304 Cfsm 2.77 In. 37.60 Ac-ft 3,116,000
Water year 1954-55: Max 18,600 Min 350 Mean 2,925 Cfsm 1.88 In. 25.57 Ac-ft 2,117,000

Peak discharge (base, 11,000 cfs).--May 21 (9:30 p.m.) 13,900 cfs (8.63 ft); June 14 (3 p.m.) 18,700 cfs (9.86 ft); June 24 (4:30 a.m.) 16,300 cfs (9.25 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Oct. 9 to Nov. 8, Nov. 10 to Dec. 9, Dec. 29 to Jan. 12, Feb. 19-23, 28, Mar. 5, 25-31, Apr. 1-4, 11-14, Apr. 22 to May 11; discharge estimated on basis of records for other Flathead River stations.

Middle Fork Flathead River near West Glacier, Mont.

Location.--Lat 48°29'50", long 114°00'30", in SW¼NE¼ sec. 34, T. 32 N., R. 19 W., on left bank three-quarters of a mile downstream from McDonald Creek, 1¼ miles west of West Glacier (formerly Belton), and 3½ miles upstream from mouth.

Drainage area.--1,128 sq mi.

Records available.--October 1939 to September 1955. Prior to October 1947, published as "near Belton."

Gage.--Water-stage recorder. Altitude of gage is 3,130 ft (from river-profile map). Prior to Nov. 22, 1950, staff gage at same site and datum.

Average discharge.--16 years, 2,806 cfs (2,031,000 acre-ft per year).

Extremes.--Maximum discharge during year, 17,500 cfs June 14 (gage height, 8.19 ft); minimum, 214 cfs Feb. 26 (gage height, 0.81 ft).
1939-55: Maximum discharge, 34,500 cfs May 20, 1954 (gage height, 13.01 ft); minimum, less than 173 cfs Nov. 27, 1952 (stage below intake pipe).

Remarks.--Records good.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

0.8	205	3.0	2,440
1.1	360	4.0	4,400
1.5	630	6.0	10,200
2.0	1,100	8.5	18,600

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	970	1,450	1,480	728	466	354	433	1,820	8,460	7,530	2,380	863
2	940	1,380	1,330	702	459	372	452	2,780	7,800	6,980	2,350	*845
3	920	1,310	1,440	654	452	384	452	3,150	8,760	6,270	2,260	827
4	890	1,250	1,410	646	440	384	440	3,110	9,930	5,850	2,120	818
5	863	1,190	1,380	570	440	390	*426	3,200	12,000	5,880	2,020	818
6	836	1,170	1,310	570	453	390	452	3,950	14,400	6,050	1,920	800
7	*818	1,190	1,280	608	452	396	520	4,600	14,900	6,470	1,850	800
8	827	1,160	1,230	622	548	402	592	5,220	*15,200	6,950	1,790	*791
9	854	1,120	1,160	578	513	420	755	5,040	14,300	6,380	1,740	782
10	863	1,170	1,080	555	426	*440	1,090	4,860	14,200	6,690	1,670	755
11	920	1,190	1,070	578	390	426	1,330	4,910	15,300	6,920	1,610	728
12	990	*1,170	980	562	396	420	1,310	6,350	16,800	7,260	1,540	702
13	1,010	1,200	990	578	472	414	1,260	7,890	16,900	6,980	1,490	678
14	980	1,230	1,020	578	*499	402	1,170	7,240	16,800	*6,770	1,440	662
15	950	1,250	*1,010	562	485	402	1,100	6,190	15,200	6,490	1,380	670
16	940	1,380	970	555	466	396	1,040	5,390	13,900	6,100	1,330	702
17	1,000	1,530	940	*555	446	390	1,010	4,830	12,300	6,050	1,280	702
18	1,060	1,570	890	513	366	390	1,030	*5,120	11,700	5,960	1,260	662
19	1,100	1,570	818	499	384	366	1,060	6,050	11,200	5,470	1,220	630
20	1,160	1,550	694	527	408	360	1,030	9,740	11,000	4,940	1,200	670
21	1,260	1,530	773	527	420	372	1,040	14,800	11,200	4,400	1,170	719
22	2,630	1,480	863	513	414	366	1,210	15,200	12,600	4,040	1,130	662
23	3,440	1,480	836	513	354	348	1,400	12,000	14,400	3,780	1,100	630
24	2,900	1,520	791	492	378	324	1,460	9,390	14,000	3,630	1,070	600
25	2,540	1,570	791	499	290	354	1,400	8,010	14,200	3,670	1,030	578
26	2,290	1,720	764	492	232	378	1,440	8,160	12,200	3,500	1,000	562
27	2,080	1,880	719	492	280	396	1,500	8,160	10,400	3,150	960	555
28	1,910	1,810	662	485	324	390	1,440	7,410	9,130	2,900	930	578
29	1,780	1,720	702	472	-	402	1,400	7,210	8,700	2,700	910	630
30	1,640	1,640	694	466	------	433	1,430	8,700	8,550	2,600	890	670
31	1,540	-----	755	466	-----	420	-----	9,610	------	2,490	872	------
Total	42,901	42,380	30,832	17,157	11,633	12,081	30,672	210,090	376,430	164,850	44,912	21,089
Mean	1,384	1,413	995	553	415	390	1,022	6,777	12,550	5,318	1,449	703
Cfsm	1.23	1.25	0.882	0.490	0.368	0.346	0.906	6.01	1.11	4.71	1.28	0.623
In.	1.41	1.40	1.02	0.57	0.38	0.40	1.01	6.93	12.41	5.44	1.48	0.70
Ac-ft	85,090	84,060	61,150	34,030	23,070	23,960	60,840	416,700	746,600	327,000	89,080	41,830

Calendar year 1954: Max 32,000 Min 270 Mean 3,826 Cfsm 3.39 In. 46.11 Ac-ft 2,770,000
Water year 1954-55: Max 16,900 Min 232 Mean 2,753 Cfsm 2.44 In. 33.15 Ac-ft 1,993,000

Peak discharge (base, 8,700 cfs).--May 21 (6 p.m.)15,900 cfs (7.72 ft); June 14 (8 a.m.) 17,500 cfs (8.19 ft); June 25 (2 p.m.) 15,000 cfs (7.45 ft).
* Discharge measurement made on this day.

South Fork Flathead River at Spotted Bear ranger station, near Hungry Horse, Mont.

Location.--Lat 47°55'20", long 113°31'25", in SE¼SW¼ sec. 17, T. 25 N., R. 15 W., on left bank 600 ft south of Spotted Bear ranger station, 1,000 ft upstream from Spotted Bear River, and 40 miles southeast of Hungry Horse.

Drainage area.--958 sq mi.

Records available.--August 1948 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 3,670 ft (from river-profile map).

Average discharge.--7 years, 1,975 cfs (1,430,000 acre-ft per year).

Extremes.--Maximum discharge during year, 13,800 cfs June 14 (gage height, 9.86 ft); minimum daily, 170 cfs Feb. 26.
1948-55: Maximum discharge, 21,000 cfs May 20, 1954 (gage height, 12.75 ft); minimum, less than 121 cfs Dec. 26, 1952 (stage below intake pipes).
Flood of May-June 1948 reached a stage of 14.00 ft about May 22 (discharge, 22,000 cfs, by slope-area determination of peak flow).

Remarks.--Records good except those for periods of ice effect, which are poor.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 19 to Sept. 8)

0.4	159	4.0	2,700
.6	209	6.0	5,770
1.0	339	8.0	9,680
2.0	800	10.0	14,100
3.0	1,550		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	576	745	490	350	265	215	270	1,180	*5,010	5,320	1,250	430
2	558	710	480	335	260	225	275	1,770	4,740	4,440	*1,210	417
3	544	680	520	310	250	230	275	1,950	5,520	3,780	1,170	413
4	530	645	540	280	240	235	280	1,850	6,170	3,430	1,110	404
5	512	620	565	270	240	235	328	1,980	6,630	3,270	1,050	400
6	504	605	*575	280	250	235	332	2,560	7,660	*3,240	1,010	392
7	499	591	565	290	260	240	375	2,840	9,390	3,570	957	392
8	504	576	520	295	270	240	460	3,300	10,800	3,660	921	383
9	499	558	480	290	250	250	630	3,030	*10,500	3,510	885	379
10	490	572	430	280	225	260	800	3,010	10,500	3,800	861	383
11	*526	558	380	285	210	255	765	3,120	11,600	4,240	828	387
12	581	558	360	280	210	250	720	4,130	13,000	4,420	790	375
13	576	586	370	285	240	245	700	4,980	*13,300	4,370	765	367
14	548	581	380	285	260	240	670	4,530	13,200	4,150	735	359
15	526	*576	390	285	255	240	630	3,800	11,900	3,890	710	367
16	535	595	350	280	240	235	586	3,270	10,400	3,650	700	367
17	576	625	320	275	230	230	567	2,930	8,900	3,550	675	383
18	625	615	290	265	225	225	591	2,870	8,020	3,510	655	371
19	645	605	280	255	235	220	630	3,680	7,940	3,160	625	*367
20	680	605	275	265	240	220	615	6,400	8,220	2,840	600	367
21	731	586	320	275	245	220	625	11,400	8,900	2,570	586	371
22	1,400	581	370	275	245	215	720	11,600	10,000	2,370	562	367
23	1,580	605	360	275	240	215	811	8,260	10,900	2,210	548	363
24	1,390	625	350	275	230	210	811	6,170	11,600	2,090	530	351
25	1,220	650	340	270	210	220	795	5,340	9,130	2,040	517	347
26	1,100	730	335	270	170	230	822	5,470	7,070	2,040	499	339
27	1,010	755	325	270	*180	245	822	5,110	6,240	1,820	482	332
28	945	735	330	*270	200	255	785	4,500	5,680	1,650	468	332
29	891	715	335	270	-	260	*770	4,450	6,350	1,520	451	351
30	833	645	350	270	------	265	828	5,490	6,580	1,430	*442	355
31	790	-----	355	270	-----	*265	-----	5,570	------	1,340	438	------
Total	22,924	18,833	12,330	8,730	6,575	7,325	18,288	136,540	265,850	96,880	23,030	11,211
Mean	739	628	398	282	235	236	610	4,405	8,862	3,125	743	374
Cfsm	0.771	0.656	0.415	0.294	0.245	0.246	0.637	4.60	9.25	3.26	0.776	0.390
In.	0.89	0.73	0.48	0.34	0.26	0.28	0.71	5.30	10.32	3.76	0.89	0.44
Ac-ft	45,470	37,350	24,460	17,320	13,040	14,530	36,270	270,800	527,300	192,200	45,680	22,240

Calendar year 1954: Max 20,100 Min 150 Mean 2,399 Cfsm 2.50 In. 33.99 Ac-ft 1,737,000
Water year 1954-55: Max 13,300 Min 170 Mean 1,722 Cfsm 1.80 In. 24.40 Ac-ft 1,247,000

Peak discharge (base, 7,500 cfs).--May 21 (1:30 a.m.) 12,600 cfs (9.36 ft); June 14 (6 a.m.) 13,800 cfs (9.86 ft); June 24 (11 a.m.) 12,100 cfs (9.12 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 2 to Apr. 4, Apr. 9, 10.

Spotted Bear River near Hungry Horse, Mont.

Location.--Lat 47°55'40", long 113°31'10", near center of sec. 17, T. 25 N., R. 15 W., on left bank a third of a mile upstream from mouth and 40 miles southeast of Hungry Horse.

Drainage area.--184 sq mi.

Records available.--October 1948 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 3,690 ft (from river-profile map).

Average discharge.--7 years, 377 cfs (272,900 acre-ft per year).

Extremes.--Maximum discharge during year, 3,400 cfs May 21 (gage height, 5.72 ft); minimum, 27 cfs Feb. 11 (gage height, 0.84 ft), but may have been less during periods of ice effect.

1948-55: Maximum discharge, 5,480 cfs May 20, 1954 (gage height, 7.40 ft); minimum, 20 cfs Jan. 5, 1953 (gage height, 0.67 ft), but may have been less during periods of ice effect.

Flood of May-June 1948 reached a stage of 7.24 ft about May 22 (discharge, 4,010 cfs, by slope-area determination of peak flow).

Remarks.--Records good except those for periods of ice effect, which are poor.

Revisions.--WSP 1216: Drainage area.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 11				June 12 to Sept. 30			
0.9	34	2.5	610	1.0	52	2.5	550
1.1	62	3.0	930	1.3	113	3.0	825
1.4	128	4.0	1,710	1.6	198	4.0	1,560
1.7	225	5.5	3,170	2.0	340	5.5	3,000
2.0	345						

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	83	137	100	70	52	45	45	340	*1,140	936	195	77
2	81	128	85	65	50	50	45	495	1,100	807	*183	75
3	81	125	85	60	47	50	40	495	1,300	711	177	73
4	79	115	90	55	45	55	40	451	1,370	640	171	73
5	77	112	95	50	40	55	39	495	1,500	615	165	73
6	75	110	*95	55	48	55	46	683	1,820	*595	156	71
7	75	110	95	60	52	60	56	761	2,150	640	151	71
8	79	107	90	60	56	60	81	891	2,440	625	145	69
9	81	100	85	60	52	60	128	787	*2,250	600	139	67
10	79	110	80	55	44	65	204	787	2,240	620	134	67
11	*85	102	70	55	35	60	184	813	2,550	789	131	66
12	100	100	70	55	35	55	158	1,160	2,640	753	126	64
13	98	112	75	55	40	55	146	1,290	*2,570	672	123	62
14	92	107	80	60	45	50	128	1,120	2,360	615	118	62
15	89	*102	80	60	45	50	115	924	2,070	555	118	62
16	102	112	75	60	45	50	102	780	1,680	523	116	62
17	128	120	70	55	40	45	102	709	1,490	505	111	64
18	137	115	65	50	35	45	110	722	1,380	478	111	62
19	134	112	60	50	40	40	118	1,050	1,320	432	108	*60
20	140	112	65	55	45	40	110	1,780	1,290	392	104	64
21	155	110	75	60	45	40	120	3,170	1,360	360	102	71
22	392	107	90	60	45	40	146	2,810	1,440	332	102	64
23	358	123	85	60	40	40	164	1,780	1,480	312	97	60
24	264	137	60	60	40	35	161	1,310	1,500	296	95	59
25	242	140	75	60	35	35	155	1,180	1,640	286	95	60
26	214	171	70	60	30	35	164	1,280	1,260	282	92	59
27	197	177	70	55	*35	35	161	1,210	1,040	258	90	59
28	184	161	70	*53	40	40	149	1,060	896	240	88	59
29	171	152	75	48	-	40	*155	1,060	1,060	227	88	62
30	158	131	80	54	------	40	180	1,350	1,110	220	*84	66
31	149	-----	75	54	------	*40	-----	1,330	------	211	80	------
Total	4,399	3,857	2,455	1,769	1,201	1,485	3,552	34,073	49,446	15,527	3,795	1,983
Mean	142	122	79.2	57.1	42.9	47.3	118	1,099	1,648	501	122	65.4
Cfsm	0.772	0.663	0.430	0.310	0.233	0.257	0.641	5.97	8.96	2.72	0.663	0.355
In.	0.89	0.74	0.50	0.36	0.24	0.30	0.72	6.89	9.99	3.14	0.77	0.40
Ac-ft	8,730	7,250	4,870	3,510	2,380	2,910	7,050	67,580	98,070	30,800	7,530	3,890

Calendar year 1954: Max 4,780 Min 25 Mean 464 Cfsm 2.52 In. 34.21 Ac-ft 335,800
Water year 1954-55: Max 3,170 Min 30 Mean 338 Cfsm 1.84 In. 24.94 Ac-ft 244,600

Peak discharge (base, 1,500 cfs).--May 21 (10 a.m.) 3,400 cfs (5.72 ft); June 12 (2:30 a.m) 2,840 cfs (5.35 ft); June 25 (6:30 a.m.) 1,880 cfs (4.35 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 2 to Jan. 27, Feb. 4, 5, Feb. 11 to Apr. 4.

Twin Creek near Hungry Horse, Mont.

Location.--Lat 47°59'10", long 113°33'30", in E½ sec. 25, T. 26 N., R. 16 W., on left bank 300 ft upstream from road bridge, 0.1 mile upstream from mouth, and 36 miles southeast of Hungry Horse.

Drainage area.--47.0 sq mi.

Records available.--August 1948 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 3,610 ft (from river-profile map).

Average discharge.--7 years, 118 cfs (85,430 acre-ft per year).

Extremes.--Maximum discharge during year, 1,260 cfs May 21 (gage height, 7.10 ft); minimum daily, 10 cfs Feb. 26, Sept. 14, 19, 26.
1948-55: Maximum discharge, 2,790 cfs May 19, 1954 (gage height, 8.33 ft), from rating curve extended above 1,000 cfs on basis of slope-area determination at gage height 8.1 ft; minimum, 3.9 cfs Mar. 8, Nov. 26, 1952 (gage height, 1.77 ft), but may have been less during periods of ice effect.
Flood of May-June 1948 reached a stage of 8.1 ft about May 22 (discharge, 2,410 cfs, by slope-area determination of peak flow).

Remarks.--Records fair except those for periods of ice effect and those for period May 1 to June 30, which are poor.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 31, June 1, June 10 to July 1)

1.7	10	4.0	232
1.9	15	5.0	425
2.2	26	6.0	716
2.5	47	7.0	1,190
3.0	93		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	43	59	27	19	14	*17	288	*335	176	42	13
2	17	40	57	26	19	14	17	376	349	166	39	13
3	17	37	54	26	18	13	17	325	432	155	*36	13
4*	17	36	51	25	18	13	18	284	473	153	34	12
5	17	34	48	25	20	14	20	355	543	156	33	12
6	17	34	*46	24	20	15	23	440	614	*155	31	12
7	17	34	44	24	21	16	33	435	690	174	30	12
8	18	32	42	24	22	17	55	450	*677	167	28	12
9	18	30	41	23	20	17	97	357	617	155	27	12
10	18	36	41	22	16	17	159	341	605	152	26	12
11	20	35	41	22	16	17	130	376	657	156	25	11
12	*22	36	36	22	17	17	100	602	661	148	24	11
13	22	55	35	22	19	16	90	605	*605	130	23	11
14	22	53	34	22	21	16	81	448	563	119	22	10
15	22	*53	38	22	20	16	71	335	487	109	22	11
16	30	60	36	22	18	16	67	282	409	98	21	11
17	39	64	33	21	17	16	64	280	357	96	21	12
18	45	63	31	20	16	16	73	331	327	102	20	11
19	45	65	30	20	17	15	81	498	313	88	20	10
20	48	63	28	20	17	14	77	786	300	79	19	*12
21	57	59	28	18	17	14	88	1,110	311	73	18	13
22	180	58	29	18	16	15	121	813	331	69	18	11
23	156	68	30	19	14	15	134	523	335	66	18	11
24	112	68	30	19	13	13	119	402	337	63	17	11
25	90	75	29	19	12	13	114	414	325	67	17	11
26	76	93	28	19	*10	15	122	460	245	62	16	10
27	66	92	27	19	12	16	121	400	208	54	15	11
28	60	82	26	*19	13	17	106	341	176	51	15	11
29	55	76	26	19	-	17	108	355	190	49	15	14
30	49	70	27	19	------	17	*147	440	197	50	14	13
31	46	-----	27	19	-----	17	-----	409	------	47	*14	------
Total	1,435	1,644	1,132	666	478	478	2,470	13,861	12,669	3,385	720	349
Mean	46.3	54.8	36.5	21.5	17.1	15.4	82.3	447	422	109	23.2	11.6
Cfsm	0.985	1.17	0.777	0.457	0.364	0.328	1.75	9.51	8.98	2.32	0.494	0.247
In.	1.14	1.30	0.90	0.53	0.38	0.38	1.95	10.97	10.02	2.68	0.57	0.28
Ac-ft	2,850	3,260	2,250	1,320	948	948	4,900	27,490	25,130	6,710	1,430	692

Calendar year 1954: Max 1,860 Min 7.5 Mean 140 Cfsm 2.98 In. 40.55 Ac-ft 101,600
Water year 1954-55: Max 1,110 Min 10 Mean 108 Cfsm 2.30 In. 31.10 Ac-ft 77,930

Peak discharge (base, 480 cfs).--May 7 (11:30 p.m.) 514 cfs (5.31 ft); May 13 (12:30 a.m.) 696 cfs (5.92 ft); May 21 (4 a.m.) 1,260 cfs (7.10 ft); June 7 (10:30 p.m.) 757 cfs (6.12 ft); June 11 (11 p.m.) 757 cfs (6.30 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 2-8, 10, 13, 14, 18-31, Jan. 3-30, Feb. 10-13, 17-28, Mar. 1-9, 20-31, Apr. 1-3.

Lower Twin Creek near Hungry Horse, Mont.

Location.--Lat 47°59'40", long 113°33'20", in SE¼ sec. 24, T. 26 N., R. 16 W., on left bank half a mile upstream from mouth and 35 miles southeast of Hungry Horse.

Drainage area.--22.4 sq mi.

Records available.--August 1948 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 3,630 ft (from river-profile map).

Average discharge.--7 years, 68.0 cfs (49,230 acre-ft per year).

Extremes.--Maximum discharge during year, 645 cfs May 21 (gage height, 3.90 ft); minimum, 7.2 cfs Sept. 27 (gage height, 1.37 ft), but may have been less during period of ice effect.

1948-55: Maximum discharge, 868 cfs May 20, 1954 (gage height, 4.01 ft), from rating curve extended above 500 cfs on basis of slope-area determination at gage height 4.35 ft (inside gage equivalent, from gage-relation curve); minimum, 0.8 cfs Jan. 28, 1952 (gage height, 0.79 ft, caused by temporary storage behind ice jam upstream).

Flood of May-June 1948 reached a stage of 5.25 ft about May 22 (discharge, 1,200 cfs, by slope-area determination of peak flow).

Remarks.--Records fair except those for period Dec. 1 to May 21, which are poor.

Revisions.--WSP 1216: Drainage area.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 4 to May 2, May 13-18)

Oct. 1 to June 11				June 12 to Sept. 30			
1.5	5.0	2.5	155	1.3	3.0	2.5	179
1.6	12	3.0	302	1.5	16	3.0	312
1.8	31	3.5	470	1.7	36	3.5	470
2.1	72	4.0	700	2.0	77		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	37	44	18	12	12	*10	155	*201	123	35	11
2	11	33	43	18	12	11	10	203	206	111	33	10
3	11	31	41	17	11	10	11	187	261	107	*32	10
4	9.9	29	40	16	11	10	12	155	299	107	30	*9.7
5	9.2	27	39	15	11	9	14	168	350	113	29	9.7
6	8.5	26	*37	15	11	9	19	203	401	*113	28	9.7
7	8.5	25	33	16	12	10	30	203	442	142	27	9.7
8	8.5	23	32	16	13	10	47	218	*401	135	26	9.7
9	8.5	22	30	15	12	10	66	192	370	129	24	9.7
10	8.5	24	29	14	11	10	87	173	357	131	23	9.7
11	11	22	27	14	10	10	80	173	411	131	22	9.7
12	*16	24	26	15	11	10	69	242	456	115	22	9.0
13	15	27	27	16	11	10	64	267	*446	104	21	9.0
14	15	32	27	14	11	9	63	212	383	98	21	9.0
15	16	*36	27	13	11	9	56	184	353	94	20	9.0
16	16	42	26	14	11	9	51	150	306	87	20	9.0
17	18	44	25	14	11	9	47	136	268	77	19	9.0
18	19	46	22	14	10	9	54	158	257	71	18	9.0
19	22	49	20	13	10	9	60	224	257	66	17	9.0
20	35	46	19	13	11	9	56	418	244	61	17	*10
21	60	44	19	12	11	9	63	538	260	58	16	10
22	173	43	20	11	11	8.5	82	460	309	52	15	9.0
23	150	46	20	12	10	8	89	331	335	49	15	8.4
24	109	46	20	13	10	8	70	242	321	49	14	8.4
25	89	51	20	13	11	8	70	242	262	56	14	7.8
26	74	62	20	12	*12	9	80	286	196	52	13	7.8
27	63	64	19	12	12	10	77	245	184	44	13	7.8
28	56	63	18	*12	12	10	69	212	157	42	12	8.4
29	50	60	18	12	-	10	66	206	177	41	12	9.0
30	43	56	18	12	------	10	*80	230	151	38	12	8.4
31	39	------	18	12	------	10	------	218	------	36	*11	------
Total	1,183.6	1,180	824	433	312	294.5	1,652	7,231	9,021	2,632	631	275.6
Mean	38.2	39.3	26.6	14.0	11.1	9.50	55.1	233	301	84.9	20.4	9.19
Cfsm	1.71	1.75	1.19	0.625	0.496	0.424	2.46	10.4	13.4	3.79	0.911	0.410
In.	1.97	1.96	1.37	0.72	0.52	0.49	2.74	12.01	14.98	4.37	1.05	0.46
Ac-ft	2,350	2,340	1,630	859	619	584	3,280	14,340	17,890	5,220	1,250	547

Calendar year 1954: Max 631 Min 5 Mean 77.4 Cfsm 3.46 In. 46.93 Ac-ft 56,040
Water year 1954-55: Max 538 Min 7.8 Mean 70.3 Cfsm 3.14 In. 42.64 Ac-ft 50,910

Peak discharge (base, 300 cfs).--May 21 (10:30 p.m.) 645 cfs (3.90 ft); June 7 (9:30 p.m.) 478 cfs (3.52 ft); June 12 (7:30 p.m.) 502 cfs (3.58 ft); June 24 (1:30 a.m.) 405 cfs (3.30 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 2-4, Dec. 18 to Apr. 3.

Sullivan Creek near Hungry Horse, Mont.

Location.--Lat 48°01'45", long 113°42'10", in W½ sec. 12, T. 26 N., R. 17 W., on left bank a quarter of a mile downstream from Quintonkon Creek, 1 mile upstream from Hungry Horse Reservoir flow line, and 30 miles southeast of Hungry Horse.

Drainage area.--71.3 sq mi.

Records available.--September 1948 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 3,740 ft (from topographic map).

Average discharge.--7 years, 208 cfs (150,600 acre-ft per year).

Extremes.--Maximum discharge during year, 1,540 cfs May 21 (gage height, 4.40 ft); minimum, 23 cfs Feb. 11 (gage height, 1.04 ft), but may have been less during periods of ice effect.
1948-55: Maximum discharge, 2,750 cfs May 19, 1954 (gage height, 5.29 ft); minimum daily, 10 cfs Nov. 26, 1952.
Flood of May-June 1948 reached a discharge of 2,280 cfs about May 22, by slope-area determination of peak flow at site 1,300 ft upstream.

Remarks.--Records good except those for periods of ice effect, which are poor.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.0	22	2.5	320
1.2	35	3.0	550
1.4	53	3.5	835
1.7	95	4.0	1,170
2.0	160	4.5	1,650

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	85	110	52	32	29	*37	258	572	400	97	39
2	49	78	108	50	32	29	39	392	*550	364	*92	38
3	47	73	105	48	32	29	36	374	698	332	89	37
4	45	69	103	46	31	28	36	336	823	316	85	37
5	44	66	97	45	31	26	35	396	906	312	81	35
6	43	72	*92	44	33	28	38	510	978	305	78	34
7	43	71	90	43	34	30	53	520	1,140	*410	76	34
8	44	64	85	42	34	30	90	530	1,120	396	72	33
9	41	60	79	41	33	31	150	465	*1,060	369	72	34
10	41	65	81	40	32	32	221	446	1,090	352	69	32
11	*50	79	75	39	30	32	178	490	1,230	336	66	32
12	53	95	71	39	30	32	153	733	1,270	320	65	31
13	52	108	68	39	30	32	136	823	1,260	282	63	29
14	50	108	69	40	31	31	118	666	*1,160	258	60	30
15	49	112	69	40	34	30	104	540	1,020	234	59	38
16	50	*134	65	40	32	30	92	450	880	218	58	34
17	54	138	61	39	32	30	87	414	745	203	55	33
18	63	138	60	38	31	30	90	441	721	186	54	30
19	64	141	58	36	31	30	97	594	715	176	53	*29
20	71	134	56	35	31	29	90	978	704	163	52	33
21	122	127	57	34	31	30	99	1,480	739	155	51	37
22	360	123	58	33	30	30	153	1,240	805	150	50	32
23	286	123	59	34	30	30	173	874	799	141	50	31
24	221	121	60	35	29	29	158	666	793	141	48	29
25	183	123	61	35	28	28	150	627	605	158	48	29
26	158	136	61	34	26	30	155	660	505	146	46	28
27	141	116	56	33	26	33	148	632	465	127	45	29
28	125	132	52	32	*28	35	132	556	418	121	41	43
29	112	125	53	*31	-	36	129	545	455	114	*43	61
30	101	114	54	31	------	36	*146	660	450	110	41	53
31	93	-----	54	32	-----	36	-----	671	------	104	40	------
Total	2,905	3,150	2,227	1,200	866	951	3,323	18,967	24,676	7,399	1,899	1,044
Mean	93.7	105	71.8	38.7	30.9	30.7	111	612	823	239	61.3	34.8
Cfsm	1.31	1.47	1.01	0.543	0.433	0.431	1.56	8.58	11.5	3.35	0.860	0.488
In.	1.52	1.64	1.16	0.63	0.45	0.50	1.73	9.89	12.87	3.86	0.99	0.54
Ac-ft	5,760	6,250	4,420	2,380	1,720	1,890	6,590	37,620	48,940	14,680	3,770	2,070

Calendar year 1954: Max 2,110 Min 19 Mean 230 Cfsm 3.23 In. 43.71 Ac-ft 166,300
Water year 1954-55: Max 1,480 Min 26 Mean 188 Cfsm 2.64 In. 35.78 Ac-ft 136,100

Peak discharge (base, 700 cfs).--May 12 (9 to 12 p.m.) 894 cfs (3.59 ft); May 21 (8:30 p.m.) 1,540 cfs (4.40 ft); May 31 (8 to 12 p.m.) 710 cfs (3.29 ft); June 11 (8 to 11 p.m.) 1,360 cfs (4.22 ft); June 24 (1:30 a.m.) 946 cfs (3.67 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 2, 3, 13, 14, 19-24, 27-29, Jan. 3 to Mar. 10, Mar. 20-31.

Graves Creek near Hungry Horse, Mont.

Location.--Lat 48°07'30", long 113°49'10", in SE¼ sec. 1, T. 27 N., R. 18 W., on left bank 500 ft upstream from Hungry Horse Reservoir flow line and 22 miles southeast of Hungry Horse.

Drainage area.--27.0 sq mi.

Records available.--August 1948 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 3,600 ft (from topographic map). Prior to Oct. 1, 1951, at site 2½ miles downstream at different datum.

Average discharge.--7 years, 134 cfs (97,010 acre-ft per year).

Extremes.--Maximum discharge during year, 952 cfs June 23 (gage height, 4.49 ft); minimum recorded, 14 cfs Sept. 14 (gage height, 1.93 ft), but may have been less during periods of ice effect.

1948-55: Maximum discharge, 1,520 cfs June 22, 1950 (gage height, 5.70 ft, site and datum then in use); minimum daily, 4.5 cfs Nov. 26, 1952.

Flood of May-June 1948 reached a stage of 5.33 ft about May 22 (discharge, 1,440 cfs, by slope-area determination of peak flow), at former site and datum.

Remarks.--Records good except those for periods of ice effect, which are poor.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.9	12	3.0	176
2.1	25	3.5	370
2.3	42	4.0	650
2.6	84	4.5	980

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	60	64	30	22	24	*17	63	284	334	56	20
2	41	57	61	30	22	21	17	98	*256	320	*52	20
3	40	53	61	28	22	19	17	115	312	280	50	19
4	39	51	56	27	b21	b18	16	122	380	248	48	18
5	38	49	53	b27	b21	b17	16	133	453	248	45	18
6	38	56	50	27	22	b18	17	163	572	264	44	17
7	38	59	*49	25	25	18	18	179	702	400	43	17
8	37	54	46	24	27	18	20	191	748	410	40	17
9	35	52	41	24	b24	18	25	182	*696	366	38	17
10	34	76	42	24	b20	18	39	176	728	348	38	17
11	*37	82	40	23	b18	18	46	176	826	*325	36	16
12	38	96	36	23	b19	18	46	233	884	348	35	16
13	37	115	39	b23	b20	17	44	276	884	325	33	15
14	35	117	38	b23	b20	17	41	256	*845	302	32	14
15	35	*119	38	24	20	17	38	220	748	272	31	20
16	35	148	36	25	20	16	37	188	644	256	31	23
17	35	166	33	25	b20	17	34	168	536	233	29	24
18	36	160	31	b24	b19	17	34	176	542	213	28	20
19	37	150	b30	24	b19	17	35	226	554	188	27	*18
20	36	138	b30	24	b19	b17	34	380	578	160	27	22
21	54	122	b30	24	20	b17	35	572	656	140	26	26
22	138	111	31	23	19	b17	43	530	806	128	25	22
23	145	108	31	23	b19	b16	51	395	904	113	24	20
24	131	100	30	22	b20	b15	52	312	838	104	24	18
25	117	100	30	22	21	b16	50	289	590	111	24	17
26	104	98	30	22	b22	b17	51	320	442	100	24	17
27	94	98	29	21	*b23	b18	52	330	395	88	23	17
28	84	92	28	21	24	b18	49	289	366	82	22	30
29	76	82	28	*20	-	18	46	272	380	76	*22	48
30	69	74	29	21	------	18	*45	312	375	67	22	42
31	66	-----	30	21	-----	17	-----	338	------	61	22	------
Total	1,822	2,843	1,200	744	588	547	1,065	7,680	17,924	6,910	1,021	625
Mean	58.8	94.8	38.7	24.0	21.0	17.6	35.5	248	597	223	32.9	20.8
Cfsm	2.18	3.51	1.43	0.889	0.778	0.652	1.31	9.19	22.1	8.26	1.22	0.770
In.	2.51	3.92	1.65	1.02	0.81	0.75	1.47	10.58	24.69	9.52	1.41	0.86
Ac-ft	3,610	5,640	2,380	1,480	1,170	1,080	2,110	15,230	35,550	13,710	2,030	1,240

Calendar year 1954: Max 1,110 Min 14 Mean 151 Cfsm 5.59 In. 76.04 Ac-ft 109,500
Water year 1954-55: Max 904 Min 14 Mean 118 Cfsm 4.37 In. 59.19 Ac-ft 85,230

Peak discharge (base, 500 cfs).--May 21 (8 to 12 p.m.) 602 cfs (3.90 ft); June 14 (12:30 a.m.) 917 cfs (4.44 ft); June 23 (2 to 4 a.m.) 952 cfs (4.49 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Hungry Horse Reservoir near Hungry Horse, Mont.

Location.--Lat 48°20'30", long 114°00'50", in NE¼NE¼NW¼ sec. 27, T. 30 N., R. 19 W., in block 14 of Hungry Horse Dam, 3 miles southeast of Hungry Horse.
Drainage area.--1,654 sq mi.
Records available.--September 1951 to September 1955.
Gage.--Water-stage recorder equipped with remote indicator in powerhouse. Datum of gage is at mean sea level (levels by Bureau of Reclamation). During construction and prior to May 1, 1953, various types of nonrecording gages were used.
Extremes.--Maximum contents observed during year, 3,461,000 acre-ft July 3, 4 (elevation, 3,561.40 ft); minimum observed, 2,104,000 acre-ft Apr. 29 (elevation, 3,495.22 ft).
1951-55: Maximum contents observed, that of July 3, 4, 1955; minimum contents observed since normal low operating level reached in May 1952, 607,700 acre-ft Jan. 13, 1953 (elevation, 3,362.50 ft).
Remarks.--Reservoir formed by concrete dam; construction of dam began in 1948, completed in 1952. Storage began Sept. 21, 1951. Capacity, 3,428,000 acre-ft between 3,560 ft (controlled spillway elevation) and 3,196 ft. Dead storage, 40,140 acre-ft. Normal operating low level 3,336 ft for on-site power generation (contents, 445,900 acre-ft exclusive of dead storage). Figures given herein represent usable contents above elevation 3,196 ft. Water is used for power production, flood control, and irrigation.
Cooperation.--Daily elevations furnished by Bureau of Reclamation.

Elevation, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	560.53	559.99	560.05	545.46	526.45	515.75	497.94	495.83	524.55	561.10	560.03	559.96
2	560.54	559.99	559.91	544.85	525.87	515.06	497.97	495.90	525.38	561.35	559.92	559.96
3	560.54	559.96	559.81	544.17	525.29	514.37	497.97	496.24	526.35	561.40	559.96	559.98
4	560.50	559.96	559.91	543.50	524.75	513.62	497.65	496.54	527.49	561.40	559.96	560.00
5	560.40	559.96	559.97	542.84	524.36	512.92	497.55	496.92	528.72	561.33	559.90	560.01
6	560.30	560.00	559.93	542.15	524.02	512.55	497.48	497.55	530.20	561.26	559.87	559.98
7	560.20	560.00	559.79	541.45	523.50	511.98	497.48	498.35	531.87	561.20	559.94	559.98
8	560.07	559.97	559.56	540.79	523.15	511.50	497.48	499.17	533.72	561.01	559.86	559.98
9	560.00	559.93	559.27	540.08	522.75	511.05	497.59	499.88	535.48	560.78	559.88	559.98
10	560.00	559.93	558.90	539.40	522.35	510.52	497.82	500.60	537.22	560.46	559.90	560.00
11	560.00	559.94	558.30	538.70	521.94	509.89	497.75	501.33	539.16	560.28	559.90	560.00
12	560.00	559.96	557.73	538.00	521.55	509.26	497.63	502.27	541.25	560.13	559.88	559.98
13	560.00	559.97	557.15	537.40	521.20	508.61	497.42	503.37	543.35	560.05	559.95	559.98
14	560.00	560.00	556.59	537.43	520.74	508.01	497.20	504.42	545.20	559.96	560.00	559.95
15	599.99	559.98	556.00	536.99	520.36	507.32	496.86	505.23	546.75	559.64	559.96	559.88
16	560.00	559.95	555.39	536.35	519.94	506.59	496.98	505.93	548.08	559.18	559.95	559.84
17	560.00	559.95	554.85	535.67	519.55	505.90	497.07	506.56	549.10	558.75	559.92	559.88
18	560.01	559.95	554.20	535.00	519.21	505.25	496.70	507.21	550.20	558.21	559.92	559.90
19	560.04	559.95	553.55	534.34	519.04	504.85	496.25	508.07	551.06	558.35	559.90	559.88
20	560.02	560.00	552.93	533.68	518.93	504.57	495.96	509.53	552.00	558.66	559.93	559.98
21	560.05	560.00	552.30	533.00	518.41	504.12	495.75	511.72	552.95	558.86	559.97	560.00
22	560.15	560.06	551.68	532.36	518.29	503.62	495.64	513.97	554.09	559.10	559.97	559.96
23	560.07	560.15	551.07	531.82	518.08	503.13	495.90	515.50	555.45	559.35	559.93	559.96
24	560.00	560.23	550.46	531.18	517.79	502.53	496.10	516.67	556.77	559.59	559.95	559.95
25	560.06	560.35	549.85	530.55	517.40	501.87	495.70	517.71	557.84	559.90	559.94	559.97
26	560.03	560.46	549.19	529.96	517.30	501.23	495.41	518.76	558.52	560.10	559.94	559.95
27	599.98	560.58	548.55	529.40	516.90	500.63	495.27	519.79	559.08	560.27	559.96	560.00
28	599.96	560.66	547.90	528.81	516.34	499.94	495.25	520.66	559.56	560.45	559.98	560.05
29	599.97	560.54	547.30	528.18	-	499.35	495.22	521.49	560.13	560.47	559.96	559.96
30	599.99	560.33	546.68	527.68	------	498.70	495.43	522.58	560.68	560.30	559.92	559.95
31	599.99	------	546.05	527.05	------	498.20	------	523.60	------	560.15	559.93	------

Note.--Add 3,000 ft to obtain elevation above mean sea level.

Monthly elevation and contents, water year October 1954 to September 1955

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	3,560.51	3,440,000	-
Oct. 31	3,559.99	3,428,000	-12,000
Nov. 30	3,560.33	3,436,000	+8,000
Dec. 31	3,546.05	3,106,000	-330,000
Calendar year 1954	-	-	+629,000
Jan. 31	3,527.05	2,701,000	-405,000
Feb. 28	3,516.34	2,489,000	-212,000
Mar. 31	3,498.20	2,155,000	-334,000
Apr. 30	3,495.43	2,107,000	-48,000
May 31	3,523.60	2,631,000	+524,000
June 30	3,560.68	3,444,000	+813,000
July 31	3,560.15	3,432,000	-12,000
Aug. 31	3,559.93	3,426,000	-6,000
Sept.30	3,559.95	3,427,000	+1,000
Water year 1954-55	-	-	-13,000

† Elevation at 11:59 p.m.

South Fork Flathead River near Columbia Falls, Mont.

Location.--Lat 48°21'30", long 114°02'15", in SW¼SE¼SW¼ sec. 16, T. 30 N., R. 19 W., on right bank 1½ miles downstream from Hungry Horse Dam, 3½ miles upstream from mouth, and 7 miles east of Columbia Falls.
Drainage area.--1,663 sq mi.
Records available.--September 1910 to September 1916, April 1923 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 3,040.0 ft above mean sea level (levels by Bureau of Reclamation). September 1910 to September 1916, chain gage and Apr. 23, 1923, to Sept. 30, 1928, water-stage recorder, at site 3 miles downstream at different datum. Oct. 1, 1928, to Sept. 30, 1952, water-stage recorder at site 1½ miles downstream at several different datums.
Average discharge.--27 years (1928-55), 3,354 cfs (2,428,000 acre-ft per year), adjusted for storage.
Extremes.--Maximum discharge during year, 13,200 cfs July 15 (gage height, 11.50 ft); minimum, 79 cfs Sept. 13 (gage height, 2.36 ft); minimum daily, 152 cfs Sept. 18.
1910-16, 1923-55: Maximum discharge observed, 46,200 cfs June 19, 1916 (gage height, 16.6 ft, site and datum then in use), from rating curve extended above 20,000 cfs; minimum observed, 7.3 cfs Sept. 24, 1951 (gage height, 0.52 ft, site and datum then in use); minimum daily, 7.3 cfs Sept. 24, 1951.
Remarks.--Records excellent. Flow regulated since Sept. 21, 1951, by Hungry Horse Reservoir (see preceding page).
Revisions (water years).--WSP 1216: Drainage area. WSP 1316: 1923-24(M), 1926-27(M), 1932(M), 1935-36(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.7	147	5.0	1,510
3.0	230	6.0	2,630
3.5	422	8.0	5,490
4.0	685	10.0	9,520
4.5	1,050	11.5	13,200

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	602	1,350	4,440	8,140	7,270	6,850	3,040	858	432	4,700	*3,420	446
2	592	1,150	2,590	7,930	6,620	7,280	446	5,140	1,040	5,290	3,050	456
3	576	1,460	2,900	8,450	6,740	7,370	441	2,350	391	6,280	1,480	460
4	1,430	1,030	451	8,450	6,820	7,870	3,450	2,520	432	7,060	*1,900	413
5	2,260	1,110	785	8,120	4,310	7,500	1,680	2,120	436	7,020	2,320	418
6	2,270	1,020	2,170	8,470	4,340	4,040	1,260	1,400	422	7,340	2,080	1,030
7	*2,190	1,010	2,660	8,490	6,760	6,220	898	315	418	8,900	645	578
8	2,140	1,530	4,140	8,490	4,700	5,550	1,140	413	427	*9,490	2,180	560
9	1,910	1,480	4,280	8,490	4,820	5,060	750	1,220	409	10,400	1,230	*432
10	931	1,730	5,640	8,530	4,880	5,980	495	558	422	10,800	1,190	413
11	1,460	1,090	8,360	8,510	4,800	6,910	2,870	510	436	10,600	*1,300	418
12	930	1,320	7,850	8,510	4,260	6,950	3,400	1,080	441	10,100	1,230	645
13	1,050	1,140	8,360	8,320	4,370	6,870	3,900	1,100	475	8,600	422	575
14	1,100	1,130	8,340	805	5,320	6,440	3,860	278	2,200	8,420	413	798
15	898	1,780	*8,360	5,400	4,700	7,060	4,470	409	3,010	10,300	1,860	1,700
16	806	2,530	8,110	8,100	*5,070	7,660	460	925	3,240	12,200	1,120	1,100
17	806	1,880	7,390	*8,040	4,670	7,240	465	502	3,840	11,100	1,370	270
18	938	*1,780	8,340	8,160	3,820	6,360	5,070	432	1,980	11,500	1,060	152
19	1,050	1,250	8,340	7,960	2,360	4,540	5,770	*446	3,840	3,770	1,240	695
20	1,590	838	8,360	7,950	2,080	3,000	*4,180	418	3,840	770	436	154
21	1,880	1,200	8,340	8,040	5,410	5,520	3,530	451	4,010	1,650	446	342
22	2,720	642	8,380	8,000	1,760	4,830	3,910	422	*4,190	1,080	855	1,160
23	3,810	522	8,380	6,540	2,900	5,440	562	678	3,090	418	1,340	500
24	3,690	518	8,400	7,560	4,180	5,920	420	612	4,210	413	618	350
25	1,460	475	8,380	7,800	4,670	6,590	5,840	442	3,200	418	628	365
26	2,620	622	8,380	6,640	1,840	6,200	5,410	412	4,190	460	782	632
27	2,580	620	8,420	6,940	4,620	6,040	3,850	450	4,180	470	510	*361
28	1,720	724	8,290	6,930	6,320	6,810	2,240	432	3,840	*515	480	510
29	1,620	3,110	8,470	7,160	-	6,340	2,160	427	3,670	2,670	1,140	2,160
30	1,070	4,180	8,450	6,120	-------	6,190	602	456	4,490	4,210	1,260	660
31	1,520	-------	8,340	7,460	------	5,220	-------	492	-------	4,100	440	-------
Total	50,219	40,221	204,096	234,505	130,210	191,850	76,569	27,995	67,201	181,044	38,245	18,753
Mean	1,620	1,341	6,584	7,565	4,650	6,189	2,552	903	2,240	5,840	1,234	625
Ac-ft	99,610	79,780	404,800	465,100	258,300	380,500	151,900	55,530	133,300	359,100	75,860	37,200
(†)	-12,000	+8,000	-330,000	-405,000	-212,000	-334,000	-48,000	+524,000	+815,000	-12,000	-6,000	+1,000

Adjusted for change in contents in Hungry Horse Reservoir

Mean	1,425	1,475	1,217	977	834	756	1,746	9,425	15,900	5,645	1,136	642
Cfsm	0.857	0.887	0.732	0.587	0.502	0.455	1.05	5.67	9.56	3.39	0.683	0.386
In.	0.99	0.99	0.84	0.68	0.52	0.52	1.17	6.53	10.67	3.91	0.79	0.43
Ac-ft	87,610	87,780	74,800	60,100	46,300	46,500	103,900	579,500	946,300	347,100	69,860	38,200

Observed

Calendar year 1954: Max 15,900 Min 360 Mean 3,634 Ac-ft 2,631,000
Water year 1954-55: Max 12,200 Min 152 Mean 3,455 Ac-ft 2,501,000

Adjusted

Calendar year 1954: Mean 4,503 Cfsm 2.71 In. 36.77 Ac-ft 3,260,000
Water year 1954-55: Mean 3,437 Cfsm 2.07 In. 28.04 Ac-ft 2,488,000

* Discharge measurement made on this day.
† Change in contents in Hungry Horse Reservoir, in acre-feet, furnished by Bureau of Reclamation.

Flathead River at Columbia Falls, Mont.

Location.--Lat 48°21'50", long 114°11'10", in NW¼SE¼ sec. 17, T. 30 N., R. 20 W., on right bank 200 ft downstream from county bridge at Columbia Falls and 5 miles downstream from South Fork.
Drainage area.--4,464 sq mi.
Records available.--May 1922 to September 1923 (fragmentary), June 1928 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 2,978.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Nov. 12, 1928, wire-weight gage on bridge 200 ft upstream at datum 0.19 ft higher.
Average discharge.--27 years (1928-55), 9,315 cfs (6,744,000 acre-ft per year), adjusted for storage.
Extremes.--Maximum discharge during year, 42,100 cfs June 14 (gage height, 11.91 ft); minimum, 1,220 cfs Feb. 27 (gage height, 0.63 ft).
1922-23, 1928-55: Maximum discharge, 102,000 cfs May 23, 1948 (gage height, 19.08 ft); minimum, 798 cfs Dec. 8, 1929 (gage height, -0.08 ft).
Maximum stage known, 22.7 ft in June 1894, from floodmarks (discharge, 135,000 cfs, from rating curve extended above 85,000 cfs by logarithmic plotting).
Remarks.--Records excellent. South Fork Flathead River which contributes about one-third of flow completely regulated by Hungry Horse Reservoir since Sept. 21, 1951 (see p. 211).
Revisions (water years).--WSP 1092: 1923. WSP 1216: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.1	1,650	6.0	12,600
1.5	2,110	8.0	20,000
2.0	2,800	10.0	30,200
4.0	6,750	12.0	42,700

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,480	4,670	7,400	10,100	8,750	7,580	4,380	3,980	18,200	20,400	9,340	2,650
2	3,370	4,250	5,340	9,800	8,400	8,360	1,860	9,880	17,200	20,100	8,720	*2,590
3	3,290	4,400	5,810	10,200	8,040	8,440	1,730	8,360	17,600	19,800	6,920	2,590
4	3,910	3,880	3,630	10,100	8,200	8,880	4,420	8,600	20,000	19,600	7,140	2,520
5	4,910	3,860	3,540	9,740	5,790	8,610	2,870	9,000	23,000	19,900	7,240	2,470
6	4,870	3,720	5,070	9,990	5,810	6,320	2,570	9,440	28,100	20,900	6,800	2,940
7	4,740	3,750	5,320	10,000	8,000	7,660	2,150	9,410	30,100	23,400	5,300	2,660
8	4,660	4,260	6,780	10,100	6,700	6,640	2,580	10,600	31,800	24,600	6,260	2,510
9	4,520	4,230	6,820	10,000	6,290	6,460	2,160	11,600	30,800	24,900	5,590	2,410
10	3,420	4,320	7,340	9,960	6,180	5,780	2,860	10,500	*30,600	24,900	5,270	2,370
11	4,120	3,980	10,700	9,960	5,920	7,880	5,360	10,500	32,700	25,200	5,190	2,360
12	3,750	3,950	9,120	10,100	5,480	8,050	5,840	13,100	36,300	25,200	5,060	2,500
13	3,930	3,880	10,500	*10,100	5,810	8,110	6,460	16,100	38,100	23,000	4,040	2,430
14	3,880	3,850	10,800	3,230	6,780	7,490	6,300	15,100	40,000	*22,400	3,890	2,570
15	3,660	4,560	10,700	6,000	6,300	8,170	6,640	13,400	38,200	23,400	5,030	3,500
16	3,440	4,850	*10,500	9,730	*6,680	8,720	3,140	12,400	34,400	25,100	4,440	2,880
17	3,480	5,880	9,430	9,640	5,980	*6,400	2,620	11,200	31,700	23,700	4,540	2,480
18	3,660	*5,300	10,300	9,700	5,080	7,760	6,660	*11,400	27,700	23,700	4,070	1,990
19	3,860	4,680	10,300	9,460	3,400	5,780	7,960	13,500	28,300	16,200	4,270	2,450
20	4,380	4,130	10,200	9,520	3,380	4,060	*6,860	19,200	27,700	11,700	3,360	1,970
21	4,910	4,770	10,200	9,510	6,330	6,460	5,820	28,600	27,800	11,700	3,280	2,300
22	*6,900	3,860	10,500	9,340	3,260	6,080	6,600	30,400	30,300	10,500	3,620	3,020
23	9,870	3,660	10,400	8,170	3,790	6,440	4,060	25,200	33,800	9,140	4,060	2,310
24	9,520	3,700	10,400	8,980	5,200	6,860	3,970	20,400	36,100	8,760	3,300	2,060
25	6,670	3,680	10,400	9,120	5,550	7,300	8,730	18,000	34,400	8,710	3,200	2,030
26	7,120	4,040	10,300	8,600	2,620	7,140	8,580	17,400	31,600	8,600	3,320	2,270
27	6,980	4,340	10,200	8,220	5,410	7,060	7,500	17,500	27,200	7,950	3,000	1,990
28	5,790	4,380	10,000	8,440	6,620	7,940	5,340	16,400	24,000	7,500	2,860	2,180
29	5,410	6,420	10,100	8,590	-	7,840	5,300	15,900	22,200	8,740	3,460	3,760
30	4,720	7,330	10,300	7,660	-------	7,290	3,650	17,800	21,900	10,400	3,470	2,810
31	4,760	-------	10,300	8,720	-------	7,110	-------	20,000	-------	10,100	2,680	-------
Total	151,980	132,580	272,700	282,780	165,750	227,670	144,970	454,870	871,800	540,400	148,720	75,570
Mean	4,903	4,419	8,797	9,122	5,920	7,344	4,832	14,670	29,060	17,430	4,797	2,519
Ac-ft	301,400	263,000	540,900	560,900	328,800	451,600	287,500	902,200	‡1,729	‡1,072	295,000	149,900
(†)	-12,000	+8,000	-330,000	-405,000	-212,000	-334,000	-48,000	+524,000	+813,000	-12,000	-6,000	+1,000

Adjusted for change in contents in Hungry Horse Reservoir

Mean	4,707	4,554	3,430	2,535	2,103	1,913	4,025	23,190	42,720	17,240	4,700	2,536
Cfsm	1.05	1.02	0.768	0.568	0.471	0.429	0.902	5.19	9.57	3.86	1.05	0.568
In.	1.22	1.14	0.89	0.65	0.49	0.49	1.01	5.99	10.68	4.45	1.21	0.63
Ac-ft	289,400	271,000	210,900	155,900	116,800	117,600	239,500	‡1,426	‡2,542	‡1,060	289,000	150,900

Observed

Calendar year 1954: Max 66,600 Min 1,640 Mean 12,140 Ac-ft 8,792,000
Water year 1954-55: Max 40,000 Min 1,730 Mean 9,506 Ac-ft 6,882,000

Adjusted

Calendar year 1954: Mean 13,010 Cfsm 2.91 In. 39.59 Ac-ft 9,421,000
Water year 1954-55: Mean 9,488 Cfsm 2.13 In. 28.85 Ac-ft 6,869,000

* Discharge measurement made on this day.
† Change in contents in Hungry Horse Reservoir, in acre-feet, furnished by Bureau of Reclamation.
‡ Expressed in thousands.

Swan River near Bigfork, Mont.

Location.--Lat 48°01'30", long 113°58'40", in SE¼SW¼ sec. 11, T. 26 N., R. 19 W., on left bank at outlet of Swan Lake, about 1,000 ft downstream from Johnson Creek and 5 miles southeast of Bigfork.

Drainage area.--671 sq mi.

Records available.--October 1910 to May 1911 (gage heights only), April 1922 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 3,062.6 ft above mean sea level (river-profile survey). Oct. 10, 1910, to May 22, 1911, staff gage at site 10 miles upstream at different datum. Apr. 28, 1922, to Oct. 14, 1930, staff gage at site 800 ft upstream at datum 1.9 ft higher.

Average discharge.--33 years (1922-55), 1,094 cfs (792,000 acre-ft per year).

Extremes.--Maximum discharge during year, 5,060 cfs June 16 (gage height, 5.60 ft); minimum, 310 cfs Mar. 26 (gage height, 2.10 ft).
1922-55: Maximum discharge, 8,400 cfs May 24, 1948 (gage height, 7.12 ft, from graph based on gage readings); minimum observed, 193 cfs Jan. 26-29, 1930 (gage height, 0.04 ft, site and datum then in use).

Remarks.--Records excellent. Diversions for irrigation of about 360 acres above station.

Revisions (water years).--WSP 1216: Drainage area. WSP 1246: 1923-24(M), 1930.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.1	310	4.0	2,290
2.5	560	5.0	3,920
3.0	1,020	6.0	5,880

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	576	616	600	458	413	371	383	950	2,130	3,130	1,130	484
2	560	608	546	464	413	377	383	1,090	2,110	2,960	1,080	484
3	553	592	539	470	407	377	383	1,340	2,100	2,730	1,020	477
4	539	576	546	451	407	365	389	1,500	2,140	2,500	990	464
5	532	568	560	438	401	360	389	1,580	2,240	2,260	950	464
6	*525	560	560	413	401	354	389	1,630	2,380	2,130	910	464
7	511	553	553	413	401	354	401	1,700	2,530	2,080	880	451
8	511	553	553	419	413	360	413	1,760	2,850	2,060	840	444
9	504	532	546	419	432	365	444	1,800	3,200	2,010	811	451
10	504	546	518	413	438	383	504	1,820	*3,500	1,990	793	444
11	511	539	518	419	419	395	584	1,810	3,670	2,030	775	444
12	525	539	511	419	401	401	649	1,810	3,940	2,140	748	432
13	539	546	484	432	395	401	712	1,890	4,330	2,220	712	432
14	546	553	484	*438	401	395	748	2,040	4,630	2,230	703	425
15	546	553	490	432	*401	389	784	2,100	4,940	2,230	685	432
16	532	553	*484	425	401	389	775	2,070	5,000	2,170	658	438
17	532	560	477	425	395	383	739	1,990	4,780	2,110	649	432
18	539	568	451	425	395	377	757	1,870	4,370	2,060	632	438
19	532	576	432	413	377	383	820	1,780	3,940	1,990	624	432
20	539	568	425	419	377	371	880	1,800	3,670	1,900	600	438
21	*553	576	419	425	377	*360	910	2,060	3,570	1,830	592	*444
22	576	568	432	419	383	360	940	2,580	3,600	1,770	576	451
23	624	546	438	419	377	365	1,020	3,070	*3,740	1,660	568	451
24	685	546	444	419	383	354	1,060	*3,150	4,140	1,590	560	438
25	703	546	451	419	383	348	1,060	2,990	4,520	1,560	532	432
26	712	*560	458	419	383	332	*1,040	2,750	4,350	1,540	532	438
27	712	576	458	419	371	338	1,020	2,580	3,960	1,460	532	425
28	703	616	451	413	371	338	1,000	2,440	3,550	1,380	511	444
29	685	616	432	413	-	348	970	2,290	3,280	*1,320	511	464
30	658	624	444	407	------	371	930	2,160	3,180	1,240	511	477
31	640	------	451	407	------	377	------	2,110	------	1,180	490	------
Total	17,907	17,033	15,155	13,184	11,116	11,441	21,476	62,510	106,320	61,460	22,105	13,434
Mean	578	568	489	425	397	369	716	2,016	3,544	1,983	713	448
Cfsm	0.861	0.846	0.729	0.633	0.592	0.550	1.07	3.00	5.28	2.96	1.06	0.668
In.	0.99	0.94	0.84	0.73	0.62	0.63	1.19	3.46	5.89	3.41	1.23	0.74
Ac-ft	35,520	33,780	30,060	26,150	22,050	22,690	42,600	124,000	210,900	121,900	43,840	26,650

Calendar year 1954: Max 5,520 Min 326 Mean 1,179 Cfsm 1.76 In. 23.83 Ac-ft 853,310
Water year 1954-55: Max 5,000 Min 332 Mean 1,022 Cfsm 1.52 In. 20.67 Ac-ft 740,100

* Discharge measurement made on this day.

Flathead Lake at Somers, Mont.

Location.--Lat 48°04'30", long 114°13'30", in SE¼NE¼ sec. 26, T. 27 N., R. 21 W., at steamboat dock at Somers.

Drainage area.--7,086 sq mi.

Records available.--April 1922 to September 1955.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (Somers datum). July 1 to Dec. 12, 1923, staff gage at same site and datum.

Extremes.--Maximum contents during year, 1,810,000 acre-ft July 25 (elevation, 2,893.15 ft); minimum, 636,200 acre-ft Apr. 18 (elevation, 2,883.54 ft).
1922-55: Maximum contents, 2,208,000 acre-ft June 19, 1933 (elevation, 2,896.26 ft); minimum, 347,000 acre-ft Dec. 5, 1936 (elevation, 2,881.07 ft).

Remarks.--Since April 1938, lake elevation has been subject to regulation by Kerr Dam, 4 miles below outlet.

Elevation, in feet, at 12 p.m., water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	92.86	92.14	90.35	88.97	87.40	84.78	84.17	83.87	87.89	93.07	92.95	92.69
2	92.88	92.07	90.28	89.04	87.31	84.78	84.08	83.92	88.00	93.02	92.93	92.67
3	92.88	92.00	90.18	89.02	87.22	84.68	83.98	84.01	88.17	92.91	92.88	92.63
4	92.85	91.92	90.12	88.99	87.15	84.67	83.94	84.07	88.28	92.81	92.80	92.57
5	92.81	91.84	90.02	88.96	87.05	84.66	83.89	84.08	88.44	92.87	92.73	92.48
6	92.78	91.77	90.00	88.93	86.93	84.62	83.82	84.16	88.70	93.05	92.70	92.46
7	92.76	91.68	89.79	88.90	86.86	84.55	83.76	84.22	88.96	93.07	92.69	92.34
8	92.72	91.61	89.71	88.85	86.77	84.56	83.69	84.32	89.27	93.01	92.65	92.24
9	92.68	91.55	89.65	88.83	86.65	84.59	83.64	84.40	89.53	92.89	92.62	92.14
10	92.66	91.48	89.57	88.82	86.55	84.50	83.63	84.45	89.77	92.89	92.66	92.12
11	92.63	91.41	89.56	88.78	86.45	84.45	83.63	84.53	90.04	93.01	92.71	92.15
12	92.58	91.37	89.54	88.76	86.34	84.49	83.65	84.63	90.40	93.03	92.73	92.05
13	92.51	91.29	89.52	88.78	86.25	84.43	83.63	84.66	90.72	92.97	92.71	91.96
14	92.44	91.22	89.50	88.65	86.16	84.41	83.67	84.92	90.94	92.89	92.75	91.93
15	92.40	91.14	89.48	88.54	86.07	84.42	83.68	84.97	91.15	92.84	92.83	91.85
16	92.42	91.11	89.43	88.50	85.98	84.39	83.66	85.09	91.22	92.81	92.84	91.77
17	92.47	91.06	89.37	88.41	85.83	84.42	83.61	85.12	91.19	92.83	92.88	91.75
18	92.41	90.99	89.33	88.37	85.74	84.35	83.66	85.14	91.10	92.91	92.87	91.71
19	92.39	90.97	89.30	88.34	85.60	84.32	83.68	85.20	90.97	92.90	92.88	91.63
20	92.34	90.90	89.26	88.26	85.48	84.28	83.72	85.35	90.97	92.85	92.92	91.52
21	92.34	90.88	89.22	88.18	85.36	84.30	83.73	85.65	91.09	92.89	92.89	91.41
22	92.34	90.82	89.17	88.14	85.27	84.20	83.80	86.07	91.30	92.90	92.89	91.29
23	92.36	90.73	89.16	88.07	85.16	84.13	83.81	86.40	91.66	92.93	92.90	91.13
24	92.43	90.65	89.13	87.99	85.10	84.17	83.77	86.64	92.20	92.98	92.88	90.99
25	92.42	90.65	89.08	87.95	84.92	84.15	83.76	86.86	92.52	92.98	92.85	90.89
26	92.39	90.62	89.05	87.87	84.87	84.15	83.88	87.06	92.68	92.98	92.85	90.77
27	92.38	90.56	89.00	87.78	84.85	84.15	83.91	87.22	92.86	92.93	92.83	90.63
28	92.35	90.48	88.98	87.70	84.82	84.17	83.88	87.38	92.88	92.90	92.80	90.55
29	92.29	90.42	88.92	87.82	-	84.19	83.88	87.50	92.95	92.91	92.76	90.45
30	92.23	90.41	88.95	87.54	------	84.20	83.87	87.67	93.10	92.90	92.79	90.33
31	92.18	-----	88.91	87.48	-----	84.16	-----	87.78	------	92.95	92.74	------

Note.--Add 2,800 ft to obtain elevation above mean sea level.

Monthly elevation and contents, water year October 1954 to September 1955

Date	Elevation (feet)†	Contents (acre-feet)‡	Change in contents (acre-feet)
Sept.30	2,892.86	1,773,000	-
Oct. 31	2,892.18	1,688,000	-85,000
Nov. 30	2,890.41	1,468,000	-220,000
Dec. 31	2,888.91	1,283,000	-185,000
Calendar year 1954	-	-	+353,900
Jan. 31	2,887.48	1,109,000	-174,000
Feb. 28	2,884.82	788,600	-320,400
Mar. 31	2,884.16	709,800	-78,800
Apr. 30	2,883.87	675,300	-34,500
May 31	2,887.78	1,145,000	+469,700
June 30	2,893.10	1,804,000	+659,000
July 31	2,892.95	1,785,000	-19,000
Aug. 31	2,892.74	1,758,000	-27,000
Sept.30	2,890.33	1,458,000	-300,000
Water year 1954-55	-	-	-315,000

† Elevation at 12 p.m.
‡ Contents above elevation 2,878 ft.

Flathead River near Polson, Mont.

Location.--Lat 47°40'50", long 114°15'10", in NW¼SE¼ sec. 11, T. 22 N., R. 21 W., on left bank half a mile downstream from Kerr Dam, 4 miles west of Polson, and 5 miles downstream from Flathead Lake.

Drainage area.--7,096 sq mi.

Records available.--July 1907 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,693.70 ft above mean sea level (levels by The Montana Power Co.). Prior to Oct. 1, 1941, staff and chain gages or water-stage recorder at several sites near highway bridge at old site of Michell's ferry 6 miles downstream from present site, all at datum 2,629.20 ft above mean sea level (river-profile survey).

Average discharge.--48 years, 11,440 cfs (8,282,000 acre-ft per year), adjusted since Oct. 1, 1952, for change in contents in Hungry Horse Reservoir and Flathead Lake.

Extremes.--Maximum discharge during year, 49,300 cfs June 16 (gage height, 15.48 ft); minimum, about 250 cfs Oct. 19, Aug. 13, 22; minimum daily, 1,670 cfs Oct. 3.
1907-55: Maximum discharge, 82,800 cfs May 29, 1928 (gage height, 17.2 ft, site and datum then in use); minimum, probably less than 5 cfs Apr. 13, 1938; minimum daily, 32 cfs Apr. 12, 1938.

Remarks.--Records excellent. Diversion above station for irrigation of about 10,000 acres. Flathead project pumps can divert up to 12,000 acre-ft per month when required for irrigation of lands downstream from station. Flow regulated by Kerr Dam since April 1938 and Hungry Horse Reservoir since September 1951 (see p. 211).

Revisions (water years).--WSP 652: 1926. WSP 752: 1932. WSP 1182: 1948. WSP 1216: Drainage area. WSP 1246: 1928(M).

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,560	9,850	11,500	5,380	14,100	9,570	8,110	7,460	14,900	22,600	10,900	5,480
2	1,750	9,820	11,800	7,960	13,400	9,080	8,170	8,090	15,000	24,100	11,100	5,050
3	1,670	9,790	12,100	11,800	14,100	9,770	7,760	7,930	*15,600	30,400	11,400	5,780
4	6,250	9,790	10,700	11,400	14,000	9,620	7,750	7,640	15,400	28,400	12,100	6,190
5	7,480	9,760	10,400	12,200	14,000	9,680	7,460	8,560	14,500	23,200	11,600	6,100
6	*8,120	9,880	11,800	12,300	14,000	9,680	7,220	8,160	15,700	20,500	10,300	5,920
7	8,100	9,680	12,100	12,000	14,000	9,470	7,080	8,280	15,200	23,300	8,810	9,460
8	6,960	9,900	11,600	12,200	12,800	9,310	6,920	8,450	17,500	29,900	8,290	*10,400
9	6,920	9,820	12,000	12,900	12,900	9,320	6,740	9,020	19,800	33,100	6,620	6,380
10	6,540	*9,880	12,000	12,700	13,000	9,220	6,440	9,330	21,200	30,400	4,710	4,080
11	7,670	9,880	12,100	11,900	13,700	8,780	6,360	9,670	20,800	27,000	3,700	2,960
12	7,070	9,820	12,300	11,800	14,000	8,850	6,520	10,000	20,800	28,200	4,250	8,860
13	7,040	9,820	12,600	11,600	11,700	9,010	6,190	10,000	25,000	31,100	2,930	7,340
14	7,280	9,730	*12,300	*12,200	13,400	9,280	*6,580	11,300	30,900	30,800	2,190	5,960
15	7,070	9,790	12,400	11,800	*13,500	*8,940	6,590	11,700	32,600	*30,000	3,030	7,280
16	3,280	9,730	12,800	13,800	13,200	9,240	6,660	11,700	38,400	29,600	2,600	6,380
17	2,800	9,500	12,800	13,700	13,600	8,750	6,220	11,700	*41,000	27,000	2,650	4,920
18	7,490	9,540	13,100	14,000	13,600	8,350	6,920	11,700	41,700	21,400	4,220	4,190
19	7,090	9,170	13,000	14,100	13,900	9,300	6,490	11,700	40,700	23,700	4,400	7,720
20	7,980	7,510	12,700	14,000	13,800	8,620	6,830	10,300	34,500	17,200	2,600	10,600
21	6,410	6,310	13,300	13,900	13,600	8,400	6,900	11,100	22,200	10,600	2,670	10,300
22	6,570	9,130	13,300	14,000	12,500	7,730	6,550	9,000	17,200	12,100	3,780	10,900
23	5,800	9,760	13,300	14,000	12,600	8,560	6,570	10,900	16,300	10,000	5,510	11,300
24	6,370	9,600	13,300	14,100	12,200	7,820	6,370	11,900	16,500	9,250	3,300	10,800
25	8,740	5,820	12,700	14,000	11,300	7,750	6,930	11,500	19,400	11,300	4,360	9,640
26	9,030	8,440	12,600	14,000	10,800	8,010	7,280	11,500	28,100	11,700	4,210	11,400
27	9,310	8,530	13,100	14,000	8,360	7,750	6,820	11,900	26,300	12,400	5,180	10,800
28	9,190	9,900	13,200	14,100	10,500	7,980	7,260	11,100	26,700	11,900	2,890	10,000
29	9,730	8,260	13,200	14,100	-	8,180	7,180	11,700	29,400	9,800	4,200	8,900
30	9,640	8,050	13,100	14,100	-------	8,180	6,310	15,200	23,700	8,880	4,760	9,190
31	8,440	-------	9,690	14,100	-------	8,090	-------	14,900	-------	7,830	7,260	-------
Total	211,350	276,460	382,890	394,140	362,560	272,290	207,180	323,390	717,000	647,660	176,520	234,280
Mean	6,818	9,215	12,350	12,710	12,950	8,784	6,906	10,430	23,900	20,890	5,694	7,809
Ac-ft	419,200	548,400	759,500	781,800	719,100	540,100	410,900	641,400	‡1,422	‡1,285	350,100	464,700
(†)	-97,000	-212,000	-515,000	-579,000	-532,400	-412,800	-82,500	+993,700	‡+1,472	-31,000	-33,000	-299,000

Adjusted for change in contents in Hungry Horse Reservoir and Flathead Lake

Mean	5,240	5,653	3,976	3,298	3,362	2,070	5,519	26,590	48,640	20,390	5,157	2,785
Cfsm	0.738	0.797	0.560	0.465	0.474	0.292	0.778	3.75	6.85	2.87	0.727	0.392
In.	0.85	0.89	0.65	0.54	0.49	0.34	0.87	4.32	7.65	3.31	0.84	0.44
Ac-ft	322,200	336,400	244,500	202,800	186,700	127,300	328,400	‡1,635	‡2,894	‡1,254	317,100	165,700

Observed

Calendar year 1954:	Max	52,400	Min	1,670	Mean	14,180	Ac-ft	10,260,000
Water year 1954-55:	Max	41,700	Min	1,670	Mean	11,520	Ac-ft	8,342,000

Adjusted

Calendar year 1954:	Mean	15,540	Cfsm	2.19	In.	29.73	Ac-ft	11,250,000
Water year 1954-55:	Mean	11,070	Cfsm	1.56	In.	21.19	Ac-ft	8,014,000

* Discharge measurement made on this day.
† Change in contents, in acre-feet, in Hungry Horse Reservoir (furnished by Bureau of Reclamation) and Flathead Lake (furnished by The Montana Power Co.).
‡ Expressed in thousands.

Clark Fork near Plains, Mont.

Location.--Lat 47°25'50", long 114°51'20", in SW¼ sec. 1, T. 19 N., R. 26 W., on right bank 2 miles southeast of Plains and 6 miles downstream from Flathead River.

Drainage area.--19,958 sq mi.

Records available.--October 1910 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,449.34 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Nov. 28, 1911, wire-weight gage at site 50 ft upstream at same datum.

Average discharge.--45 years, 19,240 cfs (13,930,000 acre-ft per year).

Extremes.--Maximum discharge during year, 74,800 cfs June 17 (gage height, 13.57 ft); minimum, 6,030 cfs Oct. 3, Sept. 12 (gage height, 3.61 ft).
1910-55: Maximum discharge, 134,000 cfs June 5, 1948 (gage height, 19.17 ft); minimum, 3,200 cfs Feb. 8, 1936, Dec. 10, 1940; minimum gage height, 2.85 ft Dec. 10, 1940.

Remarks.--Records excellent. Flow partly regulated by Flathead Lake (see p. 215) and by Hungry Horse Reservoir (see p. 211). Diversions for irrigation of about 335,000 acres above station.

Revisions.--WSP 1246: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

3.6	5,990	11.0	49,600
5.0	11,800	14.0	79,300
8.0	27,900		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10,100	12,500	12,200	13,800	17,200	13,600	12,400	12,700	35,300	44,200	16,000	10,700
2	8,390	13,800	15,100	9,640	17,000	12,800	13,200	14,700	34,200	43,000	18,400	9,220
3	6,940	13,800	15,900	11,400	17,200	12,400	13,100	17,000	33,600	45,600	18,300	8,600
4	6,150	13,700	16,200	15,100	17,200	12,000	12,600	17,700	34,200	46,400	18,400	9,260
5	9,330	13,700	15,000	14,800	17,100	11,500	12,100	17,900	34,600	44,500	18,500	10,000
6	12,200	13,700	14,400	15,200	17,000	13,500	11,700	19,000	35,100	38,400	18,200	9,500
7	12,400	13,800	16,000	15,400	17,100	13,600	11,600	20,000	38,400	38,400	16,600	*9,090
8	12,300	13,600	16,000	15,500	17,000	12,700	11,700	21,500	41,100	42,400	14,800	13,200
9	11,500	13,700	15,800	15,900	16,800	*12,700	12,000	21,800	47,200	50,100	14,200	13,100
10	11,200	13,700	15,900	16,200	16,800	13,100	12,600	*23,000	50,000	49,600	12,000	9,850
11	10,800	13,700	16,000	16,000	17,000	13,200	13,600	23,300	52,200	46,200	10,100	7,540
12	11,800	13,700	16,000	15,200	17,000	12,800	*13,700	24,200	53,700	45,400	9,220	6,980
13	11,400	13,600	16,000	15,100	16,800	12,800	13,300	25,600	55,600	49,100	9,050	11,300
14	11,300	13,600	16,300	15,500	15,100	12,700	12,600	28,300	63,900	50,800	8,020	10,800
15	11,600	13,600	16,400	15,700	16,600	12,800	12,500	30,200	*67,700	48,600	7,540	9,680
16	11,400	13,800	16,700	16,200	16,600	12,700	12,600	29,500	69,600	46,700	7,820	10,800
17	8,230	13,800	16,800	17,100	16,800	12,500	12,200	27,900	74,200	45,600	7,380	10,300
18	7,380	13,600	16,600	17,100	16,900	12,100	12,000	27,200	73,500	39,700	6,980	8,800
19	10,500	13,500	16,400	17,200	17,000	12,000	12,500	27,100	70,500	36,000	8,100	8,140
20	11,200	13,500	16,000	17,000	16,800	12,700	12,400	28,100	67,400	37,600	8,720	11,800
21	12,000	11,800	16,200	*17,100	16,800	12,000	12,700	32,800	56,800	27,500	7,180	14,200
22	11,300	10,500	16,600	17,100	16,100	11,600	12,700	39,500	46,600	23,700	7,140	14,700
23	10,900	13,000	16,800	17,200	15,900	11,300	12,600	40,600	44,700	24,200	7,290	15,300
24	10,100	13,800	16,900	17,200	15,900	12,000	12,800	39,600	44,700	21,200	9,350	15,700
25	10,700	13,900	16,900	17,300	15,100	11,300	12,600	37,100	46,600	20,500	7,540	15,300
26	13,100	10,500	16,700	17,300	14,600	10,500	13,000	34,000	49,600	*21,900	8,100	14,200
27	13,200	11,800	16,400	17,300	14,100	11,300	13,300	32,900	52,800	22,300	7,980	15,800
28	*13,600	13,100	*16,400	17,400	11,100	11,100	12,800	32,400	*43,700	22,400	8,510	15,300
29	13,500	*14,600	16,600	17,300	-	11,300	13,200	30,400	49,700	20,600	7,460	14,400
30	13,900	12,500	16,600	17,200	------	11,600	13,200	31,700	47,500	18,900	7,300	13,500
31	13,300	------	16,400	17,200	------	12,100	------	34,700	------	17,500	8,310	------
Total	341,720	397,900	498,200	494,640	456,600	380,300	379,300	842,400	‡1,514.7	‡1,129	334,490	347,060
Mean	11,020	13,260	16,070	15,960	16,310	12,270	12,640	27,170	50,490	36,420	10,790	11,570
Ac-ft	677,800	789,200	988,200	981,100	905,700	754,300	752,300	‡1,671	‡3,004	‡2,239	663,500	688,400

Calendar year 1954: Max 89,600 Min 5,700 Mean 22,920 Ac-ft 16,590,000
Water year 1954-55: Max 74,200 Min 6,150 Mean 19,500 Ac-ft 14,110,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Clark Fork at Thompson Falls, Mont.

