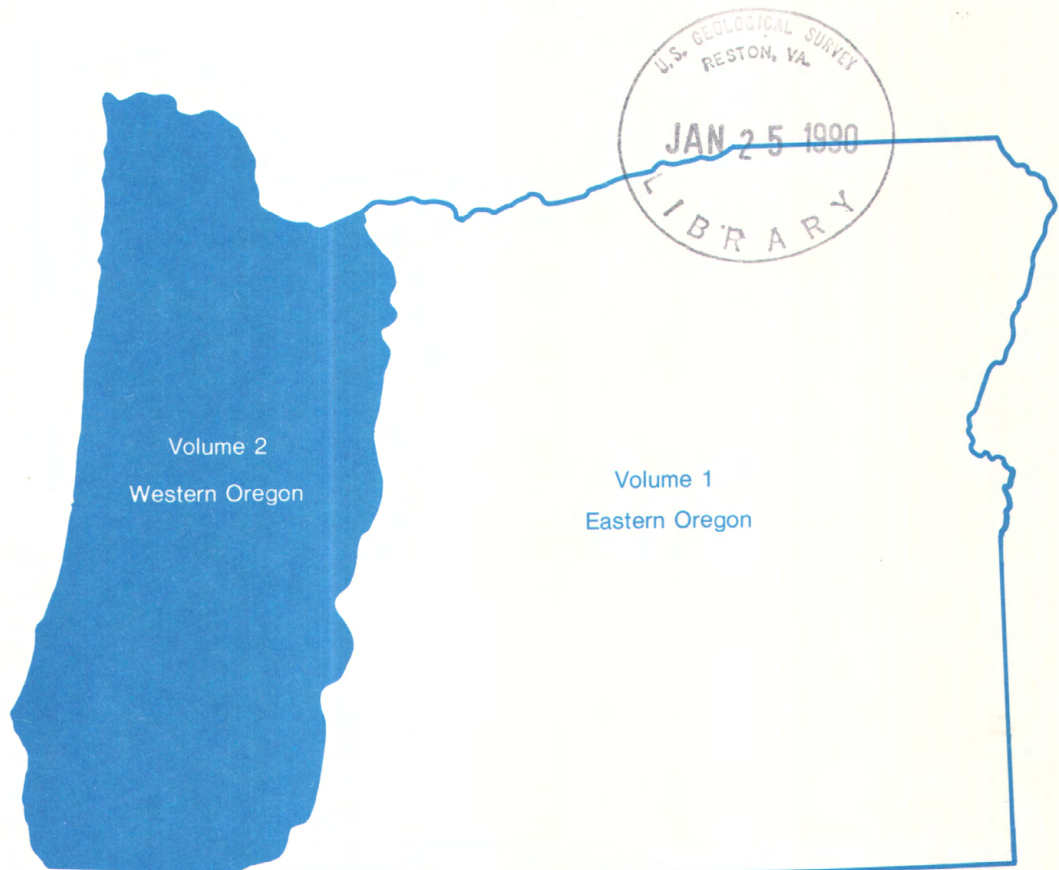


Water Resources Data Oregon Water Year 1988

Volume 2. Western Oregon



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT OR-88-2
Prepared in cooperation with the Oregon Water Resources
Department and with other agencies

CALENDAR FOR WATER YEAR 1988

1987

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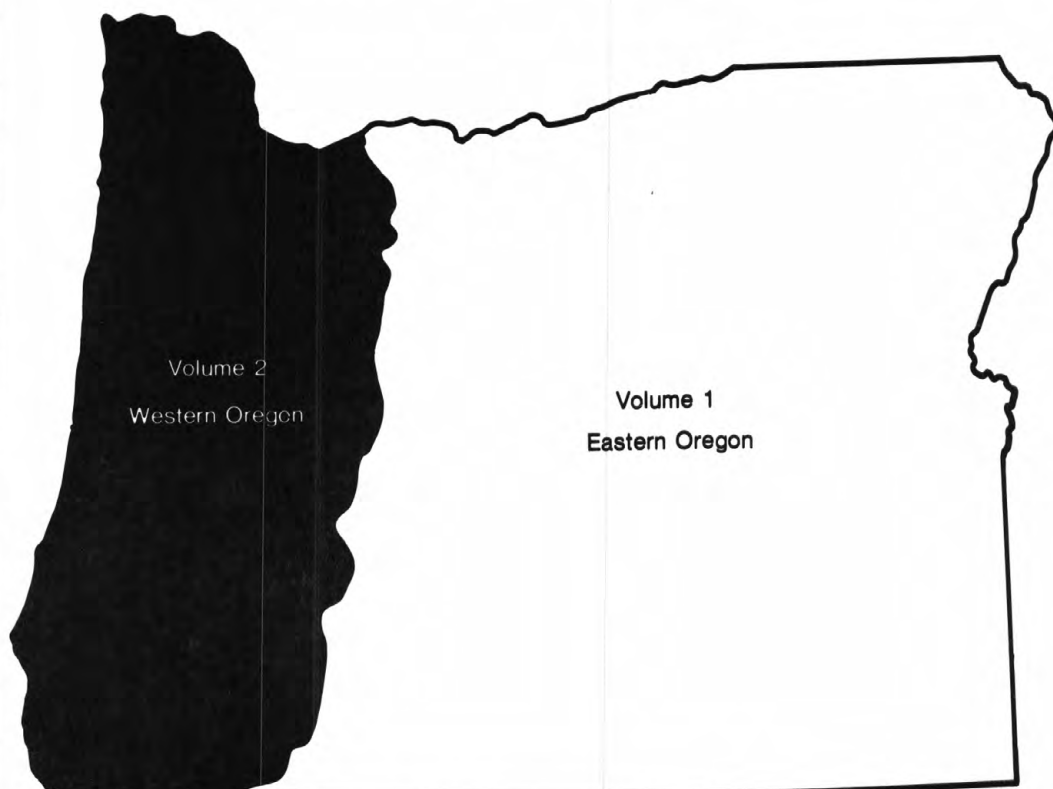
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Water Resources Data Oregon Water Year 1988

Volume 2. Western Oregon

by L.E. Hubbard, T.A. Herrett, R.L. Kraus, and R.L. Moffatt



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT OR-88-2
Prepared in cooperation with the Oregon Water Resources
Department and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

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10615 S. E. Cherry Blossom Drive
Portland, Oregon 97216

PREFACE

This volume of the annual Oregon hydrologic data report is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by State, local and Federal agencies, and the private sector for developing and managing our Nation's land and water resources. Hydrologic data for Oregon are contained in two volumes as follows:

Volume 1: Eastern Oregon

Volume 2: Western Oregon

The report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who edited and assembled the reports. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following individuals contributed significantly to the collection, processing, and tabulation of the data:

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Brenda L. Groskinsky	Jacqueline C. Olson	
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This report was prepared in cooperation with the State of Oregon and with other agencies under the general supervision of Marvin O. Fretwell, State Chief, Oregon Office, Gerald G. Parker, Jr., Pacific Northwest District Chief, and T. John Conomos, Regional Hydrologist, Western Region.

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16. Abstract (Limit: 200 words) Water Resources Data for the 1988 water year for Oregon consist of records of stage, discharge, and water quality of streams; and stage, contents, and water quality of lakes and reservoirs. This report, in two volumes, contains discharge records for 250 gaging stations; stage only records for 7 gaging stations; stage and contents for 39 lakes and reservoirs; water quality for 44 stations, and water quality for 3 precipitation stations. Also included are 5 crest-stage, partial-record stations. Additional water data were collected at various sites, not part of the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in Oregon.				
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VII

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Letter after station name designates type of data: (d) discharge; (e) elevation; (g) gage height; (v) contents; (c) chemical, including periodic biological, microbiological, sediment, pesticide, and radio-chemical where applicable; (s) daily suspended sediment; (t) water temperature; and (k) specific conductance.

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WATER RESOURCES DATA FOR OREGON 1988

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with state agencies, obtains a large amount of data pertaining to the water resources of Oregon each water year. These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series entitled "Water Resources Data - Oregon."

This report includes records on surface water in the State. Specifically, it contains: (1) Discharge records for 250 stream-gaging stations, stage only records for 7 gaging stations, 93 partial-record or miscellaneous streamflow stations, and 5 crest-stage, partial-record streamflow stations; (2) stage and content records for 39 lakes and reservoirs; and (3) water-quality records for 39 streamflow-gaging stations and 5 ungaged streamsites.

This series of annual reports for Oregon began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report format was changed to present, in one or two volumes, data on quantities of surface water, quality of surface and ground water, and ground-water levels. In 1981, the annual report was divided into two volumes: Volume 1 described the activities for Western Oregon, while Volume 2 described the activities for Eastern Oregon. Beginning with the 1985 water year, presentation of ground-water levels in this report was discontinued.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for Oregon were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface-Water Supply of the United States, Parts 10, 11, 13, and 14." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." These Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from Distribution Branch, Text Products Section, U.S. Geological Survey, 604 South Pickett Street, Alexandria, VA 22304.

Publications similar to this report are published annually by the Geological Survey for all states. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report OR-88-1" and "U.S. Geological Survey Water-Data Report OR-88-2." For archiving and general distribution, the reports for 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the Office Chief at the address given on back of title page or by telephone (503) 231-2009.

COOPERATION

The U.S. Geological Survey and organizations of the State of Oregon have had cooperative agreements for the systematic collection of surface-water records since 1905. Organizations that supplied data are acknowledged in station descriptions. Organizations that assisted in collecting data through cooperative agreements with the Survey are:

State of Oregon Water Resources Department, W. F. Young, Director.
State of Oregon Department of Fish and Wildlife, Randy Fisher, Director.
Coos Bay-North Bend Water Board, Phil Matson, General Manager.
Eugene Water and Electric Board, Jean Reeder, General Manager.
Douglas County, John Youngquist, Coordinator.
City of McMinnville, J. L. Harshman, General Manager.
City of Portland, Bureau of Water Works, Edward Tenny, Administrator.
The Confederated Tribes of the Umatilla Indian Reservation,
E. H. Patawa, Chairman, Board of Trustees.
The Confederated Tribes of the Warm Springs Indian Reservation,
Doug McClelland, Fiscal Control Manager.

Assistance in the form of funds or services was provided by the Forest Service, U.S. Department of Agriculture; Corps of Engineers, U.S. Army; Bonneville Power Administration, U.S. Department of Energy; Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, National Park Service, U.S. Department of the Interior in collection of records for stage and discharge stations and water-quality stations published in this report.

The following organizations aided in collecting records for stations under Federal Energy Regulatory Commission licenses: Eugene Water & Electric Board; Pacific Power & Light Co.; Portland General Electric Co.; Middle Fork Irrigation District; Idaho Power Co., Idaho.

SUMMARY OF HYDROLOGIC CONDITIONS

Surface Water

The hydrology of Oregon is influenced by five mountain ranges with the Cascade Range providing a natural division between western and eastern Oregon. These ranges divide the state into drainage basins and greatly affect the distribution of precipitation. Hydrologic patterns are generally uniform from drainage basin to drainage basin throughout western Oregon; whereas in eastern Oregon, hydrologic patterns vary widely between drainage basins.

Western Oregon, which composes about one-third of the total area of the state, has a climate characterized by moderate temperatures, wet winters, and dry summers. About 80 percent of the precipitation occurs between October and March. Annual precipitation ranges from about 20 inches per year in the lower elevations in the southern part of the area to about 200 inches per year in the Coast and Cascade Ranges. In general, streamflow characteristics are similar, with most of the runoff and flooding on both large and small streams being caused by winter rains. Major floods have occurred when winter rains combine with melting snow.

Eastern Oregon has more complex hydrologic patterns than western Oregon. Precipitation is less than 10 inches per year in the semiarid regions, such as parts of the north-central area, the closed basin in south-central Oregon, and southeastern Oregon. The northeastern part of the state receives as much as 80 inches of precipitation per year, much of it occurring as snowfall. On large streams, flooding can result from winter rains and (or) seasonal snowmelt; in smaller drainage basins, flooding can result from winter rains, seasonal snowmelt, and convection storms.

Surface-water Conditions

Water year 1988 was the second consecutive year of dry and mild weather conditions across the Pacific Northwest. The geographical pattern of annual precipitation showed an extensive portion of the region at less than 80 percent of normal. Areas affected in Oregon west of the Cascades were the northern coast and southwest corner of the state. East of the Cascades, the area covered the southern half of the state. Wet conditions of late November and December 1987 were wet enough to assure that, even though the rest of the water year was dry, it would not be as dry as the near-record drought of 1977. A secondary period of above-normal precipitation occurred between April and June. Precipitation records showed some subbasins ending the 1988 water year with an even drier year than water year 1987.

Northwest weather during the water year can be divided into three groups: dry weather through November; wetter weather from December through mid July; followed by more dry weather.

More specifically, the dry weather of August and September persisted into October 1987. The month started with a high pressure ridge dominating the Columbia Basin producing warm days and cool, clear nights, and little or no rain. The warm weather was especially noteworthy in southwestern Oregon where Medford averaged 7 degrees above normal to be the warmest October in 77 years of record. A result of this drought was the devastating forest fires in southwestern Oregon, Wyoming, and Montana. This weather continued until November 8 when a small but vigorous storm brought light rain to the entire basin. During the middle of the month, a westerly flow brought frequent but weak weather systems, light precipitation, and maximum temperatures of 5 to 12 degrees above normal to most of the basin. By the 28th, a large area of high pressure over western Montana became dominant, dried up the rain, and cooled the maximum temperatures to 3 to 13 degrees below normal.

December began wet and warm as a large Alaskan area of low pressure pushed marine air over the basin. Many stations west of the Cascades reported their wettest first 9 days of December on record. The upper air pattern changed to a ridge of high pressure by the 12th bringing much drier and cooler weather to the entire basin through the first week in January resulting in the major cold period of the winter. Below-normal precipitation occurred in both January and February with each month receiving most of its precipitation during the second week of the month.

A period of normal precipitation began March 1 and continued through the end of June. The only digression from this pattern was a short, dry spell near the middle of each month. Brief storms produced enough precipitation each month to compensate for the brief, dry periods. Most significant of these events was a series of frontal systems that passed through the region between March 18 and April 9 producing above-normal precipitation. A second series of storms entered the area on April 13 and lasted until May 11, also producing slightly above-normal precipitation for the period. A brief, warm spell accelerated snowmelt but this was curtailed by cooler weather and light precipitation on May 14. On May 28, a large Gulf of Alaska area of low pressure pushed marine air and a series of storm fronts through the western portion of the region. These wet and very cold conditions prevailed over Oregon until June 11. Astoria recorded a one-day precipitation record of 1.60 inches on June 7. Crater Lake recorded its snowiest June in 55 years with 16 inches, exceeding the 15 inches of June 1984. Despite the June record, Crater Lake recorded only 368.5 inches of snowfall during the 1987-88 season which ranked 7th lowest of 53 winters. July began with cool, wet weather across northwestern Oregon and western Washington with maximum temperatures as much as 17 degrees below normal.

The dry season began on July 17 as a large upper air ridge pushed northward from California, bringing a thermal surface trough, halting the rain, and furnishing record warmth to many areas west of the Cascades. New daily records on the 19th included 103°F at Portland, 109°F at Medford, and 93°F at Astoria, Oregon. Very dry conditions continued into August with maximum temperatures 12 to 20 degrees above normal. A general increase in precipitation occurred during September.

Snowpack in the Columbia Basin was below to well below average throughout the 1988 water year. Snowpack accumulation began slowly resulting in a snowpack below that of January 1987. As the season progressed, the entire Columbia Basin received below-normal snowfall and on March 1, the snowpack was generally below the 1987 level. During March, the snowfall increased somewhat resulting in a basin snowpack on April 1 of 76 percent of average, slightly ahead of 1987. An unseasonable warm spring coupled with little late-season snowfall reduced the May 1 snowpack to below 50 percent of average.

Total runoff for the 1988 water year was below average at most streamflow stations. There were, however, variations from this generalization, depending upon location and season. The dry conditions experienced in the previous water year carried into the start of the 1988 water year with drought conditions existing in many basins east of the Cascades. Early in the year, some eastern Oregon streams were experiencing discharges at only 10 to 20 percent of average. In November, some minor storm activity brought snow to higher elevations. In December, significant rainfall brought many coastal streams to or slightly above flood stage. Even with these heavier rains, runoff was less than 80 percent of normal for streams west of the Cascades. East of the Cascades, runoff ranged from 30 to 70 percent.

From January to March, streamflow east of the Cascades remained below normal, while streamflow west of the Cascades was near normal. By April, a below-average snowpack coupled with high temperatures produced snowmelt runoff peaks 2 to 3 weeks earlier than usual. No flooding was reported. By June, streams east of the Cascades were approaching extreme low flows by month's end.

Above-average precipitation during July eased the declining streamflow levels but by August, many streams again were approaching extreme low flows. As the water year concluded, well below-normal streamflow conditions were recorded in many locations. Peak discharges for representative gages are shown in Table 1.

Table 1.--Comparison of peak discharge for the 1988 water year with peak discharge for the period of record at long-term stations

Station number	Station name	Drainage area (mi ²)	Peak discharge 1988 water year Date	Peak discharge ft ³ /s	Exceedance probability	Peak discharge period of record Date	Peak discharge ft ³ /s
10396000	Donner und Blitzen River near Frenchglen	a200	Apr. 17	736	.83	Apr. 26, 1978	4,270
11502500	Williamson River below Sprague River, near Chiloquin	a3,000	Mar. 4	1,590	.86	Dec. 26, 1964	16,100
13181000	Owyhee River near Rome	a8,000	Mar. 7	3,150	---	Feb. 19, 1986	41,400
13214000	Malheur River near Drewsey	a910	Feb. 9	1,500	.65	Dec. 23, 1964	12,000
13331500	Minam River at Minam	a240	May 28	2,050	.90	June 16, 1974	6,260
14048000	John Day River at McDonald Ferry	a7,580	Apr. 23	6,210	.89	Dec. 24, 1964	42,800
14137000	Sandy River near Marmot	262	Dec. 10	16,100	.41	Dec. 22, 1964	61,400
14178000	North Santiam River below Boulder Creek, near Detroit	216	Dec. 10	8,430	.43	Dec. 22, 1964	26,700
14301000	Nehalem River near Foss	667	Dec. 9	29,500	.43	Jan. 20, 1972	46,900
14321000	Umpqua River near Elkton	3,683	Jan. 10	77,500	.67	Dec. 23, 1964	265,000
14325000	South Fork Coquille River at Powers	169	Dec. 3	17,300	.42	Dec. 22, 1964	48,900

a Approximately.

NOTE.--Exceedance probability refers to the probability that an event will exceed a specific magnitude in a given time period. A flow of 200 ft³/s with an exceedance probability of 0.5 means that there is a 50 percent chance that the flow will exceed 200 ft³/s in any one year.