Location.--Lat 47°35'50", long 115°21'50", in SE¼NW¼ sec. 7, T. 21 N., R. 29 W., on right bank a quarter of a mile downstream from The Montana Power Co. dam, a quarter of a mile downstream from Prospect Creek, and half a mile west of Thompson Falls.

Drainage area.--21,113 sq mi.

Records available.--October 1951 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 2,340 ft (from topographic map).

Extremes.--Maximum discharge during year, 79,500 cfs June 17 (gage height, 49.00 ft); minimum daily, 6,460 cfs Aug. 23.
1951-55: Maximum discharge, 97,600 cfs May 22, 1954 (gage height, 51.29 ft); minimum daily, 4,020 cfs Sept. 1, 1952.
Flood of May 31, 1948, reached a stage of 58.4 ft, from floodmarks (from The Montana Power Co. records).

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. Flow regulated by Flathead Lake (see p. 215) Hungry Horse Reservoir (see p. 211) and Thompson Falls powerplant (reservoir capacity, 15,000 acre-ft). Diversions for irrigation of about 340,000 acres above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

32.9	6,390	41.0	31,300
34.0	8,800	46.0	58,500
37.0	16,700	49.0	79,500

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11,000	12,800	12,100	15,000	17,100	11,800	12,300	13,400	39,500	49,000	15,900	8,760
2	9,720	13,500	14,100	12,000	17,000	13,400	13,100	14,700	38,400	46,700	17,600	11,700
3	9,640	13,900	15,400	10,900	16,800	12,300	13,200	19,200	37,500	47,100	17,200	7,220
4	7,660	13,800	16,000	12,600	17,100	11,900	13,100	19,900	38,000	50,700	17,600	9,810
5	7,130	14,100	15,400	14,400	17,000	11,400	12,500	20,800	38,900	48,300	17,900	9,010
6	11,200	13,900	14,800	15,000	17,000	12,000	12,100	21,200	39,700	42,600	18,200	*10,700
7	12,800	13,900	15,400	15,200	17,000	13,900	11,800	21,900	43,500	40,600	17,300	9,140
8	12,400	13,400	16,200	15,100	17,300	13,500	12,300	23,000	46,700	44,300	15,500	10,600
9	11,800	13,700	15,600	15,500	16,800	13,400	12,300	24,200	51,800	51,300	15,300	15,000
10	11,600	13,800	15,800	16,100	16,700	13,300	13,100	24,800	55,900	53,200	12,400	10,800
11	11,500	13,800	15,800	16,000	16,700	13,100	14,100	25,200	58,000	50,400	11,200	9,050
12	11,400	14,000	15,900	15,400	16,800	13,000	*15,000	26,400	59,700	48,500	10,200	7,900
13	11,700	13,900	16,000	15,000	16,900	12,800	14,200	28,200	61,300	50,800	9,500	9,260
14	11,500	13,800	16,100	14,900	15,900	12,800	13,600	30,600	*67,400	53,800	8,540	10,200
15	11,600	13,500	16,300	15,900	15,700	13,000	13,200	34,100	72,800	52,100	7,830	10,500
16	11,400	13,900	16,300	15,200	16,700	12,900	12,900	33,200	73,500	50,200	7,610	10,500
17	10,500	13,900	16,800	16,900	16,600	12,800	12,800	a32,000	78,100	48,500	7,710	11,100
18	8,930	13,800	16,400	16,900	16,700	12,300	12,900	a31,000	78,800	44,400	6,970	10,200
19	8,660	14,100	a16,500	17,000	16,800	12,000	12,700	a31,000	75,800	38,400	7,580	8,850
20	11,200	13,500	a16,500	17,100	16,700	12,500	13,000	a32,000	72,100	39,600	8,970	9,710
21	11,400	12,900	a16,500	*17,000	16,700	12,300	13,100	a39,000	*64,300	33,100	8,380	13,700
22	11,700	11,700	a16,500	17,000	16,600	11,800	13,300	a44,000	53,300	24,700	6,630	13,900
23	11,500	11,900	16,500	17,100	15,600	11,600	13,200	a46,000	49,000	24,700	6,460	15,000
24	11,300	13,200	16,700	17,100	15,800	11,700	13,500	a44,000	49,400	22,700	8,590	15,500
25	11,200	14,200	16,800	17,100	15,500	11,600	13,700	*a41,000	50,900	*21,000	8,980	15,300
26	11,400	12,400	a16,800	17,200	14,700	11,300	13,500	39,200	52,300	22,600	7,340	14,300
27	13,100	11,600	a16,500	17,200	13,900	10,600	13,700	37,100	56,400	22,500	7,980	15,400
28	13,300	12,800	16,200	17,200	12,300	11,000	13,600	36,500	50,700	22,900	8,520	15,400
29	14,100	13,900	16,300	17,200	-	11,500	13,700	34,700	50,900	21,700	8,150	15,000
30	14,000	*13,800	16,400	17,100	------	11,500	13,900	34,600	52,300	19,500	6,480	15,100
31	13,900	------	16,600	17,100	------	11,600	------	38,700	------	18,200	7,980	------
Total	350,240	403,400	495,200	490,400	456,400	380,600	395,400	941,600	‡1,656.9	‡1,204.1	336,500	348,610
Mean	11,300	13,450	15,970	15,820	16,300	12,280	13,180	30,370	55,230	38,840	10,850	11,620
Ac-ft	694,700	800,100	982,200	972,700	905,300	754,900	784,300	‡1,868	‡3,286	‡2,388	667,400	691,500

Calendar year 1954: Max 97,000 Min 5,410 Mean 24,030 Ac-ft 17,400,000
Water year 1954-55: Max 78,800 Min 6,460 Mean 20,440 Ac-ft 14,800,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
a No gage-height record; discharge estimated on basis of record for Clark Fork near Plains, and record of outflow from Thompson Falls powerplant as furnished by The Montana Power Co.

Clark Fork at Whitehorse Rapids, near Cabinet, Idaho
(Formerly published as Clark Fork near Heron, Mont.)

Location.--Gage at lat 48°05'25", long 116°03'50", in NE¼SW¼ sec. 27, T. 55 N., R. 3 E., on left bank at Cabinet, 0.4 mile downstream from Cabinet Gorge Dam, 1.7 miles downstream from Blue Creek, and 6.5 miles southeast of Clark Fork. Measuring cableway 0.4 mile downstream. Discharge computed at Whitehorse Rapids, 2.7 miles downstream.

Drainage area.--22,067 sq mi, based on revised area of 22,006 sq mi for site near Heron.

Records available.--September 1928 to September 1955. Prior to October 1952, published as Clark Fork near Heron, Mont.

Gage.--Water-stage recorder. Datum of gage is 2,000.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1947, levels by Washington Water Power Co. Prior to Oct. 30, 1928, staff gage and Oct. 30, 1928, to Apr. 8, 1952, water-stage recorder, at site near Heron, 4 miles upstream at datum 88.00 ft higher prior to Jan. 2, 1931, and 78.00 ft higher thereafter. Apr. 9 to Sept. 30, 1952, staff gage just upstream from present site at approximately same datum.

Average discharge.--27 years, 20,670 cfs (14,960,000 acre-ft per year).

Extremes.--1952-53: Maximum discharge during water year, 97,400 cfs June 16 (gage height, 85.10 ft); minimum, 884 cfs Apr. 18 (gage height, 64.48 ft); minimum daily, 1,140 cfs Aug. 30, Sept. 6.

1953-54: Maximum discharge during water year, 105,000 cfs May 22 (gage height, 85.95 ft); minimum, 790 cfs Mar. 21 (gage height, 64.20 ft); minimum daily, 980 cfs Jan. 17.

1954-55: Maximum discharge during water year, 85,700 cfs June 18 (gage height, 83.30 ft); minimum, 1,020 cfs Sept. 26 (gage height, 64.22 ft); minimum daily, 3,250 cfs Mar. 6.

1928-55: Maximum discharge, 153,000 cfs May 29 to June 1, 1948; maximum gage height, 50.97 ft May 31, 1948, site and datum then in use; minimum discharge observed, 270 cfs Aug. 12, 1952 (discharge measurement); minimum daily since reservoir filled, that of Jan. 17, 1954.

Maximum discharge known, 195,000 cfs in June 1894 (elevation at point an eighth of a mile below "near Heron" site, 2,137.1 ft, from floodmark).

Remarks.--Records excellent except those below about 5,000 cfs, which are good, and those for periods of no gage-height record, which are fair. Flow regulated by Hungry Horse Reservoir (see p. 211) and Flathead Lake (see p. 215). Extreme diurnal fluctuation caused by powerplant at Cabinet Gorge Dam. Diversions above station for irrigation of about 354,000 acres. Discharge measurements show that there is approximately 1,000 cfs ground-water inflow between Cabinet Gorge Dam and Whitehorse Rapids, and it has been observed that approximately 600 cfs of this inflow occurs in the reach (2.3 miles) from the measuring cableway to Whitehorse Rapids. Published records give flow at Whitehorse Rapids, computed by adding 600 cfs to observed flows at the measuring cableway, and are considered to be comparable to records at former site near Heron, except for surface flow from additional drainage area. To determine flow through the turbines and over the spillway at Cabinet Gorge Dam, 1,000 cfs should be deducted from flows published herein.

Cooperation.--Gage-height record furnished by Washington Water Power Co. and 10 discharge measurements made by or in collaboration with that company.

Revisions (water years).--WSP 1182: 1936.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	(*)	11,000	9,900	8,080		9,010	10,400	28,400	55,600	*36,800	16,400	9,870
2		10,600	9,000	11,100		12,000	*11,400	24,800	60,600	39,000	11,600	6,890
3		10,400	9,770	10,500		8,620	12,200	23,000	62,500	41,400	13,200	7,490
4		9,910	11,100	9,270		10,700	11,200	22,500	67,200	42,800	11,700	11,400
5		9,880	10,500	10,700		11,900	1,620	21,800	78,400	42,600	14,200	7,390
6		10,300	11,300	9,720	a12,700	11,500	14,000	*25,100	92,400	41,400	14,700	1,140
7		11,000	*7,640	10,100		12,400	14,400	29,900	94,300	41,600	15,500	1,590
8		10,100	*11,900	10,300		9,030	11,500	30,500	91,500	41,200	14,500	7,570
9	(*)	11,000	11,100	11,800		11,400	11,900	31,200	90,800	39,800	5,780	7,150
10	a10,100	11,200	10,700	11,100		11,600	9,780	36,100	89,300	32,800	12,400	10,200
11		11,000	10,900	11,900		12,800	9,500	35,000	*87,500	34,400	12,000	7,740
12		10,700	10,900	12,000	11,900	11,500	7,580	34,500	87,000	44,800	12,500	12,600
13		10,300	10,700	12,700	14,200	11,800	13,100	34,400	90,100	21,900	13,200	11,000
14		10,900	10,600	14,000	14,300	8,480	10,400	34,200	93,300	25,500	12,700	12,700
15		10,100	11,100	13,500	6,840	9,870	10,400	36,000	95,600	28,400	11,600	12,500
16		10,800	10,700	13,100	12,800	13,100	11,200	36,000	96,000	32,100	7,920	13,300
17		10,200	10,800	12,200	10,200	12,100	12,000	37,400	92,100	*31,700	16,200	12,500
18	10,100	10,500	10,800	12,900	11,600	13,600	8,390	35,600	87,000	40,200	11,200	12,600
19	10,200	11,000	10,500	12,500	11,600	12,400	4,870	36,800	*80,000	25,000	8,330	13,000
20	9,340	10,300	11,000	11,800	11,300	15,100	11,400	36,100	72,600	18,400	7,040	12,700
21	9,550	11,400	9,780	11,800	13,100	12,900	12,700	36,300	68,700	20,800	7,840	14,800
22	9,340	9,820	11,200	12,400	8,580	6,830	15,800	33,800	65,200	18,300	9,400	12,000
23	9,490	10,700	10,800	14,500	10,800	12,700	17,400	32,200	55,800	18,200	1,180	12,500
24	*10,300	10,200	11,100	14,000	11,100	13,900	15,500	36,100	*40,700	18,300	*9,760	13,300
25	10,300	10,300	9,580	11,800	*12,000	11,700	19,900	36,600	36,000	18,100	9,500	13,100
26	10,300	10,600	11,000	*12,300	11,000	10,500	18,900	38,300	34,600	16,000	5,720	13,400
27	10,200	10,000	10,600	12,000	12,400	12,700	19,000	40,000	32,200	13,700	10,200	12,800
28	10,400	9,610	9,080	13,900	11,800	10,200	21,100	*40,300	30,700	18,800	14,700	12,600
29	10,400	13,100	10,700	12,600	-	6,050	38,300	41,800	28,800	16,500	7,080	13,300
30	10,300	8,400	10,100	a11,700	------	14,700	24,000	47,200	29,800	15,700	1,140	15,400
31	10,500	------	9,680	a11,800	------	13,200	------	50,000	------	16,400	9,260	------
Total	312,420	315,320	324,530	368,070	335,220	354,290	412,840	‡1,081.9	‡2,086.3	892,800	328,430	324,530
Mean	10,080	10,510	10,470	11,870	11,970	11,430	13,760	34,250	69,540	28,790	10,590	10,820
Ac-ft	619,700	625,400	643,700	730,100	664,900	702,700	818,900	‡2,106	‡4,138	‡1,770	651,400	643,700

Calendar year 1952: Max 78,000 Min 4,900 Mean 20,680 Ac-ft 15,020,000
Water year 1952-53: Max 96,000 Min 1,140 Mean 19,500 Ac-ft 14,110,000

* Discharge measurement made on this day. ‡ Expressed in thousands.
a No gage-height record Oct. 1-17, Jan. 30 to Feb. 11; discharge estimated on basis of records for station at Thompson Falls and records for adjacent periods.

Clark Fork at Whitehorse Rapids, near Cabinet, Idaho--Continued

Discharge, in cubic feet per second, water year October 1953 to September 1954

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15,200	9,000	10,900	2,760	a10,500	25,600	14,100	33,300	75,100	67,600	11,700	17,200
2	14,600	9,050	12,400	10,200	a11,500	21,900	13,200	31,000	73,900	60,700	24,900	16,100
3	12,800	*6,850	17,100	5,600	a9,400	22,400	9,200	31,800	72,300	63,800	17,400	16,800
4	*8,600	9,540	17,400	10,700	12,400	21,600	5,440	30,200	68,900	78,000	19,000	16,100
5	13,200	9,920	11,100	10,900	16,500	19,700	14,200	30,200	60,100	78,200	15,200	12,600
6	12,800	12,800	*3,950	10,900	10,100	16,000	16,500	33,000	50,300	72,900	17,700	16,400
7	13,400	10,500	12,600	12,800	5,750	7,170	18,000	36,800	47,400	70,900	16,500	10,900
8	15,100	10,300	14,000	12,800	14,100	19,400	21,600	46,600	49,200	74,000	13,100	10,700
9	15,200	10,700	13,700	8,870	14,300	20,300	*20,400	42,100	61,900	72,800	17,400	14,200
10	13,100	7,700	13,400	4,850	14,200	20,300	15,300	50,800	54,000	71,200	15,900	15,400
11	*11,300	10,200	13,200	10,000	14,600	a21,700	6,180	54,000	*48,500	68,000	16,800	15,100
12	11,800	10,400	8,600	9,650	14,900	a21,900	21,500	59,700	55,100	61,000	13,600	12,300
13	11,500	11,500	7,270	8,900	14,200	a16,400	20,600	60,200	68,000	47,200	18,200	12,200
14	11,200	11,800	14,300	11,300	4,060	a8,000	21,300	60,000	77,100	43,000	18,100	13,700
15	12,300	11,500	14,400	13,000	14,400	a19,100	22,100	62,100	80,100	55,300	12,200	14,700
16	11,900	12,400	14,500	9,210	14,200	a19,200	22,400	64,300	80,700	52,400	11,700	14,300
17	11,600	12,800	14,200	980	13,800	19,200	17,900	70,900	77,400	58,000	13,200	11,800
18	10,500	12,400	11,600	7,180	14,200	17,100	20,800	77,800	70,500	55,000	13,400	10,100
19	9,730	12,300	10,500	6,250	19,100	17,100	30,300	87,000	59,600	33,600	14,200	7,470
20	8,180	13,100	3,680	*a7,300	14,400	12,100	31,900	*97,700	54,700	23,300	19,100	8,420
21	10,500	15,000	18,700	a8,000	7,030	3,550	32,500	100,000	54,500	*22,800	15,700	8,120
22	10,700	10,900	18,400	a11,200	*22,300	19,000	32,100	103,000	50,300	28,400	10,600	8,910
23	9,080	15,200	18,700	a10,300	22,000	18,100	31,400	103,000	48,000	33,400	13,900	7,720
24	9,490	14,500	13,900	a8,800	21,000	15,800	30,800	98,700	49,600	31,000	13,900	8,340
25	9,710	15,700	4,220	a10,500	22,500	15,700	33,700	95,400	61,900	25,500	15,400	9,080
26	8,740	5,630	8,370	a10,700	23,100	16,500	33,800	92,200	74,700	33,600	*15,300	6,610
27	8,790	17,900	6,020	a12,800	15,900	11,500	33,800	88,500	73,900	26,900	17,000	7,310
28	9,340	10,400	11,800	a12,700	15,500	*2,100	34,300	84,300	72,400	22,500	11,300	8,960
29	9,310	9,550	12,500	a14,100	-	15,500	*34,300	80,200	74,000	21,900	8,220	9,410
30	8,770	13,600	19,400	a11,000	------	a12,900	33,800	76,900	72,900	23,900	17,700	8,240
31	9,120	------	18,100	a7,900	------	a14,600	------	75,300	------	24,800	16,600	------
Total	347,760	343,140	388,910	292,150	405,940	511,420	693,420	‡2,057	‡1,917	‡1,499.6	474,920	349,190
Mean	11,220	11,440	12,550	9,424	14,500	16,500	23,110	66,350	63,900	48,370	15,320	11,640
Ac-ft	689,800	680,600	771,400	579,500	805,200	‡1,014	‡1,375	‡4,080	‡3,802	‡2,974	942,000	692,600

Calendar year 1953: Max 96,000 Min 1,140 Mean 19,850 Ac-ft 14,370,000
Water year 1953-54: Max 103,000 Min 980 Mean 25,430 Ac-ft 18,410,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
a No gage-height record; discharge estimated on basis of records of output at Cabinet powerplant furnished by Washington Water Power Co.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14,100	*16,200	17,000	14,600	17,000	11,900	*18,300	12,000	*43,300	51,800	21,200	*10,600
2	*11,200	16,100	15,400	13,600	17,100	12,300	13,000	17,700	42,800	49,100	19,600	12,500
3	7,290	16,300	16,300	11,900	19,100	15,500	9,480	20,400	42,000	48,200	19,400	10,100
4	7,180	16,000	13,900	13,000	18,100	15,800	14,000	*27,600	42,800	52,800	19,100	9,100
5	8,540	15,700	11,900	16,300	19,000	13,800	13,700	28,100	44,200	50,800	21,800	9,560
6	12,900	13,600	*16,900	16,300	17,500	3,250	13,500	27,300	45,800	46,500	22,000	10,400
7	12,500	10,100	17,700	17,800	18,100	14,000	13,300	25,700	49,000	42,800	16,200	11,300
8	15,200	15,400	16,200	18,100	19,100	14,600	17,400	21,800	52,400	45,200	17,600	10,600
9	11,300	16,100	21,100	12,900	18,400	15,300	17,100	27,000	56,100	50,700	16,100	16,600
10	13,600	16,100	21,400	*17,000	17,900	16,600	9,620	27,800	61,600	55,000	15,600	14,000
11	11,400	15,700	18,700	17,400	19,000	17,400	16,900	29,900	64,300	52,800	14,000	7,750
12	12,100	16,300	11,900	15,900	18,700	15,500	18,000	29,400	66,300	50,300	11,100	8,900
13	13,600	14,400	16,000	16,400	15,500	6,580	17,300	31,800	68,200	50,700	10,300	10,000
14	11,900	10,900	16,200	17,900	17,900	16,300	17,300	33,800	71,000	55,200	9,300	13,100
15	13,800	15,600	17,300	18,200	16,000	14,400	17,700	36,900	76,400	54,000	10,700	9,340
16	13,800	16,000	17,200	13,100	18,000	14,100	14,800	36,900	*77,000	53,300	7,270	10,100
17	8,680	16,000	18,500	17,300	17,800	10,100	9,080	36,000	80,000	49,400	9,640	14,100
18	9,930	16,400	20,300	18,200	20,800	12,700	17,000	34,500	81,800	47,800	8,650	10,300
19	12,400	16,300	14,800	17,700	20,300	16,000	15,800	33,800	79,500	*41,200	9,530	9,060
20	14,800	15,000	17,700	17,800	13,600	9,580	15,400	35,800	75,600	40,700	11,000	13,500
21	15,700	8,580	15,900	18,200	17,200	17,700	15,500	43,000	71,100	39,400	7,420	16,400
22	16,800	17,500	19,200	18,300	17,600	13,700	16,400	50,100	59,700	33,400	7,480	19,800
23	13,000	17,200	20,800	17,400	17,000	14,200	13,200	52,700	53,800	29,900	8,440	16,400
24	4,050	17,200	19,800	17,300	*16,700	8,830	12,400	50,500	54,300	26,900	*9,960	15,600
25	11,600	9,480	12,100	16,800	16,900	16,500	17,000	47,000	55,000	22,400	9,840	9,520
26	15,700	15,900	18,500	18,400	14,800	10,800	17,700	44,600	55,100	24,800	9,070	*15,300
27	15,600	14,900	16,500	18,300	15,200	5,320	17,900	42,200	58,600	21,700	12,500	16,500
28	16,100	9,050	17,200	19,100	20,400	11,300	16,000	41,200	56,100	28,400	6,390	17,300
29	15,700	17,000	17,800	19,800	-	11,900	15,600	40,100	51,400	24,100	9,810	20,500
30	12,600	16,100	18,300	16,500	------	13,200	13,800	39,500	55,900	25,600	7,620	14,900
31	8,910	------	20,300	18,500	------	12,500	------	43,200	------	16,900	9,410	------
Total	381,780	449,110	532,800	519,900	494,700	401,660	454,180	‡1,068.1	‡1,791.1	‡1,281.8	388,030	383,130
Mean	12,320	14,970	17,190	16,770	17,670	12,960	15,140	34,450	59,700	41,350	12,520	12,770
Ac-ft	757,200	890,800	‡1,057	‡1,031	981,200	796,700	900,900	‡2,119	‡3,553	‡2,542	769,600	759,900

Calendar year 1954: Max 103,000 Min 980 Mean 26,200 Ac-ft 18,970,000
Water year 1954-55: Max 81,800 Min 3,250 Mean 22,320 Ac-ft 16,160,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Pend Oreille Lake at Hope, Idaho

Location.--Lat 48°15', long 116°18', in lot 2, sec. 35, T. 57 N., R. 1 E., at floating dock near Northern Pacific Railway station at Hope.

Drainage area.--22,900 sq mi, approximately.

Records available.--March 1914 to September 1955. Published as "at Sandpoint" 1914-22. Records published for both sites September 1921 to September 1922.

Gage.--Water-stage recorder. Datum of gage is 2,000.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1947; gage readings have been reduced to elevations above mean sea level. Mar. 18, 1914, to Sept. 30, 1922, staff gage 11 miles west across lake at Sandpoint at datum 42.18 ft higher. Sept. 17, 1921, to Oct. 7, 1929, staff gage at present site at datum 45.47 ft higher than present datum. Oct. 8, 1929, to Sept. 30, 1950, water-stage recorder at present site at datum 0.20 ft lower than present datum.

Extremes.--Maximum contents during year, 1,575,000 acre-ft Oct. 1 (elevation, 2,062.64 ft); minimum, 566,400 acre-ft Apr. 18 (elevation, 2,051.55 ft).

1921-55: Maximum contents, 2,462,000 acre-ft June 9, 1948 (elevation, 2,071.62 ft, present datum); minimum, 117,700 acre-ft Feb. 17, 1936 (elevation, 2,046.27 ft, present datum).

Maximum contents known, 2,905,000 acre-ft in June 1894 (elevation, 2,075.88 ft, present datum).

Remarks.--Regulation at Albeni Falls Dam beginning June 4, 1952. Contents shown is that above elevation 2,044.8 ft.

Revisions (water years).--WSP 1122: 1946.

Elevation, in feet, at 12 p.m., water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62.60	62.42	60.06	60.25	60.07	59.87	55.34	51.67	56.21	62.17	62.33	62.44
2	62.56	62.34	60.08	60.20	60.05	59.84	54.81	51.72	56.21	62.10	62.16	62.51
3	62.47	62.22	60.13	60.09	60.06	59.91	54.20	51.78	56.20	62.09	62.25	62.49
4	62.41	62.21	60.12	60.04	60.06	-	53.73	52.02	56.24	62.35	62.34	62.50
5	62.41	62.34	60.06	60.06	60.07	59.87	53.30	52.20	56.31	62.42	62.42	62.54
6	62.46	62.45	60.15	60.08	60.08	59.60	52.92	52.34	56.43	62.29	62.44	62.48
7	62.46	62.28	60.20	60.14	60.11	59.56	52.57	52.44	56.62	62.22	62.30	62.46
8	62.49	62.07	60.15	60.18	60.20	59.55	52.38	52.45	56.84	62.26	62.24	62.44
9	62.41	61.94	60.24	60.15	60.19	59.50	52.20	52.59	57.13	62.47	62.20	62.52
10	62.46	61.79	60.31	60.19	60.16	59.50	51.86	52.78	57.51	62.50	62.28	62.49
11	62.41	61.64	60.32	60.21	60.17	59.49	51.80	53.07	57.92	62.37	62.32	62.41
12	62.40	61.52	60.24	60.23	60.19	59.45	51.96	53.50	58.34	62.27	62.32	62.39
13	62.39	61.35	60.20	60.23	60.13	59.22	51.98	53.91	58.74	62.29	62.33	62.39
14	62.39	61.10	60.18	60.21	60.13	59.19	51.90	54.21	59.17	62.38	62.35	62.49
15	62.42	60.96	60.18	60.23	60.08	59.12	51.82	54.38	59.63	62.39	62.41	62.39
16	62.48	60.88	60.16	60.14	60.07	59.03	51.74	54.48	60.06	62.37	62.37	62.34
17	62.42	60.78	60.15	60.10	60.05	58.87	51.59	54.53	60.56	62.20	62.37	62.42
18	62.39	60.65	60.17	60.10	60.10	58.76	51.73	54.55	61.03	62.08	62.37	62.38
19	62.44	60.53	60.13	60.11	60.13	58.71	51.82	54.58	61.36	62.05	62.39	62.33
20	62.51	60.39	60.10	60.10	60.04	58.56	51.91	54.72	61.54	62.22	62.42	62.42
21	62.57	60.15	60.06	60.10	60.02	58.58	52.03	55.02	61.81	62.43	62.39	62.39
22	62.56	60.16	60.07	60.10	60.00	58.48	52.11	55.41	62.11	62.46	62.38	62.44
23	62.49	60.19	60.19	60.10	59.97	58.38	52.00	55.83	62.19	62.43	62.36	62.33
24	62.33	60.23	60.18	60.09	59.98	58.04	51.84	56.04	62.29	62.37	62.40	62.10
25	62.34	60.13	60.05	60.06	59.97	57.93	51.86	56.13	62.27	62.23	62.44	61.83
26	62.41	60.15	60.05	60.08	59.95	57.74	51.92	56.19	62.23	62.24	62.41	61.60
27	62.45	60.14	60.02	60.07	-	57.39	51.99	56.18	62.27	62.27	62.50	61.45
28	62.48	59.99	60.00	60.08	59.95	57.06	51.92	56.14	62.23	62.42	62.39	61.38
29	62.50	59.99	60.04	60.10	-	56.65	51.87	56.12	62.10	62.42	62.42	61.37
30	62.45	60.03	60.17	60.09	-------	56.25	51.79	56.12	62.16	62.32	62.43	61.24
31	62.38	-------	60.26	60.09	-------	55.75	-------	56.17	-------	62.13	62.48	-------

Note.--Add 2,000 ft to obtain elevation above mean sea level.

Monthly elevation and contents, water year October 1954 to September 1955

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	2,062.53	1,564,000	-
Oct. 31	2,062.38	1,550,000	-14,000
Nov. 30	2,060.03	1,330,000	-220,000
Dec. 31	2,060.26	1,351,000	+21,000
Calendar year 1954	-	-	+1,012,400
Jan. 31	2,060.09	1,335,000	-16,000
Feb. 28	2,059.95	1,322,000	-13,000
Mar. 31	2,055.75	939,000	-383,000
Apr. 30	2,051.79	587,500	-351,500
May 31	2,056.17	976,800	+389,300
June 30	2,062.16	1,529,000	+552,200
July 31	2,062.13	1,526,000	-3,000
Aug. 31	2,062.48	1,559,000	+33,000
Sept.30	2,061.24	1,443,000	-116,000
Water year 1954-55	-	-	-121,000

† Elevation at 12 p.m.

Priest Lake at outlet, near Coolin, Idaho

Location.--Lat 48°29'30", long 116°53'00", in SE¼ sec. 5, T. 59 N., R. 4 W., half a mile east of outlet and 1¼ miles northwest of Coolin.

Drainage area.--572 sq mi.

Records available.--June 1911 to September 1913 (fragmentary gage-height records at Coolin, published as part of records for Priest River at outlet of Priest Lake, at Coolin), April 1928 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,434.64 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. June 18, 1911, to Sept. 30, 1913, staff gages at Coolin at different datums. Apr. 21, 1928, to Oct. 18, 1939, staff gage at site 400 ft from lake outlet at present datum.

Extremes.--Maximum gage height during year, 5.40 ft June 14; minimum, -0.17 ft Mar. 28. 1928-55: Maximum gage height, 6.46 ft May 29, 30, 1948; minimum, that of Mar. 28, 1955.

Remarks.--Flow from Priest Lake is regulated to hold lake at heights desirable for recreation interests during summer months and storage is released for power use downstream during winter months. Storage began Aug. 9, 1950. Prior to Aug. 9, 1950, some regulation resulted from logging operations in the outlet channel.

Gage height, in feet, at 12 p.m., water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.91	2.78	1.08	0.45	0.10	-0.02	-0.06	1.10	3.84	4.13	2.95	2.98
2	2.92	2.68	1.03	.43	.08	-.04	-.05	1.12	3.84	4.08	2.94	2.98
3	2.93	2.59	1.00	.41	.07	-.05	-.04	1.17	3.87	3.96	2.95	2.98
4	2.93	2.51	.98	.39	.07	-.06	-.04	f1.21	3.94	3.94	2.95	2.98
5	2.94	2.45	.93	.37	.05	-.08	-.03	f1.27	4.04	3.86	2.98	2.99
6	2.95	2.42	.96	.35	.09	-.08	-.03	1.34	4.20	3.79	2.99	2.99
7	2.96	2.31	.93	.33	.07	-.10	-.01	f1.42	4.36	3.70	3.00	2.99
8	2.97	2.17	.90	.30	.10	-.07	.03	1.50	4.51	3.60	3.01	3.00
9	2.98	2.08	.86	.29	.09	-.08	.11	f1.58	4.65	3.65	3.01	2.99
10	2.98	1.98	.84	.27	.07	-.05	.22	f1.67	4.80	3.87	3.01	2.99
11	3.00	1.87	.80	.25	.05	-.05	f.32	1.75	5.00	3.98	3.01	2.98
12	3.03	1.78	.80	.28	.05	-.02	f.39	f1.84	5.19	3.93	3.00	2.97
13	3.03	1.71	.77	.29	.03	-.02	.45	f1.92	5.35	3.84	3.00	2.96
14	3.04	1.66	.78	.29	.03	-.02	.49	f2.00	5.40	3.74	3.00	2.96
15	3.05	1.60	.77	.28	.03	-.04	f.50	f2.07	5.32	3.65	2.99	2.95
16	3.06	1.56	.74	.26	.02	-.05	f.58	2.14	5.22	3.53	2.97	2.97
17	3.08	1.54	.70	.25	.02	-.07	f.60	2.20	5.09	3.45	2.97	2.98
18	3.10	1.57	.65	.24	.00	-.08	.62	2.27	4.97	3.31	2.97	2.97
19	3.10	1.55	.62	.23	-.02	-.09	.66	2.38	4.84	3.21	2.96	2.97
20	3.14	1.52	.59	.21	-.04	-.11	.68	2.59	4.73	3.15	2.98	3.02
21	3.15	1.49	.56	.20	-.04	-.15	f.82	2.83	4.66	3.12	2.98	3.01
22	3.19	1.46	.54	.18	-.06	-.11	.88	3.02	4.64	3.08	2.97	3.00
23	3.19	1.42	.50	.17	-.05	-.12	.94	3.16	4.68	3.07	2.97	3.00
24	3.17	1.36	.48	.16	-.03	-.13	f.97	3.22	4.80	3.04	2.97	2.99
25	3.16	1.33	.47	.14	-.02	-.15	f.99	3.26	4.80	2.96	2.97	2.98
26	3.14	1.29	.45	.13	-.02	-.16	f1.02	3.37	4.74	2.97	2.97	2.97
27	3.12	1.27	.43	.12	-.05	-.16	1.07	3.43	4.64	3.00	2.97	3.05
28	3.09	1.22	.42	.10	-.02	-.16	1.07	3.47	4.49	2.98	2.97	3.10
29	3.06	1.17	.43	.08	-	-.11	1.06	3.56	4.36	2.99	2.97	3.12
30	3.00	1.13	.47	.08	-------	-.11	1.08	3.74	4.24	2.99	2.98	3.13
31	2.87	-------	.47	.10	-------	-.10	-------	3.82	-------	2.97	2.98	-------

f Gage heights partly estimated.

Priest River near Coolin, Idaho

Location.--Lat 48°26'50", long 116°53'50", in SE¼ sec. 19, T. 59 N., R. 4 W., on left bank 190 ft downstream from Dickensheet Bridge, 2½ miles downstream from Binarch Creek, 3 miles southwest of Coolin, and 5 miles downstream from outlet of Priest Lake.

Drainage area.--611 sq mi.

Records available.--October 1948 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,338.24 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--7 years, 1,360 cfs (984,600 acre-ft per year).

Extremes.--Maximum discharge during year, 6,580 cfs June 14 (gage height, 7.32 ft); minimum, 135 cfs Oct. 7, 8 (gage height, 2.00 ft).
1948-55: Maximum discharge, 7,290 cfs May 26, 1954 (gage height, 7.63 ft); minimum recorded, 36 cfs Aug. 1, 1951 (gage height, 1.32 ft), but may have been less Sept. 11, 1953, when stage was below intake.

Remarks.--Records excellent. No diversion above station. Flow partly regulated by Priest Lake (see preceding page).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

2.0	135	4.0	1,410
2.2	190	5.0	2,670
2.6	355	6.0	4,240
3.0	575	7.4	6,720
3.5	925		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	218	1,650	1,190	707	468	427	422	1,250	4,360	4,840	1,180	214
2	163	1,550	1,150	694	482	422	442	1,270	4,380	4,820	989	214
3	152	1,480	1,110	674	476	410	449	1,310	4,380	4,720	770	214
4	142	1,380	*1,070	661	476	410	444	1,370	4,410	4,610	642	214
5	142	1,320	1,040	648	471	395	449	1,430	4,560	4,550	515	214
6	142	1,280	1,060	635	471	395	460	1,510	4,720	4,440	515	214
7	140	1,780	1,080	623	476	390	476	1,560	4,940	4,340	515	218
8	138	2,210	1,030	611	488	395	510	1,640	5,170	4,260	504	218
9	138	2,080	1,000	599	488	400	557	1,730	5,370	2,890	504	218
10	140	1,990	976	593	482	410	617	1,810	5,570	261	504	218
11	138	1,880	950	*581	471	416	668	1,880	*5,820	1,150	510	218
12	140	1,790	934	581	466	427	714	1,950	6,090	3,090	498	214
13	142	1,700	925	599	466	432	756	2,060	6,340	3,700	504	218
14	142	1,710	917	599	460	432	778	2,150	6,520	3,570	498	222
15	145	1,700	917	599	454	427	792	2,210	6,520	3,450	498	218
16	145	1,650	909	593	449	422	822	2,260	6,450	3,330	493	222
17	150	1,620	877	587	444	410	853	2,320	6,250	3,200	480	225
18	152	1,620	845	575	432	400	877	2,390	6,070	3,040	422	229
19	155	1,620	822	569	427	400	901	2,460	5,930	*2,920	375	225
20	158	1,600	800	563	416	395	925	2,630	5,750	2,250	278	233
21	314	1,580	778	551	410	380	984	2,920	5,600	1,680	257	249
22	460	1,530	763	539	*405	375	1,120	3,210	5,550	1,640	257	249
23	510	1,500	749	533	400	385	1,160	3,410	5,570	1,600	*257	245
24	557	1,450	728	527	416	375	1,180	3,530	5,680	1,580	257	245
25	563	1,420	714	521	416	370	1,190	*3,570	5,770	1,540	253	241
26	557	1,390	700	510	420	370	1,210	3,670	5,690	1,390	241	237
27	611	1,340	687	504	420	360	*1,230	3,780	5,620	1,260	218	*253
28	687	1,310	674	498	422	360	1,230	3,850	5,440	1,260	218	274
29	668	1,260	680	488	-	385	1,230	3,890	5,300	1,250	218	288
30	1,060	1,230	687	482	------	*400	1,230	4,090	5,100	1,250	214	296
31	*1,750	------	707	482	------	405	------	4,290	------	1,240	214	------
Total	10,719	47,600	27,449	17,926	12,592	12,380	24,676	77,400	164,900	84,921	13,778	6,957
Mean	346	1,587	885	578	450	399	823	2,497	5,497	2,739	444	232
Ac-ft	21,260	94,410	54,440	35,560	24,980	24,560	48,940	153,500	327,100	168,400	27,330	13,800

Calendar year 1954: Max 7,170 Min 109 Mean 1,549 Ac-ft 1,122,000
Water year 1954-55: Max 6,520 Min 138 Mean 1,373 Ac-ft 994,300

* Discharge measurement made on this day.

Priest River near Priest River, Idaho

Location.--Lat 48°13', long 116°55', in NE¼SE¼ sec. 11, T. 56 N., R. 5 W., on right bank 500 ft downstream from Saddler Creek, a quarter of a mile downstream from Lower West Branch, 2½ miles north of Priest River, and 3½ miles upstream from mouth.

Drainage area.--902 sq mi.

Records available.--June 1903 to April 1905, November 1910 to April 1911, May to December 1923, February 1929 to September 1955. Prior to October 1930, published as "at Priest River."

Gage.--Water-stage recorder. Altitude of gage is 2,090 ft (from river-profile map). Prior to May 15, 1929, and Sept. 18, 1929, to Apr. 28, 1930, staff gages at site 3 miles downstream at altitude about 40 ft lower. June 4 to Sept. 17, 1929, Apr. 29 to Sept. 11, 1930, staff gages at or near present site at present datum.

Average discharge.--27 years (1903-4, 1929-55), 1,605 cfs (1,162,000 acre-ft per year).

Extremes.--Maximum discharge during year, 7,570 cfs June 14 (gage height, 7.48 ft); minimum, 302 cfs Oct. 8-10 (gage height, 0.85 ft).
1903-5, 1910-11, 1923, 1929-55: Maximum discharge, 10,500 cfs May 29, 30, 1948; maximum gage height, 8.97 ft May 29, 1948; minimum discharge, 170 cfs Sept. 13, 1953 (gage height, 0.48 ft).

Remarks.--Records excellent except those for periods of no gage-height record or ice effect, which are good. No diversion above station. Some regulation on tributary and, since Aug. 9, 1950, by low buttress and stoplog dam three-quarters of a mile downstream from Priest Lake Outlet.

Revisions (water years).--WSP 572: 1903-5.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.8	268	3.0	1,820
1.0	357	4.0	2,820
1.5	638	6.0	5,400
2.0	979	8.0	8,400

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	435	1,830	1,500	979	670	638	862	2,080	5,390	5,600	1,410	357
2	372	1,750	1,450	942	651	608	949	2,180	5,330	5,440	1,320	357
3	338	1,660	1,400	898	644	595	987	2,290	5,300	5,230	1,010	352
4	324	1,580	1,350	862	638	b565	1,000	2,380	5,320	5,090	957	348
5	306	1,520	*1,290	841	644	b560	1,050	2,500	5,440	5,040	753	348
6	306	1,480	1,340	827	632	b580	1,180	2,630	5,640	4,880	695	348
7	306	1,550	1,360	814	657	589	1,340	2,730	5,900	4,730	688	348
8	306	2,370	1,300	793	793	559	1,460	2,830	6,140	4,590	682	352
9	302	2,270	1,250	786	766	571	1,600	2,930	6,360	4,260	670	357
10	302	2,210	1,220	780	708	595	1,690	2,950	6,600	1,110	670	352
11	319	2,080	1,180	*760	b680	608	1,750	3,010	*6,880	807	663	348
12	315	1,970	1,160	746	b660	608	1,630	3,100	7,200	2,780	657	348
13	315	1,900	1,160	786	b650	608	1,640	3,230	7,440	3,940	651	338
14	310	1,920	1,150	b780	644	595	1,520	3,320	7,540	3,820	651	357
15	306	2,020	1,190	773	644	583	1,440	3,290	7,520	3,680	644	362
16	310	2,010	1,120	773	638	583	1,410	3,320	7,320	3,560	644	372
17	319	1,970	1,100	760	626	577	1,560	3,360	7,100	3,420	638	382
18	319	1,960	1,060	753	595	577	1,600	3,420	6,860	*3,290	601	372
19	324	1,940	1,010	740	601	565	1,760	3,530	6,600	3,120	583	367
20	334	1,900	1,000	734	595	559	1,690	3,780	6,390	2,860	507	377
21	362	1,900	979	714	614	559	1,990	4,250	6,230	1,910	435	408
22	595	1,850	964	695	*620	571	2,900	4,560	6,140	1,850	413	398
23	657	1,800	949	695	583	571	2,920	4,690	6,160	1,790	*413	377
24	714	1,800	927	688	589	542	2,570	4,710	6,360	1,800	419	382
25	720	1,750	905	682	583	524	2,340	*4,660	6,520	1,760	413	372
26	714	1,700	898	670	583	524	*2,350	4,710	6,340	1,670	408	*372
27	727	1,700	870	663	559	530	2,370	4,830	6,240	1,470	388	393
28	848	1,650	855	657	571	536	2,170	4,840	6,060	1,480	367	577
29	848	1,600	884	651	-	638	2,080	4,900	5,900	1,460	362	565
30	834	1,550	912	644	--	740	2,040	5,260	5,640	1,460	362	484
31	*1,740		1,010	651		*793	-----	5,390	- -	1,450	357	--
Total	15,227	55,190	34,743	23,537	17,838	18,251	51,848	111,660	189,860	95,347	19,431	11,470
Mean	491	1,840	1,121	759	637	589	1,728	3,602	6,329	3,076	627	382
Ac-ft	30,200	109,500	68,910	46,680	35,380	36,200	102,800	221,500	376,600	189,100	38,540	22,750

Calendar year 1954: Max 8,260 Min 302 Mean 2,004 Ac-ft 1,451,000
Water year 1954-55: Max 7,540 Min 302 Mean 1,765 Ac-ft 1,278,000

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Nov. 18 to Dec. 4; discharge estimated on basis of Telemark gage readings, weather records, and records for station near Coolin.

Pend Oreille River at Newport, Wash.

Location.--Lat 48°11', long 117°02', in SE¼SW¼ sec. 24, T. 56 N., R. 6 W., on left bank at Newport, 0.2 mile upstream from bridge on U. S. Highway 2, a quarter of a mile east of Idaho-Washington State line, and 1.6 miles downstream from Albeni Falls Dam.

Drainage area.--24,200 sq mi, approximately.

Records available.--June 1903 to September 1941, October 1952 to September 1955. Prior to October 1921, published as Clark Fork at Newport, Wash., October 1921 to September 1937, as Clark Fork at Priest River, Idaho, and October 1937 to September 1941, as Pend Oreille River at Priest River, Idaho.

Gage.--Water-stage recorder. Datum of gage is 2,000.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Sept. 22, 1928, staff or wire-weight gages at Priest River, Newport, or Metaline Falls at various datums (see description, WSP 532, p. 92). Sept. 22, 1928, to Sept. 30, 1941, water-stage recorder at Priest River at datum 2,000 ft above mean sea level, datum of 1929. Since December 1952, auxiliary water-stage recorder 2.74 miles downstream from base gage.

Average discharge.--41 years (1903-41, 1952-55), 24,900 cfs (18,020,000 acre-ft per year).

Extremes.--Maximum discharge during year, 86,200 cfs June 20 (gage height, 44.60 ft); minimum, 5,560 cfs Sept. 5; minimum gage height, 28.62 ft Oct. 5, 6.
1903-41, 1952-55: Maximum discharge, 136,000 cfs June 15, 1913, June 21, 1933; minimum, 2,200 cfs Dec. 12, 1919.
Maximum elevation known, about 2,064 ft in June 1894, present datum, from water-surface profiles (discharge, about 200,000 cfs).

Remarks.--Records excellent. Flow regulated at Albeni Falls Dam and affected by storage in Pend Oreille Lake (see p. 221), Flathead Lake (see p. 215), Hungry Horse Reservoir (see p. 211), and several smaller reservoirs (see p. 230). Diversions above station for irrigation of about 337,600 acres (1946).

Revisions (water years).--WSP 532: 1903-11.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10,700	15,500	17,200	17,700	19,000	16,000	40,000	22,300	51,600	63,000	16,700	12,400
2	12,600	*21,500	16,400	17,600	18,900	14,900	40,000	21,200	52,400	62,300	21,500	8,130
3	12,400	22,600	16,000	17,600	19,000	12,400	39,800	20,700	52,300	57,900	18,400	11,900
4	8,560	17,800	16,000	16,800	19,000	13,500	38,600	21,700	52,200	51,400	14,900	8,090
5	8,330	11,000	*16,200	15,400	19,000	17,700	35,400	25,400	53,200	56,800	16,700	7,700
6	9,920	11,100	16,200	16,100	18,900	17,500	33,600	26,400	53,000	61,300	20,600	13,200
7	12,300	17,700	17,300	16,100	19,000	16,600	32,300	26,900	54,800	55,200	22,200	11,900
8	13,600	26,500	19,000	16,100	19,000	16,200	31,200	26,900	55,600	49,400	19,800	11,500
9	14,700	25,600	19,200	16,200	19,100	17,900	30,300	26,400	57,100	48,900	18,300	13,200
10	13,900	25,600	19,200	16,200	19,000	18,400	29,200	26,300	58,800	58,000	14,500	15,200
11	13,000	25,600	19,200	*16,900	19,100	18,900	25,200	22,400	*61,500	62,400	11,700	11,800
12	13,000	25,400	19,300	18,000	19,000	19,000	18,400	19,700	63,800	60,300	11,400	8,820
13	13,000	25,400	19,200	18,500	19,000	18,900	19,900	20,600	65,800	56,800	10,400	8,780
14	12,600	25,400	19,200	19,000	19,000	18,900	23,600	24,500	66,900	57,300	9,480	10,400
15	11,500	25,100	19,200	19,200	19,000	18,500	24,200	32,600	68,500	59,800	8,490	13,700
16	12,000	24,900	19,200	19,100	18,900	18,800	23,000	*38,200	70,500	62,100	8,700	12,300
17	12,000	24,900	19,200	19,100	19,000	18,800	*19,800	38,800	*70,000	*62,900	10,000	10,500
18	12,000	25,400	19,300	19,200	18,900	18,800	17,600	39,900	70,700	58,300	9,070	12,200
19	12,000	25,300	19,200	19,000	18,900	18,800	16,100	40,000	74,000	48,700	8,190	11,900
20	12,400	25,200	19,200	19,000	18,900	18,800	16,400	39,700	78,500	36,400	9,370	11,300
21	14,200	22,500	19,100	19,000	18,900	18,800	17,800	41,000	69,700	31,000	9,100	16,000
22	17,600	19,500	19,100	19,000	18,900	19,700	21,000	43,000	60,500	33,400	8,760	17,500
23	17,900	18,300	19,200	19,000	*18,900	20,200	23,400	46,200	61,600	34,000	8,870	21,400
24	13,700	18,300	19,000	19,100	18,900	21,700	24,500	49,500	68,800	33,700	7,770	25,800
25	12,400	18,200	19,000	19,000	19,000	21,900	22,700	51,800	69,400	31,600	8,060	25,400
26	13,400	18,000	19,000	19,000	19,000	21,500	21,300	52,600	69,100	26,600	8,530	25,500
27	14,300	18,000	19,000	19,000	18,900	21,800	21,200	52,000	69,000	22,300	8,330	24,800
28	15,500	18,100	19,000	19,000	17,800	26,100	21,900	52,600	71,000	22,100	9,910	24,100
29	15,600	18,000	18,400	19,000	-	32,400	22,600	51,900	69,300	24,400	8,080	21,000
30	15,600	18,000	17,600	19,000	-	33,900	22,400	51,300	63,400	28,800	7,190	21,100
31	14,300	-	17,700	19,000		36,700	- - - -	50,500	- -	28,500	7,020	- -
Total	405,010	634,400	571,000	561,900	529,900	624,000	773,400	‡1,103	‡1,903	‡1,445.6	372,020	447,520
Mean	13,060	21,150	18,420	18,130	18,920	20,130	25,780	35,580	63,430	46,630	12,000	14,920
Ac-ft	803,300	‡1,258	‡1,133	‡1,115	‡1,051	‡1,238	‡1,534	‡2,188	‡3,775	‡2,867	737,900	887,600

Calendar year 1954: Max 101,000 Min 7,660 Mean 28,640 Ac-ft 20,730,000
Water year 1954-55: Max 78,500 Min 7,020 Mean 25,670 Ac-ft 18,590,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Calispell Creek near Dalkena, Wash.

Location.--Lat 48°14'40", long 117°20'30", in SW¼ sec. 26, T. 32 N., R. 43 E., on left bank 2 miles upstream from Calispell Lake, 4.8 miles west of Dalkena, and 9 miles upstream from mouth.

Drainage area.--67.8 sq mi.

Records available.--August 1950 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 2,070 ft (from topographic map).

Average discharge.--5 years, 73.9 cfs (53,500 acre-ft per year).

Extremes.--Maximum discharge during year, 426 cfs Apr. 22 (gage height, 5.18 ft); minimum, 9.6 cfs Oct. 28, 29 (gage height, 2.71 ft).
1950-55: Maximum discharge, 877 cfs Apr. 26, 1952 (gage height, 6.65 ft); minimum, 6.0 cfs Oct. 3, 1950; minimum gage height, 2.71 ft Oct. 28, 29, 1954.

Remarks.--Records good. Some diversion above station for irrigation. Some regulation by Power Lake.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Feb. 10, 11, 27, Mar. 4, 5, 25, 26)

Oct. 1 to June 5				June 6 to Sept. 30			
2.6	6.0	3.6	104	2.7	13	3.4	80
2.7	10.5	4.0	173	2.9	27	4.0	173
2.8	16.5	4.5	273	3.1	45	4.5	273
3.0	31	5.2	431				
3.3	62						

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15.5	12.5	*24	21	19	19	24	159	256	*116	35	18
2	15	17	24	21	18.5	19	27	169	226	127	32	18
3	15	18.5	24	21	18.5	19	34	175	212	97	30	16.5
4	15	17.5	24	21	18.5	18.5	54	181	210	90	29	16
5	15	17.5	24	20	18.5	18.5	60	198	216	88	28	16.5
6	14.5	17.5	25	20	18.5	18.5	*78	222	*218	76	28	17.5
7	14.5	18.5	25	19.5	19	18.5	107	232	214	73	28	17.5
8	14.5	18.5	*24	19.5	20	18.5	134	244	200	69	27	17.5
9	14.5	18.5	23	19.5	19.5	18.5	182	242	182	66	25	17.5
10	14.5	18.5	23	19.5	19.5	18.5	236	228	175	67	25	16
11	14.5	18.5	23	19.5	19.5	18.5	179	226	168	63	25	15.5
12	14.5	17.5	22	*19.5	20	18.5	148	240	159	60	25	15.5
13	14.5	18.5	23	19.5	20	18.5	134	248	150	54	24	15.5
14	14	21	23	19.5	*20	18.5	115	236	138	50	23	16.5
15	14	40	23	19.5	20	18.5	100	222	124	47	22	18.5
16	13.5	49	22	19.5	20	18.5	95	218	110	50	22	20
17	13.5	49	22	19.5	20	18.5	95	220	99	46	21	21
18	14	48	21	19.5	20	18.5	100	224	92	42	*21	20
19	14.5	50	21	19.5	19.5	18.5	114	238	84	39	21	18.5
20	14.5	40	22	19.5	19.5	18.5	122	298	78	37	21	18
21	15	33	22	19.5	19	*18.5	214	364	72	35	21	18
22	*15	30	21	19	19	18.5	408	344	67	35	21	18
23	15	28	21	19	19	18.5	339	298	63	33	20	17.5
24	14.5	26	21	19	19	18.5	258	269	69	43	19.5	16
25	14	25	21	19	19	18	*212	234	78	39	18.5	15.5
26	14	25	20	19	19	18	208	226	68	*35	18.5	15.5
27	14	25	20	19	19	17.5	192	224	90	48	18.5	18
28	12	25	20	19	19	17.5	162	206	73	47	18.5	46
29	9.6	25	19.5	18.5	-	19	*150	226	72	42	18.5	33
30	10.5	25	21	18.5	------	20	142	303	63	40	*18	22
31	12	------	21	18.5	------	21	------	298	------	37	18	------
Total	435.1	793.0	689.5	605.0	540.0	576.5	4,423	7,412	4,026	1,791	722.0	569.5
Mean	14.0	26.4	22.2	19.5	19.3	18.6	147	239	134	57.8	23.3	19.0
Ac-ft	863	1,570	1,370	1,200	1,070	1,140	8,770	14,700	7,990	3,550	1,430	1,130

Calendar year 1954: Max 420 Min 9.6 Mean 61.4 Ac-ft 44,430
Water year 1954-55: Max 408 Min 9.6 Mean 61.9 Ac-ft 44,780

* Discharge measurement made on this day.

Pend Oreille River below Box Canyon, near Ione, Wash.

Location.--Lat 48°46'50", long 117°24'40", in SE¼NE¼ sec. 19, T. 38 N., R. 43 E., on left bank 1,000 ft downstream from Box Canyon Dam and 4 miles north of Ione.

Drainage area.--25,000 sq mi, approximately.

Records available.--October 1952 to September 1955.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Mar. 29, 1954, staff gage at site 300 ft upstream at same datum. Mar. 29 to Aug. 25, 1954, staff gage at present site and datum.

Extremes.--Maximum discharge during year, 80,900 cfs June 20 (elevation, 2,002.98 ft); minimum, 4,940 cfs Aug. 12 (elevation, 1,981.62 ft).
1952-55: Maximum discharge observed, 103,000 cfs May 29, 1954 (elevation, 2,007.36 ft); minimum, that of Aug. 12, 1955, but may have been less sometime during period of no gage-height record, Sept. 6, 7, 1953.
Flood in June 1948 reached an elevation of 2,018.0 ft, from floodmarks (discharge, 167,000 cfs).

Remarks.--Records excellent. In 1946 there were diversions for irrigation of about 340,000 acres, and there probably has not been any appreciable change since that time. Flow affected by natural storage in Pend Oreille Lake (see p. 221), Hungry Horse Reservoir (see p. 211), Box Canyon Dam, and by smaller reservoirs in Pend Oreille River basin in Montana (see p. 230).

Rating table, water year 1954-55 (elevation, in feet, and discharge, in cubic feet per second)

1,982.0	5,700	1,989.0	25,600
1,982.5	6,800	1,992.0	35,600
1,983.0	7,900	1,995.0	46,300
1,984.0	10,300	1,998.0	58,600
1,985.0	12,900	2,001.0	71,800
1,986.0	15,900	2,003.0	81,000

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,890	14,800	18,500	18,200	19,400	18,400	38,400	24,200	50,000	*83,900	20,100	11,100
2	10,500	15,500	17,900	18,100	19,300	17,000	39,400	24,100	51,800	82,800	18,400	9,320
3	12,100	19,600	17,100	18,000	19,200	15,500	39,400	23,400	52,300	61,300	22,400	10,200
4	12,000	22,000	16,800	18,000	19,200	12,100	38,200	22,900	52,600	57,500	14,800	8,440
5	9,880	20,800	16,700	17,400	19,200	12,300	38,100	24,500	52,300	53,100	15,200	8,720
6	9,010	14,800	16,800	16,400	19,200	16,100	*38,000	27,200	53,100	57,800	21,500	10,600
7	9,900	12,300	16,800	16,400	19,300	18,300	34,800	28,700	52,900	59,000	24,400	11,800
8	11,700	15,800	17,400	16,400	19,300	18,000	33,700	29,200	54,800	54,100	15,200	11,600
9	13,000	23,900	18,900	16,400	19,200	17,500	32,800	29,400	*56,000	50,100	14,800	11,600
10	14,000	25,700	19,400	16,800	19,200	18,000	32,400	28,900	57,700	51,700	20,100	11,200
11	13,900	26,200	19,500	16,800	19,200	18,600	31,400	28,800	55,000	57,100	16,800	11,100
12	13,100	26,400	19,800	17,000	19,200	19,100	28,900	25,200	56,900	60,100	9,110	11,800
13	12,900	26,400	19,700	*18,000	19,200	19,300	21,700	20,700	61,200	58,900	6,320	12,000
14	12,900	26,400	19,700	18,500	19,300	19,200	22,400	18,500	63,700	57,000	7,920	10,700
15	12,600	26,500	19,700	19,100	*19,300	19,200	24,800	24,500	65,800	56,400	8,210	12,600
16	11,900	26,500	19,600	19,300	19,300	19,000	25,400	38,500	67,800	58,200	9,040	12,800
17	12,000	26,400	19,500	19,400	19,200	19,000	24,300	39,300	68,800	*60,100	*10,500	12,000
18	12,000	26,400	19,500	19,300	19,200	19,000	21,700	40,300	68,900	61,000	11,100	11,000
19	12,100	26,500	19,500	19,400	19,200	19,000	19,400	41,300	69,300	58,700	8,880	10,900
20	12,000	26,500	19,500	19,400	19,300	19,000	17,700	41,700	77,700	47,500	8,800	8,940
21	12,400	26,400	19,500	19,400	19,300	19,000	17,500	41,800	73,700	38,200	10,000	9,950
22	13,800	24,900	19,500	19,200	19,200	19,400	20,000	43,000	*67,200	35,300	9,590	17,000
23	16,300	22,300	19,500	19,200	19,200	*19,800	23,400	45,100	64,400	35,000	8,750	18,900
24	17,100	20,100	19,800	19,300	19,300	20,800	25,800	46,000	66,000	35,400	8,530	*19,200
25	14,800	19,200	19,800	19,300	19,200	22,100	28,500	48,900	65,800	35,200	8,190	24,200
26	13,100	18,900	19,400	19,300	19,200	22,600	24,900	55,400	67,000	30,900	8,100	25,100
27	13,300	18,700	19,400	19,300	19,300	22,400	23,600	53,300	68,600	24,800	9,060	25,700
28	14,000	18,600	19,400	19,300	19,300	22,800	23,100	*49,900	69,100	23,800	9,520	26,800
29	15,000	*18,600	19,500	19,300	-	23,600	*23,500	51,500	70,200	25,000	9,800	24,700
30	*15,400	18,600	19,100	19,400	------	33,100	24,200	52,500	67,500	28,000	7,830	20,800
31	15,500	------	18,600	19,300	------	35,500	------	51,600	------	30,400	7,480	------
Total	397,080	656,500	585,200	570,200	538,900	619,700	832,400	‡1,118.3	‡1,867.7	‡1,483.9	382,830	430,670
Mean	12,810	21,880	18,880	18,390	19,250	19,990	27,750	36,070	62,260	47,870	12,350	14,360
Ac-ft	787,600	‡1,302	‡1,161	‡1,131	‡1,069	‡1,229	‡1,651	‡2,218	‡3,705	‡2,943	759,300	854,200

Calendar year 1954: Max 103,000 Min 8,320 Mean 29,800 Ac-ft 21,570,000
Water year 1954-55: Max 77,700 Min 8,320 Mean 25,980 Ac-ft 18,810,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
Note.--Gage readings for June 16-19 furnished by Pend Oreille County Public Utility District No. 1.

Sullivan Creek at Metaline Falls, Wash.

Location.--Lat 48°51'40", long 117°21'50", in SW¼SW¼ sec. 22, T. 39 N., R. 43 E., on left bank 50 ft upstream from State highway bridge, half a mile upstream from mouth, and half a mile east of Metaline Falls.

Drainage area.--142 sq mi.

Records available.--October 1953 to September 1955.

Gage.--Staff gage read once or twice daily. Altitude of gage is 2,050 ft (from topographic map).

Extremes.--Maximum discharge observed during year, 3,550 cfs June 12 (gage height, 3.90 ft); minimum observed, 77 cfs Sept. 1; minimum gage height observed, 0.62 ft Sept. 11, 19.

1953-55: Maximum discharge observed, that of June 12, 1955; maximum gage height observed, 4.48 ft May 19, 1954; minimum discharge observed, that of Sept. 1, 1955; minimum gage height observed, that of Sept. 11, 19, 1955.

Remarks.--Records fair. Flow regulated at low stages by storage in Sullivan Lake. Small diversions above station for municipal water supply.

Cooperation.--Gage-height record furnished by Lehigh Cement Co.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 22 to June 1, Sept. 7-30)

0.7	75	2.5	960
1.0	139	3.0	1,660
1.3	212	3.5	2,610
1.6	305	3.9	3,550
2.0	510		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	92	98	117	109	109	113	126	153	417	732	157	77
2	90	98	109	109	104	113	121	157	406	714	162	90
3	92	98	119	109	100	111	121	167	439	660	153	88
4	92	94	126	109	104	109	117	172	538	660	144	88
5	96	98	126	109	104	113	117	186	872	850	139	90
6	96	98	126	109	104	113	121	181	*872	678	139	86
7	96	98	121	109	111	113	121	186	960	524	139	88
8	96	100	117	104	109	113	126	196	1,030	538	139	83
9	96	100	117	104	109	109	144	207	1,180	510	135	90
10	96	100	117	104	104	109	167	202	1,080	552	130	90
11	96	100	113	104	106	109	153	202	1,690	524	126	83
12	98	104	113	104	109	109	162	218	3,350	510	121	88
13	96	111	113	104	109	109	148	234	3,130	486	121	90
14	98	111	113	104	111	104	144	234	2,920	462	117	90
15	100	109	113	*100	109	100	139	240	2,650	395	113	96
16	98	119	109	104	109	104	144	229	2,240	*385	109	98
17	100	128	102	104	109	104	139	234	1,800	365	109	94
18	98	137	104	109	109	104	139	240	1,500	270	*104	96
19	96	141	104	104	109	104	144	258	1,500	223	104	92
20	98	144	102	109	109	100	144	385	1,350	155	102	102
21	98	135	109	109	111	100	157	510	1,500	196	98	98
22	100	130	109	109	115	100	176	462	1,660	196	100	100
23	100	132	109	109	113	100	167	355	1,660	186	96	104
24	100	130	109	104	113	100	162	252	1,320	212	94	*102
25	100	130	113	109	113	104	162	298	1,350	176	90	102
26	100	128	109	113	113	104	162	313	1,130	176	92	102
27	98	128	104	109	113	104	157	313	1,030	181	92	106
28	96	121	106	104	115	109	153	*305	916	181	94	111
29	98	117	104	104	-	121	148	337	850	176	81	115
30	*96	*115	109	106	------	117	*148	428	790	176	83	115
31	100	------	113	109	------	117	------	428	------	172	79	------
Total	3,006	3,452	3,475	3,306	3,053	3,339	4,329	8,282	42,130	12,221	3,562	2,854
Mean	97.0	115	112	107	109	108	144	267	1,404	394	115	95.1
Ac-ft	5,960	6,850	6,890	6,560	6,060	6,620	8,590	16,430	83,560	24,240	7,070	5,660

Calendar year 1954: Max 1,830 Min 80 Mean 273 Ac-ft 197,800
Water year 1954-55: Max 3,350 Min 77 Mean 255 Ac-ft 184,500

* Discharge measurement made on this day.

Pend Oreille River below Z Canyon, near Metaline Falls, Wash.

(International gaging station)

Location.--Lat 48°58'50", long 117°20'40", in lot 2, sec. 11, T. 40 N., R. 43 E., on right bank three-quarters of a mile downstream from Z Canyon, 1½ miles south of international boundary, 5 miles downstream from Slate Creek, and 10 miles downstream from town of Metaline Falls.

Drainage area.--25,200 sq mi, approximately.

Records available.--November 1908 to September 1910 (gage heights only), October 1912 to September 1955. Prior to October 1928, published as Clark Fork at Metaline Falls and October 1928 to September 1937 as Clark Fork below Z Canyon, near Metaline Falls.

Gage.--Water-stage recorder. Datum of gage is 1,721.18 ft above mean sea level, datum of 1929, supplementary adjustment of 1947 (levels by Corps of Engineers). Prior to Dec. 19, 1928, staff gages at Metaline Falls 10 miles upstream at datum approximately 262.2 ft higher.

Average discharge.--43 years (1912-55), 26,310 cfs (19,050,000 acre-ft per year).

Extremes.--Maximum discharge during year, 88,900 cfs June 20 (gage height, 37.53 ft); minimum, 5,280 cfs Aug. 13 (gage height, 9.92 ft).

1912-55: Maximum discharge, 171,300 cfs June 13, 1948 (gage height, 60.25 ft); minimum, 2,500 cfs Dec. 12, 1919 (gage height, -2.4 ft, site and datum then in use).

Maximum stage known, 69.0 ft in June 1894, from floodmarks.

Remarks.--Records excellent except those for period of no gage-height record, which are good. In 1946 there were diversions for irrigation of about 340,000 acres, and there probably has not been any appreciable change since that time. Flow regulated at Albeni Falls and Box Canyon Dams and affected by storage in Pend Oreille Lake (see p. 221), Flathead Lake (see p. 215), Hungry Horse Reservoir (see p. 211), and several smaller reservoirs (see p. 230).

Cooperation.--This is one of the international gaging stations maintained by the United States under agreement with Canada.

Revisions (water years).--WSP 442: 1913.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

9.9	5,250	17.0	26,200
13.0	12,200	20.0	35,400
15.0	18,800	38.0	90,300

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,950	15,700	19,000	18,700	20,200	19,600	39,300	26,000	52,400	67,400	26,000	9,680
2	10,400	15,700	18,400	18,700	20,000	18,000	41,200	25,900	54,000	65,900	15,500	11,700
3	12,300	19,700	17,700	18,600	19,900	16,600	41,000	25,400	54,900	64,500	26,300	9,480
4	13,100	22,400	17,300	18,600	19,900	13,300	40,900	24,700	55,300	60,800	16,600	10,400
5	10,900	22,000	17,100	18,200	19,900	12,000	39,900	*25,700	55,100	55,700	15,500	7,950
6	9,620	16,400	17,200	17,100	20,000	16,000	37,800	28,700	56,100	60,000	21,600	10,600
7	9,900	13,300	17,200	17,000	20,000	18,700	36,100	29,900	55,800	62,500	26,100	12,900
8	12,000	15,700	17,600	17,000	20,100	18,800	35,100	30,600	*57,700	57,300	21,400	12,700
9	13,500	23,900	19,000	16,900	19,900	18,300	34,200	30,700	58,900	52,500	18,300	12,500
10	14,700	26,300	19,700	17,000	19,900	18,900	33,700	30,400	61,000	53,300	18,800	12,100
11	14,900	26,900	20,000	17,100	20,000	19,400	32,700	30,200	58,900	59,200	20,300	12,200
12	14,200	27,000	20,000	17,400	20,100	19,800	29,000	27,800	59,200	62,800	12,800	12,000
13	13,800	27,000	20,200	18,300	20,100	20,000	23,500	23,600	64,300	62,100	6,180	13,100
14	13,800	27,100	20,200	19,000	20,100	*20,000	22,900	20,200	66,600	59,700	7,600	11,700
15	13,600	27,100	20,200	19,300	*20,100	19,900	25,900	24,800	69,000	59,000	9,000	12,800
16	12,800	27,200	20,000	19,500	20,100	19,800	26,900	35,300	70,800	*60,500	8,560	13,700
17	12,700	27,100	20,000	19,500	20,100	19,700	26,200	41,000	71,800	62,700	*10,700	14,000
18	12,800	27,100	20,000	19,800	19,900	19,700	23,400	41,800	72,100	63,700	12,600	12,300
19	12,800	27,200	20,000	19,800	20,100	19,700	21,500	42,800	72,400	59,800	9,500	12,000
20	12,800	27,200	20,000	19,800	20,100	19,800	19,400	44,000	81,000	50,500	8,560	10,400
21	13,000	27,000	20,000	*19,800	20,100	19,800	19,000	43,800	a77,000	38,800	10,400	9,430
22	14,300	25,900	20,000	19,800	20,100	20,100	21,200	44,500	a70,200	36,400	10,100	18,700
23	16,700	23,300	20,000	19,900	20,100	*20,300	24,900	47,400	a70,000	35,600	9,360	*19,500
24	18,000	20,800	20,100	19,900	20,200	21,400	27,100	*48,200	a69,000	36,500	8,900	20,100
25	16,400	19,700	20,100	19,900	20,000	22,600	28,100	50,700	a68,900	36,400	8,650	25,200
26	14,000	19,800	19,900	19,900	20,000	23,400	27,100	58,000	a69,900	32,500	8,450	26,300
27	14,100	19,200	19,900	19,900	20,100	23,100	25,600	*56,700	a71,800	27,100	9,140	27,000
28	14,600	19,000	19,900	20,000	20,200	23,200	24,800	52,800	a72,000	25,400	9,580	27,600
29	*15,600	19,000	20,000	20,000	-	28,100	25,100	53,500	a73,200	25,800	10,700	27,100
30	16,200	*18,900	19,700	20,000	------	33,100	25,800	55,200	*70,700	29,100	8,720	22,400
31	16,200	------	19,200	20,000	------	35,700	------	54,200	------	31,100	7,930	------
Total	418,670	674,600	599,600	586,400	561,300	638,800	879,300	‡1,174.5	‡1,960	‡1,554.6	413,830	457,540
Mean	13,510	22,490	19,340	18,920	20,050	20,610	29,310	37,890	65,330	50,150	13,350	15,250
Ac-ft	830,400	‡1,338	‡1,189	‡1,163	‡1,113	‡1,267	‡1,744	‡2,330	‡3,888	‡3,084	820,800	907,500

Calendar year 1954: Max 106,500 Min 8,790 Mean 30,780 Ac-ft 22,290,000
Water year 1954-55: Max 81,000 Min 6,180 Mean 27,180 Ac-ft 19,670,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
a No gage-height record; discharge estimated on basis of records for station at Box Canyon near Ione.

Smaller reservoirs in Pend Oreille River basin in Montana

Georgetown Lake on Flint Creek, 2 miles west of Southern Cross. Storage began about 1905 for pumpage into Warm Springs Creek for use of reduction works of Anaconda Copper Mining Co. at Anaconda, or for release through Flint Creek for power development. Usable capacity, 31,000 acre-ft. Records furnished by The Montana Power Co.

East Fork Rock Creek Reservoir on East Fork Rock Creek, 14 miles southwest of Philipsburg. Storage began in 1936 for irrigation in Flint Creek Valley; usable capacity, 16,000 acre-ft. Records furnished by Montana State Water Conservation Board.

Nevada Creek Reservoir on Nevada Creek, 7 miles west of Finn. Storage began in 1939 for irrigation; usable capacity, 12,600 acre-ft. Records furnished by Montana State Water Conservation Board.

West Fork Bitterroot River Reservoir on West Fork Bitterroot River, 7 miles upstream from Nez Perce Creek and 23 miles south of Darby. Storage began in 1940 for irrigation; usable capacity, 31,700 acre-ft. Records furnished by Montana State Water Conservation Board.

Como Lake on Rock Creek, 4 miles northwest of Darby. Storage began in 1909 for irrigation; usable capacity, 34,800 acre-ft. Records furnished by Bitterroot Irrigation District.

Camas Reservoirs comprise a group of four reservoirs in Little Bitterroot River basin, which are operated for irrigation. Records furnished by Office of Indian Affairs. Little Bitterroot Lake on Little Bitterroot River, 2 miles southwest of Marion; storage began in 1918; usable capacity, 24,000 acre-ft. Hubbart Reservoir on Little Bitterroot River, 9 miles northwest of Niarada; storage began in 1924; usable capacity, 12,100 acre-ft. Upper Dry Fork Reservoir on Dry Fork Creek, 4 miles northwest of Lonepine; storage began in 1940; usable capacity, 2,700 acre-ft. Dry Fork Reservoir on Dry Fork Creek, 1 mile west of Lonepine; storage began in 1921; usable capacity, 4,000 acre-ft.

Mission Valley Reservoirs comprise a group of eight reservoirs in the area east of and tributary to Flathead River between Flathead Lake and Jocko River, which are operated for irrigation. Records furnished by Office of Indian Affairs.. Twin Reservoir, fed entirely by canals, 4 miles southeast of Polson; storage began in 1932; usable capacity, 1,210 acre-ft. Pablo Reservoir, fed entirely by canals, 3 miles south of Polson; storage began in 1914; usable capacity, 25,000 acre-ft. Lower Crow Reservoir on Crow Creek, 6 miles west of Ronan; storage began in 1933; usable capacity, 10,350 acre-ft. Kicking Horse Reservoir, fed entirely by canals, 5 miles south of Ronan; storage began in 1930; usable capacity, 8,350 acre-ft. Ninepipe Reservoir, fed entirely by canals, 2 miles northeast of Charlo; storage began in 1911; usable capacity, 14,870 acre-ft. McDonald Reservoir on Post Creek, 9 miles east of Charlo; storage began in 1919; usable capacity, 8,220 acre-ft. Mission Reservoir on Mission Creek, 4 miles east of St. Ignatius; storage began in 1935; usable capacity, 7,250 acre-ft. Tabor Reservoir on Dry Creek, 8 miles southeast of St. Ignatius; storage began in 1919; usable capacity, 23,000 acre-ft.