Monthly and annual mean discharges are compared with the long-term medians (1951-80) at four representative sites throughout the state in figures 1a and 1b. In eastern Oregon, the annual mean discharge for the Donner Und Blitzen River near Frenchglen (10396000) was 76.9 ft³/s which was 63 percent of the 1951-80 median. Also in eastern Oregon, the annual mean discharge for the Williamson River below Sprague River, near Chiloquin (11502500) was 777 ft³/s which was 65 percent of the long-term median. In western Oregon, the annual mean discharge for the Wilson River near Tillamook (14301500) was 847 ft³/s which was 71 percent of the long-term median. The annual mean discharge for the Umpqua River near Elkton (14321000), also in western Oregon, reported an annual mean discharge of 5,121 ft³/s which was 68 percent of the long-term median.

The above information was compiled from reports of the Columbia River Water Management Group. The information was provided by the River Forecast Center, National Weather Service; the Snow Survey Office, Soil Conservation Service; and the U.S. Geological Survey.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of more than 50 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in national or regional water-quality planning and management. The several hundred sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objective of NASQAN is to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting. The design of the network is intended to provide data for (1) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (2) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (3) a nationally consistent data base useful for water-quality assessment and hydrologic research.

The National Trends Network (NTN) is a 150 station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Tritium network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1988 water year that began October 1, 1987, and ended September 30, 1988. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, and water-quality data for surface water. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

Each data station in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The two systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations are based on geographic location. The "downstream order" system is used for regular surface-water stations and the "latitude-longitude" system is used for surface-water stations where only miscellaneous measurements are made. Basin designation is based on the Hydrologic Unit Map for Oregon prepared in cooperation with the U.S. Water Resources Council (1974).

Downstream Order System

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary with respect to the stream to which it is immediately tributary is indicated by an indentation in the "List of Stations" in the front of this report. Each indentation represents one rank. This downstream order and system of indentation show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete eight-digit number for each station, such as 14105700, which appears just to the left of the station name, includes the two-digit Part number "14" plus the six-digit downstream-order number "105700." The Part number designates the major river basin; for example, part "14" refers to the Pacific slope basins in Oregon and lower Columbia River basin.

Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this report.

Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relations between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relation between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals. Measurements of discharge are made with current meters using methods adapted by the Geological Survey that are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations (TWRI), Book 3, Chapter A6.

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge for any stage within the range of the measurements are prepared. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves are extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow-over-dams or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. 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 the individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may so obscure the stage-discharge relations that daily mean discharges must be estimated from other information such as temperature and precipitation records, notes of observations, and records for other stations in the same or nearby basins for comparable periods.

At some stream-gaging stations the stage-discharge relation is affected by the 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 computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations an acoustic velocity meter (AVM) is used instead of the slope method. The AVM measures both water-surface elevation and velocity from which discharge can be computed directly.

In computing records of lake or reservoir contents, it is necessary to have information available from surveys, curves, or tables that define the relation of stage to content. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relation changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relation. Discharges over lake or reservoir spillways are computed from stage-discharge relations much as other stream discharges are computed.

For some gaging stations there are periods when no gage-height record is obtained, or the validity of the recorded gage height is so questionable that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

Data Presentation

The records published for each gaging station consist of two parts, the manuscript or station description and the data table for the current water year. The manuscript provides, under various headings, descriptive information, such as station location; period of record; average discharge; historical extremes; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gage with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages are based on information developed by the Hydraulics and Hydrology Committee of the Pacific Northwest River Basins Commission.

DRAINAGE AREA.--Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

PERIOD OF RECORD.--This indicates the period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not, and whose location was such that records from it can reasonably be considered equivalent with records from the present station.

REVISED RECORDS.--Published records, because of new information, occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means the instantaneous maximum discharge was revised; "(m)" the instantaneous minimum was revised; and "(P)" the peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

GAGE.--The type of gage in current use, the datum of the current gage referred to National Geodetic Vertical Datum of 1929 (see "DEFINITION OF TERMS"), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.--All periods of estimated daily-discharge record will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily-discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a remarks statement is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, special methods of computation, conditions that affect natural flow at the station and, possibly, other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

AVERAGE DISCHARGE.--The discharge value given is the arithmetic mean of the water-year mean discharges. It is computed only for stations having at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development.

EXTREMES FOR PERIOD OF RECORD.--Extremes may include maximum and minimum stages and maximum and minimum discharges or content. Unless otherwise qualified, the maximum discharge or content is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage gage, or by direct observation of a nonrecording gage. If the maximum stage did not occur on the same day as the maximum discharge or content, it is given separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and is reported in the same manner as the maximum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Included here is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the U.S. Geological Survey.

EXTREMES FOR CURRENT YEAR.--Extremes given here are similar to those for the period of record, except the peak discharge listing may include secondary peaks. For stations meeting certain criteria, all peak discharges and stages occurring during the water year and greater than a selected base discharge are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330. The minimum for the current water year appears below the table of peak data.

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the Oregon office to determine if the published records were ever revised after the station was discontinued. Of course, if the data were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

The daily table for stream-gaging stations gives mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also is usually 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 there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. In the yearly summary below the monthly summary, the figures shown are the appropriate discharges for the calendar and water years. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversions or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of discharge measurements at low-flow partial-record stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables of annual state data reports are identified either by flagging individual daily values with the letter symbol "e" and printing a table footnote, "e Estimated," or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

Accuracy of the Records

The accuracy of streamflow records 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 measurements of stage, measurements of discharge, and interpretation of records.

The accuracy attributed to the records is indicated under the "REMARKS" paragraph. "Excellent" means that about 95 percent of the daily discharges are within 5 percent of the true; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned, are rated "poor."

Different accuracies may be attributed to different parts of a given record. Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft³/s; the nearest tenth between 1.0 and 10 ft³/s; whole numbers between 10 and 1,000 ft³/s; and 3 significant figures for more than 1,000 ft³/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff because of the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation, or other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, changes in contents of reservoirs, or 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 if adjustments or losses are large in comparison with the observed discharge.

Other Records Available

Monthly records for several ungaged sites are given in a separate section following the gaged sites. The accuracy of records for ungaged sites is generally lower than that for gaged sites, depending on the precision of the computation method and the accuracy of data used in the computations. For most gaging stations, unpublished, detailed information, on file in the Oregon office, includes discharge measurements, gage-height records, and rating tables. Many gaging-station records in Oregon through 1982 have been analyzed to determine several statistical summaries: (1) The number of days in each year that the daily discharge was between selected limits (duration tables); (2) the lowest mean discharge for selected numbers of consecutive days in each year; and (3) the highest mean discharge for selected numbers of consecutive days in each year.

Other Federal and State agencies have collected discharge data at other sites in Oregon during the current water year. Although these records have not been published by the U.S. Geological Survey, the National Water Data Exchange, NAWDEX, Water Resources Division, U.S. Geological Survey, National Center, Reston, VA 22092, maintains an index of these sites and will furnish information about them.

Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve a variety of types of data and measurement frequencies.

Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A continuing-record station is a site where data are collected on a regularly scheduled basis. Frequency may be one or more times daily, weekly, monthly, or quarterly. A partial-record station is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A miscellaneous sampling site is a location other than a continuing or partial-record station, where random samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently.

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

On-site Measurements and Sample Collection

In obtaining water-quality data, it is important that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, treating the samples to prevent changes in quality pending analysis, and shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," (TWRI), Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. All of these references are listed under "PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS" in this report. Also, detailed information on collecting, treating, and shipping samples may be obtained from the Geological Survey Oregon office.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream Quality Accounting Network (see "DEFINITION OF TERMS") are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals, depends on flow conditions and other factors which must be evaluated by the collector.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the U.S. Geological Survey office whose address is given on the back of the title page of this report.

Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the Oregon office.

Sediment

Suspended-sediment concentrations are determined from samples collected by one of the standard sampling techniques discussed in TWRI, Book 3, Chapter C2, "Field methods for measurement of fluvial sediment." Samples are obtained using standard depth- or point-integrating samplers, or by means of an approved pumping sampler. Mean concentrations for the sampled cross section are in turn determined from these samples.

During periods of rapidly changing flow or rapidly changing suspended-sediment concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of suspended-sediment discharge, periodic measurements of particle-size distributions for the suspended-sediment, bed-load, and bed-material samples are included for stations where samples were obtained to measure this parameter.

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (BOD), samples for identification of biological populations, samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the Geological Survey laboratory in Arvada, Colorado. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the Geological Survey laboratory are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured weekly or less frequently, because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remark Codes

The following remark codes may appear with the water-quality data in this report:

<u>PRINTED OUTPUT</u>	<u>REMARK</u>
E	Estimated value
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (non-ideal colony count)

ACCESS TO WATSTORE DATA

The National WATER Data STorage and RETrieval System (WATSTORE) was established for handling water data collected through the activities of the U.S. Geological Survey and to provide for more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the Survey at its National Center in Reston, Virginia.

WATSTORE can provide a variety of useful products ranging from simple data tables to complex statistical analyses. A minimal fee, plus the actual computer cost incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from each of the Water Resources Division's District offices (see address given on the back of the title page).

General inquiries about WATSTORE may be directed to:

Chief Hydrologist
U.S. Geological Survey
437 National Center
Reston, Virginia 22092

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also table for converting English units to International System (SI) Units on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equal to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Adenosine triphosphate (ATP) is an organic, phosphate-rich, compound important in the transfer of energy in organisms. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measure of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter of the original water sample.

Algae are mostly aquatic single-celled, colonial, or multicelled plants, containing chlorophyll and lacking roots, stems, and leaves.

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, while others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35°C plus or minus 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milliliters (mL) of sample.

Fecal coliform bacteria are bacteria that are present in the intestine or feces of warmblooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5°C plus or minus 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in the intestine of warmblooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C plus or minus 1.0°C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Base flow. See Base runoff.

Base runoff refers to sustained or fair weather runoff. In most streams, base runoff is composed largely of ground-water effluent. The term base flow is often used in the same sense as base runoff. However, the distinction is the same as that between streamflow and runoff. When the concept in the terms base flow and base runoff is that of the natural flow in a stream, base runoff is the logical term.

Bed material is the sediment mixture of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by micro-organisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 105°C for zooplankton and periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and the ash mass and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common green pigments in plants.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

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

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, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic foot per second (ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Cubic foot per second-day [$(\text{ft}^3/\text{s})/\text{d}$] 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, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,445 cubic meters.

Cubic feet per second per square mile [$(\text{ft}^3/\text{s})/\text{mi}^2$] 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.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment) that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved refers to that material in a representative water sample which passes through a 0.45- μm membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

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

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate (CaCO_3).

Hydrologic Bench-Mark Network is a network of more than 50 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an eight-digit number.

Land-surface datum (lsd) is a datum plane that is approximately at land surface at each ground-water observation well.

Measuring point (MP) is an arbitrary permanent reference point from which the distance to the water surface in a well is measured to obtain the water level.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Methylene blue active substances (MBAS) are apparent detergents. The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram (ug/g) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per liter (UG/L, ug/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represents the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L and is based on the mass of dry sediment per liter of water-sediment mixture.

National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in national or regional water-quality planning and management. The several hundred sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objective of NASQAN is to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting. The design of the network is intended to provide data for (1) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (2) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (3) a nationally consistent data base useful for water-quality assessment and hydrologic research.

National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

Organism is any living entity.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per unit area habitat, usually square meter (m^2), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume usually milliliter (mL) or liter (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Parameter Code is a 5-digit number used in the U.S. Geological Survey computerized data system, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE are the same as those used in the U.S. Environmental Protection Agency data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

Partial-record station is a particular site where limited streamflow and (or) water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of a particle determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

<u>Classification</u>	<u>Size (mm)</u>	<u>Method of analysis</u>
Clay.....	0.00024 - 0.004	Sedimentation
Silt.....	.004 - .062	Sedimentation
Sand.....	.062 - 2.0	Sedimentation or sieve
Gravel.....	2.0 - 64.0	Sieve

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic matter is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population in terms of types, numbers, mass, or volume.

Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 disintegrations per minute (dpm).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algae mats or floating "moss" in lakes. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [mg C/(m².time)] for periphyton and macrophytes and [mg C/(m³.time)] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [mg O₂/(m².time)] for periphyton and macrophytes and [mg O₂/(m³.time)] for phytoplankton are units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Return period is the average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. May also be called recurrence interval.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Bed load is the sediment that is transported in a stream by rolling, sliding, or skipping along the bed very close to the bed surface. In this report, bed load is considered to consist of particles in transit within 0.25 ft of the streambed.

Bed load discharge (tons per day) is the quantity of bed load measured by dry weight that moves past a section as bed load in a given time.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Suspended-sediment discharge (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft³/s) x 0.0027.

Suspended-sediment load is a general term that refers to material in suspension. It is not synonymous with either discharge or concentration.

Total-sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry mass or volume, that passes a section during a given time.

Total-sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. It is not synonymous with total-sediment discharge.

Seven-day 10-year low flow (7 Q10) is the discharge at the 10-year recurrence interval taken from a frequency curve of annual values of the lowest mean discharge for 7 consecutive days (the 7-day low flow).

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and the volume of water, per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

Natural substrate refers to any naturally occurring emerged or submersed solid surface, such as a rock or tree, upon which an organism lives.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton.

Surface area of a lake is that area outlined on the latest U.S.G.S. topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is the part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is associated with the material retained on a 0.45-um filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45-um membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45-um membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata, is the following:

Kingdom.....	Animal
Phylum.....	Arthropoda
Class.....	Insecta
Order.....	Ephemeroptera
Family.....	Ephemeridae
<u>Genus</u>	<u>Hexagenia</u>
<u>Species</u>	<u>Hexagenia limbata</u>

Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder" is used in the table headings and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY) is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determined all of the constituent in the sample.)

Total discharge is the total quantity of any individual constituent, as measured by dry mass or volume, that passes through a stream cross section per unit of time. This term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses, because different digestion procedures are likely to produce different analytical results.

Tritium Network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

Water year in Geological Survey reports dealing with surface-water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1980, is called the "1980 water year."

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports (WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976).

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

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

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Box 25425, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

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- 1-D2. GUIDELINES FOR COLLECTION AND FIELD ANALYSIS OF GROUND-WATER SAMPLES FOR SELECTED UNSTABLE CONSTITUENTS, by W. W. Wood: USGS--TWRI book 1, Chapter D2. 1976. 24 pages.
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- 3-A14. USE OF FLUMES IN MEASURING DISCHARGE, by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.
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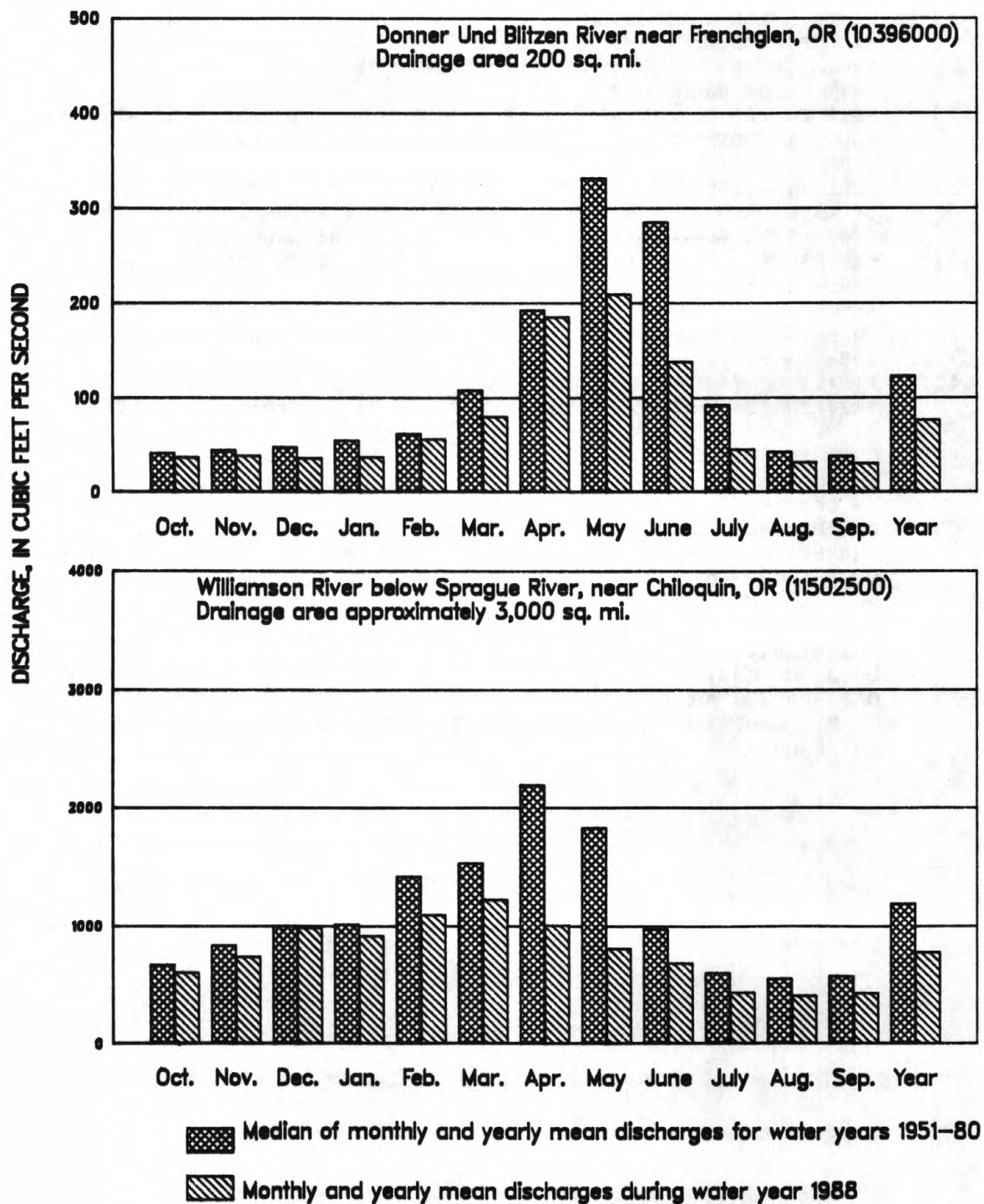


Figure 1a.--Discharge during 1988 water year compared with median discharge for period 1951-80 for two representative gaging stations in Eastern Oregon.