Lower Jocko Lake on Middle Fork Jocko River, 15 miles east of Arlee. Storage began in 1937; usable capacity, 7,600 acre-ft. Records furnished by Office of Indian Affairs.

Thompson Falls Reservoir on Clark Fork, at Thompson Falls, for power development; usable capacity, 15,000 acre-ft. Records furnished by The Montana Power Co.

Other reservoirs of small capacity, principally on tributaries of Bitterroot River, are operated for irrigation.

Month-end contents, in acre-feet, water year October 1954 to September 1955

Date	Georgetown Lake	East Fork Rock Creek Reservoir	Nevada Creek Reservoir	West Fork Bitterroot River Reservoir	Como Lake	Camas Reservoirs	Mission Valley Reservoirs	Lower Jocko Lake	Thompson Falls Reservoir
Sept.30.....	24,020	-	-	b27,000	3,940	35,520	39,020	1,240	c14,970
Oct. 31.....	24,360	-	-	b28,000	0	35,520	49,800	1,030	15,960
Nov. 30.....	25,180	-	-	b25,000	1,840	37,220	50,920	813	12,980
Dec. 31.....	28,050	-	-	b25,000	3,030	37,700	51,850	-	14,390
Jan. 31.....	24,380	-	-	b25,000	3,970	38,100	54,550	-	15,590
Feb. 28.....	22,190	-	-	b25,000	4,980	38,940	55,580	-	12,030
Mar. 31.....	20,140	-	-	b25,000	6,000	39,540	57,170	-	14,530
Apr. 30.....	21,580	a16,000	d7,000	b25,000	7,960	41,130	60,170	-	14,250
May 31.....	24,410	-	-	32,830	25,920	42,380	59,090	5,230	2,630
June 30.....	27,110	-	e13,000	31,700	38,150	41,290	74,840	5,710	4,560
July 31.....	29,670	-	-	31,700	34,200	40,760	92,760	4,150	3,130
Aug. 31.....	28,830	a0	-	31,700	13,410	35,170	30,850	288	14,100
Sept.30.....	27,800	-	7,500	31,700	2,320	32,200	11,870	120	13,520

a Figure of contents for first day of following month.
b Approximately.
c Published incorrectly in WSP 1346.
d Figure of contents for Apr. 22, 1955.
e Figure of contents for June 7, 1955.

Columbia River at international boundary

(International gaging station)

Location.--Lat 49°00'03", long 117°37'40", in SE¼ sec. 4, T. 40 N., R. 41 E., on left bank at international boundary, half a mile downstream from Pend Oreille River.

Drainage area.--59,700 sq mi, approximately.

Records available.--October 1937 to September 1955. Prior to March 1938 monthly discharge only, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (Bureau of Reclamation 1937 datum). Prior to Apr. 27, 1939, staff gage at same site and datum. Since May 31, 1942, auxiliary water-stage recorder 2.2 miles downstream from base gage. Jan. 1 to May 30, 1942, auxiliary staff gage at same site.

Average discharge.--18 years, 95,900 cfs (69,430,000 acre-ft per year).

Extremes.--Maximum discharge during year, 403,600 cfs June 29 (elevation, 1,328.37 ft); minimum, 26,800 cfs Mar. 5 (elevation, 1,291.33 ft).
1937-55: Maximum discharge, 550,100 cfs June 12, 1948 (elevation, 1,338.13 ft); minimum, 18,000 cfs Feb. 7, 1954 (elevation, 1,289.38 ft).
Flood in June 1894 reached a stage of 1.346 ft, from information by Bureau of Reclamation (discharge, 680,000 cfs).
Flow of about 12,900 cfs occurred Jan. 30 or 31, 1937, based on information from other gaging stations (elevation, 1,287.9 ft), from rating curve extended below 1,291.6 ft; may have been as low sometime in January 1930.

Remarks.--Records excellent. Many diversions above station for irrigation. It was estimated that 346,700 acres were under irrigation in the United States in 1946. Water is diverted for the irrigation of an additional 25,000 acres in Canada. The flow is affected by internationally controlled storage in Kootenay Lake as well as by natural and controlled regulation in other lakes and reservoirs in Kootenay and Pend Oreille River basins. Records of chemical analyses and water temperatures for the water year 1955 are given in WSP 1403.

Cooperation.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Revisions (water years).--WSP 932: 1937(m), 1938(M), 1939(m).

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65,900	54,400	65,400	50,100	42,200	38,600	58,000	54,700	173,100	383,900	214,300	75,200
2	67,700	52,500	64,800	49,700	42,000	36,700	61,100	54,900	176,200	373,300	195,500	71,100
3	68,600	55,200	62,700	46,200	41,300	34,400	60,600	55,200	179,300	361,200	203,000	69,600
4	65,700	57,000	58,800	42,500	41,300	31,000	58,900	56,200	182,900	347,600	185,600	68,400
5	61,000	57,000	57,600	41,400	41,400	27,700	57,400	58,300	187,600	333,300	179,200	67,400
6	58,800	53,400	57,200	39,700	41,300	31,800	56,100	62,100	193,500	328,300	178,400	68,500
7	58,300	51,000	60,300	39,200	41,500	34,900	55,400	65,600	*198,900	324,300	176,800	69,800
8	57,900	51,900	58,200	38,500	42,200	35,600	55,700	67,800	205,700	313,200	167,300	71,500
9	58,200	58,200	58,200	38,300	43,000	34,500	56,600	69,600	213,200	303,000	158,400	75,100
10	61,000	61,100	57,300	38,600	*42,300	35,300	60,400	69,800	222,500	299,100	153,200	77,400
11	63,100	61,500	56,700	38,600	41,800	*37,700	60,900	71,400	231,300	301,000	152,200	78,000
12	64,600	61,700	56,200	*40,600	41,800	41,500	56,900	72,000	243,300	302,800	140,700	79,000
13	63,600	61,800	56,500	42,200	41,700	41,500	51,100	70,400	264,800	301,800	129,900	77,200
14	61,700	61,800	55,300	44,100	41,700	40,400	50,200	68,600	284,100	301,000	127,300	77,800
15	59,600	62,200	55,200	44,300	41,500	39,500	52,800	72,800	302,800	304,500	124,300	77,700
16	56,300	64,000	53,300	44,700	41,400	39,600	53,800	86,700	318,300	311,300	116,800	77,300
17	56,100	66,900	54,600	44,500	41,700	38,500	53,400	94,400	328,600	317,000	115,100	76,500
18	55,800	69,100	52,200	44,300	41,000	*37,700	50,700	98,000	334,600	323,400	113,400	75,700
19	56,100	68,900	51,900	43,800	41,200	37,400	48,500	103,600	338,000	323,400	107,100	71,000
20	58,800	71,100	51,100	42,600	41,000	37,600	46,600	110,600	345,800	315,600	104,000	64,500
21	61,800	70,700	50,800	42,200	40,800	37,500	46,600	117,400	345,200	299,200	103,900	62,500
22	61,600	67,500	50,400	42,100	40,800	38,700	49,700	123,700	338,000	289,700	102,900	*57,200
23	60,700	63,900	50,000	42,100	39,900	39,800	53,200	131,400	345,100	280,900	101,000	66,800
24	61,600	63,400	46,900	41,900	39,700	40,400	55,300	138,200	355,400	274,800	99,500	66,700
25	60,300	63,300	47,100	41,700	39,300	40,100	57,000	*145,700	370,500	269,100	98,800	69,200
26	57,000	64,000	46,500	41,500	39,300	40,200	55,900	156,900	382,500	259,000	93,900	68,500
27	56,500	65,500	46,100	42,000	39,100	39,900	54,200	162,500	393,800	247,900	93,000	67,200
28	*56,600	*68,800	45,600	41,700	39,000	39,800	53,400	161,100	398,600	236,500	92,100	69,600
29	58,800	65,400	45,600	42,200	-	45,100	53,900	164,100	*401,600	230,700	90,600	71,200
30	54,300	65,300	45,300	42,500	------	52,600	54,500	172,200	398,700	228,500	86,300	62,600
31	55,600	------	45,000	42,600	------	54,800	------	173,200	------	224,200	83,300	------
Total	#1,863.4	#1,858.3	#1,662.8	#1,316.4	#1,151.2	#1,200.8	#1,638.7	#3,109.1	#6,851.8	#9,511.6	#4,085.8	#2,140
Mean	60,110	61,940	53,640	42,460	41,110	38,740	54,620	100,300	228,400	306,400	131,800	71,330
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	#3,696	#3,686	#3,298	#2,611	#2,283	#2,382	#3,250	#6,167	#17,160	#18,470	#8,104	#4,245

Calendar year 1954: Max 411,800 Min 28,500 Mean 123,200 Cfsm - In. - Ac-ft 89,190,000
Water year 1954-55: Max 401,600 Min 27,700 Mean 104,100 Cfsm 1.74 In. 23.67 Ac-ft 75,350,000

* Discharge measurement made on this day.
# Expressed in thousands.

428272 O - 57 - 16

Kettle River near Ferry, Wash.

(International gaging station)

Location.--Lat 48°58'40", long 118°46'10", in lot 7, sec. 10, T. 40 N., R. 32 E., on right bank 1¼ miles south of international boundary and Ferry and 3 miles upstream from Toroda Creek.

Drainage area.--2,220 sq mi, approximately.

Records available.--August 1928 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,836.8 ft above mean sea level, international joint adjustment of 1947. Prior to Nov. 23, 1928, staff gage at present site and datum.

Average discharge.--27 years, 1,454 cfs (1,053,000 acre-ft per year).

Extremes.--Maximum discharge during year, 14,400 cfs June 13 (gage height, 18.65 ft); minimum, 100 cfs Mar. 25 (gage height, 9.42 ft).
1928-55: Maximum discharge, 21,200 cfs May 29, 1948 (gage height, 21.15 ft); minimum, 14 cfs (discharge measurement) Jan. 23, 1930, but may have been less during period of ice effect Jan. 18-23, 1930.

Remarks.--Records excellent. Several small diversions above station for irrigation. No regulation.

Cooperation.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

9.6	149	13.0	2,880
10.0	290	15.0	6,140
10.5	540	17.0	10,300
11.0	860	19.0	15,400
12.0	1,730		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	938	606	1,090	686	441	317	317	962	6,040	5,040	1,450	274
2	916	600	790	624	436	376	344	1,100	5,710	5,130	1,320	258
3	895	588	732	540	385	317	330	1,330	5,860	4,850	1,200	246
4	860	576	853	458	358	218	317	1,580	6,500	4,580	1,120	240
5	839	576	1,120	496	*395	243	340	1,920	7,660	4,990	1,040	229
6	811	570	1,180	524	425	294	371	2,330	8,600	4,840	978	218
7	790	606	1,120	*529	390	322	436	2,590	9,260	4,390	902	212
8	777	618	1,040	496	405	312	496	2,910	*9,300	3,980	846	208
9	777	606	970	496	380	322	612	3,010	9,740	3,580	797	201
10	777	630	970	480	335	335	846	2,850	10,900	*3,440	758	198
11	751	699	938	446	266	322	986	2,850	12,100	3,540	718	187
12	777	686	867	380	322	322	994	3,600	13,300	3,410	*666	180
13	797	706	867	452	335	299	923	3,990	*14,200	3,100	630	177
14	777	744	867	430	385	290	874	3,960	13,200	2,830	594	180
15	751	751	839	405	*405	290	846	4,040	10,500	2,620	564	198
16	*732	818	725	436	395	294	825	4,300	8,480	2,440	524	236
17	738	946	606	480	420	*299	804	4,770	7,440	2,240	485	326
18	758	1,030	507	485	385	312	790	5,110	7,100	2,130	463	340
19	770	*1,070	480	496	348	278	804	5,780	7,100	1,870	441	*317
20	784	1,350	512	485	385	266	825	7,460	6,440	1,690	420	290
21	825	1,460	692	502	385	290	881	*8,100	*6,410	1,560	400	278
22	804	1,390	811	474	362	304	*978	7,640	7,400	1,410	390	274
23	777	1,580	777	452	362	270	1,070	6,630	8,860	1,300	380	290
24	744	1,630	758	512	348	226	1,070	5,870	8,440	1,230	358	282
25	706	1,550	666	458	362	187	1,040	5,780	7,240	1,240	344	270
26	699	1,480	618	441	308	236	1,030	6,040	6,860	1,340	330	258
27	660	1,410	540	458	282	290	1,000	6,220	6,010	1,570	326	250
28	660	1,350	485	446	274	274	946	5,650	5,510	1,840	335	254
29	660	1,290	582	452	-	290	916	5,540	6,480	1,750	317	266
30	630	1,240	648	436	------	304	895	6,730	5,560	1,630	308	308
31	618	------	673	436	------	308	------	6,860	------	1,520	290	------
Total	23,798	29,156	24,323	14,891	10,279	9,007	22,906	137,502	248,200	87,080	19,694	7,445
Mean	768	972	785	480	367	291	764	4,436	8,273	2,809	635	248
Ac-ft	47,200	57,830	48,240	29,540	20,390	17,870	45,430	272,700	492,300	172,700	39,060	14,770

Calendar year 1954: Max 15,000 Min 150 Mean 1,969 Ac-ft 1,426,000
Water year 1954-55: Max 14,200 Min 177 Mean 1,738 Ac-ft 1,258,000

* Discharge measurement made on this day.

Curlew Lake near Malo, Wash.

Location.--Lat 48°45'20", long 118°39'30", in NE¼ sec. 29, T. 38 N., R. 33 E., on east shore 1 mile uplake from outlet and 3½ miles southeast of Malo.

Drainage area.--65.9 sq mi.

Records available.--July 1953 to September 1955 (fragmentary).

Gage.--Staff gage read once daily. Datum of gage is 2,337.22 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum gage height observed during year, 1.79 ft June 4; minimum observed, 0.27 ft Mar. 21.
1953-55: Maximum gage height observed, that of June 4, 1955; minimum observed, that of Mar. 21, 1955.

Remarks.--No known diversions. Some regulation from small dam at outlet. At times during high water and irrigation season, water is diverted from Sanpoil River into this basin. At extreme stages there may be some flow into Sanpoil River basin.

Gage height, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-	0.39			-	0.36	-	-	-	-	-
2	-	0.29	-			-	.36	0.99	-	-	1.19	0.58
3	-	-	-			-	-	-	-	-	-	-
4	0.32	-	.40			-	-	-	1.79	-	-	-
5	-	.29	-	0.31	0.32	-	-	-	-	-	-	-
6	-	-	.41			-	-	1.00	1.73	1.37	-	-
7	-	-	-			-	-	-	-	-	-	.52
8	-	-	-			-	-	-	-	1.35	0.98	-
9	-	.30	.40			-	-	-	-	1.37	-	-
10	-	-	-			-	-	-	-	1.39	-	-
11	-	.33	-			-	-	-	-	-	-	.48
12	-	-	.40			-	-	-	-	-	.93	-
13	.30	-	-			-	-	-	-	-	-	-
14	-	-	-			-	-	-	-	-	-	-
15	-	.39	.38			-	.65	1.33	1.65	-	-	-
16	-	-	-			-	-	-	-	-	.87	-
17	-	-	.37			0.29	-	1.39	1.59	-	-	-
18	-	.42	-			-	.69	-	-	-	-	-
19	-	.45	-			-	-	-	-	-	-	.45
20	-	-	-			-	-	-	1.53	-	-	-
21	-	.45	-			.27	.73	1.56	-	-	-	-
22	.30	-	.35			-	.79	-	1.47	1.19	-	-
23	-	.44	-			-	-	-	-	1.22	.72	-
24	.30	-	-			.30	-	1.66	-	-	-	.44
25	-	.43	-			.28	-	-	-	-	-	-
26	-	-	.34			.29	-	-	-	-	-	-
27	.30	.42	-			-	-	1.74	-	-	-	-
28	-	-	-			-	-	-	-	-	-	-
29	.29	.41	-			.33	-	1.76	-	1.19	-	-
30	-	-	-		-------	.34	-	-	-	-	-	-
31	-	-------	.36		-------	-	-------	-	-------	-	.62	-------

Note.--Gage partly to completely frozen over Dec. 1 to Apr. 19.

Kettle River near Laurier, Wash.

(International gaging station)

Location.--Lat 48°59'10", long 118°13'00", in NW¼ sec. 11, T. 40 N., R. 36 E., on right bank 500 ft downstream from Deep Creek, 1½ miles southeast of Laurier, and 12 miles upstream from Boulder Creek.

Drainage area.--3,800 sq mi, approximately.

Records available.--September 1929 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,425.5 ft above mean sea level, international joint adjustment of 1947. Prior to Jan. 3, 1930, staff gage at same site and datum.

Average discharge.--26 years, 2,822 cfs (2,043,000 acre-ft per year).

Extremes.--Maximum discharge during year, 24,400 cfs June 13 (gage height, 14.22 ft); minimum, 410 cfs Sept. 14 (gage height, 3.04 ft).
1929-55: Maximum discharge, 35,000 cfs May 29, 1948 (gage height, 17.25 ft); minimum not determined, probably occurred during winter of 1929-30.
Maximum stage known, about 22 ft in May or June 1894, from information by local residents.

Remarks.--Records excellent except those for periods of ice effect, which are fair. North Fork regulated by reservoir at Grand Forks, British Columbia. Numerous diversions for irrigation of about 720 acres in the United States (for 1946 from United States reports), and 2,090 acres in Canada, from the Canada Year Book for 1940. Some diversion for domestic use.

Cooperation.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Revisions (water years).--WSP 737: 1930-31. WSP 862: 1937. WSP 882: 1938.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

3.0	390	6.0	3,180
3.5	680	8.0	6,850
4.0	1,010	10.0	11,300
5.0	1,930	14.0	23,600

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,790	1,080	2,490	1,410	962	832	672	2,690	11,400	9,070	2,910	806
2	1,740	1,070	2,080	1,410	930	811	708	2,970	10,600	8,820	2,730	588
3	1,690	1,050	1,850	1,220	874	832	720	3,480	10,800	8,700	2,500	584
4	1,650	1,030	1,920	1,090	797	b790	708	4,220	11,400	8,210	2,310	535
5	1,600	1,040	2,050	1,150	b780	b740	708	5,080	13,200	8,540	2,140	520
6	1,540	1,040	2,250	1,120	*b790	b780	755	5,750	*14,700	8,520	2,000	500
7	1,500	1,060	2,270	1,150	888	804	860	6,050	15,800	8,070	1,880	485
8	1,480	1,080	2,190	1,140	916	769	1,060	6,570	16,300	7,420	1,730	480
9	1,440	1,070	2,080	1,120	902	776	1,470	6,850	16,400	6,870	1,620	475
10	1,410	1,090	2,020	1,070	811	762	2,580	6,430	17,900	6,570	1,580	465
11	1,390	1,130	1,970	*1,010	b790	734	3,080	6,130	19,900	6,610	1,520	450
12	1,400	1,200	1,920	930	b770	720	2,890	7,080	21,700	6,470	*1,390	430
13	1,410	1,230	1,860	970	b780	708	2,630	7,960	*23,500	*6,090	1,300	420
14	1,410	1,290	1,830	994	*b800	690	2,380	7,830	23,600	5,580	1,230	420
15	1,380	1,370	1,800	923	909	672	2,260	7,740	19,700	5,170	1,190	415
16	1,330	1,520	1,750	954	909	654	2,160	8,010	15,200	4,800	1,120	440
17	1,310	1,860	1,480	1,000	888	*594	2,130	8,570	13,400	4,440	1,080	480
18	*1,310	2,110	1,250	1,030	797	600	2,060	9,140	12,600	4,070	994	878
19	1,330	2,370	1,220	1,050	874	594	2,080	9,980	12,700	3,890	946	808
20	1,350	3,040	1,200	1,040	930	564	2,160	12,400	*11,900	3,320	902	552
21	1,390	3,260	1,240	1,010	954	552	2,310	14,400	11,300	3,030	860	*530
22	1,440	3,100	1,530	923	970	570	2,670	13,900	12,700	2,780	839	510
23	1,390	3,050	1,570	868	946	576	2,930	12,500	14,900	2,640	811	495
24	1,340	3,240	1,600	895	923	540	2,940	11,200	15,500	2,520	783	505
25	1,290	3,140	1,520	938	902	470	2,860	10,800	13,000	2,490	755	500
26	1,250	3,000	1,390	938	888	460	*2,820	*11,200	12,100	2,800	734	475
27	*1,220	*2,890	1,240	946	860	490	2,800	11,700	10,900	3,010	714	465
28	1,180	2,820	1,150	946	825	552	2,680	10,800	9,880	3,380	696	455
29	1,170	2,700	1,170	938	-	570	2,590	10,300	11,000	3,480	684	465
30	1,150	2,600	1,300	938	------	630	2,580	11,900	10,500	3,220	668	480
31	1,110	------	1,370	954	------	642	------	13,000	------	3,080	642	------
Total	43,390	57,540	52,540	32,095	24,345	20,478	61,281	266,610	434,280	163,480	41,216	14,897
Mean	1,400	1,918	1,695	1,035	869	661	2,043	8,600	14,480	5,273	1,330	497
Ac-ft	86,060	114,100	104,200	63,660	48,290	40,620	121,500	528,800	861,400	324,200	81,750	29,550

Calendar year 1954: Max 26,500 Min 400 Mean 3,663 Ac-ft 2,652,000
Water year 1954-55: Max 23,600 Min 415 Mean 3,321 Ac-ft 2,404,000

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Deer Lake near Loon Lake, Wash.

Location.--Lat 48°06'25", long 117°36'10", on line between secs. 11 and 14, T. 30 N., R. 41 E., an eighth of a mile upstream from outlet and 3 miles northeast of town of Loon Lake.

Drainage area.--17.8 sq mi.

Records available.--November 1952 to September 1955 (fragmentary).

Gage.--Staff gage read once daily. Altitude of gage is 2,480 ft (from topographic map). Prior to Oct. 1, 1953, staff gage at same site at datum 4.00 ft higher.

Extremes.--Maximum gage height observed during year, 6.87 ft May 21; minimum observed, 3.60 ft Jan. 1.
1952-55: Maximum gage height observed, 6.96 ft Apr. 27, May 1, 1954; minimum observed, that of Jan. 1, 1955.

Remarks.--Intermediate stages of lake controlled for recreational purposes by flashboards. No diversion.

Gage height, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-	-	3.60			-	6.57	-	6.37	-	-
2	4.88	3.96	-				4.68	-	-	6.35	-	-
3	-	-	-				-	-	-	-	-	5.00
4	-	-	3.86				-	6.68	6.79	-	-	-
5	4.82	-	-				4.76	-	-	-	-	-
6	-	3.92	-				-	-	6.75	-	5.76	-
7	-	-	-				-	6.74	6.71	-	-	-
8	-	-	3.86				-	-	-	-	-	-
9	4.77	3.94	-				5.00	-	-	6.35	-	-
10	-	-	-				-	6.78	-	-	-	4.85
11	4.71	-	3.86				-	-	6.64	-	-	-
12	-	-	-				-	-	-	-	-	-
13	-	3.95	-				5.18	-	-	-	5.56	-
14	-	-	3.87				-	6.82	6.56	-	-	-
15	-	-	-				-	-	-	-	-	-
16	4.64	3.97	-				5.30	-	-	6.15	-	-
17	-	-	-				-	6.86	-	6.15	-	4.72
18	-	-	3.88				-	-	6.48	-	-	-
19	-	-	-				5.42	-	-	-	-	-
20	4.61	3.96	-				-	-	-	-	5.36	-
21	4.60	-	3.81		4.36		5.54	6.87	6.45	-	-	-
22	-	-	-				5.74	-	-	-	-	-
23	4.57	-	-				5.92	-	-	6.04	-	-
24	-	3.95	-				6.08	6.85	-	-	-	4.53
25	-	-	3.74				6.18	-	6.42	-	-	-
26	-	-	-				6.29	-	-	-	-	-
27	4.52	3.92	-				6.40	-	-	6.00	5.17	-
28	-	-	3.67				6.45	6.82	6.38	-	-	-
29	-	-	-				-	-	-	-	5.13	-
30	4.48	3.89	-		-------		6.53	-	-	5.92	-	4.48
31	-	-------	-		-------		-------	6.80	-------	-	-	-------

Loon Lake near Loon Lake, Wash.

Location.--Lat 48°01'45", long 117°36'15", in NW¼ sec. 11, T. 29 N., R. 41 E., at south end of Loon Lake, 2.7 miles southeast of town of Loon Lake.

Drainage area.--33.4 sq mi.

Records available.--April 1950 to September 1955.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, unadjusted. Prior to Sept. 29, 1951, at site 0.2 mile north at present datum.

Extremes.--Maximum elevation during year, 2,381.56 ft May 16, 17; minimum, 2,380.16 ft Nov. 5, 6.
1950-55: Maximum elevation, 2,382.71 ft May 3, 1950, but may have been higher sometime in 1951 water year when water-stage recorder was not in operation; minimum recorded, 2,379.86 ft Dec. 1, 1952.

Remarks.--Elevation controlled by dam at lake outlet. Some small diversions for irrigation of lawns and gardens.

Revisions (water years).--WSP 1216: 1950.

Mean elevation, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80.37	80.19	80.24	80.37	80.53	80.59	80.80	81.48	81.50	81.33	81.08	80.56
2	80.36	80.18	80.24	80.37	80.54	80.59	80.82	81.49	81.50	81.32	81.07	80.55
3	80.35	80.17	80.24	80.37	80.55	80.59	80.83	81.50	81.49	81.31	81.05	80.53
4	80.33	80.17	80.24	80.37	80.56	80.59	80.87	81.51	81.48	81.31	81.03	80.52
5	80.32	80.17	80.24	80.37	80.57	80.59	80.90	81.50	81.47	81.31	81.02	80.51
6	80.31	80.18	80.27	80.37	80.59	80.59	80.92	81.50	81.45	81.30	81.01	80.50
7	80.30	80.17	80.30	80.38	80.60	80.60	80.92	81.49	81.44	81.28	80.99	80.49
8	80.30	80.17	80.30	80.39	80.60	80.62	80.92	81.50	81.42	81.27	80.97	80.47
9	80.29	80.18	80.29	80.40	80.61	80.62	80.93	81.51	81.40	81.27	80.96	80.46
10	80.28	80.19	80.29	80.40	80.61	80.63	80.94	81.51	81.38	81.27	80.94	80.45
11	80.27	80.19	80.28	80.40	80.61	80.64	80.94	81.52	81.38	81.27	80.93	80.44
12	80.26	80.20	80.30	80.42	80.61	80.66	80.96	81.53	81.37	81.27	80.91	80.41
13	80.25	80.20	80.32	80.43	80.61	80.67	80.98	81.53	81.36	81.25	80.88	80.40
14	80.24	80.22	80.33	80.45	80.60	80.68	80.99	81.54	81.34	81.24	80.87	80.40
15	80.23	80.25	80.33	80.46	80.60	80.67	80.99	81.54	81.33	81.23	80.85	80.38
16	80.23	80.26	80.33	80.46	80.60	80.67	81.02	81.56	81.32	81.23	80.83	80.38
17	80.22	80.26	80.32	80.47	80.60	80.67	81.05	81.56	81.31	81.21	80.82	80.38
18	80.22	80.28	80.32	80.48	80.60	80.67	81.08	81.55	81.29	81.20	80.80	80.37
19	80.21	80.29	80.30	80.48	80.60	80.67	81.10	81.54	81.29	81.18	80.78	80.36
20	80.22	80.29	80.30	80.48	80.60	80.67	81.13	81.54	81.28	81.16	80.77	80.36
21	80.23	80.29	80.29	80.48	80.60	80.67	81.20	81.54	81.26	81.15	80.75	80.35
22	80.24	80.28	80.29	80.48	80.60	80.69	81.28	81.53	81.25	81.14	80.73	80.34
23	80.23	80.28	80.29	80.48	80.59	80.70	81.33	81.53	81.24	81.12	80.70	80.33
24	80.22	80.28	80.29	80.48	80.59	80.70	81.34	81.53	81.24	81.16	80.68	80.32
25	80.21	80.27	80.28	80.48	80.59	80.71	81.36	81.53	81.27	81.14	80.66	80.30
26	80.20	80.27	80.29	80.49	80.59	80.72	81.40	81.53	81.26	81.14	80.64	80.29
27	80.20	80.26	80.28	80.49	80.59	80.72	81.43	81.53	81.26	81.15	80.63	80.31
28	80.20	80.25	80.28	80.49	80.59	80.71	81.45	81.54	81.27	81.13	80.62	80.35
29	80.20	80.25	80.29	80.49	-	80.73	81.46	81.54	81.29	81.12	80.60	80.35
30	80.20	80.25	80.33	80.50	-------	80.75	81.47	81.53	81.30	81.11	80.59	80.34
31	80.20	-------	80.36	80.52	-------	80.76	-------	81.52	-------	81.10	80.58	-------

Note.--Add 2,300 ft to obtain elevation above mean sea level.

Sheep Creek at Loon Lake, Wash.

Location.--Lat 48°03'35", long 117°39'10", in NE¼ sec. 22, T. 30 N., R. 41 E., on right bank 0.7 mile downstream from outlet of Loon Lake and 1 mile west of town of Loon Lake.
Drainage area.--36.2 sq mi.
Records available.--April to September 1950, October 1951 to September 1955.
Gage.--Water-stage recorder and wooden control. Altitude of gage is 2,370 ft (from topographic map). April to September 1950 water-stage recorder at site a quarter of a mile upstream at different datum.
Extremes.--Maximum discharge during year, 6.3 cfs Nov. 8 (gage height, 2.13 ft); no flow for long periods.
1950, 1951-55: Maximum discharge, 42 cfs (revised) Apr. 9, 1952 (gage height, 2.83 ft); maximum gage height, 3.43 ft Feb. 4, 1954 (ice jam); no flow at times each year.
Revisions.--The maximum discharge for the water year 1954 has been revised to 34 cfs Apr. 6, 1954 (gage height, 2.72 ft), superseding figure published in WSP 1346.
Remarks.--Records fair. Flow regulated by dam at outlet of Loon Lake. Some small diversions for irrigation.
Revisions.--Revised figures of discharge, in cubic feet per second, for periods in the water year 1954, superseding those published in WSP 1346, are given herewith:

1953		1954	
Nov. 4	0.1	Feb. 5	b0
1954		6	b.5
Feb. 3	b1.1	17	b5.7
4	b0	18	b12.5
		Mar. 31	9.9

b Stage-discharge relation affected by ice.

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
November 1953	0.1	0.1	0	0.003	0.2
Calendar year 1953	288.6	34		.79	572
February 1954	178.5	22	0	6.38	354
March	31.6	11	0	1.02	63
Water year 1953-54	338.9	23	0	.93	672

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.75	0
1.80	.3
1.90	.9
2.00	1.9
2.10	4.9

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0					0	1.7	2.1			
2		0					0	1.9	1.9			
3		0					0	2.3	1.8			
4		0					0	2.3	1.4			
5		0					0	2.1	1.2			
6		0					0	1.9	*1.0			
7		0		(*)			0	1.9	.8			
8		0.1					0	1.7	.8			
9		0					0	1.8	.6			
10		0					0	1.8	.3			
11		0					0	2.1	0			
12		0					0	1.9	0			
13		0					0	1.9	0			
14		0					0	2.1	0			
15		0					0	2.9	0			
16		0					0	2.9	0			
17		0			(*)		0	2.9	0			
18		0				(*)	0	2.6	0			
19		0					0	2.6	0			
20		0					0	2.1	0			
21	(*)	0					0	2.1	0			
22		0					0	1.8	0			
23		0					0	2.1	0			
24		0					0	2.6	0			
25		0					0	2.9	0			
26		0					.5	3.2	0			
27		0					*1.0	2.9	*0	(*)		
28		0					1.2	2.6	0			
29		0			-		1.4	2.9	0			
30		*0			------		1.6	2.9	0			
31		------			------		------	2.6	------			------
Total	0	0.1	0	0	0	0	5.7	72.0	11.9	0	0	0
Mean	0	0.003	0	0	0	0	0.19	2.32	0.40	0	0	0
Ac-ft	0	0.2	0	0	0	0	11	143	24	0	0	0

Calendar year 1954: Max 23 Min 0 Mean 0.93 Ac-ft 672
Water year 1954-55: Max 3.2 Min 0 Mean 0.25 Ac-ft 178

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

Sheep Creek at Springdale, Wash.

Location.--Lat 48°03'30", long 117°45'00", in SE¼NW¼ sec. 34, T. 30 N., R. 40 E., on right bank 15 ft upstream from bridge on State Highway 3, half a mile west of Springdale, and 4½ miles upstream from mouth.

Drainage area.--46.9 sq mi.

Records available.--January 1953 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,980 ft (from topographic map).

Extremes.--Maximum discharge during year, 26 cfs May 19 (gage height, 1.69 ft); maximum gage height, 2.37 ft Feb. 21 (backwater from ice); minimum discharge, 1.6 cfs Jan. 21 (gage height, 1.06 ft), result of freezeup.
1953-55: Maximum discharge, 64 cfs June 9 or 10, 1953 (gage height, 2.04 ft, from recorded range in stage); minimum, that of Jan. 21, 1955.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Some small diversions for domestic use. Flow partly regulated by dam at outlet of Loon Lake.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 16		Dec. 17 to Sept. 30	
1.2	5.4	1.1	2.8
1.3	9.0	1.2	5.8
		1.3	9.6
		1.5	16.5

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.2	7.2	6.8	a8.0	6.5	6.0	11.5	12.5	10.5	8.0	6.8	6.2
2	7.2	7.2	6.8	a7.5	6.5	6.0	12	12.5	10.5	7.6	6.8	6.2
3	7.2	7.2	6.8	a7.0	6.4	6.0	11	13	9.9	7.2	6.8	6.2
4	7.2	7.6	7.2	a6.5	6.8	6.0	10.5	12.5	9.6	7.6	6.8	6.2
5	7.2	7.6	7.2	a6.5	6.6	6.0	10.5	12.5	9.2	7.2	6.8	6.5
6	7.2	7.6	8.6	a6.5	6.5	6.0	10.5	12	*9.2	7.2	6.8	6.2
7	7.2	7.6	7.6	*6.5	6.8	a7.0	9.9	11.5	8.8	6.8	6.8	6.5
8	7.2	7.6	7.2	6.5	7.2	a6.5	9.6	11.5	8.4	6.8	6.8	6.2
9	7.2	7.6	7.2	6.8	6.8	a6.0	9.9	11.5	8.4	6.8	6.8	6.2
10	7.6	8.2	7.2	6.5	7.0	5.8	9.6	11.5	7.6	7.2	6.8	5.8
11	7.2	7.9	7.2	6.5	7.0	6.5	8.8	11.5	7.2	6.8	6.5	6.2
12	6.8	7.6	7.2	6.5	7.2	7.6	9.2	12	7.2	6.8	6.5	6.2
13	6.8	7.9	7.6	7.2	a7.2	7.2	9.9	11.5	7.2	6.8	6.5	6.2
14	7.2	8.6	7.2	6.5	a7.2	7.2	9.2	12	7.2	6.8	6.5	6.8
15	7.2	8.6	7.6	6.0	a7.2	7.2	8.4	12.5	6.8	6.8	6.5	6.5
16	7.2	8.6	7.2	6.0	a7.2	7.2	8.8	13	6.8	6.8	6.5	7.2
17	7.2	7.9	7.0	6.5	*7.2	7.2	9.2	13	6.8	6.8	6.5	7.2
18	7.2	8.6	6.5	6.5	7.0	*7.6	9.9	12.5	6.8	6.2	6.5	6.5
19	7.2	8.2	6.5	6.5	7.0	7.2	10.5	14	6.8	5.8	6.5	6.5
20	7.2	7.9	6.5	6.5	7.0	7.2	10.5	14.5	6.5	5.8	6.5	6.2
21	*7.6	7.2	7.0	6.0	7.0	7.6	12.5	12.5	6.5	5.8	6.5	6.2
22	7.6	7.6	7.0	6.5	7.0	8.0	*16.5	11.5	6.5	5.5	6.5	6.5
23	7.2	7.2	7.0	7.0	7.0	7.6	14.5	12	6.5	6.5	6.5	6.5
24	7.2	6.8	6.5	6.8	7.0	7.5	13.5	12	7.6	8.4	6.5	6.5
25	7.6	7.2	6.5	6.8	7.6	7.0	12.5	11.5	7.2	5.8	6.5	6.5
26	7.6	7.2	6.5	6.5	7.5	7.2	14	11.5	6.8	7.2	6.5	6.5
27	7.6	6.8	6.5	6.5	7.0	7.2	*13.5	11.5	*6.5	*7.6	6.5	7.6
28	7.6	6.8	6.5	6.5	6.5	*7.6	12	11	6.8	6.8	6.5	8.4
29	7.6	6.8	6.5	6.5	-	9.6	12.5	11.5	7.2	6.8	*6.2	6.8
30	7.8	*6.8	7.0	6.5	------	9.9	12.5	12	7.2	6.8	6.5	6.5
31	7.6	-----	a7.5	6.8	-----	10.5	-----	11	------	6.8	5.8	------
Total	226.4	227.6	217.6	205.4	194.9	223.1	333.4	375.5	230.2	211.8	203.5	195.7
Mean	7.30	7.59	7.02	6.63	6.96	7.20	11.1	12.1	7.67	6.83	6.56	6.52
Cfsm	0.156	0.162	0.150	0.141	0.148	0.154	0.237	0.258	0.164	0.146	0.140	0.139
In.	0.18	0.18	0.17	0.16	0.15	0.18	0.26	0.30	0.18	0.17	0.16	0.16
Ac-ft	449	451	432	407	387	443	661	745	457	420	404	388

Calendar year 1954: Max 42 Min 6.5 Mean 10.0 Cfsm 0.213 In. 2.88 Ac-ft 7,250
Water year 1954-55: Max 16.5 Min 5.5 Mean 7.79 Cfsm 0.166 In. 2.25 Ac-ft 5,640

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of 2 discharge measurements, weather records, and recorded range in stage.
Note.--Stage-discharge relation affected by ice Dec. 1-3, 16-30, Jan. 14-16, 21-23, Feb. 3-5, 10-12, 18-24, Feb. 26 to Mar. 6, Mar. 24-26 (no gage-height record Dec. 18-26, 29, 30, Feb. 12, Feb. 28 to Mar. 6; discharge estimated on basis of weather records).

Mill Creek near Colville, Wash.

Location.--Lat 48°34'45", long 117°51'50", in SW¼NW¼ sec. 35, T. 36 N., R. 39 E., on right bank 3 miles northeast of Colville and 5 miles downstream from North Fork.

Drainage area.--82 sq mi, approximately.

Records available.--October 1939 to September 1955. Prior to February 1940 monthly discharge only, published in WSP 1316.

Gage.--Staff gage read twice daily. Altitude of gage is 1,950 ft (from topographic map). Prior to Nov. 2, 1952, water-stage recorder (now used as supplementary gage) at site half a mile upstream at different datum.

Average discharge.--16 years, 48.5 cfs (35,110 acre-ft per year).

Extremes.--Maximum discharge observed during year, 272 cfs May 13 (gage height, 5.65 ft); minimum observed, 10 cfs Dec. 28, Feb. 27, Mar. 5, 6, 20, 26 (gage height, 4.00 ft). 1939-55: Maximum discharge, 570 cfs Apr. 29, 1953 (gage height, 6.65 ft, from graph based on gage readings); minimum, 3.6 cfs Aug. 28, 31, Sept. 1, 1940, but may have been less during period of no gage-height record Feb. 1-4, 1940.

Remarks.--Records good. Diversion for irrigation of about 50 acres above station. No regulation.

Revisions (water years).--WSP 1042: 1940, 1942.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Jan. 21, Feb. 11, 19, 20, 27, Mar. 4, 5, 25-27)

Oct. 1 to Apr. 23				Apr. 24 to Sept. 30			
4.0	10	4.6	63	4.0	9.4	4.7	77
4.2	21	5.0	130	4.2	23	5.0	130
4.4	39	5.4	215	4.4	42	6.0	349

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13.5	12	14	15	13	11	31	114	160	92	38	13
2	13	12	13	14	12.5	12	31	128	155	83	34	12
3	13	12.5	14	14.5	12.5	12	36	143	145	89	32	12
4	13	12	14	14	12	11	36	169	138	85	30	11
5	12.5	12.5	14	13.5	12	11	33	188	134	82	30	11
6	12.5	13	14.5	13	12.5	10	35	188	130	80	28	12
7	12	13	15	13	13	11	47	226	126	57	27	12
8	12	13	16	13	12.5	12	66	239	120	56	27	12
9	12	13	15	13	*12.5	12	77	237	112	53	25	12
10	12	14	15	*13	12	13	107	221	105	80	23	12
11	12	14	14	13	13	12.5	77	226	98	82	22	11
12	12	14.5	14	12.5	14	12.5	66	239	89	55	22	10.5
13	11.5	15	15	13	14	12	59	265	83	52	*22	10.5
14	12	18	15	12	13.5	12	54	232	77	48	20	10.5
15	12	26	15	13	13	12	50	226	77	44	19	12
16	12.5	28	14	13	13	12	48	226	73	43	18.5	13
17	12	27	12	13	12.5	12.5	48	241	72	44	18.5	13
18	12	26	11	13	14	*12.5	50	230	72	41	18.5	12.5
19	12	25	11	13	13	12	60	237	69	38	19	13
20	12	22	11	13	13	11.5	60	263	64	37	18.5	*13
21	12	20	12	12	12.5	12.5	95	285	82	34	18	13
22	13	18.5	12	12	13	13	*178	257	60	33	18	13
23	12.5	18	12.5	13	12	13	158	235	57	35	18	13
24	13.	17.5	13	13	12.5	12	136	219	64	43	17	12.5
25	13	17.5	13	13	12	12	118	199	74	37	15.5	12.5
26	*13	*18	12	13	12	11	*118	*193	64	38	15.5	13
27	12	16	12	13	12	12	120	186	67	44	15.5	12.5
28	12	15.5	10.5	13	11	12	110	175	64	44	15	14.5
29	12	14.5	13	13	-	24	103	173	67	44	14.5	18
30	12	14.5	13.5	13	------	18.5	101	193	*80	42	13.5	15.5
31	12	-----	16	13	-----	24	-----	171	------	40	13	------
Total	382.0	510.5	416.0	405.5	354.5	400.5	2,306	6,504	2,736	1,555	665.5	375.5
Mean	12.3	17.0	13.4	13.1	12.7	12.9	76.9	210	91.2	50.2	21.5	12.5
Cfsm	0.150	0.207	0.163	0.160	0.155	0.157	0.938	2.56	1.11	0.612	0.262	0.152
In.	0.17	0.23	0.19	0.18	0.16	0.18	1.05	2.95	1.24	0.71	0.30	0.17
Ac-ft	758	1,010	825	804	703	794	4,570	12,900	5,430	3,080	1,320	745

Calendar year 1954: Max 274 Min 10.5 Mean 40.5 Cfsm 0.494 In. 6.72 Ac-ft 29,340
Water year 1954-55: Max 265 Min 10 Mean 45.5 Cfsm 0.555 In. 7.53 Ac-ft 32,940

* Discharge measurement made on this day.

Colville River at Kettle Falls, Wash.

Location.--Lat 48°35'40", long 118°03'30", in sec. 29, T. 36 N., R. 38 E., on right bank 600 ft downstream from Stevens County Light & Power Co.'s plant at foot of Meyers Falls, half a mile south of town of Kettle Falls, and 2 miles upstream from Franklin D. Roosevelt Lake.

Drainage area.--1,050 sq mi, approximately.

Records available.--October 1922 to September 1955. Published as "at Meyers Falls" 1922-38.

Gage.--Water-stage recorder. Altitude of gage is 1,500 ft (from topographic map). Prior to Oct. 21, 1932, staff gage at site 500 ft upstream at different datum. Oct. 21, 1932, to Sept. 19, 1938, staff gages at site 200 ft upstream at different datum. Sept. 20, 1938, to Mar. 20, 1949, staff gage at present site and datum.

Average discharge.--33 years, 281 cfs (203,400 acre-ft per year).

Extremes.--Maximum discharge during year, 990 cfs May 22 (gage height, 7.35 ft); minimum, 26 cfs Sept. 21; minimum daily, 78 cfs Sept. 14.
1922-55: Maximum discharge, 2,690 cfs Apr. 19, 1938 (gage height, 6.20 ft, site and datum then in use, from graph based on gage readings); minimum observed, 0.5 cfs Aug. 15, 1930.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Several ditches above station divert water for irrigation. Slight regulation for power by small reservoir above falls.

Cooperation.--Gage-height record furnished by Washington Water Power Co.

Revisions (water years).--WSP 1286: 1938(M). WSP 1316: 1941(M), 1948(M).

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

4.8	73	6.0	355
5.0	98	6.5	560
5.3	144	7.0	800
5.6	216	7.5	1,080

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	129	126	141	183	154	144	371	695	760	400	202	85
2	130	129	114	176	156	152	423	685	735	450	188	84
3	130	137	130	164	148	148	435	690	695	420	180	86
4	130	129	154	156	122	93	423	715	660	400	174	80
5	132	129	156	156	132	124	379	760	623	380	162	85
6	129	130	150	152	*139	144	351	810	592	360	152	84
7	127	132	156	154	164	150	359	840	560	*347	142	80
8	127	137	178	150	164	164	383	865	528	321	142	85
9	124	139	166	150	181	164	423	895	503	299	136	83
10	124	142	158	144	150	169	495	890	479	295	130	81
11	124	139	156	*144	122	181	528	885	455	321	129	83
12	122	139	144	139	141	176	520	895	431	317	126	83
13	122	144	156	144	181	196	495	942	407	*295	*120	84
14	122	156	156	139	171	194	463	956	379	274	115	78
15	122	166	158	124	164	174	443	930	363	254	116	85
16	126	199	158	134	160	174	423	948	344	238	111	93
17	127	205	129	169	155	181	423	948	328	232	109	93
18	121	199	93	169	150	*196	423	948	314	225	102	102
19	127	196	114	160	150	199	451	936	303	210	102	111
20	121	196	137	158	150	191	483	942	285	196	101	105
21	127	183	136	132	150	183	515	978	261	*183	86	*106
22	127	176	152	108	145	196	*660	984	247	171	106	104
23	132	166	139	139	145	205	865	966	222	169	93	102
24	134	162	146	178	145	188	900	942	210	178	90	108
25	129	160	146	162	140	158	895	930	300	196	93	102
26	132	158	136	156	135	160	*860	*890	350	194	90	111
27	*130	*158	127	148	130	176	855	865	330	205	90	101
28	130	158	121	146	124	186	835	820	300	235	90	116
29	130	150	142	148	-	216	790	775	300	228	92	148
30	132	142	158	154	------	321	745	770	330	225	86	148
31	130	------	156	150	------	367	------	770	------	219	86	------
Total	3,949	4,682	4,463	4,686	4,168	5,670	16,614	26,865	12,594	8,437	3,745	2,896
Mean	127	156	144	151	149	183	554	867	420	272	121	96.5
Ac-ft	7,830	9,290	8,850	9,290	8,270	11,250	32,950	53,290	24,980	16,730	7,430	5,740

Calendar year 1954: Max 1,030 Min 58 Mean 284 Ac-ft 205,300
Water year 1954-55: Max 984 Min 78 Mean 271 Ac-ft 195,900

* Discharge measurement made on this day.
Note.--No gage-height record Feb. 17-27, June 25 to July 5; discharge estimated on basis of weather records and records for Mill Creek near Colville.

Coeur d'Alene River above Shoshone Creek, near Prichard, Idaho

Location.--Lat 47°42', long 115°59', in NE¼SW¼ sec. 5, T. 50 N., R. 4 E., on left bank at Shoshone Creek ranger station, 0.2 mile downstream from Uranus Creek, 0.4 mile upstream from Shoshone Creek, and 3½ miles north of Prichard.

Drainage area.--335 sq mi.

Records available.--December 1950 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 2,485 ft (from river-profile map).

Extremes.--Maximum discharge during year, 5,800 cfs May 21 (gage height, 5.86 ft); minimum, 88 cfs Sept. 12 (gage height, 0.94 ft).
1950-55: Maximum discharge, 9,610 cfs Feb. 11, 1951 (gage height, 7.17 ft), from rating curve extended above 5,500 cfs by logarithmic plotting; minimum, 34 cfs Dec. 26, 1952.

Remarks.--Records excellent except those for periods of ice effect, which are fair. No regulation or diversion above station.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.9	76	3.0	1,400
1.1	126	4.0	2,670
1.3	193	5.0	4,290
1.6	331	6.0	6,200
2.0	576		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	115	126	342	220	130	150	365	1,630	2,030	510	193	107
2	112	121	310	210	130	160	*411	2,230	1,780	491	182	107
3	112	118	320	200	120	150	411	2,760	1,820	460	175	104
4	110	118	306	180	110	140	405	2,790	2,070	472	175	104
5	107	115	280	170	100	140	393	3,310	2,230	478	171	102
6	104	129	275	170	150	150	652	3,850	2,320	453	168	102
7	102	157	285	170	180	160	1,200	*4,040	2,320	478	161	99
8	102	145	*262	170	800	170	1,900	4,330	2,140	453	157	99
9	102	138	239	160	950	180	2,080	4,000	1,960	423	157	97
10	102	145	243	160	600	190	2,120	3,550	1,840	423	154	94
11	132	157	234	150	500	190	2,310	3,320	1,740	399	151	94
12	142	154	214	150	450	180	1,760	4,090	1,620	417	148	90
13	129	175	210	*150	400	170	1,440	4,240	1,440	*376	145	90
14	118	193	230	140	360	160	1,190	3,390	*1,230	359	142	99
15	110	218	234	135	330	150	1,010	2,610	1,050	342	138	118
16	107	325	190	135	295	150	875	2,280	914	337	135	145
17	107	667	170	135	271	140	799	2,320	829	316	*132	168
18	115	829	150	130	220	170	791	2,580	761	300	129	135
19	118	852	140	130	200	170	829	3,110	710	280	126	118
20	132	784	170	140	170	170	844	4,720	659	266	123	115
21	170	681	190	130	180	180	953	5,520	624	257	123	151
22	342	576	200	120	200	200	1,660	4,580	597	248	121	148
23	266	497	200	120	190	200	1,990	*5,530	576	239	121	123
24	209	435	200	140	190	165	1,820	2,800	717	266	118	112
25	179	423	190	140	180	150	1,580	2,460	754	271	118	*107
26	161	435	180	135	170	160	1,520	2,560	604	234	121	104
27	148	466	170	130	160	210	1,380	2,640	543	222	118	107
28	*142	447	150	120	*160	230	1,230	2,390	510	222	115	142
29	138	417	160	120	-	300	1,160	2,320	530	214	115	164
30	132	393	180	120	------	417	1,190	2,580	491	230	112	135
31	129	-----	200	120	-----	381	-----	2,490	------	214	110	------
Total	4,294	10,436	6,824	4,600	7,896	5,833	36,268	99,020	37,409	10,650	4,354	3,480
Mean	139	348	220	148	282	188	1,209	3,194	1,247	344	140	116
Cfsm	0.415	1.04	0.657	0.442	0.842	0.561	3.61	9.53	3.72	1.03	0.418	0.346
In.	0.48	1.16	0.76	0.51	0.88	0.65	4.03	10.99	4.15	1.18	0.48	0.39
Ac-ft	8,520	20,700	13,540	9,120	15,660	11,570	71,940	196,400	74,200	21,120	8,640	6,900

Calendar year 1954: Max 6,140 Min 102 Mean 867 Cfsm 2.59 In. 35.17 Ac-ft 628,000
Water year 1954-55: Max 5,520 Min 90 Mean 633 Cfsm 1.89 In. 25.66 Ac-ft 458,300

Peak discharge (base, 3,600 cfs).--May 8 (12 m.) 4,470 cfs (5.16 ft); May 21 (10 a.m.) 5,800 cfs (5.86 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 2, 3, 13, 14, Dec. 16 to Feb. 15, Feb. 18 to Mar. 28.

Coeur d'Alene River at Enaville, Idaho

Location.--Lat 47°34', long 116°15', in NW¼ sec. 30, T. 49 N., R. 2 E., on right bank 800 ft upstream from highway bridge, a quarter of a mile northwest of Enaville Post Office, 1.1 miles upstream from South Fork, and 3.5 miles downstream from North Fork.
Drainage area.--895 sq mi.
Records available.--March 1911 to April 1913 (fragmentary), October 1939 to September 1955. Published as North Fork of Coeur d'Alene River at Enaville 1911-13.
Gage.--Water-stage recorder. Datum of gage is 2,100.00 ft above mean sea level, referenced to benchmark near mouth of North Fork, elevation, 2,204.880 ft (Geological Survey Bull. 567, p. 82). Mar. 3, 1911, to Apr. 12, 1913, staff gage at site a quarter of a mile downstream at different datum. Oct. 18 to Dec. 22, 1939, staff gage at present site and datum.
Average discharge.--16 years (1939-55), 1,876 cfs (1,358,000 acre-ft per year).
Extremes.--Maximum discharge during year, 14,600 cfs May 21 (gage height, 70.50 ft); minimum daily, 240 cfs Sept. 13; minimum gage height, 61.31 ft Dec. 19.
1911-13, 1939-55: Maximum discharge, 28,100 cfs Dec. 15, 1946, from rating curve extended above 13,000 cfs by logarithmic plotting; maximum gage height, 74.93 ft Feb. 11, 1951; minimum discharge, 104 cfs Dec. 26, 1952 (gage height, 60.10 ft).
From local information concerning high-water marks, flood in December 1933 reached a stage of 79.47 ft and that in April 1938 a stage of 78.16 ft.
Remarks.--Records good except those for periods of shifting control, which are fair. No appreciable regulation or diversion above station.
Revisions.--Revised figures of discharge, in cubic feet per second, for water year 1945 superseding those published in WSP 1042 and 1062, are given herewith:

1945	
Jan. 9	1,800
10	1,540
11	1,360
12	2,200
13	4,950

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
January 1945	45,415	7,200	231	1,465	1.64	1.89	90,080
Water year 1944-45	555,282	13,900	145	1,521	1.70	23.08	1,101,000
Calendar year 1945	635,017	13,900	220	1,740	1.94	26.41	1,259,000

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	320	400	1,110	882	415	488	1,160	3,570	5,220	1,560	*870	300
2	310	390	1,000	831	409	552	*1,310	4,840	4,380	1,510	840	300
3	310	380	980	754	392	520	1,360	6,280	4,320	1,400	807	300
4	320	370	935	691	354	b440	1,320	6,630	4,950	1,410	580	290
5	300	370	875	593	338	397	1,290	7,380	5,380	1,480	570	289
6	290	380	845	565	403	463	1,600	*8,980	5,760	1,380	552	289
7	290	430	*860	600	481	500	2,590	9,600	6,110	1,520	532	280
8	290	426	817	572	3,170	526	4,160	10,200	5,950	1,520	506	290
9	290	380	768	558	3,570	586	5,090	9,800	5,540	1,440	490	300
10	293	420	733	548	2,420	628	5,770	8,700	5,250	1,450	480	275
11	350	430	712	546	1,830	614	6,250	8,180	5,120	1,380	460	250
12	370	470	684	500	1,600	593	5,010	9,880	4,950	1,360	450	250
13	360	500	684	*500	1,480	565	4,240	10,500	4,410	*1,290	438	240
14	340	572	705	481	1,280	539	3,620	8,840	*3,830	1,200	421	260
15	322	600	712	450	1,140	506	3,080	6,780	3,220	1,130	400	310
16	300	900	684	475	1,030	475	2,660	5,770	2,720	1,080	392	397
17	320	1,500	552	475	958	488	2,400	5,760	2,430	1,030	380	494
18	330	1,900	438	438	824	520	2,360	6,230	2,240	980	*360	409
19	340	2,000	354	415	670	520	2,530	7,380	2,080	930	360	360
20	350	1,910	463	457	614	494	2,590	11,200	1,930	890	350	340
21	420	1,610	520	421	705	539	2,760	14,100	1,850	870	348	410
22	850	1,360	565	369	775	621	4,460	12,100	1,820	840	343	410
23	928	1,210	621	369	719	614	5,980	*9,280	1,770	820	340	380
24	705	1,080	800	450	684	532	5,440	7,210	1,990	840	330	360
25	650	1,050	572	450	635	444	4,610	6,160	2,180	840	330	*298
26	560	1,200	532	426	621	444	4,200	6,270	1,780	800	320	290
27	500	1,360	488	415	*546	546	3,810	6,540	1,630	761	320	290
28	*450	1,370	426	409	526	635	3,360	5,980	1,540	754	320	380
29	440	1,290	450	403	-	775	3,130	5,650	1,580	726	310	500
30	420	1,210	508	392	------	1,080	2,980	6,250	1,500	720	310	440
31	409	------	712	397	------	1,140	------	6,280	------	712	310	------
Total	12,727	27,468	20,903	15,830	28,589	17,784	101,120	242,320	103,410	34,583	13,219	9,981
Mean	411	916	674	511	1,020	573	3,371	7,817	3,447	1,116	426	333
Cfsm	0.459	1.02	0.753	0.571	1.14	0.640	3.77	8.73	3.85	1.25	0.476	0.372
In.	0.53	1.14	0.87	0.66	1.19	0.74	4.20	10.07	4.30	1.44	0.55	0.41
Ac-ft	25,240	54,480	41,460	31,400	56,670	35,230	200,600	480,600	205,100	68,590	26,220	19,800

Calendar year 1954: Max 13,900 Min 290 Mean 2,292 Cfsm 2.56 In. 34.77 Ac-ft 1,660,000
Water year 1954-55: Max 14,100 Min 240 Mean 1,720 Cfsm 1.92 In. 26.10 Ac-ft 1,245,000

Peak discharge (base, 8,000 cfs).--May 13 (1 a.m.) 10,800 cfs (68.76 ft); May 21 (2:30 p.m.) 14,600 cfs (70.50 ft).
* Discherge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--Shifting-control method used Oct. 1 to Nov. 26, July 15 to Sept. 30.

Coeur d'Alene River near Cataldo, Idaho

Location.--Lat 47°34', long 116°18', in sec. 26, T. 49 N., R. 1 E., on left bank 1½ miles upstream from Cataldo and 3 miles downstream from South Fork.
Drainage area.--1,220 sq mi, approximately.
Records available.--April 1911 to December 1912, July 1920 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 2,100 ft above mean sea level, referenced to benchmark "2143 S" (Geological Survey Bull. 567, p. 82). Datum of 1929, supplementary adjustment of 1947, is 2.84 ft higher. Apr. 25, 1911, to Dec. 31, 1912, staff gage at site 300 ft downstream at different datum. July 29, 1920, to Oct. 10, 1925, staff gage at present site and datum.
Average discharge.--36 years, 2,456 cfs (1,778,000 acre-ft per year).
Extremes.--Maximum discharge during year, 18,100 cfs May 21 (gage height, 47.33 ft); minimum, 381 cfs Oct. 8; minimum gage height, 38.44 ft Sept. 7.
1911-12, 1920-55: Maximum discharge, 55,300 cfs Dec. 22 or 23, 1933 (gage height, 56.9 ft, from floodmark), from rating curve extended above 24,000 cfs by logarithmic plotting; minimum, 122 cfs Dec. 4, 1929; minimum gage height, 37.03 ft Sept. 6, 1931.
Remarks.--Records good except those for periods of ice effect, which are fair. No appreciable regulation or diversion above station. Records of chemical analyses and water temperatures for the water year 1955 are given in WSP 1403.
Cooperation.--Water-stage-recorder graph furnished by Washington Water Power Co.
Revisions.--Revised figures of discharge, in cubic feet per second, for the water year 1945, superseding those published in WSP 1042 and 1062, are given herewith:

1945	
Jan. 9	2,170
10	1,900
11	1,660
12	2,380
13	5,890

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
January 1945	61,879	8,610	259	1,996	1.64	1.89	122,700
Water year 1944-45	731,188	17,800	190	2,003	1.64	22.31	1,450,000
Calendar year 1945	838,314	17,800	259	2,297	1.88	25.58	1,663,000

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	494	637	1,640	1,290	560	716	1,830	4,390	6,670	2,240	924	506
2	482	609	1,470	1,240	548	732	2,030	5,850	5,690	2,140	900	500
3	476	595	1,410	1,090	500	b680	*2,010	7,550	5,690	2,000	868	494
4	488	573	1,340	985	464	b640	1,930	8,200	6,450	1,980	844	494
5	470	571	1,240	860	452	b600	1,840	9,170	6,960	2,020	836	488
6	458	630	1,170	852	518	b650	2,230	*11,200	7,500	1,940	796	476
7	458	732	*1,190	884	630	b680	3,220	11,900	8,220	2,170	780	446
8	452	716	1,120	852	3,350	740	4,630	12,600	7,930	2,170	756	440
9	452	689	1,050	836	4,200	804	5,810	12,000	7,430	2,080	740	464
10	446	708	1,000	804	3,170	868	6,940	10,800	7,160	2,050	724	452
11	548	740	976	732	2,700	860	7,450	10,300	6,960	1,930	708	452
12	581	748	908	*732	2,370	836	5,890	12,100	6,720	1,900	700	410
13	567	852	932	756	2,190	756	5,030	12,800	6,050	1,780	690	395
14	520	876	958	672	1,900	740	4,470	10,800	5,270	*1,650	672	430
15	500	976	1,030	637	1,700	686	3,960	8,530	*4,530	1,580	651	542
16	470	1,390	1,040	651	1,550	672	3,390	7,090	3,900	1,540	644	602
17	494	2,260	772	651	1,450	658	3,040	6,910	3,490	1,480	623	716
18	512	2,880	595	588	1,210	764	3,000	7,430	3,220	1,360	*611	602
19	524	3,020	488	574	967	756	3,280	8,960	2,980	1,330	602	512
20	560	3,000	616	616	900	740	3,320	13,400	2,830	1,270	588	500
21	644	2,550	686	574	976	804	3,490	17,500	2,710	1,180	581	595
22	1,400	2,240	788	506	1,050	908	5,310	15,400	2,760	1,140	560	616
23	1,550	1,980	900	512	967	868	7,240	*11,900	2,690	1,100	560	560
24	1,180	1,760	892	609	940	748	6,670	9,300	2,960	1,180	560	524
25	1,080	1,740	828	588	844	637	5,770	7,890	3,130	1,170	554	*488
26	908	1,870	788	567	796	588	5,330	8,150	2,620	1,100	540	473
27	828	2,060	756	548	*b790	708	4,870	8,200	2,380	1,000	518	474
28	*748	2,060	651	530	772	844	4,220	7,410	2,260	1,000	518	602
29	732	1,960	644	518	-	1,110	3,890	7,180	2,310	985	500	716
30	693	1,820	672	512	------	1,620	3,700	7,930	2,170	1,000	518	665
31	672	-----	1,070	530	-----	1,700	-----	7,980	------	985	512	------
Total	20,387	43,242	29,620	22,296	38,464	25,113	125,790	300,820	141,640	48,430	20,578	15,634
Mean	658	1,441	955	719	1,374	810	4,193	9,704	4,721	1,562	664	521
Cfsm	0.539	1.18	0.783	0.589	1.13	0.664	3.44	7.95	3.87	1.28	0.544	0.427
In.	0.62	1.32	0.90	0.68	1.17	0.77	3.83	9.17	4.32	1.48	0.63	0.48
Ac-ft	40,440	85,770	58,750	44,220	76,290	49,810	249,500	596,700	280,900	96,060	40,820	31,010

Calendar year 1954: Max 17,900 Min 446 Mean 3,086 Cfsm 2.53 In. 34.34 Ac-ft 2,234,000
Water year 1954-55: Max 17,500 Min 395 Mean 2,279 Cfsm 1.87 In. 25.37 Ac-ft 1,650,000

Peak discharge (base, 11,100 cfs).--May 13 (3 a.m.) 13,100 cfs (45.77 ft); May 21 (2 p.m.) 18,100 cfs (47.33 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

St. Joe River at Calder, Idaho

Location.--Lat 47°16', long 116°11', in sec. 3, T. 45 N., R. 2 E., on right bank 150 ft southwest of Chicago, Milwaukee, St. Paul & Pacific Railway station at Calder.

Drainage area.--1,030 sq mi, approximately.

Records available.--April 1911 to September 1912 (published as "near Calder"), July 1920 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,096.76 ft above mean sea level, datum of 1929, supplementary adjustment of 1947, or 2,100 ft above mean sea level, datum of Geological Survey as given in Bulletin 567. Apr. 14, 1911, to Sept. 30, 1912, staff gage at site 2½ miles downstream at different datum. July 13 to Dec. 21, 1920, staff gage at present site and datum.

Average discharge.--36 years (1911-12, 1920-55), 2,287 cfs (1,656,000 acre-ft per year).

Extremes.--Maximum discharge during year, 18,200 cfs May 21 (gage height, 88.30 ft); minimum recorded, 338 cfs Mar. 5 (gage height, 79.50 ft), but may have been less during period of ice effect.

1911-12, 1920-55: Maximum discharge, 53,000 cfs Dec. 23, 1933, computed on basis of slope between gages downstream; maximum gage height, 93.1 ft Apr. 18, 1938, from flood-mark; minimum discharge, 91 cfs Nov. 27, 1952; minimum gage height, 78.43 ft Dec. 5, 1928.

Remarks.--Records good except those for periods of ice effect or shifting control, which are fair. No diversion above gage.

Cooperation.--Water-stage-recorder graph and three discharge measurements furnished by Washington Water Power Co.

Revisions.--WSP 1182: Drainage area.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	559	616	1,050	1,120	756	*504	1,050	4,310	6,980	3,610	1,320	548
2	559	587	1,140	958	722	510	1,130	5,520	6,420	3,370	1,260	542
3	559	587	1,220	b800	b660	484	*1,080	5,800	6,960	3,120	1,190	548
4	548	604	1,120	*b650	b620	b395	1,010	5,500	7,680	3,040	1,110	542
5	531	582	1,070	b660	b700	b390	998	6,540	8,090	3,170	1,060	537
6	542	599	1,040	b700	b750	b525	1,380	8,300	9,310	*3,160	1,020	537
7	526	610	1,070	b750	b850	b565	2,370	9,030	11,500	4,380	990	515
8	521	604	1,010	b800	b2,000	b620	3,600	9,970	12,200	4,070	950	515
9	515	587	*890	b750	1,680	770	4,330	9,080	12,200	3,840	928	515
10	526	676	958	b720	b1,010	742	5,290	8,730	12,300	3,860	905	489
11	628	702	990	b720	b780	690	4,430	8,730	12,600	3,670	890	484
12	890	683	912	b700	b833	676	3,300	10,400	12,500	*3,580	861	469
13	819	826	1,100	b680	898	b605	2,900	10,200	11,400	3,300	833	444
14	662	763	1,130	*b700	833	599	2,530	8,000	*9,860	3,090	805	521
15	549	798	1,110	b670	770	b580	2,170	6,360	7,970	2,870	798	770
16	526	1,100	982	b680	709	b600	1,900	5,480	6,820	2,630	*777	716
17	548	1,540	b800	b680	676	b635	1,780	5,730	6,080	2,440	742	763
18	576	1,620	b640	b640	b510	696	1,910	6,420	5,560	2,340	722	548
19	*564	1,760	b720	b650	b425	683	2,050	8,760	5,330	2,240	709	479
20	658	1,570	b800	b680	b411	664	2,030	13,300	5,220	2,130	676	479
21	763	1,400	b875	b680	628	696	2,180	17,500	5,350	2,040	670	526
22	1,450	1,280	b950	b660	652	702	3,260	*15,700	5,520	1,960	664	537
23	1,210	1,230	b1,000	b700	634	658	3,600	11,800	5,330	1,890	652	494
24	990	1,210	b950	770	587	616	3,180	9,410	5,790	1,910	622	479
25	854	1,220	898	770	576	521	2,880	7,970	5,290	1,740	640	454
26	770	1,570	875	749	549	548	*2,920	8,250	4,410	1,690	646	449
27	*728	1,680	b820	696	b490	646	2,830	7,680	4,050	1,570	634	489
28	709	1,550	b750	b635	510	702	2,550	6,820	3,840	1,520	610	*550
29	702	1,400	b720	b600	-	875	2,490	7,350	3,840	1,470	593	570
30	664	1,300	b800	b660	------	1,100	2,760	8,350	3,560	1,440	559	542
31	646	-----	b1,100	b700	-----	1,020	-----	8,070	------	1,400	564	------
Total	21,292	31,254	29,490	22,328	21,219	20,017	75,888	265,060	224,020	82,540	25,400	16,051
Mean	687	1,042	951	720	758	646	2,530	8,550	7,467	2,663	819	535
Cfsm	0.667	1.01	0.923	0.699	0.736	0.627	2.46	8.30	7.25	2.59	0.795	0.519
In.	0.77	1.13	1.06	0.81	0.77	0.72	2.74	9.57	8.09	2.98	0.92	0.58
Ac-ft	42,230	61,990	58,490	44,290	42,090	39,700	150,500	525,700	444,300	163,700	50,380	31,840

Calendar year 1954: Max 19,600 Min 370 Mean 2,812 Cfsm 2.73 In. 37.07 Ac-ft 2,036,000
Water year 1954-55: Max 17,500 Min 390 Mean 2,286 Cfsm 2.22 In. 30.14 Ac-ft 1,655,000

Peak discharge (base, 8,500 cfs).--May 13 (5 a.m.) 10,800 cfs (86.34 ft); May 21 (9 to 11 a.m.) 18,200 cfs (88.30 ft); June 12 (3 a.m.) 13,300 cfs (87.05 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Shifting-control method used Oct. 1-22, Aug. 20 to Sept. 30.

St. Maries River at Lotus, Idaho

Location.--Lat 47°14'40", long 116°37'30", in sec. 17, T. 45 N., R. 2 W., on left bank 1 mile northwest of Lotus, 1 mile downstream from Carlton Creek, and 5½ miles southwest of St. Maries.

Drainage area.--437 sq mi.

Records available.--July 1911 to October 1912, July 1920 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,140.19 ft above mean sea level, referenced to benchmark "U.S.G.S. 2155 1911 35" (Geological Survey Bull. 567, p. 45). Datum of 1929, supplemental adjustment of 1947, is 3.17 ft higher. Prior to Oct. 1, 1945, staff gages at sites 0.8 to 1.3 miles upstream at different datums. Oct. 1, 1945, to Feb. 21, 1949, staff gage at present site and datum.

Average discharge.--35 years (1920-55), 504 cfs (364,900 acre-ft per year).

Extremes.--Maximum discharge during year, 3,300 cfs Apr. 22 (gage height, 4.78 ft); maximum gage height, 4.97 ft Feb. 9 (ice jam); minimum daily discharge, 50 cfs Dec. 18, 19.
1911-12, 1920-55: Maximum discharge observed, 23,800 cfs Dec. 22, 23, 1933, from rating curve extended above 4,000 cfs by logarithmic plotting; maximum gage height, 13.4 ft probably Feb. 9, 1951, from floodmark (ice jam); minimum discharge, 11 cfs Nov. 23, 1952 (gage height, 0.98 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No diversion or appreciable regulation above station.

Cooperation.--Water-stage-recorder graph and three discharge measurements furnished by Washington Water Power Co.

Revisions (water years).--WSP 1062: Drainage area. WSP 1346: 1912.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 22				Apr. 23 to Sept. 30			
1.1	36	2.5	625	1.2	61	2.5	655
1.2	53	3.0	1,030	1.4	107	3.0	1,060
1.4	102	4.0	2,130	1.7	205	4.0	2,240
1.7	201	5.0	3,650	2.0	350	4.5	2,930
2.0	335						

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76	84	b130	371	90	*b110	754	1,390	952	361	129	69
2	74	81	b150	311	90	b120	868	1,670	898	356	124	67
3	74	84	175	234	85	b110	*673	1,630	856	295	118	67
4	74	84	151	179	80	b100	619	1,450	856	270	115	67
5	74	86	128	150	80	105	694	1,630	848	*315	113	67
6	74	86	141	140	95	110	1,100	2,160	848	310	110	65
7	74	89	138	130	120	120	1,570	2,160	856	596	107	67
8	74	92	*125	125	b500	170	1,810	2,240	856	564	104	65
9	74	86	b95	120	b770	356	1,960	1,990	832	441	97	65
10	74	97	b110	115	b530	465	2,620	1,690	800	435	97	65
11	76	116	b100	110	b350	436	2,560	1,630	770	394	94	63
12	86	105	b75	110	b300	409	1,540	1,920	740	*423	92	61
13	*86	131	b110	105	b260	356	1,590	1,900	*690	366	90	61
14	79	125	131	*b105	b230	335	1,340	1,570	648	320	84	*69
15	71	122	122	105	205	311	1,080	1,320	590	290	84	132
16	69	179	86	105	186	301	931	1,160	513	275	82	132
17	71	287	b65	100	179	292	913	1,240	459	250	*82	151
18	79	436	50	95	b160	345	1,030	1,230	423	236	80	110
19	81	471	50	95	b130	345	1,220	1,360	383	214	78	84
20	84	297	80	100	120	330	1,150	1,880	350	201	76	78
21	105	222	100	90	130	311	1,260	2,330	315	190	76	80
22	217	179	115	85	140	256	2,730	*2,140	280	182	74	80
23	171	164	125	90	135	226	2,730	1,610	255	175	74	78
24	119	154	115	100	130	209	1,990	1,390	330	171	76	74
25	102	154	110	100	120	201	*1,510	1,270	558	164	76	69
26	94	194	100	95	115	186	1,470	1,200	372	161	74	67
27	*92	226	95	90	110	222	1,380	1,180	325	154	74	69
28	89	209	90	90	110	306	1,130	1,060	310	148	72	*87
29	89	161	*b88	90	-	454	1,050	1,060	378	145	72	118
30	86	148	128	90	------	599	1,060	1,090	350	145	69	94
31	86	-----	205	90	-----	593	-----	1,030	------	141	69	------
Total	2,774	4,949	3,483	3,915	5,550	8,789	42,332	48,580	17,641	8,688	2,762	2,421
Mean	89.5	165	112	126	198	284	1,411	1,567	588	280	89.1	80.7
Cfsm	0.205	0.378	0.256	0.288	0.453	0.650	3.23	3.59	1.35	0.641	0.204	0.185
In.	0.24	0.42	0.30	0.33	0.47	0.75	3.60	4.13	1.50	0.74	0.24	0.21
Ac-ft	5,500	9,820	6,910	7,770	11,010	17,430	83,960	96,360	34,990	17,230	5,480	4,800

Calendar year 1954: Max 5,080 Min 50 Mean 565 Cfsm 1.29 In. 17.56 Ac-ft 408,900
Water year 1954-55: Max 2,730 Min 50 Mean 416 Cfsm 0.952 In. 12.93 Ac-ft 301,300

Peak discharge (base, 2,200 cfs).--Apr. 11 (1 to 2 a.m.) 3,230 cfs (4.76 ft); Apr. 22 (8 to 9 p.m.) 3,300 cfs (4.78 ft); May 8 (1 p.m.) 2,330 cfs (4.07 ft); May 21 (6 p.m.) 2,450 cfs (4.16 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Dec. 18-28, Jan. 5-13, Jan. 15 to Feb. 7, Feb. 20-28, Mar. 5-8; discharge estimated on basis of weather records, recorded range in stage, and records for Potlatch Creek at Kendrick and St. Joe River at Calder.

Coeur d'Alene Lake at Coeur d'Alene, Idaho

Location.--Lat 47°40', long 116°46', in sec. 24, T. 50 N., R. 4 W., 500 ft southwest of south end of Eleventh Street, Coeur d'Alene.
Drainage area.--3,700 sq mi, approximately.
Records available.--April 1903 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 2,100.00 ft above mean sea level, referred to originally accepted elevation (2,157.40 ft) of Geological Survey benchmark in southeast corner of Merriam Building (see WSP 882). Gage heights reduced to elevations above mean sea level. Datum of 1929, supplementary adjustment of 1947, is 3.00 ft higher. Apr. 26, 1903, to Feb. 14, 1905, staff gage at mouth of St. Joe River at datum about 18.7 ft higher. Feb. 15, 1905, to Mar. 23, 1921, staff gage and Mar. 24, 1921, to Dec. 22, 1930, water-stage recorder, at Johnson Wharf 800 ft southeast of railroad station and 1 mile northwest of present site at datum 19.75 ft higher. Dec. 23, 1930, to Feb. 9, 1931, staff gage at present site and datum.
Extremes.--Maximum contents during year, 433,000 acre-ft May 24 (elevation, 2,131.76 ft); minimum, 44,500 acre-ft Jan. 30 (elevation, 2,121.66 ft).
1903-55: Maximum contents, 834,900 acre-ft Dec. 25, 1933 (elevation, 2,139.05 ft); minimum, 2,700 acre-ft below zero of contents table Oct. 10-12, 1904, Sept. 24, 25, 1905, Oct. 14 to Nov. 3, 1906 (elevation, 2,119.9 ft).
Maximum contents known prior to 1903, 753,300 acre-ft May 31, 1894 (elevation, 2,137.6 ft, from high-water marks).
Remarks.--The Washington Water Power Co. stores water in Coeur d'Alene Lake by regulation at Post Falls Dam for power generation at Post Falls and other plants on Spokane River. Storage is within natural range of lake stage. Contents given herein are those above elevation 2,120.0 ft. Capacity of lake between elevations 2,120 and 2,140 ft, 889,000 acre-ft.
Cooperation.--Water-stage recorder graph furnished by Washington Water Power Co.
Revisions.--WSP 1182: Drainage area.

Elevation, in feet, at 12 p.m., water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27.99	25.34	24.12	22.30	21.70	22.20	22.81	26.87	30.33	26.32	27.97	27.97
2	27.97	25.20	24.06	22.30	21.69	22.15	23.00	27.04	30.14	26.44	27.95	27.96
3	27.96	25.08	24.01	22.30	21.69	22.07	23.13	27.23	29.88	26.65	27.93	27.96
4	27.86	24.92	23.93	22.27	21.69	22.01	23.22	27.42	29.72	26.82	27.93	27.97
5	27.77	24.79	23.85	22.24	21.68	21.93	23.29	27.66	29.61	26.98	27.96	27.99
6	27.71	24.70	23.78	22.20	21.72	21.88	23.45	28.01	29.58	27.15	28.00	27.96
7	27.62	24.53	23.69	22.16	21.80	21.85	23.76	28.45	29.61	27.37	28.01	27.90
8	27.52	24.39	23.57	22.14	22.15	21.85	24.27	28.85	29.73	27.54	27.97	27.90
9	27.36	24.26	23.48	22.13	22.60	21.90	24.85	29.25	29.83	27.71	27.93	27.90
10	27.24	24.13	23.36	22.10	22.78	21.95	25.45	29.57	29.91	27.83	27.95	27.90
11	27.08	23.99	23.25	22.06	22.86	21.98	26.05	29.77	29.98	27.92	27.97	27.91
12	27.00	23.87	23.17	22.01	22.91	22.02	26.42	29.98	30.06	27.94	27.95	27.89
13	26.93	23.74	23.08	22.00	22.95	22.00	26.56	30.25	30.05	27.94	27.92	27.88
14	26.85	23.62	22.99	21.95	22.96	22.01	26.65	30.47	29.98	27.96	27.93	27.93
15	26.79	23.53	22.89	21.91	22.98	22.00	26.61	30.48	29.80	27.94	27.93	27.91
16	26.77	23.47	22.78	21.86	22.95	22.00	26.52	30.36	29.54	27.99	27.93	27.94
17	26.68	23.51	22.67	21.81	22.84	22.00	26.37	30.17	29.24	27.95	27.91	27.95
18	26.55	23.69	22.54	21.79	22.78	21.99	26.33	30.02	28.93	27.93	27.91	27.98
19	26.45	23.90	22.43	21.77	22.70	22.01	26.25	29.99	28.61	27.95	27.94	27.94
20	26.32	24.16	22.35	21.75	22.60	22.03	26.22	30.18	28.29	27.99	27.91	27.93
21	26.31	24.32	22.31	21.73	22.51	22.14	26.25	30.68	28.00	28.00	27.90	27.90
22	26.33	24.32	22.29	21.73	22.48	22.13	26.55	31.28	27.80	28.01	27.91	27.83
23	26.37	24.32	22.30	21.71	22.43	22.14	26.88	31.67	27.55	27.99	27.93	27.79
24	26.29	24.30	22.28	21.73	22.38	22.13	27.05	31.74	27.44	28.04	27.93	27.73
25	26.20	24.31	22.25	21.75	22.35	22.11	27.13	31.61	27.30	28.01	27.93	27.75
26	26.10	24.29	22.23	21.74	22.30	22.10	27.21	31.41	27.10	27.96	27.95	27.70
27	25.99	24.27	22.19	21.72	22.27	22.10	27.18	31.21	26.88	27.96	27.96	27.66
28	25.85	24.28	22.16	21.69	22.26	22.17	27.08	30.99	26.70	27.95	27.96	27.62
29	25.74	24.24	22.15	21.68	-	22.30	26.97	30.79	26.49	27.95	27.98	27.57
30	25.61	24.22	22.23	21.66	-------	22.48	26.87	30.60	26.34	27.93	28.00	27.50
31	25.47	-------	22.24	21.72	-------	22.61	-------	30.48	-------	27.96	28.00	-------

Note.--Add 2,100 ft to obtain elevation above mean sea level.

Monthly elevation and contents, water year October 1954 to September 1955

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30.....	2,128.00	238,500	-
Oct. 31.....	2,125.47	148,100	-90,400
Nov. 30.....	2,124.22	113,900	-34,200
Dec. 31.....	2,122.24	60,200	-53,700
Calendar year 1954.....	-	-	-48,000
Jan. 31.....	2,121.72	46,100	-14,100
Feb. 28.....	2,122.26	60,700	+14,600
Mar. 31.....	2,122.61	70,200	+9,500
Apr. 30.....	2,126.87	190,500	+120,300
May 31.....	2,130.48	364,900	+174,400
June 30.....	2,126.34	172,900	-192,000
July 31.....	2,127.96	236,600	+63,700
Aug. 31.....	2,128.00	238,500	+1,900
Sept.30.....	2,127.50	215,400	-23,100
Water year 1954-55.....	-	-	-23,100

† Elevation at 12 p.m.

Hayden Lake at Hayden Lake, Idaho

Location.--Lat 47°46', long 116°45', in sec. 18, T. 51 N., R. 3 W., at Avondale and Hayden Lake pumping plants, a quarter of a mile north of Bozanta Tavern at Hayden Lake.

Records available.--May 1920 to September 1955.

Gage.--Staff gage read twice daily Oct. 1 to Feb. 27 (morning readings only listed herein); once daily Feb. 28 to Sept. 30. Datum of gage is 2,200.21 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1925, at datum 30.35 ft higher. Oct. 1, 1925, to Mar. 26, 1931, at datum 21.60 ft higher.

Extremes.--Maximum gage height observed during year, 39.20 ft June 6-10; minimum observed, 34.44 ft Mar. 26-28.
1920-55: Maximum gage height observed, 41.55 ft May 18, 19, 1950; minimum observed, 19.38 ft Dec. 16, 1931.

Remarks.--Water is pumped from lake for irrigation and domestic supply. Lake has no natural outlet.

Revisions (water years).--WSP 962: 1921(M). WSP 1216: 1950.

Gage height, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35.72	35.16	35.04	34.82	34.60	34.66	34.54	36.80	39.14	38.76	37.86	36.44
2	35.70	35.14	35.02	34.84	34.58	34.66	34.58	36.86	39.16	38.72	37.80	36.40
3	35.68	35.12	35.00	34.82	34.58	34.64	34.62	36.90	39.18	38.70	37.74	36.34
4	35.64	35.12	35.00	34.80	34.56	34.62	34.64	37.00	39.18	38.68	37.70	36.30
5	35.62	35.10	34.98	34.78	34.56	34.60	34.66	37.10	39.18	38.66	37.66	36.26
6	35.60	35.10	34.98	34.78	34.54	34.58	34.70	37.20	39.20	38.66	37.62	36.22
7	35.58	35.10	34.98	34.76	34.56	34.58	34.72	37.36	39.20	38.62	37.58	36.18
8	35.54	35.09	34.98	34.76	34.60	34.56	34.78	37.48	39.20	38.58	37.52	36.16
9	35.54	35.06	34.94	34.76	34.64	34.56	34.88	37.54	39.20	38.56	37.46	36.12
10	35.50	35.08	34.94	34.74	34.66	34.57	34.96	37.64	39.20	38.56	37.42	36.08
11	35.48	35.08	34.92	34.74	34.66	34.58	35.12	37.72	39.18	38.56	37.38	36.02
12	35.44	35.08	34.92	34.74	34.67	34.58	35.20	37.82	39.18	38.54	37.36	35.98
13	35.40	35.06	34.92	34.74	34.67	34.56	35.32	37.94	39.16	38.50	37.30	35.94
14	35.38	35.08	34.92	34.74	34.66	34.56	35.38	38.06	39.14	38.48	37.26	35.90
15	35.38	35.06	34.92	34.74	34.66	34.54	35.44	38.14	39.10	38.46	37.22	35.84
16	35.36	35.08	34.92	34.74	34.66	34.52	35.52	38.22	39.08	38.42	37.18	35.82
17	35.34	35.12	34.90	34.72	34.66	34.52	35.56	38.26	39.04	38.38	37.12	35.82
18	35.32	35.14	34.88	34.70	34.65	34.52	35.62	38.32	39.00	38.34	37.06	35.80
19	35.30	35.16	34.86	34.70	34.64	34.50	35.68	38.40	38.96	38.30	37.00	35.76
20	35.28	35.16	34.84	34.68	34.62	34.50	35.74	38.44	38.94	38.26	36.96	35.74
21	35.30	35.16	34.84	34.66	34.62	34.48	35.80	38.60	38.90	38.22	36.92	35.72
22	35.34	35.14	34.82	34.66	34.61	34.48	35.94	38.68	38.86	38.18	36.88	35.70
23	35.34	35.14	34.80	34.66	34.60	34.48	36.16	38.74	38.84	38.12	36.82	35.68
24	35.32	35.12	34.80	34.64	34.60	34.48	36.30	38.80	38.86	38.12	36.76	35.66
25	35.30	35.12	34.77	34.64	34.60	34.46	36.44	38.86	38.84	38.08	36.74	35.64
26	35.28	35.14	34.76	34.64	34.65	34.44	36.52	38.90	38.84	38.04	36.70	35.60
27	35.26	35.12	34.74	34.64	34.66	34.44	36.60	38.96	38.82	38.00	36.66	35.58
28	35.26	35.10	34.74	34.62	34.66	34.44	36.66	39.00	38.80	37.98	36.60	35.58
29	35.22	35.08	34.74	34.61	-	34.46	36.70	39.04	38.80	37.96	36.56	35.56
30	35.20	35.06	34.74	34.60	-------	34.50	36.78	39.08	38.78	37.94	36.52	35.54
31	35.18	-------	34.80	34.60	-------	34.50	-------	39.12	-------	37.88	36.48	-------

Rathdrum Prairie Canal at Huetter, Idaho

Location.--Lat 47°43', long 116°52', in sec. 6, T. 50 N., R. 4 W., on left bank 450 ft downstream from outlet of discharge pipe, five-eighths of a mile north of pumping plant, and three-quarters of a mile northwest of Huetter.

Records available.--April 1946 to September 1955.

Gage.--Water-stage recorder.

Extremes.--1946-55: Maximum daily discharge, 66 cfs June 29 to July 2, 1947; no flow for long periods each year.

Remarks.--Records good. Canal carries water which is pumped from Spokane River in sec. 7, T. 50 N., R. 4 W., for irrigation of first unit of Rathdrum Prairie project.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.2							0	30	0	57	55
2	0							0	37	0	56	55
3	0							0	52	0	56	56
4	0							0	52	0	56	56
5	0							0	52	0	55	56
6	0							0	52	21	55	56
7	0							0	52	34	55	57
8	0							0	*52	37	52	*56
9	0							0	52	30	53	56
10	0							0	52	0	54	56
11	0							0	52	0	54	56
12	0							0	53	0	54	56
13	0							0	53	29	54	56
14	0							6.2	53	46	48	56
15	0							0	*53	*55	55	56
16	0							0	52	44	55	56
17	0							7.5	51	42	55	56
18	0							0	50	53	55	56
19	0							0	49	52	*55	56
20	0							0	48	53	55	56
21	0							0	48	55	55	23
22	0							0	47	57	55	0
23	0							19	47	58	54	21
24	0							26	46	53	54	30
25	0							0	46	58	55	30
26	0						(*)	0	26	58	55	30
27	0							0	0	58	55	30
28	0							0	0	58	55	*20
29	*0							0	0	57	55	0
30	0				------			16	0	57	55	0
31	0	------			------		------	30	------	57	52	------
Total	9.2	0	0	0	0	0	0	104.7	1,257	1,122	1,689	1,303
Mean	0.30	0	0	0	0	0	0	3.38	41.9	36.2	54.5	43.4
Ac-ft	18	0	0	0	0	0	0	208	2,490	2,230	3,350	2,580

Calendar year 1954: Max 58 Min 0 Mean 14.0 Ac-ft 10,120
Water year 1954-55: Max 58 Min 0 Mean 15.0 Ac-ft 10,880

* Discharge measurement or observation of no flow made on this day.
Note.--No gage-height record May 14 to June 7, Sept. 9-27; discharge estimated on basis of records of pump operation and records for adjacent periods.

Spokane Valley Farms Co.'s canal at Post Falls, Idaho

Location.--Lat 47°43', long 116°57', in sec. 3, T. 50 N., R. 5 W., on left bank 300 ft downstream from headgate and half a mile northwest of Post Falls.

Records available.--May 1911 to September 1917, September 1919 to September 1955.

Gage.--Water-stage recorder. Prior to Apr. 22, 1938, staff gages at several sites within 1,000 ft of present site at various datums.

Extremes.--1911-17, 1919-55: Maximum daily discharge, 306 cfs July 26, 1951; no flow or small amount of leakage during nonirrigation seasons.

Remarks.--Records good except those below 5 cfs, which are poor. Canal diverts water for irrigation from Spokane River in SE¼ sec. 3, T. 50 N., R. 5 W.

Cooperation.--Water-stage recorder inspected by employee of Spokane Valley Farms Co. Two discharge measurements furnished by Washington Water Power Co.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1	1					0	50	156	205	262	*239
2	1	1					*0	50	156	208	260	238
3	1	1					0	75	190	210	*261	237
4	1	1					0	84	202	208	262	235
5	1	1					0	84	221	209	262	234
6	1	1					0	*112	257	210	261	238
7	1	1	(*)				0	122	274	217	259	239
8	1	1					0	122	272	224	258	239
9	1	1					0	117	278	243	257	237
10	1	1					0	119	280	246	256	226
11	1	1					0	119	282	243	257	218
12	1	1		(*)			0	120	291	244	257	218
13	1	1					0	121	296	250	256	217
14	1	1					0	122	295	251	255	216
15	1	1					0	122	*295	260	259	208
16	1	0					0	122	295	*267	248	39
17	1	0					0	120	296	268	240	42
18	1	0					0	120	295	271	240	41
19	1	0					19	122	294	275	*239	39
20	1	0					27	123	296	277	*239	39
21	1	0					44	151	283	277	239	38
22	1	0					50	161	270	276	237	38
23	1	0					50	161	295	279	237	38
24	1	0					50	*159	300	280	238	38
25	1	0			(*)		51	162	292	280	238	37
26	1	0					51	163	280	278	237	36
27	1	0					51	163	280	277	236	36
28	1	0					51	158	279	269	235	*36
29	*1	0			-		50	156	192	262	234	15
30	1	0			-		50	156	204	262	236	3
31	1	-					-----	155	- -	262	239	- -
Total	31	15	0	0	0	0	544	3,891	7,856	7,788	7,696	3,954
Mean	1.0	0.5	0	0	0	0	18.1	126	262	251	248	132
Ac-ft	61	30	0	0	0	0	1,080	7,720	15,580	15,450	15,260	7,840

Calendar year 1954: Max 283 Min 0 Mean 83.0 Ac-ft 60,110
Water year 1954-55: Max 300 Min 0 Mean 87.1 Ac-ft 63,020

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

Spokane River near Post Falls, Idaho

Location.--Lat 47°42'10", long 116°58'40", in SW¼SW¼ sec. 4, T. 50 N., R. 5 W., on right bank 1 mile downstream from powerplant of Washington Water Power Co., 1½ miles downstream from intake of Spokane Valley Farms Co.'s canal, and 1½ miles southwest of Post Falls.

Drainage area.--3,840 sq mi, approximately, of which about 122 sq mi in the vicinity of Hayden Lake is noncontributing to this station.

Records available.--January 1913 to September 1955. Prior to October 1949, published as "at Post Falls."

Gage.--Water-stage recorder. Datum of gage is 2,000.00 ft above mean sea level, referenced to same datum as gage on Coeur d'Alene Lake at Coeur d'Alene (see p. 246). Datum of 1929, supplementary adjustment of 1947, is 3.00 ft higher. Jan. 1, 1913, to Nov. 21, 1920, staff gage and Sept. 16, 1934, to Nov. 15, 1949, water-stage recorder, at site 0.8 mile upstream at present datum. Nov. 22, 1920, to Sept. 15, 1934, water-stage recorder at site 0.6 mile upstream at present datum.

Average discharge.--River only, 42 years, 6,012 cfs (4,353,000 acre-ft per year); river, Spokane Valley Farms Co.'s canal, and Rathdrum Prairie Canal, 42 years, 6,116 cfs (4,428,000 acre-ft per year).

Extremes.--Maximum discharge during year, 27,500 cfs May 25 (gage height, 70.40 ft); minimum, 117 cfs Aug. 27, 28, Sept. 12 (gage height, 55.19 ft); minimum daily, 120 cfs Aug. 27, 28, Sept. 5, 9, 10.

1913-55: Maximum discharge, 50,100 cfs when recorder was not operating Dec. 25, 1933 (determined from unpublished records collected by Washington Water Power Co. for station at Liberty Bridge); minimum daily, that of Aug. 27, 28, Sept. 5, 9, 10, 1955.

Remarks.--Records excellent. Spokane Valley Farms Co.'s canal (see preceding page) and Rathdrum Prairie Canal (see p. 248) divert water above gage for irrigation. Figures of daily discharge do not include water diverted by these canals. Flow regulated by dam at Post Falls and affected by storage in Coeur d'Alene Lake (see p. 246).

Cooperation.--Water-stage-recorder graph and one discharge measurement furnished by Washington Water Power Co.

Revisions.--WSP 1182: Drainage area.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	828	4,040	4,170	2,930	1,610	2,780	*3,570	12,000	21,400	5,570	1,840	707
2	1,080	3,960	4,060	2,930	1,660	2,670	3,860	12,100	20,800	2,990	1,820	483
3	931	3,960	4,340	2,690	1,740	2,590	4,050	12,600	19,900	1,490	1,480	160
4	2,480	4,100	4,330	2,670	1,610	2,430	4,210	13,000	19,200	1,510	1,130	125
5	2,980	4,090	4,240	2,660	1,540	2,440	4,210	13,500	18,800	2,130	832	120
6	2,960	4,100	4,360	2,630	1,420	2,240	4,220	*14,200	18,500	2,210	788	855
7	2,960	4,110	*4,380	2,550	1,780	2,210	4,200	15,100	18,400	2,210	1,190	1,270
8	3,240	4,110	4,240	2,500	2,250	2,190	4,740	16,100	18,500	2,920	1,460	888
9	3,850	4,250	4,150	2,460	2,980	2,250	6,050	17,200	18,800	3,230	1,240	120
10	3,810	4,000	4,300	2,450	3,410	2,380	7,070	18,100	19,200	3,250	963	120
11	3,820	4,090	4,200	2,490	3,450	2,490	8,650	18,900	19,500	3,920	558	122
12	3,090	4,200	4,160	*2,570	3,480	2,520	10,700	19,600	19,400	5,400	1,080	462
13	2,670	4,290	4,190	2,570	3,460	2,500	11,200	20,300	19,600	4,930	999	270
14	2,500	4,170	4,140	2,570	3,340	2,490	11,500	21,100	19,400	4,240	795	145
15	2,180	4,040	4,080	2,580	3,400	2,490	11,600	21,500	19,200	4,270	552	435
16	1,880	3,990	3,860	2,590	3,710	2,430	11,300	21,300	*18,600	*4,140	802	1,250
17	2,740	3,610	3,770	2,350	3,840	2,480	11,000	20,800	17,700	4,150	810	1,260
18	3,720	3,690	3,320	1,920	3,710	2,450	10,800	20,300	17,100	3,900	677	413
19	3,570	2,810	3,130	1,920	3,570	2,400	10,800	20,000	16,200	2,980	481	1,460
20	3,980	1,630	2,810	2,010	3,480	2,460	10,600	20,100	15,400	2,390	*532	1,520
21	3,980	2,180	2,370	1,830	3,250	2,540	10,600	21,000	14,700	2,330	465	1,630
22	2,370	3,860	2,430	1,740	3,180	2,200	10,800	22,300	14,200	2,320	441	1,820
23	1,860	3,810	2,440	1,650	3,130	2,210	11,600	24,400	13,600	3,230	278	1,840
24	3,880	4,020	2,450	1,600	3,120	2,680	12,200	*25,300	*13,100	1,570	272	1,700
25	4,020	4,250	2,420	1,640	*2,990	2,520	12,600	25,300	12,800	3,490	255	787
26	3,940	4,240	2,280	1,870	2,890	2,630	12,900	24,600	12,500	3,210	128	1,820
27	3,970	4,100	2,280	1,910	2,820	2,560	12,900	23,800	11,900	2,190	120	1,830
28	4,110	4,060	2,280	1,910	2,850	2,580	12,700	23,200	11,500	2,370	120	*2,140
29	*4,030	4,390	2,310	1,800	-	2,820	12,500	22,400	11,100	2,140	122	2,210
30	4,080	4,450	2,410	1,660	------	3,070	12,100	22,100	8,630	1,840	122	2,130
31	4,050		2,770	1,610	------	3,320	-------	21,300	-------	1,480	492	-------
Total	95,559	116,600	106,670	69,260	79,680	78,020	275,230	603,500	499,630	94,000	22,844	30,092
Mean	3,083	3,887	3,441	2,234	2,846	2,517	9,174	19,470	16,650	3,032	737	1,003
Ac-ft	189,500	231,300	211,600	137,400	158,000	154,800	545,900	‡1,197	991,000	186,400	45,310	59,690
(†)	79	30	0	0	0	0	1,080	7,928	18,070	17,680	18,610	10,420

Adjusted for diversion through Spokane Valley Farms Co.'s canal and Rathdrum Prairie Canal

Mean	3,084	3,887	3,441	2,234	2,846	2,517	9,192	19,600	16,960	3,320	1,040	1,178
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	189,600	231,300	211,600	137,400	158,000	154,800	547,000	‡1,205	‡1,009	204,100	63,930	70,110

Observed

Calendar year 1954:	Max	31,800	Min	192	Mean	7,433	Ac-ft 5,382,000
Water year 1954-55:	Max	25,300	Min	120	Mean	5,674	Ac-ft 4,108,000

Adjusted

Calendar year 1954:	Mean	7,530	Cfsm	1.96	In.	26.62	Ac-ft 5,452,000
Water year 1954-55:	Mean	5,776	Cfsm	1.50	In.	20.42	Ac-ft 4,182,000

* Discharge measurement made on this day.
† Diversion, in acre-feet, through Spokane Valley Farms Co.'s canal and Rathdrum Prairie Canal.
‡ Expressed in thousands.

Spokane River above Liberty Bridge, near Otis Orchards, Wash.

Location.--Lat 47°40'55", long 117°05'05", in NW¼ sec. 11, T. 25 N., R. 45 E., on left bank 1.2 miles upstream from Liberty Bridge, 1¾ miles southeast of Otis Orchards, and 3.3 miles northeast of Greenacres.

Drainage area.--3,880 sq mi, approximately.

Records available.--October 1950 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 2,000 ft above mean sea level (levels by Washington Water Power Co.).

Average discharge.--5 years, 6,244 cfs (4,520,000 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 26,100 cfs May 25 (gage height, 17.99 ft); minimum observed, 64 cfs Sept. 2 (gage height, 7.67 ft).
1950-55: Maximum discharge, 30,400 cfs May 1, 1952 (gage height, 18.95 ft); minimum, 61 cfs Aug. 7, 1951; minimum gage height, 7.67 ft Sept. 2, 1955.
Maximum stage known since 1932, 22.24 ft Dec. 25, 1933 (discharge, 50,100 cfs), determined from unpublished records collected by Washington Water Power Co. at this station.

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. Flow partly regulated by powerplant at Post Falls, Idaho, and by Coeur d'Alene Lake (see p. 246). Spokane Valley Farms Co.'s canal (see p. 249) and Rathdrum Prairie Canal (see p. 248) divert water above station for irrigation.

Cooperation.--Gage-height record collected in cooperation with Washington Water Power Co.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

7.7	71	11.0	3,000
8.0	171	12.0	4,800
8.5	425	14.0	10,200
9.0	740	16.0	17,600
10.0	1,640	18.0	26,100

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	690	3,910	4,060	2,800	1,510	2,640	3,440	11,900	21,000	6,160	*1,700	*a680
2	1,000	3,800	3,930	2,790	1,520	2,520	3,700	12,100	20,500	2,820	1,680	*a400
3	799	3,790	4,190	2,560	1,610	2,470	3,910	12,400	19,700	1,360	1,360	171
4	2,200	3,950	4,190	2,550	1,520	2,280	4,080	12,900	19,100	1,380	1,000	a110
5	2,790	3,950	4,120	2,540	1,430	2,310	4,080	13,400	18,700	2,020	824	a100
6	2,760	3,950	4,190	2,510	1,330	2,240	4,080	13,900	18,500	2,070	768	485
7	2,760	4,000	*4,230	2,440	1,640	2,100	4,080	14,900	18,500	2,050	1,000	1,010
8	2,970	3,970	4,130	2,410	2,100	2,060	4,560	16,000	18,500	2,580	1,330	998
9	3,610	4,130	3,980	2,330	2,730	2,140	5,760	17,000	18,800	3,090	1,120	a100
10	3,590	3,880	4,150	*2,310	3,260	2,240	6,770	18,100	19,100	3,110	1,090	a100
11	3,560	3,970	4,040	2,400	*3,290	2,330	8,360	18,900	19,400	3,870	425	a100
12	2,960	4,040	4,040	2,440	3,320	2,370	10,600	19,500	*19,500	5,110	928	a410
13	a2,400	4,130	4,020	2,440	3,290	2,350	11,100	20,100	19,600	4,900	1,030	260
14	a2,150	4,040	4,000	2,450	3,190	2,350	11,300	20,900	19,500	4,060	824	132
15	2,020	3,880	3,930	2,450	3,220	2,350	11,500	21,300	19,300	4,100	584	a330
16	1,780	3,860	3,710	2,490	3,470	*2,280	11,200	21,100	18,600	4,060	796	1,070
17	2,370	3,440	3,610	2,230	3,700	2,340	11,000	20,600	17,800	4,040	810	1,110
18	3,590	3,560	3,350	1,820	3,540	2,330	10,800	20,200	17,000	3,820	727	391
19	3,370	2,780	2,970	1,830	3,420	2,270	10,700	19,900	16,100	2,940	460	1,340
20	3,790	1,460	2,670	1,910	3,300	2,310	10,600	20,000	15,300	2,160	498	1,440
21	3,820	1,580	2,200	1,740	3,110	2,400	10,500	20,700	14,600	2,040	479	1,490
22	2,500	3,680	2,240	1,610	3,020	2,100	10,800	21,900	13,900	2,070	403	1,660
23	1,530	3,640	2,230	1,570	2,980	2,060	11,600	23,800	13,400	3,210	a250	1,670
24	3,750	3,860	2,270	1,500	2,980	2,540	12,300	24,500	12,900	1,400	a240	1,610
25	*3,840	4,080	2,230	1,530	2,820	2,400	12,700	24,500	12,500	3,180	a230	734
26	3,820	4,080	2,110	1,740	2,740	2,480	*12,900	24,000	12,200	3,160	a110	1,640
27	3,800	3,930	2,100	1,800	2,670	2,410	12,900	23,300	11,700	2,040	a100	1,680
28	3,970	3,890	2,110	1,770	2,730	2,440	12,700	22,800	11,200	2,200	a100	2,050
29	3,880	4,210	2,130	1,700	-	2,640	12,500	21,900	10,800	2,010	a100	2,170
30	3,930	4,300	2,170	1,550	-------	2,880	12,100	21,600	8,600	1,750	a100	2,090
31	3,910	-	2,660	1,510	-------	3,130	-----	21,100	-----	1,370	*a320	-----
Total	89,909	111,740	101,960	65,720	75,440	73,760	272,620	595,200	496,300	90,130	21,386	27,531
Mean	2,900	3,725	3,289	2,120	2,694	2,379	9,087	19,200	16,540	2,907	690	918
Ac-ft	178,300	221,600	202,200	130,400	149,600	146,300	540,700	‡1,181	984,400	178,800	42,420	54,610

Calendar year 1954: Max 29,600 Min 176 Mean 7,155 Ac-ft 5,179,000
Water year 1954-55: Max 24,500 Min 100 Mean 5,539 Ac-ft 4,010,000

* Discharge measurement made this day.
‡ Expressed in thousands.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for stations near Post Falls, Idaho, and below Trent Bridge near Spokane.

Liberty Lake at Liberty Lake, Wash.

Location.--Lat 47°39'10", long 117°05'20", in NE¼ sec. 22, T. 25 N., R. 45 E., on right wall of concrete outlet flume at town of Liberty Lake, 15 miles east of Spokane.

Drainage area.--13.7 sq mi.

Records available.--December 1950 to September 1955 (fragmentary).

Gage.--Staff gage. Datum of gage is 2,046.48 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Apr. 11, 1952, staff gages at various locations within a few feet of present site at same datum.

Extremes.--Maximum gage height observed during year, 2.60 ft May 16; minimum observed, 0.79 ft Oct. 25.
1950-55: Maximum gage height observed, 4.42 ft May 1, 3, 1952; minimum observed, -0.12 ft Aug. 30, 1951.

Remarks.--Stage controlled by gate at outlet. No known diversion.

Gage height, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-	-	0.90	0.97	1.02	-		-	-	-	
2	-	-	-	.90	.96	-	1.20		-	-	-	
3	-	-	-	.90	.96	-	-		2.38	-	-	
4	-	-	-	.98	-	1.04	-		-	2.20	1.70	
5	-	-	-	.98	-	-	-		2.36	-	-	
6	-	-	0.90	.98	-	-	-		-	-	-	
7	-	-	-	.98	1.00	-	-		-	-	-	
8	-	-	-	-	-	-	-		-	-	1.60	
9	-	-	-	-	.99	1.06	-		-	-	-	
10	-	-	-	.99	.99	-	1.38		-	-	-	
11	-	-	-	.98	1.00	-	-		-	-	-	
12	-	-	-	.98	-	-	-		-	-	-	
13	-	-	-	-	-	1.00	-		-	-	-	
14	-	-	-	.99	-	1.00	-		-	2.10	-	
15	-	-	-	.99	1.00	-	-		-	-	-	
16	-	-	-	-	1.00	.99	-	2.60	2.30	-	-	0.90
17	-	-	-	.98	-	.97	-		-	2.10	-	
18	0.80	0.88	-	.98	-	-	-		-	-	-	
19	-	-	-	.98	-	-	-		-	-	-	
20	-	.88	-	.98	-	-	-		-	-	1.30	
21	-	-	-	.98	-	-	-		-	-	-	
22	-	-	-	-	.98	.96	2.26		-	2.00	-	
23	-	.88	.96	-	.98	-	-		-	-	-	
24	-	-	-	.96	-	.98	-		-	-	1.20	
25	.79	-	-	.97	-	-	-		-	1.90	-	
26	-	-	-	.97	-	.97	2.26		-	-	-	
27	-	.88	-	.97	-	-	-		-	-	-	
28	-	-	.88	.97	-	-	-		-	1.96	-	
29	-	-	-	-	-	-	-		-	-	-	
30	-	.88	-	-	-------	-	-		-	1.80	-	
31	-	-------	-	.96	-------	-	-------		-------	-	1.04	-------

Spokane River at Spokane, Wash.

Location.--Lat 47°39'35", long 117°26'50", in SW¼ sec. 13, T. 25 N., R. 42 E., on right bank at Cochran Street in Spokane, half a mile upstream from Latah Creek.

Drainage area.--4,290 sq mi, approximately.

Records available.--April 1891 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,696.6 ft above mean sea level, datum of 1929 (river-profile survey). Prior to July 1, 1921, water-stage recorders and staff or wire-weight gages at several sites within 4 miles of present site at various datums.

Average discharge.--64 years, 6,768 cfs (4,900,000 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 27,000 cfs May 25 (gage height, 25.70 ft); minimum, 454 cfs Mar. 23 (gage height, 16.62 ft); minimum daily, 841 cfs Sept. 5. 1891-1955: Maximum discharge, 49,000 cfs (estimated) May 31, 1894 (see WSP 532); minimum, 156 cfs Nov. 14, 1948 (gage height, 16.18 ft); minimum daily, 740 cfs Sept. 7, 1947.

Remarks.--Records good. Flow partly regulated by powerplant of Washington Water Power Co. at Post Falls, Idaho, and at Spokane, and by Coeur d'Alene Lake (see p. 247). Spokane Valley Farms Co.'s canal (see p. 249) and Rathdrum Prairie Canal (see p. 248) divert water above station for irrigation. In 1946, approximately 22,600 acres were under irrigation upstream from Spokane, of which about 15,000 acres utilized surface water.

Cooperation.--Gage-height record collected in cooperation with Washington Water Power Co.

Revisions (water years).--WSP 532: 1891-1904. WSP 1246: Drainage area. WSP 1286: 1907-9.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

17.0	760	21.0	8,300
18.0	1,910	23.0	15,100
19.0	3,500	26.0	28,500
20.0	5,560		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,450	4,340	4,560	3,410	2,220	3,150	3,680	12,400	22,200	7,500	2,580	1,350
2	1,640	4,300	4,420	3,370	2,200	3,170	3,960	12,400	20,900	5,270	*2,470	*1,220
3	1,590	4,220	4,560	3,200	2,240	3,080	4,140	12,800	20,900	2,960	2,420	1,150
4	2,300	4,340	4,660	3,360	2,290	2,930	4,340	13,300	20,200	2,920	2,100	940
5	3,180	4,360	4,600	3,060	2,060	2,900	4,400	13,800	19,700	3,270	1,920	841
6	3,250	4,460	4,660	*3,060	2,160	2,770	4,360	14,300	19,500	3,290	1,700	1,290
7	3,220	4,440	*4,620	3,030	2,120	2,720	4,400	15,300	19,400	3,220	1,870	1,580
8	3,340	4,460	4,820	3,100	2,610	2,660	4,540	16,300	19,400	3,340	2,120	1,840
9	3,990	4,500	4,480	2,880	2,960	2,760	5,770	17,400	19,700	4,030	2,170	920
10	4,030	4,500	4,640	2,950	3,460	2,770	6,880	18,400	20,000	4,030	2,020	900
11	3,990	4,480	4,520	2,920	3,610	2,870	8,150	19,200	20,300	4,420	1,410	880
12	3,750	4,380	4,580	3,010	3,750	2,900	10,200	20,000	*20,400	5,420	1,650	940
13	3,080	4,540	4,560	3,010	3,660	2,880	11,100	20,700	20,500	5,920	1,900	1,070
14	3,080	4,560	4,560	3,010	3,610	2,820	11,300	21,500	20,400	4,730	1,650	1,030
15	2,770	4,440	4,500	2,960	3,610	2,920	11,700	22,000	20,300	4,750	1,450	910
16	2,630	4,460	4,300	3,080	*3,750	2,880	11,400	22,100	19,700	4,770	1,600	1,600
17	2,610	3,960	4,200	2,980	4,110	*2,870	11,300	21,600	18,700	4,730	1,560	1,760
18	3,970	4,110	3,990	2,470	3,960	2,880	11,100	21,100	18,100	4,660	1,560	1,290
19	3,720	3,790	3,660	2,560	3,860	2,840	11,000	20,800	17,200	4,130	1,370	1,720
20	*4,130	2,360	3,520	2,500	3,730	2,840	11,000	20,800	16,400	2,950	1,250	2,050
21	4,200	2,400	3,030	2,470	3,630	2,880	10,800	21,400	15,700	2,980	1,350	2,170
22	3,720	3,880	2,980	2,360	3,550	2,880	11,100	22,700	15,000	3,010	1,250	2,290
23	1,740	4,130	3,030	2,290	3,520	2,470	11,700	24,800	14,400	3,790	1,200	2,260
24	4,030	4,220	3,030	2,230	3,480	3,000	12,600	25,800	14,000	2,900	1,110	2,240
25	4,140	4,520	2,950	2,220	3,430	3,000	12,900	26,000	13,500	3,430	1,120	1,690
26	4,240	4,560	2,900	2,300	3,320	2,920	13,100	25,600	13,200	3,990	1,080	2,020
27	4,220	4,380	2,820	2,460	3,250	2,920	13,200	24,900	12,800	3,050	920	2,300
28	4,320	4,400	2,870	2,380	3,320	2,980	*13,100	24,200	12,300	3,120	940	2,400
29	4,260	4,540	2,870	2,470	-	3,080	12,800	23,200	11,800	2,920	930	2,640
30	4,340	4,880	2,920	2,280	- - - -	3,250	12,600	22,900	10,100	2,850	910	2,660
31	4,360	- -	3,120	2,240	- -	3,500	- - - - -	22,400	- - - - -	2,400	950	- -
Total	105,290	126,910	120,930	85,620	89,470	90,490	278,620	620,100	526,700	120,750	48,530	47,951
Mean	3,396	4,230	3,901	2,762	3,195	2,919	9,287	20,000	17,560	3,895	1,565	1,598
Ac-ft	208,800	251,700	239,900	169,800	177,500	179,500	552,600	‡1,230	‡1,045	239,500	96,260	95,110

Calendar year 1954: Max 30,800 Min 1,000 Mean 7,789 Ac-ft 5,639,000
Water year 1954-55: Max 26,000 Min 841 Mean 6,196 Ac-ft 4,486,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Latah Creek at Spokane, Wash.

Location.--Lat 47°39'10", long 117°26'55", in NW¼ sec. 24, T. 25 N., R. 42 E., on left bank in Spokane, three-quarters of a mile upstream from mouth.

Drainage area.--619 sq mi.

Records available.--April 1948 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,720 ft (from topographic map). Prior to Nov. 22, 1948, wire-weight gage at site half a mile upstream at different datum.

Average discharge.--7 years, 251 cfs (181,700 acre-ft per year).

Extremes.--Maximum discharge during year, 4,730 cfs Feb. 8 (gage height, 9.42 ft); minimum, 3.8 cfs Sept. 4, 5, 8 (gage height, 2.12 ft).
1948-55: Maximum discharge, 11,900 cfs May 24, 1948 (gage height, 18.73 ft, from floodmarks, site and datum then in use), from rating curve extended above 7,300 cfs on basis of slope-area and contracted-opening determinations of peak flow; minimum, that of Sept. 4, 5, 8, 1955.

Remarks.--Records good except those below 10 cfs and those for periods of ice effect, which are poor. No regulation. A few small diversions for irrigation above station.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.1	3.3	3.6	144
2.2	5.8	4.0	231
2.3	8.9	4.5	370
2.4	12.5	5.0	545
2.6	22	6.0	1,030
2.8	35	7.0	1,750
3.0	54	8.0	2,740
3.3	91	9.0	4,060

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	19	b25	692	60	57	733	302	61	23	*7.7	4.8
2	16.5	19	25	319	b54	55	795	277	57	21	7.0	*4.6
3	16	18.5	28	172	b52	*52	630	285	53	21	6.7	4.3
4	15.5	18.5	28	93	63	b51	477	277	51	22	6.7	4.0
5	15.5	18.5	27	77	67	b50	428	261	46	21	6.7	4.0
6	15	20	*27	*71	61	b49	400	238	41	21	6.7	4.0
7	15	22	29	62	*434	48	407	244	39	20	6.7	4.3
8	15	23	31	52	*3,880	134	418	248	35	18	6.7	4.3
9	14.5	24	30	47	1,300	*946	421	231	32	16	5.3	4.6
10	14.5	23	27	46	488	746	424	219	29	16.5	5.0	4.8
11	15	22	27	41	304	385	428	198	28	18	5.0	4.8
12	15	22	31	40	196	328	414	179	26	17	5.0	4.6
13	14.5	22	30	42	172	272	388	170	24	16	5.0	4.6
14	14.5	23	34	46	140	231	533	181	22	14.5	4.8	5.0
15	14.5	24	34	39	160	181	435	183	22	13.5	4.8	5.6
16	14.5	25	36	39	203	198	385	174	23	13.5	4.8	6.1
17	15	26	37	38	200	224	418	158	20	11.5	4.8	6.1
18	15	27	35	36	136	379	446	144	20	12	5.0	5.8
19	*15	35	34	33	88	379	880	136	19	10.5	5.6	5.8
20	15	61	30	b32	81	319	710	121	*18	9.6	5.0	6.7
21	18	62	29	b31	77	277	684	114	17	8.3	4.8	7.0
22	20	50	26	b31	75	272	1,100	112	16	8.0	4.8	7.4
23	28	40	26	b32	66	355	1,420	116	15.5	7.4	4.8	7.4
24	28	35	26	b33	65	288	855	104	17	9.6	4.6	6.4
25	23	33	27	37	60	217	577	96	20	21	4.6	6.4
26	23	31	29	47	b59	170	449	97	22	18	4.6	6.4
27	24	29	b27	69	b58	238	452	91	21	15	4.6	8.0
28	22	29	30	88	b58	421	*463	78	22	13	4.6	8.6
29	20	27	32	73	-	810	407	75	22	*11.5	4.8	8.9
30	19.5	b26	34	62	------	922	349	70	23	11	4.8	9.6
31	19	-----	708	56	-----	770	-----	64	------	9.6	4.8	------
Total	547.0	854.5	1,599	2,576	8,657	9,824	16,926	5,243	861.5	468.0	166.8	174.9
Mean	17.6	28.5	51.6	83.1	309	317	564	169	28.7	15.1	5.38	5.83
Cfsm	0.028	0.046	0.083	0.134	0.499	0.512	0.911	0.273	0.046	0.024	0.009	0.009
In.	0.03	0.05	0.10	0.15	0.52	0.59	1.02	0.32	0.05	0.03	0.01	0.01
Ac-ft	1,080	1,690	3,170	5,110	17,170	19,490	33,570	10,400	1,710	928	331	347

Calendar year 1954: Max 3,660 Min 7.5 Mean 199 Cfsm 0.321 In. 4.36 Ac-ft 144,100
Water year 1954-55: Max 3,880 Min 4.0 Mean 131 Cfsm 0.212 In. 2.88 Ac-ft 95,000

Peak discharge (base, 2,500 cfs).--Feb. 8 (8:30 a.m.) 4,730 cfs (9.42 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Medical Lake at Medical Lake, Wash.

Location.--Lat 47°34'40", long 117°41'30", in NW¼NW¼ sec. 18, T. 24 N., R. 41 E., at causeway to State Hospital in town of Medical Lake.

Drainage area.--1.50 sq mi.

Records available.--March 1953 to September 1955 (fragmentary).

Gage.--Staff gage read once daily. Datum of gage is 2,385.43 ft above mean sea level. Gage readings have been reduced to elevations above mean sea level. Prior to May 26, 1954, at site 0.5 mile southeast at datum 10 ft higher.

Extremes.--Maximum elevation observed during year, 2,394.86 ft Mar. 3; minimum observed, 2,391.53 ft Sept. 16.
1953-55: Maximum elevation observed, 2,397.97 ft Mar. 19, 1954; minimum observed, that of Sept. 16, 1955.

Remarks.--Lake has no natural surface outlet. Since Mar. 14, 1954, a pump has been in operation intermittently to lower the lake. The water is pumped into a tributary of Deep Creek.

Elevation, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	93.75	93.68	-			-	-	-	-	92.92	92.31	91.89
2	-	-	-			-	-	94.12	-	-	-	91.88
3	-	-	93.82			94.86	-	-	93.40	-	-	-
4	93.73	-	-			-	94.67	-	-	-	-	-
5	-	93.68	-			-	-	-	-	-	92.31	91.81
6	-	-	93.85			-	-	94.12	93.37	-	-	-
7	-	-	-			-	-	-	-	-	-	-
8	93.73	93.68	-			-	94.67	-	-	-	92.23	-
9	-	-	-			-	-	93.87	-	-	-	91.68
10	-	-	93.85	94.05		-	-	-	93.30	-	-	-
11	93.73	-	-			-	94.60	-	-	-	-	-
12	-	93.71	93.85			-	-	-	-	-	92.18	91.58
13	-	-	-			-	-	93.82	93.27	-	-	-
14	-	-	-			-	-	-	-	-	-	-
15	93.68	93.73	-			-	94.47	-	-	-	92.18	-
16	-	-	-			-	-	93.64	-	-	-	91.53
17	-	-	93.88			94.64	-	-	93.20	-	-	-
18	93.68	-	-			-	94.37	-	-	-	-	-
19	93.67	-	-			-	-	-	-	-	92.08	-
20	-	93.81	93.88			-	-	93.50	93.07	-	-	-
21	-	-	-			-	-	-	-	-	-	-
22	93.71	93.81	-			-	94.37	-	-	92.45	92.03	-
23	-	-	-			-	-	93.47	-	-	-	-
24	-	-	93.88			-	-	-	92.96	-	-	-
25	93.68	-	-			-	94.27	-	-	92.43	-	-
26	-	93.83	-			-	-	-	-	-	91.98	-
27	-	-	93.88			-	-	93.42	92.92	-	-	-
28	-	-	-			-	-	-	-	-	-	-
29	93.68	93.83	-			-	94.17	-	-	92.39	91.91	-
30	-	-	-		-------	-	-	93.42	-	-	-	-
31	-	-------	93.88		-------	-	-------	-	-------	-	-	-------

Note.--Add 2,300 ft to obtain elevation above mean sea level.

Little Spokane River at Elk, Wash.

Location.--Lat 48°01'20", long 117°16'20", in SE¼ sec. 8, T. 29 N., R. 44 E., on right bank half a mile upstream from and northeast of Elk.

Drainage area.--115 sq mi.

Records available.--July 1948 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,875 ft (from topographic map).

Average discharge.--7 years, 59.4 cfs (43,000 acre-ft per year).

Extremes.--Maximum discharge during year, 94 cfs Apr. 23 (gage height, 1.59 ft); maximum gage height, 2.23 ft Mar. 4 (backwater from ice); minimum discharge, 36 cfs Feb. 27 (gage height, 1.07 ft).
1948-55: Maximum discharge, 141 cfs Mar. 19, 1950 (gage height, 1.83 ft); minimum, 28 cfs Jan. 16, 1954 (gage height, 1.01 ft).

Remarks.--Records good except those for periods of ice effect, which are fair. No regulation or diversion.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.0	31
1.2	46
1.4	66
1.6	96

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	38	*38	53	45	46	58	83	60	49	42	40
2	42	38	39	50	45	46	58	82	59	46	42	40
3	42	38	40	48	44	b43	57	82	58	48	41	40
4	42	38	40	46	44	b43	56	80	57	48	41	39
5	42	38	40	45	44	b43	55	78	56	48	40	38
6	42	39	44	45	44	b43	55	77	55	47	41	38
7	42	39	46	44	44	44	55	76	*53	47	40	38
8	42	39	46	43	46	45	55	74	53	46	39	38
9	42	39	43	43	b43	46	56	73	53	46	39	37
10	42	40	43	43	b43	46	56	72	53	46	39	37
11	42	40	42	43	b43	47	56	72	52	46	40	38
12	42	39	42	*43	43	47	57	70	52	46	40	38
13	42	39	42	45	43	47	59	70	51	46	40	38
14	42	40	42	b43	*43	47	59	70	50	46	40	38
15	42	41	42	46	43	47	58	72	50	45	41	38
16	42	42	42	45	44	46	58	72	50	45	41	39
17	42	42	42	45	44	46	59	70	50	45	41	40
18	42	42	42	45	b43	46	62	69	50	44	41	40
19	42	42	42	45	46	46	65	69	49	44	41	41
20	42	42	42	45	46	47	65	68	49	43	41	41
21	41	41	42	45	46	*47	70	66	48	43	41	42
22	*40	40	42	44	46	49	89	65	48	42	40	42
23	40	39	42	44	46	50	92	65	48	42	40	42
24	40	39	42	44	46	49	89	65	50	44	40	41
25	40	39	42	44	46	48	86	65	52	44	40	40
26	40	39	42	44	46	47	86	64	52	*43	40	40
27	40	39	42	44	46	47	88	63	51	44	40	42
28	39	39	42	44	46	48	86	63	50	43	40	46
29	39	38	42	44	-	52	*84	62	50	43	40	46
30	39	38	45	44	------	55	83	62	49	43	*40	45
31	39	-----	51	44	-----	56	-----	60	------	43	40	------
Total	1,277	1,186	1,313	1,390	1,248	1,459	2,012	2,179	1,558	1,397	1,251	1,202
Mean	41.2	39.5	42.4	44.8	44.6	47.1	67.1	70.3	51.9	45.1	40.4	40.1
Cfsm	0.358	0.343	0.369	0.390	0.388	0.410	0.583	0.611	0.451	0.392	0.351	0.349
In.	0.41	0.38	0.42	0.45	0.40	0.47	0.65	0.70	0.50	0.45	0.40	0.39
Ac-ft	2,530	2,350	2,600	2,760	2,480	2,890	3,990	4,320	3,090	2,770	2,480	2,380

Calendar year 1954: Max 84 Min 38 Mean 52.1 Cfsm 0.453 In. 6.15 Ac-ft 37,730
Water year 1954-55: Max 92 Min 37 Mean 47.9 Cfsm 0.417 In. 5.62 Ac-ft 34,640

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Diamond Lake near Newport, Wash.

Location.--Lat 48°08'05", long 117°10'35", in NE¼ sec. 1, T. 30 N., R. 44 E., on southeast shore of Diamond Lake, 7 miles southwest of Newport.

Drainage area.--5.7 sq mi, approximately.

Records available.--July 1953 to September 1955 (fragmentary).

Gage.--Staff gage read once daily. Altitude of gage is 2,340 ft (from topographic map).

Extremes.--Maximum gage height observed during year, 4.80 ft Apr. 23; minimum observed, 3.41 ft Sept. 27.
1953-55: Maximum gage height observed, 4.82 ft Apr. 14-17, 19, 1954; minimum observed, that of Sept. 27, 1955.

Remarks.--No known regulation or diversions.

Gage height, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.96	-	4.01	4.26	4.38	-	-	-	-	-	-	3.58
2	3.95	3.83	-	-	-	-	4.51	-	-	4.28	-	-
3	-	-	-	4.27	-	-	-	4.76	4.58	-	4.00	3.56
4	3.92	-	4.01	4.28	-	-	4.53	4.74	4.58	4.26	-	-
5	-	3.82	-	-	4.38	-	-	-	-	-	-	-
6	-	3.82	-	-	-	-	4.54	-	4.54	4.25	3.97	3.55
7	3.91	-	4.02	4.28	-	-	-	4.70	-	-	-	-
8	-	-	-	4.28	4.40	4.43	-	-	-	4.20	3.96	-
9	3.90	3.84	4.05	-	-	4.46	4.55	-	4.52	4.19	-	3.50
10	-	3.90	-	4.28	4.40	-	-	4.66	-	-	3.90	3.49
11	-	-	4.05	-	-	4.47	-	-	4.45	4.20	-	-
12	3.88	-	-	4.28	4.40	4.48	4.56	4.66	-	-	-	-
13	-	3.90	4.09	4.30	-	-	-	-	-	-	3.86	3.46
14	3.86	-	4.10	-	4.37	4.48	4.59	4.66	4.40	4.19	-	-
15	-	3.94	-	4.31	-	4.48	-	-	-	-	-	3.45
16	3.84	-	4.10	-	-	-	4.62	-	-	-	3.80	-
17	-	-	-	4.34	4.35	4.47	-	4.68	4.36	-	-	3.46
18	3.83	4.00	4.10	-	-	-	-	-	4.36	4.18	3.78	-
19	-	-	-	-	4.35	4.46	4.64	-	-	4.16	-	-
20	3.84	4.03	-	4.36	-	-	-	4.67	-	-	3.77	3.46
21	3.86	-	4.10	-	-	4.44	4.68	4.67	4.34	4.12	-	-
22	-	4.02	-	4.38	-	-	-	-	-	-	3.74	3.45
23	3.88	-	-	-	-	4.44	4.80	-	-	4.10	-	-
24	-	-	4.10	-	-	-	-	4.64	4.32	-	-	3.44
25	3.86	-	4.09	4.38	-	-	-	-	4.31	-	-	-
26	-	4.02	-	-	-	4.42	4.76	-	-	4.08	3.64	-
27	3.85	4.02	4.09	4.38	-	-	4.77	-	-	-	3.63	3.41
28	-	-	-	4.38	-	4.42	-	4.60	4.30	-	-	-
29	3.85	-	4.10	4.38	-	-	4.76	-	-	4.06	-	3.49
30	3.84	4.02	-	-	-------	-	4.76	-	4.28	4.06	3.60	3.50
31	-	-------	4.20	-	-------	4.48	-------	4.59	-------	-	-	-------

Sacheen Lake near Newport, Wash.

Location.--Lat 48°09'55", long 117°18'05", in NW¼NW¼ sec. 30, T. 31 N., R. 44 E., on concrete wall at southeast corner of bay at Sacheen Lake resort, 12 miles west of Newport.

Drainage area.--32.2 sq mi.

Records available.--April 1954 to September 1955 (fragmentary).

Gage.--Staff gage read once daily. Altitude of gage is 2,240 ft (from topographic map).

Extremes.--Maximum gage height observed during year, 5.75 ft Apr. 29; minimum observed, 4.10 ft Sept. 11.
1954-55: Maximum gage height observed, that of Apr. 29, 1955; minimum observed, 3.84 ft Aug. 7, 9, 11, 1954.

Remarks.--No known regulation or diversion.

Gage height, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	4.28	4.44	4.62	-	-	-	-	4.70	4.70	-	-
2	4.34	-	-	-	-	-	4.80	-	-	-	4.48	4.48
3	-	-	-	-	-	4.52	-	-	4.68	-	-	-
4	4.32	-	4.44	4.62	4.54	-	-	-	-	-	-	-
5	-	4.32	-	-	-	-	-	5.44	-	-	-	4.26
6	-	-	4.46	-	-	-	-	-	-	4.68	4.48	-
7	4.20	-	-	-	4.56	-	-	-	-	-	-	4.22
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	4.58	-	-	5.20	-	4.60	4.68	-	-
10	-	4.40	4.48	-	-	-	-	-	-	-	-	-
11	4.10	-	-	-	-	4.54	-	-	4.60	4.70	4.50	4.10
12	4.12	4.44	4.44	-	-	-	-	5.25	-	-	-	-
13	-	-	-	-	-	-	-	5.20	-	-	4.50	-
14	-	-	-	-	-	-	-	-	4.58	-	-	-
15	4.12	-	-	4.64	-	-	-	-	-	-	-	4.26
16	-	-	4.50	-	4.56	-	5.30	5.12	-	-	-	-
17	-	-	-	-	-	4.58	-	-	-	-	-	4.26
18	-	4.56	-	-	4.56	-	-	5.06	4.56	-	4.54	-
19	4.14	4.60	-	-	-	-	-	-	-	-	4.54	-
20	-	-	4.50	-	-	-	-	-	-	4.60	4.54	-
21	4.20	-	-	-	-	-	5.40	-	4.52	-	-	-
22	-	-	-	4.60	-	-	5.45	-	-	-	-	-
23	-	-	-	-	-	-	-	4.82	-	4.52	-	-
24	-	-	4.50	-	-	4.60	-	-	-	-	-	4.60
25	-	-	-	-	-	-	-	-	4.56	-	-	-
26	-	4.46	-	-	4.54	-	-	-	-	4.48	-	-
27	4.26	4.46	-	4.54	-	-	-	4.72	-	-	4.58	-
28	-	-	-	-	-	-	-	-	-	-	-	-
29	4.28	-	-	-	-	-	5.75	-	4.64	-	-	-
30	-	4.44	-	-	-------	-	-	-	-	4.48	4.60	4.64
31	-	-------	-	-	-------	-	-------	-	-------	-	-	-------

Eloika Lake near Elk, Wash.

Location.--Lat 48°01'45", long 117°22'25", in NE¼ sec. 9, T. 29 N., R. 43 E., on east shore 1½ miles upstream from outlet and 5 miles northwest of Elk.

Drainage area.--87.5 sq mi.

Records available.--May 1953 to September 1955.

Gage.--Staff gage read once daily. Altitude of gage is 1,920 ft (from topographic map).

Extremes.--Maximum gage height observed during year, 6.30 ft Apr. 25, 26; minimum observed, 2.32 ft Sept. 3-6.

1953-55: Maximum gage height observed, that of Apr. 25, 26, 1955; minimum observed, that of Sept. 3-6, 1955.

Maximum stage known, 7.0 ft (from well-defined line on trees at gage), date of occurrence unknown.

Remarks.--No known regulation or diversion.

Gage height in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.53	2.46	2.78	2.84	2.81	2.76	3.46	5.86	4.26	3.16	2.84	2.33
2	2.53	2.46	2.76	2.85	2.81	2.75	3.60	5.78	4.20	3.18	2.82	2.33
3	2.50	2.46	2.72	2.85	2.81	2.75	3.70	5.68	4.14	3.18	2.82	2.32
4	2.49	2.46	2.70	2.85	2.82	2.74	3.82	5.60	4.08	3.20	2.80	2.32
5	2.49	2.46	2.69	2.85	2.84	2.73	4.02	5.54	4.02	3.20	2.80	2.32
6	2.49	2.47	2.73	2.85	2.84	2.81	4.04	5.54	3.96	3.20	2.78	2.32
7	2.48	2.48	2.73	2.85	2.84	2.91	4.14	5.40	3.90	3.18	2.76	2.34
8	2.44	2.47	2.75	2.85	2.82	2.91	4.26	5.34	3.82	3.18	2.74	2.34
9	2.40	2.47	2.74	2.85	2.82	2.90	4.42	5.28	3.76	3.18	2.70	2.36
10	2.40	2.50	2.74	2.85	2.82	2.92	4.60	5.24	3.68	3.16	2.68	2.39
11	2.40	2.50	2.74	2.85	2.82	2.94	4.74	5.20	3.62	3.16	2.66	2.41
12	2.40	2.52	2.72	2.85	2.82	2.96	4.85	5.16	3.56	3.16	2.62	2.41
13	2.40	2.54	2.72	2.86	2.79	2.96	4.98	5.08	3.52	3.12	2.60	2.41
14	2.42	2.58	2.71	2.87	2.80	2.97	5.02	5.06	3.46	3.10	2.58	2.42
15	2.43	2.62	2.71	2.88	2.79	2.97	5.00	5.02	3.40	3.08	2.56	2.44
16	2.43	2.65	2.70	2.88	2.79	2.97	4.98	4.98	3.38	3.06	2.54	2.48
17	2.44	2.69	2.70	2.89	2.79	2.98	5.00	4.92	3.34	3.04	2.52	2.48
18	2.44	2.74	2.72	2.88	2.79	2.98	4.98	4.90	3.30	3.02	2.50	2.48
19	2.44	2.77	2.70	2.88	2.79	2.98	4.98	4.84	3.28	3.00	2.48	2.49
20	2.44	2.80	2.70	2.88	2.79	2.99	5.02	4.80	3.22	2.98	2.48	2.49
21	2.45	2.82	2.70	2.88	2.78	3.02	5.08	4.74	3.20	2.94	2.44	2.50
22	2.47	2.84	2.70	2.88	2.78	3.05	5.30	4.70	3.16	2.90	2.43	2.49
23	2.47	2.82	2.70	2.86	2.78	3.06	5.80	4.66	3.12	2.90	2.42	2.49
24	2.46	2.82	2.70	2.86	2.78	3.08	6.10	4.60	3.10	2.90	2.40	2.48
25	2.46	2.83	2.70	2.86	2.77	3.10	6.30	4.60	3.16	2.90	2.40	2.48
26	2.46	2.83	2.70	2.85	2.76	3.12	6.30	4.54	3.16	2.87	2.38	2.47
27	2.45	2.83	2.70	2.84	2.76	3.12	6.26	4.50	3.16	2.86	2.38	2.47
28	2.46	2.80	2.70	2.84	2.76	3.12	6.22	4.40	3.14	2.88	2.36	2.54
29	2.46	2.80	2.70	2.84	-	3.18	6.10	4.36	3.12	2.88	2.35	2.55
30	2.46	2.80	2.74	2.82	-------	3.26	5.98	4.32	3.14	2.88	2.34	2.54
31	2.46	-------	2.80	2.81	-------	3.36	-------	4.28	-------	2.86	2.34	-------

Little Spokane River at Dartford, Wash.

Location.--Lat 47°47'00", long 117°24'50", in NE¼ sec. 6, T. 26 N., R. 43 E., on right bank 50 ft downstream from highway bridge at Dartford, 6 miles upstream from mouth, and 8 miles north of Spokane.

Drainage area.--665 sq mi.

Records available.--April 1929 to September 1932, December 1946 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,580 ft (from topographic map). Prior to Mar. 16, 1951, staff gage at same site and datum.

Average discharge.--11 years (1929-32, 1947-55), 314 cfs (227,300 acre-ft per year).

Extremes.--Maximum discharge during year, 1,320 cfs Apr. 23 (gage height, 4.28 ft); minimum, 126 cfs Sept. 3-5 (gage height, 1.47 ft).
1929-32, 1946-55: Maximum discharge, 2,240 cfs Mar. 18, 1950 (gage height, 5.1 ft, from graph based on gage readings); minimum observed, 63 cfs July 24, 1930 (gage height, 1.07 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Small diversions for irrigation and domestic use above station. No known regulation.

Revisions (water years).--1216: Drainage area. WSP 1286: 1930, 1932(M), 1947-49(M).

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.4	117	2.5	470
1.7	168	3.0	690
2.1	310	4.1	1,230

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	159	153	171	338	185	b190	494	740	410	214	159	127
2	157	153	171	262	175	b210	555	708	398	211	153	127
3	157	153	178	225	170	b200	537	690	382	211	153	126
4	157	153	178	200	b170	b160	494	672	366	207	150	126
5	157	153	178	190	b170	b170	478	658	358	207	148	126
6	155	157	190	190	b165	b180	470	640	346	207	146	127
7	155	161	222	*184	210	b200	490	631	*342	200	143	127
8	153	161	211	181	270	225	514	627	330	194	143	129
9	153	161	194	181	*310	334	546	614	318	190	141	129
10	150	166	187	181	214	394	564	600	303	197	140	129
11	153	171	184	178	214	288	560	591	292	204	140	129
12	153	171	178	178	232	277	550	578	277	200	138	129
13	153	174	187	184	218	314	564	573	266	194	138	129
14	153	184	197	168	207	258	564	568	254	184	136	129
15	153	197	197	184	207	240	546	568	243	178	135	130
16	153	207	184	184	214	251	519	564	236	174	135	136
17	155	214	b165	181	229	*254	514	555	229	168	135	138
18	155	214	b160	178	218	310	546	537	225	166	135	138
19	155	222	b155	171	b190	284	604	519	218	166	133	138
20	157	214	171	174	b180	269	609	506	214	164	133	138
21	*161	200	171	170	b190	277	631	502	207	159	132	140
22	171	194	171	165	214	288	855	498	200	157	132	140
23	171	187	174	165	207	306	1,220	494	194	153	132	140
24	161	187	178	180	214	277	1,100	490	200	184	130	138
25	159	187	174	190	214	251	995	482	225	187	130	138
26	157	190	171	195	211	254	*955	462	218	168	132	138
27	155	187	b160	200	b170	280	*955	458	*222	166	132	141
28	153	181	b155	205	b160	303	920	438	218	164	130	161
29	153	178	b165	205	-	390	820	426	222	*164	*129	166
30	153	*178	194	205	------	510	771	430	218	164	130	155
31	153	-----	422	195	-----	502	-----	422	------	161	129	------
Total	4,840	5,408	5,793	5,987	5,728	8,646	19,940	17,241	8,131	5,663	4,272	4,064
Mean	156	180	187	193	205	279	665	556	271	183	138	135
Cfsm	0.235	0.271	0.281	0.290	0.308	0.420	1.00	0.836	0.408	0.275	0.208	0.203
In.	0.27	0.30	0.32	0.33	0.32	0.48	1.12	0.96	0.45	0.32	0.24	0.23
Ac-ft	9,600	10,730	11,490	11,880	11,360	17,150	39,550	34,200	16,130	11,230	8,470	8,060

Calendar year 1954: Max 977 Min 131 Mean 283 Cfsm 0.426 In. 5.77 Ac-ft 205,000
Water year 1954-55: Max 1,220 Min 126 Mean 262 Cfsm 0.394 In. 5.34 Ac-ft 189,800

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Jan. 21 to Feb. 9; discharge estimated on basis of 1 discharge measurement, weather records, and recorded range in stage.

Long Lake at Long Lake, Wash.

Location.--Lat 47°50'15", long 117°50'20", in NW¼SW¼ sec. 13, T. 27 N., R. 39 E., at left end of spillway at Long Lake dam, 12 miles north of Reardan.

Drainage area.--5,920 sq mi, approximately.

Records available.--October 1913 to September 1955 (prior to October 1950, in WSP 1316).

Gage.--Water-stage recorder and staff gage, with long distance indicator in powerhouse. Datum of gage is at mean sea level (levels by Washington Water Power Co.).

Extremes.--Maximum contents during year, 104,200 acre-ft on many days (elevation, 1,536.0 ft); minimum, 7,950 acre-ft Mar. 31 (elevation, 1,514.20 ft).
1913-55: Maximum contents, 104,200 acre-ft on many days each year since 1950 (elevation, 1,536.0 ft); minimum, that of Mar. 31, 1955.

Remarks.--Reservoir is formed by concrete dam, completed in 1913 and raised in 1950. Capacity, 104,200 acre-ft between elevations 1,512 ft (lower limit of normal operation) and 1,536 ft (top of gates). Contents at elevation 1,512 ft by capacity table used prior to October 1915, 148,600 acre-ft. Records given herein represent usable contents. Water used for power. Diversions above station for irrigation of about 25,000 acres in Idaho and Washington. Other regulation in Coeur d'Alene Lake and at powerplants along Spokane River.

Cooperation.--Lake elevations furnished by Washington Water Power Co.

Month-end elevation and usable contents, water year October 1954 to September 1955

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	1,535.80	103,200	-
Oct. 31	1,535.90	103,700	+500
Nov. 30	1,535.35	100,950	-2,750
Dec. 31	1,532.10	84,900	-16,050
Calendar year 1954	-	-	-14,300
Jan. 31	1,525.58	54,450	-30,450
Feb. 28	1,522.48	40,950	-13,500
Mar. 31	1,514.20	7,950	-33,000
Apr. 30	1,535.70	102,700	+94,750
May 31	1,535.23	100,350	-2,350
June 30	1,535.10	99,700	-650
July 31	1,535.83	103,350	+3,650
Aug. 31	1,535.92	103,800	+450
Sept.30	1,535.56	102,000	-1,800
Water year 1954-55	-	-	-1,200

† Elevation at 12 p.m.

Spokane River at Long Lake, Wash.

Location.--Lat 47°50'15", long 117°50'25", in SW¼ sec. 13, T. 27 N., R. 39 E., on left bank at Long Lake powerhouse, 1½ miles upstream from Chamokane Creek and 12 miles north of Reardan.

Drainage area.--5,920 sq mi, approximately.

Records available.--April 1939 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,299.00 ft above mean sea level, datum of 1929.

Average discharge.--16 years, 7,751 cfs (5,611,000 acre-ft per year), adjusted for storage.

Extremes.--Maximum discharge during year, 28,600 cfs June 15 (gage height, 71.48 ft); minimum not determined; minimum daily, 144 cfs Sept. 18, 25 (determined from powerplant records).
1939-55: Maximum discharge recorded, 49,400 cfs May 24, 1948 (gage height, 78.66 ft); minimum recorded, 115 cfs Oct. 6, 1939 (gage height, 57.66 ft), but may have been less sometime during periods of backwater; minimum daily, 144 cfs Sept. 15, 1946, Aug. 24, 1947, Sept. 12, 1954, Sept. 18, 25, 1955 (determined from powerplant records).

Remarks.--Records good. Flow regulated by Coeur d'Alene Lake (see p. 246) and Long Lake (see preceding page), and by powerplants of Washington Water Power Co. Water diverted for irrigation above station and is equivalent to that shown for Spokane River at Spokane (see p. 253).

Revisions.--WSP 1216: Drainage area.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,330	4,920	5,320	2,900	3,070	3,860	5,500	13,600	22,600	6,410	2,830	2,520
2	2,460	5,350	5,700	3,440	3,280	4,660	5,530	12,700	22,000	7,400	2,880	2,490
3	1,980	5,230	5,780	4,140	3,220	4,510	5,530	15,500	21,400	4,270	3,060	2,640
4	2,980	5,160	5,480	4,690	3,530	4,400	5,510	14,000	20,500	3,730	2,530	1,280
5	3,790	5,170	4,730	4,900	3,450	4,460	5,510	18,900	20,400	3,500	2,290	621
6	3,890	5,220	4,970	4,770	3,710	4,350	5,520	9,350	19,800	3,490	2,700	2,800
7	4,180	4,460	5,420	4,690	3,590	4,710	5,530	15,700	19,800	3,300	1,500	2,680
8	4,270	4,780	5,410	4,350	4,340	4,900	5,520	16,500	19,600	4,830	2,520	2,440
9	4,490	5,150	5,520	4,850	4,530	5,250	5,580	17,600	19,800	5,190	2,330	2,230
10	4,450	5,330	5,540	4,050	5,360	5,570	5,640	19,400	19,900	4,510	2,400	2,030
11	4,130	5,230	5,230	4,630	5,700	5,440	5,660	19,300	20,500	4,870	2,440	152
12	4,560	5,100	4,860	4,200	5,370	4,630	5,720	20,400	20,500	5,920	2,270	2,230
13	3,910	5,020	5,530	4,170	5,310	4,450	6,360	20,500	21,400	5,210	2,300	2,370
14	4,280	5,120	5,440	4,570	5,400	4,980	6,880	22,100	20,700	5,110	2,180	2,020
15	3,850	5,340	5,390	4,710	5,680	4,640	6,730	22,100	20,700	5,920	2,260	1,590
16	2,390	5,200	5,650	4,810	5,850	4,580	6,870	23,200	20,500	5,950	2,130	2,550
17	2,800	5,060	5,640	5,020	5,800	4,550	6,800	22,000	19,700	4,420	2,370	2,280
18	3,920	5,380	5,440	4,400	5,080	4,700	6,730	21,900	18,700	5,550	2,320	144
19	4,740	5,030	4,940	4,180	5,320	4,350	6,610	21,000	15,600	4,890	2,150	2,340
20	4,550	3,730	5,370	3,810	5,310	4,630	9,140	21,100	15,900	4,860	2,020	2,690
21	4,680	2,240	4,000	3,910	4,870	4,400	14,100	21,400	17,000	4,220	1,280	2,840
22	4,760	4,740	4,050	3,740	4,380	4,560	12,400	23,000	15,800	4,030	2,220	2,850
23	3,370	5,150	4,070	3,240	4,430	4,510	14,300	24,500	15,100	3,720	1,150	2,890
24	4,040	5,160	3,950	3,640	4,410	4,250	14,300	25,600	14,100	1,080	1,620	2,390
25	4,270	5,170	3,460	3,360	4,600	4,570	14,000	*25,900	13,900	4,730	1,270	144
26	5,040	4,580	3,400	3,820	5,060	4,580	14,600	25,500	13,600	4,790	1,630	3,150
27	5,270	4,880	4,390	4,300	4,950	4,560	14,300	24,700	13,800	3,540	1,890	3,210
28	5,350	4,910	4,960	4,250	5,210	4,590	14,500	24,300	*13,200	3,460	1,010	3,310
29	5,330	5,260	4,890	4,030	~	5,110	13,700	23,900	11,300	2,780	1,580	3,370
30	4,530	5,650	4,550	4,020	- - - -	5,100	13,600	23,300	12,300	2,570	1,410	3,470
31	3,320	- - - -	5,260	3,560	- - - -	5,490	- - - -	22,600	- - - -	1,650	1,420	- - - -
Total	123,890	148,720	154,340	129,150	130,590	145,340	262,670	631,550	540,100	135,900	63,960	67,721
Mean	3,996	4,957	4,979	4,166	4,664	4,688	8,756	20,370	18,000	4,384	2,063	2,257
Ac-ft	245,700	295,000	306,100	256,200	259,000	288,300	521,000	‡1,253	‡1,071	269,600	126,900	134,300
(†)	+500	-2,750	-16,050	-30,450	-13,500	-33,000	+94,750	-2,350	-650	+3,650	+450	-1,800

Adjusted for change in contents in Long Lake

Mean Cfsm	4,004	4,911	4,716	3,672	4,420	4,152	10,350	20,350	17,980	4,443	2,072	2,227
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	246,200	292,200	290,000	225,800	245,500	255,300	615,800	‡1,251	‡1,070	273,200	127,400	132,500

Observed

Calendar year 1954: Max 34,800 Min 144 Mean 8,922 Ac-ft 6,459,000
Water year 1954-55: Max 25,900 Min 144 Mean 6,942 Ac-ft 5,026,000

Adjusted

Calendar year 1954: Mean 8,902 Cfsm 1.50 In. 20.41 Ac-ft 6,445,000
Water year 1954-55: Mean 6,941 Cfsm 1.17 In. 15.92 Ac-ft 5,025,000

* Discharge measurement made on this day.
† Change in contents in Long Lake, in acre-feet.
‡ Expressed in thousands.
Note.--Backwater from Little Falls throughout the year; discharge computed by Washington Water Power Co. from powerplant records.

Sanpoil River near Keller, Wash.

Location.--Lat 48°06'30", long 118°41'50", in SE¼ sec. 7, T. 30 N., R. 33 E., on right bank 0.3 mile upstream from Brush Creek and 2½ miles north of Keller.

Drainage area.--890 sq mi, approximately.