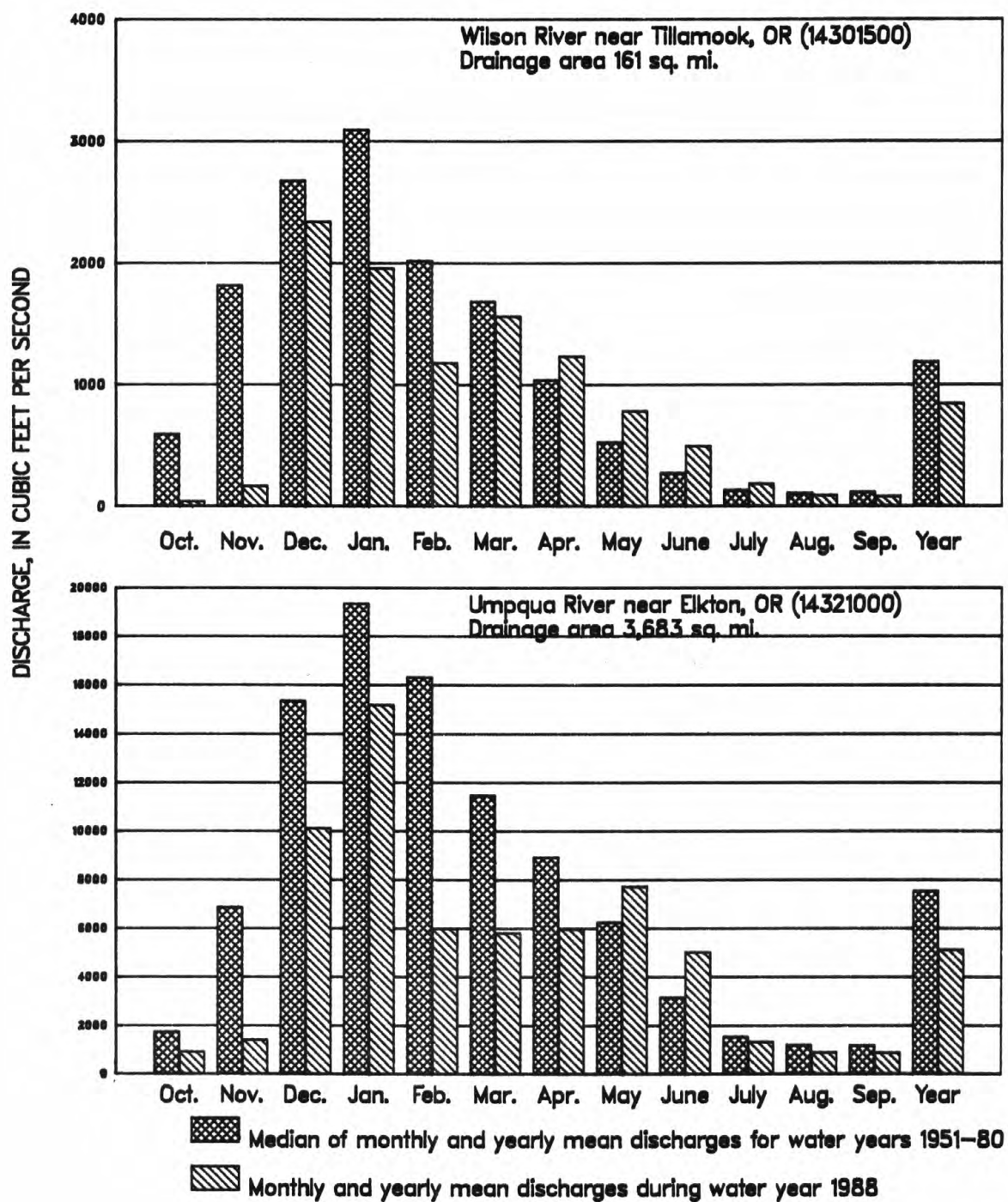


Figure 1b.--Discharge during 1988 water year compared with median discharge for period 1951-80 for two representative gaging stations in Western Oregon.

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SURFACE-WATER RECORDS

33

REMARK CODES.--The following remark codes may appear with the water-quality data in this section:

PRINTED OUTPUT	REMARK
E	Estimated value
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (non-ideal colony count)
M	Presence of material verified but not quantified

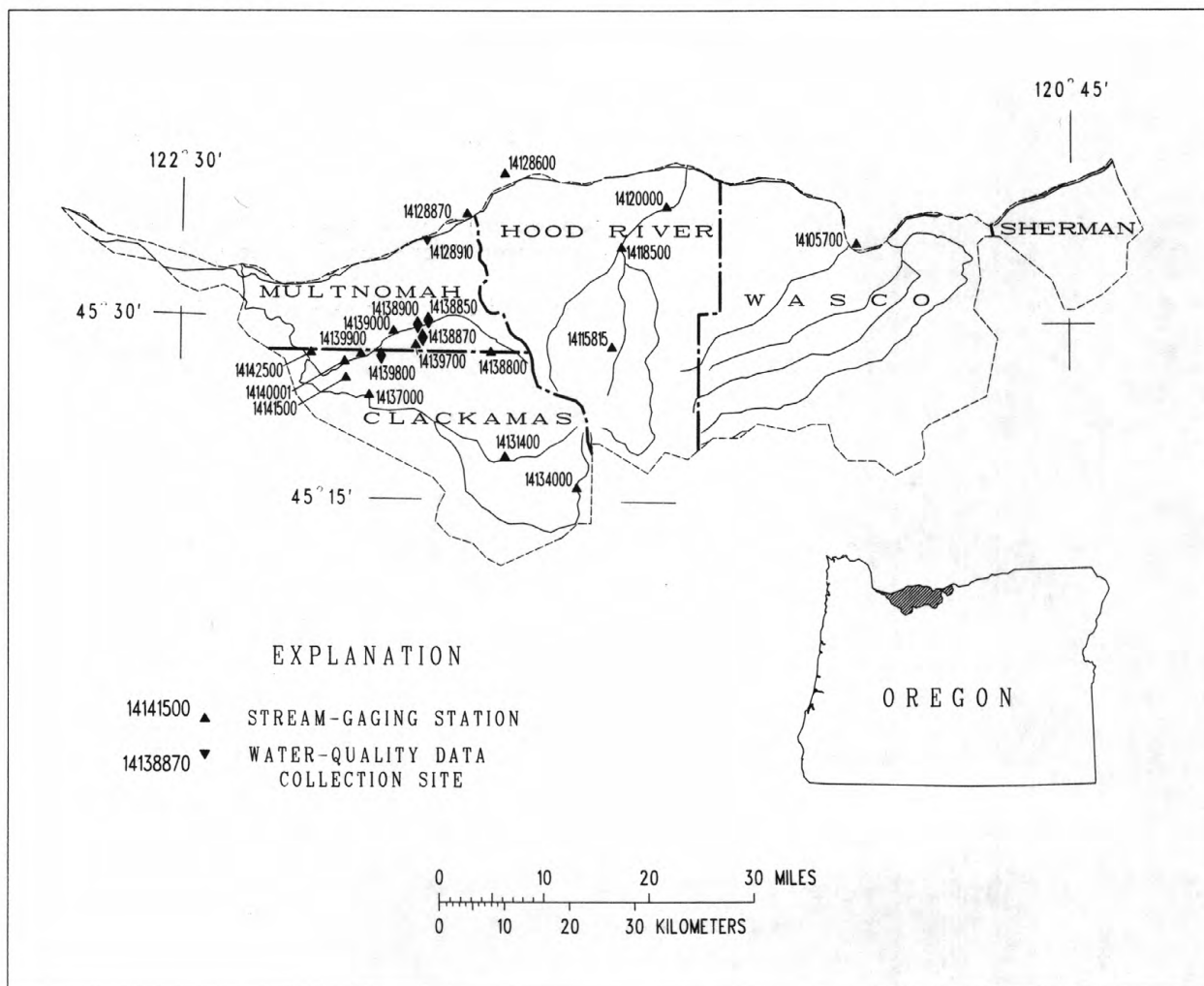


Figure 2.--Location of surface-water and water-quality stations in the Lower Deschutes River, Middle and Lower Columbia River, and Sandy River basins.

LOWER COLUMBIA RIVER BASIN

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14128870 COLUMBIA RIVER BELOW BONNEVILLE DAM, OR

LOCATION.--Lat 45°38'20", long 121°57'16", in sec.21, T.2 N., R.7·E., Multnomah County, Hydrologic Unit 17080001, on left bank 0.4 mi downstream from Bonneville Dam left bank powerhouse, 0.5 mi upstream from Tanner Creek, and at mile 145.0.

DRAINAGE AREA.--239,900 mi², approximately.

PERIOD OF RECORD.--May 1981 to current year (gage heights only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Flow regulated by many reservoirs upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 30.40 ft June 11, 1981; minimum, 7.00 ft Oct. 4, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 20.27 ft May 25; minimum, 7.20 ft Aug. 15.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	14.01	11.21	12.39	9.81	8.78	9.41	15.25	11.18	14.18	14.45	10.48	13.26
2	11.71	10.28	10.83	9.98	8.61	9.15	14.31	12.64	13.37	14.11	10.72	12.35
3	10.80	9.33	9.92	11.36	8.89	9.97	14.61	12.90	13.79	15.78	13.73	14.29
4	10.03	8.43	9.08	12.14	10.29	11.17	15.62	14.23	14.95	15.94	14.30	15.11
5	11.37	9.34	10.47	11.52	9.35	10.29	14.19	12.33	13.08	15.90	13.56	14.89
6	14.08	11.03	12.54	12.56	10.52	11.26	13.86	11.54	12.26	15.57	14.05	14.77
7	13.51	11.36	12.14	12.39	9.13	10.57	15.33	13.51	14.33	16.21	15.35	15.56
8	12.95	11.45	12.18	9.10	7.53	8.62	15.41	14.12	14.71	17.79	15.39	15.91
9	13.06	11.07	12.21	11.47	7.63	9.65	17.35	14.29	15.47	16.04	12.68	13.78
10	11.93	9.36	10.26	11.42	8.51	9.17	20.21	17.31	18.46	15.06	14.02	14.61
11	10.14	8.63	9.19	10.36	8.35	8.91	18.21	16.40	17.05	17.33	14.95	15.66
12	11.63	8.89	10.07	12.48	10.40	11.49	16.40	14.57	15.38	16.49	14.96	15.77
13	13.76	11.49	12.23	12.75	10.10	11.47	15.50	13.40	14.08	17.45	16.15	16.52
14	14.69	13.80	14.15	11.18	10.05	10.87	16.84	15.29	16.06	17.82	15.30	16.92
15	14.94	13.50	14.50	11.23	10.66	10.96	17.13	13.84	15.17	18.47	17.22	17.77
16	13.55	13.19	13.38	11.35	7.57	9.44	15.81	13.56	15.12	17.39	15.57	16.60
17	13.55	9.41	11.37	12.44	11.24	11.93	18.09	15.32	16.07	15.58	14.19	14.69
18	9.55	8.98	9.29	11.98	10.88	11.43	17.97	15.49	16.27	17.26	13.63	15.71
19	12.93	8.76	10.97	12.02	10.87	11.50	15.88	13.79	14.66	16.48	14.75	15.45
20	13.85	11.64	12.89	11.76	10.31	11.13	13.81	11.67	12.76	16.57	15.66	15.90
21	14.04	11.12	12.93	11.48	10.51	10.92	15.81	12.70	13.93	16.87	16.17	16.54
22	13.19	9.74	12.05	12.47	11.11	11.63	16.47	15.05	15.38	16.24	14.90	15.93
23	13.59	11.33	12.29	12.33	11.40	11.83	15.45	14.34	14.66	16.31	14.43	14.97
24	11.43	10.00	10.77	12.00	10.72	11.22	14.58	13.41	13.96	14.60	13.86	14.14
25	10.39	9.31	9.82	13.09	11.42	12.43	13.66	12.40	13.02	15.03	13.97	14.52
26	12.79	9.99	11.15	13.15	12.43	12.69	12.67	11.66	12.22	14.93	11.83	13.68
27	12.84	11.46	11.87	12.89	10.98	11.94	12.05	10.05	11.19	13.90	11.42	12.89
28	12.40	11.33	12.02	11.34	9.19	10.54	13.46	11.78	12.90	13.09	10.35	11.35
29	11.90	10.98	11.29	9.62	8.80	9.21	14.23	12.41	12.90	12.44	10.22	11.11
30	12.48	10.85	11.60	10.92	8.60	9.55	14.81	13.58	14.35	14.00	12.41	12.96
31	11.64	9.47	10.58	---	---	---	14.69	13.42	14.44	15.50	13.87	14.38
MONTH	14.94	8.43	11.50	13.15	7.53	10.68	20.21	10.05	14.39	18.47	10.22	14.77

LOWER COLUMBIA RIVER BASIN

14128870 COLUMBIA RIVER BELOW BONNEVILLE DAM, OR--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN			
FEBRUARY				MARCH				APRIL				MAY			
1	15.79	15.24	15.48	11.78	9.64	10.72	12.23	10.72	11.67	14.59	14.03	14.31			
2	16.54	15.61	16.25	12.71	11.41	12.09	10.94	10.16	10.50	16.21	12.93	14.15			
3	16.64	13.82	15.33	13.79	10.38	12.15	12.92	10.48	11.31	18.39	14.45	16.30			
4	15.66	12.96	14.93	14.61	12.30	13.62	14.28	12.72	13.39	17.58	16.53	17.08			
5	15.87	12.88	14.09	12.28	11.70	11.94	16.20	11.96	15.16	17.94	16.45	16.84			
6	13.48	13.13	13.30	12.91	11.69	12.35	15.92	14.66	15.47	17.42	14.46	15.46			
7	13.16	10.71	12.23	14.89	12.38	13.30	15.46	13.57	14.44	15.61	14.28	15.21			
8	14.94	10.84	13.31	15.02	13.19	14.31	13.61	10.88	12.82	15.89	14.78	15.46			
9	13.74	12.04	12.96	13.56	11.15	12.08	11.40	9.32	10.92	17.19	15.53	15.88			
10	15.80	11.73	14.08	13.34	11.82	12.78	10.86	9.12	10.23	18.64	15.71	17.36			
11	15.96	12.50	14.44	14.82	13.06	14.12	13.16	10.47	11.48	19.56	17.52	18.80			
12	13.77	12.27	13.03	13.40	10.77	12.00	13.24	10.41	11.84	20.13	18.21	19.09			
13	13.35	10.83	12.03	11.64	11.15	11.35	12.38	11.74	12.05	19.84	17.61	18.69			
14	13.69	13.11	13.35	13.14	11.22	11.91	14.08	12.38	13.31	19.86	17.60	18.56			
15	13.58	11.96	12.55	13.37	11.58	12.33	14.57	13.89	14.29	19.58	17.64	17.95			
16	15.82	12.18	14.04	12.62	11.76	12.26	14.86	13.74	14.37	19.43	17.39	17.82			
17	16.39	12.71	14.84	12.39	11.68	12.10	14.79	13.97	14.46	19.68	17.44	18.80			
18	16.50	14.28	15.17	11.84	10.02	10.72	14.66	13.55	14.15	19.78	18.55	18.87			
19	15.17	13.34	14.08	11.20	10.06	10.60	14.77	13.85	14.30	18.96	18.39	18.54			
20	13.65	12.15	12.60	10.92	9.85	10.36	14.66	13.98	14.32	19.56	18.26	19.02			
21	12.74	11.76	12.22	13.07	10.20	11.86	14.84	13.88	14.40	19.51	18.18	18.96			
22	14.26	11.47	12.94	13.03	10.44	11.52	14.68	13.97	14.33	18.38	16.12	17.05			
23	14.38	13.69	14.15	13.85	10.33	12.20	14.64	13.91	14.28	16.92	15.75	16.40			
24	13.77	12.76	13.08	17.20	13.79	15.01	14.36	13.92	14.20	19.08	16.79	17.77			
25	13.74	11.28	12.55	17.63	14.19	16.28	15.87	12.78	14.01	20.27	18.79	19.18			
26	12.59	10.48	11.34	13.95	11.24	12.37	16.49	12.93	14.09	19.56	18.16	18.82			
27	12.53	10.40	11.81	14.05	11.16	13.47	17.33	13.59	14.30	18.77	17.78	18.22			
28	12.19	10.13	11.25	15.09	13.84	14.79	16.89	13.90	14.57	17.77	14.83	16.82			
29	11.06	9.91	10.40	17.05	14.86	15.21	16.26	14.09	14.62	14.85	13.89	14.51			
30	---	---	---	18.38	12.33	16.03	14.74	14.19	14.44	15.05	13.37	14.19			
31	---	---	---	12.71	12.16	12.40	---	---	---	17.78	14.01	16.25			
MONTH	16.64	9.91	13.37	18.38	9.64	12.72	17.33	9.12	13.46	20.27	12.93	17.17			
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN			
JUNE				JULY				AUGUST				SEPTEMBER			
1	19.88	17.95	19.25	10.79	9.73	10.22	10.61	7.78	9.17	13.04	12.43	12.79			
2	19.94	18.95	19.45	10.68	9.58	10.02	10.95	9.18	9.83	13.43	11.72	12.84			
3	20.05	18.73	19.58	11.63	9.56	10.71	10.16	8.32	9.15	13.70	9.69	11.11			
4	19.23	18.12	18.62	11.73	9.68	10.57	11.06	9.04	10.04	10.88	9.08	9.83			
5	18.91	17.45	18.10	10.22	8.54	9.36	11.10	8.40	9.32	11.99	9.06	9.79			
6	18.94	17.29	18.19	12.76	9.14	11.28	9.44	8.09	8.68	14.67	10.21	12.56			
7	18.74	16.90	17.61	15.32	11.76	12.62	9.79	8.14	8.86	14.61	10.89	11.83			
8	17.39	16.61	16.98	12.88	11.18	11.96	10.84	8.62	9.70	12.15	9.82	11.43			
9	18.80	17.10	18.01	11.25	10.14	10.83	9.76	7.49	9.11	12.14	10.68	11.12			
10	18.00	15.68	17.32	11.70	10.35	11.02	10.43	7.39	9.41	11.78	9.80	10.97			
11	15.54	13.20	14.69	11.61	9.86	10.94	11.77	7.72	10.79	12.44	10.32	11.81			
12	13.58	12.78	13.16	13.30	10.19	11.34	12.00	9.90	11.34	10.33	9.19	9.64			
13	15.09	13.43	14.25	13.12	11.05	12.05	12.08	9.72	10.78	10.18	8.47	9.36			
14	13.45	11.86	12.62	13.09	11.47	12.16	10.11	7.72	8.78	11.65	9.34	10.01			
15	14.79	12.51	14.24	12.94	10.52	11.94	10.67	7.20	9.32	13.02	10.58	11.95			
16	15.23	14.42	14.77	12.31	8.62	10.07	11.06	8.97	10.34	11.49	9.65	10.31			
17	15.16	14.11	14.49	9.70	8.24	9.08	11.99	8.57	10.82	11.02	9.27	9.94			
18	14.57	13.50	14.17	9.86	8.46	9.34	10.34	7.97	9.31	11.06	9.65	10.41			
19	13.96	13.34	13.64	12.19	8.70	10.42	10.48	8.29	9.63	11.20	8.01	9.67			
20	13.84	13.25	13.60	11.95	9.69	10.76	11.44	8.76	9.92	11.62	10.20	11.19			
21	13.50	12.93	13.25	11.47	10.24	10.90	10.30	7.98	9.25	12.02	9.88	11.25			
22	14.02	12.22	13.08	12.05	10.63	11.46	9.73	7.68	8.80	11.91	9.20	11.34			
23	15.30	13.95	14.62	11.76	8.68	9.44	10.28	7.68	9.15	12.40	11.78	12.05			
24	15.41	14.32	14.66	9.33	8.33	8.73	13.25	8.17	11.03	12.04	8.90	10.19			
25	14.88	13.40	14.06	11.38	8.55	10.21	12.95	10.84	11.73	11.06	8.02	9.71			
26	13.67	13.18	13.41	11.29	10.06	10.89	12.96	10.82	11.63	12.73	10.35	11.35			
27	14.59	12.81	13.53	10.06	8.72	9.51	11.00	9.26	10.23	12.71	10.21	11.59			
28	14.08	10.72	12.86	10.06	8.03	9.22	11.65	8.67	10.12	12.38	8.74	10.61			
29	14.08	13.15	13.76	10.61	7.90	9.18	11.28	9.08	10.35	12.67	9.85	11.17			
30	13.33	10.75	11.53	9.88	8.65	9.22	13.44	10.50	11.77	11.67	9.92	10.94			
31	---	---	---	9.42	7.71	8.56	12.99	11.54	12.07	---	---	---			
MONTH	20.05	10.72	15.25	15.32	7.71	10.45	13.44	7.20	10.01	14.67	8.01	10.96			
YEAR	MAXIMUM 20.27	MINIMUM 7.20	MEAN 12.90												

LOWER COLUMBIA RIVER BASIN

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14128910 COLUMBIA RIVER AT WARRENDALE, OR

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1975 to current year.