Records available.--August 1952 to September 1955 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 1,464.08 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 1,120 cfs Apr. 23 (gage height, 6.39 ft); minimum, 32 cfs Sept. 13 (gage height, 3.72 ft).
1952-55: Maximum discharge, 2,210 cfs Apr. 29, 1953 (gage height, 8.08 ft); minimum, that of Sept. 13, 1955.
Maximum stage known, 10.02 ft, from high-water marks inside and outside of well, during high water in May 1956 after station had been discontinued.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. At high stage and during irrigation season, water is sometimes diverted into Kettle River basin through Curlew Lake and Creek. At extreme stages there may be some flow from Curlew Creek into Sanpoil River basin. No regulation.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 7		Mar. 8 to Sept. 30			
3.8	43	3.7	29	5.5	600
4.0	66	4.0	74	6.0	890
4.2	101	4.5	180	6.5	1,190
4.4	147	5.0	355		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	52	b74	66	68	b54	188	605	645	242	148	46
2	56	52	b68	66	70	b54	346	605	605	294	139	44
3	56	52	b68	64	80	b55	368	620	580	298	130	43
4	54	*52	71	62	95	b56	360	650	555	278	122	43
5	53	52	71	60	*100	b56	346	698	545	263	116	42
6	53	52	76	61	105	b56	391	746	530	249	110	39
7	53	52	82	b63	72	b60	485	794	520	238	108	39
8	53	54	84	*b64	63	72	555	836	*500	223	*100	37
9	52	56	84	63	b61	*69	674	848	485	211	98	39
10	52	58	83	61	b58	68	878	836	460	*217	96	37
11	53	60	82	59	b56	69	830	818	440	249	94	35
12	52	65	80	58	b54	69	716	836	425	252	87	33
13	51	70	77	57	b54	71	630	866	410	238	85	*32
14	51	75	74	56	b56	71	560	848	391	214	81	33
15	52	85	71	58	60	71	510	800	368	198	78	35
16	52	92	68	60	660	70	480	776	346	182	76	37
17	52	102	65	61	61	71	460	794	324	172	72	40
18	52	*114	63	62	b58	72	445	800	310	165	69	42
19	52	123	62	64	b56	76	445	800	298	158	68	40
20	52	135	62	65	b54	76	470	830	282	148	66	*40
21	53	140	63	65	b53	76	555	*914	263	139	63	40
22	53	128	67	66	b53	81	830	938	246	132	61	40
23	53	116	68	66	b53	83	1,080	890	229	126	58	40
24	52	110	68	67	54	81	1,050	830	226	130	56	40
25	52	103	65	67	56	b76	926	782	238	130	56	39
26	52	99	63	66	b55	b76	842	740	238	134	54	37
27	53	95	61	66	b54	78	782	728	232	150	52	39
28	53	92	60	66	b54	79	722	710	226	165	50	42
29	53	88	61	67	-	94	674	674	238	172	49	43
30	52	82	63	68	----	110	630	668	223	165	49	43
31	52	-	65	68	- -	130	------	668	-----	155	48	--
Total	1,633	2,506	2,169	1,962	1,772	2,280	18,228	23,948	11,378	6,087	2,539	1,179
Mean	52.7	83.5	70.0	63.3	63.3	73.5	608	773	379	196	81.9	39.3
Ac-ft	3,240	4,970	4,300	3,890	3,510	4,520	36,150	47,500	22,570	12,070	5,040	2,340

Calendar year 1954: Max 1,160 Min 44 Mean 209 Ac-ft 151,100
Water year 1954-55: Max 1,080 Min 32 Mean 207 Ac-ft 150,100

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Nov. 5-17, Dec. 9 to Jan. 6, Jan. 9 to Feb. 5 (stage-discharge relation affected by ice during some of periods); discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

Feeder canal at Grand Coulee, Wash.

Location.--Lat 47°57'00", long 118°59'40", on line between secs. 1 and 2, T. 28 N., R. 30 E., on left bank at Grand Coulee, a quarter of a mile downstream from intake and half a mile southwest of Grand Coulee Dam.

Records available.--October 1951 to September 1955 (pumping seasons only).

Gage.--Water-stage recorder. Datum of gage is 1,550.0 ft above mean sea level, Bureau of Reclamation adjustment of 1937. Supplementary water-stage recorder 3,100 ft downstream at same datum. Auxiliary water-stage recorder 1 mile downstream from base gage.

Extremes.--Maximum daily discharge during year, 10,100 cfs July 4; no flow except during pumping periods.
1951-55: Maximum daily discharge, 11,000 cfs July 11, 1954; no flow except during pumping seasons.

Remarks.--Records fair. Water is pumped (beginning May 1951) from Franklin D. Roosevelt Lake behind Grand Coulee Dam, through a lift of about 280 ft into feeder canal for a distance of 2 miles into an equalizing reservoir. From equalizing reservoir it is distributed through a system of canals to the Columbia Basin project.

Cooperation.--Auxiliary water-stage recorder record furnished by Bureau of Reclamation.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	111	0	4,070					0	7,780	9,940	3,330	2,590
2	0	0	1,200					0	7,540	9,880	3,870	2,260
3	0	0	0					0	8,780	9,950	4,310	8,020
4	0	0	0					0	9,700	10,100	3,000	6,410
5	0	0	0					0	9,470	9,860	5,590	3,270
6	0	0	910					0	7,430	8,980	3,190	0
7	0	0	0					0	8,490	*5,890	3,190	0
8	0	0	0					0	8,830	4,830	*3,680	0
9	0	0	0					0	9,060	4,940	4,900	0
10	0	0	0					0	8,700	4,860	2,930	1,820
11	0	0	0					0	9,500	4,260	3,270	3,140
12	0	0	0					0	9,610	3,190	2,910	0
13	0	0	0					0	7,970	4,330	7,550	1,940
14	0	0	0					0	8,700	6,280	9,950	*2,500
15	0	0	0					0	9,190	5,040	2,360	1,010
16	0	0	0					0	*9,040	5,590	338	783
17	1,460	0	0					0	9,020	6,880	3,360	1,950
18	0	0	0					0	9,720	5,780	2,400	0
19	0	1,300	0					0	9,760	5,150	2,110	0
20	0	5,070	0					0	8,920	3,770	8,230	0
21	0	6,270	0					0	9,850	0	8,200	0
22	0	6,370	0					0	9,890	5,730	3,070	0
23	0	6,410	0					0	9,600	6,870	2,970	0
24	0	*6,470	0					0	8,840	5,440	2,440	0
25	0	6,520	0					*3,870	9,740	4,670	2,120	0
26	0	6,540	0					4,640	9,820	6,480	2,120	0
27	0	6,580	0					5,130	8,720	6,490	8,190	0
28	0	6,500	0					9,260	8,470	7,230	8,050	0
29	0	4,750	0		-			9,340	9,540	6,890	2,480	0
30	0	5,430	0					9,450	9,910	5,110	2,170	0
31	0		0				-----	6,220	-----	4,100	2,280	--
Total	1,571	68,210	6,180	0	0	0	0	47,910	271,590	188,520	124,558	35,693
Mean	50.7	2,274	199	0	0	0	0	1,545	9,053	6,081	4,018	1,190
Ac-ft	3,120	135,300	12,260	0	0	0	0	95,030	538,700	373,900	247,100	70,800

Calendar year 1954: Max 11,000 Min 0 Mean 2,237 Ac-ft 1,620,000
Water year 1954-55: Max 10,100 Min 0 Mean 2,039 Ac-ft 1,476,000

* Discharge measurement made on this day.
Note.--Supplementary gage-height record used Aug. 9 to Sept. 15.

Franklin D. Roosevelt Lake at Grand Coulee Dam, Wash.

Location.--Lat 47°57'20", long 118°59'10", in lot 3, sec. 1, T. 28 N., R. 30 E., in block 12 of Grand Coulee Dam at Grand Coulee.
Drainage area.--74,100 sq mi, approximately.
Records available.--April 1938 to September 1955. Prior to October 1943, published as Columbia River Reservoir at Grand Coulee Dam.
Gage.--Water-stage recorder. Datum of gage is at mean sea level, Bureau of Reclamation datum, or 1.425 ft above mean sea level, datum of 1929, supplementary adjustment of 1947 (levels by Bureau of Reclamation). Prior to Apr. 24, 1942, staff gage at site 2,000 ft upstream at same datum.
Extremes.--Maximum contents during year, 9,577,300 acre-ft July 16 (elevation, 1,290.19 ft); minimum, 4,886,500 acre-ft Apr. 22 (elevation, 1,219.40 ft).
1938-55: Maximum contents recorded, 9,586,200 acre-ft July 17, 1942, June 3, 1945 (elevation, 1,290.3 ft); minimum observed, 16,200 acre-ft Aug. 29, 1938 (elevation, 956.1 ft).
Remarks.--Reservoir is formed by concrete dam; construction of dam began in 1934; was completed in 1941; storage began early in construction period. Capacity, 5,071,700 acre-ft between elevations 1,208 ft (proposed lower limit of operation) and 1,288 ft (top of gates) above mean sea level. Storage below 1,208 ft, 4,330,000 acre-ft. Figures given herein represent total contents. Water is used for power development and diversion by pumping for irrigation of Grand Coulee project of Bureau of Reclamation began in May 1951.
Revisions (water years).--WSP 1286: 1942, 1945(M).

Capacity table (elevation, in feet, and contents, in acre-feet)
(Prepared by Geological Survey from data furnished by Bureau of Reclamation)

1,219.0	4,866,000	1,260.0	7,327,500
1,230.0	5,451,200	1,270.0	8,030,700
1,240.0	6,033,400	1,280.0	8,775,400
1,250.0	6,663,200	1,290.0	9,562,000

Elevation, in feet, at 12 p.m., water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	87.82	87.00	87.53	84.20	71.77	53.44	22.75	21.06	75.43	89.93	89.88	88.83
2	87.72	86.78	87.50	84.45	71.08	52.32	22.73	21.13	76.62	89.86	89.93	88.52
3	87.80	86.57	87.43	84.18	70.45	51.34	22.67	21.30	77.56	89.96	90.05	88.08
4	87.77	86.44	87.48	83.72	69.63	50.15	22.49	21.57	77.93	89.78	89.91	87.88
5	87.72	86.28	87.63	83.33	69.18	48.76	22.25	21.89	77.95	89.91	89.90	87.90
6	87.58	86.27	87.35	82.94	68.74	47.51	21.99	22.49	78.00	89.93	89.99	87.87
7	87.52	86.23	87.40	82.51	68.14	46.47	21.71	23.06	78.00	89.87	89.86	87.81
8	87.52	86.00	87.35	82.13	67.86	45.42	21.54	24.33	77.99	89.97	89.86	87.79
9	87.61	85.90	87.28	81.98	67.27	44.37	21.55	25.14	78.15	89.90	89.93	87.82
10	87.74	85.98	87.25	81.33	66.74	43.27	21.79	26.12	79.04	89.90	89.97	87.87
11	87.89	86.08	87.40	80.80	66.23	42.30	22.04	27.03	80.14	89.95	89.90	87.81
12	87.97	86.10	87.52	80.44	65.80	41.27	22.04	28.12	81.36	89.92	89.89	88.00
13	87.98	86.29	87.47	79.90	65.58	40.39	21.76	29.21	82.81	89.89	89.87	87.88
14	87.90	86.65	87.33	79.33	64.95	39.50	21.45	30.40	84.00	89.91	90.04	87.85
15	87.82	86.67	87.33	79.03	64.47	38.51	21.15	31.75	85.20	90.03	89.91	87.86
16	87.72	86.78	87.25	79.00	63.76	37.48	21.05	33.38	86.29	90.03	89.90	87.85
17	87.66	87.12	87.05	78.62	63.10	36.38	20.96	35.50	87.16	90.05	90.00	87.80
18	87.55	87.60	86.98	78.17	62.42	35.38	20.67	37.70	87.78	90.08	89.93	87.90
19	87.25	88.05	86.95	77.68	61.84	34.28	20.24	40.08	88.47	89.92	89.90	87.78
20	87.13	88.40	86.63	77.20	61.35	33.19	19.92	42.75	88.97	89.92	89.90	87.60
21	87.26	88.23	86.20	76.75	60.61	31.92	19.63	45.79	89.45	89.89	89.95	87.44
22	87.46	88.03	85.90	76.46	59.85	31.00	19.51	49.25	89.77	89.93	90.03	87.38
23	87.62	87.85	85.65	76.34	59.00	29.94	19.62	52.24	89.87	90.02	89.96	87.38
24	87.84	87.65	85.48	75.79	58.10	28.90	19.94	55.15	89.88	89.91	89.93	87.38
25	87.72	87.85	85.55	75.27	57.22	27.83	20.27	58.21	89.90	89.98	89.91	87.48
26	87.71	87.70	85.50	74.71	56.34	26.80	20.42	61.48	89.89	89.85	89.80	87.40
27	87.63	87.76	85.00	74.18	55.47	25.83	20.58	64.46	89.87	89.92	89.59	87.38
28	87.46	87.79	84.45	73.61	54.47	24.87	20.63	66.58	89.89	89.88	89.47	87.57
29	87.28	87.67	84.10	73.21	-	24.07	20.69	68.45	89.91	89.98	89.40	87.75
30	87.17	87.62	83.88	72.93	-------	23.47	20.83	71.12	89.82	89.86	89.22	87.71
31	87.20	-------	83.97	72.25	-------	23.19	-------	73.76	-------	89.90	89.08	-------

Note.--Add 1,200 ft to obtain elevation above mean sea level (Bureau of Reclamation datum).

Monthly elevation and total contents, water year October 1954 to September 1955

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	1,287.93	9,396,100	-
Oct. 31	1,287.20	9,338,000	-58,100
Nov. 30	1,287.62	9,371,400	+33,400
Dec. 31	1,283.97	9,083,100	-288,300
Calendar year 1954	-	-	+13,300
Jan. 31	1,272.25	8,194,400	-888,700
Feb. 28	1,254.47	6,955,900	-1,238,000
Mar. 31	1,223.19	5,083,400	-1,872,000
Apr. 30	1,220.83	4,960,100	-123,300
May 31	1,273.76	8,305,500	+3,345,000
June 30	1,289.82	9,547,500	+1,242,000
July 31	1,289.90	9,554,000	+6,500
Aug. 31	1,289.08	9,488,100	-65,900
Sept.30	1,287.71	9,378,600	-109,500
Water year 1954-55	-	-	-17,500

† Elevation at 12 p.m.

Columbia River at Grand Coulee Dam, Wash.

Location.--Lat 47°58'00", long 118°58'45", opposite lot 4, sec. 36, T. 29 N., R. 30 E., in pier 3 of highway bridge, 2,500 ft downstream from Grand Coulee Dam and 14 miles upstream from Nespelem River.

Drainage area.--74,100 sq mi, approximately.

Records available.--April 1913 to September 1955 (monthly discharge only, April 1913 to June 1923, January 1924 to May 1928). Published as "at Grand Coulee, near Nespelem" prior to 1936 and as "at Grand Coulee" 1936-42.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, Bureau of Reclamation adjustment of 1937. June 27 to Dec. 31, 1923, June 12, 1928, to Mar. 31, 1931, staff gages at site half a mile upstream at datum 2.4 ft lower. Apr. 1, 1931, to Dec. 31, 1935, water-stage recorder at site 850 ft downstream at present datum. Since June 12, 1955, auxiliary water-stage recorder 6 miles downstream from base gage.

Average discharge.--42 years, 108,200 cfs (78,330,000 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 414,100 cfs June 28 (elevation, 979.13 ft); maximum elevation, 979.18 ft June 30; minimum discharge, 33,600 cfs Nov. 19 (elevation, 936.60 ft).

1913-55: Maximum discharge, 637,800 cfs June 12, 1948 (elevation, 987.90 ft); minimum daily, 15,300 cfs Feb. 1, 1937.

Maximum discharge known, 725,000 cfs (estimated) during flood of June 1894.

Remarks.--Records excellent. Feeder canal diverts water by pumping from Franklin D. Roosevelt Lake for Columbia Basin project (see preceding page). Other diversions above station for irrigation are a small percentage of flow past gage. Flow regulated by Franklin D. Roosevelt Lake (see p. 265) and reservoirs in Kootenai, Pend Oreille, and Spokane River basins. Records of chemical analyses and water temperatures for the water year 1955 are given in WSP 1403.

Revisions (water years).--WSP 1286: 1942, 1947.

Rating table, water year 1954-55 (elevation, in feet, and discharge, in cubic feet per second)
(Backwater from Rufus Woods Lake June 12 to Sept. 30)

938.7	43,500	956.0	168,300
940.0	50,200	965.0	262,000
944.0	74,000	976.0	411,000
949.0	108,900		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	79,800	65,900	72,000	45,200	*72,000	82,400	74,400	69,800	138,800	376,500	218,500	86,000
2	74,300	67,700	72,600	43,800	72,500	79,800	74,100	71,200	160,100	371,900	201,000	84,700
3	68,800	68,400	70,800	61,800	72,900	81,200	70,900	73,200	173,500	348,000	*203,800	82,900
4	72,300	67,800	65,800	65,100	74,200	82,500	74,300	71,600	196,400	345,100	195,000	70,100
5	68,300	66,700	60,400	60,800	67,500	82,500	74,300	72,600	223,400	318,400	181,500	61,800
6	67,000	62,100	69,900	62,400	63,300	80,600	72,500	71,400	228,300	*321,300	177,300	68,000
7	66,100	59,800	67,800	68,800	66,600	80,200	71,700	67,100	240,900	326,600	179,700	73,000
8	64,000	67,600	65,300	59,400	64,600	78,900	71,400	66,200	245,900	310,300	173,100	72,400
9	60,000	64,600	66,200	51,100	68,400	79,200	66,400	71,000	250,500	304,800	*165,300	*74,100
10	56,300	64,000	64,800	68,800	70,900	79,900	63,700	74,100	229,800	306,300	154,200	75,700
11	63,000	63,300	58,000	67,000	68,900	80,700	70,000	75,100	227,600	297,800	158,000	74,400
12	66,200	64,000	57,800	63,800	64,700	79,400	71,600	73,600	234,100	308,900	147,400	68,900
13	68,900	60,600	64,000	64,700	57,700	79,000	72,400	73,700	254,600	*308,300	130,900	72,800
14	70,000	54,600	64,000	74,700	69,000	78,000	72,500	68,300	278,300	301,900	115,200	*71,600
15	68,400	64,900	64,400	63,600	68,600	79,400	72,300	62,900	*290,900	305,000	130,700	72,000
16	61,500	63,800	65,600	53,900	75,100	80,600	70,200	72,500	301,900	310,000	120,200	72,100
17	58,400	61,800	67,700	67,000	75,200	80,100	66,800	*70,800	*313,300	316,400	113,200	69,800
18	*66,800	59,300	61,100	*70,400	75,600	80,200	72,100	65,900	328,800	319,000	*115,800	66,100
19	68,000	52,500	58,900	67,800	70,200	80,000	72,500	62,300	326,000	328,700	107,900	75,400
20	67,000	54,000	70,300	67,000	64,200	78,700	72,500	63,200	337,900	291,500	104,700	75,600
21	65,000	77,300	71,400	66,700	75,900	79,300	71,700	56,000	339,200	310,800	96,400	71,700
22	62,000	77,200	67,700	58,600	76,300	79,400	72,600	53,100	333,000	*290,800	97,800	*69,900
23	59,200	*73,400	67,400	53,300	77,300	79,300	71,200	*87,200	358,600	283,500	102,700	72,400
24	57,500	73,300	56,200	68,400	79,600	78,000	68,700	73,600	369,100	280,700	100,900	70,100
25	66,600	53,700	50,500	64,100	79,500	79,000	72,500	74,300	371,500	272,400	*98,200	65,100
26	61,800	69,500	53,000	68,400	78,700	78,700	72,600	75,400	383,100	270,200	95,600	76,000
27	65,500	64,000	71,900	69,100	78,100	75,600	73,800	92,800	394,400	250,700	94,700	77,500
28	68,500	68,000	73,300	71,400	80,300	76,200	73,200	114,300	399,400	*240,300	93,400	67,200
29	69,700	75,700	64,700	62,800	-	76,000	72,700	123,300	394,800	229,100	91,200	*67,200
30	64,800	67,700	60,500	60,900	------	*75,900	69,900	101,400	397,000	236,900	92,100	69,700
31	59,000	------	49,200	71,700	------	74,500	------	107,000	------	224,900	*88,800	------
Total	$2,034.7	$1,953.2	$1,993.2	$1,962.5	$2,007.8	$2,455.2	$2,145.5	$2,334.9	$8,721.1	$9,307	$4,145.2	$2,174.2
Mean	65,640	65,110	64,300	63,310	71,710	79,200	71,520	75,320	290,700	300,200	133,700	72,470
Ac-ft	$4,036	$3,874	$3,953	$3,893	$3,982	$4,870	$4,256	$4,631	$17,300	$18,460	$8,222	$4,312

Calendar year 1954: Max 390,600 Min 40,000 Mean 136,300 Ac-ft 98,640,000
Water year 1954-55: Max 399,400 Min 43,800 Mean 113,000 Ac-ft 81,790,000

* Discharge measurement made on this day.
$ Expressed in thousands.

Columbia River at Bridgeport, Wash.

Location.--Lat 48°00'25", long 119°39'50", in SW¼SW¼ sec. 14, T. 29 N., R. 25 E., on left bank at Bridgeport, 1 mile downstream from Foster Creek and 1½ miles downstream from Chief Joseph Dam.

Drainage area.--75,000 sq mi, approximately.

Records available.--April 1952 to September 1955.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

Extremes.--Maximum discharge during year, 418,000 cfs June 30 (elevation, 787.85 ft); minimum, 44,200 cfs Dec. 27 (elevation, 756.82 ft).
1952-55: Maximum discharge, that of June 30, 1955; minimum daily, 31,000 cfs Jan. 11, 1953.

Remarks.--Records excellent. Feeder canal diverts water by pumping from Franklin D. Roosevelt Lake for Columbia Basin project (see p. 266). Other diversions above station for irrigation are small percentage of flow past gage. Flow regulated by Rufus Woods Lake, Franklin D. Roosevelt Lake (see p. 265), and reservoirs in Kootenai, Pend Oreille, and Spokane River basins.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80,900	62,400	64,700	51,500	70,800	82,000	74,800	71,500	123,400	387,200	222,200	82,100
2	77,200	66,100	64,400	46,100	*73,000	80,200	75,100	70,900	148,700	379,000	202,400	80,500
3	73,400	68,600	67,500	50,700	72,700	81,100	73,300	73,500	166,000	359,700	185,000	84,100
4	74,200	63,400	68,600	*62,900	72,300	81,900	73,700	74,100	182,700	358,800	197,800	77,300
5	71,000	68,800	67,600	66,500	70,800	78,600	74,900	72,100	212,500	329,700	181,100	71,000
6	69,500	67,000	66,200	65,800	66,000	81,800	73,700	72,900	220,100	327,400	173,700	65,000
7	68,100	64,600	68,100	64,600	65,500	80,900	73,400	69,900	230,900	*333,000	178,900	76,500
8	66,200	62,900	68,100	65,800	62,800	80,700	72,300	68,100	237,000	316,800	176,300	74,100
9	63,800	67,300	67,800	63,800	66,900	79,500	68,400	69,600	241,700	309,700	*161,300	76,400
10	60,100	66,200	67,500	62,300	71,200	80,400	66,200	74,600	231,000	308,600	148,300	76,000
11	60,900	65,500	65,700	61,200	69,500	81,100	68,100	75,100	220,000	302,900	148,900	77,000
12	66,100	65,300	62,700	60,000	66,700	79,800	71,800	75,300	228,600	319,700	143,100	76,700
13	70,700	65,100	56,900	61,200	67,000	79,500	73,400	74,700	237,900	316,500	131,000	82,200
14	71,800	60,600	51,800	70,400	65,000	*78,500	73,400	72,100	*251,000	314,400	112,000	83,200
15	70,400	57,300	55,200	70,900	69,900	79,600	73,000	65,700	271,100	301,300	116,100	79,400
16	66,400	62,700	57,100	58,600	72,200	80,600	72,400	69,400	*280,700	306,300	125,700	*79,400
17	61,700	62,000	58,700	60,300	75,200	80,400	68,800	73,000	306,800	315,600	104,800	80,100
18	*64,900	62,600	59,700	66,000	74,900	80,500	70,500	*69,500	324,300	317,000	107,800	78,600
19	69,900	57,200	59,700	67,300	72,500	80,400	*73,100	64,100	330,400	333,300	*110,500	77,100
20	76,700	54,300	60,400	67,800	66,800	79,300	74,100	64,100	330,200	324,600	103,500	74,800
21	73,800	62,100	61,800	66,900	71,300	79,500	72,800	59,400	344,500	313,400	94,000	74,100
22	62,200	*74,200	62,900	63,000	76,600	80,000	73,600	55,500	336,100	292,800	90,200	75,800
23	62,400	73,000	64,100	58,500	76,400	80,200	72,900	61,100	350,800	284,800	96,300	76,200
24	59,700	76,000	64,000	58,100	79,800	78,900	71,100	73,700	364,500	275,100	97,600	74,600
25	64,400	70,000	62,300	63,400	79,300	79,000	72,100	74,600	379,600	271,200	88,400	69,900
26	69,100	63,800	61,200	64,700	79,100	79,200	73,600	76,000	390,600	266,800	86,500	72,800
27	64,400	65,400	47,700	70,900	78,800	78,000	74,600	79,500	403,100	250,000	86,600	76,400
28	67,600	67,400	56,000	70,900	79,900	75,800	74,500	100,400	407,300	239,800	103,200	74,500
29	70,900	71,100	67,600	67,500	-	76,300	73,700	121,500	402,000	240,400	100,700	70,200
30	70,000	71,000	65,000	63,300	-	76,700	71,600	104,700	406,700	238,400	101,900	66,700
31	63,200	-	58,000	67,200	-	75,600	-	101,300	-	230,600	97,000	-
Total	‡2,108.6	‡1,963.9	‡1,929	‡1,958.1	‡2,012.9	‡2,466	‡2,174.9	‡2,327.9	‡8,560.2	‡9,464.8	‡4,072.8	‡2,283.3
Mean	68,020	65,460	62,230	63,160	71,890	79,550	72,500	75,090	285,300	305,300	131,400	76,110
Ac-ft	‡4,182	‡3,895	‡3,826	‡3,884	‡3,993	‡4,891	‡4,314	‡4,617	‡16,980	‡18,770	‡8,078	‡4,529

Calendar year 1954 : Max 392,100 Min 43,200 Mean 136,400 Ac-ft 98,740,000
Water year 1954-55 : Max 407,300 Min 46,100 Mean 113,200 Ac-ft 81,960,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Okanagan River at Okanagan Falls, British Columbia

(International gaging station)

Location.--Lat 49°21', long 119°35', on right bank 0.1 mile downstream from dam at outlet of Skaha Lake at Okanagan Falls, B. C. Prior to Nov. 13, 1954, at site 200 ft upstream.

Drainage area.--2,650 sq mi, approximately.

Records available.--January 1915 to September 1955. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 1,092.82 ft above mean sea level (Geodetic Survey of Canada, 1947 joint adjustment). Prior to Oct. 2, 1933, staff gages at sites about 600 and 700 ft upstream at different datums. Oct. 2, 1933, to Apr. 13, 1936, staff gage and Apr. 14, 1936, to Nov. 12, 1954, water-stage recorder, at site 200 ft upstream at same datum.

Average discharge.--40 years, 513 cfs (371,400 acre-ft per year).

Extremes.--Maximum discharge during year, 1,030 cfs June 10, 13-15 (gage height, 1.59 ft); minimum, 45 cfs Oct. 19 (gage height, 0.25 ft).
1915-55: Maximum discharge observed, 2,680 cfs June 10, 1928; minimum observed, 4.6 cfs Mar. 14, 1931.

Remarks.--Diversions above station for irrigation of approximately 38,000 acres. Flow regulated by control dams at outlets of Okanagan and Skaha Lakes.

Cooperation.--This station is one of the international gaging stations maintained by Canada under agreement with the United States.

Revisions.--WSP 1152: Drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 12				Nov. 13 to Sept. 30	
0.2	40	1.5	365	0.5	292
.4	60	2.0	630	1.0	589
.6	90	2.5	1,080	1.6	1,040
1.0	185				

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	354	665	842	864	674	681	640	589	872	872	864	811
2	487	672	842	864	674	688	640	589	872	888	864	811
3	775	672	834	849	667	681	647	551	864	888	864	819
4	768	679	834	789	674	681	647	512	864	888	864	819
5	775	679	834	744	674	681	647	519	872	888	864	819
6	768	693	834	744	674	681	647	512	872	888	864	819
7	775	700	*834	653	667	681	640	512	936	888	864	819
8	784	686	834	653	674	681	640	512	1,020	896	864	826
9	784	700	826	653	*681	688	640	512	1,020	904	864	849
10	784	722	834	653	681	688	634	512	*1,030	896	864	849
11	784	738	826	647	688	688	634	*512	1,020	896	864	849
12	802	738	834	647	681	681	634	512	1,020	896	864	872
13	856	753	826	647	681	681	634	512	1,030	896	864	888
14	949	768	766	653	681	681	640	519	1,030	904	864	888
15	*785	783	759	653	681	688	667	519	1,030	904	864	896
16	458	797	766	653	688	653	667	519	1,020	904	864	896
17	960	812	759	647	681	660	694	*519	1,020	904	864	896
18	545	827	759	653	681	647	694	519	1,020	896	796	896
19	45	*842	766	653	688	653	694	519	1,020	896	796	*904
20	60	842	759	653	688	647	681	*595	928	864	796	912
21	221	842	759	647	681	647	674	595	928	864	796	896
22	*452	842	766	653	681	653	674	640	928	864	796	888
23	686	842	759	653	688	647	674	744	*928	864	796	888
24	679	842	766	653	681	647	660	744	928	864	796	888
25	665	834	766	674	688	640	589	849	880	864	796	888
26	665	842	766	688	681	640	595	849	834	864	796	888
27	665	842	314	708	681	640	603	872	834	864	804	796
28	665	842	314	708	681	640	595	872	834	864	804	708
29	665	834	872	701	-	640	603	872	842	864	804	701
30	665	842	864	674	------	640	595	872	842	864	796	694
31	665	------	864	674	------	640	------	872	------	864	*804	------
Total	19,991	23,172	23,978	21,405	19,040	20,584	19,323	19,346	28,138	27,360	25,864	25,373
Mean	645	772	773	690	680	664	644	624	938	883	834	846
Ac-ft	39,650	45,960	47,560	42,460	37,770	40,830	38,330	38,370	55,810	54,270	51,300	50,330

Calendar year 1954: Max 1,190 Min 45 Mean 729 Ac-ft 527,500
Water year 1954-55: Max 1,030 Min 45 Mean 750 Ac-ft 542,600

* Discharge measurement made on this day.

Osoyoos Lake near Oroville, Wash.

(International gaging station)

Location.--Lat 48°59'15", long 119°27'15", in lot 1, sec. 8, T. 40 N., R. 27 E., on west shore 1 mile south of international boundary and 3 miles north of Oroville.

Drainage area.--3,150 sq mi, approximately.

Records available.--July 1928 to September 1955.

Gage.--Staff gage read once daily. Datum of gage is at mean sea level, U. S. Coast and Geodetic Survey datum of 1929. Prior to Sept. 2, 1928, staff gage and Sept. 2, 1928, to Nov. 9, 1929, water-stage recorder, at site 100 ft south of international boundary. Nov. 10, 1929, to June 24, 1955, staff gage or water-stage recorder at present site. All elevations prior to Oct. 1, 1944, at datum 2.39 ft lower. To convert from present datum to Geodetic Survey of Canada 1934 datum, subtract 1.63 ft; to convert from present datum to 1947 joint adjustment of U. S. Coast and Geodetic Survey and Geodetic Survey of Canada, subtract 0.26 ft.

Extremes.--Maximum elevation during year, 914.65 ft June 15; minimum, 911.13 ft May 9, 10.
1928-55: Maximum elevation, 916.74 ft May 31, 1948; minimum, 908.82 ft Oct. 14, 1929 (present datum).
Flood of May 29, 1894, reached an elevation of 918.8 ft ±0.5 ft (present datum), 1 mile below present lake outlet, from floodmark on old Okanogan Hotel Building, pointed out in 1930 by Mr. and Mrs. Stansbury who kept a diary and operated the hotel in 1894.

Remarks.--Approximately 44,000 acres are irrigated above station in Canada. Elevation may occasionally be affected by dam at Zosel's mill in Oroville.

Cooperation.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Revisions.--WSP 1346: Drainage area.

Elevation in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11.88	11.47	11.84	11.48	-	11.17	11.44	11.45	12.29	12.20	11.95	11.75
2	11.84	11.50	11.83	11.52	-	11.16	11.44	11.43	12.32	12.17	11.95	11.77
3	11.75	11.51	11.78	11.54	11.27	11.17	11.46	11.41	12.33	12.16	11.93	11.79
4	11.64	11.52	11.77	11.57	11.27	11.18	11.46	11.39	12.34	12.14	11.91	11.79
5	11.62	11.53	11.77	11.66	11.29	11.18	11.46	11.36	12.35	12.14	11.90	11.79
6	11.62	11.55	11.79	11.72	11.31	11.17	11.50	11.31	12.37	12.13	11.89	11.81
7	11.65	11.56	11.80	11.75	11.33	11.22	11.54	11.26	12.41	12.12	11.88	11.82
8	11.68	11.59	11.78	11.76	11.31	11.26	11.60	11.20	12.44	12.11	11.87	11.84
9	11.72	11.61	11.78	11.73	11.30	11.30	11.67	11.15	12.50	12.08	11.86	11.84
10	11.73	11.64	11.78	11.68	11.31	11.32	11.72	11.13	12.64	12.05	11.86	11.84
11	11.76	11.66	11.76	11.63	11.31	11.34	11.74	11.15	12.89	12.05	11.88	11.84
12	11.78	11.70	11.74	11.57	11.30	11.35	11.78	11.19	13.48	12.06	11.88	11.84
13	11.77	11.71	11.75	11.52	11.29	11.36	11.81	11.23	14.10	12.06	11.87	11.84
14	11.76	11.77	11.74	11.50	11.28	11.36	11.80	11.31	14.54	12.04	11.86	11.89
15	11.77	11.82	11.76	-	11.27	11.36	11.76	11.36	14.59	12.03	11.85	11.92
16	11.78	11.85	11.77	-	11.26	11.39	11.70	11.38	14.38	12.01	11.85	11.97
17	11.77	11.85	11.77	-	11.26	11.46	11.67	11.41	14.11	11.99	11.86	12.00
18	11.72	11.85	11.75	-	11.25	11.47	11.63	11.46	13.83	11.97	11.88	12.03
19	11.71	11.88	11.73	-	11.24	11.47	11.60	11.51	13.56	11.95	11.88	12.05
20	11.62	11.89	11.72	11.52	11.22	11.45	11.60	11.62	13.32	11.93	11.89	12.08
21	11.51	11.90	11.71	-	11.20	11.44	11.61	11.73	13.08	11.91	11.86	12.09
22	11.38	11.90	11.72	-	11.19	11.46	11.62	11.82	12.86	11.90	11.83	12.05
23	11.26	11.90	11.71	-	11.18	11.45	11.62	11.89	12.68	11.89	11.82	12.03
24	11.18	11.88	11.71	-	11.17	11.43	11.61	11.94	12.62	11.88	11.82	12.04
25	11.17	11.88	11.70	-	11.16	11.41	11.61	11.96	12.59	11.90	11.80	12.06
26	11.23	11.88	11.70	-	11.16	11.40	11.59	12.03	12.47	11.88	11.78	12.05
27	11.28	11.88	11.68	-	11.15	11.40	11.54	12.07	12.38	11.91	11.77	12.06
28	11.37	11.88	11.62	-	11.17	11.40	11.52	12.11	12.28	11.90	11.76	12.08
29	11.39	11.87	11.53	-	-	11.42	11.51	12.17	12.26	11.92	11.76	12.07
30	11.42	11.85	11.47	-	-------	11.43	11.47	12.23	12.23	11.94	11.76	12.03
31	11.45	-------	11.46	-	-------	11.43	-------	12.26	-------	11.95	11.76	-------

Note.--Add 900.00 ft to obtain elevation above mean sea level.

Okanogan River at Oroville, Wash.

Location.--Lat 48°55'55", long 119°25'05", in SW¼ sec. 27, T. 40 N., R. 27 E., on left bank in Oroville 20 ft downstream from Great Northern Railway trestle, half a mile downstream from Tonasket Creek, and 1½ miles downstream from Osoyoos Lake.

Drainage area.--3,210 sq mi, approximately.

Records available.--October 1942 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 899.77 ft above mean sea level, supplementary adjustment of 1947. Prior to Oct. 26, 1944, staff gage at Zosel's mill dam 200 ft upstream at same datum. Oct. 26, 1944, to Mar. 6, 1948, water-stage recorder on railroad trestle 20 ft upstream at same datum. Auxiliary water-stage recorder half a mile downstream used during high-water periods since Apr. 10, 1948. May 15, 1946, to Apr. 9, 1948, auxiliary staff gage at same site and datum.

Average discharge.--13 years, 734 cfs (531,400 acre-ft per year).

Extremes.--Maximum discharge during year, 2,320 cfs June 16, 17; maximum gage height, 14.49 ft June 14 (backwater from Similkameen River); maximum reverse flow, 650 cfs June 13 (from graph based on discharge measurements).

1942-55: Maximum discharge recorded, 3,430 cfs June 2, 1948 (gage height, 15.28 ft); maximum gage height, 16.50 ft May 31, 1948 (backwater from Similkameen River); maximum daily reverse flow, 2,270 cfs May 29, 1948; minimum gage height, 3.98 ft Mar. 1, 1948.

Remarks.--Records good except those for periods of backwater from Similkameen River, which are fair. Diversions made to irrigate approximately 44,000 acres in Canada and minor diversions in United States above station. Natural regulation in several large lakes and artificial regulation in Okanagan Lake as an aid to navigation in that lake; also variations in pondage back of Zosel's mill dam at Oroville, 200 ft above gage.

Rating table, water year 1954-55, except periods of backwater or shifting control (gage height, in feet, and discharge, in cubic feet per second)

6.5	387	7.1	850
6.7	530	7.5	1,170
6.9	690		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	906	634	914	794	794	762	658	738	1,110	997	866	714
2	922	642	906	810	786	746	626	746	1,080	1,020	866	690
3	898	650	890	802	786	610	610	746	1,090	1,020	858	698
4	826	650	882	818	*786	586	618	754	1,130	1,050	850	698
5	786	658	882	842	786	594	578	762	1,240	978	842	698
6	714	674	922	*850	786	594	515	746	1,200	985	842	698
7	738	682	938	890	786	610	515	730	1,340	982	842	722
8	754	682	930	946	794	618	515	722	1,270	961	794	762
9	754	690	938	946	794	634	515	626	*1,320	*956	770	762
10	762	690	938	922	794	634	538	602	*752	962	770	762
11	778	706	930	906	786	642	546	602	*20	933	*786	770
12	874	714	922	882	786	650	570	618	*-410	942	794	770
13	882	722	922	866	778	666	610	626	*-540	932	786	770
14	874	746	882	858	770	674	642	626	*510	930	770	786
15	866	842	866	850	770	674	658	682	*1,890	951	778	826
16	874	882	866	842	770	*682	674	682	2,230	974	786	850
17	874	906	866	826	786	682	666	674	2,280	926	786	*866
18	858	922	866	826	778	698	674	666	*2,180	859	786	874
19	866	930	850	818	778	698	666	*674	2,030	865	786	882
20	810	*946	850	810	770	698	682	818	1,860	898	794	914
21	*706	938	850	794	762	682	*690	1,000	1,770	874	770	938
22	674	938	858	794	770	714	714	930	1,720	858	762	914
23	650	946	850	786	762	698	730	938	1,620	842	754	922
24	626	938	858	786	770	682	754	938	988	850	746	930
25	519	930	858	778	770	658	762	938	955	850	738	930
26	421	938	850	778	778	642	770	978	1,210	826	730	930
27	435	938	842	778	770	642	762	994	1,100	834	730	930
28	586	930	826	778	762	666	770	978	1,250	818	722	938
29	618	930	802	778	-	690	730	986	1,140	850	722	930
30	626	922	778	786	------	682	738	1,130	1,020	866	730	922
31	634	------	770	786	------	666	------	1,210	------	866	738	------
Total	23,111	24,316	27,102	25,726	21,808	20,574	19,496	24,860	36,335	28,455	24,294	24,796
Mean	746	811	874	830	779	664	650	802	1,212	918	784	827
Ac-ft	45,840	48,230	53,760	51,030	43,260	40,810	38,670	49,310	72,110	56,440	48,190	49,180

Calendar year 1954: Max 1,500 Min 140 Mean 808 Ac-ft 585,200
Water year 1954-55: Max 2,280 Min -540 Mean 824 Ac-ft 596,800

* Discharge measurement made on this day.

Note.--Backwater from Similkameen River May 21, 31, June 5 to July 19. Shifting-control method used Mar. 25 to May 20, May 22-30, June 1-4.

Similkameen River near Nighthawk, Wash.

(International gaging station)

Location.--Lat 48°59'10", long 119°37'00", in NW¼ sec. 7, T. 40 N., R. 26 E., on left bank three-quarters of a mile upstream from Oroville-Tonasket Irrigation District canal intake, about 1¾ miles downstream from and northeast of Nighthawk, and 12 miles upstream from mouth.

Drainage area.--3,550 sq mi, approximately.

Records available.--May 1911 to September 1955 (prior to September 1928, mean monthly discharge included Oroville-Tonasket Irrigation District canal). Published as "near Oroville" 1911-28.

Gage.--Water-stage recorder. Datum of gage is 1,137.70 ft above mean sea level, international joint adjustment of 1947. Prior to Sept. 11, 1928, staff gages at sites 7 miles downstream (below Oroville-Tonasket Irrigation District canal) at various datums.

Average discharge.--44 years, 2,226 cfs (1,612,000 acre-ft per year).

Extremes.--Maximum discharge during year, 28,200 cfs June 13 (gage height, 15.13 ft); minimum, 308 cfs Feb. 27 (gage height, 2.82 ft); minimum daily, 426 cfs Mar. 5.
1928-55: Maximum discharge, 38,700 cfs May 30, 1948 (gage height, 17.62 ft); minimum, 120 cfs Jan. 6, 1930 (gage height, 2.05 ft).

Remarks.--Records good. Flow at high stages regulated by natural diversion into and release from Palmer Lake. Several small diversions above station for irrigation of about 2,900 acres in the Unites States in 1946 and approximately 1,600 acres in Canada.

Cooperation.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Revisions.--WSP 1182: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

3.0	385	7.0	4,600
3.5	640	9.0	8,570
4.0	970	11.0	13,700
5.0	1,880	13.0	20,200
6.0	3,080	15.1	28,100

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,260	1,040	2,090	1,050	700	485	552	718	7,580	9,310	2,920	748
2	1,240	1,050	1,840	1,020	694	541	558	736	7,210	8,390	2,780	724
3	1,210	1,040	1,550	914	670	568	552	767	7,250	7,910	2,640	694
4	1,190	1,030	1,610	795	*646	580	541	802	7,840	9,100	2,470	682
5	1,210	1,010	1,870	774	646	426	536	858	10,100	8,800	2,320	664
6	1,200	1,060	1,870	*844	664	490	536	1,000	11,700	8,550	2,180	646
7	1,180	1,510	1,790	865	646	546	563	1,170	12,500	8,110	2,060	634
8	1,170	1,440	1,650	858	664	585	612	1,350	13,600	7,670	1,940	618
9	1,140	1,340	1,550	837	618	602	724	1,600	*15,200	*7,210	1,850	612
10	1,140	1,310	1,530	823	*558	602	872	1,600	18,100	7,140	1,770	602
11	1,120	1,270	1,480	736	495	590	1,030	1,660	*22,300	7,710	*1,680	590
12	1,270	1,220	1,380	706	510	574	1,030	1,870	25,600	7,650	1,570	574
13	1,340	1,190	1,320	742	558	563	956	2,220	28,000	7,330	1,480	568
14	1,220	1,160	1,320	781	634	541	907	2,290	26,300	7,000	1,420	588
15	1,160	1,160	1,310	742	640	*530	872	2,310	21,300	6,750	1,340	574
16	1,180	1,160	1,290	724	646	536	837	2,490	16,900	6,370	1,260	580
17	1,250	1,160	1,190	742	629	530	823	2,870	*14,500	7,060	1,210	*596
18	1,260	1,170	1,020	730	563	536	795	3,780	13,400	7,380	1,160	618
19	1,270	1,250	935	736	536	530	767	5,260	12,500	6,250	1,110	640
20	*1,220	*1,550	956	742	541	530	767	*8,090	11,600	5,580	1,060	624
21	1,260	1,670	1,070	718	585	525	774	8,960	11,600	5,050	1,040	607
22	1,280	1,730	1,220	688	612	525	*774	8,170	12,800	4,620	1,030	607
23	1,220	3,950	1,230	700	602	530	767	7,250	14,700	4,290	986	618
24	1,190	3,150	1,270	718	596	500	754	6,730	14,500	4,060	942	612
25	1,120	2,620	1,220	748	585	455	748	6,750	12,100	4,270	907	607
26	1,100	3,080	1,130	760	563	485	748	7,120	11,100	4,030	886	590
27	1,070	2,940	1,030	767	480	505	754	7,140	10,300	3,770	893	580
28	1,070	2,670	1,490	742	495	515	736	6,850	10,300	3,640	872	574
29	1,090	2,510	1,130	712	-	536	724	6,980	11,400	3,400	837	580
30	1,070	2,330	1,060	700	------	530	718	8,130	10,300	3,180	816	596
31	1,050	------	1,060	706	------	525	-----	8,350	------	3,050	774	------
Total	36,750	50,770	42,461	24,120	16,776	16,516	22,327	125,871	422,580	194,630	46,203	18,527
Mean	1,185	1,692	1,370	778	599	533	744	4,060	14,090	6,278	1,490	618
Ac-ft	72,890	100,700	84,220	47,840	33,270	32,760	44,280	249,700	838,200	386,000	91,640	36,750

Calendar year 1954: Max 18,800 Min 240 Mean 3,356 Ac-ft 2,429,000
Water year 1954-55: Max 28,000 Min 426 Mean 2,788 Ac-ft 2,018,000

Peak discharge (base, 8,000 cfs).--May 20 (9 p.m.) 9,170 cfs (9.26 ft); June 13 (6 p.m.) 28,200 cfs (15.13 ft); June 23 (10 p.m.) 15,900 cfs (11.69 ft).
* Discharge measurement made on this day.

Okanogan River near Tonasket, Wash.

(International gaging station)

Location.--Lat 48°38'00", long 119°27'50", in lot 3, sec. 8, T. 36 N., R. 27 E., on right bank 1,000 ft upstream from Chewilliken Creek and 5½ miles south of Tonasket.

Drainage area.--7,270 sq mi, approximately.

Records available.--April 1929 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 860.78 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--26 years, 2,894 cfs (2,095,000 acre-ft per year).

Extremes.--Maximum discharge during year, 27,600 cfs June 14 (gage height, 18.12 ft); minimum, 800 cfs Mar. 4 (gage height, 5.02 ft).
1929-55: Maximum discharge, 40,900 cfs May 31, 1948 (gage height, 21.79 ft, from floodmark); minimum recorded, 126 cfs Sept. 5, 1931 (gage height, 3.43 ft).

Remarks.--Records excellent except those for periods of ice effect or doubtful gage-height record, which are fair. Diversions above station for irrigation of about 10,700 acres in the United States and 45,580 acres in Canada. Flow affected by regulation of Okanagan Lake and Skaha Lake, and by natural storage in other lakes. Some diurnal fluctuation at low flow caused by powerplant on Similkameen River.

Cooperation.--This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Revisions (water years).--WSP 862: 1937. WSP 1216: Drainage area. WSP 1316: 1934(M), 1938(M).

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

5.0	790	12.0	11,000
6.0	1,460	16.0	21,200
7.0	2,430	18.5	28,900
9.0	5,240		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,250	1,860	3,280	2,000	1,610	1,320	1,370	1,450	9,230	10,900	3,790	1,480
2	2,240	1,860	3,070	2,010	1,600	1,300	1,360	1,440	8,530	9,910	3,650	1,400
3	2,210	1,870	2,760	b1,820	*1,570	b1,200	1,320	1,460	8,450	9,050	3,510	1,370
4	2,150	1,860	2,600	b1,720	1,570	b1,000	1,300	1,480	8,670	9,350	3,350	1,360
5	2,110	1,860	2,790	*b1,610	1,540	b1,080	1,280	1,520	9,870	9,930	3,190	1,320
6	2,090	1,870	2,930	1,800	1,540	b1,150	1,230	1,600	12,000	9,620	3,030	1,300
7	2,030	2,020	2,910	1,870	1,550	b1,220	1,200	1,750	12,900	9,210	2,900	1,290
8	2,030	2,350	2,820	1,960	1,560	1,270	1,270	1,870	13,800	*8,690	2,760	1,320
9	2,060	2,260	2,700	1,970	1,550	1,310	1,290	2,060	14,900	8,230	2,610	1,320
10	2,070	2,200	2,640	1,950	1,480	1,340	1,430	2,150	16,100	7,950	*2,550	1,280
11	2,080	2,180	2,610	b1,860	b1,420	1,330	1,620	2,160	18,900	8,200	2,500	1,280
12	2,100	2,150	2,540	b1,800	1,390	1,320	1,760	2,240	*22,400	8,470	2,450	1,270
13	2,340	2,130	2,450	1,790	1,380	1,310	1,750	2,520	25,500	8,230	2,350	1,250
14	2,320	2,120	2,420	b1,760	1,440	1,300	1,710	2,790	27,300	7,930	2,290	1,270
15	2,230	2,140	2,360	b1,740	1,500	*1,270	1,680	2,820	26,200	7,610	2,220	1,280
16	2,210	2,220	2,350	1,750	1,500	1,280	1,670	2,950	22,400	7,320	2,170	1,340
17	2,240	2,220	2,310	1,720	1,500	1,280	1,640	3,190	18,700	7,080	2,100	*1,390
18	2,280	2,240	2,180	1,710	1,450	1,280	1,620	3,750	*16,600	8,310	2,040	1,430
19	2,300	2,280	2,010	1,680	1,420	1,290	1,580	*4,820	15,300	7,380	1,950	1,460
20	*2,280	2,460	2,000	1,680	1,380	1,290	1,570	6,720	14,100	6,540	1,780	1,490
21	*2,170	*2,680	2,040	1,670	1,390	1,280	*1,590	9,130	13,200	5,980	1,880	1,510
22	2,150	2,710	2,190	b1,640	1,440	1,290	1,630	9,190	13,400	5,500	1,850	1,490
23	2,110	3,640	2,220	1,610	1,450	1,280	1,590	8,630	14,600	5,160	1,820	1,520
24	2,040	4,630	2,290	1,620	1,440	1,270	1,580	8,020	16,000	4,890	1,760	1,550
25	1,970	3,880	2,280	1,620	1,420	1,240	1,570	7,820	15,200	4,860	1,700	1,520
26	1,770	3,720	2,200	1,630	1,390	1,210	1,560	7,740	13,200	4,870	1,670	1,520
27	1,720	4,160	b2,080	1,650	1,340	1,220	1,560	8,040	12,100	4,620	1,640	1,520
28	1,730	3,850	1,980	1,640	1,300	1,240	1,550	8,080	11,300	4,500	1,630	1,520
29	1,860	3,640	1,960	1,620	-	1,350	1,500	7,950	12,000	4,270	1,600	1,510
30	1,880	3,490	2,000	1,590	------	1,360	1,450	8,630	12,100	4,080	1,560	1,510
31	1,860	-----	2,020	1,600	------	1,330	-----	9,680	------	3,920	1,530	------
Total	64,880	78,550	74,990	54,090	41,120	39,210	45,230	143,450	454,950	222,560	71,830	42,070
Mean	2,093	2,618	2,419	1,745	1,469	1,265	1,508	4,627	15,160	7,179	2,317	1,402
Ac-ft	128,700	155,800	148,700	107,300	81,560	77,770	89,710	284,500	902,400	441,400	142,500	83,440

Calendar year 1954: Max 18,900 Min 520 Mean 4,216 Ac-ft 3,052,000
Water year 1954-55: Max 27,300 Min 1,000 Mean 3,655 Ac-ft 2,644,000

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--Doubtful gage-height record May 21 to June 12; discharge computed from reconstructed gage-height graph based on recorded graph.

Methow River at Twisp, Wash.

Location.--Lat 48°21'40", long 120°06'50", in NW¼ sec. 17, T. 33 N., R. 22 E., on left bank a quarter of a mile downstream from Twisp River and 0.3 mile east of center of Twisp.

Drainage area.--1,330 sq mi, approximately.

Records available.--June 1919 to September 1955. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Altitude of gage is 1,580 ft (from topographic map). Prior to Oct. 3, 1919, several staff gages in the immediate vicinity at different datum. Oct. 3, 1919, to Sept. 30, 1929, and Oct. 31 to Nov. 6, 1933, chain gage on road bridge 40 ft upstream at same datum as staff gages. Nov. 7 to Dec. 18, 1933, staff gage at present site at different datum.

Average discharge.--36 years, 1,287 cfs (931,700 acre-ft per year).

Extremes.--Maximum discharge during year, 16,600 cfs June 12 (gage height, 8.22 ft in gage well, 8.90 ft from high-water mark on outside gage); minimum, 283 cfs Sept. 30 (gage height, 1.74 ft in gage well).
1919-29, 1933-55: Maximum discharge, 40,800 cfs May 29, 1948 (gage height, 12.94 ft in gage well), from rating curve extended above 18,000 cfs on basis of slope-area determination of peak flow; minimum observed, 134 cfs Sept. 4, 5, 1926, Sept. 9, 10, 1929, but may have been less during period of ice effect Jan. 6 to Mar. 4, 1937.

Remarks.--Records good except those for periods of ice effect, which are fair. A large part of the flow diverted above station for irrigation by two canals of Methow Valley Irrigation District, by Risley ditch, and by many other smaller ditches. Diversions for irrigation of 7,410 acres above station (1946 estimate).

Revisions (water years).--WSP 512: Drainage area. WSP 1316: 1921(M), 1928(M), 1934.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 8				June 9 to Sept. 30			
2.1	300	4.0	3,300	1.7	255	4.0	3,420
2.3	445	5.0	5,560	2.0	480	5.0	5,760
2.5	620	6.0	8,400	2.5	990	6.0	8,600
2.7	845	6.5	10,000	3.0	1,660	8.0	15,700
3.0	1,300			3.5	2,470		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*592	511	845	519	350	328	356	662	3,860	3,780	1,320	456
2	652	511	749	502	330	335	378	694	*3,920	3,260	1,270	400
3	641	511	737	461	*310	328	370	761	4,270	3,400	1,200	348
4	630	502	785	450	310	314	363	809	5,330	3,550	1,140	340
5	620	511	809	*440	320	335	370	912	7,440	3,480	1,050	340
6	611	546	797	420	363	335	408	1,070	*8,250	3,550	1,010	332
7	601	583	749	420	400	328	453	1,180	9,300	3,550	978	325
8	592	592	714	420	438	328	511	1,360	9,740	*3,550	954	332
9	583	620	725	440	400	328	601	1,430	a 11,200	3,300	906	332
10	583	662	652	461	350	314	725	1,470	a 13,800	3,480	*859	325
11	641	641	683	430	330	314	773	1,550	*a15,100	3,800	804	311
12	630	630	672	420	330	314	809	1,660	*15,700	3,690	771	304
13	601	620	652	420	330	314	797	1,720	*14,300	3,780	750	297
14	574	641	641	430	349	*307	785	1,720	10,600	3,860	730	311
15	564	662	641	445	349	300	761	1,660	8,540	3,820	690	*311
16	564	672	590	438	349	307	749	1,680	7,350	3,590	651	325
17	555	652	550	438	330	307	725	1,800	6,730	5,710	606	332
18	555	662	520	445	310	307	714	*2,100	6,180	4,020	579	340
19	555	704	500	430	310	300	704	2,780	5,650	3,060	552	325
20	*555	737	546	400	310	300	*704	4,580	5,320	2,510	525	318
21	564	*704	555	380	320	300	714	4,970	6,070	2,150	525	311
22	546	704	564	380	320	321	737	4,660	6,450	1,920	516	304
23	546	867	555	360	321	321	749	4,160	*9,480	1,840	498	304
24	536	940	555	360	321	314	737	3,880	6,780	1,800	480	304
25	527	966	546	370	314	300	725	3,760	5,680	1,750	448	297
26	527	995	510	392	314	300	725	3,840	5,050	1,630	448	297
27	527	1,010	500	380	*307	307	694	3,620	4,640	1,620	432	297
28	527	953	500	370	328	300	662	3,620	5,300	1,510	424	297
29	511	899	511	360	-	328	652	4,080	5,220	1,410	416	290
30	511	858	536	350	------	328	652	4,920	4,380	1,340	*400	283
31	511	------	536	350	------	321	------	4,410	------	1,330	408	------
Total	17,732	21,066	19,425	12,881	9,413	9,783	19,103	77,518	231,630	91,040	22,340	9,688
Mean	572	702	627	416	336	316	637	2,501	7,721	2,937	721	323
Ac-ft	35,170	41,780	38,530	25,550	18,670	19,400	37,890	153,800	459,400	180,600	44,310	19,220

Calendar year 1954: Max 12,200 Min 277 Mean 1,840 Ac-ft 1,332,000
Water year 1954-55: Max 15,700 Min 283 Mean 1,484 Ac-ft 1,074,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of reconstructed gage-height graph.
Note.--Stage-discharge relation affected by ice Dec. 16-19, 26-28, Jan. 4-9, 12, 13, 20-25, 27-31, Feb. 1-5, 10-13, 17-22.

Alta Lake near Pateros, Wash.

Location.--Lat 48°01'30", long 119°56'30", in SW¼NE¼ sec. 10, T. 29 N., R. 23 E., on west shore, 2½ miles southwest of Pateros.

Drainage area.--4.03 sq mi.

Records available.--November 1954 to September 1955 (fragmentary).

Gage.--Staff gage read once daily. Altitude of gage is 1,175 ft (from topographic map).

Extremes.--Maximum gage height observed during period, 7.90 ft Apr. 21-23, Apr. 26 to May 1, May 17, 18; minimum observed, 6.31 ft Sept. 29, 30.

Remarks.--Small diversion for irrigation. No known regulation.

Gage height, in feet, November 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		-	7.84	7.78	7.84	-	-	7.90	7.84	7.53	7.18	-
2		-	7.83	7.78	7.82	-	7.88	7.89	7.84	7.52	7.14	6.62
3		-	7.82	7.78	-	-	-	7.89	7.82	7.50	7.12	6.60
4		-	7.82	7.78	-	7.80	7.88	7.89	7.82	7.50	7.10	-
5		-	7.81	7.78	7.83	-	-	7.88	7.82	7.50	7.08	-
6		-	7.84	-	7.83	-	-	7.88	7.80	7.48	7.08	6.55
7		-	7.84	-	-	7.78	7.86	7.88	7.80	7.48	7.06	6.55
8		-	7.84	-	-	-	7.86	7.88	7.79	7.46	7.04	6.54
9		-	7.85	-	-	-	7.86	7.86	7.78	7.46	7.04	6.53
10		-	7.84	-	-	-	-	7.86	7.78	7.46	7.02	6.52
11		-	7.83	-	7.88	7.80	7.84	7.86	7.77	7.45	7.00	6.50
12		-	7.83	-	-	7.80	7.88	7.86	-	7.44	6.98	6.48
13		-	7.84	-	7.82	7.80	-	7.86	7.74	7.44	6.94	6.48
14		-	7.82	-	-	-	-	7.86	7.72	7.44	6.92	6.47
15		-	7.81	-	-	-	-	7.87	7.70	7.43	6.92	6.46
16		-	7.80	-	-	-	7.88	7.89	7.70	7.42	6.90	6.46
17		-	7.80	-	-	-	-	7.90	7.66	7.42	6.88	6.44
18		-	7.80	-	-	-	7.88	7.90	7.66	7.40	6.87	6.46
19		-	7.80	7.85	7.84	7.81	-	-	7.64	7.38	6.87	6.43
20		-	7.80	-	-	7.81	7.86	-	7.62	7.34	6.84	6.42
21		-	7.78	7.84	7.81	-	7.90	-	7.62	7.33	6.81	6.41
22		7.84	7.78	7.84	-	7.85	7.90	7.88	7.62	7.32	6.80	6.39
23		7.84	7.78	7.84	-	-	7.90	7.88	7.60	7.30	6.78	6.37
24		7.84	7.78	-	-	-	7.89	7.89	7.58	7.30	6.75	6.36
25		7.84	7.78	-	7.80	-	7.89	7.89	7.60	7.29	6.74	-
26		7.84	7.77	-	-	7.83	7.90	7.89	7.60	-	-	6.34
27		7.84	7.77	-	7.78	-	7.90	7.88	7.58	-	-	6.34
28		7.84	7.76	-	7.80	-	7.90	7.88	7.57	7.24	-	6.32
29		7.84	7.76	7.83	-	-	7.90	7.87	7.57	7.22	-	6.31
30		7.83	7.77	7.82	-------	7.88	7.90	7.86	7.54	7.22	6.66	6.31
31		-------	7.78	7.82	-------	-	-------	7.84	-------	-	-	-------

Stehekin River at Stehekin, Wash.

Location.--Lat 48°19'30", long 120°41'20", in SE¼ sec. 26, T. 33 N., R. 17 E., on left bank 1,200 ft upstream from Boulder Creek, 1¾ miles upstream from Lake Chelan, and 2 miles northwest of Stehekin. Records include flow of Boulder Creek.

Drainage area.--372 sq mi, includes that of Boulder Creek.

Records available.--October 1910 to October 1915, October 1926 to September 1955. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 1,100 ft above mean sea level (unadjusted). Prior to Aug. 17, 1911, staff gage at site three-eighths of a mile upstream from mouth at different datums (datum change made June 13, 1911). Aug. 17, 1911, to Oct. 31, 1915, staff gage at site a quarter of a mile downstream from Boulder Creek at different datum.

Average discharge.--34 years, 1,369 cfs (991,100 acre-ft per year).

Extremes.--Maximum discharge during year, 12,400 cfs June 11 (gage height, 26.65 ft); minimum, 176 cfs sometime during period of no gage-height record Jan. 23 to Mar. 10 (gage height, 18.32 ft, from recorded range in stage).
1910-15, 1926-55: Maximum discharge, 18,900 cfs May 29, 1948 (gage height, 29.00 ft), from rating curve extended above 9,000 cfs on basis of slope-area determination of peak flow; minimum, 56 cfs Jan. 21, 1930.

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation or diversion.

Cooperation.--Gage-height record collected in cooperation with, and four discharge measurements furnished by Washington Water Power Co. to June 30 and by Public Utility District No. 1 of Chelan County thereafter.

Revisions (water years).--WSP 412: 1914. WSP 1316: 1911-12(M), 1914-15(M).

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	640	510	1,050	550	290	260	280	780	2,800	3,130	2,800	*1,040
2	600	501	1,000	510	280	250	300	*762	3,000	2,770	2,370	1,130
3	565	501	980	520	290	240	310	860	3,200	2,980	1,990	1,190
4	540	497	950	510	290	250	350	*980	3,600	3,070	1,850	1,200
5	510	1,700	950	500	300	270	330	1,150	4,300	3,130	1,850	1,240
6	497	1,980	910	460	310	280	350	1,200	4,920	3,400	2,030	1,290
7	492	1,260	880	440	310	270	370	1,300	5,490	3,420	2,200	1,330
8	535	1,050	840	410	320	260	400	1,400	6,260	3,470	2,130	1,330
9	505	1,040	810	390	340	260	450	1,600	7,850	3,510	1,930	1,250
10	505	924	800	364	350	260	500	1,700	9,230	3,930	1,870	1,110
11	816	854	800	364	320	258	540	1,700	*10,400	4,390	1,870	994
12	678	816	780	356	310	258	600	1,900	*11,000	5,070	1,740	882
13	590	780	780	*360	300	254	700	2,100	8,550	*6,000	1,520	847
14	550	786	760	344	280	251	800	2,000	6,360	6,410	1,420	945
15	555	768	740	344	270	251	750	1,800	5,120	6,300	1,400	780
16	580	816	720	336	280	*254	720	1,700	4,200	6,610	1,400	726
17	615	828	700	332	310	258	700	1,800	3,840	5,830	1,410	640
18	610	1,040	660	328	320	262	660	1,900	3,720	4,120	1,470	570
19	630	1,440	660	320	290	258	640	2,400	3,650	3,370	1,550	555
20	672	1,310	660	316	260	254	600	2,700	3,860	3,070	1,580	555
21	660	1,210	670	308	260	258	580	3,000	5,380	*2,970	1,410	520
22	620	2,570	680	308	260	293	600	3,200	7,810	3,270	1,280	478
23	575	2,270	700	310	270	275	620	3,000	8,050	3,670	1,200	447
24	545	*1,760	700	310	260	262	620	2,800	5,580	3,710	1,150	429
25	530	2,100	670	310	250	258	600	2,800	4,650	3,100	1,080	408
26	515	2,090	660	300	250	254	580	2,800	4,100	2,530	1,010	412
27	510	1,870	630	300	260	258	580	2,600	4,100	2,260	973	465
28	515	1,600	610	290	270	258	600	2,500	4,760	1,980	960	452
29	505	1,420	620	300	-	260	650	2,600	4,360	2,020	973	420
30	501	1,100	610	300	------	260	700	2,800	3,710	2,220	1,050	396
31	505	-----	600	300	------	270	-----	2,910	------			------
Total	17,666	37,391	23,580	11,390	8,100	8,064	16,480	62,742	163,850	114,280	48,556	24,031
Mean	570	1,246	761	367	289	260	549	2,024	5,462	3,686	1,566	801
Cfsm	1.53	3.35	2.05	0.987	0.777	0.699	1.48	5.44	14.7	9.91	4.21	2.15
In.	1.77	3.74	2.36	1.14	0.81	0.81	1.65	6.27	16.38	11.42	4.85	2.40
Ac-ft	35,040	74,160	46,770	22,590	16,070	15,990	32,690	124,400	325,000	226,700	96,310	47,660

Calendar year 1954: Max 8,500 Min 272 Mean 1,831 Cfsm 4.92 In. 66.81 Ac-ft 1,325,000
Water year 1954-55: Max 11,000 Min 240 Mean 1,469 Cfsm 3.95 In. 53.60 Ac-ft 1,063,000

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 30 to Jan. 9, Jan. 23 to Mar. 10, Mar. 29 to May 1, May 3, May 5 to June 5; discharge estimated on basis of weather records, recorded range in stage, and records for nearby stations.

Railroad Creek at Lucerne, Wash.

Location.--Lat 48°11'45", long 120°35'50", in sec. 9, T. 31 N., R. 18 E., on left bank half a mile upstream from mouth and half a mile southwest of Lucerne.

Drainage area.--64.8 sq mi.

Records available.--October 1910 to September 1913, October 1926 to September 1955. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Altitude of gage is 1,250 ft (from topographic map). Dec. 6, 1910, to June 30, 1913, staff gage at site 1,800 ft downstream at different datum.

Average discharge.--32 years, 201 cfs (145,500 acre-ft per year).

Extremes.--Maximum discharge during year, 2,820 cfs June 12 (gage height, 4.92 ft); minimum, 28 cfs Mar. 13 or 14.
1910-13, 1926-55: Maximum discharge, 3,900 cfs May 28, 1948 (gage height, 8.1 ft, from floodmarks), from rating curve extended above 1,300 cfs on basis of slope-area and contracted-opening determinations of peak flow; minimum, less than 9.4 cfs sometime during period of ice effect Jan. 15-25, 1930.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor. No regulation or diversion above station.

Cooperation.--Gage-height record collected in cooperation with, and four discharge measurements furnished by Washington Water Power Co. to June 30 and in cooperation with Public Utility District No. 1 of Chelan County thereafter.

Revisions (water years).--WSP 1042: 1944. WSP 1122: 1936. WSP 1216: Drainage area. WSP 1316: 1941(M).

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 8				June 9 to Sept. 30			
2.1	31	3.0	267	1.7	53	3.5	670
2.3	67	3.5	525	2.0	89	4.0	1,180
2.5	112	4.1	1,040	2.3	140	4.5	1,960
2.7	168			2.6	218	4.8	2,550
				3.0	369		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	107	82	136	73	52	48	58	71	375	569	455	*160
2	102	82	123	71	50	46	54	*86	375	506	398	170
3	98	82	126	65	46	50	52	107	412	477	326	183
4	93	82	120	69	48	b50	52	117	467	477	299	183
5	88	199	117	67	48	b50	54	*131	760	471	299	185
6	88	225	115	65	50	b50	59	145	850	489	310	194
7	86	154	107	65	58	b50	67	159	850	483	335	197
8	86	136	100	65	61	52	82	193	960	471	339	191
9	86	145	98	65	59	52	102	199	1,250	449	314	185
10	88	136	95	63	56	52	107	206	1,530	518	295	175
11	105	128	90	61	78	52	98	225	*1,790	625	295	160
12	102	126	90	61	61	52	93	242	2,380	742	273	147
13	93	123	88	61	56	a50	90	236	1,760	*910	241	147
14	88	123	86	*59	52	a53	86	225	1,250	1,060	221	165
15	90	126	86	58	50	54	84	219	1,040	1,100	215	147
16	95	128	84	58	48	*52	82	225	840	1,080	212	132
17	98	123	82	58	46	48	82	242	750	1,130	215	119
18	98	148	78	56	59	50	82	286	726	686	221	109
19	98	174	78	56	63	50	82	412	686	562	225	101
20	102	a155	80	54	46	48	82	611	750	*500	241	98
21	100	a140	78	52	46	48	84	539	1,030	471	225	96
22	95	a290	80	56	45	52	86	466	1,570	518	203	a95
23	88	*264	82	58	43	50	88	395	1,630	625	188	a90
24	86	225	84	56	43	50	88	365	1,130	640	183	a85
25	84	232	82	54	43	50	86	390	860	530	172	a80
26	82	225	78	52	43	50	84	375	734	428	162	a70
27	82	196	75	52	45	48	84	337	750	383	158	a65
28	82	180	75	48	56	48	84	332	930	326	158	a70
29	82	162	73	52	-	48	84	406	860	318	155	a65
30	82	144	73	52	------	48	86	499	702	343	162	a60
31	82	-----	75	52	-----	48	-----	430	------	403	167	------
Total	2,836	4,735	2,834	1,834	1,451	1,549	2,402	8,871	29,997	18,290	7,662	3,924
Mean	91.5	158	91.4	59.2	51.8	50.0	80.1	286	1,000	590	247	131
Cfsm	1.41	2.44	1.41	0.914	0.799	0.772	1.24	4.41	15.4	9.10	3.81	2.02
In.	1.63	2.72	1.63	1.05	0.83	0.89	1.38	5.09	17.22	10.50	4.40	2.25
Ac-ft	5,630	9,390	5,620	3,640	2,880	3,070	4,760	17,600	59,500	36,280	15,200	7,780

Calendar year 1954: Max 1,170 Min 42 Mean 267 Cfsm 4.12 In. 55.99 Ac-ft 193,500
Water year 1954-55: Max 2,380 Min 43 Mean 237 Cfsm 3.66 In. 45.59 Ac-ft 171,400

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for Stehekin River at Stehekin.
b Stage-discharge relation affected by ice.

Lake Chelan at Chelan, Wash.

Location.--Lat 47°50'00", long 120°03'40", in lot 3, sec. 15, T. 27 N., R. 22 E., on south shore at Lakeside, 2 miles west of Chelan.
Drainage area.--952 sq mi.
Records available.--September 1897 to December 1899, January to June 1905 and December 1910 to September 1911 (fragmentary gage heights only); October 1911 to September 1955. Prior to October 1940, records of change in contents published with records for Chelan River at Chelan. Records of change in contents prior to October 1911, published in WSP 482 and 492 with records for Chelan River near Chelan have been found to be unreliable and should not be used. Month-end contents October 1911 to September 1950 published in WSP 1316.
Gage.--Water-stage recorder. Datum of gage is at mean sea level, adjustment of 1912. Prior to Jan. 1, 1900, staff gage at Lakeside about 1 mile west of Chelan at datum 1,070.18 ft above mean sea level, adjustment of 1912. Jan. 1 to June 30, 1905, staff gage at upper highway bridge at Chelan at different datum. Dec. 5, 1910, to Nov. 13, 1927, staff gage at Forest Service boat landing at Chelan at datum 1,076.07 ft above mean sea level, adjustment of 1912.
Extremes.--Maximum elevation during year, 1,100.00 ft July 23 (contents, 676,100 acre-ft); minimum, 1,082.37 ft Apr. 30 (contents, 106,200 acre-ft).
1897-99, 1905, 1910-55: Maximum elevation, 1,100.05 ft July 19, 1947 (contents, 677,800 acre-ft); minimum since completion of dam in 1927, 1,079.68 ft Apr. 3, 4, 1937 (contents, 21,400 acre-ft); minimum elevation, 1,076.78 ft Jan. 27, 28, Dec. 2-5, 1898.
Remarks.--Reservoir is formed by low concrete dam at lake outlet completed Sept. 3, 1927. Usable capacity between elevations 1,079 and 1,100 ft, 676,100 acre-ft. Regulation between these elevations is allowed by stipulation of Federal Power Commission. Water is used for power development. Elevation of lake maintained between 1,092 and 1,100 ft during period Aug. 16 to Sept. 15 for scenic effect and recreational purposes. In 1946, an estimated 6,280 acres were being irrigated above station, with an estimated annual depletion of about 11,000 acre-ft.
Cooperation.--Gage-height record collected in cooperation with the Washington Water Power Co. to June 30 and by Public Utility District No. 1 of Chelan County July 1 to Sept. 30.
Revisions (water years).--WSP 1216: Drainage area. WSP 1246: 1951. WSP 1286: 1952.
See also Records available.

Elevation, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	98.60	95.78	95.05	92.67	89.50	86.70	83.41	82.48	88.58	99.28	99.94	98.94
2	98.48	95.66	95.02	92.59	89.37	86.62	83.30	82.52	88.80	99.29	99.92	98.88
3	98.35	95.57	94.95	92.47	89.24	86.50	83.22	82.50	89.03	99.31	99.91	98.83
4	98.27	95.46	94.88	92.37	89.13	86.37	83.11	82.53	89.27	99.36	99.90	98.75
5	98.19	95.42	94.82	92.27	89.02	86.25	83.03	82.65	89.68	99.38	99.91	98.70
6	98.10	95.45	94.80	92.15	88.91	86.14	82.93	82.73	90.14	99.42	99.93	98.69
7	98.00	95.45	94.74	92.02	88.88	86.02	82.88	82.88	90.62	99.39	99.97	98.65
8	97.95	95.38	94.65	91.96	88.94	85.94	82.82	83.05	91.25	99.39	99.93	98.61
9	97.85	95.36	94.59	91.86	88.83	85.82	82.82	83.14	91.90	99.47	99.90	98.58
10	97.75	95.30	94.51	91.74	88.72	85.72	82.80	83.29	92.70	99.48	99.89	98.52
11	97.75	95.26	94.42	91.65	88.61	85.62	82.80	83.42	93.57	99.53	99.91	98.50
12	97.68	95.20	94.36	91.55	88.53	85.52	82.78	83.63	94.40	99.58	99.96	98.40
13	97.55	95.12	94.27	91.44	88.40	85.42	82.77	83.80	94.99	99.55	99.86	98.28
14	97.46	95.08	94.18	91.31	88.30	85.32	82.74	83.97	95.47	99.42	99.80	98.21
15	97.35	95.05	94.15	91.24	88.20	85.20	82.71	84.11	95.86	99.34	99.79	98.14
16	97.25	95.02	94.09	91.12	88.11	85.07	82.70	84.28	96.13	99.36	99.77	98.08
17	97.15	94.97	94.00	91.01	88.01	84.98	82.69	84.44	96.40	99.50	99.73	98.01
18	97.07	94.94	93.91	90.95	87.89	84.86	82.70	84.66	96.68	99.51	99.69	97.92
19	97.00	94.94	93.80	90.86	87.77	84.71	82.62	84.91	96.89	99.64	99.70	97.84
20	96.90	94.95	93.70	90.75	87.66	84.62	82.59	85.29	97.01	99.77	99.65	97.79
21	96.83	94.88	93.62	90.63	87.55	84.50	82.56	85.67	97.20	99.87	99.60	97.68
22	96.75	94.90	93.53	90.54	87.44	84.45	82.53	85.97	97.57	99.90	99.57	97.53
23	96.64	94.95	93.41	90.43	87.32	84.29	82.54	86.22	98.02	99.89	99.53	97.44
24	96.53	94.98	93.35	90.33	87.24	84.18	82.53	86.47	98.28	99.88	99.49	97.35
25	96.45	95.02	93.26	90.21	87.10	84.09	82.55	86.73	98.42	99.84	99.43	97.23
26	96.35	95.14	93.18	90.10	87.00	83.96	82.53	87.00	98.50	99.82	99.33	97.13
27	96.25	95.18	93.08	90.00	86.87	83.88	82.50	87.25	98.56	99.89	99.26	97.07
28	96.15	95.16	92.98	89.90	86.79	83.76	82.44	87.44	98.78	99.90	99.18	97.00
29	96.05	95.15	92.90	89.80	-	83.68	82.41	87.70	99.08	99.91	99.11	96.86
30	95.95	95.10	92.81	89.68	-------	83.58	82.41	88.02	99.23	99.93	99.05	96.72
31	95.87	-------	92.77	89.59	-------	83.49	-------	88.31	-------	99.93	99.01	-------

Note.--Add 1,000 ft to obtain elevation above mean sea level.