WATER TEMPERATURE: October 1975 to current year.

INSTRUMENTATION.--Specific conductance and temperature recorders since October 1975.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 244 microsiemens Jan. 7, 1988; minimum, 95 microsiemens June 26, 27, 1982.

WATER TEMPERATURE: Maximum, 22.5°C Aug. 17, 18, 1977, Aug. 11, 1980; minimum recorded, 0.0°C many days in January and February, 1979.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 244 microsiemens Jan. 7; minimum, 126 microsiemens June 30.

WATER TEMPERATURE: Maximum recorded, 21.0°C several days in August and September; minimum, 4.5°C Jan. 5-10.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, DIS-SOLVED (PER-CENT SATUR-ATION)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS (MG/L AS CACO3)	HARD-NESS NONCARB (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	
NOV 17...	1205	133000	163	7.6	12.0	9.9	92	K5	8	76	9	21	
JAN 26...	1145	151000	178	8.1	4.0	12.3	93	K3	48	77	7	21	
APR 05...	1135	165000	182	8.2	8.0	12.3	103	K1	K1	81	8	22	
AUG 23...	1204	101000	137	7.8	20.5	8.4	93	M1	K2	59	3	16	
DATE		MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WATER DIS IT FIELD (MG/L AS CACO3)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)
NOV 17...	5.6	7.0	1.4	66	80	0	15	3.9	0.2	0.04	0.2	0.3	
JAN 26...	6.0	6.2	1.3	68	83	0	17	3.5	0.3	<0.01	0.3	<0.2	
APR 05...	6.2	7.6	1.3	72	88	0	17	4.2	0.2	0.04	0.2	0.3	
AUG 23...	4.6	4.8	1.0	56	68	0	11	2.5	0.1	0.02	<0.1	0.4	
DATE		PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS TOTAL (MG/L AS P)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	TUR-BID-ITY (NTU)	SEDI-MENT, SUS-PENDE (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	
NOV 17...	0.01	0.02	0.02	8.5	99	104	35600	0.8	10	3590	96		
JAN 26...	0.02	0.03	0.05	9.3	106	108	43200	4.3	14	5710	97		
APR 05...	<0.01	0.01	0.03	10	106	114	47200	1.8	8	3560	89		
AUG 23...	0.02	0.03	0.04	7.0	79	81	21500	2.4	8	2180	92		

K - Results based on colony count outside acceptable range (non-ideal colony count).

LOWER COLUMBIA RIVER BASIN

14128910 COLUMBIA RIVER AT WARRENDALE, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
NOV 17...	150	1	28	<0.5	<1	<1	<3	3	16	<5
JAN 26...	10	1	28	<0.5	<1	<1	<3	2	19	<5
APR 05...	<10	1	23	<0.5	<1	<1	<3	5	10	<5
AUG 23...	<10	1	25	<0.5	<1	<1	<3	6	6	<5
DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 17...	<4	2	<0.1	<10	<1	<1	<1	110	<6	86
JAN 26...	<4	1	<0.1	<10	1	<1	<1	100	<6	4
APR 05...	<4	<1	<0.1	<10	2	<1	<1	110	<6	<3
AUG 23...	<4	3	<0.1	<10	2	<1	<1	87	<6	8

LOWER COLUMBIA RIVER BASIN

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14128910 COLUMBIA RIVER AT WARRENDALE, OR--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	180	177	178	167	165	166	194	178	186	230	184	188
2	181	178	180	165	164	165	181	178	180	195	183	184
3	182	181	182	167	164	165	179	172	176	187	185	186
4	182	181	182	167	166	167	181	176	178	234	187	191
5	182	181	181	168	166	167	186	181	183	189	187	188
6	183	181	182	171	168	169	187	185	186	227	188	194
7	184	182	183	173	170	172	190	187	188	244	189	200
8	185	183	184	172	170	171	193	190	191	232	190	194
9	186	184	185	172	171	171	194	178	188	194	191	193
10	186	184	185	171	169	170	187	176	182	191	185	188
11	184	182	183	169	166	168	189	184	187	189	183	184
12	182	181	182	167	162	165	193	189	191	212	182	185
13	184	181	183	163	161	162	197	193	195	184	181	183
14	187	184	186	162	161	161	197	195	196	182	166	174
15	192	187	190	166	162	164	195	194	195	167	165	166
16	192	190	191	169	166	167	196	194	195	166	164	165
17	190	184	187	170	168	169	200	196	198	166	164	165
18	184	179	182	170	169	169	204	199	202	167	164	165
19	179	173	176	172	170	171	208	205	207	170	167	168
20	172	169	170	174	171	173	209	208	209	172	170	171
21	172	169	170	176	174	175	209	206	208	205	172	176
22	173	171	172	176	173	174	206	203	205	176	174	175
23	172	170	171	173	172	173	205	203	204	176	174	175
24	170	168	169	173	171	172	206	204	205	189	174	175
25	169	168	169	176	172	173	206	204	205	188	172	174
26	170	169	169	182	175	177	205	203	204	174	172	173
27	172	169	170	187	180	182	204	200	202	177	174	175
28	174	171	173	231	188	206	201	198	200	179	176	178
29	174	172	173	224	186	210	199	198	199	179	177	178
30	172	169	171	228	189	211	198	193	196	180	177	179
31	169	166	168	---	---	---	193	188	191	180	179	179
MONTH	192	166	178	231	161	173	209	172	195	244	164	180
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	180	178	179	192	189	190	198	196	197	196	195	195
2	178	176	177	193	192	192	197	190	194	196	194	195
3	177	175	176	193	190	191	190	185	187	194	189	193
4	176	175	175	191	188	189	186	182	184	190	186	187
5	177	175	176	189	187	188	184	181	183	186	182	184
6	177	175	176	188	187	188	185	181	183	183	180	182
7	178	176	177	189	186	188	182	180	181	180	178	179
8	179	177	178	190	189	189	184	181	183	176	172	175
9	177	170	174	189	188	188	185	182	183	172	167	170
10	171	169	170	189	187	188	185	182	184	167	164	165
11	172	170	171	190	188	189	183	181	182	164	160	162
12	173	171	172	191	188	189	182	180	181	160	157	159
13	173	170	171	189	188	188	180	177	178	157	154	156
14	171	168	170	190	187	188	178	175	177	154	151	152
15	170	168	169	191	189	190	181	176	179	151	148	149
16	170	169	170	192	189	191	186	181	183	148	143	146
17	172	169	171	194	191	193	187	184	185	144	141	142
18	173	171	172	196	194	195	187	184	186	142	140	141
19	179	173	176	197	195	196	187	185	186	144	141	142
20	182	178	180	196	195	196	187	186	186	146	143	144
21	181	175	178	196	194	195	187	184	186	148	145	147
22	176	174	175	196	195	196	189	186	187	148	146	147
23	177	174	175	196	194	195	188	185	187	147	143	145
24	180	177	178	194	193	194	190	187	188	145	143	143
25	184	180	182	194	190	192	192	188	190	149	144	147
26	186	183	184	194	188	192	193	191	192	154	149	151
27	187	185	186	196	189	192	195	192	193	157	153	155
28	189	187	188	199	193	196	196	195	195	158	156	157
29	190	188	189	199	197	198	196	193	195	158	156	157
30	---	---	---	198	196	197	196	194	195	157	156	156
31	---	---	---	198	196	197	---	---	---	156	155	155
MONTH	190	168	176	199	186	192	198	175	186	196	140	161

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

[illegible]

LOWER COLUMBIA RIVER BASIN

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14128910 COLUMBIA RIVER AT WARRENDALE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	18.5	18.5	18.5	14.5	14.5	14.5	10.0	9.5	10.0	6.0	5.5	6.0
2	19.0	18.5	18.5	14.5	14.5	14.5	10.0	10.0	10.0	6.0	5.5	5.5
3	19.0	18.5	18.5	14.5	14.0	14.0	10.0	10.0	10.0	5.5	5.0	5.5
4	18.5	18.5	18.5	14.0	14.0	14.0	10.0	9.5	10.0	5.0	5.0	5.0
5	18.5	18.5	18.5	14.0	13.5	13.5	10.0	9.5	10.0	5.0	4.5	4.5
6	18.5	18.0	18.0	13.5	13.5	13.5	10.0	9.5	10.0	4.5	4.5	4.5
7	18.0	18.0	18.0	13.5	13.5	13.5	10.0	9.5	9.5	5.0	4.5	4.5
8	18.0	18.0	18.0	13.5	13.0	13.5	9.5	9.5	9.5	4.5	4.5	4.5
9	18.0	17.5	17.5	13.5	13.0	13.0	9.5	9.0	9.5	4.5	4.5	4.5
10	17.5	17.0	17.0	13.5	13.0	13.0	9.5	9.0	9.0	5.0	4.5	4.5
11	17.0	16.5	17.0	13.5	13.0	13.0	9.0	9.0	9.0	5.0	5.0	5.0
12	17.0	16.5	17.0	13.5	13.0	13.5	9.0	8.5	8.5	5.0	5.0	5.0
13	17.0	17.0	17.0	13.5	13.0	13.5	9.0	8.5	8.5	5.0	5.0	5.0
14	17.0	17.0	17.0	13.5	13.0	13.0	8.5	8.5	8.5	5.5	5.0	5.5
15	17.0	16.5	17.0	13.0	13.0	13.0	8.5	8.0	8.5	5.5	5.5	5.5
16	16.5	16.5	16.5	13.0	13.0	13.0	8.5	8.0	8.0	5.5	5.5	5.5
17	16.5	16.5	16.5	13.0	12.0	12.5	8.5	8.5	8.5	5.5	5.5	5.5
18	16.5	16.0	16.0	12.0	11.5	12.0	8.5	8.5	8.5	5.5	5.5	5.5
19	16.0	15.5	16.0	11.5	11.5	11.5	8.5	8.5	8.5	5.5	5.5	5.5
20	16.0	15.5	15.5	11.5	11.5	11.5	8.5	8.0	8.0	5.5	5.5	5.5
21	16.0	15.5	15.5	11.5	11.5	11.5	8.0	8.0	8.0	5.5	5.5	5.5
22	15.5	15.5	15.5	12.0	11.5	12.0	8.0	7.5	8.0	5.5	5.5	5.5
23	15.5	15.0	15.0	12.0	12.0	12.0	7.5	7.5	7.5	6.0	5.5	6.0
24	15.0	15.0	15.0	12.0	11.5	11.5	7.5	7.5	7.5	6.0	5.5	6.0
25	15.0	15.0	15.0	11.5	11.0	11.5	7.5	6.5	7.0	5.5	5.5	5.5
26	15.0	14.5	14.5	11.0	10.5	11.0	6.5	6.0	6.0	5.5	5.5	5.5
27	14.5	14.5	14.5	10.5	10.5	10.5	6.0	6.0	6.0	5.5	5.5	5.5
28	14.5	14.5	14.5	10.5	10.0	10.0	6.0	5.5	5.5	5.5	5.5	5.5
29	14.5	14.5	14.5	10.0	9.5	10.0	5.5	5.5	5.5	6.0	5.5	5.5
30	14.5	14.5	14.5	10.0	9.5	9.5	6.0	5.5	5.5	6.0	6.0	6.0
31	14.5	14.5	14.5	---	---	---	6.0	5.5	6.0	6.0	5.5	5.5
MONTH	19.0	14.5	16.5	14.5	9.5	12.5	10.0	5.5	8.0	6.0	4.5	5.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5.5	5.5	5.5	7.0	7.0	7.0	8.5	8.0	8.5	11.5	11.5	11.5
2	5.5	5.0	5.0	7.5	7.0	7.0	8.5	8.5	8.5	11.5	11.5	11.5
3	5.5	5.0	5.0	7.5	7.0	7.0	8.5	8.5	8.5	11.5	11.5	11.5
4	5.5	5.0	5.0	7.0	7.0	7.0	8.5	8.5	8.5	11.5	11.0	11.5
5	5.0	5.0	5.0	7.0	7.0	7.0	8.5	8.5	8.5	12.0	11.5	11.5
6	5.5	5.0	5.0	7.0	7.0	7.0	8.5	8.5	8.5	12.0	12.0	12.0
7	5.5	5.5	5.5	7.0	7.0	7.0	8.5	8.5	8.5	12.0	12.0	12.0
8	5.5	5.5	5.5	7.0	7.0	7.0	8.5	8.5	8.5	12.5	12.0	12.5
9	5.5	5.5	5.5	7.0	7.0	7.0	9.0	8.5	8.5	12.5	12.0	12.5
10	6.0	5.5	6.0	7.0	7.0	7.0	9.0	8.5	9.0	13.0	12.5	12.5
11	6.0	5.5	5.5	7.0	7.0	7.0	9.5	9.0	9.0	13.0	12.5	13.0
12	6.0	5.5	5.5	7.0	7.0	7.0	9.5	9.0	9.5	13.5	13.0	13.0
13	6.0	6.0	6.0	7.0	7.0	7.0	10.0	9.5	10.0	13.5	13.0	13.0
14	6.0	5.5	6.0	7.5	7.0	7.0	10.0	10.0	10.0	13.5	13.0	13.5
15	6.0	5.5	5.5	7.5	7.0	7.5	10.5	10.0	10.0	13.5	13.0	13.0
16	5.5	5.5	5.5	7.5	7.5	7.5	10.5	10.0	10.5	13.5	13.0	13.5
17	5.5	5.5	5.5	7.5	7.5	7.5	10.5	10.0	10.0	14.0	13.5	13.5
18	6.0	5.5	5.5	8.0	7.5	7.5	10.5	10.0	10.0	14.0	13.5	13.5
19	6.0	5.5	6.0	8.0	7.5	8.0	10.5	10.5	10.5	14.0	13.5	14.0
20	6.0	5.5	6.0	8.0	8.0	8.0	10.5	10.5	10.5	14.5	14.0	14.0
21	6.0	6.0	6.0	8.5	8.0	8.0	10.5	10.5	10.5	14.5	14.0	14.0
22	6.0	6.0	6.0	8.0	8.0	8.0	10.5	10.5	10.5	14.5	14.5	14.5
23	6.0	6.0	6.0	8.0	8.0	8.0	10.5	10.5	10.5	14.5	14.0	14.5
24	6.0	6.0	6.0	8.0	7.5	8.0	10.5	10.5	10.5	14.0	14.0	14.0
25	6.0	5.5	6.0	8.0	7.5	7.5	11.0	10.5	11.0	14.0	14.0	14.0
26	6.5	6.0	6.0	8.0	8.0	8.0	11.5	11.0	11.0	14.0	14.0	14.0
27	6.5	6.5	6.5	8.0	7.5	7.5	11.5	11.5	11.5	14.0	14.0	14.0
28	7.0	6.5	6.5	8.0	7.5	7.5	11.5	11.5	11.5	14.0	14.0	14.0
29	7.0	6.5	7.0	8.0	7.5	8.0	11.5	11.5	11.5	14.0	14.0	14.0
30	---	---	---	8.0	7.5	8.0	11.5	11.5	11.5	14.0	14.0	14.0
31	---	---	---	8.5	8.0	8.0	---	---	---	14.0	13.5	13.5
MONTH	7.0	5.0	5.5	8.5	7.0	7.5	11.5	8.0	10.0	14.5	11.0	13.0

SANDY RIVER BASIN

43

14131400 ZIGZAG RIVER NEAR RHODODENDRON, OR

LOCATION.--Lat 45°18'32", long 121°51'31", in NE 1/4 SE 1/4 sec.18, T.3 S., R.8 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on right bank at bridge, 0.5 mi upstream from Devil Canyon Creek, 1.2 mi downstream from Lady Creek, and 2.8 mi southeast of Rhododendron.

DRAINAGE AREA.--14.8 mi².

PERIOD OF RECORD.--July 1981 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,191.52 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No regulation. Small diversion for private water supply from Lady Creek.

AVERAGE DISCHARGE.--7 years (water years 1982-88), 78.9 ft³/s, 72.40 in/yr, 57,160 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 438 ft³/s Jan. 6, 1983, gage height, 5.35 ft; minimum discharge, 32 ft³/s Oct. 26, 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 25, 1980, reached a stage of 6.0 ft, discharge, 863 ft³/s, from slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 220 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 9	1230	*311	*5.12	No other peak greater than base discharge.			
Minimum discharge, 32 ft ³ /s Oct. 26.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	45	78	47	62	100	93	109	108	77	55	47
2	41	43	81	e45	60	87	116	107	105	78	55	47
3	40	42	145	e43	58	89	140	102	107	77	54	47
4	38	41	74	e41	57	89	116	96	105	75	54	47
5	39	43	62	e42	56	88	103	94	100	78	53	47
6	38	43	79	e44	56	83	113	94	99	76	53	48
7	41	40	56	e46	57	79	113	93	101	73	53	47
8	42	41	51	47	66	81	104	98	96	72	52	47
9	40	39	169	62	99	84	99	106	96	72	51	47
10	40	38	170	70	161	78	102	106	92	72	50	47
11	40	41	101	59	141	75	108	123	91	71	51	39
12	40	46	80	55	112	74	113	135	90	71	51	42
13	41	62	66	57	93	73	119	136	91	73	51	45
14	40	48	61	117	90	72	120	134	93	71	51	48
15	39	44	59	98	93	72	113	129	94	68	50	47
16	38	50	60	76	85	71	114	130	96	67	50	47
17	37	47	56	69	81	70	110	124	95	67	50	51
18	38	44	54	64	82	70	105	122	94	66	49	47
19	35	42	53	62	83	72	107	119	92	64	49	75
20	35	43	53	61	84	74	118	116	91	65	47	61
21	35	42	55	58	82	77	157	120	91	64	48	59
22	35	44	54	59	76	74	126	123	91	64	47	59
23	36	44	52	59	73	84	117	115	89	62	48	59
24	35	48	51	58	73	79	110	109	86	61	49	58
25	35	46	50	58	73	103	107	105	85	59	49	59
26	36	43	50	58	76	134	105	102	82	58	48	61
27	38	43	49	62	81	124	113	102	81	58	48	66
28	38	45	49	66	85	103	129	117	81	59	48	57
29	41	46	49	72	96	97	125	107	82	57	48	56
30	43	47	48	69	---	92	116	100	79	57	49	56
31	41	---	48	65	---	91	---	102	---	55	47	---
TOTAL	1196	1330	2163	1889	2391	2639	3431	3475	2783	2087	1558	1563
MEAN	38.6	44.3	69.8	60.9	82.4	85.1	114	112	92.8	67.3	50.3	52.1
MAX	43	62	170	117	161	134	157	136	108	78	55	75
MIN	35	38	48	41	56	70	93	93	79	55	47	39
AC-FT	2370	2640	4290	3750	4740	5230	6810	6890	5520	4140	3090	3100
CFSM	2.61	3.00	4.71	4.12	5.57	5.75	7.73	7.57	6.27	4.55	3.40	3.52
IN.	3.01	3.34	5.44	4.75	6.01	6.63	8.62	8.73	7.00	5.25	3.92	3.93

CAL YR 1987 TOTAL 23064 MEAN 63.2 MAX 170 MIN 35 AC-FT 45750 CFSM 4.27 IN. 57.97
WTR YR 1988 TOTAL 26505 MEAN 72.4 MAX 170 MIN 35 AC-FT 52570 CFSM 4.89 IN. 66.62

e Estimated

SANDY RIVER BASIN

14134000 SALMON RIVER NEAR GOVERNMENT CAMP, OR

LOCATION.--Lat 45°15'55", long 121°43'00", in SE 1/4 NW 1/4 sec.31, T.3 S., R.9 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on right bank near lower end of Red Top Meadows and 3.0 mi southeast of Government Camp.

DRAINAGE AREA.--8.00 mi².

PERIOD OF RECORD.--May 1910 to May 1912, April 1926 to current year. Published as "near Rowe" 1910-12.

REVISED RECORDS.--WSP 1398: 1911-12, 1926-27, 1933(M), 1949. WDR OR-77-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,445.53 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 21, 1910, nonrecording gage at site 0.2 mi upstream at different datum. Nov. 21, 1910, to May 31, 1912, and Apr. 21, 1926, to Sept. 30, 1933, at site 75 ft upstream from former site at different datums. Oct. 1, 1933, to Sept. 30, 1960, at datum 1.00 ft higher.

REMARKS.--Records good. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--63 years (water years 1911, 1927-88), 44.3 ft³/s, 75.20 in/yr, 32,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,300 ft³/s Dec. 23, 1964, gage height, 4.75 ft, from rating curve extended above 310 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 10 ft³/s Nov. 27, 1952.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 9	2300	*328	*2.72	No other peak greater than base discharge.			
Minimum discharge, 13 ft ³ /s Nov. 8.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	21	38	24	25	62	46	65	72	43	29	23
2	17	17	37	e23	e24	50	66	62	69	43	28	23
3	16	15	89	e21	e23	54	78	61	71	43	28	23
4	16	15	46	e20	23	51	57	56	72	41	28	23
5	16	14	38	e21	23	50	50	55	63	44	28	22
6	17	14	55	e22	23	43	60	55	67	43	28	23
7	17	14	35	e23	25	40	58	53	68	40	27	22
8	16	14	31	24	33	41	49	59	61	38	27	22
9	16	15	128	29	55	44	49	67	60	38	28	22
10	16	14	109	39	71	39	54	70	60	37	28	21
11	16	18	47	26	51	36	63	89	56	38	27	22
12	15	21	37	24	43	35	73	99	55	40	26	22
13	16	35	32	23	40	33	82	102	55	42	26	21
14	15	23	30	48	39	33	85	95	56	39	26	21
15	15	18	29	44	43	33	82	89	57	37	27	21
16	16	23	27	31	36	32	83	88	57	36	27	21
17	16	19	26	28	33	32	79	79	55	34	26	25
18	17	19	25	26	32	33	75	78	55	34	25	22
19	16	20	24	25	34	37	74	77	52	34	25	38
20	17	20	24	24	35	42	84	76	51	34	25	24
21	17	24	25	24	34	44	107	79	50	33	25	22
22	16	23	24	26	33	40	83	82	50	33	24	22
23	16	21	23	28	32	48	73	75	48	33	24	21
24	16	23	22	26	31	40	69	71	47	32	25	21
25	16	20	23	25	31	59	66	70	46	31	25	21
26	16	18	23	25	32	91	66	68	46	32	25	22
27	15	17	24	25	34	70	81	71	44	32	24	27
28	15	17	25	27	40	53	104	86	45	32	24	22
29	15	16	25	30	56	48	91	74	46	31	25	21
30	14	16	25	29	---	44	74	68	44	30	23	21
31	16	---	25	26	---	44	---	69	---	30	23	---
TOTAL	495	564	1171	836	1034	1401	2161	2288	1678	1127	806	681
MEAN	16.0	18.8	37.8	27.0	35.7	45.2	72.0	73.8	55.9	36.4	26.0	22.7
MAX	17	35	128	48	71	91	107	102	72	44	29	38
MIN	14	14	22	20	23	32	46	53	44	30	23	21
AC-FT	982	1120	2320	1660	2050	2780	4290	4540	3330	2240	1600	1350
CFSM	2.00	2.35	4.72	3.37	4.46	5.65	9.00	9.23	6.99	4.54	3.25	2.84
IN.	2.30	2.62	5.45	3.89	4.81	6.51	10.05	10.64	7.80	5.24	3.75	3.17

CAL YR 1987 TOTAL 12240 MEAN 33.5 MAX 128 MIN 14 AC-FT 24280 CFSM 4.19 IN. 56.92
WTR YR 1988 TOTAL 14242 MEAN 38.9 MAX 128 MIN 14 AC-FT 28250 CFSM 4.86 IN. 66.23

e Estimated

SANDY RIVER BASIN

45

14137000 SANDY RIVER NEAR MARMOT, OR

LOCATION.--Lat 45°23'30", long 122°07'40", in SE 1/4 sec.13, T.2 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, on right bank 0.7 mi southwest of Marmot, 0.8 mi upstream from Sandy River Dam of Portland General Electric Co., 6.6 mi downstream from Salmon River, and at mile 30.9.

DRAINAGE AREA.--262 mi².

PERIOD OF RECORD.--August 1911 to current year. Published as "at Marmot" October 1912 to September 1913. Records for January 1916 to June 1919, published as "below dam, near Marmot," obtained by combining records for Sandy River below dam, near Marmot, with records for Sandy River Canal near Marmot.

REVISED RECORDS.--WSP 594: Drainage area. WSP 1288: 1912(M), 1915, 1922, 1924, 1934(M). WSP 1318: 1932(M).

GAGE.--Water-stage recorder. Elevation of gage is 730 ft, from river-profile map. Aug. 15, 1911, to Dec. 20, 1915, and July 2, 1919, to Oct. 19, 1933, nonrecording gage at site 1.0 mi upstream at different datum. Oct. 20, 1933, to Sept. 30, 1958, water-stage recorder at site 0.6 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--77 years, 1,360 ft³/s, 70.49 in/yr, 985,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 61,400 ft³/s Dec. 22, 1964, gage height, 17.05 ft, from rating curve extended above 7,000 ft³/s; maximum gage height, 17.10 ft, Feb. 23, 1986; minimum, 195 ft³/s Nov. 27, 28, 1952.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	1000	7,850	11.39	Jan. 14	2230	8,400	11.58
Dec. 10	0330	*16,100	*13.61	Mar. 26	1730	8,140	11.49

Minimum discharge, 223 ft³/s Nov. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	255	250	877	502	1170	1810	1990	2340	2240	611	416	304
2	256	267	1630	479	1020	1580	2960	2220	2120	674	398	306
3	258	248	5700	466	965	1780	5100	2190	2230	710	391	318
4	252	243	2740	450	885	1780	3520	1990	1970	626	395	327
5	251	239	1620	446	839	1920	2640	1800	1700	626	395	326
6	251	233	1510	442	800	1740	3210	1730	1520	681	385	311
7	251	230	1160	433	862	1490	3350	1670	1540	587	377	303
8	251	227	915	454	1220	1500	2550	1630	1390	578	372	285
9	250	232	5070	1030	4240	2050	2140	1800	1310	585	377	290
10	246	233	9390	3280	6500	1750	1970	1710	1270	571	385	275
11	243	239	3590	2200	3780	1500	2050	1920	1170	580	377	268
12	240	333	2250	1540	2660	1360	2250	2140	1090	566	364	267
13	238	534	1630	1380	2200	1260	2400	2260	1030	692	358	273
14	238	543	1330	5640	1840	1200	2360	2210	996	646	350	276
15	237	344	1120	5580	2050	1130	2090	1930	990	581	357	275
16	234	380	983	2970	1910	1060	2070	1940	1000	560	359	269
17	234	346	865	2050	1710	991	1960	1860	961	538	356	290
18	234	283	784	1590	1750	958	1770	1820	948	527	341	287
19	234	269	718	1310	1570	975	1680	1710	892	516	338	535
20	233	263	694	1240	1550	1040	1810	1580	872	519	337	400
21	230	278	987	1130	1570	1260	3460	1510	843	520	328	316
22	230	331	841	1080	1490	1210	2940	1540	852	506	323	289
23	230	511	763	1170	1330	1750	2370	1430	841	498	321	280
24	230	498	679	1070	1200	1890	2180	1280	746	485	332	285
25	230	599	641	994	1110	4600	1960	1200	740	488	341	287
26	230	440	613	1040	1100	5570	1780	1140	721	484	335	312
27	230	367	578	1230	1160	4870	1770	1160	698	475	328	447
28	230	326	567	1510	1270	3040	2330	1640	661	454	324	336
29	227	299	554	1770	1650	2650	2650	1680	687	449	327	300
30	228	283	546	1700	---	2330	2540	1650	625	440	322	289
31	232	---	538	1410	---	2020	---	1650	---	435	309	---
TOTAL	7413	9868	51883	47586	51401	60064	73850	54330	34653	17208	11018	9326
MEAN	239	329	1674	1535	1772	1938	2462	1753	1155	555	355	311
MAX	258	599	9390	5640	6500	5570	5100	2340	2240	710	416	535
MIN	227	227	538	433	800	958	1680	1140	625	435	309	267
AC-FT	14700	19570	102900	94390	102000	119100	146500	107800	68730	34130	21850	18500
CFSM	.91	1.26	6.39	5.86	6.77	7.40	9.40	6.69	4.41	2.12	1.36	1.19
IN.	1.05	1.40	7.37	6.76	7.30	8.53	10.49	7.71	4.92	2.44	1.56	1.32

CAL YR 1987 TOTAL 318186 MEAN 872 MAX 9390 MIN 227 AC-FT 631100 CFSM 3.33 IN. 45.18
WTR YR 1988 TOTAL 428600 MEAN 1171 MAX 9390 MIN 227 AC-FT 850100 CFSM 4.47 IN. 60.85

SANDY RIVER BASIN

14138800 BLAZED ALDER CREEK NEAR RHODODENDRON, OR

LOCATION.--Lat 45°27'10", long 121°53'25", in NW 1/4 SE 1/4 sec.25, T.1 S., R.7 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on right bank 600 ft below the confluence of Bedrock and Hickman Creeks and 8.6 mi north of Rhododendron.

DRAINAGE AREA.--8.17 mi².

PERIOD OF RECORD.--October 1963 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,540 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--25 years, 58.3 ft³/s, 96.91 in/yr, 42,240 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,610 ft³/s Dec. 22, 1964, gage height, 8.25 ft, from rating curve extended above 330 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 1.4 ft³/s Oct. 17-30, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	0230	732	4.17	Jan. 14	1830	634	3.89
Dec. 10	0030	*1,030	*4.93	Mar. 26	1530	537	3.60

Minimum discharge, 1.4 ft³/s Oct. 17-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	3.9	106	10	44	107	54	81	136	8.0	3.8	1.9
2	2.1	3.5	207	9.8	39	83	145	76	118	9.8	3.5	1.9
3	2.0	2.6	513	9.5	30	103	278	79	115	11	3.3	1.8
4	1.9	2.3	196	9.2	26	112	132	69	85	8.9	3.2	1.8
5	1.8	2.3	107	9.2	23	110	87	59	64	11	3.2	1.8
6	1.8	2.3	86	9.2	21	87	152	62	51	14	3.3	1.8
7	1.7	2.3	61	9.0	28	63	140	62	47	9.8	3.2	1.8
8	1.6	2.1	43	18	75	74	90	64	37	8.5	3.1	1.8
9	1.6	2.6	441	120	395	102	71	75	33	7.8	3.1	1.8
10	1.6	2.6	495	131	352	69	66	76	31	7.0	2.9	1.8
11	1.6	5.5	140	70	161	53	77	85	26	7.8	2.9	1.8
12	1.5	11	74	41	105	43	106	87	23	11	2.9	1.7
13	1.5	40	45	45	90	37	117	99	21	19	2.9	1.7
14	1.5	40	34	446	74	33	99	129	19	16	2.9	1.7
15	1.5	18	28	249	94	30	80	97	18	14	2.9	1.7
16	1.5	38	25	107	70	28	76	85	16	12	2.9	1.7
17	1.4	20	22	67	59	26	71	78	15	10	2.8	1.7
18	1.4	13	20	46	55	26	62	71	15	9.1	2.7	1.7
19	1.4	11	18	35	45	29	56	61	14	8.3	2.6	1.7
20	1.4	9.7	19	35	44	41	68	51	13	7.5	2.5	1.7
21	1.4	17	33	30	50	84	165	45	12	7.1	2.4	1.1
22	1.4	39	23	29	52	69	123	41	11	6.7	2.3	1.6
23	1.4	63	20	32	45	122	85	37	11	6.5	2.2	1.3
24	1.4	76	17	27	37	111	76	32	9.9	6.1	2.1	1.6
25	1.4	59	16	24	33	366	70	28	9.1	5.3	2.1	1.6
26	1.4	36	15	24	33	350	59	25	9.1	5.0	2.1	5.0
27	1.4	25	14	30	36	199	67	31	8.7	4.6	2.1	1.6
28	1.4	19	13	56	56	106	96	75	8.6	4.5	2.1	6.5
29	1.4	16	12	115	92	75	137	77	12	4.2	1.9	4.7
30	1.4	14	11	90	---	57	105	67	8.9	4.2	2.0	4.0
31	1.4	---	11	63	---	52	---	81	---	4.0	2.0	---
TOTAL	48.7	596.7	2865	1995.9	2264	2847	3010	2085	997.3	268.7	83.9	109.5
MEAN	1.57	18.8	92.4	64.4	78.1	91.8	100	67.3	33.2	8.67	2.71	3.65
MAX	1.1	76	513	446	395	366	278	129	136	19	3.8	1.6
MIN	1.4	2.1	11	9.0	21	26	54	25	8.6	4.0	1.9	1.7
AC-FT	97	1180	5680	3960	4490	5650	5970	4140	1980	533	166	217
CFSM	1.19	2.43	11.3	7.88	9.56	11.2	12.3	8.23	4.07	1.06	0.33	0.45
IN.	2.2	2.72	13.05	9.09	10.31	12.96	13.71	9.49	4.54	1.22	0.38	0.80

CAL YR 1987 TOTAL 13424.8 MEAN 36.8 MAX 513 MIN 1.4 AC-FT 26630 CFSM 4.50 IN. 61.13
WTR YR 1988 TOTAL 17171.7 MEAN 46.9 MAX 513 MIN 1.4 AC-FT 34060 CFSM 5.74 IN. 78.19

SANDY RIVER BASIN

47

14138850 BULL RUN RIVER NEAR MULTNOMAH FALLS, OR

LOCATION.--Lat 45°29'50", long 122°00'50", near center of sec.12, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, in Mount Hood National Forest, on right bank 1.2 mi upstream from North Fork, 7.0 mi southeast of Multnomah Falls, and at mile 14.8.

DRAINAGE AREA.--47.9 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1966 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,080 ft, from topographic map.

REMARKS.--No estimated daily discharges. Water-discharge records good. Regulation at times since 1915 by Bull Run Lake, usable capacity, 12,270 acre-ft. No diversion upstream from station.