Monthly elevation and contents, water year October 1954 to September 1955

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	1,098.62	630,860	-
Oct. 31	1,095.79	538,300	-92,560
Nov. 30	1,095.08	515,160	-23,140
Dec. 31	1,092.71	437,950	-77,210
Calendar year 1954	-	-	+46,330
Jan. 31	1,089.54	335,340	-102,600
Feb. 28	1,086.80	247,350	-87,990
Mar. 31	1,083.46	140,780	-106,600
Apr. 30	1,082.41	107,500	-33,280
May 31	1,088.37	297,660	+190,200
June 30	1,099.16	648,570	+350,900
July 31	1,099.88	672,180	+23,610
Aug. 31	1,098.90	640,040	-32,140
Sept.30	1,096.64	566,010	-74,030
Water year 1954-55	-	-	-64,850

† Elevations at 12 p.m. based on mean of elevations at Lakeside and at head of lake at Stehekin.

Chelan River at Chelan, Wash.

Location.--Lat 47°50'05", long 120°00'40", in SE¼ sec. 13, T. 27 N., R. 22 E., near right bank in forebay upstream from control dam at outlet of Lake Chelan, a quarter of a mile south of Chelan (revised).

Drainage area.--951 sq mi.

Records available.--November 1903 to September 1955. Published as "below Chelan Lake" 1904-5. Adjusted records for October 1903 to September 1911, published in WSP 482, 492, and 870, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder and concrete dam. Datum of gage is at mean sea level, adjustment of 1912. Prior to Jan. 7, 1927, staff gage at site 800 ft downstream at same datum. Jan. 7 to Sept. 30, 1927, staff gage 500 to 1,000 ft below dam at same datum. Oct. 1, 1927, to Nov. 10, 1928, staff gage, and Nov. 11, 1928, to Mar. 19, 1939, water-stage recorder, at sites 2½ miles downstream at same datum.

Average discharge (revised).--51 years (1904-55), 2,018 cfs (1,461,000 acre-ft per year), adjusted for storage since October 1911.

Extremes.--Maximum daily discharge during year, 10,100 cfs July 14; minimum daily, 28 cfs May 5-8, 10.

1903-55: Maximum daily discharge, 16,000 cfs May 30, 1948; no flow part of day Jan. 30, 1917, when lake outlet was blocked with ice, and at other times owing to artificial regulation.

Remarks.--Unmeasured water that is diverted for irrigation above station is small percentage of total runoff. Chelan County Public Utility District No. 1 diverts water at Chelan to develop about 54,000 horsepower and to irrigate an unknown area near Chelan, which quantity is included in records of daily discharge. Prior to July 1, 1955, the diversion was by Washington Water Power Co. Diversions for irrigation of about 6,280 acres, depletion 11,000 acre-ft (1946 estimate). Flow regulated by Lake Chelan (see preceding page).

Cooperation.--Records of water used for power and irrigation furnished by the Washington Water Power Co. to June 30 and by Public Utility District No. 1 of Chelan County thereafter.

Revisions (water years).--WSP 482: 1904-13. WSP 612: 1924. WSP 1216: Drainage area. WSP 1246: 1951. WSP 1286: 1952. See also Records available.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,190	2,210	2,160	2,260	2,120	2,180	2,150	53	39	3,840	4,200	2,210
2	2,190	2,200	2,230	2,270	2,190	2,160	2,080	1,230	219	3,510	3,040	2,210
3	2,200	2,220	2,220	2,230	2,200	2,160	1,930	656	622	3,530	2,360	2,210
4	2,190	2,220	2,220	2,220	2,200	2,160	1,950	37	399	3,550	2,220	2,220
5	2,190	2,220	2,250	2,250	2,200	2,180	2,060	28	63	3,540	2,230	2,220
6	2,190	2,210	2,220	2,230	2,230	2,190	2,070	28	63	4,320	2,200	1,760
7	2,180	2,240	2,220	2,230	2,200	2,170	2,030	28	87	5,020	3,400	2,200
8	2,180	2,220	2,220	2,230	2,190	2,160	1,920	28	94	3,480	2,440	2,200
9	2,180	2,210	2,210	2,230	2,190	2,160	1,940	48	89	3,870	2,600	2,200
10	2,200	2,220	2,230	2,240	2,190	2,160	1,950	28	81	4,850	2,200	2,190
11	2,180	2,240	2,230	2,230	2,200	2,150	1,830	31	1,630	*5,210	2,240	2,200
12	2,190	2,220	2,250	2,240	2,200	2,150	1,760	31	4,770	5,750	2,500	2,110
13	2,190	2,210	2,230	2,210	2,230	2,170	1,840	131	4,700	9,340	2,200	2,180
14	2,190	2,230	2,230	2,220	2,200	2,160	1,420	31	3,490	10,100	2,210	2,180
15	2,190	2,200	2,220	2,210	2,230	2,160	1,440	31	2,760	9,740	2,190	2,190
16	2,190	2,210	2,240	2,210	2,110	2,170	1,350	86	2,520	7,840	2,190	2,180
17	2,200	2,220	2,240	2,210	2,190	2,160	871	31	2,270	7,000	2,190	1,840
18	2,200	2,220	2,250	2,210	2,210	2,160	1,460	34	2,170	4,420	2,200	1,810
19	2,190	2,210	2,270	2,210	2,200	2,150	1,600	34	2,700	2,340	2,190	1,860
20	2,190	2,240	2,250	2,210	2,210	2,170	1,660	34	4,200	2,200	2,190	1,900
21	2,190	2,250	2,230	2,220	2,200	2,120	1,660	34	4,630	2,740	2,210	1,930
22	2,130	2,230	2,230	2,220	2,190	2,140	1,210	34	4,860	4,380	2,190	2,180
23	2,210	2,150	2,230	2,230	2,180	2,140	1,120	34	4,930	5,250	2,190	2,130
24	2,140	2,230	2,240	2,220	2,180	2,150	402	34	4,960	5,880	2,190	2,140
25	2,070	2,250	2,260	2,230	2,170	2,150	1,430	34	5,200	4,530	2,190	2,040
26	2,210	2,210	2,270	2,220	2,180	2,160	1,360	34	5,220	2,540	2,190	1,940
27	2,220	2,220	2,240	2,230	2,200	2,120	1,350	34	4,060	2,530	2,190	2,080
28	2,220	2,110	2,230	2,230	2,180	2,120	1,310	34	2,370	2,540	2,220	2,050
29	2,210	2,140	2,240	2,230	-	2,140	1,190	34	2,310	2,540	2,200	2,190
30	2,210	2,220	2,210	2,230	-------	2,130	537	34	3,540	2,720	2,190	2,190
31	2,230	-------	2,220	2,230	-------	2,140	-------	34	-------	3,180	2,210	-------
Total	67,840	66,380	69,190	69,040	61,370	66,790	46,880	3,012	75,046	142,280	73,360	62,940
Mean	2,188	2,213	2,232	2,227	2,192	2,155	1,563	97.2	2,502	4,590	2,366	2,098
Ac-ft	134,600	131,700	137,200	136,900	121,700	132,500	92,990	5,970	148,900	282,200	145,500	124,800
(†)	-92,560	-23,140	-77,210	-102,600	-87,990	-106,600	-33,280	+190,200	+350,900	+23,610	-32,140	-74,030

Adjusted for change in contents in Lake Chelan

Mean	684	1,825	976	558	607	421	1,003	3,191	8,399	4,973	1,844	853
Cfsm	0.719	1.92	1.03	0.587	0.638	0.443	1.05	3.36	8.83	5.23	1.94	.897
In.	0.83	2.14	1.18	0.68	0.66	0.51	1.18	3.87	9.85	6.03	2.24	1.00
Ac-ft	42,040	108,600	59,990	34,300	33,710	25,900	59,710	196,200	499,800	305,800	113,400	50,770

Observed

Calendar year 1954: Max 10,100 Min 51 Mean 2,593 Ac-ft 1,877,000
Water year 1954-55: Max 10,100 Min 28 Mean 2,203 Ac-ft 1,595,000

Adjusted

Calendar year 1954: Mean 2,658 Cfsm 2.79 In. 37.92 Ac-ft 1,924,000
Water year 1954-55: Mean 2,113 Cfsm 2.22 In. 30.17 Ac-ft 1,530,000

* Discharge measurement made on this day.
† Change in contents in Lake Chelan, in acre-feet, furnished by Washington Water Power Co.
Note.--Discharges are combined flows of power conduit, irrigation diversion below dam, and waste water.

Entiat River at Entiat, Wash.

Location.--Lat 47°39'40", long 120°13'30", in SE¼ sec. 17, T. 25 N., R. 21 E., on right bank at Entiat and a quarter of a mile upstream from mouth.

Drainage area.--419 sq mi.

Records available.--October 1910 to September 1925, June 1951 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 690 ft (from topographic map). October 1910 to Sept. 30, 1925, staff gage at site three-quarters of a mile upstream at different datum.

Average discharge.--19 years, 496 cfs (359,100 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 4,800 cfs June 13 (gage height, 5.89 ft); minimum daily, 111 cfs Sept. 30.

1910-25, 1951-55: Maximum discharge, 5,380 cfs June 18, 1916 (gage height, 5.07 ft, from graph based on gage readings); minimum observed, 32 cfs Jan. 30, 1923 (result of discharge measurement).

Maximum discharge known, 10,800 cfs May 29, 1948, on basis of conveyance-slope determination of peak flow.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Many diversions above station for irrigation of an estimated 2,560 acres in 1946 with a resulting estimated depletion of 4,480 acre-ft of flow. Occasional regulation by millpond 10 miles upstream.

Revisions (water years).--WSP 1286: 1916(M). WSP 1316: 1914-15(M), 1918(M).

Rating tables, water year 1954-55, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 5-9)

Oct. 1 to Mar. 6		Mar. 7 to Sept. 30			
1.6	127	1.6	107	3.0	905
2.0	279	2.0	269	4.0	2,030
2.5	519	2.5	530	6.0	4,980

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	209	182	369	237	150	137	140	212	1,260	1,540	595	191
2	201	182	301	217	137	147	152	221	1,300	1,340	582	183
3	193	178	279	186	116	140	144	243	1,400	1,260	530	187
4	190	178	341	182	137	a120	144	260	1,640	1,200	489	191
5	190	182	341	190	182	a115	140	283	2,100	1,140	460	183
6	182	250	332	*164	124	a120	164	325	2,420	1,150	444	183
7	178	241	310	182	175	133	200	349	2,640	1,160	438	183
8	175	237	297	190	262	140	238	400	*2,740	1,170	444	191
9	171	250	288	213	*209	133	301	416	3,220	1,190	427	187
10	171	254	279	209	167	126	344	432	*3,740	1,240	400	179
11	237	241	258	164	150	140	320	477	4,140	*1,350	380	171
12	241	237	258	182	190	129	315	543	*4,610	1,440	364	164
13	209	229	258	201	201	122	287	543	4,450	1,580	349	156
14	193	250	258	178	186	122	265	518	3,610	1,770	330	191
15	190	258	254	182	175	122	251	512	3,100	1,880	310	183
16	190	271	217	175	164	122	243	512	2,670	1,780	292	191
17	190	262	182	167	157	122	234	543	2,360	1,910	283	183
18	193	262	182	178	122	122	229	616	2,160	1,460	274	167
19	190	341	160	171	130	118	221	772	2,020	1,190	269	156
20	*209	337	197	157	178	*118	221	1,190	1,980	1,040	265	144
21	217	292	258	119	160	126	225	1,290	2,070	923	265	137
22	213	301	266	b115	153	152	221	1,270	2,760	880	*256	133
23	201	374	250	b120	147	144	221	1,160	3,120	880	247	129
24	190	369	237	175	150	133	221	1,050	2,710	888	238	122
25	190	393	213	167	144	126	221	*1,060	2,300	846	234	118
26	186	457	171	160	137	126	221	1,040	2,040	764	217	114
27	186	452	153	157	140	122	*212	1,000	1,860	718	225	118
28	182	412	237	153	137	118	208	1,010	1,930	644	200	118
29	182	393	245	153	-	129	208	1,140	1,890	582	200	*114
30	186	*364	245	153	------	129	204	1,340	1,770	569	191	111
31	182	------	245	153	------	126	------	1,320	------	576	191	------
Total	6,017	8,629	7,881	5,350	4,480	3,979	6,715	22,047	76,010	36,060	10,389	4,778
Mean	194	288	254	173	160	128	224	711	2,534	1,163	335	159
Ac-ft	11,930	17,120	15,630	10,610	8,890	7,890	13,320	43,730	150,800	71,520	20,610	9,480

Calendar year 1954: Max 2,940 Min 70 Mean 612 Ac-ft 443,000
Water year 1954-55: Max 4,610 Min 111 Mean 527 Ac-ft 381,500

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for nearby streams.
b Stage-discharge relation affected by ice.

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White River near Plain, Wash.
(Formerly published as White River near Chiwaukum)

Location.--Lat 47°52'30", long 120°52'10", in NE¼ sec. 5, T. 27 N., R. 16 E., on left bank at downstream side of Forest Service bridge, 1¼ miles downstream from Sears Creek, 6 miles upstream from Wenatchee Lake, and 12½ miles northwest of Plain.
Drainage area.--150 sq mi.
Records available.--May 1911 to September 1914 (fragmentary), August 1954 to September 1955. Monthly discharge only for some periods, published in WSP 1316. Published as "near Chiwaukum" May 1911 to September 1914.
Gage.--Water-stage recorder. Altitude of gage is 1,880 ft (from river-profile map). May 1911 to September 1914, staff gage at same site at different datum.
Extremes.--Maximum discharge for period August 1954 to September 1955, 5,360 cfs June 12 (gage height, 13.15 ft); minimum, 135 cfs Mar. 20 (gage height, 2.32 ft).
1911-14, 1954-55: Maximum discharge, that of June 12, 1955; minimum observed, 114 cfs Nov. 1-3, 1911 (gage height, -0.34 ft, datum then in use).
Remarks.--Records excellent except those for periods of ice effect, which are fair. No regulation or diversion above station.
Revisions (water years).--WSP 1316: 1914 (monthly discharge only).

Rating tables, Aug. 31, 1954, to Sept. 30, 1955, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Aug. 31 to June 12						June 13 to Sept. 30			
2.3	132	4.5	750	9.0	2,800	2.6	163	3.5	405
2.6	185	5.0	950	11.0	3,860	3.0	260	4.0	570
3.0	275	6.0	1,380	13.0	5,220				
3.5	410	7.0	1,830			Note.--Same as preceding table above 4.0 ft.			
4.0	570	8.0	2,300						

Discharge, in cubic feet per second, 1954

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	-	942	9	-	647	17	-	687	25	-	542
2	-	854	10	-	689	18	-	710	26	-	488
3	-	*853	11	-	758	19	-	616	27	-	455
4	-	703	12	-	619	20	-	594	28	-	383
5	-	616	13	-	546	21	-	563	29	-	356
6	-	570	14	-	521	22	-	535	30	-	325
7	-	577	15	-	546	23	-	524	31	*1,090	-
8	-	598	16	-	654	24	-	556			
Total										-	18,027
Mean										-	601
Cubic feet per second per square mile										-	4.01
Runoff in inches										-	4.47
Runoff in acre-feet										-	35,760

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	302	305	*714	295	185	b180	172	322	1,440	1,740	1,420	476
2	288	300	640	278	181	183	166	371	1,450	1,500	1,470	500
3	278	292	602	268	176	176	159	404	1,590	1,510	1,200	556
4	262	288	563	258	176	b175	161	443	2,180	1,530	1,140	542
5	245	1,040	528	255	172	b175	174	566	2,660	1,570	1,140	535
6	234	944	500	248	172	176	197	654	2,780	*1,800	1,200	532
7	232	640	464	*241	225	172	223	730	*3,040	1,880	1,280	528
8	305	566	437	236	285	174	328	878	3,360	1,930	1,190	504
9	262	594	422	234	243	174	488	798	*4,040	1,920	1,060	479
10	272	518	392	229	227	176	504	818	*4,510	2,310	1,010	435
11	538	476	374	225	*229	174	449	1,140	4,840	2,680	1,010	387
12	*410	449	365	223	225	172	425	1,380	*5,120	3,080	918	342
13	332	431	356	225	227	170	389	1,150	4,720	3,410	786	351
14	310	440	345	220	234	166	365	1,010	3,900	4,040	722	356
15	330	449	322	218	227	161	345	950	3,120	*4,150	700	342
16	350	616	315	216	220	158	332	974	2,540	4,230	706	321
17	395	584	300	214	214	152	320	1,010	2,320	3,340	714	262
18	368	1,020	b290	212	b200	*151	315	1,300	2,220	2,410	*742	235
19	404	1,500	b280	205	b200	146	315	1,890	2,180	2,020	794	218
20	440	1,130	292	201	b200	144	315	2,200	2,450	1,990	790	230
21	470	1,070	302	197	199	146	315	1,980	3,340	1,970	672	222
22	*422	1,780	428	195	195	163	320	1,710	4,420	2,220	605	198
23	380	1,330	365	b190	193	154	325	1,530	4,260	2,430	566	186
24	348	1,060	340	b190	195	149	322	1,500	3,100	2,360	546	177
25	338	1,530	320	b190	191	147	*308	1,600	2,580	1,890	496	170
26	325	1,380	308	191	189	147	298	*1,490	2,330	1,570	447	168
27	320	1,200	292	189	181	147	285	1,380	2,430	1,470	447	198
28	325	1,030	b290	189	b180	149	282	1,380	2,680	1,220	467	186
29	312	886	b290	189	-	151	282	1,780	2,500	1,280	476	175
30	308	794	b290	187	------	151	288	1,980	2,060	1,360	514	163
31	305	-----	b300	187	------	156	-----	1,600	------	1,930	521	------
Total	10,410	24,642	12,026	6,795	5,741	5,015	9,167	36,918	90,160	68,740	25,749	9,974
Mean	336	821	388	219	205	162	306	1,191	3,005	2,217	831	332
Cfsm	2.24	5.47	2.59	1.46	1.37	1.08	2.04	7.94	20.0	14.8	5.54	2.21
In.	2.58	6.11	2.98	1.68	1.42	1.24	2.27	9.15	22.35	17.04	6.38	2.47
Ac-ft	20,650	48,880	23,850	13,480	11,390	9,950	18,180	73,230	178,800	136,300	51,070	19,780

Calendar year 1954: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1954-55: Max 5,120 Min 144 Mean 837 Cfsm 5.58 In. 75.67 Ac-ft 605,600

Peak discharge (base, 2,000 cfs).--May 20 (2 a.m.) 2,360 cfs (8.13 ft); May 30 (2 a.m.) 2,220 cfs (7.83 ft); June 12 (5 a.m.) 5,360 cfs (13.15 ft); June 23 (3 a.m.) 4,840 cfs (12.53 ft); July 15 (2 a.m.) 4,680 cfs (12.32 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Wenatchee Lake near Plain, Wash.

Location.--Lat 47°49'50", long 120°46'30", in sec. 19, T. 27 N., R. 17 E., on north (left) shore, 2¾ miles upstream from outlet, 7½ miles northwest of Plain, and 33 miles upstream from Leavenworth.

Drainage area.--276 sq mi.

Records available.--January 1932 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,860.00 ft above mean sea level, subject to correction to datum of 1929; gage readings have been reduced to elevations above mean sea level. Prior to Jan. 5, 1935, staff gage at same site and datum.

Extremes.--Maximum elevation during year, 1,877.28 ft June 13; minimum, 1,869.72 ft Sept. 30.
1932-55: Maximum elevation recorded, 1,879.65 ft May 29, 1948; minimum, 1,869.27 ft Dec. 1, 1936.

Remarks.--Records excellent. No regulation or diversion.

Revisions.--WSP 1216: Drainage area. The mean daily elevation for July 24, 1944, has been revised to 1,870.25 ft, superseding figure published in WSP 1012.

Mean elevation, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70.14	70.17	71.27	70.25	69.91	69.96	69.84	70.23	72.35	72.87	72.07	70.28
2	70.08	70.16	71.11	70.20	69.90	69.96	69.87	70.29	72.15	72.51	71.98	70.27
3	70.01	70.12	70.98	70.15	69.88	69.95	69.87	70.34	72.10	72.26	71.71	70.29
4	69.98	70.11	70.88	70.12	69.87	69.89	69.86	70.41	72.41	72.21	71.51	70.30
5	69.96	70.28	70.80	70.10	69.88	69.83	69.87	70.54	73.05	72.18	71.39	70.31
6	69.91	70.91	70.77	70.07	69.92	69.85	69.89	70.68	73.52	72.27	71.35	70.32
7	69.89	70.94	70.70	70.05	70.12	69.84	69.98	70.83	73.90	72.35	71.36	70.32
8	69.91	70.80	70.62	70.03	70.42	69.85	70.12	71.01	74.35	72.44	71.35	70.29
9	69.96	70.73	70.57	70.02	70.54	69.85	70.34	71.11	75.00	72.47	71.26	70.27
10	69.97	70.69	70.50	70.01	70.43	69.90	70.62	71.11	75.83	72.64	71.17	70.26
11	70.25	70.62	70.43	70.00	70.34	69.93	70.71	71.25	76.54	72.94	71.12	70.20
12	70.50	70.56	70.39	69.99	70.29	69.92	70.71	71.76	77.14	73.27	71.04	70.11
13	70.46	70.50	70.37	70.00	70.23	69.90	70.65	71.90	77.16	73.67	70.94	70.08
14	70.35	70.47	70.34	69.99	70.21	69.86	70.58	71.74	76.32	74.13	70.84	70.13
15	70.30	70.45	70.34	69.98	70.18	69.84	70.50	71.59	75.22	74.51	70.77	70.13
16	70.28	70.58	70.29	69.97	70.15	69.82	70.44	71.50	74.22	74.63	70.72	70.12
17	70.28	70.80	70.24	69.96	70.12	69.79	70.40	71.48	73.58	74.46	70.70	70.08
18	70.30	71.03	70.20	69.95	70.07	69.78	70.38	71.59	73.23	73.73	70.70	70.01
19	70.31	71.70	70.17	69.93	70.03	69.77	70.33	72.01	73.07	73.00	70.70	69.95
20	70.44	72.07	70.16	69.91	70.03	69.76	70.33	72.70	73.06	72.65	70.70	69.90
21	70.60	71.84	70.15	69.89	70.02	69.77	70.33	72.92	73.56	72.51	70.66	69.87
22	70.64	71.82	70.19	69.89	69.99	69.88	70.33	72.79	74.55	72.46	70.60	69.84
23	70.58	72.08	70.27	69.92	69.97	69.90	70.35	72.51	75.24	72.63	70.53	69.83
24	70.48	71.85	70.30	69.95	70.01	69.89	70.35	72.30	74.92	72.69	70.46	69.79
25	70.41	71.78	70.26	70.00	70.00	69.88	70.32	72.30	74.08	72.51	70.40	69.77
26	70.34	72.19	70.21	69.96	69.97	69.82	70.31	72.29	73.53	72.17	70.34	69.74
27	70.30	72.38	70.17	69.95	69.93	69.81	70.28	72.19	73.31	71.99	70.30	69.73
28	70.27	72.10	70.16	69.92	69.96	69.79	70.24	72.07	73.34	71.78	70.28	69.74
29	70.23	71.76	70.16	69.91	-	69.81	70.22	72.16	73.39	71.61	70.26	69.73
30	70.20	71.49	70.18	69.91	-------	69.81	70.21	72.62	73.18	71.66	70.28	69.72
31	70.19	-------	70.24	69.91	-------	69.81	-------	72.63	-------	71.83	70.29	-------

Note.--Add 1,800 ft to obtain elevation above mean sea level.

Wenatchee River below Wenatchee Lake, Wash.

Location.--Lat 47°49'50", long 120°46'30", in sec. 19, T. 27 N., R. 17 E., on north (left) shore of Wenatchee Lake, 2¾ miles upstream from outlet, 7½ miles northwest of Plain, and 33 miles upstream from Leavenworth. Discharge measurements made 0.3 mile above highway bridge half a mile downstream from lake outlet.

Drainage area.--276 sq mi.

Records available.--January 1932 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,860.00 ft above mean sea level, datum of 1912; gage readings have been reduced to elevations above mean sea level. Prior to Jan. 5, 1935, staff gage at same site and datum.

Average discharge.--23 years, 1,301 cfs (941,900 acre-ft per year).

Extremes.--Maximum discharge during year, 9,620 cfs June 13 (elevation of lake surface, 1,877.28 ft); minimum, 242 cfs Sept. 30 (elevation of lake surface, 1,869.72 ft).
1932-55: Maximum discharge recorded, 13,700 cfs May 29, 1948 (elevation of lake surface, 1,879.65 ft); minimum, 96 cfs Nov. 30, Dec. 1-3, 1952; minimum elevation of lake surface, 1,869.27 ft Dec. 1, 1936.

Remarks.--Records good. Natural regulation in lake. No diversion.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1954-55 (elevation, in feet, and discharge, in cubic feet per second)

1,869.7	230	1,873.0	3,620
1,870.0	425	1,875.0	6,300
1,871.0	1,280	1,877.2	9,500
1,872.0	2,420		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	532	556	*1,560	620	362	397	316	604	2,840	3,460	2,500	644
2	485	548	1,390	580	355	397	336	652	2,600	3,030	2,400	636
3	432	516	1,260	540	342	390	336	692	2,540	2,730	2,070	652
4	411	508	1,160	516	336	348	329	748	2,910	2,670	1,830	660
5	397	644	1,090	500	342	310	336	859	3,680	2,640	1,690	668
6	362	1,190	1,060	478	369	322	348	982	4,300	2,740	1,640	676
7	348	1,220	1,000	*462	516	316	411	1,120	4,790	2,840	1,660	676
8	362	1,090	928	448	757	322	516	1,290	*5,390	*2,950	1,640	652
9	397	1,030	884	440	859	322	692	1,390	6,300	2,980	1,550	636
10	404	991	825	432	786	355	928	1,390	*7,460	3,190	1,450	628
11	620	928	766	425	*692	376	1,010	1,540	8,510	3,550	1,400	580
12	825	876	732	418	652	369	1,010	2,130	9,410	3,970	1,320	508
13	*791	825	716	425	604	355	955	2,300	*9,440	4,490	1,220	485
14	700	800	692	418	588	329	893	2,110	8,180	5,090	1,130	524
15	660	782	692	411	564	316	825	1,930	6,610	5,610	1,060	524
16	644	893	652	404	540	303	774	1,820	5,210	5,780	1,020	516
17	644	1,090	612	397	516	284	740	1,800	4,370	5,540	1,000	485
18	660	1,310	580	*390	478	278	724	1,930	3,920	4,570	1,000	432
19	668	2,060	556	376	448	272	684	2,430	3,710	3,620	1,000	390
20	774	2,500	548	362	448	266	684	3,260	3,700	3,200	1,000	355
21	910	2,230	540	348	440	272	684	3,520	4,350	3,030	964	336
22	946	2,200	572	348	418	342	684	3,370	5,670	2,970	*910	316
23	893	2,520	636	369	404	355	700	3,030	6,640	3,180	850	310
24	808	2,240	660	390	432	348	700	2,780	6,190	3,250	791	284
25	748	2,160	628	425	425	342	*676	2,780	5,020	3,030	740	272
26	692	2,650	588	397	404	303	668	*2,770	4,310	2,620	692	254
27	660	2,880	556	390	376	296	644	2,650	4,020	2,410	660	248
28	636	2,540	548	369	397	284	612	2,500	4,060	2,160	644	254
29	604	2,130	548	362	-	296	596	2,610	4,130	1,950	628	248
30	580	1,810	564	362	------	296	588	3,160	3,850	2,010	644	242
31	572	-----	612	362	-----	296	-----	3,180	------	2,220	652	------
Total	19,165	43,717	24,155	13,164	13,830	10,057	19,399	63,327	154,110	103,480	37,755	14,091
Mean	618	1,457	779	425	494	324	647	2,043	5,137	3,338	1,218	470
Cfsm	2.24	5.28	2.82	1.54	1.79	1.17	2.34	7.40	18.6	12.1	4.41	1.70
In.	2.58	5.89	3.25	1.77	1.86	1.36	2.61	8.53	20.77	13.94	5.09	1.90
Ac-ft	38,010	86,710	47,910	26,110	27,430	19,950	38,480	125,600	305,700	205,200	74,890	27,950

Calendar year 1954: Max 6,920 Min 348 Mean 1,772 Cfsm 6.42 In. 87.12 Ac-ft 1,283,000
Water year 1954-55: Max 9,440 Min 242 Mean 1,414 Cfsm 5.12 In. 69.55 Ac-ft 1,024,000

* Discharge measurement made on this day.

Chiwawa River near Plain, Wash.

Location.--Lat 47°50'30", long 120°39'40", in SE¼ sec. 13, T. 27 N., R. 17 E., on right bank half a mile upstream from Goose Creek, 6 miles north of Plain, 7 miles upstream from mouth, and 11 miles northeast of Chiwaukum.
Drainage area.--170 sq mi.
Records available.--May 1911 to October 1914 (published as Chiwawa Creek near Leavenworth), August 1936 to November 1949, August 1954 to September 1955.
Gage.--Water-stage recorder. Altitude of gage is 2,100 ft (from river-profile map). May 29, 1911, to Oct. 31, 1914, staff gage at site 3 miles downstream at different datum.
Average discharge.--17 years (1911-14, 1936-49, 1954-55), 483 cfs (349,700 acre-ft per year).
Extremes.--Maximum discharge during period August 1954 to September 1955, 4,730 cfs June 13 (gage height, 8.26 ft); minimum, 121 cfs Feb. 28 (gage height, 3.79 ft).
1911-14, 1936-49, 1954-55: Maximum discharge, 5,880 cfs May 29, 1948 (gage height, 9.17 ft); minimum recorded, 56 cfs Oct. 24-27, 1942 (gage height, 3.73 ft), but may have been less during some periods of ice effect.
Remarks.--Records good except those for periods of ice effect, which are poor. No regulation or diversion above station.
Revisions.--WSP 1316: Drainage area.

Discharge, in cubic feet per second, 1954

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	-	512	9	-	360	17	-	420	25	564	321
2	-	*480	10	-	365	18	-	390	26	540	307
3	-	480	11	-	370	19	-	365	27	490	298
4	-	436	12	-	360	20	-	350	28	458	280
5	-	395	13	-	340	21	-	345	29	458	271
6	-	375	14	-	325	22	-	325	30	496	259
7	-	365	15	-	321	23	-	321	31	546	-
8	-	360	16	-	370	24	-	316			

Total	-	10,782
Mean	-	359
Cubic feet per second per square mile	-	2.11
Runoff in inches	-	2.36
Runoff in acre-feet	-	21,390

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	246	215	441	231	158	b130	158	263	1,340	1,570	927	265
2	238	215	395	212	155	b130	161	302	1,350	1,360	836	265
3	227	215	380	204	155	b130	155	335	1,440	1,280	719	285
4	223	212	370	201	167	b140	152	360	1,760	1,210	656	280
5	215	284	360	194	152	164	158	430	2,230	1,180	649	275
6	212	436	355	194	149	190	167	490	2,440	1,250	642	270
7	204	360	335	b190	190	201	194	546	*2,630	*1,340	663	265
8	204	321	321	*b185	223	201	238	630	2,720	1,440	656	260
9	204	330	312	b180	187	184	293	636	2,940	1,380	614	255
10	204	316	302	180	b180	152	330	654	*3,420	1,490	572	236
11	307	302	289	173	b180	149	307	758	3,950	1,640	551	218
12	312	293	284	177	b170	149	293	910	4,470	1,790	518	205
13	284	280	276	180	b170	146	276	878	*4,550	2,010	476	197
14	*242	307	276	173	*167	143	263	807	3,930	2,290	434	246
15	238	316	271	173	167	140	250	751	3,270	*2,560	422	205
16	238	395	b260	170	167	140	242	751	2,790	2,470	410	201
17	246	400	b250	167	161	137	234	800	2,470	2,460	410	189
18	250	452	b250	167	155	137	231	958	2,290	1,830	*416	173
19	246	594	b240	164	b155	137	234	1,220	2,170	1,510	422	158
20	271	552	b240	164	b155	135	242	1,600	2,110	1,360	440	151
21	293	480	b230	161	155	137	246	1,590	2,460	1,270	404	151
22	267	485	b230	164	152	155	*246	1,470	3,170	1,280	372	143
23	250	654	231	164	152	146	250	1,340	3,580	1,400	350	133
24	234	570	227	167	155	143	250	1,270	3,080	1,390	338	129
25	231	642	223	161	152	137	242	1,300	2,530	1,250	*316	123
26	227	744	b220	161	152	137	238	1,280	2,150	1,050	300	126
27	223	667	b220	158	146	137	231	*1,230	1,920	945	285	143
28	219	576	b220	158	132	137	231	1,220	2,080	812	285	140
29	219	512	246	158	-	143	231	1,370	2,030	748	275	129
30	215	*474	234	158	------	143	234	1,590	1,830	772	275	123
31	215	-----	246	158	------	143	-----	1,450	------	884	285	------
Total	7,404	12,599	8,734	5,447	4,559	4,593	6,977	29,189	79,100	45,221	14,918	5,939
Mean	239	420	282	176	163	148	233	942	2,637	1,459	481	198
Cfsm	1.41	2.47	1.66	1.04	0.959	0.871	1.37	5.54	15.5	8.58	2.83	1.16
In.	1.62	2.76	1.91	1.19	1.00	1.00	1.53	6.39	17.30	9.89	3.26	1.30
Ac-ft	14,690	24,990	17,320	10,800	9,040	9,110	13,840	57,900	156,900	89,690	29,590	11,780

Calendar year 1954: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1954-55: Max 4,550 Min 123 Mean 616 Cfsm 3.62 In. 49.15 Ac-ft 445,600

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Wenatchee River at Plain, Wash.

Location.--Lat 47°45'50", long 120°39'30", in lot 8, sec. 12, T. 26 N., R. 17 E., on left bank at Plain a quarter of a mile downstream from Beaver Creek, 7½ miles downstream from Nason Creek, and 12 miles north of Leavenworth.

Drainage area.--591 sq mi.

Records available.--November 1910 to September 1955 in reports of Geological Survey. Published as "near Leavenworth" 1910-31. August 1904 to September 1953 (monthly discharge only) in State Water-Supply Bulletin 6.

Gage.--Water-stage recorder. Altitude of gage is 1,805 ft (from river-profile map). Prior to Jan. 8, 1932, staff gage at site a quarter of a mile downstream at different datum.

Average discharge.--51 years (1904-55), 2,199 cfs (1,592,000 acre-ft per year).

Extremes.--Maximum discharge during year, 17,000 cfs June 13 (gage height, 10.51 ft); minimum, 483 cfs Sept. 30 (gage height, 2.02 ft).
1910-29, 1931-55: Maximum discharge, 22,700 cfs May 29, 1948 (gage height, 12.43 ft, from high-water mark in well); minimum, 168 cfs Nov. 30, 1952 (gage height, 1.31 ft).

Remarks.--Records excellent except those for period of no gage-height record, which are fair. Wenatchee Park Land & Irrigation Co. diverts a maximum of about 12 cfs from Chiwawa River for irrigation of 1,400 acres near Plain. Natural regulation by Wenatchee Lake.

Revisions (water years).--WSP 482: 1911-14. WSP 1316: 1914(M), 1916(M), 1919(M), 1921-23(M), 1927(M).

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 3				May 4 to Sept. 30			
2.0	495	4.0	2,280	2.0	470	5.0	3,840
2.5	810	5.0	3,630	2.5	810	6.0	5,520
3.0	1,230	6.0	5,310	3.0	1,230	8.0	9,900
3.5	1,720			3.5	1,740	10.0	15,500
				4.0	2,350	10.5	17,000

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	882	930	2,440	1,090	635	677	664	1,240	5,340	6,220	4,020	1,030
2	818	914	2,180	1,010	630	691	691	1,360	5,030	5,390	3,860	1,020
3	782	890	*2,010	962	625	684	677	1,470	5,140	4,980	3,340	1,030
4	754	874	1,910	922	620	628	677	1,560	5,900	4,870	2,980	1,040
5	726	1,010	1,810	898	630	616	684	1,800	7,430	4,770	2,770	1,040
6	691	1,910	1,750	858	660	640	747	2,040	8,370	*4,980	2,670	1,040
7	670	1,830	1,650	834	1,000	628	850	2,320	9,210	5,110	2,700	1,030
8	677	1,640	1,520	818	1,500	634	1,030	2,740	10,100	5,300	2,700	1,030
9	705	1,610	1,470	818	1,400	634	1,390	2,740	*11,500	5,320	2,520	986
10	705	1,520	1,400	810	1,250	658	1,750	2,780	13,400	5,680	2,340	954
11	1,140	1,430	1,310	782	1,150	684	1,760	3,250	15,000	6,200	2,230	914
12	1,400	1,360	1,260	*768	1,050	684	1,720	4,210	16,400	6,860	2,130	842
13	*1,270	1,300	1,250	782	1,000	658	1,620	4,240	*16,800	7,760	2,080	803
14	1,120	1,310	1,200	761	938	634	1,500	3,890	14,600	8,750	1,810	890
15	1,040	1,310	1,210	740	*914	616	1,410	3,570	11,900	9,570	1,700	866
16	1,030	1,570	1,120	740	890	598	1,340	3,460	9,620	9,670	1,630	850
17	1,030	1,860	1,030	730	866	568	1,280	3,480	8,200	9,380	1,590	818
18	1,070	2,200	970	720	789	574	1,250	3,860	7,430	7,560	1,580	740
19	1,070	3,180	930	705	782	562	1,230	4,840	7,030	6,080	*1,600	684
20	1,270	3,620	978	690	775	*544	1,250	6,340	7,010	5,380	1,620	649
21	1,500	3,190	962	685	747	562	1,260	6,620	8,130	5,030	1,550	621
22	1,500	3,200	1,030	660	733	670	1,280	6,240	10,500	4,960	1,450	607
23	1,400	3,690	1,100	665	712	677	1,330	5,650	12,000	5,270	1,380	587
24	1,270	3,270	1,110	700	761	652	1,320	5,180	11,100	5,410	1,300	554
25	1,180	3,290	1,070	725	740	628	1,270	5,270	9,040	5,020	1,220	535
26	1,120	4,120	1,000	700	705	604	*1,250	5,180	7,760	4,320	1,140	516
27	1,050	4,290	922	680	684	604	1,200	*4,980	7,280	4,000	1,080	522
28	1,030	3,700	954	660	670	598	1,160	4,800	7,540	3,580	1,050	528
29	994	3,180	954	645	-	616	1,140	5,140	7,560	3,280	1,040	509
30	970	2,750	994	635	------	616	1,140	6,140	6,950	3,370	1,040	490
31	954	-----	1,090	630	-----	622	-----	5,920	------	3,650	1,060	------
Total	31,818	66,948	40,584	23,823	23,856	19,461	35,870	122,310	283,270	177,720	61,180	23,725
Mean	1,026	2,232	1,309	768	852	628	1,196	3,945	9,442	5,733	1,974	791
Cfsm	1.74	3.78	2.21	1.30	1.44	1.06	2.02	6.68	16.0	9.70	3.34	1.34
In.	2.00	4.21	2.55	1.50	1.50	1.22	2.26	7.70	17.83	11.18	3.85	1.49
Ac-ft	63,110	132,800	80,500	47,250	47,320	38,600	71,150	242,600	561,900	352,500	121,300	47,060

Calendar year 1954: Max 12,200 Min 658 Mean 2,991 Cfsm 5.06 In. 68.70 Ac-ft 2,165,000
Water year 1954-55: Max 16,800 Min 490 Mean 2,495 Cfsm 4.22 In. 57.29 Ac-ft 1,806,000

* Discharge measurement made on this day.
Note.--No gage-height record Jan. 17 to Feb. 13; discharge estimated on basis of recorded range in stage, weather records, and records for nearby stations.

Icicle Creek above Snow Creek, near Leavenworth, Wash.

Location.--Lat 47°32'25", long 120°42'55", in SE¼ sec. 28, T. 24 N., R. 17 E., on right bank three-eighths of a mile upstream from Snow Creek and 4½ miles southwest of Leavenworth.

Drainage area.--193 sq mi.

Records available.--September 1936 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,450 ft (from river-profile map).

Average discharge.--19 years, 605 cfs (438,000 acre-ft per year).

Extremes.--Maximum discharge during year, 6,010 cfs June 12 (gage height, 11.08 ft); minimum, 115 cfs Mar. 20 (gage height, 2.39 ft).
1936-55: Maximum discharge, 11,600 cfs May 28, 1948 (gage height, 13.93 ft), from rating curve extended above 7,000 cfs on basis of slope-area determination of peak flow; minimum daily, 45 cfs Nov. 30, 1952.

Remarks.--Records good except those for periods of ice effect, which are poor. No diversion. Some regulation in headwater lakes for irrigation.

Revisions (water years).--WSP 1246: 1936-41. WSP 1286: 1948.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

2.5	128	7.0	1,760
3.0	198	8.0	2,550
4.0	406	9.0	3,500
5.0	710	10.0	4,640
6.0	1,150	11.0	5,910

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	208	215	528	297	157	b150	168	262	1,310	1,650	914	220
2	195	206	*440	272	154	b150	168	274	1,320	1,410	818	219
3	192	198	468	254	146	b150	160	282	1,580	1,430	714	222
4	192	192	440	226	153	b145	159	306	2,270	1,440	664	219
5	180	250	420	248	152	b140	164	370	2,790	1,440	636	215
6	173	361	408	235	157	b140	182	428	2,960	1,520	630	212
7	168	297	384	224	299	159	220	510	3,260	1,480	636	213
8	166	285	361	220	448	160	270	616	*3,690	1,510	622	213
9	167	357	354	220	354	156	399	574	4,400	1,540	564	206
10	164	323	336	*215	270	153	442	630	*4,980	1,710	522	196
11	382	304	314	206	258	153	401	886	*5,290	1,830	507	187
12	354	293	306	203	254	153	387	1,070	5,290	*2,090	475	176
13	278	297	299	201	239	152	364	918	*4,300	2,510	440	179
14	250	306	291	196	224	148	345	810	3,410	2,860	411	229
15	*260	327	289	193	*215	143	327	754	2,860	2,860	392	203
16	272	440	270	185	206	140	314	774	2,370	2,850	377	200
17	289	445	226	178	198	138	304	798	2,230	2,250	366	200
18	289	703	226	188	160	*141	293	1,020	2,150	1,680	359	179
19	297	1,020	224	174	190	140	285	1,780	2,170	1,420	359	166
20	348	810	272	179	192	135	282	2,300	2,430	1,330	361	157
21	448	682	272	170	182	145	*280	1,910	3,250	1,270	348	157
22	404	870	327	170	174	167	280	1,610	3,960	1,330	321	152
23	350	894	318	196	170	160	276	1,410	3,520	1,380	301	145
24	314	762	304	195	170	156	272	1,330	2,780	1,350	287	140
25	291	866	289	182	167	153	266	1,390	2,470	1,160	274	134
26	270	942	272	174	160	148	264	1,310	2,370	985	*258	128
27	258	866	242	168	154	149	256	1,220	2,380	980	246	129
28	250	754	268	b160	b150	145	250	1,220	2,600	886	241	132
29	239	647	272	b160	-	149	246	1,520	2,350	854	233	*130
30	228	584	276	160	------	148	244	1,840	1,980	862	229	128
31	222	-----	329	160	-----	149	-----	*1,480	------	894	228	------
Total	8,098	15,496	10,025	6,209	5,753	4,615	8,268	31,602	88,720	48,761	13,733	5,386
Mean	261	517	323	200	205	149	276	1,019	2,957	1,573	443	180
Cfsm	1.35	2.68	1.67	1.04	1.06	0.772	1.43	5.28	15.3	8.15	2.30	0.933
In.	1.56	2.99	1.93	1.20	1.11	0.89	1.59	6.09	17.10	9.40	2.65	1.04
Ac-ft	16,060	30,740	19,880	12,320	11,410	9,150	16,400	62,680	176,000	96,720	27,240	10,680

Calendar year 1954: Max 4,340 Min 150 Mean 834 Cfsm 4.32 In. 58.63 Ac-ft 603,600
Water year 1954-55: Max 5,290 Min 128 Mean 676 Cfsm 3.50 In. 47.56 Ac-ft 489,300

Peak discharge (base, 2,500 cfs).--May 20 (2 a.m.) 2,500 cfs (7.94 ft); June 12 (12:30 a.m.) 6,010 cfs (11.08 ft); June 22 (2:30 a.m.) 4,220 cfs (9.65 ft); July 14 (12 p.m.) 3,200 cfs (8.70 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Wenatchee River at Peshastin, Wash.

Location.--Lat 47°34'50", long 120°37'00", in SE¼SW¼ sec. 8, T. 24 N., R. 18 E., on right bank 1 mile northwest of Peshastin and 3½ miles upstream from Peshastin Creek.

Drainage area.--1,000 sq mi, approximately.

Records available.--October 1928 to September 1955 (monthly discharge only, October 1928 to February 1929).

Gage.--Water-stage recorder. Datum of gage is 1,028.04 ft above mean sea level, datum of 1929. Prior to Mar. 24, 1932, staff gage at site 1¼ miles downstream at different datum.

Average discharge.--27 years, 2,956 cfs (2,140,000 acre-ft per year).

Extremes.--Maximum discharge during year, 23,400 cfs June 13 (gage height, 12.98 ft); minimum, 415 cfs Sept. 27 (gage height, 1.81 ft); minimum daily, 588 cfs Sept. 27, 30.
1929-55: Maximum discharge, 32,300 cfs May 28, 1948 (gage height, 15.88 ft); minimum, 183 cfs Oct. 14, 1939; minimum gage height, 1.24 ft Nov. 1, 1952; minimum daily discharge, 270 cfs Oct. 2, 1929, Nov. 30, 1936, Dec. 1, 1952.

Remarks.--Records excellent. Numerous diversions upstream for irrigation of an estimated 3,200 acres above station, and domestic use above and below station. Diversion by Icicle Creek irrigation canal 8 miles upstream from station is used for irrigation of a substantial part of the 22,000 acres irrigated below station. Some regulation by powerplant in Tumwater Canyon.

Revisions (water years).--WSP 1316: 1929-32(M).

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,140	1,200	3,200	1,470	849	924	1,000	1,660	7,140	8,520	5,010	1,210
2	1,090	1,170	*2,810	1,370	833	959	1,080	1,800	7,050	7,290	4,770	1,210
3	1,030	1,140	2,630	1,290	793	950	1,050	1,940	7,190	6,790	4,160	1,220
4	1,010	1,130	2,500	1,200	793	882	1,030	2,060	8,700	6,660	3,680	1,230
5	950	1,150	2,370	1,200	817	801	1,070	2,300	11,100	6,440	3,400	1,230
6	899	2,120	2,300	1,150	809	890	1,160	2,640	12,400	6,750	3,280	1,230
7	874	2,250	2,160	1,110	1,050	865	1,310	2,960	13,500	6,860	3,310	1,220
8	833	2,030	2,020	1,080	1,980	865	1,560	3,490	14,800	*7,120	3,310	1,230
9	874	2,010	1,930	1,080	1,920	874	2,010	3,520	*16,800	7,190	3,130	1,180
10	874	1,930	1,860	*1,060	*1,630	882	2,560	3,600	19,000	7,730	2,860	1,130
11	1,350	1,810	1,710	1,040	1,510	968	2,530	4,210	21,000	8,400	2,750	1,090
12	1,840	1,730	1,650	1,000	1,460	950	2,480	5,440	*22,800	9,350	2,620	1,000
13	1,630	1,660	1,610	1,000	1,380	924	2,320	5,500	22,400	10,800	2,420	942
14	1,450	1,680	1,580	1,000	1,290	874	2,150	4,970	19,400	12,200	2,240	1,060
15	*1,370	1,730	1,560	968	1,230	841	2,000	4,560	16,100	13,200	2,100	1,080
16	1,350	2,000	1,480	959	1,220	801	1,910	4,450	13,200	13,300	2,000	1,060
17	1,360	2,370	1,360	950	1,200	*801	1,820	4,480	11,500	12,600	1,940	1,040
18	1,420	2,970	1,290	950	1,070	801	1,760	5,040	10,500	10,200	1,930	942
19	1,410	4,260	1,230	942	1,070	778	1,730	6,900	10,100	8,120	1,950	841
20	1,450	4,690	1,310	908	1,080	755	1,730	9,350	10,200	7,100	1,980	785
21	1,930	4,140	1,310	873	1,050	770	1,760	9,450	12,100	6,590	1,920	732
22	2,000	4,240	1,400	865	1,020	933	1,780	8,700	15,200	6,500	1,790	703
23	1,830	4,950	1,490	882	977	1,010	1,810	7,740	16,500	6,880	1,650	675
24	1,670	4,380	1,490	986	1,010	977	1,800	7,050	15,100	7,030	*1,550	640
25	1,530	4,290	1,440	977	1,020	933	1,720	7,120	12,700	6,500	1,490	614
26	1,470	5,390	1,360	942	977	874	*1,690	7,030	11,200	5,540	1,410	594
27	1,400	5,620	1,280	916	933	849	1,630	6,680	10,400	5,150	1,320	588
28	1,360	4,880	1,270	874	941	841	1,590	6,330	11,000	4,620	1,280	608
29	1,310	4,160	1,300	865	-	899	1,570	6,940	10,900	4,240	1,260	*594
30	1,260	3,600	1,330	849	------	908	1,560	8,520	9,720	4,340	1,240	588
31	1,230	------	1,460	841	------	916	------	8,020	------	4,530	1,260	------
Total	41,194	86,680	53,690	31,597	31,912	27,295	51,170	164,450	399,700	238,540	75,010	28,266
Mean	1,329	2,889	1,732	1,019	1,140	880	1,706	5,305	13,320	7,695	2,420	942
Ac-ft	81,710	171,900	106,500	62,670	63,300	54,140	101,500	326,200	792,800	473,100	148,800	56,060

Calendar year 1954: Max 17,300 Min 833 Mean 4,040 Ac-ft 2,925,000
Water year 1954-55: Max 22,800 Min 588 Mean 3,369 Ac-ft 2,439,000

Peak discharge (base, 11,000 cfs).--June 13 (1 a.m.) 23,400 cfs (12.98 ft); June 23 (5:30 a.m.) 16,600 cfs (10.63 ft); July 16 (10 p.m.) 13,600 cfs (9.42 ft).
* Discharge measurement made on this day.

Sand Creek near Cashmere, Wash.

Location.--Lat 47°25'50", long 120°30'45", in NW¼ sec. 6, T. 22 N., R. 19 E., 800 ft upstream from mouth and 6¾ miles southwest of Cashmere.

Drainage area.--19.8 sq mi.

Records available.--May 1954 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,730 ft (from topographic map).

Extremes.--Maximum discharge during year, 71 cfs Feb. 7 (gage height, 2.86 ft); minimum, 0.4 cfs Sept. 10 (gage height, 1.06 ft).
1954-55: Maximum discharge, that of Feb. 7, 1955; minimum, that of Sept. 10, 1955.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor. No regulation or diversion.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.9	0.9	1.2	1.6	1.2	1.0	8.6	12	10.5	3.0	1.0	0.5
2	.9	.9	b1.2	1.5	1.2	1.0	10.5	13.5	9.6	2.9	1.0	.5
3	.9	.9	*b1.3	1.3	1.4	1.0	10	16	9.3	2.8	.9	.5
4	.9	.9	1.1	1.9	1.6	1.1	10	16.5	9.0	2.7	.9	.5
5	.9	.9	1.1	1.2	2.0	1.3	11.5	20	9.0	2.6	.9	.5
6	.9	.9	1.2	*1.3	2.5	1.6	15	22	8.6	2.5	.8	.5
7	.9	.9	1.2	1.4	5.0	2.0	19	22	8.3	2.9	.8	.5
8	.9	.9	1.3	1.3	11	1.8	23	25	7.7	2.3	.8	.5
9	.9	1.0	1.4	1.3	*6.3	1.7	27	22	7.0	2.2	.8	.5
10	.9	.9	1.4	1.2	4.5	1.8	25	21	6.0	2.2	.7	.5
11	1.2	.9	1.4	1.3	4.0	1.9	*24	25	5.6	2.1	.7	.5
12	1.1	.9	1.4	1.2	3.5	2.0	22	26	5.4	*2.0	.7	.5
13	1.0	1.1	1.8	1.2	3.0	2.1	18.5	*23	5.0	1.9	.7	.5
14	.9	1.2	1.4	1.2	2.7	2.2	15.5	20	4.8	1.9	.7	.6
15	.9	1.5	b1.4	1.2	2.5	2.3	14.5	18.5	4.7	1.8	.7	.6
16	.9	2.8	b1.4	1.2	2.3	2.5	13	20	4.5	1.7	.6	.7
17	.9	2.3	b1.3	1.2	2.0	*2.6	12	24	4.3	1.6	.6	.6
18	.9	2.7	b1.3	1.3	1.7	2.6	11	27	4.2	1.5	.6	.5
19	.9	4.0	b1.2	1.3	1.9	2.5	10.5	32	4.0	1.4	.6	.5
20	*.9	3.0	b1.2	1.3	1.8	2.8	10.5	34	3.8	1.4	.6	.5
21	.9	2.6	1.2	1.3	1.7	2.8	11	26	3.8	1.4	.6	.5
22	.9	2.3	1.2	1.3	1.6	6.8	12	20	3.7	1.2	.6	.5
23	.9	2.1	1.2	1.3	1.5	7.6	12.5	17.5	3.6	1.2	.6	.5
24	.9	1.9	1.2	1.3	1.4	6.6	12.5	15.5	3.6	1.2	.6	.5
25	.9	2.0	1.2	1.3	1.3	6.2	12	*14.5	3.5	1.2	*.6	.5
26	.9	2.2	1.0	1.3	1.2	5.8	12.5	13.5	3.4	1.3	.6	.5
27	.9	2.4	b1.0	1.3	1.1	5.8	11.5	12.5	3.3	1.3	.5	.5
28	.9	1.6	b1.0	1.3	1.1	5.8	*10.5	12	3.3	1.2	.5	*.6
29	.9	1.5	b1.0	1.3	-	6.6	10	12	3.2	1.1	.5	.6
30	.9	1.4	b1.4	1.2	------	6.6	10.5	12.5	3.1	1.0	.5	.6
31	.9	-----	2.4	1.2	-----	6.8	-----	12	------	1.0	.5	------
Total	28.5	49.5	40.0	40.5	73.0	105.2	426.1	607.5	165.8	56.5	21.2	15.8
Mean	0.92	1.65	1.29	1.31	2.61	3.39	14.2	19.6	5.53	1.82	0.68	0.53
Cfsm	0.046	0.083	0.065	0.066	0.132	0.171	0.717	0.990	0.279	0.092	0.034	0.027
In.	0.05	0.09	0.08	0.08	0.14	0.20	0.80	1.14	0.31	0.11	0.04	0.03
Ac-ft	57	98	79	80	145	209	845	1,200	329	112	42	31

Calendar year 1954: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1954-55: Max 34 Min 0.5 Mean 4.46 Cfsm 0.225 In. 3.07 Ac-ft 3,230

Peak discharge (base, 25 cfs).--Feb. 7 (time unknown) 71 cfs (2.86 ft); Apr. 9 (time unknown) 38 cfs (2.27 ft); May 19 (time unknown) 28 cfs (2.17 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Oct. 6-14, Nov. 15-26, Feb. 3-8, Feb. 12 to Mar. 16, Apr. 8-10, May 17-21, June 8-10, June 20 to July 11, Aug. 8-24, Sept. 24-27; discharge estimated on basis of weather records, recorded range in stage, and records for Mission Creek near Cashmere.

Mission Creek near Cashmere, Wash.

Location.--Lat 47°30'15", long 120°28'30", in SE¼NE¼ sec. 8, T. 23 N., R. 19 E., on right bank 1½ miles upstream from mouth and 1½ miles south of Cashmere.

Drainage area.--77.9 sq mi.

Records available.--May 1954 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 850 ft (from topographic map).

Extremes.--Maximum discharge during year, 215 cfs Feb. 8 (gage height, 2.14 ft); minimum daily, 0.1 cfs Aug. 25 to Sept. 12.
1954-55: Maximum discharge, that of Feb. 8, 1955; minimum daily, that of Aug. 25 to Sept. 12, 1955.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor. No regulation. Some diversion for domestic use and irrigation.

Rating tables, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 7		Feb. 8 to May 18				May 19 to Sept. 30			
0.6	2.8	0.7	6.4	1.2	44	0.17	0.1	0.8	14
.8	9.0	.8	11	1.4	69	.3	.8	1.0	28
1.1	28	1.0	24	1.6	100	.4	2.1	1.3	58
						.6	6.1	1.7	117

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.0	4.1	12	9.5	6.0	6.0	22	32	48	15.5	5.6	0.1
2	4.0	4.1	9.0	8.1	6.5	6.0	25	38	47	15	5.2	.1
3	4.0	4.1	*9.5	6.0	7.0	6.0	24	42	49	15.5	5.6	.1
4	4.0	4.4	8.5	5.5	7.5	6.0	24	44	52	15.5	5.4	.1
5	4.0	4.4	8.5	5.0	8.0	6.5	24	53	56	14	5.2	.1
6	4.0	4.6	7.7	*4.9	8.5	9.0	32	58	56	12.5	3.9	.1
7	4.0	4.6	7.3	6.9	15	9.6	42	61	55	12.5	3.1	.1
8	4.0	4.9	6.9	7.3	92	8.2	61	70	54	12	2.6	.1
9	4.0	9.5	6.9	7.7	*36	8.4	89	48	52	12	2.7	.1
10	4.0	6.2	6.5	7.3	23	9.0	82	44	50	13	2.7	.1
11	10	5.2	6.5	7.0	20	9.0	*61	52	48	12	2.2	.1
12	6.0	4.9	6.5	6.5	21	9.0	53	48	46	*10.5	1.9	.1
13	5.0	5.2	6.2	6.5	16	9.0	42	*54	42	9.3	1.8	1.0
14	4.5	8.1	6.2	6.5	14	9.0	36	53	37	8.3	1.8	2.1
15	4.0	16	5.8	6.5	13	9.0	32	53	33	8.3	2.1	2.1
16	4.0	17	3.5	6.5	12	11	30	68	30	9.0	1.8	3.9
17	4.0	12.5	3.5	6.5	11	*12	27	75	27	9.0	1.5	4.4
18	4.0	18	3.5	6.5	7.5	11.5	25	84	26	7.9	1.5	3.9
19	4.0	26	3.3	6.0	8.0	11.5	24	107	24	7.2	1.3	3.5
20	*4.4	18	3.5	6.0	8.5	11	24	108	22	6.5	1.1	3.3
21	4.9	13.5	5.2	6.5	9.2	11.5	25	89	20	5.6	.9	3.7
22	4.9	12.5	5.5	6.5	8.7	21	28	76	19.5	5.4	.7	4.1
23	4.4	11	5.8	6.5	8.7	19	32	65	21	6.1	.5	4.1
24	4.4	10	5.5	6.5	8.7	18	31	56	20	6.1	.3	3.7
25	4.4	10.5	5.5	6.2	7.8	16.5	28	*52	19	5.4	*.1	3.1
26	4.1	16	5.0	6.2	7.8	15	32	50	18.5	6.1	.1	2.7
27	4.1	24	5.0	6.2	7.3	14.5	28	48	19	10	.1	2.7
28	4.1	17	4.6	6.2	6.4	14.5	*26	48	17.5	8.6	.1	*3.3
29	4.1	15	5.5	6.2	-	17	26	62	16.5	7.5	.1	3.1
30	4.1	12.5	6.2	6.2	- - -	18	27	62	16	6.1	.1	3.1
31	4.1	-	12.5	6.2		18.5	- - - - -	51	- - - -	6.1	.1	- -
Total	137.5	323.8	197.6	202.1	405.1	360.2	1,062	1,851	1,041.0	298.5	62.1	59.0
Mean	4.44	10.8	6.37	6.52	14.5	11.6	35.4	59.7	34.7	9.63	2.00	1.97
Ac-ft	273	642	392	401	804	714	2,110	3,670	2,060	592	123	117

Calendar year 1954: Max - Min - Mean - Ac-ft -
Water year 1954-55: Max 108 Min 0.1 Mean 16.4 Ac-ft 11,900

Peak discharge (base, 100 cfs).--Feb. 8 (12:01 a.m.) 215 cfs (2.14 ft); Apr. 9 (9 p.m.) 105 cfs (1.63 ft); May 19 (10 p.m.) 123 cfs (1.73 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 1-19, Mar. 9-16, Aug. 20 to Sept. 13; discharge estimated on basis of 1 discharge measurement, recorded range in stage, weather records, and records for Sand Creek near Cashmere. Stage-discharge relation affected by ice Dec. 16-20, 25-27, Jan. 3-5, 11-23, Feb. 1-5, 18-20, Mar. 1-6.

Douglas Creek near Alstown, Wash.

Location.--Lat 47°35'00", long 120°00'50", in S½ sec. 12, T. 24 N., R. 22 E., on left bank 1½ miles northwest of Alstown and 2.9 miles south of Douglas.

Drainage area.--114 sq mi.

Records available.--June 1949 to September 1955 (discontinued).

Gage.--Water-stage recorder and concrete control. Altitude of gage is 2,260 ft (by barometer).

Average discharge.--6 years, 5.74 cfs (4,160 acre-ft per year).

Extremes.--Maximum discharge during year, 563 cfs Feb. 8 (gage height, 4.61 ft); minimum daily, 0.2 cfs Aug. 19, 20.

1949-55: Maximum discharge, 3,160 cfs Feb. 25, 1954 (gage height, 6.47 ft), from rating curve extended above 760 cfs; minimum, 0.1 cfs Oct. 19, 1949, but may have been less during period of no gage-height record Jan. 21-24, 1950.

Flood of June 10, 1948, reached a stage of 13.05 ft, from floodmarks (discharge, 6,420 cfs, on basis of slope-area determination).

Remarks.--Records fair. No regulation. Possible minor diversions for domestic use above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.9	0.2	2.6	46
2.0	1.4	3.0	119
2.1	4.1	3.5	240
2.2	8.6	4.2	440
2.4	23		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	0.6	0.8	0.7	0.7	0.7	72	1.6	1.0	0.8	0.4	0.3
2	.6	.6	.8	.7	.7	.7	31	1.4	1.0	.8	.4	.3
3	.6	.6	.8	.7	.7	.7	26	1.4	1.0	.8	.4	.3
4	.6	.6	.8	.7	.7	.7	15	1.4	1.0	.8	.4	.3
5	.6	.6	.8	.7	.7	.7	9.8	1.4	1.0	*.8	.4	.4
6	.6	.6	.8	.7	.7	.7	8.6	1.4	1.0	.9	.3	.4
7	.6	.6	.8	.7	1.0	.7	8.1	1.4	1.0	.9	.3	.4
8	.6	.6	.8	.7	415	*20	8.1	1.4	.9	.9	.4	.3
9	.6	.6	.8	.7	218	*50	7.6	1.4	.8	.9	.4	.3
10	.6	.6	.8	.7	115	40	7.6	1.4	.8	1.0	.4	.4
11	*.6	.6	.8	.7	66	35	6.6	1.4	.8	1.0	.4	.4
12	.6	.6	.8	.7	54	*29	5.7	1.2	.8	.9	.4	.4
13	.6	.6	.8	.7	40	24	5.3	1.4	.6	.8	.4	.5
14	.6	.8	.8	.7	20	18	4.9	1.6	.6	.6	.4	.5
15	.6	.8	.8	.7	10	12	4.1	1.6	.8	.6	.3	.5
16	.6	.8	.8	.7	5.0	10	3.7	1.8	.8	.6	.3	.6
17	.6	.8	.7	.7	2.0	15	3.4	1.8	.9	.6	.3	.6
18	.6	.8	.7	.7	1.0	8.0	3.4	1.6	.9	.6	.3	.6
19	.6	.8	.7	.7	.8	6.0	3.0	1.4	.8	.6	.2	.6
20	.6	.8	.7	.7	.7	4.0	3.0	1.2	.8	.5	.2	.6
21	.6	.8	.7	.7	.7	*3.6	3.0	1.2	.6	.5	.3	.6
22	.6	.8	.7	.7	.7	26	3.0	1.2	.6	.5	.3	.6
23	.6	.8	.7	.7	*.7	6.1	3.0	1.2	.6	.5	.3	.6
24	.6	.8	.7	.7	.7	2.2	2.8	*1.2	.6	.6	.3	.4
25	.6	.8	.7	.7	.7	2.0	2.8	1.2	.9	.6	.4	.5
26	.6	.8	.7	.7	.7	1.8	2.8	1.2	.8	.6	.4	.5
27	.6	.8	.7	.7	.7	3.0	*2.0	1.2	.8	.6	.4	.5
28	.6	.8	.7	.7	.7	6.1	1.6	1.2	.8	.6	.4	.5
29	.6	*.8	.7	.7	-	*187	1.6	1.2	.8	.6	.3	.5
30	.6	.8	.7	.7	------	45	1.6	1.2	.8	.5	*.3	.5
31	.6	------	.7	.7	------	54	------	1.2	------	.5	.3	------
Total	18.6	21.4	23.3	21.7	958.3	612.7	261.1	42.4	24.6	21.5	10.7	13.9
Mean	0.60	0.71	0.75	0.70	34.2	19.8	8.70	1.37	0.82	0.69	0.35	0.46
Ac-ft	37	42	46	43	1,900	1,220	518	84	49	43	21	28

Calendar year 1954: Max 629 Min 0.5 Mean 5.58 Ac-ft 4,040
Water year 1954-55: Max 415 Min 0.2 Mean 5.56 Ac-ft 4,030

Peak discharge (base, 400 cfs).--Feb. 8 (5 a.m.) 563 cfs (4.61 ft); Mar. 29 (1:30 to 3 p.m.) 509 cfs (4.43 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 10 to Feb. 7, Feb. 13 to Mar. 21; discharge estimated on basis of weather records, gage inspections, and 7 discharge measurements.

Douglas Creek at Palisades, Wash.

Location.--Lat 47°25', long 119°56', in SE¼ sec. 10, T. 22 N., R. 23 E., on left bank three-quarters of a mile south of Palisades.

Drainage area.--844 sq mi.

Records available.--January 1951 to September 1955 (fragmentary), discontinued.

Gage.--Water-stage recorder. Altitude of gage is 955 ft (by barometer).

Extremes.--Maximum discharge during year, 347 cfs Mar. 29 (gage height, 4.62 ft); no flow at times.

1951-55: Maximum discharge, 1,990 cfs Mar. 26, 1951 (gage height, 7.22 ft), from rating curve extended above 260 cfs by logarithmic plotting; no flow at times each year.

Remarks.--Records fair. No regulation. A few diversions for irrigation and domestic use above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 10-14, 18-20, Apr. 2-18, 26)

1.8	0	2.4	5.5
1.9	.10	2.6	13.0
2.0	.40	2.8	26
2.1	1.0	3.1	53
2.2	1.8	3.4	88
2.3	3.0		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0				0	70		(*)			
2		0				0	28					
3		0				0	7.3					
4		0				0	3.6					
5		0				0	3.2					
6		0				0	3.0					
7		0	(*)			0	2.6					
8		0				41	2.5					
9		0				*83	2.6					
10		1.5			(*)	70	2.0					
11	(*)	4.9				46	1.5					
12		4.6				*27	1.5					
13		8.4				15	1.4					
14		1.3				9.6	.7					
15		0				9.2	.6					
16		0			(*)	*13	.6					
17		0		(*)		18	.6					
18		3.0				48	.3			(*)		
19		2.2				25	0					
20	(*)	0				11	0					
21		0				8.4	0					
22		0			(*)	17.5	0					
23		0				22	0					
24		0				6.1	0					
25		0				4.6	0					
26		0				4.6	0					
27		0				3.8	0					
28		0				1.6	*0					
29		0			-	83	0					
30		0			------	50	0					
31		------			------	63	------		------			------
Total	0	25.9	0	0	0	680.4	132.0	0	0	0	0	0
Mean	0	0.86	0	0	0	21.9	4.40	0	0	0	0	0
Ac-ft	0	51	0	0	0	1,350	262	0	0	0	0	0

Calendar year 1954: Max 268 Min 0 Mean 3.84 Ac-ft 2,780
Water year 1954-55: Max 83 Min 0 Mean 2.30 Ac-ft 1,660

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

Columbia River at Trinidad, Wash.

Location.--Lat 47°13'30", long 120°00'50", in SE¼ sec. 13, T. 20 N., R. 22 E., on left bank half a mile southwest of Trinidad, 8½ miles downstream from Colocham Creek, and 12 miles downstream from Rock Island Dam.

Drainage area.--89,700 sq mi, approximately.

Records available.--January to December 1910 (gage heights only), May 1913 to September 1955. Published as "at Wenatchee" 1910, 1913-16, and as "at Vernita" 1917-30.

Gage.--Water-stage recorder. Datum of gage is 499.3 ft above mean sea level (river-profile survey). Prior to Jan. 1, 1916, staff gage 1 mile upstream from highway bridge at Wenatchee (24 miles upstream) at datum 583 ft above mean sea level, unadjusted. Jan. 1 to Dec. 31, 1916, staff gage on pier of highway bridge at Wenatchee at datum 579.30 ft above mean sea level, unadjusted. Jan. 14, 1917, to Sept. 30, 1930, staff gage at ferry at Vernita (50 miles downstream) at datum 388.7 ft above mean sea level, unadjusted.

Average discharge.--42 years, 118,700 cfs (85,940,000 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 448,500 cfs July 1 (gage height, 50.00 ft); minimum, 42,800 cfs Jan. 2 (gage height, 20.25 ft).
1913-55: Maximum discharge, 692,600 cfs June 12, 1948 (gage height, 59.35 ft); minimum, 4,120 cfs Feb. 10, 1932 (gage height, 11.40 ft).
Maximum discharge known, about 740,000 cfs June 7, 1894 (based on information obtained at other points).

Remarks.--Records excellent. Diversion above station for irrigation of about 500,000 acres is small percentage of flow past gage. Some diurnal fluctuation caused by power-plants at Rock Island and at Grand Coulee Dam. Flow regulated by Franklin D. Roosevelt Lake (see p. 265) and reservoirs in Kootenai, Pend Oreille, Spokane, Okanogan, and Chelan River basins.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

22.0	53,700	35.0	180,800
24.0	67,500	40.0	254,800
26.0	83,300	45.0	345,000
30.0	121,500	50.0	448,500

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	91,600	71,500	82,100	63,600	77,100	87,900	*82,400	77,700	*134,600	437,500	251,000	97,800
2	87,200	71,800	78,600	55,400	77,500	89,200	82,200	75,500	161,600	412,300	239,100	92,800
3	84,700	72,400	74,900	54,200	79,400	87,500	81,900	79,100	182,500	406,200	216,000	89,100
4	79,100	75,000	78,700	62,600	79,300	88,000	78,900	80,400	198,700	389,600	207,700	92,300
5	80,900	76,400	78,400	71,300	80,700	87,700	81,500	80,300	226,000	379,600	204,600	81,500
6	77,900	76,300	75,100	73,800	75,800	89,000	81,700	79,100	251,000	363,000	193,200	73,700
7	76,300	75,100	*79,500	73,400	74,000	88,100	80,700	79,900	264,700	364,800	194,100	75,300
8	76,800	67,600	77,700	72,000	73,500	88,400	80,900	78,200	276,900	365,600	198,800	83,400
9	74,000	74,000	76,600	72,700	70,400	87,700	80,100	73,500	286,300	349,200	187,100	80,000
10	69,700	75,100	78,300	69,100	71,300	87,400	76,800	81,700	*293,100	340,600	170,900	86,400
11	65,300	74,300	76,700	68,100	78,300	88,300	73,200	84,400	280,700	342,000	164,400	83,700
12	70,700	72,900	75,000	67,600	77,900	88,300	78,000	87,100	293,000	353,600	164,700	84,600
13	72,800	73,700	68,500	66,400	72,600	87,300	80,900	87,300	307,000	362,000	154,200	82,400
14	76,500	71,700	64,700	72,700	64,200	86,000	81,700	86,900	314,900	363,200	138,800	93,800
15	80,300	68,100	60,600	76,000	75,800	85,500	81,400	82,700	327,000	356,000	126,400	89,400
16	76,000	68,700	63,200	62,000	76,300	86,500	81,700	75,900	337,100	350,000	140,100	85,900
17	75,400	70,600	65,200	*63,000	*79,500	87,400	80,000	82,900	345,000	356,400	130,000	87,200
18	65,800	72,500	64,800	73,400	81,900	87,300	75,300	85,100	371,600	*357,600	119,300	86,700
19	74,700	72,300	67,400	71,300	82,100	87,000	79,900	83,300	368,200	360,600	125,600	84,200
20	76,500	68,300	65,700	73,700	79,600	86,600	80,700	83,000	372,400	362,800	122,500	83,600
21	77,900	65,800	68,600	74,300	71,300	86,500	81,900	88,400	390,200	349,000	113,500	78,900
22	74,500	74,300	69,200	73,900	81,100	86,600	80,700	84,100	387,500	336,200	103,100	82,000
23	72,800	87,500	70,900	67,800	83,000	86,600	80,900	80,800	392,100	320,000	103,900	82,100
24	68,300	86,300	74,300	63,000	84,100	86,400	80,100	89,600	411,900	309,700	113,500	83,000
25	*64,600	89,700	70,300	68,400	86,600	85,500	76,700	97,900	420,300	306,100	104,800	78,400
26	71,100	81,800	70,100	68,900	86,000	85,600	79,800	96,800	427,200	293,700	98,100	75,100
27	73,500	79,300	65,300	74,500	85,100	85,700	82,100	97,500	435,400	286,700	95,400	82,500
28	72,000	80,300	54,700	76,700	85,600	83,900	81,900	109,100	441,900	268,100	106,000	81,100
29	74,900	81,200	71,300	78,000	-	83,000	*81,500	137,300	441,900	258,800	*113,500	80,800
30	79,800	85,000	73,900	71,800	------	83,400	81,000	142,200	439,700	248,100	114,200	*75,000
31	74,700	------	72,600	68,900	------	83,500	------	129,300	------	253,500	114,100	------
Total	‡2,336.3	‡2,259.5	‡2,212.9	‡2,148.5	‡2,190	‡2,687.8	‡2,406.5	‡2,777	‡9,780.4	‡10,602.5	‡4,628.6	‡2,512.7
Mean	75,360	75,320	71,380	69,310	78,210	86,700	80,220	89,580	326,000	342,000	149,300	83,760
Ac-ft	‡4,634	‡4,482	‡4,389	‡4,261	‡4,344	‡5,331	‡4,773	‡5,508	‡19,400	‡21,030	‡9,181	‡4,984

Calendar year 1954: Max 418,400 Min 48,800 Mean 149,100 Ac-ft 107,900,000
Water year 1954-55: Max 441,900 Min 54,200 Mean 127,500 Ac-ft 92,320,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Crab Creek at Irby, Wash.

Location.--Lat 47°21'30", long 118°51'00", in NW¼ sec. 31, T. 22 N., R. 32 E., on right bank 8 ft upstream from highway bridge at Irby, 5 miles downstream from Lake Creek, and 7 miles west of Odessa.

Drainage area.--974 sq mi.

Records available.--September 1942 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,386.30 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--13 years, 77.1 cfs (55,820 acre-ft per year).

Extremes.--Maximum discharge during year, 2,160 cfs Feb. 8 (gage height, 8.15 ft); minimum, 7.9 cfs Sept. 30 (gage height, 1.89 ft).
1942-55: Maximum discharge, 3,640 cfs Mar. 5, 1950 (gage height, 8.96 ft), from rating curve extended above 1,200 cfs by logarithmic plotting; minimum, 2.0 cfs Jan. 12, 1948 (gage height, 1.80 ft).