AVERAGE DISCHARGE.--22 years, 413 ft³/s, 117.09 in/yr, 299,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,610 ft³/s Jan. 20, 1972, gage height, 13.22 ft; minimum discharge, 30 ft³/s Oct. 28-31, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	0730	4,330	9.67	Feb. 9	2330	4,000	9.37
Dec. 9	2300	*5,560	*10.80				

Minimum discharge, 30 ft³/s Oct. 28-31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	47	933	96	337	580	491	634	918	87	67	43
2	49	47	1340	87	271	481	1050	612	793	114	65	42
3	47	36	3220	86	240	620	1970	635	884	133	64	42
4	46	33	1400	85	208	684	1010	561	632	107	62	42
5	44	33	754	81	187	690	677	483	482	114	61	42
6	43	33	794	80	168	576	1250	462	398	148	61	42
7	40	33	564	80	249	451	1130	452	388	114	61	44
8	39	32	428	81	666	506	698	423	338	103	59	55
9	39	31	3130	342	2760	738	538	442	315	95	58	62
10	38	31	3010	951	2550	529	476	419	305	90	58	67
11	37	55	1100	584	1150	415	490	442	269	93	57	70
12	36	109	644	388	732	361	553	453	237	143	57	72
13	36	315	447	383	659	315	575	534	211	342	56	73
14	36	345	348	2860	542	287	518	777	190	279	56	76
15	36	187	277	1710	662	257	444	578	172	206	56	78
16	36	361	239	799	567	235	414	514	157	164	55	79
17	35	223	207	506	469	214	406	473	147	142	53	84
18	34	155	170	382	461	200	369	452	142	127	51	81
19	33	136	152	294	393	209	349	413	136	113	49	174
20	33	130	151	275	379	250	379	369	125	103	49	98
21	33	156	275	260	392	454	973	327	117	97	48	85
22	33	261	207	247	388	417	810	305	111	91	47	81
23	31	434	169	283	339	777	585	287	107	87	47	75
24	31	529	144	249	291	815	506	251	100	84	46	66
25	31	490	132	220	265	2680	476	228	97	80	46	57
26	31	320	124	218	261	2270	409	202	91	77	45	62
27	31	239	118	283	281	1390	383	247	91	74	45	164
28	31	196	115	430	376	776	464	610	88	72	44	72
29	30	173	114	812	531	628	860	611	107	71	44	57
30	30	161	106	644	---	528	755	529	93	69	44	52
31	30	---	102	455	---	472	---	575	---	68	44	---
TOTAL	1130	5331	20914	14251	16774	19805	20008	14300	8241	3687	1655	2137
MEAN	36.5	178	675	460	578	639	667	461	275	119	53.4	71.2
MAX	51	529	3220	2860	2760	2680	1970	777	918	342	67	174
MIN	30	31	102	80	168	200	349	202	88	68	44	42
AC-FT	2240	10570	41480	28270	33270	39280	39690	28360	16350	7310	3280	4240
CFSM	.76	3.71	14.1	9.60	12.1	13.3	13.9	9.63	5.73	2.48	1.11	1.49
IN.	.88	4.14	16.24	11.07	13.03	15.38	15.54	11.11	6.40	2.86	1.29	1.66

CAL YR 1987 TOTAL 103276 MEAN 283 MAX 3220 MIN 30 AC-FT 204800 CFSM 5.91 IN. 80.21
WTR YR 1988 TOTAL 128233 MEAN 350 MAX 3220 MIN 30 AC-FT 254400 CFSM 7.31 IN. 99.59

SANDY RIVER BASIN

14138850 BULL RUN RIVER NEAR MULTNOMAH FALLS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1977 to current year.

WATER TEMPERATURE: October 1977 to current year.

SUSPENDED SEDIMENT DISCHARGE: October 1977 to September 1986.

INSTRUMENTATION.--Conductivity/temperature recorder since October 1977.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 44 microsiemens Sept. 17, 1988; minimum recorded, 9 microsiemens

Jan. 23, 1982, Feb. 23, 1986.

WATER TEMPERATURE: Maximum, 17.0°C July 19, 20, 1979, June 29, July 14, 1987, July 26, 1988; minimum, 0.0°C on many days during winter periods.

SEDIMENT CONCENTRATION: Maximum daily, 290 mg/L Dec. 2, 1977; minimum, 0 mg/L on many days.

SEDIMENT DISCHARGE: Maximum daily, 5,930 tons Dec. 2, 1977; minimum, 0 tons on many days.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 44 microsiemens Sept. 17; minimum, 15 microsiemens Dec. 9, Apr. 3.

WATER TEMPERATURE: Maximum, 17.0°C July 26; minimum, 0.5°C Dec. 27, Jan. 2-5.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	30	28	29	34	32	33	25	20	22	24	21	23
2	30	29	30	32	32	32	22	19	21	24	23	24
3	30	29	30	32	32	32	23	17	20	26	24	24
4	30	29	30	32	31	32	22	19	20	26	24	24
5	30	29	30	32	32	32	21	20	20	26	24	24
6	30	30	30	32	32	32	21	19	20	26	24	25
7	30	30	30	32	32	32	22	20	21	26	24	25
8	30	30	30	32	32	32	22	20	21	27	25	25
9	30	30	30	32	32	32	21	15	18	25	19	23
10	30	30	30	32	31	32	20	16	18	20	18	19
11	30	30	30	35	31	32	21	19	20	22	19	20
12	30	30	30	31	30	31	22	20	20	20	19	20
13	30	30	30	32	26	29	21	21	21	20	19	20
14	30	30	30	30	26	27	22	21	22	20	16	18
15	30	30	30	29	26	27	23	22	22	21	17	19
16	30	30	30	27	23	25	23	22	23	20	18	19
17	30	30	30	26	24	24	23	22	22	19	18	18
18	30	30	30	26	24	25	23	22	22	20	18	18
19	30	30	30	27	25	25	23	23	23	19	18	18
20	30	30	30	26	25	25	24	22	23	19	18	19
21	30	30	30	27	24	25	22	22	22	19	19	19
22	30	30	30	26	22	24	22	22	22	20	19	20
23	30	30	30	25	22	23	24	22	22	19	19	19
24	30	30	30	24	21	22	23	22	23	20	19	19
25	30	30	30	24	21	22	25	23	23	20	19	20
26	30	30	30	24	21	22	25	23	24	20	20	20
27	31	30	30	24	22	22	24	23	24	20	20	20
28	31	30	30	25	22	23	25	24	24	22	20	20
29	31	30	30	25	23	23	26	24	24	21	19	19
30	31	30	30	23	23	23	26	24	24	20	19	19
31	39	31	34	---	---	---	24	21	23	21	19	19
MONTH	39	28	30	35	21	27	26	15	22	27	16	21

SANDY RIVER BASIN

14138850 BULL RUN RIVER NEAR MULTNOMAH FALLS, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	12.5	12.0	12.0	10.5	10.0	10.0	6.0	4.5	5.5	2.5	1.0	1.5
2	12.5	12.0	12.0	10.0	9.5	10.0	6.5	5.0	6.0	1.0	.5	1.0
3	12.5	12.0	12.5	10.0	9.5	9.5	7.0	6.5	7.0	1.0	.5	.5
4	12.5	11.5	12.0	9.5	8.5	8.5	7.0	6.5	7.0	1.0	.5	1.0
5	11.5	11.0	11.0	8.5	8.5	8.5	7.5	6.5	7.0	1.0	.5	1.0
6	11.5	11.0	11.5	8.5	8.5	8.5	7.5	7.0	7.5	2.0	1.0	1.5
7	11.5	11.5	11.5	9.0	8.5	9.0	6.5	5.5	6.0	2.0	1.5	1.5
8	11.5	11.0	11.0	9.0	8.5	9.0	6.0	5.5	5.5	1.5	1.0	1.0
9	11.0	10.5	11.0	9.0	8.5	9.0	7.5	5.0	6.5	2.0	1.0	1.5
10	10.5	10.0	10.0	9.0	8.5	8.5	7.0	5.5	6.0	3.0	1.5	2.5
11	10.0	9.5	9.5	9.0	8.5	8.5	5.5	5.0	5.5	5.0	3.0	4.0
12	9.5	9.0	9.5	9.5	9.0	9.0	5.0	4.5	5.0	4.5	3.5	4.0
13	9.0	8.5	9.0	9.5	8.0	9.0	4.5	3.0	3.5	4.0	3.5	4.0
14	9.0	8.5	8.5	8.0	6.5	7.0	4.0	4.0	4.0	5.5	3.5	4.5
15	9.0	8.5	8.5	7.0	6.5	6.5	4.0	3.0	3.5	5.0	4.0	4.5
16	8.5	8.0	8.5	7.0	6.0	6.5	3.5	3.0	3.0	5.0	4.0	4.5
17	8.0	7.5	8.0	6.0	5.5	5.5	3.0	2.5	3.0	4.5	3.0	3.5
18	7.5	7.5	7.5	6.0	5.0	5.5	3.5	3.0	3.0	3.5	2.5	3.0
19	8.0	7.5	7.5	6.0	6.0	6.0	3.5	2.5	3.0	3.5	3.0	3.5
20	8.0	7.5	8.0	6.5	6.0	6.0	3.0	2.5	2.5	3.5	3.0	3.5
21	8.0	7.5	7.5	7.0	6.5	7.0	4.0	3.0	3.5	3.5	3.5	3.5
22	8.0	7.5	7.5	6.5	6.0	6.5	3.5	2.5	2.5	4.0	3.0	3.5
23	8.0	7.5	7.5	6.5	6.0	6.5	3.0	2.5	2.5	4.0	3.5	4.0
24	8.0	7.5	7.5	7.0	6.0	6.5	2.5	2.0	2.5	3.5	3.0	3.5
25	8.5	7.5	8.0	6.5	5.5	6.0	2.0	1.5	1.5	4.0	3.0	3.5
26	8.0	7.5	8.0	5.5	5.0	5.5	1.5	1.0	1.0	4.5	3.5	4.0
27	8.0	8.0	8.0	5.5	5.0	5.0	1.5	.5	1.0	5.0	4.0	4.5
28	8.0	7.5	7.5	5.0	4.0	4.5	1.0	1.0	1.0	4.5	4.0	4.5
29	8.5	7.5	8.0	4.0	3.5	4.0	2.0	1.0	1.5	5.0	4.0	4.5
30	9.5	8.5	9.0	4.5	4.0	4.0	2.0	2.0	2.0	4.0	3.0	3.5
31	10.5	9.5	10.0	---	---	---	2.5	2.0	2.0	3.0	2.0	3.0
MONTH	12.5	7.5	9.5	10.5	3.5	7.0	7.5	.5	4.0	5.5	.5	3.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	2.0	1.0	1.5	6.0	5.0	5.5	7.0	4.5	5.5	6.0	4.5	5.0
2	2.0	.5	1.0	6.0	5.0	5.5	6.0	5.0	5.5	6.0	5.0	5.5
3	3.0	2.0	2.5	5.5	4.5	5.0	5.0	4.0	4.5	6.0	5.0	5.5
4	3.0	2.5	2.5	6.0	4.5	5.0	5.0	3.5	4.5	6.5	4.5	5.5
5	3.0	2.5	3.0	5.5	4.5	5.0	6.0	4.5	5.0	6.5	5.5	6.0
6	4.0	3.0	3.5	5.0	3.5	4.0	5.5	4.0	5.0	6.0	5.5	6.0
7	4.0	3.5	4.0	5.0	3.5	4.0	5.5	4.0	4.5	7.5	5.0	6.0
8	4.5	4.0	4.0	5.5	4.0	4.5	6.5	4.5	5.0	7.0	6.0	6.5
9	5.0	4.5	4.5	5.0	3.5	4.0	7.0	4.5	5.5	8.0	6.0	7.0
10	5.0	4.5	5.0	4.5	4.0	4.0	8.0	5.0	6.0	10.5	7.0	8.5
11	6.0	4.0	5.0	4.5	3.0	4.0	8.5	5.0	6.5	12.0	8.0	10.0
12	5.5	4.0	5.0	5.0	3.0	4.0	8.5	5.5	7.0	11.0	9.0	10.0
13	5.0	4.0	4.5	5.5	3.5	4.5	7.5	6.0	6.5	9.5	7.0	8.0
14	5.0	4.0	4.5	5.0	3.5	4.5	6.5	6.0	6.0	8.5	6.5	7.5
15	4.5	3.5	4.0	5.0	3.5	4.0	7.5	6.0	6.5	10.5	6.5	8.5
16	4.5	3.5	4.0	5.0	4.0	4.5	7.0	6.5	7.0	9.5	7.5	8.5
17	4.0	3.5	4.0	5.5	4.0	4.5	7.0	6.0	6.5	8.0	6.5	7.5
18	5.0	4.0	4.5	6.0	4.5	5.0	8.0	6.0	6.5	7.5	6.5	7.0
19	5.0	4.0	4.5	6.5	5.0	5.5	7.5	6.0	7.0	10.5	7.0	8.0
20	5.0	3.5	4.5	7.0	6.0	6.5	7.5	6.5	7.0	10.5	7.0	8.5
21	5.0	3.5	4.5	6.5	5.0	6.0	6.5	5.5	6.0	12.5	8.5	10.0
22	4.5	3.0	4.0	5.5	4.5	5.0	6.0	5.0	5.5	11.5	9.5	10.5
23	4.5	3.5	4.0	5.5	4.0	4.5	6.5	5.5	6.0	10.0	8.0	9.0
24	4.5	3.5	4.0	4.0	3.0	3.5	6.0	4.5	5.5	10.5	8.0	9.0
25	5.0	3.5	4.5	6.0	4.0	5.5	7.5	4.5	6.0	10.5	8.5	9.5
26	5.5	4.5	5.0	6.0	4.5	5.5	8.0	5.0	6.5	9.5	8.0	8.5
27	6.0	4.5	5.5	5.0	4.0	4.5	8.5	6.5	7.5	10.0	8.5	9.0
28	7.0	5.5	6.0	5.5	4.5	5.0	8.0	7.0	7.5	9.5	8.0	9.0
29	6.5	5.0	6.0	5.0	3.5	4.5	7.0	5.0	6.0	8.0	6.5	7.0
30	---	---	---	5.5	4.5	5.0	5.5	4.0	4.5	7.5	6.5	7.0
31	---	---	---	6.5	4.5	5.0	---	---	---	8.0	7.5	7.5
MONTH	7.0	.5	4.0	7.0	3.0	5.0	8.5	3.5	6.0	12.5	4.5	8.0

SANDY RIVER BASIN

14138870 FIR CREEK NEAR BRIGHTWOOD, OR

LOCATION.--Lat 45°28'56", long 122°01'36", in NE 1/4 SE 1/4 sec.14, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, on right bank, 6.4 mi north of Brightwood and 0.6 mi above Bull Run Reservoir Number One.

DRAINAGE AREA.--5.46 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1975 to current year.

REVISED RECORDS.--WDR OR-78-1: 1976. WDR OR-82-2: 1976(P), 1978-79(P), 1981.

GAGE.--Water-stage recorder. Elevation of gage is 1,440 ft, from topographic map.

REMARKS.--No estimated daily discharges. Water-discharge records good. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--13 years, 34.2 ft³/s, 85.06 in/yr, 24,780 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,290 ft³/s Dec. 2, 1977, gage height, 5.64 ft; minimum discharge, 1.8 ft³/s Oct. 24-31, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	0630	413	4.37	Dec. 9	2230	*479	*4.54

Minimum discharge, 1.8 ft³/s Oct. 24-31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	4.4	84	8.9	30	35	52	60	72	7.1	5.6	2.8
2	2.3	3.1	119	8.5	25	31	105	60	70	10	5.4	2.8
3	2.1	2.3	314	8.2	21	43	198	62	83	12	5.2	2.7
4	2.1	2.1	144	8.0	18	55	98	56	59	9.2	5.0	2.6
5	2.1	2.0	74	7.6	17	56	67	47	45	12	4.9	2.6
6	2.0	2.0	72	7.5	16	44	149	45	38	14	4.7	2.6
7	2.0	2.0	52	7.3	23	36	119	44	36	11	4.6	2.6
8	2.0	2.0	39	7.6	59	41	72	41	33	9.9	4.5	2.5
9	2.0	2.1	300	37	246	58	57	42	32	9.1	4.3	2.5
10	2.0	2.1	271	114	280	46	50	38	30	8.6	4.3	2.5
11	2.0	3.6	104	74	115	38	49	37	27	9.2	4.1	2.4
12	2.0	9.3	62	45	69	34	50	36	23	14	4.1	2.4
13	2.0	33	44	42	55	30	47	43	20	33	4.0	2.4
14	2.0	29	36	284	46	28	42	54	18	29	4.1	2.4
15	2.0	15	30	184	54	26	36	42	16	22	3.9	2.3
16	2.0	35	25	78	48	23	34	40	15	17	4.2	2.4
17	1.9	20	21	49	42	20	34	39	14	14	4.0	3.1
18	1.9	13	18	36	42	18	31	39	14	12	3.8	2.8
19	1.9	9.8	16	28	38	18	29	36	13	11	3.7	12
20	1.9	8.1	16	27	38	20	35	32	12	9.8	3.6	4.6
21	1.9	7.8	27	25	38	32	96	29	11	9.1	3.5	3.5
22	1.9	14	20	25	35	30	77	27	10	8.5	3.4	3.1
23	1.9	24	17	31	30	50	54	25	9.7	8.1	3.3	3.1
24	1.8	33	15	27	26	57	48	20	9.1	7.7	3.3	3.4
25	1.8	33	13	24	24	254	47	18	8.5	7.3	3.2	3.2
26	1.8	23	13	24	23	207	41	16	7.9	6.9	3.1	4.4
27	1.8	17	12	32	24	127	36	20	7.7	6.6	3.1	15
28	1.8	13	11	46	29	70	41	57	7.2	6.3	3.0	5.9
29	1.8	11	11	68	38	60	82	56	7.6	6.1	3.0	4.5
30	1.8	9.7	10	51	---	54	70	46	7.2	5.9	3.0	3.9
31	2.1	---	9.5	38	---	49	---	51	---	5.7	3.0	---
TOTAL	61.0	385.4	1999.5	1452.6	1549	1690	1946	1258	755.9	352.1	122.9	113.0
MEAN	1.97	12.8	64.5	46.9	53.4	54.5	64.9	40.6	25.2	11.4	3.96	3.77
MAX	2.4	35	314	284	280	254	198	62	83	33	5.6	15
MIN	1.8	2.0	9.5	7.3	16	18	29	16	7.2	5.7	3.0	2.3
AC-FT	121	764	3970	2880	3070	3350	3860	2500	1500	698	244	224
CFSM	.36	2.35	11.8	8.58	9.78	9.98	11.9	7.43	4.61	2.08	.73	.69
IN.	.42	2.63	13.62	9.90	10.55	11.51	13.26	8.57	5.15	2.40	.84	.77

CAL YR 1987 TOTAL 9038.3 MEAN 24.8 MAX 314 MIN 1.8 AC-FT 17930 CFSM 4.54 IN. 61.58
WTR YR 1988 TOTAL 11685.4 MEAN 31.9 MAX 314 MIN 1.8 AC-FT 23180 CFSM 5.85 IN. 79.61

SANDY RIVER BASIN

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14138870 FIR CREEK NEAR BRIGHTWOOD, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1977 to current year.

WATER TEMPERATURE: October 1977 to current year.

SUSPENDED SEDIMENT DISCHARGE: October 1977 to September 1986.

INSTRUMENTATION.--Conductivity/temperature recorder since October 1977.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 49 microsiemens May 6, 1988; minimum, 9 microsiemens Dec. 4, 1978.

WATER TEMPERATURE: Maximum recorded, 16.0°C Sept. 1, 1987; minimum recorded, 0.0°C on several days in 1978-80, 1983.

SEDIMENT CONCENTRATION: Maximum, 200 mg/L Jan. 23, Feb. 20, 1982; minimum, 0 mg/L on many days.

SEDIMENT DISCHARGE: Maximum, 345 tons Dec. 2, 1977; minimum, 0 tons on many days.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 49 microsiemens May 6; minimum recorded, 11 microsiemens Dec. 9, Apr. 6.

WATER TEMPERATURE: Maximum recorded, 13.5°C July 26, Sept. 3-5; minimum, 1.0°C Jan. 3-5.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	26	25	25	---	---	---	22	19	21	21	21	21
2	26	25	25	---	---	---	21	18	20	21	21	21
3	26	25	25	---	---	---	19	17	18	22	21	21
4	---	---	---	28	28	28	20	19	19	24	21	22
5	---	---	---	28	28	28	21	20	20	22	21	21
6	---	---	---	28	28	28	21	20	20	22	21	22
7	27	26	26	28	28	28	21	21	21	22	21	22
8	26	26	26	28	27	28	21	21	21	22	21	21
9	26	26	26	28	27	28	22	11	18	21	18	20
10	26	26	26	28	27	27	17	12	16	20	18	18
11	26	26	26	28	27	28	18	17	17	19	18	19
12	26	26	26	29	27	29	18	18	18	19	19	19
13	26	26	26	29	25	27	20	18	19	20	19	19
14	26	26	26	25	24	25	20	19	19	19	14	17
15	26	26	26	24	24	24	21	19	19	18	16	18
16	26	26	26	24	22	23	21	19	20	19	18	19
17	26	26	26	22	22	22	20	19	19	20	19	19
18	26	26	26	23	22	22	20	20	20	21	19	20
19	26	26	26	23	21	22	20	20	20	20	20	20
20	26	26	26	24	20	23	20	19	20	20	20	20
21	26	26	26	24	24	24	19	19	19	20	20	20
22	26	26	26	24	23	24	20	19	19	20	20	20
23	26	26	26	24	23	23	20	19	20	20	20	20
24	26	26	26	23	21	22	20	20	20	20	20	20
25	26	26	26	22	21	22	20	20	20	20	20	20
26	26	26	26	21	21	21	20	20	20	20	20	20
27	26	26	26	21	21	21	21	20	21	20	20	20
28	26	26	26	21	21	21	21	21	21	20	19	20
29	27	26	26	22	21	21	21	21	21	20	18	19
30	27	26	27	22	20	21	21	21	21	19	19	19
31	27	27	27	---	---	---	21	21	21	19	19	19
MONTH	---	---	---	---	---	---	22	11	20	24	14	20

SANDY RIVER BASIN

14138870 FIR CREEK NEAR BRIGHTWOOD, OR--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	20	19	20	20	18	18	22	18	21	20	20	20
2	20	19	20	19	19	19	21	19	20	20	20	20
3	20	20	20	19	18	19	21	18	19	20	20	20
4	20	20	20	21	17	18	22	20	20	21	20	20
5	20	20	20	19	17	18	22	21	21	23	20	21
6	21	20	20	19	17	18	34	11	22	49	20	22
7	22	21	20	20	18	18	21	20	20	45	19	22
8	20	18	19	19	17	18	22	21	21	22	20	21
9	18	15	18	18	17	18	22	22	22	20	15	17
10	17	15	16	19	18	18	23	22	22	20	20	20
11	17	16	17	20	18	19	23	22	22	20	20	20
12	18	17	17	20	19	19	22	22	22	---	---	---
13	18	17	18	20	19	19	22	22	22	---	---	---
14	18	18	18	21	19	20	22	22	22	---	---	---
15	19	18	18	20	19	19	23	22	22	---	---	---
16	18	18	18	21	19	20	23	22	23	---	---	---
17	19	18	18	20	20	20	22	21	22	---	---	---
18	20	19	19	20	20	20	21	21	21	---	---	---
19	21	19	20	20	20	20	23	21	22	---	---	---
20	20	19	19	20	20	20	22	20	21	---	---	---
21	22	19	19	21	19	19	20	19	19	---	---	---
22	20	19	19	23	19	19	20	19	19	---	---	---
23	19	19	19	20	18	18	20	20	20	---	---	---
24	20	19	19	19	17	18	20	20	20	---	---	---
25	22	19	20	17	16	17	21	20	21	21	20	20
26	22	19	20	19	16	17	21	21	21	21	20	21
27	20	19	19	18	16	17	21	21	21	21	20	20
28	20	19	20	21	17	18	24	20	21	20	17	18
29	20	18	19	22	18	19	20	19	19	18	18	18
30	---	---	---	23	18	20	20	19	20	19	18	18
31	---	---	---	24	19	20	---	---	---	19	18	18
MONTH	22	15	19	24	16	19	34	11	21	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	18	17	18	37	25	25	26	25	25	28	27	28
2	18	17	18	31	24	25	26	25	26	28	28	28
3	21	17	18	25	23	24	27	26	26	28	28	28
4	19	18	18	35	24	24	27	26	27	28	27	28
5	19	19	19	28	23	24	27	26	26	28	28	28
6	19	19	19	24	23	23	26	25	26	28	27	28
7	21	19	19	24	24	24	26	26	26	28	27	27
8	25	20	21	25	24	24	27	26	27	28	27	28
9	27	20	21	25	24	24	28	27	27	28	27	28
10	21	20	21	30	24	25	27	26	27	27	27	27
11	21	21	21	25	24	24	27	26	27	27	27	27
12	22	21	21	30	23	24	27	26	27	28	27	27
13	22	21	22	23	22	22	27	26	27	28	27	28
14	23	22	22	22	21	22	27	26	27	28	27	27
15	23	22	23	22	22	22	28	26	27	28	27	27
16	23	22	23	23	22	23	28	27	27	27	26	27
17	23	22	22	23	23	23	28	27	27	29	27	28
18	23	22	23	24	23	23	28	27	27	28	27	28
19	23	23	23	24	23	24	28	27	27	30	27	29
20	23	23	23	24	24	24	27	27	27	30	29	29
21	24	23	23	35	24	24	28	27	27	29	28	29
22	24	23	24	33	24	24	28	27	28	28	28	28
23	24	23	23	25	24	24	28	28	28	29	27	28
24	30	23	27	34	24	25	28	28	28	29	28	28
25	26	23	24	25	25	25	28	28	28	29	28	28
26	25	24	25	35	25	27	28	28	28	28	27	28
27	29	24	25	36	25	27	28	28	28	28	27	28
28	25	24	25	33	23	26	28	28	28	28	28	28
29	36	24	25	25	25	25	28	27	28	28	28	28
30	25	24	25	25	25	25	28	27	27	28	28	28
31	---	---	---	26	25	26	28	27	27	---	---	---
MONTH	36	17	22	37	21	24	28	25	27	30	26	28

SANDY RIVER BASIN

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14138870 FIR CREEK NEAR BRIGHTWOOD, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	12.0	11.5	12.0	---	---	---	5.5	5.0	5.0	3.0	2.0	2.5
2	12.0	11.5	12.0	---	---	---	6.0	5.0	5.5	2.0	1.5	1.5
3	12.5	12.0	12.0	---	---	---	6.5	6.0	6.5	1.5	1.0	1.0
4	---	---	---	8.5	8.0	8.0	6.5	6.5	6.5	1.5	1.0	1.5
5	---	---	---	8.0	8.0	8.0	7.0	6.5	7.0	1.5	1.0	1.5
6	---	---	---	8.0	8.0	8.0	7.0	6.5	7.0	2.5	1.5	2.0
7	11.5	11.0	11.5	8.5	8.0	8.5	6.5	6.0	6.0	2.5	2.0	2.5
8	11.5	10.5	11.0	8.5	8.0	8.0	6.0	5.5	6.0	2.5	1.5	2.0
9	11.0	10.5	10.5	8.5	8.0	8.0	7.0	5.0	6.0	2.5	2.0	2.5
10	10.5	10.0	10.0	8.0	8.0	8.0	6.5	5.5	6.0	4.5	2.5	3.5
11	10.0	9.5	10.0	8.0	8.0	8.0	6.0	5.5	5.5	4.5	4.0	4.0
12	10.0	9.5	9.5	8.5	8.0	8.5	5.5	5.0	5.0	4.5	4.0	4.5
13	9.5	9.0	9.0	8.5	8.0	8.5	5.0	4.0	4.5	4.5	4.0	4.5
14	9.0	8.5	9.0	8.0	7.0	7.0	5.0	4.0	4.5	4.5	3.5	4.0
15	9.0	8.5	8.5	7.0	6.5	6.5	4.5	4.0	4.0	4.5	4.0	4.5
16	8.5	8.0	8.5	6.5	6.0	6.5	4.0	3.5	4.0	4.5	4.0	4.5
17	8.0	7.5	8.0	6.0	5.5	5.5	3.5	3.5	3.5	4.0	4.0	4.0
18	8.0	7.5	7.5	6.5	5.5	6.0	4.0	3.5	4.0	4.0	3.5	4.0
19	8.0	7.5	7.5	6.5	6.0	6.5	4.0	3.0	3.5	4.0	4.0	4.0
20	8.0	7.5	8.0	7.0	6.0	6.5	4.0	3.0	3.5	4.0	4.0	4.0
21	8.0	7.5	8.0	7.0	6.5	6.5	4.0	3.5	4.0	4.0	4.0	4.0
22	8.0	7.5	8.0	6.5	6.5	6.5	4.0	3.0	3.5	4.5	4.0	4.0
23	8.0	7.5	8.0	6.5	6.0	6.0	3.5	3.0	3.5	4.5	4.0	4.0
24	8.0	7.5	7.5	6.5	5.5	6.0	3.0	2.5	3.0	4.0	3.5	4.0
25	8.0	7.5	8.0	6.0	5.5	6.0	2.5	2.0	2.5	4.5	4.0	4.0
26	7.5	7.0	7.5	6.0	5.5	5.5	2.5	2.0	2.0	4.5	4.0	4.5
27	8.0	7.5	7.5	5.5	5.0	5.5	2.5	1.5	2.0	5.0	4.5	4.5
28	8.0	7.5	7.5	5.0	4.5	4.5	2.0	2.0	2.0	4.5	4.5	4.5
29	8.5	7.5	8.0	4.5	4.0	4.0	3.0	2.0	2.5	4.5	4.0	4.5
30	9.0	8.0	8.5	5.0	4.0	4.5	3.0	2.5	3.0	4.0	3.5	4.0
31	9.0	9.0	9.0	---	---	---	3.0	2.5	3.0	3.5	3.0	3.5
MONTH	---	---	---	---	---	---	7.0	1.5	4.5	5.0	1.0	3.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	3.0	2.0	2.0	5.0	5.0	5.0	5.5	4.5	5.0	5.5	4.5	5.0
2	3.0	1.5	2.0	5.5	4.5	5.0	5.0	4.5	5.0	5.5	5.0	5.0
3	3.5	3.0	3.0	5.0	4.5	4.5	4.5	3.5	4.0	5.5	5.0	5.0
4	3.5	3.0	3.5	5.5	4.5	5.0	4.5	4.0	4.5	6.0	4.5	5.5
5	3.5	3.5	3.5	5.0	4.5	4.5	5.5	4.5	5.0	6.0	5.0	5.5
6	4.0	3.5	4.0	4.5	4.0	4.0	5.0	4.0	4.5	6.0	5.5	5.5
7	4.0	4.0	4.0	4.5	4.0	4.0	5.0	4.0	4.5	6.5	5.0	6.0
8	4.5	4.0	4.0	5.0	4.0	4.5	5.0	4.5	4.5	---	---	---
9	4.5	4.0	4.0	4.5	3.5	4.0	5.5	4.5	5.0	---	---	---
10	5.0	4.0	4.5	4.5	3.5	4.0	6.5	5.0	5.5	8.0	7.0	7.0
11	5.0	4.5	4.5	4.0	3.5	4.0	6.5	5.5	6.0	9.5	7.0	8.0
12	5.0	4.5	4.5	4.5	3.5	4.0	7.0	5.5	6.0	9.0	8.0	8.5
13	5.0	4.5	4.5	5.0	4.0	4.5	6.5	6.0	6.0	8.0	7.5	7.0
14	5.0	4.5	4.5	5.0	4.0	4.5	6.0	5.5	5.5	7.5	6.5	7.0
15	4.5	3.5	4.0	4.5	3.5	4.0	6.5	5.5	6.0	---	---	---
16	4.5	4.0	4.0	4.5	4.0	4.5	6.5	6.0	6.0	8.0	7.5	7.5
17	4.5	4.0	4.0	5.0	4.0	4.5	6.0	5.5	5.5	---	---	---
18	4.5	4.0	4.5	5.5	4.5	5.0	6.5	5.5	6.0	---	---	---
19	4.5	4.0	4.5	6.0	4.5	5.5	7.0	5.5	6.5	---	---	---
20	4.5	4.0	4.5	6.5	5.5	6.0	6.5	6.0	6.5	---	---	---
21	4.5	4.0	4.5	6.0	5.0	5.5	6.0	5.0	5.5	---	---	---
22	4.5	3.5	4.0	5.0	4.5	5.0	5.5	5.0	5.0	---	---	---
23	4.5	4.0	4.0	5.0	4.0	4.5	6.0	5.5	5.5	---	---	---
24	4.5	4.0	4.0	4.5	3.5	4.0	5.5	4.5	5.0	---	---	---
25	5.0	4.0	4.5	5.0	4.0	4.5	6.0	4.5	5.5	9.0	7.5	8.0
26	5.5	4.5	5.0	5.0	4.0	4.5	7.0	5.0	6.0	8.0	7.5	8.0
27	5.5	4.5	5.0	4.5	3.5	4.0	7.5	6.0	6.5	8.5	8.0	8.0
28	6.0	5.0	5.5	5.0	3.5	4.5	7.0	6.5	7.0	8.5	7.0	8.0
29	5.5	5.0	5.0	4.0	3.5	4.0	6.5	4.5	5.5	7.0	6.5	6.5
30	---	---	---	5.0	4.0	4.5	5.0	4.0	4.5	7.0	6.5	6.5
31	---	---	---	5.5	4.5	4.5	---	---	---	7.0	6.5	7.0
MONTH	6.0	1.5	4.0	6.5	3.5	4.5	7.5	3.5	5.5	---	---	---

SANDY RIVER BASIN

14138870 FIR CREEK NEAR BRIGHTWOOD, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.0	6.5	7.0	10.5	9.0	10.0	11.5	11.0	11.0	12.5	11.0	11.5
2	8.0	7.0	7.0	10.0	9.5	10.0	12.0	10.0	11.0	13.0	11.5	12.5
3	7.5	7.0	7.5	9.5	9.0	9.5	12.5	10.5	11.5	13.5	12.5	13.0
4	7.5	7.0	7.5	9.5	8.5	9.0	13.0	11.0	12.0	13.5	12.5	13.0
5	7.5	7.0	7.0	9.0	8.0	8.5	12.5	11.5	12.0	13.5	13.0	13.0
6	8.0	7.0	7.5	9.5	8.0	8.5	12.0	11.0	11.0	12.5	12.0	12.5
7	8.0	7.0	7.5	11.0	8.5	9.5	11.5	10.5	11.0	12.5	11.5	12.0
8	8.0	7.0	7.5	12.0	10.0	11.0	11.5	10.5	11.0	11.5	11.0	11.5
9	8.0	7.0	7.5	12.5	10.5	11.5	12.0	10.5	11.5	11.5	10.5	11.0
10	8.5	7.5	8.0	12.5	10.5	11.5	12.0	11.5	11.5	10.5	10.0	10.5
11	9.5	7.5	8.5	11.5	10.0	10.5	11.5	11.0	11.5	10.0	9.0	9.5
12	10.0	7.5	8.5	10.0	10.0	10.0	11.5	11.0	11.0	10.5	9.5	10.0
13	10.5	8.0	9.5	10.0	9.5	10.0	11.0	10.5	11.0	11.0	10.0	10.5
14	11.5	9.0	10.5	10.0	9.0	9.5	11.0	10.5	10.5	11.0	10.5	10.5
15	12.0	10.0	11.0	10.0	9.0	9.5	10.5	10.5	10.5	11.0	10.0	10.5
16	12.0	10.0	11.0	10.5	8.5	9.5	10.5	10.5	10.5	10.5	10.0	10.0
17	11.5	10.5	11.0	10.5	9.0	9.5	11.0	10.0	10.5	10.0	9.0	9.5
18	10.0	9.5	9.5	11.0	9.0	10.0	11.0	10.0	10.5	9.0	8.0	8.5
19	11.5	9.0	10.0	12.0	10.0	11.0	11.0	10.0	10.5	9.5	8.5	9.0
20	11.5	9.5	10.5	12.5	11.0	11.5	11.0	10.0	10.5	9.5	9.0	9.5
21	12.0	10.0	11.0	12.0	9.5	11.0	11.0	9.5	10.5	9.0	8.5	9.0
22	11.5	10.5	11.0	12.0	10.0	11.0	11.5	10.0	10.5	9.0	8.0	8.5
23	11.0	10.0	10.5	11.5	9.5	10.5	12.0	11.0	11.5	9.0	8.5	8.5
24	12.0	9.5	10.5	12.5	10.5	11.0	12.5	11.5	12.0	9.5	9.0	9.0
25	11.5	10.5	11.0	13.0	11.0	12.0	12.5	11.0	11.5	9.5	9.5	9.5
26	11.0	10.0	10.5	13.5	11.5	12.5	12.0	11.0	11.5	10.0	9.5	9.5
27	10.0	9.0	9.5	---	---	---	12.5	11.0	12.0	10.0	9.5	9.5
28	9.0	8.5	9.0	---	---	---	13.0	11.5	12.5	9.5	8.5	9.0
29	9.0	8.0	8.5	13.0	11.0	12.0	12.5	12.0	12.5	10.0	9.0	9.5
30	10.0	7.5	9.0	13.0	11.5	12.0	12.0	11.0	11.5	10.5	9.5	10.0
31	---	---	---	12.5	11.5	12.0	11.5	10.5	11.0	---	---	---
MONTH	12.0	6.5	9.0	13.5	8.0	10.5	13.0	9.5	11.0	13.5	8.0	10.5

SANDY RIVER BASIN

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14138900 NORTH FORK BULL RUN RIVER NEAR MULTNOMAH FALLS, OR

LOCATION.--Lat 45°29'40", long 122°02'05", near line between SE 1/4 and SW 1/4 sec.11, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, Mount Hood National Forest, on left bank 7.0 mi southeast of Multnomah Falls and at mouth.

DRAINAGE AREA.--8.32 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1965 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,060 ft, from topographic map. Prior to Oct. 1, 1978, at site 700 ft upstream at datum 18.7 ft higher.

REMARKS.--No estimated daily discharges. Records good. Regulation at times since 1958 by North Fork Reservoir, capacity, about 1,030 acre-ft. No diversion upstream from station.