Remarks.--Records good except those for periods of ice effect, which are fair. No regulation. Some diversion above station for irrigation.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.9	8.4	4.0	405
2.0	15.5	5.0	641
2.2	35	6.0	950
2.4	59	7.0	1,400
2.7	105	8.0	2,040
3.0	170		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.1	12	15	49	*33	62	84	66	24	22	15	11
2	9.1	12	15.5	163	33	62	85	65	24	21	15	11
3	9.1	12	15.5	205	33	60	90	58	24	21	15	11
4	9.1	12	16.5	185	35	60	91	58	23	21	15	11
5	9.1	12	16.5	*160	36	60	95	55	22	21	15	10.5
6	9.1	12.5	17.5	135	44	60	98	58	22	20	15	10.5
7	9.1	12.5	17.5	113	107	70	95	55	22	20	14	10.5
8	9.1	12.5	17.5	102	*1,030	80	90	52	21	20	14	10.5
9	10.5	12.5	17.5	95	2,040	*221	90	44	21	19	14	10.5
10	10.5	12.5	17.5	90	1,500	756	84	43	21	20	13.5	10.5
11	10.5	12.5	19	84	595	661	81	42	21	20	13.5	10.5
12	10.5	12.5	20	76	384	391	82	38	22	19	15	10.5
13	10.5	13.5	22	70	277	299	81	37	22	19	15	10.5
14	10.5	13.5	22	62	221	248	79	40	22	18	15	10.5
15	10.5	13.5	22	56	188	*209	76	43	22	18	14	10.5
16	10.5	13.5	20	51	175	188	*73	45	22	18	14	10.5
17	10.5	13.5	20	46	200	165	72	44	22	18	13.5	10.5
18	10.5	14	20	45	190	148	70	36	22	18	13.5	9.8
19	10.5	14	20	42	238	137	67	34	22	18	13.5	9.8
20	10.5	14	20	39	209	133	67	38	22	*17	13.5	9.8
21	11	14	20	38	180	122	67	34	22	16.5	13.5	9.8
22	11	14	20	36	153	102	66	35	22	15.5	*12.5	9.1
23	*12	*14	20	35	139	111	63	34	22	15	12.5	*9.1
24	12	14	20	34	120	105	65	35	22	19	12.5	9.1
25	12	14	22	33	111	100	73	33	22	17.5	12.5	9.1
26	12	14	22	33	102	95	78	31	22	16.5	12.5	8.4
27	12	14	22	33	62	91	74	28	22	16.5	12.5	9.1
28	12	15	22	33	62	86	79	31	22	15.5	12	9.1
29	12	15	22	33	-	85	74	33	22	15.5	12	8.4
30	12	15	24	33	- -	82	67	33	22	15.5	12	8.4
31	12		24	33		84	-----	*28	----	15.5	11	--
Total	328.8	400.0	609.5	2,242	8,497	5,133	2,356	1,306	663	566.5	421.5	299.5
Mean	10.6	13.3	19.7	72.3	303	166	78.5	42.1	22.1	18.3	13.6	9.98
Ac-ft	652	793	1,210	4,450	16,850	10,180	4,670	2,590	1,320	1,120	836	594

Calendar year 1954: Max 602 Min 9.1 Mean 40.2 Ac-ft 29,120
Water year 1954-55: Max 2,040 Min 8.4 Mean 62.5 Ac-ft 45,260

Peak discharge (base, 300 cfs).--Feb. 8 (6 p.m.) 2,160 cfs (8.15 ft); Mar. 10 (11 a.m.) 846 cfs (5.72 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 17-24, Jan. 12 to Feb. 5, Feb. 28 to Mar. 6.

Wilson Creek at Wilson Creek, Wash.

Location.--Lat 47°26', long 119°06', in SW¼ sec. 6, T. 22 N., R. 30 E., on right bank half a mile upstream from mouth and town of Wilson Creek.

Drainage area.--About 470 sq mi.

Records available.--February 1951 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,280 ft (from Great Northern Ry.).

Extremes.--Maximum discharge during year, 294 cfs Mar. 31 (gage height, 6.58 ft); no flow for many days.
1951-55: Maximum discharge, 1,420 cfs Mar. 16, 1951 (gage height, 9.59 ft), from rating curve extended above 270 cfs; no flow for long periods each year.

Remarks.--Records fair. Diversions for irrigation above station. Flow regulated by storage for irrigation above station.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

4.7	0	5.1	10.5
4.8	.3	5.2	16.5
4.9	1.8	5.4	28
5.0	5.4		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						0	9.0	0.3		0		
2						0	21	0		0		
3						0	22	0		0		
4						0	19.5	0		0		
5				(*)		0	12	0		0		
6						0	7.3	0		0		
7						0	7.8	0		0		
8					(*)	0	3.4	0		0		
9						*0	.7	0		0		
10						0	.4	0		0		
11						0	0	0		0		
12						*0	0	0		0		
13						0	3.3	0		0		
14						0	2.7	0		0		
15						0	.6	0		0		
16						0	**.2	0		0		
17						0	0	0		0		
18						0	0	0		0		
19						0	0	0		0		
20						0	0	0		*0		
21						0	0	0		0		
22						0	0	0		0	(*)	
23	(*)	(*)				0	0	0		0		
24						0	0	0		0		
25				(*)		0	0	0		0		
26						0	0	0		14.5		
27						0	0	0		3.8		
28						0	0	0		.5		
29					-	0	0	0		0		
30					------	0	1.2	0		0		
31		------			------	*12	------	*0	------	0		------
Total	0	0	0	0	0	12	111.1	0.3	0	18.8	0	0
Mean	0	0	0	0	0	0.39	3.70	0.01	0	0.61	0	0
Ac-ft	0	0	0	0	0	24	220	0.6	0	37	0	0

Calendar year 1954: Max 239 Min 0 Mean 1.35 Ac-ft 980
Water year 1954-55: Max 22 Min 0 Mean 0.39 Ac-ft 282

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

Crab Creek near Moses Lake, Wash.

Location.--Lat 47°11'25", long 119°16'00", in SW¼SE¼ sec. 26, T. 20 N., R. 28 E., on right bank 3 miles upstream from Parker Horn and 4 miles north of town of Moses Lake.

Drainage area.--About 2,040 sq mi.

Records available.--September 1942 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 1,070.39 ft above mean sea level (Bureau of Reclamation benchmark).

Extremes.--Maximum discharge during year, 355 cfs Feb. 14 (gage height, 4.10 ft); minimum, 7.0 cfs Feb. 11 (gage height, 1.60 ft).
1942-55: Maximum discharge, 2,810 cfs Feb. 27, 1949 (gage height, 5.57 ft); no flow during several months each year prior to 1952, and part of each day Jan. 14, 15, 1953.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Numerous small diversions for irrigation and domestic use above station. Most of natural flow from upper basin passes this station underground. No regulation. Beginning in 1952, return flow from irrigation on Columbia Basin project has increased runoff during summer months.

Cooperation.--Two discharge measurements furnished by Bureau of Reclamation.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-3, July 31 to Sept. 30)

1.6	7.0	3.0	104
2.0	26	3.5	191
2.5	56	4.0	320

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	50	19	12	b11	b100	63	33	*16.5	30	39	43
2	74	48	19	13	b11	b65	56	33	16	30	39	44
3	72	45	19	14	b10.5	b70	50	30	16	30	39	44
4	72	43	19	*14	b10.5	b55	45	29	16	30	39	44
5	71	42	19	13.5	b11	b45	41	30	16	32	39	43
6	72	42	19	13.5	12	38	42	26	16	33	38	44
7	71	39	19	13	15	35	44	24	16	33	38	44
8	69	36	18	13.5	18.5	32	42	24	16	32	37	44
9	70	35	17	14	14	30	44	19.5	16	32	38	44
10	71	33	16	13	b11	39	45	18.5	16.5	35	36	44
11	70	32	16	13	b11	30	42	19	16.5	35	35	44
12	68	30	15	12.5	13	25	44	19	17	34	36	44
13	68	30	15	13	21	18	50	18	17.5	33	36	45
14	66	32	14	12	317	*28	50	17.5	18.5	32	36	47
15	67	32	14	12.5	*256	122	*47	20	19	34	38	46
16	68	28	13	12.5	189	220	48	22	19.5	35	39	48
17	66	26	13	12.5	140	224	56	22	20	35	38	46
18	65	28	12	12.5	90	206	61	20	20	35	39	46
19	65	28	12	b12	114	175	52	19	21	35	39	45
20	64	25	12	b11	64	148	50	19	21	*36	39	45
21	69	24	11	b10	55	131	57	17.5	22	38	39	44
22	*69	*24	11	b11	78	124	59	16.5	22	38	39	44
23	64	22	11	12.5	107	107	52	16	24	38	*39	44
24	62	22	11	13	113	95	42	17.5	24	55	39	42
25	62	22	11	13.5	113	86	41	17.5	26	43	40	41
26	61	21	11	13.5	b100	81	45	17.5	26	45	40	42
27	60	20	11	13	b70	78	39	17	26	45	41	45
28	58	19	11	13	b80	76	33	17	28	42	41	48
29	57	19	11	13	-	75	33	17.5	28	42	41	42
30	55	19	11	13	------	68	32	17.5	28	41	41	41
31	52	------	11	*b12	------	70	------	17	------	40	42	------
Total	2,052	916	441	394.5	2,055.5	2,696	1,405	651.0	605.0	1,128	1,199	1,327
Mean	66.2	30.5	14.2	12.7	73.4	87.0	46.8	21.0	20.2	36.4	38.7	44.2
Ac-ft	4,070	1,820	875	782	4,080	5,350	2,790	1,290	1,200	2,240	2,380	2,630

Calendar year 1954: Max 90 Min 5.3 Mean 37.0 Ac-ft 26,800
Water year 1954-55: Max 317 Min 10 Mean 40.7 Ac-ft 29,510

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Nov. 29 to Dec. 5, Dec. 8 to Jan. 3, Mar. 31 to Apr. 4.

Park Lake near Coulee City, Wash.

Location.--Lat 47°35', long 119°24', in NW¼ sec. 14, T. 24 N., R. 27 E., on southeast shore, 1 mile upstream from outlet and 5½ miles southwest of Coulee City.

Records available.--March 1938 to September 1955 (fragmentary).

Gage.--Staff gage read 2 or 3 times a month. Datum of gage is at mean sea level (Bureau of Reclamation benchmark).

Extremes.--1938-55: Maximum elevation observed, 1,096.44 ft Feb. 9, 1950; minimum observed, 1,094.17 ft Sept. 30, 1939.
Maximum elevation known, 1,101.3 ft (from well-defined alkali line at gage), date of occurrence unknown.

Remarks.--Some diversion from tributary for irrigation.

Elevation, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-	-	-	-	-	-	-	95.50	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	95.32	95.62	-	-	-	-	-	95.76	-
5	95.58	95.70	-	95.34	-	-	-	95.76	-	95.94	-	-
6	-	-	95.47	-	-	-	-	-	-	-	-	95.37
7	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	95.22	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	95.65	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	95.64	95.78	-	-	-	-	-	-	-	-	-	-
20	-	-	95.29	95.42	-	-	95.60	95.60	95.65	95.82	-	95.38
21	-	-	-	-	95.44	95.42	-	-	-	95.80	-	-
22	-	-	-	-	-	-	-	-	-	-	95.60	-
23	-	95.75	-	-	-	-	-	-	-	-	-	95.38
24	-	-	-	-	-	-	-	-	-	-	95.58	-
25	95.60	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	95.31	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-------	-	-	-	-	-	-	-
31	-	-------	-	-	-------	-	-------	95.50	-------	-	-	-------

Note.--Add 1,000 ft to obtain elevation above mean sea level.

Park Creek below Park Lake, near Coulee City, Wash.

Location.--Lat 47°34'20", long 119°25'10", in SW¼ sec. 15, T. 24 N., R. 27 E., on left bank at highway crossing 100 ft upstream from mouth, 500 ft downstream from Park Lake, and 6½ miles southwest (corrected) of Coulee City.

Drainage area.--About 400 sq mi.

Records available.--July 1945 to September 1955.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,091.52 ft above mean sea level (Bureau of Reclamation benchmark).

Average discharge.--10 years, 7.99 cfs (5,780 acre-ft per year).

Extremes.--Maximum discharge during year, 19.5 cfs Dec. 1 (gage height, 2.27 ft); maximum gage height, 2.41 ft Feb. 27 (backwater from ice); minimum discharge, 0.8 cfs Mar. 19, 20 (gage height, 1.65 ft).
1945-55: Maximum discharge, 47 cfs Feb. 9, 1951 (gage height, 2.71 ft); maximum gage height, 3.05 ft Jan. 28, 1950 (backwater from ice); minimum discharge not determined, probably less than 0.1 cfs during period Aug. 17 to Sept. 21, or Oct. 1-17, 1945 (gage height, less than 1.4 ft).

Remarks.--Records good. Some diversion during summer months for irrigation above Park Lake. Occasional regulation by operation of fish screen at outlet of Park Lake.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.6	0.4	2.0	7.1
1.7	1.2	2.1	11
1.8	2.5	2.2	16.5
1.9	4.4	2.3	24

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10.5	10	18.5	15.5	*12.5	11.5	12.5	2.5	11	5.9	5.9	9.6
2	10.5	10	18	15.5	12.5	14.5	12.5	4.9	11	5.4	5.4	9.6
3	10.5	9.6	17	14.5	12.5	13	12.5	16.5	11	5.4	4.9	9.2
4	10.5	9.6	16.5	*14.5	12.5	7.7	12	16.5	11	4.4	5.1	8.4
5	10	10	16	14.5	13.5	7.7	12	16	10.5	3.4	5.6	8.0
6	9.6	10.5	15.5	14.5	13.5	9.6	12	15.5	10.5	4.0	5.6	8.0
7	9.6	10.5	15.5	14	14.5	12.5	12	15.5	5.4	2.8	5.6	8.0
8	10	10.5	14.5	14.5	16	15.5	12	15.5	3.0	2.4	4.4	7.7
9	10	10.5	14.5	15.5	18.5	15.5	12.5	16	3.0	2.4	2.2	8.0
10	10.5	11	14	13	18.5	15.5	12.5	15.5	3.2	3.0	2.2	8.0
11	8.8	10.5	14	12.5	18.5	14.5	12.5	15.5	3.2	6.8	2.2	8.0
12	5.4	10	14	12.5	14.5	*14.5	12.5	14.5	3.4	9.2	2.1	8.0
13	9.2	10.5	14	12.5	11	14.5	12.5	14.5	3.0	9.2	4.9	8.0
14	9.2	11	14	12.5	12	14.5	12.5	14	3.2	8.8	11.5	8.0
15	9.2	13	14	12.5	18.5	10.5	12.5	14	2.4	4.9	8.8	8.0
16	9.2	14	13.5	13	18	7.7	*12.5	14	1.8	1.4	8.0	8.8
17	9.2	14	13.5	12.5	17	8.0	12.5	14.5	2.5	2.2	7.7	8.8
18	9.2	14	13.5	12.5	11.5	8.0	12.5	14.5	3.0	8.0	7.7	8.8
19	*8.8	14.5	13.5	12	16	3.7	12.5	14	3.0	7.4	7.1	8.8
20	8.8	14	13.5	11.5	16	1.2	12.5	12.5	3.8	7.1	6.5	8.8
21	8.4	14	13.5	11	16	1.4	13	12	3.8	*6.5	6.5	8.8
22	9.2	13.5	13.5	11	16	1.6	13	8.8	4.2	6.5	*6.5	8.8
23	9.2	*13.5	13	11.5	16	9.6	13	6.2	4.2	6.5	*6.2	*8.8
24	9.2	13.5	13	11.5	16	3.2	12.5	8.0	5.1	6.5	5.9	8.8
25	8.8	14	13	11.5	15.5	.9	12.5	12.5	6.2	6.5	5.6	8.4
26	8.4	13.5	13	11.5	10.5	1.0	12	12.5	6.5	6.5	5.6	8.8
27	8.8	12.5	9.6	11.5	9.2	6.6	6.8	12	6.5	6.8	5.6	9.2
28	8.8	12	8.4	11.5	9.6	12.5	5.9	12	7.1	6.8	9.2	9.2
29	9.2	14.5	8.8	12	-	13	3.8	12	6.8	6.5	11	8.8
30	9.2	17	9.6	12	------	13	3.4	11.5	6.2	5.9	10	8.4
31	9.6	------	15.5	12	------	12.5	------	*11.5	------	6.2	9.6	------
Total	287.5	365.7	428.4	397.0	406.3	295.4	343.4	395.4	165.5	175.3	195.1	256.5
Mean	9.27	12.2	13.8	12.8	14.5	9.53	11.4	12.8	5.52	5.65	6.29	8.55
Ac-ft	570	725	850	787	806	586	681	784	328	348	387	509

Calendar year 1954: Max 26 Min 0.1 Mean 9.96 Ac-ft 7,210
Water year 1954-55: Max 18.5 Min 0.9 Mean 10.2 Ac-ft 7,360

* Discharge measurement made on this day.

Blue Lake near Coulee City, Wash.

Location.--Lat 47°34', long 119°26, in SE¼ sec. 16, T. 24 N., R. 27 E., on right shore 2½ miles upstream from outlet and 7 miles southwest of Coulee City.

Records available.--March 1938 to September 1955 (fragmentary).

Gage.--Staff gage read 2 or 3 times a month. Datum of gage is at mean sea level (Bureau of Reclamation benchmark).

Extremes.--1938-55: Maximum elevation observed, 1,093.46 ft Jan. 5, 1955; minimum observed, 1,090.50 ft Nov. 10, 1939.
Maximum elevation known, 1,101.2 ft (from alkali line at gage); date of occurrence unknown.

Remarks.--Some diversion from tributaries for irrigation.

Elevation, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-	-	-	-	-	-	-	93.32	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	93.42	92.83	-	-	-	-	-	92.76	-
5	92.66	92.88	-	93.46	-	-	92.90	93.06	-	92.90	-	-
6	-	-	93.31	-	-	-	-	-	-	-	-	92.50
7	-	-	-	-	-	92.64	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	92.65	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	93.27	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-
19	92.78	93.08	-	-	-	-	-	-	-	-	-	-
20	-	-	93.33	93.29	-	-	-	93.34	93.09	93.09	-	92.54
21	-	-	-	-	92.76	92.58	-	-	-	93.08	-	-
22	-	-	-	-	-	-	-	-	-	-	92.56	-
23	-	93.18	-	-	-	-	-	-	-	-	-	92.55
24	-	-	-	-	-	-	-	-	-	-	92.58	-
25	92.78	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	93.32	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-------	-	-	-	-	-	-	-
31	-	-------	-	-	-------	-	-------	93.32	-------	-	-	-------

Note.--Add 1,000 ft to obtain elevation above mean sea level.

Lenore Lake near Soap Lake, Wash.

Location.--Lat 47°31', long 119°30', in SW¼ sec. 1, T. 23 N., R. 26 E., on east shore 5½ miles upstream from outlet and 9 miles north of town of Soap Lake.

Records available.--July 1936, March 1938 to September 1955 (fragmentary).

Gage.--Staff gage read about two times a week. Mar. 21, 1950, to Sept. 21, 1954, benchmark or reference point at same site and datum. Datum of gage is at mean sea level (Bureau of Reclamation benchmark).

Extremes.--1936, 1938-55: Maximum elevation observed, 1,087.73 ft June 12, 1953; minimum observed, 1,076.65 ft Oct. 26, 1940.
Maximum elevation known, 1,092.2 ft (from well-defined alkali line at gage); date of occurrence unknown.

Remarks.--Some diversion from tributaries for irrigation, and pumping into and out of lake.

Elevation, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	83.10	-	-	-	-	-	-	81.09	-	80.75	-
2	-	-	-	-	-	-	-	80.98	-	-	-	-
3	-	-	-	81.32	-	-	-	-	-	-	-	-
4	83.12	83.08	-	81.21	80.73	-	-	-	-	-	80.73	-
5	83.12	83.05	-	81.27	80.71	-	80.58	80.99	-	80.93	-	-
6	-	-	82.02	-	-	-	-	81.00	81.09	-	-	80.22
7	-	-	-	-	-	80.14	-	-	-	-	-	-
8	-	82.92	-	-	-	-	-	-	-	-	80.74	-
9	-	-	-	-	-	-	-	81.00	-	-	-	-
10	-	-	-	81.14	80.61	-	-	-	-	-	-	-
11	83.10	82.75	-	-	-	-	80.65	-	-	80.91	-	-
12	-	-	-	-	-	80.20	-	-	-	-	-	80.17
13	-	-	81.83	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	80.17	-	-	-	-	-	-
15	-	82.66	-	-	-	-	-	-	-	-	80.56	-
16	-	-	-	-	-	-	80.68	81.02	-	-	-	-
17	-	-	-	80.99	-	-	-	-	-	-	-	-
18	83.12	-	-	-	-	-	80.79	-	-	80.84	-	-
19	83.08	-	-	-	-	-	-	-	-	-	-	-
20	-	-	81.66	80.94	-	-	80.79	81.02	81.04	-	-	80.10
21	-	-	-	-	80.43	80.31	-	-	-	80.74	-	-
22	-	82.41	-	-	-	-	-	-	-	-	80.46	-
23	-	82.40	-	-	-	-	-	81.03	-	-	-	80.04
24	-	-	-	80.87	-	-	-	-	-	-	80.40	-
25	83.08	-	-	-	-	-	80.86	-	-	-	-	-
26	-	-	-	80.84	-	-	-	-	-	-	-	80.08
27	-	-	81.46	-	-	-	-	-	80.99	-	-	-
28	-	-	-	-	80.35	80.47	-	-	-	-	-	-
29	83.11	82.22	81.40	-	-	-	-	-	-	-	80.33	-
30	-	82.19	81.39	-	-------	-	-	-	-	-	-	-
31	-	-------	-	-	-------	-	-------	81.15	-------	-	-	-------

Note.--Add 1,000 ft to obtain elevation above mean sea level.

Soap Lake near Soap Lake, Wash.

Location.--Lat 47°23'40", long 119°29'30", in SW¼ sec. 18, T. 22 N., R. 27 E., on east shore 1 mile north of town of Soap Lake.

Records available.--May to August 1936, March 1938 to September 1955 (fragmentary).

Gage.--Water-stage recorder. Prior to Feb. 4, 1953, staff gage or reference point at site three-quarters of a mile uplake. Feb. 4, 1953, to June 8, 1954, staff gage at present site. All readings have been reduced to elevations above mean sea level.

Extremes.--Maximum elevation during year, 1,077.15 ft Dec. 2, 3; minimum, 1,075.04 ft Sept. 4.

1936, 1938-55: Maximum elevation observed, 1,079.20 ft Jan. 28, 1953; minimum observed, 1,070.87 ft Oct. 21, 1939.

Maximum elevation known, 1,083.1 ft (from well-defined alkali line at gage); date of occurrence unknown.

Remarks.--Some diversion from tributaries for irrigation. Water pumped from lake to reduce or limit high stages.

Cooperation.--Gage-height record furnished by Bureau of Reclamation.

Mean elevation, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76.55	76.76	77.14	76.30	-	-	75.33	75.55	75.53	75.30	75.25	75.06
2	76.56	76.77	77.15	76.29	-	-	75.34	75.55	75.52	-	75.23	75.05
3	76.56	76.78	77.15	76.28	-	-	75.34	75.55	75.51	75.27	75.21	75.05
4	76.56	76.79	77.12	-	75.72	-	75.35	75.55	75.50	75.27	75.22	75.04
5	76.56	76.81	77.08	76.26	75.70	-	75.35	75.56	75.49	75.30	75.22	75.05
6	76.57	76.83	77.05	-	-	-	75.35	75.55	75.48	75.29	75.22	75.05
7	76.57	76.84	77.02	-	75.69	75.20	75.36	75.55	75.48	75.29	75.21	75.05
8	76.57	76.85	76.98	-	-	75.18	75.36	75.55	75.47	75.29	75.20	75.05
9	76.58	76.87	76.95	-	-	-	75.37	75.55	75.46	75.30	75.21	75.06
10	76.58	76.88	76.91	76.16	75.62	75.18	75.37	75.55	75.46	75.30	75.21	75.06
11	76.59	76.91	76.88	-	-	75.19	75.37	75.55	75.46	75.31	75.20	75.06
12	76.59	76.93	76.85	-	-	75.20	75.40	75.54	75.44	75.31	75.17	75.06
13	76.60	76.94	76.81	-	-	75.21	75.42	75.54	75.43	75.31	75.16	75.06
14	76.60	76.96	76.78	-	75.54	75.22	75.43	75.55	75.42	75.31	75.15	75.07
15	76.62	76.97	76.74	-	-	-	75.43	75.56	75.41	75.33	75.15	75.07
16	76.63	76.98	76.70	-	-	-	75.44	75.57	75.40	75.32	75.13	75.09
17	76.64	76.99	76.67	76.02	-	-	75.44	75.58	75.40	75.32	75.13	75.10
18	76.65	77.01	76.64	-	-	-	75.45	75.59	75.39	75.30	75.12	75.11
19	76.66	77.03	76.60	-	-	-	75.45	75.59	75.38	75.30	75.11	75.10
20	76.67	77.05	76.56	75.99	-	-	75.45	75.60	75.38	75.29	75.10	75.08
21	76.68	77.07	76.53	-	75.40	75.24	75.47	-	75.38	75.29	75.11	75.08
22	76.68	77.08	76.49	-	-	75.24	75.48	-	75.37	75.29	75.10	75.09
23	76.69	77.09	76.46	-	-	75.25	75.49	75.56	75.36	75.29	75.09	75.09
24	76.69	77.10	76.44	75.91	-	75.25	75.50	75.56	75.35	75.30	75.08	75.09
25	76.70	77.10	76.42	-	-	75.25	75.51	75.57	75.35	75.29	75.07	75.10
26	76.70	77.11	76.41	-	-	75.26	75.52	75.56	75.35	75.30	75.08	75.10
27	76.71	77.11	76.40	-	-	75.27	75.53	75.55	75.35	75.29	75.07	75.13
28	76.71	77.12	76.37	75.84	75.24	75.28	75.54	75.55	75.35	75.28	75.06	75.13
29	76.72	77.13	76.35	-	-	75.30	75.55	75.55	75.33	75.26	75.06	75.13
30	76.73	77.13	76.33	-	-------	75.31	75.55	75.55	75.32	75.25	75.06	75.14
31	76.74	-------	76.32	75.79	-------	75.32	-------	75.54	-------	75.25	75.06	-------

Note.--Add 1,000 ft to obtain elevation above mean sea level.

Rocky Ford Creek near Ephrata, Wash.

Location.--Lat 47°18'20", long 119°26'50", in NW¼NW¼ sec. 21, T. 21 N., R. 27 E., on right bank 1½ miles downstream from source at Rocky Ford Springs, 5 miles east of Ephrata, and 7 miles upstream from mouth.

Drainage area.--About 500 sq mi, most of which is noncontributing to surface runoff.

Records available.--June 1909 to April 1910, July to December 1911, August 1942 to September 1955. Prior to January 1910, published as Upper Crab Creek near Ephrata.

Gage.--Water-stage recorder. Datum of gage is 1,064.88 ft above mean sea level (Bureau of Reclamation benchmark). Prior to Jan. 1, 1912, staff gages at sites 4½ to 5½ miles downstream at different datums. Aug. 19, 1942, to May 23, 1945, water-stage recorder at site 3½ miles downstream at datum 5.37 ft lower.

Average discharge.--13 years (1942-55), 72.1 cfs (52,200 acre-ft per year).

Extremes.--Maximum discharge during year, 109 cfs July 24; maximum gage height, 2.67 ft Oct. 17; minimum discharge, 71 cfs Feb. 17, 21-27; minimum gage height, 2.02 ft Feb. 17.

1909-11, 1942-55: Maximum discharge, 143 cfs Apr. 23, 1949 (gage height, 2.84 ft); minimum observed, 20 cfs Aug. 13-18, 1911.

Remarks.--Records good. A few small diversions for domestic use above station. Slight regulation by fish hatchery.

Revision.--WSP 1246: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 10)

2.0	71
2.2	85
2.5	110

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	90	88	79	79	77	72	83	94	*94	101	106	100
2	90	88	79	80	77	72	84	94	94	100	106	100
3	88	88	79	80	76	72	84	95	94	101	106	101
4	88	87	79	80	76	72	84	95	95	101	105	101
5	91	87	79	*79	76	72	86	95	95	101	105	101
6	91	87	78	79	76	73	86	95	95	101	104	102
7	91	87	77	79	75	73	86	95	95	102	104	102
8	92	87	77	78	75	74	87	94	95	102	104	102
9	91	87	77	77	74	73	87	94	95	103	104	102
10	91	85	77	77	74	74	87	94	96	104	104	102
11	92	84	77	77	74	74	88	94	96	104	103	102
12	92	84	77	77	74	74	89	95	96	106	103	102
13	92	83	77	78	74	74	89	95	97	106	103	103
14	92	83	77	78	73	*75	90	95	97	106	102	103
15	92	83	77	78	73	76	90	95	96	106	102	103
16	93	82	77	78	73	77	*91	95	97	107	102	103
17	93	82	77	78	72	77	a91	95	98	107	102	103
18	92	82	77	78	72	77	a91	95	98	107	102	104
19	*91	82	78	78	72	77	a92	95	98	107	102	104
20	91	81	78	78	72	77	a92	95	98	107	101	103
21	91	80	78	77	71	77	a92	95	98	*108	101	103
22	91	80	79	77	71	78	a93	95	97	108	101	102
23	91	*79	79	77	71	78	a93	95	99	108	*101	*102
24	91	79	79	77	71	78	93	95	99	108	101	100
25	91	79	79	77	71	79	93	95	99	107	100	99
26	90	79	79	77	71	80	93	95	99	108	100	99
27	*91	79	80	77	71	81	93	95	99	107	100	100
28	91	79	80	77	72	81	94	95	99	107	101	99
29	91	79	79	77	-	82	94	95	100	106	101	99
30	91	79	80	77	------	82	94	95	101	106	101	98
31	90	------	79	*77	------	82	------	95	------	106	100	------
Total	2,822	2,489	2,424	2,413	2,054	2,363	2,689	2,939	2,909	3,258	3,177	3,044
Mean	91.0	83.0	78.2	77.8	73.4	76.2	89.6	94.8	97.0	105	102	101
Ac-ft	5,600	4,940	4,810	4,790	4,070	4,690	5,330	5,830	5,770	6,460	6,300	6,040

Calendar year 1954: Max 96 Min 65 Mean 83.0 Ac-ft 60,080
Water year 1954-55: Max 108 Min 71 Mean 89.3 Ac-ft 64,630

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage.

Moses Lake at Moses Lake, Wash.

Location.--Lat 47°06'00", long 119°19'20", in NW¼ sec. 33, T. 19 N., R. 28 E., on east shore 100 ft north of U. S. Highway 10, 1½ miles upstream from outlet, and 2 miles southwest of town of Moses Lake. Prior to Mar. 15, 1955, at site on bridge near west shore 100 ft downlake.

Drainage area.--2,970 sq mi, approximately.

Records available.--June 1909 to September 1914, November 1936 to September 1945 (fragmentary), October 1945 to September 1955. Published as "at Neppel" 1912-14.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (Bureau of Reclamation benchmark). Prior to Apr. 3, 1910, staff gage at site 1 mile northeast at different datum. Apr. 3, 1910, to Sept. 30, 1914, and Nov. 19, 1936, to Nov. 24, 1944, staff gages at site 3¼ miles northeast at Parker Horn at various datums. Oct. 30, 1945, to Mar. 14, 1955, water-stage recorder at site near west shore on downstream side of bridge on U. S. Highway 10 at same datum.

Extremes.--Maximum elevation during year, 1,046.69 ft Oct. 1; minimum, 1,043.93 ft Feb. 28.

1909-14, 1936-55: Maximum elevation, 1,048.29 ft Mar. 10, 1950; minimum observed, 1,038.17 ft Aug. 27, 1910.

Remarks.--Elevation controlled by dam at lake outlet. Many small diversions for irrigation.

Elevation, in feet, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46.69	46.48	46.25	45.94	44.94	43.97	45.52	46.38	46.38	46.22	46.78	46.30
2	46.67	46.48	46.23	45.94	44.90	44.03	45.56	46.40	46.40	46.20	46.64	46.31
3	46.66	46.47	46.22	45.93	44.86	44.10	45.61	46.42	46.40	46.19	46.52	46.32
4	46.64	46.47	46.20	45.89	44.82	44.13	45.64	46.43	46.42	46.18	46.50	46.31
5	46.63	46.46	46.19	45.88	44.75	44.14	45.66	46.46	46.42	46.17	46.49	46.31
6	46.62	46.46	46.18	45.86	44.70	44.18	45.69	46.47	46.43	46.17	46.48	46.32
7	46.60	46.45	46.17	45.84	44.65	44.24	45.71	46.49	46.44	46.17	46.45	46.33
8	46.58	46.46	46.16	45.85	44.66	44.30	45.73	46.51	46.44	46.17	46.42	46.33
9	46.58	46.46	46.14	45.87	44.74	44.33	45.75	46.49	46.44	46.18	46.41	46.33
10	46.57	46.45	46.13	45.86	44.70	44.37	45.77	46.52	46.44	46.18	46.40	46.34
11	46.56	46.44	46.13	45.85	44.65	44.39	45.79	46.52	46.44	46.20	46.40	46.34
12	46.55	46.43	46.12	45.84	44.59	44.43	45.81	46.53	46.43	46.20	46.38	46.34
13	46.55	46.43	46.11	45.82	44.52	44.46	45.84	46.51	46.42	46.21	46.37	46.35
14	46.54	46.42	46.10	45.82	44.49	44.51	45.88	46.49	46.41	46.22	46.35	46.37
15	46.54	46.41	46.08	45.81	44.50	44.54	45.90	46.50	46.40	46.22	46.35	46.37
16	46.53	46.41	46.08	45.81	44.50	44.63	45.93	46.50	46.37	46.21	46.35	46.41
17	46.52	46.40	46.07	45.80	44.46	44.71	45.97	46.50	46.37	46.19	46.34	46.42
18	46.52	46.39	46.06	45.80	44.39	44.82	46.01	46.50	46.36	46.18	46.34	46.43
19	46.51	46.38	46.04	45.79	44.33	44.91	46.03	46.50	46.34	46.18	46.34	46.44
20	46.51	46.38	46.03	45.73	44.27	44.95	46.06	46.50	46.35	46.19	46.33	46.47
21	46.50	46.37	46.01	45.63	44.21	44.98	46.11	46.48	46.34	46.19	46.33	46.47
22	46.49	46.37	46.00	45.54	44.15	45.08	46.16	46.46	46.33	46.19	46.32	46.48
23	46.50	46.36	45.99	45.45	44.11	45.13	46.18	46.43	46.32	46.18	46.31	46.49
24	46.49	46.34	45.98	45.39	44.07	45.18	46.20	46.42	46.31	46.23	46.31	46.51
25	46.48	46.32	45.97	45.32	44.05	45.20	46.24	46.41	46.29	46.28	46.30	46.51
26	46.48	46.31	45.95	45.27	44.02	45.24	46.26	46.37	46.29	46.41	46.30	46.52
27	46.48	46.30	45.94	45.21	43.97	45.28	46.28	46.35	46.27	46.64	46.30	46.57
28	46.48	46.28	45.94	45.15	43.93	45.33	46.32	46.34	46.27	46.83	46.30	46.59
29	46.47	46.27	45.93	45.08	-	45.38	46.34	46.35	46.26	46.96	46.30	46.61
30	46.47	46.26	45.93	45.03	-------	45.43	46.36	46.36	46.23	47.00	46.30	46.62
31	46.47	-------	45.93	44.99	-------	45.47	-------	46.37	-------	46.91	46.30	-------

Note.--Add 1,000 ft to obtain elevation above mean sea level. Elevations estimated from reconstructed graph Oct. 12-21, Nov. 8-21, 26-30, Mar. 5, 6, July 6, 7.

Crab Creek near Warden, Wash.

Location.--Lat 46°58'45", long 119°15'45", in NE¼ sec. 11, T. 17 N., R. 28 E., on right bank a quarter of a mile downstream from O'Sullivan Dam, 0.4 mile downstream from Lind Coulee, and 10 miles west of Warden.

Drainage area.--About 4,150 sq mi, of which 500 sq mi in the vicinity of Soap Lake is probably noncontributing.

Records available.--June to December 1909, March to December 1910, February to December 1911, February to June 1912, October 1942 to September 1955. Published as Lower Crab Creek near Warden, 1909-12.

Gage.--Water-stage recorder and concrete control. Datum of gage is 923.90 ft above mean sea level (levels by Bureau of Reclamation). Prior to June 27, 1912, staff gages at several sites within 5 miles downstream at various datums. October 1942 to September 1950, water-stage recorder at site 0.4 mile downstream at different datum.

Extremes.--The discharge for the year varied between 0.2 and 0.4 cfs with an average flow of 0.3 cfs. The range in stage was between 1.58 and 1.67 ft.

1909-12, 1942-55: Maximum discharge, 3,000 cfs Feb. 7, 1943 (gage height, 4.25 ft, site and datum then in use), from rating curve extended above 20 cfs on basis of slope-area measurement of flood in Lind Coulee; no flow for short intervals in June and July 1948, and part of each day Feb. 2-21, 1952, when water was shut off at O'Sullivan Dam.

Remarks.--The discharge for the 1955 water year consisted entirely of seepage from O'Sullivan Dam. The average seepage was 0.3 cfs. Many diversions for irrigation. Flow regulated by O'Sullivan Dam.

Crab Creek near Smyrna, Wash.

Location.--Lat 46°50'35", long 119°36'25", in SE¼ sec. 30, T. 16 N., R. 26 E., on left bank at highway bridge, 2½ miles east of Smyrna and 17 miles upstream from mouth.

Drainage area.--About 4,500 sq mi, of which about 500 sq mi in the vicinity of Soap Lake is probably noncontributing.

Records available.--August 1942 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 530.83 ft above mean sea level (Bureau of Reclamation benchmark).

Extremes.--Maximum discharge during year, 53 cfs Oct. 22 (gage height, 2.53 ft); minimum, 12 cfs July 16 (gage height, 1.43 ft).
1942-55: Maximum discharge, 3,300 cfs Feb. 8, 1943 (gage height, 7.5 ft, estimated by observer), from rating curve extended above 1,000 cfs; possibly no flow at times during summer of 1947.

Remarks.--Records good. Many diversions above station for irrigation. Some artificial regulation from Moses Lake and by O'Sullivan Dam.

Revisions.--WSP 1216: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

1.4	11.5
1.7	18.5
2.1	31
2.6	54

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	42	38	42	42	39	29	36	*21	25	28	32
2	42	42	38	40	41	38	28	36	21	27	28	32
3	43	42	41	38	38	36	28	37	22	28	28	32
4	42	42	41	*34	37	33	29	34	22	28	29	32
5	43	43	42	34	39	29	29	32	24	28	29	32
6	44	46	41	41	40	34	31	34	24	28	30	32
7	43	47	41	38	41	38	33	35	23	30	28	33
8	44	46	41	38	41	36	35	30	21	31	27	33
9	43	45	40	40	39	35	34	28	20	31	28	34
10	43	45	40	41	37	35	34	29	20	32	28	34
11	42	44	40	41	37	*34	35	28	21	32	28	33
12	43	42	40	40	39	33	40	27	22	26	29	33
13	42	42	40	40	39	33	41	27	21	24	30	34
14	42	43	40	39	38	32	39	28	19	23	30	35
15	43	45	40	41	38	32	*38	30	20	16.5	30	35
16	44	44	39	41	38	33	35	34	19.5	13.5	30	35
17	45	43	35	40	37	33	34	38	19	20	31	35
18	45	43	29	40	33	32	34	36	21	20	31	35
19	45	43	25	40	36	33	34	36	23	*16.5	30	35
20	47	44	24	38	37	31	32	34	19.5	16	30	36
21	50	43	30	37	37	30	34	34	17.5	16.5	30	36
22	*52	*41	37	36	37	30	36	35	16.5	15	31	37
23	51	41	41	39	37	33	37	33	16.5	15	31	37
24	51	41	37	40	36	32	36	32	21	15.5	*31	38
25	51	41	37	41	36	31	36	30	23	17	32	38
26	49	41	33	41	37	31	38	27	24	20	32	39
27	46	40	32	40	35	31	41	27	23	25	31	41
28	45	40	28	40	38	31	40	30	23	27	31	42
29	44	41	34	40	-	32	38	28	24	27	32	47
30	43	40	48	41	------	32	38	25	25	27	32	47
31	43	------	46	*41	------	31	------	25	------	29	32	------
Total	1,391	1,282	1,158	1,222	1,060	1,023	1,046	977	636.5	729.5	927	1,074
Mean	44.9	42.7	37.4	39.4	37.9	33.0	34.9	31.5	21.2	23.5	29.9	35.8
Ac-ft	2,760	2,540	2,300	2,420	2,100	2,030	2,070	1,940	1,260	1,450	1,840	2,130

Calendar year 1954: Max 84 Min 10 Mean 34.4 Ac-ft 24,890
Water year 1954-55: Max 52 Min 13.5 Mean 34.3 Ac-ft 24,840

* Discharge measurement made on this day.

Yakima River near Martin, Wash.

Location.--Lat 47°19'10", long 121°20'10", in NE¼ sec. 12, T. 21 N., R. 11 E., on left bank 800 ft downstream from dam at outlet of Keechelus Lake, 3½ miles northwest of Martin, and 9½ miles northwest of Easton.
Drainage area.--55.8 sq mi.
Records available.--October 1903 to September 1955.
Gage.--Water-stage recorder and masonry channel. Datum of gage is 2,422.40 ft above mean sea level (Bureau of Reclamation benchmark). Prior to July 20, 1923, staff gages at several sites within 2 miles of present site at various datums.
Average discharge.--52 years (1903-55), 329 cfs (238,200 acre-ft per year), adjusted for storage since January 1906.
Extremes.--Maximum discharge during year, 1,300 cfs June 23; maximum gage height, 7.85 ft July 1, 2; minimum discharge, 1.4 cfs Oct. 30 to Nov. 2 (gage height, 2.13 ft).
1903-55: Maximum discharge, 7,370 cfs Mar. 26, 1915, when temporary crib dam was washed out; practically no flow when gates in Keechelus Lake Dam are closed.
Remarks.--Records good. Flow regulated by Keechelus Lake (see p. 319). Keechelus Lake spillway discharge, computed from reservoir elevations and spillway rating, bypasses gage and is added to flow at station. No diversion.
Cooperation.--Gage-height record collected in cooperation with, and seven discharge measurements furnished by Bureau of Reclamation.
Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1910.

Rating table, water year 1954-55, except period of combined flow at gage and over spillway (gage height, in feet, and discharge, in cubic feet per second)

2.1	1.0	3.5	85
2.2	2.6	4.0	141
2.3	5.0	5.0	285
2.4	8.2	6.0	500
2.6	17	7.0	770
2.8	28	8.0	1,130
3.0	41		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	824	1.4	4.2	5.3	5.9	7.2	8.2	550	166	1,170	806	881
2	800	1.6	4.2	5.3	6.2	7.2	8.2	550	166	1,090	830	860
3	800	2.4	4.2	5.3	6.2	7.2	8.2	548	166	1,070	830	860
4	800	2.6	4.2	5.3	6.2	7.2	8.2	548	166	1,060	830	860
5	800	2.6	4.5	5.3	6.2	7.2	8.6	548	166	1,050	830	860
6	800	2.6	4.5	5.3	6.2	7.2	8.9	548	166	978	830	842
7	800	2.6	4.8	5.3	8.2	7.2	8.9	485	166	930	830	812
8	800	2.8	4.8	5.3	11	7.2	8.6	421	164	930	830	779
9	800	2.8	4.8	5.3	8.6	7.2	8.9	367	164	930	830	767
10	800	2.8	4.8	5.3	7.5	7.2	9.2	345	166	930	869	767
11	800	2.8	4.8	*5.3	7.2	7.2	105	321	167	930	894	770
12	668	2.8	4.8	5.3	7.2	7.2	166	305	168	782	914	767
13	600	2.8	4.8	5.3	6.8	7.2	167	305	*171	653	930	*752
14	600	2.8	*4.8	5.3	6.8	7.2	167	305	553	779	930	737
15	600	2.8	4.5	5.3	*6.8	7.2	219	349	1,100	653	*930	695
16	562	*2.8	4.2	5.3	6.8	*7.2	231	367	990	598	930	668
17	525	2.8	4.0	5.3	6.8	7.5	212	339	858	600	930	648
18	525	3.5	3.8	5.3	6.8	7.5	312	278	802	600	930	628
19	525	3.5	4.2	5.3	6.5	7.5	369	255	786	600	930	618
20	590	3.2	4.8	5.3	6.5	7.5	369	200	793	722	930	618
21	*671	3.0	4.8	5.3	6.5	7.5	367	167	994	770	930	632
22	713	3.0	4.8	5.3	6.2	8.2	*367	167	1,250	773	930	642
23	704	3.0	4.8	5.6	6.2	8.6	367	166	1,300	770	930	642
24	692	3.0	5.0	5.9	6.5	8.6	365	166	1,150	773	930	645
25	683	3.2	5.0	5.9	6.8	8.6	393	167	996	773	930	645
26	273	6.8	5.0	5.3	6.8	8.6	405	*167	839	770	930	648
27	2.8	5.6	5.0	5.3	7.2	8.2	462	167	774	770	930	650
28	1.8	5.3	5.0	5.3	7.2	7.5	528	166	790	*767	934	650
29	1.5	4.8	5.0	5.6	-	7.5	548	166	807	770	934	653
30	1.4	4.8	5.0	5.6	-------	7.8	548	166	877	770	934	653
31	1.4	-------	5.3	5.9	-------	8.2	-------	166	-------	770	930	-------
Total	17,763.9	96.5	144.4	167.0	193.8	234.5	6,752.9	9,765	17,821	25,531	27,805	21,649
Mean	573	3.22	4.66	5.39	6.92	7.56	225	315	594	824	897	722
Ac-ft	35,230	191	286	331	384	465	13,390	19,370	35,350	50,640	55,150	42,940
(†)	-24,610	+22,930	+9,980	+9,860	+15,160	+7,950	-1,530	+17,880	+32,510	-11,230	-45,410	-38,130

Adjusted for change in contents in Keechelus Lake

Mean	173	389	167	166	280	137	199	606	1,140	641	158	80.8
Cfsm	3.10	6.97	2.99	2.97	5.02	2.46	3.57	10.9	20.4	11.5	2.83	1.45
In.	3.57	7.77	3.45	3.42	5.22	2.83	3.99	12.52	22.80	13.24	3.27	1.62
Ac-ft	10,620	23,120	10,270	10,190	15,540	8,420	11,860	37,250	67,860	39,410	9,740	4,810

Observed

Calendar year 1954: Max 1,090 Min 1.4 Mean 436 Ac-ft 315,300
Water year 1954-55: Max 1,300 Min 1.4 Mean 350 Ac-ft 253,700

Adjusted

Calendar year 1954: Mean 383 Cfsm 6.86 In. 93.24 Ac-ft 277,500
Water year 1954-55: Mean 344 Cfsm 6.16 In. 83.70 Ac-ft 249,100

* Discharge measurement made on this day.
† Change in contents in Keechelus Lake, in acre-feet.
Note.--Discharge June 13 to July 2 is combined flow at gage and over spillway.

Kachess River near Easton, Wash.

Location.--Lat 47°15'30", long 121°11'50", in NE¼ sec. 3, T. 20 N., R. 13 E., on left bank three-quarters of a mile downstream from Kachess Lake and 2 miles northwest of Easton.
Drainage area.--63.6 sq mi.
Records available.--October 1903 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 2,188.10 ft above mean sea level (Bureau of Reclamation benchmark). Prior to July 22, 1913, staff gage and July 22, 1913, to Aug. 14, 1916, water-stage recorder, at site a quarter of a mile upstream at different datum. Aug. 15, 1916, to Oct. 8, 1927, water-stage recorder at site half a mile downstream at different datum. Oct. 9, 1927, to Sept. 30, 1951, staff gage and water-stage recorder at present site at datum 1.33 ft higher.
Average discharge.--52 years, 285 cfs (206,300 acre-ft per year), adjusted for storage since October 1905.
Extremes.--Maximum discharge during year, 1,570 cfs June 12 (gage height, 7.15 ft); minimum, 1.7 cfs Jan. 12-18 (gage height, 1.70 ft).
1903-55: Maximum discharge, 2,530 cfs May 28, 1948 (gage height, 8.45 ft, present datum); no flow at times when gates in dam are closed.
Remarks.--Records good. No diversion. Flow regulated by Kachess Lake (see p. 319).
Cooperation.--Gage-height record collected in cooperation with, and seven discharge measurements furnished by Bureau of Reclamation.
Revisions (water years).--WSP 369: 1904, 1907-8. WSP 1216: Drainage area.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 12 to Nov. 8, Dec. 11 to Jan. 24)

1.5	0.7	3.5	132
1.6	1.8	4.0	220
1.9	9.0	5.0	560
2.1	17	6.0	985
2.5	39	7.2	1,600
3.0	77		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	220	3.8	235	5.8	96	7.5	258	428	136	552	728	895
2	210	3.8	235	5.5	96	7.8	303	428	178	552	728	890
3	210	4.1	235	4.8	96	7.8	303	396	212	684	728	868
4	210	3.8	235	4.8	96	7.8	303	365	214	760	728	850
5	210	2.5	235	4.6	97	7.5	303	348	214	756	728	850
6	210	2.5	235	4.3	97	7.5	303	294	214	752	724	814
7	208	2.3	235	4.1	98	7.8	303	240	216	*748	724	774
8	206	67	235	4.1	154	7.5	300	202	233	744	720	752
9	206	107	235	3.6	262	7.5	220	145	824	740	720	748
10	206	107	198	*3.4	327	7.8	190	126	1,250	736	760	748
11	206	107	90	3.4	180	8.1	190	104	1,420	732	787	748
12	129	85	5.3	2.5	126	8.1	188	70	1,520	660	859	748
13	3.8	70	4.8	1.7	126	7.8	188	55	*1,550	576	886	732
14	4.1	70	*4.6	1.7	126	130	252	54	1,530	640	886	712
15	4.1	70	4.6	1.7	*126	118	312	54	1,440	552	882	672
16	3.8	*70	4.6	1.7	53	*83	312	54	1,380	504	*877	*596
17	3.6	70	4.3	1.7	8.1	71	312	54	1,360	508	877	568
18	3.6	70	4.3	2.3	7.8	71	448	54	1,150	504	872	512
19	3.8	70	4.3	2.7	7.8	70	544	24	886	504	872	424
20	4.1	71	4.3	2.7	7.8	70	476	12	624	608	904	396
21	*3.8	71	4.3	2.7	7.5	70	440	11	576	648	936	396
22	3.8	71	4.3	2.9	7.5	117	*436	10.5	668	636	931	393
23	3.8	71	4.3	3.8	7.5	176	436	10.5	676	628	926	365
24	3.8	71	4.1	58	7.5	176	436	10.5	676	628	922	334
25	4.1	71	4.1	95	7.5	176	484	54	922	620	918	321
26	4.1	144	3.8	95	7.5	176	508	*80	900	632	918	318
27	4.1	186	3.8	96	7.5	178	508	97	774	632	913	318
28	4.1	186	3.8	96	7.5	176	508	126	774	696	908	318
29	4.1	216	4.1	95	-	176	508	135	636	732	904	235
30	4.1	238	4.6	96	-------	176	456	136	552	732	900	136
31	3.8	-------	5.5	96	-------	176	-------	136	-------	732	900	-------
Total	2,505.5	2,381.8	2,490.8	803.5	2,247.5	2,486.5	10,728	4,313.5	23,705	20,128	26,066	17,431
Mean	80.8	79.4	80.3	25.9	80.3	80.2	358	139	790	649	841	581
Ac-ft	4,970	4,720	4,940	1,590	4,460	4,930	21,280	8,560	47,020	39,920	51,700	34,570
(†)	+1,390	+13,170	+4,770	+5,790	+9,650	+3,470	-9,000	+28,840	+13,370	-10,280	-46,060	-31,540

Adjusted for change in contents in Kachess Lake

Mean	103	301	158	120	254	137	206	608	1,015	482	91.7	50.9
Cfsm	1.62	4.73	2.48	1.89	3.99	2.15	3.24	9.56	16.0	7.58	1.44	0.800
In.	1.87	5.27	2.86	2.18	4.16	2.48	3.62	11.03	17.80	8.74	1.66	0.89
Ac-ft	6,360	17,890	9,710	7,380	14,110	8,400	12,280	37,400	60,390	29,640	5,640	3,030

Observed

Calendar year 1954: Max 985 Min 2.3 Mean 346 Ac-ft 250,800
Water year 1954-55: Max 1,550 Min 1.7 Mean 316 Ac-ft 228,700

Adjusted

Calendar year 1954: Mean 344 Cfsm 5.41 In. 73.43 Ac-ft 249,100
Water year 1954-55: Mean 293 Cfsm 4.61 In. 62.56 Ac-ft 212,200

* Discharge measurement made on this day.
† Change in contents in Kachess Lake, in acre-feet.

Cle Elum River near Roslyn, Wash.

Location.--Lat 47°14'30", long 121°03'50", in NW¼ sec. 11, T. 20 N., R. 14 E., on left bank 1,000 ft downstream from dam at Cle Elum Lake and 4 miles northwest of Roslyn.
Drainage area.--203 sq mi.
Records available.--October 1903 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 2,102.10 ft above mean sea level (Bureau of Reclamation benchmark). Prior to Oct. 14, 1913, and Sept. 4, 1931, to Apr. 19, 1933, several staff gages and Oct. 14, 1913, to Sept. 3, 1931, water-stage recorder, at about same site at same datum.
Average discharge.--52 years, 910 cfs (658,800 acre-ft per year), adjusted for storage since 1906.
Extremes.--Maximum discharge during year, 6,620 cfs June 12 (gage height, 11.51 ft); minimum, 5.4 cfs Nov. 18 (gage height, 3.88 ft).
1903-55: Maximum discharge, 18,700 cfs Nov. 15, 1906 (gage height, 14.05 ft); no flow at times when gates in dam are closed.
Remarks.--Records good. No diversion above station. Flow regulated by Cle Elum Lake (see p. 319).
Cooperation.--Gage-height record collected in cooperation with, and eight discharge measurements furnished by Bureau of Reclamation.
Revisions (water years).--WSP 369: 1906-8. WSP 1216: Drainage area. WSP 1286: 1908-9. WSP 1316: 1904. The mean discharge for October 1942 has been revised to 404 cfs, superseding figure published in WSP 982 and 1316. The adjusted mean discharge for December 1953 has been corrected to 1,003 cfs (4.94 cfsm). superseding figures published in WSP 1346.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

4.1	22	6.0	725
4.2	36	7.0	1,370
4.3	53	8.0	2,230
4.5	97	9.0	3,320
4.7	160	10.0	4,550
5.0	265	11.5	6,600
5.5	475		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,310	480	35	206	78	78	550	1,290	511	2,670	2,240	2,270
2	1,220	480	69	206	80	75	595	1,290	511	2,390	2,240	2,160
3	1,240	333	153	202	83	75	595	1,290	516	2,210	2,250	2,130
4	1,240	265	147	198	85	73	595	1,290	518	2,190	2,240	2,120
5	1,250	265	144	198	87	73	595	1,240	520	2,180	2,340	2,120
6	1,240	269	140	198	87	73	595	1,170	525	2,150	2,410	2,120
7	1,240	273	137	195	90	73	595	1,060	890	2,140	2,410	2,110
8	1,240	154	140	195	95	73	595	996	1,120	*2,130	2,420	2,020
9	1,240	35	144	195	90	73	457	725	2,660	2,130	2,290	1,950
10	1,260	35	144	*195	87	73	357	660	5,440	2,130	2,210	1,940
11	1,260	36	96	195	85	71	349	714	6,520	1,690	2,200	1,940
12	888	36	48	195	80	73	345	381	6,600	2,150	2,340	1,930
13	620	36	44	195	78	78	484	265	*6,280	1,370	2,400	1,890
14	620	36	*140	195	78	78	630	262	*4,280	1,930	2,400	*1,850
15	615	35	198	195	*78	80	730	488	3,630	2,230	2,410	1,790
16	377	33	198	195	80	78	742	630	3,440	2,520	*2,400	1,650
17	265	33	198	195	80	*78	742	630	3,310	2,520	2,410	1,590
18	258	30	198	198	80	78	736	635	2,770	2,350	2,410	1,550
19	254	30	195	198	80	75	906	333	2,470	2,290	2,410	1,510
20	416	32	195	198	80	75	1,010	206	2,460	2,260	2,420	1,510
21	*630	32	195	153	80	220	1,030	206	2,540	2,250	2,410	1,510
22	730	33	195	130	80	394	1,010	202	3,560	2,250	2,400	1,510
23	730	*33	195	127	80	475	*1,010	202	4,470	2,250	2,410	1,510
24	730	33	195	127	80	470	1,010	314	4,360	2,240	2,410	1,510
25	725	33	192	124	80	470	1,060	*498	3,640	2,240	2,400	1,510
26	725	33	192	90	80	466	1,080	502	2,850	2,230	2,400	1,500
27	471	33	195	73	78	470	1,080	506	2,400	2,230	2,390	1,500
28	305	35	195	71	78	475	1,220	516	2,570	2,230	2,390	1,410
29	398	35	195	75	-	475	1,300	516	2,770	2,220	2,400	1,380
30	488	35	198	75	-----	475	1,300	516	2,720	2,220	2,340	1,010
31	484	-------	202	78	-------	480	-------	511	-------	2,250	2,310	-------
Total	24,469	3,261	4,910	5,070	2,297	6,373	23,303	20,044	86,849	68,240	73,110	52,480
Mean	789	109	158	164	82.0	206	777	647	2,895	2,201	2,358	1,749
Ac-ft	48,530	6,470	9,740	10,060	4,560	12,640	46,220	39,760	172,300	135,400	145,000	104,100
(†)	-27,610	+47,140	+15,310	+6,760	+23,100	+3,930	-15,430	+74,020	+48,120	-24,860	-107,430	-87,150

Adjusted for change in contents in Cle Elum Lake

Mean	340	901	407	274	498	269	517	1,851	3,704	1,797	611	285
Cfsm	1.67	4.44	2.00	1.35	2.45	1.33	2.55	9.12	18.2	8.85	3.01	1.40
In.	1.93	4.95	2.31	1.55	2.55	1.53	2.84	10.51	20.36	10.21	3.47	1.57
Ac-ft	20,920	53,610	25,050	16,820	27,660	16,570	30,790	113,800	220,400	110,500	37,570	16,950

Observed

Calendar year 1954: Max 3,840 Min 30 Mean 1,098 Ac-ft 795,000
Water year 1954-55: Max 6,600 Min 30 Mean 1,015 Ac-ft 734,800

Adjusted

Calendar year 1954: Mean 1,130 Cfsm 5.57 In. 75.55 Ac-ft 818,100
Water year 1954-55: Mean 954 Cfsm 4.70 In. 63.78 Ac-ft 690,600

* Discharge measurement made on this day.
† Change in contents in Cle Elum Lake, in acre-feet.

Yakima River at Cle Elum, Wash.

Location.--Lat 47°11'20", long 120°56'40", in sec. 27, T. 20 N., R. 15 E., on left bank at highway bridge at Cle Elum just upstream from Roslyn Creek, 7 miles upstream from Teanaway River.
Drainage area.--500 sq mi, approximately.
Records available.--August 1906 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 1,902.27 ft above mean sea level (levels by Bureau of Reclamation). Prior to Aug. 12, 1910, chain gage on highway bridge at different datum. Aug. 12, 1910, to July 11, 1911, staff gage 30 ft below bridge at present datum. July 12, 1911, to June 27, 1923, water-stage recorder under highway bridge at present datum. June 28, 1923, to Oct. 21, 1924, staff gages at various locations near bridge at present datum.
Average discharge.--49 years, 1,969 cfs (1,425,000 acre-ft per year), adjusted for storage since October 1906 and Kittitas Canal diversion since 1930.
Extremes.--Maximum discharge during year, 10,000 cfs June 12 (gage height, 10.68 ft); minimum, 131 cfs Nov. 12 (gage height, 5.19 ft).
1906-55: Maximum discharge, 25,600 cfs Nov. 14, 1906 (gage height, 12.5 ft, from floodmarks); minimum, 46 cfs Nov. 17, 1953; minimum gage height, that of Nov. 12, 1954.
Remarks.--Records good except those below 600 cfs, which are fair. Kittitas high-line canal diverts water from river at Easton for irrigation below station. Several smaller diversions for irrigation of several hundred acres above station. Considerable regulation by Keechelus, Kachess, and Cle Elum Lakes (see p. 319). Records of chemical analyses and water temperatures for the water year 1955 are given in WSP 1403.
Cooperation.--Gage-height record collected in cooperation with, and nine discharge measurements furnished by Bureau of Reclamation.
Revisions (water years).--WSP 369: 1910-11. WSP 832: 1936.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,050	980	683	629	450	340	1,120	2,220	1,180	4,160	2,840	3,200
2	1,910	*956	665	566	430	360	1,280	2,220	1,090	4,020	2,860	3,080
3	1,910	718	726	510	410	350	1,300	2,200	1,170	3,720	2,840	3,010
4	1,900	480	726	480	400	310	1,320	2,170	1,370	3,840	2,800	2,980
5	1,910	470	726	460	400	320	1,340	2,140	1,640	3,780	2,840	2,960
6	*1,880	470	726	440	410	330	1,380	2,100	1,740	3,720	2,920	2,960
7	1,840	450	718	410	674	350	1,440	2,010	2,100	*3,580	2,900	2,920
8	1,810	410	710	400	1,820	360	1,500	1,960	2,560	3,510	2,900	2,780
9	1,810	260	683	390	1,810	370	1,520	1,650	4,060	3,490	2,780	2,690
10	1,830	167	656	*390	1,460	390	1,460	1,450	7,750	3,470	2,690	2,690
11	1,900	149	602	400	1,320	390	1,350	1,600	9,560	2,990	2,800	2,740
12	1,650	185	410	390	980	380	1,120	1,560	9,920	3,440	*2,930	2,700
13	950	221	280	390	860	380	1,220	*1,220	*9,440	2,280	3,110	2,680
14	880	221	300	390	797	360	1,410	996	*7,000	2,980	3,110	2,600
15	880	221	*410	390	742	470	1,690	1,050	6,310	3,170	3,110	*2,530
16	740	230	410	400	*692	430	1,760	1,220	5,950	3,240	*3,110	2,390
17	515	250	400	400	557	*410	1,720	1,230	5,480	3,140	3,110	2,240
18	450	340	390	400	520	410	1,770	1,350	4,710	2,900	3,090	2,180
19	464	510	380	400	500	410	2,130	1,530	3,960	2,750	3,090	2,080
20	655	510	380	400	490	410	2,250	1,690	3,670	2,700	3,140	2,050
21	1,280	440	380	380	470	548	2,240	1,520	3,630	2,860	3,200	2,060
22	*1,530	410	380	350	380	940	2,240	1,290	5,110	2,820	3,240	2,070
23	1,630	*380	390	390	340	1,110	*2,280	1,110	6,480	2,780	3,240	2,060
24	1,630	370	390	530	340	1,060	2,270	1,030	6,240	2,750	3,240	2,010
25	1,640	380	380	620	340	1,050	2,250	1,200	5,400	2,700	3,260	1,980
26	1,630	584	370	602	330	1,030	2,270	1,180	4,540	2,690	3,270	1,980
27	1,280	964	360	520	340	1,010	2,140	1,160	3,670	2,690	3,310	1,990
28	584	908	360	490	330	1,010	2,210	1,090	3,740	2,720	3,310	1,940
29	593	797	370	470	-	1,030	2,280	1,160	4,000	2,780	3,330	1,870
30	790	742	390	460	-------	1,060	2,250	1,400	3,840	2,810	3,310	1,500
31	839	-------	520	460	-------	1,060	-------	1,380	-------	2,870	3,260	-------
Total	41,360	14,173	15,271	13,907	18,592	18,438	52,510	47,086	137,310	97,350	94,940	72,930
Mean	1,334	472	493	449	664	595	1,750	1,519	4,577	3,140	3,063	2,431
Ac-ft	82,040	28,110	30,290	27,580	36,880	36,570	104,200	93,390	272,400	193,100	188,300	144,700
(†)	20,570	0	0	0	0	0	3,150	44,690	56,600	61,900	72,220	48,870
(‡)	-50,830	+83,240	+30,060	+22,410	+47,910	+15,350	-25,960	+120,700	+94,000	-46,370	-198,900	-156,800

Adjusted for change in lake contents and diversion

Mean	842	1,872	981	813	1,527	844	1,368	4,209	7,109	3,393	1,002	618
Cfsm	1.68	3.74	1.96	1.63	3.05	1.69	2.74	8.42	14.2	6.79	2.00	1.24
In.	1.94	4.18	2.26	1.87	3.18	1.95	3.05	9.70	15.86	7.82	2.31	1.38
Ac-ft	51,780	111,400	60,350	49,990	84,790	51,920	81,390	258,800	423,000	208,600	61,620	36,770

Observed

Calendar year 1954: Max 5,630 Min 149 Mean 1,955 Ac-ft 1,415,000
Water year 1954-55: Max 9,920 Min 149 Mean 1,709 Ac-ft 1,238,000

Adjusted

Calendar year 1954: Mean 2,341 Cfsm 4.68 In. 63.55 Ac-ft 1,695,000
Water year 1954-55: Mean 2,045 Cfsm 4.09 In. 55.50 Ac-ft 1,480,000

* Discharge measurement made on this day.
† Diversion by Kittitas Canal in acre-feet.
‡ Change in contents in Keechelus, Kachess, and Cle Elum Lakes, in acre-feet.

Yakima River at Umtanum, Wash.

Location.--Lat 46°51'45", long 120°28'30", in NW¼ sec. 20, T. 16 N., R. 19 E., on right bank at Umtanum, half a mile upstream from Umtanum Creek and 10 miles south of Ellensburg.

Drainage area.--1,590 sq mi, approximately.

Records available.--August 1906 to September 1955. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 1,800.00 ft above mean sea level, datum of 1929. Prior to Sept. 28, 1911, staff or chain gages at approximately same site at various datums. Sept. 28, 1911, to Nov. 23, 1936, water-stage recorder at site about 300 ft upstream at datum 26.70 ft higher.

Extremes.--Maximum discharge during year, 12,800 cfs June 13 (gage height, 35.39 ft); minimum, 478 cfs Nov. 12 (gage height, 30.24 ft, from recorded range in stage).
1906-55: Maximum discharge, 41,000 cfs Nov. 15 or 16, 1906 (gage height, 41.1 ft, from floodmarks, present datum); minimum recorded, 138 cfs Oct. 3, 1915 (gage height, 2.86 ft, datum then in use).

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. Flow partly regulated by Keechelus, Kachess, and Cle Elum Lakes (see p. 319). Water diverted above station for irrigation of about 105,000 acres.

Cooperation.--Records collected and prepared in cooperation with, and results of six discharge measurements furnished by Bureau of Reclamation.

Revisions (water years).--WSP 412: 1914. WSP 1216: Drainage area. WSP 1286: 1910.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

30.2	450	32.0	2,640
30.5	690	33.0	4,760
31.0	1,200	34.0	7,720
31.5	1,840	35.5	13,200

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,560	1,800	1,300	950	800	650	1,670	3,280	3,090	5,070	3,200	3,550
2	2,350	1,600	1,200	900	750	700	1,840	3,480	2,800	5,180	3,140	3,440
3	2,320	1,400	1,300	900	750	600	1,900	3,550	3,200	4,640	3,090	3,380
4	2,300	900	1,300	850	700	500	1,880	3,570	3,440	4,690	3,050	3,380
5	2,320	900	1,300	800	700	550	1,980	3,690	4,340	4,580	3,050	3,360
6	2,300	900	1,300	800	700	600	2,140	3,910	4,660	4,440	3,140	3,380
7	2,300	800	1,300	750	1,200	600	2,400	3,930	4,740	4,290	3,140	3,340
8	2,250	700	1,300	750	2,200	650	2,750	4,040	5,350	4,180	3,160	3,280
9	2,250	650	1,300	750	3,000	700	3,140	3,800	6,070	4,180	3,160	3,120
10	2,270	600	1,200	750	2,200	800	3,300	3,180	9,010	4,270	3,090	3,070
11	2,400	500	1,100	*690	1,830	820	3,050	3,500	11,800	4,060	*3,160	3,070
12	2,490	500	800	690	1,560	800	2,620	4,270	12,400	3,820	3,120	3,070
13	1,900	550	600	672	1,340	753	2,350	3,570	12,400	3,590	3,320	3,090
14	1,600	550	700	663	1,210	699	2,380	2,880	10,600	3,120	3,400	3,070
15	1,540	568	*708	645	1,130	708	2,570	2,490	8,430	3,550	3,420	3,050
16	1,530	609	699	627	*1,080	780	2,640	2,730	*7,920	3,690	3,380	3,070
17	*1,220	690	690	618	1,020	*753	2,620	2,900	7,300	3,670	3,360	2,200
18	1,100	717	700	627	1,000	762	2,540	3,200	6,760	3,420	3,400	2,200
19	1,100	1,090	700	618	900	780	2,780	4,090	5,720	3,160	3,360	2,100
20	1,100	1,300	700	600	900	762	3,090	4,120	5,290	3,030	3,380	2,050
21	1,600	1,140	700	600	900	762	*3,140	4,890	4,920	3,070	3,460	2,050
22	1,870	1,040	700	550	800	1,250	3,200	4,110	5,720	3,050	3,530	2,100
23	2,020	*1,010	700	600	650	1,670	3,260	3,500	7,500	3,010	3,530	2,050
24	2,040	960	700	700	650	1,640	3,280	2,990	7,660	2,990	3,530	2,000
25	2,040	910	700	950	650	1,530	3,140	*2,950	6,950	2,990	3,550	2,000
26	2,000	1,040	650	900	650	1,470	3,180	2,950	6,070	3,010	3,590	2,000
27	1,900	1,420	650	900	650	1,430	3,030	2,880	5,180	*3,100	3,610	1,950
28	1,200	1,570	650	850	620	1,420	3,050	2,800	4,790	3,070	3,630	1,950
29	1,100	1,400	700	800	-	1,650	3,220	2,990	5,160	3,120	3,670	1,900
30	1,300	1,300	800	800	----	1,690	3,240	3,670	5,020	3,140	3,690	1,500
31	1,500	-	850	800	---	1,640	-----	3,610	-----	3,200	*3,570	-----
Total	57,770	29,114	27,997	23,100	30,540	30,119	81,380	107,520	194,290	114,380	103,880	79,770
Mean	1,864	970	903	745	1,091	972	2,713	3,468	6,476	3,690	3,351	2,659
Ac-ft	114,600	57,750	55,530	45,820	60,580	59,740	161,400	213,300	385,400	226,900	206,000	158,200

Calendar year 1954: Max 6,620 Min 500 Mean 2,864 Ac-ft 2,074,000
Water year 1955-56: Max 12,400 Min 500 Mean 2,411 Ac-ft 1,745,000

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 26 to Nov. 14, Nov. 29 to Dec. 14, Dec. 18 to Jan 10, Jan. 20 to Feb. 9, Feb. 18 to Mar. 10, Sept. 17-30; discharge estimated on basis of recorded range in stage, weather records, and record for station at Cle Elum.

Bumping River near Nile, Wash.

Location.--Lat 46°52', long 121°18', in NE¼ sec. 23, T. 16 N., R. 12 E., on left bank a quarter of a mile downstream from spillway of Bumping Lake Dam and 19 miles west of Nile.
Drainage area.--68.6 sq mi.
Records available.--June to July 1906, April 1909 to September 1955.
Gage.--Water-stage recorder. Datum of gage is 3,367.10 ft above mean sea level (Bureau of Reclamation benchmark). June 13 to July 31, 1906, staff gage at site half a mile upstream at different datum. Apr. 27 to Aug. 6, 1909, and June 24, 1912, to June 13, 1913, staff gage at site three-eighths of a mile upstream at different datum. Aug. 7, 1909, to June 23, 1912, staff gage at site 1,300 ft upstream at different datum.
Average discharge.--46 years (1909-55), 291 cfs (210,700 acre-ft per year), adjusted for storage since November 1910.
Extremes.--Maximum discharge during year, 2,100 cfs June 12 (gage height, 5.20 ft); minimum, 5.8 cfs Feb. 18, Mar. 20 (gage height, 0.95 ft).
1906, 1909-55: Maximum discharge, 5,180 cfs Dec. 29, 1917 (gage height, 9.33 ft); practically no flow when gates in outlet conduit are closed.
Remarks.--Records good. No diversion. Flow regulated by Bumping Lake (see p. 319).
Cooperation.--Gage-height record collected and prepared in cooperation with, and six discharge measurements furnished by Bureau of Reclamation.
Revisions (water years).--WSP 369: 1911. WSP 1246: Drainage area. WSP 1286: 1911.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 12				June 13 to Sept. 30	
0.9	4.8	2.5	225	2.2	150
1.0	6.2	3.0	415	2.4	205
1.1	8.0	3.5	670	2.7	305
1.3	14	4.0	1,000	3.1	480
1.5	26	4.5	1,420	3.5	700
1.7	49	5.1	2,000	4.0	1,050
2.0	100			4.5	1,450
				5.0	1,900

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	225	311	292	102	28	7.3	34	146	598	760	694	202
2	219	326	264	102	28	6.9	34	144	571	676	555	178
3	216	292	244	100	28	6.4	34	146	571	616	490	178
4	g213	278	g193	100	28	6.6	34	146	642	586	485	175
5	g208	282	g193	102	28	6.9	33	146	804	570	480	172
6	g205	264	g193	102	29	6.6	34	121	979	565	480	175
7	g202	231	g193	102	33	6.2	34	85	1,160	560	475	181
8	199	213	193	102	36	6.1	35	89	1,360	555	470	178
9	196	196	174	102	32	6.1	37	69	*1,590	570	465	175
10	205	225	146	74	32	6.1	39	55	1,800	592	460	172
11	219	235	146	50	32	6.1	37	60	1,890	604	416	172
12	156	208	146	50	31	6.2	39	64	1,980	658	398	170
13	*108	185	146	52	31	6.2	37	64	1,790	754	398	170
14	108	172	146	52	31	6.4	37	64	*1,580	879	398	175
15	108	172	132	52	31	6.2	37	64	1,350	956	357	175
16	108	137	*92	54	13.5	6.1	37	64	1,140	978	313	178
17	108	*123	92	54	6.7	6.1	39	66	970	858	309	175
18	g108	152	92	54	7.3	6.1	69	*69	907	718	309	175
19	g108	g180	92	54	7.1	6.1	106	46	865	604	309	175
20	g108	g208	90	54	6.7	6.1	100	34	865	604	321	175
21	g110	g257	90	52	6.6	66	100	39	1,010	670	321	175
22	g213	282	92	52	6.4	67	100	40	1,280	694	*317	175
23	303	315	94	54	6.4	33	100	37	1,390	700	294	175
24	292	415	94	54	6.4	33	100	35	1,270	742	274	172
25	216	406	94	54	6.2	33	100	34	1,080	742	274	170
26	164	406	94	37	6.2	33	100	100	956	*760	274	*168
27	240	406	96	13.5	6.2	33	100	292	914	760	270	178
28	326	402	96	26	8.8	33	126	388	907	754	266	187
29	322	392	96	26	-	34	146	490	893	742	252	g184
30	319	366	100	26	-------	34	146	615	830	760	235	181
31	300	-------	104	27	-------	34	-------	637	-------	760	232	-------
Total	6,132	8,037	4,309	1,935.5	552.5	559.8	2,004	4,449	33,942	21,747	11,591	5,291
Mean	198	268	139	62.4	19.7	18.1	66.8	144	1,131	702	374	176
Ac-ft	12,160	15,940	8,550	3,840	1,100	1,110	3,970	8,820	67,320	43,130	22,990	10,490
(†)	-3,980	-260	+880	+2,940	+4,550	+4,060	+910	+15,090	+890	-8,340	-13,900	-5,220

Adjusted for change in contents in Bumping Lake

Mean	133	264	153	110	102	84.1	82.0	389	1,146	566	148	88.6
Cfsm	1.94	3.85	2.23	1.60	1.49	1.23	1.20	5.67	16.7	8.25	2.16	1.29
In.	2.24	4.29	2.58	1.85	1.54	1.41	1.33	6.54	18.64	9.51	2.48	1.44
Ac-ft	8,180	15,680	9,430	6,780	5,650	5,170	4,880	23,910	68,210	34,790	9,090	5,270

Observed

Calendar year 1954:	Max	1,370	Min	90	Mean	361	Ac-ft 261,500
Water year 1954-55:	Max	1,980	Min	6.1	Mean	275	Ac-ft 199,400

Adjusted

Calendar year 1954:	Mean	357	Cfsm	5.20	In.	70.72	Ac-ft 258,700
Water year 1954-55:	Mean	272	Cfsm	3.97	In.	53.85	Ac-ft 197,000

* Discharge measurement made on this day.
† Change in contents in Bumping Lake, in acre-feet.
g Computed from once-daily staff-gage readings.

American River near Nile, Wash.

Location.--Lat 46°58'30", long 121°10'10", in SW¼ sec. 12, T. 17 N., R. 13 E., on right bank 300 ft upstream from Bumping Lake road crossing, three-quarters of a mile upstream from mouth, and 16 miles northwest of Nile.

Drainage area.--78.9 sq mi.

Records available.--April 1909 to March 1912, July to September 1913, June to September 1914, June to September 1915, October 1939 to September 1955. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 2,700.00 ft above mean sea level (Washington State Highway Dept. benchmark). Prior to Sept. 12, 1915, staff gage at site 300 ft downstream at different datum. Oct. 12 to Dec. 7, 1939, staff gage at present site and datum.

Average discharge.--18 years (1909-11, 1939-55), 241 cfs (174,500 acre-ft per year).

Extremes.--Maximum discharge during year, 1,790 cfs June 12 (gage height, 75.37 ft); minimum, 40 cfs Mar. 20 (gage height, 71.96 ft).
1909-12, 1913-15, 1939-55: Maximum discharge, 2,600 cfs May 27, 1948 (gage height, 76.6 ft, from high-water mark in well), from rating curve extended above 1,400 cfs; minimum, 20 cfs Nov. 22, 1940.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No regulation or diversion.

Cooperation.--Gage-height record collected in cooperation with, and eight discharge measurements furnished by Bureau of Reclamation.

Revisions (water years).--WSP 982: 1940-42. WSP 1216: Drainage area. WSP: 1286: 1911.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 9-23)

72.0	46	73.5	470
72.3	96	74.0	710
72.6	162	75.0	1,390
73.0	275	75.4	1,730

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	89	167	a92	67	68	57	91	488	456	205	70
2	70	87	155	a90	65	83	59	92	497	400	191	68
3	68	83	150	a88	62	b82	57	100	528	371	178	67
4	67	82	150	87	65	b80	57	110	675	383	165	65
5	65	83	145	*96	62	b80	60	114	944	367	155	64
6	62	102	145	94	65	78	73	167	1,030	379	152	62
7	62	98	136	92	82	70	91	205	1,120	371	148	62
8	70	96	129	92	138	65	110	260	1,210	387	143	60
9	70	96	125	91	118	70	150	269	*1,370	396	136	59
10	68	98	120	87	98	68	178	315	1,530	417	*127	57
11	102	100	110	85	b95	67	165	391	1,620	412	120	56
12	118	98	108	83	b90	64	155	474	1,680	466	118	56
13	*102	100	108	83	b85	62	145	430	1,370	524	112	57
14	92	120	108	82	b80	60	114	375	*1,110	590	110	68
15	91	170	112	80	b80	*59	129	348	932	620	102	67
16	87	194	*98	78	b75	57	123	333	770	605	100	89
17	87	*199	98	80	*b75	56	118	337	680	488	96	98
18	87	315	b95	77	b70	60	*112	*396	650	391	92	83
19	91	520	b95	73	b65	57	108	600	650	352	91	77
20	114	474	b95	73	b65	54	104	848	670	333	91	72
21	145	363	98	73	68	60	102	800	812	315	89	68
22	194	315	106	72	70	59	102	695	1,010	308	*87	65
23	160	288	108	73	67	56	100	620	999	312	85	64
24	140	253	102	75	68	52	96	556	788	312	83	60
25	131	269	98	73	64	52	94	551	640	278	82	57
26	120	275	b98	72	62	51	92	515	580	*260	80	*56
27	114	253	b96	70	60	52	88	474	556	260	78	57
28	106	227	b96	67	59	52	85	456	575	230	77	68
29	100	202	a94	72	-	56	83	524	580	216	75	70
30	96	183	a94	68	------	54	83	600	515	216	73	67
31	92	-----	a92	68	-----	54	-----	551	------	205	72	------
Total	3,043	5,832	3,531	2,486	2,120	1,938	3,090	12,597	26,579	11,620	3,513	1,989
Mean	98.2	194	114	80.2	75.7	62.5	103	406	886	375	113	66.3
Cfsm	1.24	2.46	1.44	1.02	0.959	0.792	1.31	5.15	11.2	4.75	1.43	0.840
In.	1.43	2.75	1.66	1.17	1.00	0.91	1.46	5.94	12.53	5.48	1.66	0.94
Ac-ft	6,040	11,570	7,000	4,930	4,200	3,840	6,130	24,990	52,720	23,050	6,970	3,950

Calendar year 1954: Max 1,680 Min 62 Mean 300 Cfsm 3.80 In. 51.61 Ac-ft 217,200
Water year 1954-55: Max 1,680 Min 51 Mean 215 Cfsm 2.72 In. 36.93 Ac-ft 155,390

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.
b Stage-discharge relation affected by ice.

Naches River below Tieton River, near Naches, Wash.

Location.--Lat 46°44'40", long 120°46'00", in SW¼NE¼ sec. 36, T. 15 N., R. 16 E., on left bank half a mile downstream from Wapatox power canal, three-quarters of a mile downstream from Tieton River, and 3½ miles northwest of Naches.

Drainage area.--941 sq mi.

Records available.--August to October 1905, October 1908 to September 1955. Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder. Datum of gage is 1,549.67 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Dec. 7, 1916, staff gage and Dec. 7, 1916, to Sept. 9, 1936, water-stage recorder, at site five-eighths of a mile upstream at different datums. Sept. 10 to Oct. 30, 1936, staff gage at present site and datum.

Average discharge.--47 years, 1,689 cfs (1,223,000 acre-ft per year), adjusted for diversions by Selah Valley and Tieton Canals since 1909, city of Yakima at Oak Flat since 1929, by Wapatox Canal since 1936, for change in contents in Bumping Lake since November 1910, and in Tieton Reservoir since October 1924.

Extremes.--Maximum discharge during year, 9,740 cfs June 12 (gage height, 16.63 ft); minimum, 8.5 cfs Mar. 6 (gage height, 9.81 ft).
1905, 1908-55: Maximum discharge, 32,200 cfs Dec. 22, 23, 1933 (gage height, 14.33 ft, site and datum then in use); minimum, 1 cfs Nov. 7, 1942, and for many days during winter of 1943-44, result of regulation and diversion.

Remarks.--Records good except those for periods of ice effect, which are poor. Flow regulated by Bumping Lake and Tieton Reservoir (see p. 319), by diversion at Oak Flat for municipal supply of city of Yakima below station, and by diversion of Selah Valley, Tieton, and Wapatox Canals. Small unmeasured diversions for irrigation of approximately 420 acres above station.

Cooperation.--Gage-height record collected in cooperation with, and seven discharge measurements furnished by Bureau of Reclamation.

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1910(M), 1911, 1929-30(M), 1932-33(M), 1935(M). Revised figures, in acre-feet, of change in contents in Bumping Lake and Tieton Reservoir and adjusted runoff figures based thereon in water year 1954, are given herewith, superseding those published in WSP 1346.

Month	Observed				Change in contents†	Diversion (acre-feet)‡	Adjusted			
	Maximum	Minimum	Mean	Runoff in acre-feet			Mean	Per square mile	Runoff	
									Inches	Acre-feet
May 1954....	7,160	2,140	4,190	257,600	+66,390	47,690	6,045	6.42	7.41	371,700
Water year 1953-54.	7,160	36	1,402	1,015,000	+34,520	485,800	2,121	2.25	30.60	1,535,000

† Change in contents in Bumping Lake and Tieton Reservoir, in acre-feet.
‡ Diversion by Tieton, Selah Valley and Wapatox Canals, and city of Yakima, in acre-feet.

Naches River below Tieton River, near Naches, Wash.--Continued

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

10.0	20	12.0	924
10.1	30	12.5	1,410
10.3	60	13.0	2,050
10.5	104	14.0	3,730
10.7	162	15.0	5,720
11.0	285	17.0	10,800
11.5	563		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	145	614	797	372	60	28	74	545	2,270	2,420	1,320	455
2	153	695	675	325	60	26	72	859	2,190	2,080	1,290	410
3	153	668	563	289	60	25	66	900	2,440	1,840	1,150	388
4	153	745	532	248	60	25	60	916	3,070	1,860	1,120	383
5	146	782	526	220	60	25	60	1,020	4,320	*1,960	1,110	383
6	184	1,010	532	210	62	25	92	1,200	4,860	2,090	1,170	367
7	206	1,030	502	*210	85	27	169	1,310	5,300	2,130	1,150	346
8	206	820	485	210	456	30	280	1,580	5,950	2,120	1,140	330
9	206	738	461	200	405	30	438	1,260	6,820	2,150	1,120	305
10	191	675	394	200	239	32	563	1,210	*7,360	2,200	1,100	295
11	315	641	310	190	170	32	467	1,610	7,860	2,110	*1,030	290
12	388	*621	218	180	110	32	383	2,090	9,260	2,040	941	280
13	248	589	206	170	70	32	290	1,730	8,740	2,340	984	262
14	214	595	222	160	40	32	253	1,400	7,120	2,180	950	244
15	*202	595	295	150	35	*32	310	1,190	*5,720	2,580	984	248
16	206	569	230	130	32	35	*267	1,180	4,580	2,600	875	356
17	153	526	150	120	32	36	223	1,200	3,920	2,370	851	352
18	137	589	*130	110	*32	40	231	1,510	3,600	1,980	*851	280
19	123	933	130	100	32	38	356	2,400	3,360	1,700	820	244
20	173	1,020	130	100	32	36	315	*3,620	3,320	1,550	775	198
21	262	933	130	100	33	40	340	3,160	3,840	1,600	775	187
22	450	843	130	100	40	82	290	2,640	5,040	1,630	767	187
23	520	843	130	100	48	131	295	2,250	5,380	1,650	760	187
24	563	875	130	100	45	66	290	1,910	4,560	1,630	702	187
25	520	907	140	90	36	52	276	1,870	3,670	1,580	675	184
26	290	1,060	150	80	36	50	300	1,730	3,220	1,580	654	180
27	253	1,130	150	70	34	48	253	1,740	3,000	1,550	627	173
28	532	1,050	150	65	30	50	271	1,750	3,050	1,430	589	194
29	601	967	170	60	-	64	399	2,160	3,000	1,400	563	206
30	641	851	250	60	-------	66	346	2,760	2,760	1,390	514	173
31	589	-------	410	60	-------	66	-------	2,560	-------	1,380	490	-------
Total	9,123	23,914	9,428	4,779	2,434	1,333	8,029	53,260	139,580	59,120	27,847	8,274
Mean	294	797	304	154	86.9	43.0	268	1,718	4,653	1,907	898	276
Ac-ft	18,100	47,430	18,700	9,480	4,830	2,640	15,930	105,600	276,900	117,300	55,230	16,410
(†)	-3,620	-7,000	+2,320	+4,890	+9,980	+7,970	+1,780	+44,190	+29,840	-19,030	-59,690	-36,220
(‡)	29,810	23,470	23,490	22,320	21,290	22,710	34,650	41,080	55,680	56,250	58,220	54,640

Adjusted for change in lake and reservoir contents and diversions

Mean	720	1,074	724	597	550	542	880	3,105	6,090	2,513	874	585
Cfsm	0.765	1.14	0.769	0.634	0.691	0.576	0.935	3.30	6.47	2.67	0.929	0.622
In.	0.88	1.27	0.89	0.73	0.72	0.66	1.04	3.80	7.22	3.08	1.07	0.69
Ac-ft	44,290	63,900	44,510	36,690	36,100	33,320	52,360	190,900	362,400	154,500	53,760	34,830

Observed

Calendar year 1954: Max 7,160 Min 120 Mean 1,449 Ac-ft 1,049,000
Water year 1954-55: Max 9,260 Min 25 Mean 951 Ac-ft 688,600

Adjusted

Calendar year 1954: Mean 2,102 Cfsm 2.23 In. 30.32 Ac-ft 1,521,000
Water year 1954-55: Mean 1,530 Cfsm 1.63 In. 22.05 Ac-ft 1,108,000

* Discharge measurement made on this day.
† Change in contents in Bumping Lake and Tieton Reservoir, in acre-feet.
‡ Diversion by Tieton, Selah Valley and Wapatox Canals, and city of Yakima, in acre-feet.
Note.--Stage-discharge relation affected by ice Dec. 16-30, Jan. 5 to Feb. 5, Feb. 11-22, Mar. 1-16.

North Fork Ahtanum Creek near Tampico, Wash.

Location.--Lat 46°33'40", long 120°55'10", in NW¼ sec. 2, T. 12 N., R. 15 E., on left bank 150 ft downstream from Nasty Creek, 3½ miles upstream from Tampico and confluence with South Fork, and 20 miles west of Yakima.

Drainage area.--68.9 sq mi.

Records available.--August 1907 to September 1955 (no winter records in water years 1908-9, 1916-30). Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder and sharp-crested weir. Altitude of gage is 2,450 ft (from topographic map). Prior to Sept. 20, 1934, staff gage or water-stage recorder at site 50 ft upstream at different datum.

Average discharge.--31 years (1909-15, 1930-55), 66.9 cfs (48,430 acre-ft per year).

Extremes.--Maximum discharge during year, 360 cfs June 5 (gage height, 1.92 ft); minimum, 8.6 cfs Feb. 18 (gage height, 0.20 ft).
1907-55: Maximum discharge, 770 cfs May 27, 1948 (gage height, 2.97 ft); maximum gage height, 4.6 ft June 18, 1916 (site and datum then in use); minimum discharge, 5.0 cfs Nov. 14, 15, 1944, Jan. 20, 1945 (gage height, 0.18 ft), but may have been less during periods of ice effect.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No diversion of importance. No regulation.

Cooperation.--Gage-height record collected in cooperation with, and eight discharge measurements furnished by Office of Indian Affairs.

Revisions (water years).--WSP 1216: Drainage area. WSP 1286: 1910(M), 1914-15.

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.2	9.2	1.0	127
.3	18	1.5	245
.5	41	2.0	395
.7	71		

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	25	30	26	21	19	27	33	*152	99	36	22
2	25	25	27	24	b20	20	27	36	170	88	36	22
3	25	25	30	b20	b16	19	27	42	197	88	34	22
4	24	25	30	b14	b20	b19	26	48	251	85	34	22
5	23	26	28	b20	21	b20	27	63	311	80	33	22
6	23	30	27	b18	21	b20	31	76	326	80	33	20
7	23	30	26	20	24	22	36	94	320	74	32	21
8	23	31	25	23	31	24	46	113	314	73	31	21
9	23	32	25	24	b22	25	65	111	317	78	31	21
10	23	30	19	24	b22	24	67	135	326	74	31	20
11	*30	30	20	22	b22	23	58	161	320	69	*28	20
12	27	28	26	24	24	23	54	161	314	*66	27	19
13	25	28	26	24	24	22	48	133	282	63	27	20
14	25	31	28	22	22	21	44	111	242	63	27	21
15	25	37	25	b20	21	20	41	103	214	60	27	21
16	*25	34	16	b20	20	*21	40	99	*189	60	26	24
17	25	33	b15	b20	17	21	*37	99	175	57	26	22
18	25	38	*b13	b20	22	22	34	117	168	52	26	22
19	25	44	b14	b17	*19	22	33	157	161	48	25	21
20	26	38	b20	b19	21	b20	33	206	159	45	25	20
21	34	36	24	21	21	22	34	196	170	42	25	20
22	32	36	27	22	20	23	34	180	177	41	25	*20
23	30	36	28	21	20	22	33	166	168	40	24	a20
24	27	34	26	21	20	22	33	157	150	40	24	a20
25	26	37	23	*21	19	21	33	150	138	40	24	a20
26	25	38	b15	21	19	21	34	144	129	41	24	a22
27	26	37	b15	b19	18	21	32	138	123	40	24	a20
28	26	33	b21	b18	18	22	*32	142	121	37	24	a19
29	25	30	27	20	-	28	32	175	111	36	24	a19
30	25	26	28	22	------	26	32	184	107	36	23	19
31	25	-----	33	22	-----	26	-----	159	------	36	22	------
Total	795	963	737	649	585	681	1,130	3,889	6,302	1,831	858	622
Mean	25.6	32.1	23.8	20.9	20.9	22.0	37.7	125	210	59.1	27.7	20.7
Cfsm	0.372	0.466	0.345	0.303	0.303	0.319	0.547	1.81	3.05	0.858	0.402	0.300
In.	0.43	0.52	0.40	0.35	0.32	0.37	0.61	2.10	3.40	0.99	0.46	0.34
Ac-ft	1,580	1,910	1,460	1,290	1,160	1,350	2,240	7,710	12,500	3,630	1,700	1,230

Calendar year 1954: Max 415 Min 13 Mean 82.9 Cfsm 1.20 In. 16.35 Ac-ft 60,020
Water year 1954-55: Max 326 Min 13 Mean 52.2 Cfsm 0.758 In. 10.29 Ac-ft 37,760

Peak discharge (base, 200 cfs).--May 19 (12 p.m.) 224 cfs (1.43 ft); May 29 (11 p.m.) 209 cfs (1.38 ft); June 5 (11 p.m.) 360 cfs (1.92 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for station on South Fork.

b Stage-discharge relation affected by ice.

South Fork Ahtanum Creek at Conrad Ranch, near Tampico, Wash.

Location.--Lat 46°30'30", long 120°54'50", in SW¼ sec. 23, T. 12 N., R. 15 E., on left bank at Conrad Ranch, 2½ miles upstream from confluence with North Fork, 2¾ miles southwest of Tampico, and 20 miles southwest of Yakima.

Drainage area.--24.8 sq mi.

Records available.--March 1915 to September 1955 (no winter records prior to water year 1931). Monthly discharge only for some periods, published in WSP 1316.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 2,400 ft (from topographic map). Prior to Aug. 9, 1918, staff gage at same site and at datum 1.00 ft lower. Aug. 9, 1918, to Mar. 22, 1951, staff gage at present site and datum.

Extremes.--Maximum discharge during year, 84 cfs June 9 (gage height, 1.28 ft); minimum, 4.4 cfs Jan. 4 (gage height, 0.38 ft).
1915-55: Maximum discharge observed, 424 cfs Dec. 23, 1933 (gage height, 3.10 ft), from rating curve extended above 80 cfs; minimum observed, 2.6 cfs Aug. 23, 25, 1951 (gage height, 0.35 ft).

Remarks.--Records good except those for periods of ice effect, which are poor. Diversion for irrigation of about 55 acres above station. No regulation.

Cooperation.--Gage-height record collected in cooperation with, and nine discharge measurements furnished by Office of Indian Affairs.

Revisions (water years).--WSP 312: 1910. WSP 902: 1939. WSP 1246: Drainage area. WSP 1316: 1943(M).

Rating table, water year 1954-55, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.4	4.9	0.8	26
.5	8.0	1.0	46
.6	12	1.3	87

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.7	8.7	b9.5	6.7	7.3	7.0	9.5	10.5	*36	22	9.5	7.0
2	8.7	8.7	b9.5	6.4	7.0	7.0	9.5	11	36	21	9.5	7.0
3	8.7	8.7	b9.5	6.0	b7.0	7.0	9.1	11.5	40	21	9.1	6.7
4	8.7	8.7	9.9	6.4	b7.0	b7.0	8.7	13.5	50	20	9.1	6.7
5	8.7	*8.7	9.5	b6.4	7.0	b7.0	9.1	15.5	61	19.5	8.7	6.4
6	8.7	9.5	9.5	b6.5	7.3	b7.0	9.5	17.5	69	18	8.7	6.4
7	8.7	9.5	9.1	b7.0	b7.3	b7.0	10.5	19	72	17.5	8.4	6.7
8	8.4	9.5	8.7	b8.5	b7.5	7.0	13	22	69	17	8.0	6.7
9	8.4	9.9	8.7	8.7	8.0	7.3	15.5	22	74	18	8.4	6.7
10	8.4	9.1	b8.5	8.0	b8.0	7.3	17	24	78	17.5	8.0	6.7
11	*11	9.1	b8.5	7.6	b8.0	7.7	15.5	29	75	17	*8.0	6.4
12	9.1	9.1	8.7	7.6	b8.0	7.3	15.5	30	74	*15.5	7.7	6.4
13	8.7	8.7	b8.4	7.6	8.0	7.3	14.5	26	66	15	7.7	7.0
14	8.7	9.5	8.4	7.6	7.6	7.3	14	23	58	14.5	7.7	7.0
15	8.7	11	8.7	7.6	7.3	7.0	13	22	53	14.5	7.7	7.0
16	*8.7	11	b8.0	b7.5	7.3	*7.3	12	21	*48	14.5	7.7	7.6
17	8.7	10.5	b7.0	b8.0	b7.3	7.3	*11.5	22	44	13.5	7.3	7.0
18	8.7	11	*b6.8	8.4	b7.5	7.3	11	23	39	13	7.3	6.7
19	8.7	11	b7.0	8.0	*b8.0	7.3	11	29	37	12	7.3	6.7
20	9.1	11	b7.0	b7.5	b7.0	b7.5	11	36	36	11.5	7.3	6.4
21	11	10.5	b8.0	*7.3	b6.7	7.7	11	37	35	11.5	7.0	6.4
22	10.5	9.9	9.5	7.3	6.7	8.0	11	36	34	11.5	7.0	*6.7
23	9.1	9.9	8.4	7.6	6.7	7.7	11	36	34	11.5	7.0	6.7
24	9.1	9.9	8.0	7.6	7.0	7.3	11	33	32	11	7.0	6.4
25	9.1	10.5	b8.0	7.6	6.7	7.3	11	31	30	11	7.0	6.4
26	8.7	11	b7.5	7.3	6.7	7.3	11.5	30	29	11.5	6.7	6.4
27	8.7	10.5	b7.0	7.3	8.0	7.3	11	29	28	11	6.7	6.7
28	8.7	9.5	b7.0	b7.3	8.4	7.7	*10.5	30	26	10.5	6.7	6.4
29	8.7	9.5	b7.0	7.3	-	9.9	10.5	35	25	10.5	6.7	6.0
30	8.7	9.5	7.3	7.3	------	9.1	10.5	38	24	10.5	6.7	6.0
31	8.7	------	7.6	7.3	------	9.5	------	37	------	9.9	7.0	------
Total	277.2	293.6	256.2	229.2	206.3	232.7	349.4	799.5	1,410	452.9	238.6	199.3
Mean	8.94	9.79	8.26	7.39	7.37	7.51	11.6	25.8	47.0	14.6	7.70	6.64
Ac-ft	550	582	508	455	409	462	693	1,590	2,800	898	473	395

Calendar year 1954: Max 97 Min 6.5 Mean 22.7 Ac-ft 16,460
Water year 1954-55: Max 78 Min 6.0 Mean 13.5 Ac-ft 9,820

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Yakima River near Parker, Wash.

Location.--Lat 46°29'40", long 120°26'10", in sec. 28, T. 12 N., R. 19 E., on left bank 700 ft downstream from Sunnyside diversion dam, 1½ miles east of Parker, and 3 miles downstream from Ahtanum Creek.

Drainage area.--3,650 sq mi, approximately.

Records available.--April 1908 to September 1955. Monthly discharge only for some periods, published in WSP 1316. Prior to October 1916, published as "near Wapato."

Gage.--Water-stage recorder. Datum of gage is 886.23 ft above mean sea level (Bureau of Reclamation benchmark). Prior to Jan. 1, 1909, hook gage at site 25 ft above headgate of Sunnyside Canal at different datum. Jan. 1, 1909, to Dec. 31, 1913, chain gage at site 500 ft downstream from Sunnyside Canal at datum 1.82 ft higher than present datum. Jan. 1, 1914, to Aug. 16, 1915, chain or staff gage and Aug. 17, 1915, to Feb. 2, 1919, water-stage recorder, at site 500 ft downstream from headgate of Sunnyside Canal at datum 0.18 ft lower than present datum. Feb. 3, 1919, to Oct. 20, 1940, water-stage recorder at present site at datum 0.18 ft lower than present datum. Oct. 21, 1940, to Aug. 9, 1953, water-stage recorder at site 1,000 ft downstream from headgate of Sunnyside Canal at datum 0.18 ft lower than present datum.

Extremes.--Maximum discharge during year, 18,400 cfs June 12 (gage height, 10.68 ft); minimum, 88 cfs Apr. 28 (gage height, 2.08 ft); minimum daily, 204 cfs Apr. 28.
1908-55: Maximum discharge, 65,000 cfs Dec. 23, 1933 (gage height, 15.0 ft, from high-water marks); practically no flow for several days during latter part of irrigation season in most years as result of diversions.

Remarks.--Records excellent except those for periods of no gage-height record, which are good. Diversions above station for irrigation of about 200,000 acres above and 220,000 acres below station. During the irrigation season when Sunnyside Canal is carrying water, as much as 18 cfs, depending upon the stage of the canal, is released ahead of the fish screens and passes the river and canal gaging stations unmeasured. Some regulation by diversions and by Keechelus, Kachess, Cle Elum, and Bumping Lakes, and Tieton Reservoir (see p. 319).

Cooperation.--Records collected and prepared in cooperation with Bureau of Reclamation, which furnished 12 discharge measurements.

Revisions (water years).--WSP 982: 1942. WSP 1122: 1934. WSP 1216: 1949-50, drainage area.

Rating tables, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 19				May 20 to Sept. 30			
2.5	204	4.0	1,240	2.7	189	5.0	2,220
2.7	284	5.0	2,560	3.0	300	6.0	3,900
3.0	435	6.0	4,260	3.5	575	8.0	8,600
3.5	780			4.0	1,000	10.6	18,000

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,400	2,520	2,720	1,900	1,430	1,250	658	588	1,650	3,920	682	523
2	1,260	2,670	2,500	1,900	1,340	1,140	780	844	1,060	3,730	674	612
3	1,110	2,670	2,280	1,820	1,340	1,230	860	924	1,330	3,000	474	462
4	1,110	2,410	2,350	1,720	1,280	1,120	788	940	2,020	2,900	380	439
5	1,120	2,240	2,280	1,670	1,340	1,030	772	1,080	3,790	*2,790	*267	428
6	1,120	2,270	2,340	1,640	1,300	1,060	812	1,400	5,320	2,630	412	434
7	1,130	2,240	2,210	*1,600	1,320	1,300	852	1,610	5,630	*2,710	439	456
8	1,130	2,150	2,200	1,590	2,410	1,200	1,140	1,830	6,700	2,580	474	456
9	1,100	2,280	2,180	1,600	4,170	1,440	1,710	1,820	7,950	2,620	*422	336
10	1,100	1,960	2,070	1,600	3,330	1,500	2,200	1,070	*10,700	2,810	292	259
11	1,220	2,180	1,990	1,540	2,720	1,480	*1,940	1,230	14,500	2,780	428	a270
12	1,540	*1,970	1,750	1,500	2,480	1,420	1,280	2,560	16,900	1,950	263	284
13	1,200	1,870	1,590	1,500	2,270	1,360	788	2,140	18,000	2,520	417	365
14	630	1,900	1,500	1,500	2,070	1,230	477	1,120	15,700	1,300	568	444
15	908	1,970	1,550	1,490	1,900	1,120	424	370	11,000	2,090	642	480
16	1,190	1,900	1,620	1,480	1,820	860	*609	386	8,990	2,320	590	730
17	*990	1,960	1,580	1,470	*1,660	812	588	616	*7,610	2,150	*474	851
18	658	1,990	1,440	1,470	1,540	*588	355	924	6,600	1,650	504	516
19	502	2,430	1,370	1,440	1,360	521	386	2,290	5,430	981	504	523
20	489	3,060	*1,430	1,340	1,410	502	700	*4,500	4,810	*620	428	292
21	1,040	2,960	a1,500	1,350	1,440	391	716	4,700	4,560	523	486	*222
22	2,910	2,700	a1,560	1,360	1,370	396	693	3,390	5,890	523	568	244
23	3,230	2,610	1,600	1,340	1,410	1,110	637	2,310	8,310	492	486	332
24	3,360	2,610	1,720	1,440	1,290	1,090	772	1,330	8,660	530	480	275
25	3,400	2,580	1,600	1,480	1,320	990	554	905	7,400	504	395	209
26	3,170	2,720	1,520	1,640	1,320	812	528	860	5,990	480	400	233
27	3,120	3,150	1,430	1,590	1,210	740	396	772	4,900	682	450	275
28	2,850	3,380	1,460	1,480	1,220	693	204	650	4,160	530	355	549
29	2,390	3,200	1,580	1,420	-	740	465	905	4,560	582	434	456
30	2,380	2,940	1,620	1,370	----	900	609	2,080	4,200	605	444	360
31	2,450	----	1,720	1,430	----	708	-----	2,460	----	612	355	--
Total	51,207	73,490	56,260	47,670	49,070	30,733	23,693	48,604	214,320	54,114	14,187	12,315
Mean	1,652	2,450	1,815	1,538	1,752	991	790	1,568	7,144	1,746	458	410
Ac-ft	101,600	145,800	111,600	94,550	97,330	60,960	46,990	96,400	425,100	107,300	28,140	24,430

Calendar year 1954: Max 9,820 Min 71 Mean 2,831 Ac-ft 2,050,000
Water year 1954-55: Max 18,000 Min 204 Mean 1,851 Ac-ft 1,340,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for station at Kiona.

Yakima River near Parker, Wash.--Continued

Monthly discharge, of Yakima River and canals near Parker, Wash., water year October 1954 to September 1955

Month	Mean discharge in cubic feet per second							Combined flow of Yakima River and canals (acre-feet)
	Yakima River near Parker	Roza Canal at mile 26.9	Union Gap Canal (estimated)	New Reservation Canal	Old Reservation Canal	Sunnyside Canal	Combined flow of Yakima River and canals	
October	1,652	296	8	341	4	506	2,807	172,600
November	2,450	0	0	0	14	0	2,464	146,600
December	1,815	0	0	0	12	0	1,827	112,300
Calendar year 1954.	2,831	405	16	906	32	656	4,846	3,506,000
January	1,538	0	0	0	12	0	1,550	95,310
February	1,752	0	0	0	12	0	1,764	97,970
March	991	a136	5	153	20	206	1,511	92,910
April	790	572	20	1,153	24	993	3,552	211,400
May	1,568	691	34	1,873	52	1,248	5,466	336,100
June	7,144	891	39	1,922	39	1,280	11,320	673,600
July	1,746	857	36	1,925	0	1,271	5,835	358,800
August	458	822	37	1,732	0	1,270	4,319	265,600
September	410	627	25	1,418	0	1,034	3,514	209,100
Water year 1954-55.	1,851	410	17	881	16	643	3,818	2,772,000

a Estimated as 80 percent of diversion at the intake for March.

Note.--New Reservation, Old Reservation, and Sunnyside Canals divert from river above station and below Union Gap. Roza and Union Gap Canals head above Union Gap, but records given herein show flow in these canals that reaches the Valley below Union Gap. Records for Roza and Sunnyside Canals furnished by Bureau of Reclamation. Records for Union Gap Canal estimated on basis of discharge measurements and records of flow at canal headworks. Combined flow represents flow of Yakima River that reaches valley below Union Gap.

Yakima River at Kiona, Wash.

Location.--Lat 46°15'10", long 119°28'50", in sec. 19, T. 9 N., R. 27 E., on left bank just upstream from highway bridge at Kiona, 3½ miles downstream from intake of Kiona Canal and 25 miles upstream from mouth.

Drainage area.--5,600 sq mi, approximately.

Records available.--August to December 1895 (gage heights only, fragmentary), August 1896 to March 1915, February 1933 to September 1955.

Gage.--Water-stage recorder. Datum of gage is 454.41 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Mar. 31, 1915, several staff or chain gages at approximately same site at datum 1.0 ft lower. Feb. 6, 1933, to July 26, 1934, tape gage at present site and datum.

Extremes.--Maximum discharge during year, 18,300 cfs June 14 (gage height, 12.18 ft); minimum, 1,130 cfs Apr. 20 (gage height, 3.41 ft).
1896-1915, 1933-55: Maximum discharge, 67,000 cfs Dec. 23, 1933 (gage height, 21.57 ft, from high-water marks); minimum observed, 105 cfs Sept. 11, 1906 (gage height, 2.35 ft, datum then in use).

Remarks.--Records excellent except those for period of fragmentary gage-height record, which are good. Water diverted above gage for irrigation of about 424,000 acres. Some regulation by diversions and by Keechelus, Kachess, Cle Elum, and Bumping Lakes, and Tieton Reservoir (see following page). The Kiona Canal bypasses station with a mean flow of approximately 23 cfs for irrigation of about 1,100 acres below station. Records of chemical analyses and water temperatures for the water year 1955 are given in WSP 1403.

Cooperation.--Gage-height record collected in cooperation with, and six discharge measurements furnished by Bureau of Reclamation.

Revisions (water years).--WSP 214: 1905. WSP 1122: 1934(M). WSP 1216: 1949-50, drainage area. WSP 1286: 1907(M), 1909, 1936.

Rating table, water year 1954-55 (gage height, in feet, and discharge, in cubic feet per second)

3.4	1,120	7.0	6,260
4.0	1,810	9.0	10,100
5.0	3,130	12.0	17,800

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,060	3,450	3,700	2,420	2,100	1,860	2,340	2,020	4,360	5,820	2,290	1,790
2	3,170	3,490	3,540	2,560	2,110	1,910	2,250	2,030	3,720	5,750	2,300	1,850
3	2,980	3,600	3,370	2,580	2,020	1,810	2,370	2,230	3,160	5,560	2,360	2,100
4	2,860	3,600	3,170	2,510	2,000	1,750	2,450	2,320	3,300	4,980	2,290	2,020
5	2,890	3,380	3,160	2,430	1,970	1,750	2,340	2,360	f4,020	4,900	2,110	1,970
6	2,920	3,240	3,130	2,360	2,000	1,630	2,210	2,400	f5,700	4,690	1,950	1,970
7	2,930	3,240	3,130	2,330	2,060	1,620	2,120	2,670	f6,840	4,560	1,860	1,980
8	2,850	3,170	3,050	2,280	1,910	1,810	2,110	2,890	f7,180	4,400	*1,890	1,970
9	2,850	3,120	2,990	2,290	3,060	1,800	2,230	3,090	f8,020	4,280	1,760	2,020
10	2,820	*3,090	2,960	2,290	4,510	1,940	2,720	3,120	f9,060	4,340	1,640	1,970
11	2,810	2,930	2,860	2,280	3,970	2,000	3,200	2,590	f10,900	4,550	1,550	1,890
12	*2,810	3,030	2,800	2,230	3,440	2,110	3,020	2,600	f13,300	4,340	1,500	1,880
13	3,030	2,950	2,640	*2,200	3,200	1,940	*2,560	3,780	15,700	3,640	1,460	1,860
14	2,910	2,850	2,460	2,190	2,980	1,980	2,120	3,700	17,800	3,910	1,470	1,950
15	2,460	2,860	2,380	2,170	2,780	1,900	*1,710	2,990	17,800	2,920	1,740	2,060
16	2,690	2,890	2,330	2,160	2,640	1,690	1,530	2,470	*14,500	3,400	1,800	2,190
17	2,920	2,840	2,410	2,140	2,500	1,550	1,590	2,330	11,300	3,580	1,790	2,410
18	2,810	2,880	2,360	2,140	2,360	1,450	1,630	2,620	9,660	3,510	1,650	2,590
19	2,690	2,950	2,210	2,120	2,250	1,330	1,440	2,910	8,520	3,240	1,690	2,420
20	2,600	3,140	2,190	2,080	*2,100	1,520	1,180	4,180	7,430	2,750	1,750	2,370
21	2,890	3,790	2,170	2,000	2,080	1,730	1,380	6,230	6,710	*2,340	1,700	2,190
22	3,540	3,760	2,260	2,020	2,100	1,520	1,630	6,490	6,350	2,120	1,750	2,020
23	4,160	3,550	2,300	2,020	2,070	*1,330	1,630	*5,560	7,230	2,070	1,820	1,980
24	4,330	3,450	2,330	1,990	2,070	2,140	1,520	4,560	8,840	2,040	1,740	2,020
25	4,390	3,480	2,370	2,060	1,940	2,390	1,740	3,680	9,560	2,150	1,750	1,990
26	4,420	3,410	2,300	2,200	1,980	2,320	1,860	3,210	8,620	2,060	1,680	1,940
27	4,220	3,490	2,200	2,260	2,000	2,320	1,770	3,060	7,480	2,140	1,670	1,940
28	4,140	3,820	2,140	2,260	1,940	2,280	1,810	2,910	6,440	2,330	1,760	2,030
29	3,860	4,080	2,110	2,200	—	2,250	1,690	2,770	5,970	2,320	1,740	2,210
30	3,510	*3,970	2,290	2,120	------	2,250	1,790	2,930	6,140	2,280	1,770	2,280
31	3,420	------	2,300	2,070	------	2,420	------	4,030	------	2,320	1,840	------
Total	99,940	99,500	81,610	68,960	68,140	58,300	59,940	100,730	255,610	109,290	56,070	61,860
Mean	3,224	3,317	2,633	2,225	2,434	1,881	1,998	3,249	8,520	3,525	1,809	2,062
Ac-ft	198,200	197,400	161,900	136,800	135,200	115,600	118,900	199,800	507,000	216,800	111,200	122,700

Calendar year 1954: Max 11,560 Min 1,730 Mean 4,350 Ac-ft 3,150,000
Water year 1954-55: Max 17,800 Min 1,180 Mean 3,068 Ac-ft 2,222,000

* Discharge measurement made on this day.
f Fragmentary gage-height record; discharge computed from partly estimated gage heights.

Reservoirs in Yakima River basin, Wash.

Keechelus Lake.--Lat 47°19'20", long 121°20'20", in NE¼ sec. 12, T. 21 N., R. 11 E., at dam on Yakima River at outlet of Keechelus Lake, 3½ miles northwest of Martin and 9½ miles northwest of Easton. Drainage area, 55.8 sq mi. Records available, January 1906 to September 1955. Staff gage read twice daily. Datum of gage is at mean sea level (Bureau of Reclamation benchmark). Maximum contents observed during year, 159,360 acre-ft June 15 (elevation, 2,517.62 ft); minimum observed, 42,050 acre-ft Oct. 26 (elevation, 2,457.19 ft). Maximum contents observed during period 1906-55, 160,570 acre-ft May 16, 1925 (elevation, 2,518.09 ft); minimum observed, 448 acre-ft Sept. 6, 12, 13, 1906 (original crib dam); minimum elevation observed, 2,428.30 ft Sept. 20, 1926.

Reservoir is formed on natural lake by earth- and gravel-fill dam completed in 1917; storage began above crib dam Jan. 12, 1906, above present dam Aug. 19, 1914. To aid in construction and clearing of reservoir site, the water surface was kept low and present reservoir was not filled until June 15, 1920. Capacity, 157,800 acre-ft between gate sill (elevation, 2,425.00 ft), and spillway crest (elevation, 2,517.00 ft). Spillway raised 2 ft, construction completed Sept. 12, 1952. Records given herein represent usable contents. Water used for irrigation.

Kachess Lake.--Lat 47°15'50", long 121°12'00", in SW¼ sec. 34, T. 21 N., R. 13 E., at dam on Kachess River at outlet of Kachess Lake, 2½ miles northwest of Easton. Drainage area, 63.6 sq mi. Records available, September 1905 to September 1955. Staff gage read twice daily. Datum of gage is at mean sea level (Bureau of Reclamation benchmark). Maximum contents observed during year, 243,070 acre-ft June 13 (elevation, 2,262.90 ft); minimum observed, 151,950 acre-ft Sept. 30 (elevation, 2,241.59 ft). Maximum contents observed during period 1905-55, that of June 13, 1955; minimum observed, 525 acre-ft Sept. 14, 15, 1910 (original crib dam); minimum elevation observed, 2,197.73 ft Sept. 26, 27, 1915.

Reservoir is formed on natural lake by earth- and gravel-fill dam completed in 1912. Original crib dam creating capacity of 21,000 acre-ft used Sept. 20, 1905, to June 30, 1911. Storage above present dam began June 30, 1911. Capacity, 239,000 acre-ft between gate sill (elevation, 2,192.75 ft) and top of spillway gate (elevation, 2,262.00 ft). Records given herein represent usable contents. Water used for irrigation.

Cle Elum Lake.--Lat 47°14'40", long 121°04'00", in NE¼ sec. 10, T. 20 N., R. 14 E., at dam on Cle Elum River at outlet of Cle Elum Lake, 4 miles northwest of Roslyn. Drainage area, 203 sq mi. Records available, May 1906 to September 1955. Staff gage read twice daily. Datum of gage is at mean sea level (Bureau of Reclamation benchmark). Maximum contents observed during year, 443,120 acre-ft June 23 (elevation, 2,241.28 ft); minimum observed, 219,650 acre-ft Sept. 30 (elevation, 2,188.96 ft). Maximum contents observed during period 1906-55, 443,700 acre-ft May 31, 1945, May 28, 1949 (elevation, 2,241.40 ft); minimum observed, 2,380 acre-ft Aug. 31, 1906; minimum elevation observed, 2,114.35 ft Oct. 14, 1932. Storage was uncontrolled Oct. 3, 1931, to Feb. 26, 1932.

Reservoir is formed on natural lake by earth- and gravel-fill dam completed in 1933; storage began above present dam Feb. 26, 1932. Capacity, 436,900 acre-ft between gate sill (elevation, 2,110.00 ft) and top of spillway gate (elevation, 2,240.00 ft). Records given herein represent usable contents. Water used for irrigation.

Revisions.--WSP 1182: 1948-49.

Bumping Lake.--Lat 46°52', long 121°18', in SW¼ sec. 23 (unsurveyed), T. 16 N., R. 12 E., at dam on Bumping River at outlet of Bumping Lake, 11½ miles upstream from American River, and 19 miles west of Nile. Drainage area, 68.6 sq mi. Records available, June to July 1906, April 1909 to September 1955. Staff gage read twice daily. Datum of gage is at mean sea level (Bureau of Reclamation benchmark). Maximum contents observed during year, 38,140 acre-ft June 12-13 (elevation, 3,429.31 ft); minimum observed, 3,200 acre-ft Nov. 15 (elevation, 3,394.01 ft). Maximum contents observed during period 1906, 1909-55, 39,840 acre-ft June 21, 22, 1925 (elevation, 3,430.55 ft); minimum observed, 1,130 acre-ft Feb. 5-9, 1949 (elevation, 3,390.80 ft).

Reservoir is formed on natural lake by earth-fill dam completed in 1910; storage began Nov. 3, 1910. Capacity, 33,700 acre-ft between gate sill (elevation, 3,389.00 ft) and spillway crest (elevation, 3,426.00 ft). Records given herein represent usable contents. Water used for irrigation.

Tieton Reservoir.--Lat 46°39'10", long 121°07'30", in SW¼ sec. 31 (unsurveyed), T. 14 N., R. 14 E., on face of dam on Tieton River, at spillway, at Rimrock, 2,000 ft upstream from Wildcat Creek, 7½ miles upstream from headworks of Tieton Canal, and 22½ miles southwest of Naches. Drainage area, 187 sq mi. Records available, April 1925 to September 1955. Staff gage read twice daily. Datum of gage is at mean sea level (Bureau of Reclamation benchmark). Maximum contents observed during year, 200,790 acre-ft June 13 (elevation, 2,927.10 ft); minimum observed, 112,300 acre-ft Sept. 30 (elevation, 2,886.43 ft). Maximum contents observed during period 1925-55, 201,380 acre-ft June 21, 1937 (elevation, 2,927.33 ft); minimum observed, 89 acre-ft Oct. 12, 1926 (elevation, 2,766.77 ft).

Reservoir is formed by earth- and gravel-fill dam completed in 1925; storage began Apr. 27, 1925. Capacity, 198,000 acre-ft between sill of tunnel entrance (elevation, 2,766.00 ft) and crest of spillway gates (elevation, 2,926.00 ft). Records given herein represent usable contents. Water used for irrigation.

Cooperation.--Records furnished by Bureau of Reclamation, reviewed and prepared for publication by Geological Survey.

Reservoirs in Yakima River basin, Wash.--Continued

Month-end elevation and usable contents, water year October 1954 to September 1955

Date	Keechelus Lake			Kachess Lake		
	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	2,474.58	68,100	-	2,245.66	168,300	-
Oct. 31	2,458.22	43,490	-24,610	2,246.00	169,690	+1,390
Nov. 30	2,473.56	66,420	+22,930	2,249.17	182,860	+13,170
Dec. 31	2,479.46	76,400	9,980	2,250.30	187,630	+4,770
Calendar year 1954	-	-	-37,810	-	-	-1,700
Jan. 31	2,484.91	86,260	+9,860	2,251.66	193,420	+5,790
Feb. 28	2,492.64	101,420	+15,160	2,253.90	203,070	+9,650
Mar. 31	2,496.44	109,370	+7,950	2,254.70	206,540	+3,470
Apr. 30	2,495.72	107,840	-1,530	2,252.62	197,540	-9,000
May 31	2,503.83	125,720	+17,880	2,259.20	226,380	+28,840
June 30	2,517.18	158,230	+32,510	2,262.17	239,750	+13,370
July 31	2,512.73	147,000	-11,230	2,259.89	229,470	-10,280
Aug. 31	2,492.72	101,590	-45,410	2,249.30	183,410	-46,060
Sept.30	2,471.72	63,460	-38,130	2,241.57	151,870	-31,540
Water year 1954-55	-	-	-4,640	-	-	-16,430

Date	Cle Elum Lake			Bumping Lake		
Sept.30	2,200.29	263,340	-	3,405.30	11,420	-
Oct. 31	2,193.22	235,730	-27,610	3,400.17	7,440	-3,980
Nov. 30	2,205.14	282,870	+47,140	3,399.82	7,180	-260
Dec. 31	2,208.88	298,180	+15,310	3,401.02	8,060	+880
Calendar year 1954	-	-	+23,020	-	-	-2,820
Jan. 31	2,210.51	304,940	+6,760	3,404.78	11,000	+2,940
Feb. 28	2,215.99	328,040	+23,100	3,409.94	15,550	+4,550
Mar. 31	2,216.91	331,970	+3,930	3,414.01	19,610	+4,060
Apr. 30	2,213.28	316,540	-15,430	3,414.87	20,520	+910
May 31	2,230.13	390,560	+74,020	3,427.44	35,610	+15,090
June 30	2,240.36	438,680	+48,120	3,428.11	36,500	+890
July 31	2,235.14	413,820	-24,860	3,421.58	28,160	-8,340
Aug. 31	2,210.86	306,390	-107,430	3,408.56	14,260	-13,900
Sept.30	2,188.85	219,240	-87,150	3,402.31	9,040	-5,220
Water year 1954-55	-	-	-44,100	-	-	-2,380

Date	Tieton Reservoir		
Sept.30	2,897.80	134,400	-
Oct. 31	2,897.98	134,760	+360
Nov. 30	2,894.62	128,020	-6,740
Dec. 31	2,895.34	129,460	+1,440
Calendar year 1954	-	-	+2,030
Jan. 31	2,896.32	131,410	+1,950
Feb. 28	2,899.00	136,840	+5,430
Mar. 31	2,900.90	140,750	+3,910
Apr. 30	2,901.32	141,620	+870
May 31	2,914.66	170,720	+29,100
June 30	2,926.66	199,670	+28,950
July 31	2,922.37	188,980	-10,690
Aug. 31	2,902.07	143,190	-45,790
Sept.30	2,886.37	112,190	-31,000
Water year 1954-55	-	-	-22,210

† Elevation estimated at 12 p.m. from twice-daily gage readings.

Providence Coulee at Cunningham, Wash.

Location.--Lat 46°49'20", long 118°48'30", near township line in NW¼ sec. 4, T. 15 N., R. 32 E., on west side of Northern Pacific Railway tracks at Cunningham.

Drainage area.--27.8 sq mi.

Records available.--January 1953 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 1,160 ft (from topographic map).

Extremes.--Maximum discharge during year, 106 cfs Feb. 7 (gage height, 3.48 ft); no flow for long periods.
1953-55: Maximum discharge, that of Feb. 7, 1955; no flow most of each year.

Remarks.--Records poor. No known regulation or diversion. No flow prior to Feb. 6, 1955.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					0							
2					0							
3				(*)	0							
4					0							
5					0							
6					13							
7					*44							
8					*1.4							
9					0							
10					0							
11					0	(*)						
12					0							
13					0							
14					0							
15					0		(*)					
16					0							
17					0							
18					0							
19					0							
20					0							
21		(*)			0							
22					0							
23					0							
24					0					(*)		
25					0							
26					0							
27					0							
28					0							
29					—							
30				(*)	------							
31		-----			-----		-----		------			------
Total	0	0	0	0	58.4	0	0	0	0	0	0	0
Mean	0	0	0	0	2.09	0	0	0	0	0	0	0
Cfsm	0	0	0	0	0.075	0	0	0	0	0	0	0
In.	0	0	0	0	0.08	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	116	0	0	0	0	0	0	0

Calendar year 1954: Max 0 Min 0 Mean 0 Cfsm 0 In. 0 Ac-ft 0
Water year 1954-55: Max 44 Min 0 Mean 0.160 Cfsm 0.0058 In. 0.08 Ac-ft 116

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

Esquatzel Coulee at Connell, Wash.

Location.--Lat 46°39'40", long 118°51'40", in NE¼ sec. 36, T. 14 N., R. 31 E., on right bank 30 ft downstream from Main Street in Connell.

Drainage area.--240 sq mi.

Records available.--January 1953 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 840 ft (from topographic map).

Extremes.--Maximum discharge during year, 229 cfs Feb. 7 (gage height, 4.69 ft); no flow for long periods.
1953-55: Maximum discharge, that of Feb. 7, 1955; no flow most of each year.

Remarks.--No known regulation or diversion. No flow prior to Feb. 7, 1955.

Discharge, in cubic feet per second, water year October 1954 to September 1955

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					0							
2					0							
3				(*)	0							
4					0							
5					0							
6					0							
7					*47							
8					*12							
9					0							
10					0							
11					0	(*)						
12					0			(*)				
13					0							
14					0							
15					0		(*)					
16					0							
17					0							
18					0							
19					0							
20					0							
21		(*)			0							
22					0							
23					0							
24					0						(*)	
25					0							
26					0							
27					0							
28					0							
29					-							
30				(*)	------							
31		-----			-----		-----		------			------
Total	0	0	0	0	59	0	0	0	0	0	0	0
Mean	0	0	0	0	2.1	0	0	0	0	0	0	0
Cfsm	0	0	0	0	0.0088	0	0	0	0	0	0	0
In.	0	0	0	0	0.009	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	117	0	0	0	0	0	0	0

Calendar year 1954: Max 0 Min 0 Mean 0 Cfsm 0 In. 0 Ac-ft 0
Water year 1954-55: Max 47 Min 0 Mean 0.2 Cfsm 0.00083 In. 0.009 Ac-ft 117

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

Esquatzel Coulee at Eltopia, Wash.

Location.--Lat 46°27'40", long 119°01'00", in SE¼ sec. 2, T. 11 N., R. 30 E., on left bank on upstream side of railroad bridge at Eltopia.

Drainage area.--394 sq mi.

Records available.--January 1953 to September 1955.

Gage.--Water-stage recorder. Altitude of gage is 580 ft (from topographic map).

Extremes.--No flow during period of record.

Remarks.--No known regulation or diversion.

Measurements of streamflow in the Pacific slope basins in Washington and upper Columbia River basin made at points other than regular gaging stations are given in the following table. Most of these measurements were made during periods of base flow when streamflow is primarily from ground-water storage. Measurements believed to have been made under base flow conditions are identified by an asterisk (*) to the left of the discharge figure. These measurements when correlated with the simultaneous discharge of a nearby stream where continuous records are available will give a picture of the low-flow potentiality of stream. The column headed "Measured previously" shows the water years for which measurements were made at the same, or practically the same, site.

Discharge measurements made at points other than gaging stations in the Pacific slope basins in Washington and upper Columbia River basin during the water year 1955

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Chehalis River basin, Wash.						
Wynoochee River.	Chehalis River.	NW¼SE¼ sec. 28, T. 18 N., R. 8 W., 4 miles northwest of Montesano.	146		Sept.12 Sept.19	*119 *204
Fir Brook Creek.	Wynoochee River.	On line between SW¼ sec. 27, and SE¼ sec. 28, T. 18 N., R. 8 W., at county road bridge 4 miles northwest of Montesano.	1.33		July 28 Aug. 8 Aug. 30 Sept.20	*3.81 *.94 *1.49 *.82
Mooney Creek	....do.....	SW¼NE¼ sec. 33, T. 18 N., R. 8 W., at road crossing ½ mile above mouth and 3 miles northwest of Montesano.	3.87	1942	July 28 Aug. 8 Aug. 30 Sept.20	*2.18 *2.44 *2.23 *1.32
Black Creek	....do.....	NE¼SE¼ sec. 11, T. 18 N., R. 8 W., at road crossing, 5 miles northwest of Montesano.	16.0		July 28 Aug. 8 Aug. 30 Sept.20	*14.3 *12.0 *3.51 *3.55
Wynoochee River.	Chehalis River.	NW¼NW¼ sec. 35, T. 18 N., R. 8 W., at former gaging station site below Black Creek, near Montesano.	178	1950-54	Nov. 9 Nov. 19 Jan. 6 July 12 July 28 Aug. 8 Aug. 30 Sept.20	1,900 16,600 1,670 *407 *876 *413 *164 *208
Geyser Creek	Wynoochee River.	Center of east line sec. 33, T. 18 N., R. 8 W., at road crossing, 3½ miles northwest of Montesano.	1.34		July 28 Aug. 8 Aug. 30	*1.31 *1.08 *1.17
Do.....	....do.....	Center of NE¼ sec. 34, T. 18 N., R. 8 W., ½ mile above mouth and 3 miles northwest of Montesano.	1.93		Sept.20	*.62
Wynoochee River.	Chehalis River.	SE¼SW¼ sec. 2, T. 17 N., R. 8 W., 1½ miles west of Montesano and 3 miles above mouth.	182		Sept.14 Sept.19	*139 *231
Sylvia Creek	Wynoochee River.	NE¼NE¼ sec. 12, T. 17 N., R. 8 W., at bridge on U. S. Highway 101 at Montesano.	8.20		July 28 Aug. 8 Aug. 30 Sept.20	9.65 *6.83 *3.49 *3.25
Skokomish River basin, Wash.						
Vance Creek	South Fork Skokomish River.	SE¼ sec. 4, T. 21 N., R. 5 W., 1,000 ft above gaging station site near Potlatch.	-		May 19 June 14 July 13 Aug. 12 Sept.27	79.8 28.7 19.6 25.8 25.5
Do.....	....do.....	300 ft above gaging station site near Potlatch.	-		Aug. 12 Sept.27	28.4 22.6
Minor basins between Nisqually and Puyallup Rivers, Wash.						
Mason Gulch stream.	Commencement Bay.	SE¼ sec. 24, T. 21 N., R. 2 E., 200 ft above Water St., 500 ft above tidewater in Tacoma.	-	1954	Oct. 25 Nov. 23 Dec. 30 Jan. 26 Mar. 11 Apr. 12	3.98 3.98 4.56 3.80 4.03 3.91
34th Street Gulch stream.	....do.....	NW¼ sec. 30, T. 21 N., R. 3 E., 600 ft above tidewater near North 34th Street and Ruston Way in Tacoma.	-	1954	Oct. 25 Nov. 23 Dec. 30 Jan. 26 Mar. 11 Apr. 12	.89 1.05 1.30 .94 1.00 1.07
Chuckanut Creek basin, Wash.						
Chuckanut Creek.	Chuckanut Bay.	NE¼ sec. 13, T. 37 N., R. 2 E., at crossing of alternate U. S. Highway 99, 2½ miles southwest of Bellingham.	6.67	1948-49, 1954	Aug. 23	*.52

* Base flow.

Discharge measurements made at points other than gaging stations in the Pacific slope basins in Washington and upper Columbia River basin during the water year 1955--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Whatcom Creek basin, Wash.						
Austin Creek	Lake Whatcom	SW¼NW¼ sec. 8, T. 37 N., R. 4 E., at former gaging station site near Bellingham.	7.80	1949, 1951	Aug. 22	*1.40
Smith Creek	....do.....	NE¼NE¼ sec. 5, T. 37 N., R. 4 E., at road crossing at Sunnyside.	5.56	1948-49, 1954	Aug. 22	*1.11
Olsen Creek	....do.....	SW¼ sec. 30, T. 38 N., R. 4 E., at road crossing, ½ mile south of Woodlawn.	3.78	1948-49, 1954	Aug. 22	*1.13
Squalicum Creek basin, Wash.						
Squalicum Creek.	Bellingham Bay.	NW¼SW¼ sec. 16, T. 38 N., R. 3 E., at former gaging station site at Bellingham.	10.3	1949-50	Aug. 22	*.44
Nooksack River basin, Wash.						
Kendall Creek	Nooksack River.	NE¼ sec. 3, T. 39 N., R. 5 E., at former gaging station site at Kendall.	a 29.2		Aug. 24 Sept.12	*15.5 *8.70
Coal Creek	....do.....	NW¼NW¼ sec. 10, T. 39 N., R. 5 E., at former gaging station site near Kendall.	4.57	1949	Aug. 24 Sept.12	*1.29 *.56
Unnamed tributary.	....do.....	NW¼ sec. 27, T. 39 N., R. 5 E., at mouth 1 mile northwest of Kulshan.	3.09		Oct. 6	53.4
Bells Creek	....do.....	SE¼ sec. 21, T. 39 N., R. 5 E., at Mt. Baker Highway crossing, 1½ miles northwest of Kulshan.	4.15	1948-49, 1954	Aug. 24 Sept.12	*.79 *.39
Middle Fork Nooksack River.	....do.....	NW¼ sec. 21, T. 38 N., R. 6 E., 100 ft above Clearwater Creek and 6 miles southeast of Kulshan.	47.2		Oct. 6	*132
Clearwater Creek.	Middle Fork Nooksack River.	NW¼ sec. 21, T. 38 N., R. 6 E., at mouth, 6 miles southeast of Kulshan.	21.1	1954	Oct. 6	*29.8
Falls Creek	....do.....	N½ sec. 20, T. 38 N., R. 6 E., at logging road crossing, 5½ miles southeast of Kulshan.	.75		Oct. 6	*.83
Middle Fork Nooksack River.	Nooksack River.	NW¼ sec. 13, T. 38 N., R. 5 E., at former gaging station site near Deming.	70.5	1911, 1920	Aug. 25 Sept.12	*280 *217
Unnamed tributary.	Heislers Creek.	W½ sec. 13, T. 38 N., R. 5 E., at mouth, 4 miles southeast of Kulshan.	.45		Oct. 6	*.24
Heislers Creek.	Middle Fork Nooksack River.	W½ sec. 13, T. 38 N., R. 5 E., at mouth, 4 miles southeast of Kulshan.	1.93	1954	Oct. 6	*.69
Porter Creek	....do.....	SE¼ sec. 11, T. 38 N., R. 5 E., at road crossing, 3 miles southeast of Kulshan.	4.23	1954	Oct. 6 Aug. 25 Sept.12	*2.20 *3.01 *.59
Unnamed tributary.	....do.....	Center of sec. 2, T. 38 N., R. 5 E., at Mosquito Lake road crossing, 1¾ miles southeast of Kulshan.	.55		Oct. 6	0
Do.....	....do.....	NW¼ sec. 35, T. 39 N , R. 5 E., at road crossing, 1 mile south of Kulshan.	1.21		Oct. 6	*2.15
Canyon Creek	....do.....	SE¼SE¼ sec. 27, T. 39 N., R. 5 E., at former gaging station site at Kulshan.	8.70	1954	Aug. 25 Sept.12	*10.7 *5.82
McCauley Creek.	Smith Creek	W½ sec. 26, T. 39 N., R. 4 E., at Mt. Baker Highway crossing, 2 miles northwest of Deming.	3.66	1954	Oct. 1	*.62
Smith Creek	Nooksack River.	West line sec. 22, T. 39 N., R. 4 E., at highway crossing, ½ mile southeast of Lawrence.	9.60	1948-49, 1954	Oct. 1	*1.04
Anderson Creek.	....do.....	SE¼ sec. 6, T. 38 N., R. 4 E., at Mt. Baker Highway crossing, 3 miles south of Goshen.	7.16	1948-49, 1954	Aug. 22	*.79
Do.....	....do.....	NE¼ sec. 19, T. 39 N., R. 4 E., at former gaging station site at Goshen.	12.9	1949	Aug. 24	*.80
Kamm ditch	....do.....	NW¼ sec. 14, T. 40 N., R. 3 E., at Lynden-Sumas road crossing, 2½ miles northeast of Lynden.	-	1954	Oct. 1	.70
Do.....	....do.....	Center south half of sec. 15, T. 40 N., R. 3 E., at road crossing 80 ft north of Milwaukee railroad tracks and 1½ miles east of Lynden.	-	1954	Oct. 1	2.92
Unnamed tributary.	....do.....	SE¼ sec. 29, T. 40 N., R. 3 E., at Hannegan road crossing, 1 mile south of Lynden.	10.9	1948-49, 1954	Oct. 1	*3.41
East Branch Double Ditch Creek.	Double Ditch Creek.	NE¼ sec. 31, T. 41 N., R. 4 E., at international boundary, 4 miles north of Lynden.	-	1942-43, 1951, 1954	Oct. 1 Aug. 23	*2.53 *4.29
Do.....	....do.....	South line sec. 7, T. 40 N., R. 3 E., at Blaine-Sumas road crossing 1 mile northwest of Lynden.	-	1948, 1954	Oct. 1	*2.52

* Base flow.
a Of which 5.6 sq mi is in Canada.

Discharge measurements made at points other than gaging stations in the Pacific slope basins in Washington and upper Columbia River basin during the water year 1955--Continued

Nooksack River basin, Wash.--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
West Branch Double Ditch Creek.	Double Ditch Creek.	NW¼ sec. 31, T. 41 N., R. 3 E., at international boundary, 4 miles north of Lynden.	-	1942-43, 1948-49, 1951, 1954	Oct. 1 Aug. 23	*3.98 *3.05
Do.....	....do.....	South line sec. 7, T. 40 N., R. 3 E., at Blaine-Sumas road crossing 1 mile northwest of Lynden.	-	1948, 1954	Oct. 1	*2.45
Unnamed tributary.	Fishtrap Creek.	NW¼ sec. 18, T. 40 N., R. 3 E., at Lynden-Sumas road crossing, 1½ miles northwest of Lynden.	-	1948-49, 1954	Oct. 1	b .02
Fishtrap Creek.	Nooksack River.	NE¼ sec. 25, T. 40 N., R. 2 E., at U. S. Highway 99 crossing, 1 mile southwest of Lynden.	c 29.1	1942-43, 1948-49, 1954	Oct. 1	*13.3
Bertrand Creek.	....do.....	SE¼ sec. 11, T. 40 N., R. 2 E., at Blaine-Sumas road crossing, 2½ miles northwest of Lynden.	d 28.4	1948-49, 1954	Oct. 1 Aug. 23	*5.54 *6.33
Do.....	....do.....	North line of sec. 27, T. 40 N., R. 2 E., at Birchbay-Lynden road crossing, 3½ miles west of Lynden.	e 36.0	1942-43, 1954	Oct. 1	*10.3
Do.....	....do.....	SE¼ sec. 27, T. 40 N., R. 2 E., at former gaging station site near Lynden.	e 40.3	1949, 1951	Aug. 23	*10.4
Wiser Creek	....do.....	SW¼ sec. 3, T. 39 N., R. 2 E., ½ mile above mouth and 3 miles northeast of Ferndale.	6.23	1942-43, 1949, 1954	Oct. 1 Aug. 23	*3.14 *2.37
Tenmile Creek.	Barrett Lake	NE¼ sec. 18, T. 39 N., R. 3 E., at road crossing, 1 mile northeast of Laurel.	10.5	1942-43, 1948-49, 1954	Oct. 1 Aug. 23	*1.21 *1.09
Fourmile Creek.	Tenmile Creek.	W½ sec. 18, T. 39 N., R. 3 E., at road crossing, 1 mile north of Laurel.	7.34	1942-43, 1948-49, 1954	Oct. 1	*2.30
Tenmile Creek.	Barrett Lake	NE¼SW¼ sec. 22, T. 39 N., R. 2 E., at former gaging station site near Ferndale.	22.7	1949, 1951	Aug. 23	*6.08
Larrabee Springs.	Deer Creek	NW¼NW¼ sec. 36, T. 39 N., R. 2 E., 100 ft below source, 2 miles southwest of Laurel.	-	1948, 1950, 1954	Aug. 23	*.50
Deer Creek	Barrett Lake	NE¼ sec. 27, T. 39 N., R. 2 E., at road crossing, 2 miles east of Ferndale.	7.06	1943, 1948-49, 1954	Aug. 23	*1.29
Terrell Creek basin, Wash.						
Terrell Creek.	Birch Bay	East line sec. 6, T. 39 N., R. 1 E., at road crossing, 6 miles south of Blaine.	8.56	1954	Aug. 23	*5.25
California Creek basin, Wash.						
California Creek.	Drayton Harbor.	SE¼ sec. 27, T. 40 N., R. 1 E., at former gaging station site near Custer.	6.85	1942-43	Aug. 23	*0.86
Dakota Creek basin, Wash.						
North Fork Dakota Creek.	Dakota Creek	SE¼SE¼ sec. 14, T. 40 N., R. 1 E., at road crossing, 5 miles southeast of Blaine.	6.65	1948-49, 1954	Aug. 23	*1.05
Dakota Creek	Drayton Harbor.	NW¼SW¼ sec. 14, T. 40 N., R. 1 E., at former gaging station site near Blaine.	15.2	1954	Aug. 23	*1.86
Fraser River basin, Wash.						
Sumas River.	Vedder River	SE¼ sec. 16, T. 39 N., R. 4 E., at road crossing, ½ mile north of Lawrence.	2.56	1947, 1954	Oct. 1	0
Do.....	....do.....	West line sec. 9, T. 39 N., R. 4 E., at road crossing, 2 miles north of Lawrence.	4.85	1948, 1954	Oct. 1	0
Dale Creek (earlier unnamed stream).	Sumas River	North line sec. 9, T. 39 N., R. 4 E., at road crossing, 2½ miles southeast of Nooksack.	2.57	1947-48, 1954	Aug. 24	*.35
Goodwin ditch.	....do.....	SW¼ sec. 33, T. 40 N., R. 4 E., at road crossing, 1 mile southeast of Nooksack.	-	1947-49, 1954	Aug. 24	*4.46
Unnamed tributary.	....do.....	NW¼ sec. 33, T. 40 N., R. 4 E., at road crossing, ¾ mile southeast of Nooksack.	4.45	1947-48, 1954	Aug. 24	*.61
Sumas River	Vedder River	South line of sec. 29, T. 40 N., R. 4 E., at road crossing at Nooksack.	16.9	1948-49, 1954	Aug. 24	*10.6
Breckenridge Creek.	Sumas River	East line of sec. 28, T. 40 N., R. 4 E., at crossing of Goodwin Rd., 1½ miles east of Nooksack.	5.37	1947-49, 1954	Aug. 24	*1.55
Kinney Creek	....do.....	NW¼ sec. 22, T. 40 N., R. 4 E., at road crossing, 3 miles south of Sumas.	1.89	1947-48, 1954	Oct. 1	b .15

* Base flow.
b Estimated.
c Of which 19.4 sq mi is in Canada.
d Of which 22.6 sq mi is in Canada.
e Of which 23.1 sq mi is in Canada.

Discharge measurements made at points other than gaging stations in the Pacific slope basins in Washington and upper Columbia River basin during the water year 1955--Continued

Fraser River basin, Wash.--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Sumas River	Vedder River	NE¼ sec. 11, T. 40 N., R. 4 E., at former gaging station site near Sumas.	32.1	1951	Aug. 24	*17.9
Bone Creek	Sumas River	South line of sec. 3, T. 40 N., R. 4 E., at road crossing, 1 mile southwest of Sumas.	1.22	1947, 1954	Oct. 1	0
Do.....	....do.....	NW¼ sec. 2, T. 40 N , R. 4 E., at road crossing at Sumas.	2.07	1948, 1954	Oct. 1	b .10
Squaw Creek (West Branch Johnson Creek).	Johnson Creek	South line of sec. 12, T. 40 N., R. 3 E., at road crossing, 2 miles southwest of Clearbrook.	1.07	1948, 1954	Oct. 1	*.73
Do.....	....do.....	South line of sec. 7, T. 40 N., R. 4 E., at Lynden-Sumas road crossing, 1½ miles southwest of Clearbrook.	1.56	1948, 1954	Oct. 1	*1.08
Do.....	....do.....	West line of sec. 8, T. 40 N., R. 4 E., at road crossing, 3½ miles southwest of Sumas.	1.86	1947	Oct. 1	*1.05
Pangborn Lake Creek.	....do.....	SW¼ sec. 5, T. 40 N., R. 4 E., at road crossing at Clearbrook.	2.74	1947-48, 1954	Aug. 24	*3.89
Johnson Creek	Sumas River	SE¼ sec. 34, T. 41 N., R. 4 E., at former gaging station site at Sumas.	f 23.0	1947-49	Aug. 24	*8.22
Saar Creek	....do.....	Center of sec. 12, T. 40 N., R. 4 E., at mouth of canyon, 1½ miles southeast of Sumas.	7.63	1948-49, 1954	Oct. 1	*2.68
Do.....	....do.....	North line of sec. 6, T. 40 N., R. 5 E., at former gaging station site near Sumas.	9.76	1948	Aug. 24	*1.39

Kootenai River basin

Boulder Creek.	Kootenai River.	In SE¼ sec. 22, T. 61 N., R. 3 E., at mouth, ½ mile northwest of Leonia, Idaho.	61	1954	Mar. 30 Aug. 26	22.0 *15.3
Kootenai River.	Columbia River.	Lat 49°29'40", long 117°20'04", at Grohman Narrows, 2 miles below Nelson, British Columbia; measurements referred to gage No. 10 at Nelson (station 8 N., J. 9 of Water Resources Division, Department of Northern Affairs and National Resources, Canada).	17,700	1932-54	Mar. 24 June 18 July 29 Sept.29	10,030 116,400 67,100 11,570

Pend Oreille River basin, Mont.

Fred Burr Creek.	Bitterroot River.	NW¼ sec. 20, T. 7 N., R. 21 W., at former gaging station, 5 miles above mouth and 7 miles southwest of Victor.	18.4		Oct. 27 July 19 Aug. 24 Sept.27	12.7 88.3 18.7 10.0
Dayton Creek	Flathead Lake.	SW¼ sec. 17, T. 25 N., R. 21 W., 4.7 miles northwest of Dayton.	20.5		Apr. 12	10.6

Spokane River basin, Wash.

Little Spokane River.	Spokane River.	NE¼ sec. 34, T. 28 N., R. 43 E., at site of former gaging station at Chattaroy.	300	1948, 1952	Sept.13	*63.7
Deer Creek	Little Spokane River.	On line between SW¼ and SE¼ sec. 26, T. 28 N., R. 43 E., 1 mile upstream from mouth at Chattaroy.	31.9	1948, 1952	Sept.13	0
Dragoon Creek.	....do.....	NE¼ sec. 4, T. 27 N., R. 43 E., at mouth, 1¼ miles southwest of Chattaroy.	177	1948, 1952	Sept.14	*11.4
Little Spokane River.	Spokane River.	On line between secs. 3 and 4, T. 27 N., R. 43 E., 500 ft below Dragoon Creek and 1 mile south of Chattaroy.	512	1952	Sept.13	*81.7
Do.....	....do.....	NE¼ sec. 16, T. 27 N., R. 43 E., 50 ft above county bridge at Buckeye.	518	1952	Sept.13	*88.4
Do.....	....do.....	SE¼ sec. 21, T. 27 N., R. 43 E., 50 ft below county bridge and 1½ miles south of Buckeye.	523	1952	Sept.14	*92.7
Do.....	....do.....	S½ sec. 28, T. 27 N., R. 43 E., at county bridge ½ mile above Deadman Creek and 2¼ miles northeast of Dartford.	524	1952	Sept.14	*89.2
Deep Creek	Deadman Creek.	In SE¼ sec. 22, T. 27 N., R. 43 E., at site of former gaging station at highway bridge at Colbert.	32.8	1948, 1952-53	Sept.14	0
Deadman Creek.	Little Spokane River.	E½ sec. 3, T. 26 N., R. 43 E., 300 ft below highway bridge and 1 mile north of Mead.	80.3	1948, 1952	Sept.15	*2.04
Do.....	....do.....	SE¼NW¼ sec. 3, T. 26 N., R. 43 E., 1,000 ft below U. S. Highway 195 and 1 mile northwest of Mead.	94.7	1953	Sept.15	*12.0

* Base flow.
b Estimated.
f Of which 6.6 sq mi is in Canada.

Discharge measurements made at points other than gaging stations in the Pacific slope basins in Washington and upper Columbia River basin during the water year 1955--Continued

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Date	Discharge (cfs)
Spokane River basin, Wash.--Continued						
Little Spokane River.	Spokane River	NW¼SW¼ sec. 33, T. 27 N., R. 43 E., 800 ft below Deadman Creek and 2 miles northwest of Mead.	658	1952-53	Sept.14	*93.5
Unnamed tributary.	Little Spokane River.	NW¼SW¼ sec. 33, T. 27 N., R. 43 E., 820 ft below Deadman Creek and 2 miles northwest of Mead.	.09		Sept.14	*1.47
Little Spokane River.	Spokane River	NW¼ sec. 5, T. 26 N., R. 43 E., 400 ft above Wandermere Lake Creek and ¾ mile east of Dartford.	660	1953	Sept.14	*105
Wandermere Lake Creek.	Little Spokane River.	SE¼NW¼ sec. 5, T. 26 N., R. 43 E., 50 ft above mouth and ¾ mile east of Dartford.	4.65	1953	Sept.15	7.08
Little Spokane River.	Spokane River	NW¼NW¼ sec. 12, T. 26 N., R. 42 E., 10 ft above bridge and 2 miles southwest of Dartford.	688	1953	Sept.15	*292
Do.....	....do.....	SE¼NW¼ sec. 5, T. 26 N., R. 42 E., 50 ft below bridge, ¼ mile above mouth, and 5½ miles west of Dartford.	700	1948, 1953	Sept.15	*370
Nespelem River basin, Wash.						
Nespelem River.	Columbia River.	NW¼SW¼ sec. 3, T. 30 N., R. 30 E., ½ mile above mouth and 4 miles southwest of Nespelem.	224		Mar. 10	*37.3
Okanogan River basin, Wash.						
Okanogan River.	Columbia River.	NE¼ sec. 16, T. 30 N., R. 25 E., at bridge on State Highway 10, 3 miles east of Brewster.	g 8,400		Mar. 11	*1,800
Methow River basin, Wash.						
Methow River	Columbia River.	SW¼ sec. 36, T. 30 N., R. 23 E., 500 ft below bridge on U. S. Highway 97 at Pateros.	g 1,810		Mar. 11	*377
Wenatchee River basin, Wash.						
Wenatchee River.	Columbia River.	SW¼ sec. 11, T. 23 N., R. 19 E., at bridge, 1½ miles northwest of Monitor.	g 1,300		Dec. 6	2,510
Do.....	....do.....	SE¼ sec. 19, T. 23 N., R. 20 E., ¼ mile below bridge and 2¼ miles southeast of Monitor.	g 1,320		Feb. 18	*1,150
Do.....	....do.....	SE¼ sec. 19, T. 23 N., R. 20 E., at bridge, 2¼ miles southeast of Monitor.	-		Mar. 17	*946
					June 1	7,620
					Aug. 26	*1,390
					Sept.28	*567

* Base flow.
g Approximately.

INDEX

U. S. GOVERNMENT PRINTING OFFICE: 1957 O -428272