AVERAGE DISCHARGE.--23 years, 75.2 ft³/s, 122.74 in/yr, 54,480 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,700 ft³/s, probably affected by surge from release of water temporarily impounded by landslide upstream from station, Jan. 20, 1972, gage height, 9.89 ft, from floodmark, from rating curve extended above 850 ft³/s on basis of estimate of peak flow from slope-area survey; minimum discharge, 8.6 ft³/s Oct. 19-29, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 9	2230	*1,340	*6.67	Feb. 9	2130	737	5.97

Minimum discharge, 8.6 ft³/s Oct. 19-29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.8	15	147	20	58	62	83	94	124	20	16	12
2	9.8	13	176	20	49	63	168	102	111	33	16	12
3	9.8	10	452	19	45	85	252	102	118	29	15	12
4	9.8	9.9	216	19	40	104	142	88	88	23	15	12
5	9.8	9.7	125	18	38	92	106	76	72	28	15	12
6	9.8	9.6	140	18	36	80	220	78	62	29	15	12
7	9.1	9.7	97	18	55	67	172	71	59	24	15	12
8	9.0	9.4	75	19	137	84	110	63	55	22	15	12
9	9.0	10	658	55	459	109	90	59	55	21	15	12
10	9.0	10	503	132	393	80	83	54	54	20	14	12
11	9.0	17	188	90	180	67	79	52	47	23	14	12
12	9.0	24	106	62	114	59	76	51	42	38	14	12
13	9.0	79	76	67	100	52	73	82	38	58	14	12
14	9.0	52	62	378	86	48	72	107	34	41	14	12
15	9.0	31	51	275	96	44	64	77	32	33	14	12
16	9.0	67	44	131	83	41	64	76	30	29	19	12
17	9.0	32	38	86	74	38	58	70	28	26	16	12
18	9.0	23	33	66	73	37	53	68	30	24	15	12
19	9.0	20	30	54	64	37	51	62	27	23	14	28
20	8.7	18	32	51	59	43	62	53	25	21	14	15
21	8.7	26	49	47	56	63	145	47	24	21	14	13
22	8.8	46	38	48	52	62	117	44	23	20	13	13
23	8.8	72	33	52	46	101	85	42	23	20	13	13
24	8.6	82	29	45	43	130	80	37	22	19	13	13
25	8.6	71	27	41	42	445	68	34	21	18	13	13
26	8.8	48	26	41	43	375	59	32	21	18	13	14
27	8.8	36	24	47	45	222	54	43	21	17	13	32
28	8.6	29	23	58	55	128	70	73	21	17	13	16
29	8.6	25	23	135	67	108	126	69	26	17	12	14
30	9.0	23	22	98	---	93	104	57	21	16	13	13
31	9.7	---	21	73	---	84	---	88	---	16	13	---
TOTAL	281.6	927.3	3564	2283	2688	3103	2986	2051	1354	764	442	413
MEAN	9.08	30.9	115	73.6	92.7	100	99.5	66.2	45.1	24.6	14.3	13.8
MAX	9.8	82	658	378	459	445	252	107	124	58	19	32
MIN	8.6	9.4	21	18	36	37	51	32	21	16	12	12
AC-FT	559	1840	7070	4530	5330	6150	5920	4070	2690	1520	877	819
CFSM	1.09	3.72	13.8	8.85	11.1	12.0	12.0	7.95	5.42	2.96	1.71	1.65
IN.	1.26	4.15	15.94	10.21	12.02	13.87	13.35	9.17	6.05	3.42	1.98	1.85

CAL YR 1987	TOTAL 18114.6	MEAN 49.6	MAX 658	MIN 8.6	AC-FT 35930	CFSM 5.97	IN. 80.99
WTR YR 1988	TOTAL 20856.9	MEAN 57.0	MAX 658	MIN 8.6	AC-FT 41370	CFSM 6.85	IN. 93.25

SANDY RIVER BASIN

14138900 NORTH FORK BULL RUN RIVER NEAR MULTNOMAH FALLS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1978 to current year.

pH: October 1980 to September 1981.

WATER TEMPERATURE: October 1978 to current year.

SUSPENDED SEDIMENT DISCHARGE: October 1978 to September 1986.

INSTRUMENTATION.--Water-quality monitor, prior to October 1980, conductivity/temperature recorder.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 103 microsiemens Jan. 13, 1981 (cement spill); minimum, 9 microsiemens

Dec. 25, 1980, Jan. 6, 1983, Feb. 23, 1986.

pH: Maximum, 9.8 units Jan. 13, 1981 (cement spill); minimum, 6.3 units, June 19, 1981.

WATER TEMPERATURE: Maximum, 14.5°C Aug. 28, 1988; minimum, 0.0°C on several days during winter periods.

SEDIMENT CONCENTRATION: Maximum daily, 205 mg/L Dec. 25, 1980; minimum, 0 mg/L on many days.

SEDIMENT DISCHARGE: Maximum daily, 765 tons Feb. 23, 1986; minimum, 0 tons on many days.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 50 microsiemens Sept. 8; minimum, 11 microsiemens Dec. 9.

WATER TEMPERATURE: Maximum, 14.5°C Aug. 28; minimum recorded, 0.5°C Feb. 2.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	42	41	42	43	39	41	28	18	21	31	30	30
2	42	41	42	43	40	41	20	16	19	31	31	31
3	42	41	42	43	42	43	16	14	15	31	31	31
4	42	41	42	43	42	43	17	16	16	32	31	32
5	42	41	42	43	42	43	18	17	18	32	32	32
6	42	41	42	43	43	43	18	17	17	32	32	32
7	42	41	42	43	42	43	19	18	18	33	32	33
8	42	41	42	43	42	43	20	19	20	33	31	32
9	42	41	42	43	42	43	20	11	15	31	21	27
10	42	41	42	43	42	42	15	12	14	21	19	19
11	42	41	42	43	38	41	16	15	16	21	19	20
12	42	41	42	39	37	38	18	16	17	22	21	22
13	42	41	42	38	25	30	19	18	19	22	20	22
14	42	41	42	28	26	27	20	19	20	19	15	17
15	42	41	42	30	28	29	21	20	21	17	15	16
16	42	41	42	29	23	25	22	21	22	19	17	18
17	42	41	42	28	26	27	24	22	23	20	19	20
18	42	41	42	30	28	29	25	24	25	21	20	21
19	42	41	42	32	30	31	26	25	26	23	22	22
20	42	41	42	32	32	32	27	23	26	23	22	23
21	42	41	42	33	29	31	25	22	24	24	23	23
22	42	41	42	30	24	28	25	24	25	24	23	24
23	42	41	42	24	23	23	26	25	26	24	23	23
24	42	41	42	24	21	22	28	26	27	24	23	24
25	42	41	42	23	22	22	28	26	27	25	24	25
26	42	41	42	24	23	23	28	27	27	25	25	25
27	42	41	42	25	24	25	28	28	28	25	24	24
28	42	41	42	27	25	26	29	28	28	24	22	23
29	42	41	42	28	27	27	29	29	29	21	18	19
30	43	41	42	29	28	28	30	29	29	20	19	20
31	43	42	43	---	---	---	30	29	30	21	20	21
MONTH	43	41	42	43	21	33	30	11	22	33	15	24

SANDY RIVER BASIN

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14138900 NORTH FORK BULL RUN RIVER NEAR MULTNOMAH FALLS, OR--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	22	21	22	21	21	21	20	20	20	19	18	19
2	23	22	23	22	18	21	20	15	18	19	18	19
3	25	23	24	20	17	19	16	14	15	19	18	18
4	25	24	25	20	16	18	17	16	17	20	19	19
5	26	25	25	19	17	18	18	17	18	20	20	20
6	26	26	26	20	18	19	18	14	16	20	19	20
7	26	22	24	20	20	20	17	15	16	21	20	20
8	22	16	20	21	17	20	18	17	18	22	21	21
9	16	14	16	19	17	18	19	18	19	22	21	22
10	16	14	15	20	19	19	20	19	20	23	22	23
11	18	16	17	21	20	20	20	20	20	24	23	23
12	19	18	19	22	21	21	20	20	20	24	23	24
13	20	18	19	22	22	22	20	20	20	23	19	21
14	20	19	20	23	22	23	20	20	20	19	17	18
15	20	19	20	24	23	23	21	20	21	21	20	20
16	21	20	20	24	24	24	21	20	21	21	20	20
17	21	21	21	25	24	24	22	21	21	21	20	21
18	21	20	21	25	25	25	22	21	22	21	21	21
19	22	21	21	25	25	25	23	22	22	22	21	22
20	22	21	22	25	23	24	23	19	22	24	22	23
21	23	22	22	23	21	21	18	17	17	25	23	24
22	23	22	23	22	18	21	18	17	17	25	24	25
23	24	23	23	19	18	19	19	18	19	25	24	25
24	25	23	24	20	15	19	20	19	19	26	25	26
25	25	24	24	15	14	14	21	20	20	27	26	26
26	25	24	24	15	12	14	22	21	21	28	27	27
27	24	24	24	16	14	15	22	22	22	28	24	26
28	24	22	23	18	16	17	22	20	21	26	20	22
29	22	21	21	18	17	18	19	17	18	22	21	21
30	---	---	---	19	18	19	18	17	18	23	22	22
31	---	---	---	20	19	20	---	---	---	23	18	21
MONTH	26	14	22	25	12	20	23	14	19	28	17	22
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	19	17	18	38	36	37	38	36	37	45	43	44
2	19	17	19	38	31	34	38	36	37	46	43	44
3	20	18	19	36	32	34	38	37	38	45	44	44
4	21	20	20	36	34	35	39	37	38	45	44	44
5	22	21	22	37	30	34	39	38	39	46	45	45
6	23	22	23	35	30	32	40	38	39	46	43	44
7	24	23	23	36	33	34	41	38	39	45	43	44
8	24	23	24	36	34	35	42	39	40	50	44	45
9	24	23	24	37	35	36	40	39	40	46	44	44
10	24	23	24	38	35	36	40	39	39	45	43	44
11	26	24	25	37	34	36	40	39	39	44	43	44
12	27	25	26	35	27	33	40	39	39	45	44	44
13	28	26	27	29	26	27	40	39	40	45	44	45
14	29	27	28	31	28	29	40	39	39	45	44	45
15	30	29	29	32	30	31	41	39	40	46	44	45
16	31	30	30	34	31	32	42	37	39	45	44	44
17	31	30	31	34	32	33	40	38	40	47	44	45
18	31	30	30	34	32	33	43	40	41	44	43	44
19	33	31	32	36	33	34	44	41	42	43	38	40
20	33	32	32	35	34	34	42	40	41	42	40	41
21	34	32	33	35	34	35	42	41	41	43	42	43
22	35	33	34	35	34	35	42	41	42	44	43	44
23	35	33	34	36	35	35	43	41	42	44	43	43
24	37	34	35	36	35	36	43	42	42	44	42	43
25	36	35	36	37	35	36	43	42	42	44	43	43
26	36	35	35	37	36	37	44	42	43	44	40	42
27	36	34	35	37	36	37	44	43	43	40	34	37
28	38	36	36	38	37	37	44	43	44	42	39	41
29	37	33	34	38	37	38	44	43	44	42	41	42
30	37	35	36	39	37	38	44	43	44	43	42	42
31	---	---	---	37	36	37	44	43	44	---	---	---
MONTH	38	17	28	39	26	35	44	36	41	50	34	43
YEAR	MAXIMUM 50			MINIMUM 11			MEAN 29					

SANDY RIVER BASIN

14138900 NORTH FORK BULL RUN RIVER NEAR MULTNOMAH FALLS, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	11.0	9.0	10.0	8.0	8.0	8.0	5.5	5.0	5.5	2.5	2.0	2.5
2	10.5	9.5	9.5	8.0	8.0	8.0	6.5	5.0	5.5	2.0	1.5	1.5
3	10.0	9.5	9.5	8.0	7.5	7.5	7.0	6.5	6.5	1.5	1.5	1.5
4	10.0	8.5	9.0	7.5	7.0	7.5	6.5	6.0	6.5	2.0	1.5	1.5
5	10.0	8.5	9.0	8.0	7.5	7.5	7.0	6.5	6.5	2.0	1.5	2.0
6	10.5	9.0	9.5	7.5	7.5	7.5	7.0	6.5	7.0	2.5	2.0	2.5
7	10.0	9.0	9.5	8.0	7.5	7.5	6.5	5.5	6.0	2.5	2.5	2.5
8	9.5	8.5	9.0	7.5	7.0	7.5	5.5	5.0	5.5	2.5	2.0	2.5
9	9.5	8.5	9.0	8.0	7.5	7.5	7.5	5.0	6.0	2.5	2.0	2.5
10	9.0	8.0	8.5	7.5	7.0	7.5	7.0	5.0	6.0	3.5	2.5	3.0
11	9.0	7.5	8.0	8.0	7.0	7.5	5.0	4.5	5.0	3.5	3.0	3.5
12	8.5	7.5	8.0	8.5	8.0	8.0	4.5	4.0	4.5	4.0	3.5	3.5
13	8.5	7.0	7.5	8.5	7.5	8.5	4.0	3.0	3.5	4.0	3.5	3.5
14	8.0	7.0	7.5	7.5	6.5	7.0	4.0	3.5	3.5	4.0	2.5	3.5
15	8.0	7.0	7.5	6.5	6.5	6.5	3.5	3.0	3.0	3.5	2.5	3.0
16	8.0	7.0	7.0	6.5	5.5	6.5	3.5	3.0	3.0	3.0	2.5	3.0
17	7.5	6.5	7.0	6.0	5.5	5.5	3.0	2.5	3.0	3.0	2.5	2.5
18	7.5	6.5	7.0	6.5	5.5	6.0	3.5	3.0	3.0	3.0	2.5	2.5
19	8.0	6.5	7.0	6.5	6.0	6.0	3.5	3.0	3.0	3.5	3.0	3.0
20	7.5	6.5	7.0	7.0	6.0	6.5	3.0	2.5	3.0	3.5	3.0	3.0
21	8.0	6.5	7.0	7.0	6.5	6.5	3.5	3.0	3.0	3.5	3.0	3.0
22	7.5	6.5	7.0	6.5	6.0	6.5	3.0	2.5	2.5	3.5	3.0	3.0
23	7.5	6.5	7.0	6.5	6.0	6.0	3.0	2.5	3.0	4.0	3.0	3.5
24	7.5	6.5	7.0	6.5	6.0	6.0	3.0	2.0	2.5	3.5	3.0	3.0
25	7.5	6.5	7.0	6.0	5.0	5.5	2.5	1.5	2.0	4.0	3.0	3.5
26	7.5	6.5	7.0	5.5	5.0	5.5	2.0	1.5	2.0	4.0	3.5	3.5
27	8.0	7.0	7.0	5.5	5.0	5.0	2.0	1.5	2.0	4.5	3.5	4.0
28	8.0	7.0	7.0	5.0	4.5	4.5	2.0	1.5	2.0	4.5	4.0	4.0
29	7.5	7.0	7.0	4.5	4.0	4.5	2.5	1.5	2.0	4.0	3.0	3.5
30	8.5	7.5	8.0	5.0	4.5	4.5	2.5	2.5	2.5	3.0	2.5	3.0
31	8.5	8.0	8.0	---	---	---	3.0	2.5	2.5	2.5	2.0	2.5
MONTH	11.0	6.5	8.0	8.5	4.0	6.5	7.5	1.5	4.0	4.5	1.5	3.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	1.5	1.0	1.5	5.5	5.0	5.0	6.0	4.0	5.0	5.0	4.0	4.5
2	2.0	.5	1.5	5.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0
3	2.5	2.0	2.5	5.0	4.0	4.5	4.5	3.5	4.0	5.5	4.5	5.0
4	3.0	2.0	2.5	5.0	4.5	4.5	4.0	3.0	3.5	6.0	4.5	5.5
5	3.0	2.5	3.0	4.5	4.0	4.5	5.0	4.0	4.5	6.0	5.5	6.0
6	3.5	3.0	3.0	4.0	3.0	3.5	5.0	3.5	4.5	6.0	5.5	6.0
7	3.5	3.5	3.5	4.5	3.0	3.5	4.5	3.5	4.0	7.0	5.5	6.0
8	4.0	3.5	3.5	5.0	4.0	4.5	5.5	3.5	4.5	7.0	6.0	6.5
9	4.0	3.5	3.5	4.0	3.0	3.5	6.0	4.5	5.0	8.0	6.0	7.0
10	4.5	3.5	4.0	4.0	3.0	3.5	7.0	5.0	6.0	10.0	7.5	8.5
11	4.5	3.5	4.0	4.5	3.0	3.5	8.0	6.0	7.0	11.5	9.0	10.0
12	4.5	3.5	4.0	4.5	3.0	3.5	8.5	6.5	7.5	11.5	9.5	10.5
13	4.0	3.5	3.5	5.0	3.5	4.0	8.0	7.0	7.5	9.5	8.0	9.0
14	4.0	3.5	4.0	5.0	3.5	4.0	7.0	6.5	6.5	9.0	7.5	8.0
15	4.0	3.0	3.5	5.0	3.5	4.0	7.0	6.5	6.5	10.0	8.0	9.0
16	3.5	3.0	3.5	5.0	4.0	4.5	7.5	7.0	7.0	9.5	8.0	9.0
17	3.5	3.0	3.5	5.5	4.0	4.5	7.0	6.5	6.5	8.5	7.5	8.0
18	4.0	3.5	4.0	6.0	4.5	5.0	7.5	6.0	7.0	8.0	7.5	7.5
19	4.5	3.5	4.0	6.5	5.0	5.5	7.5	6.5	7.0	9.5	7.5	8.0
20	5.0	3.5	4.0	6.5	6.0	6.5	7.5	7.0	7.0	10.0	7.5	8.5
21	5.0	4.0	4.0	6.0	5.0	5.5	7.0	6.0	6.5	11.5	8.5	10.0
22	4.5	3.0	4.0	5.0	4.5	4.5	6.0	5.0	5.5	11.0	9.0	10.0
23	4.5	3.5	4.0	5.0	3.5	4.0	6.0	6.0	6.0	9.5	8.0	9.0
24	5.0	3.5	4.0	3.5	3.0	3.5	6.0	5.0	5.5	10.0	8.0	9.0
25	5.0	3.5	4.5	4.0	3.5	4.0	7.0	5.0	6.0	9.5	8.5	9.0
26	5.5	4.5	5.0	4.5	3.0	4.0	8.0	5.5	7.0	9.0	8.0	8.5
27	6.0	4.5	5.0	3.5	2.0	3.0	8.5	7.0	8.0	9.5	8.5	9.0
28	6.0	5.0	5.5	4.5	3.0	3.5	8.5	8.0	8.0	9.0	8.0	9.0
29	6.0	5.0	5.5	3.5	3.0	3.5	7.5	4.5	6.0	8.0	7.5	7.5
30	---	---	---	4.5	3.5	4.0	4.5	4.0	4.5	7.5	7.0	7.5
31	---	---	---	5.5	3.5	4.5	---	---	---	8.0	7.5	7.5
MONTH	6.0	.5	3.5	6.5	2.0	4.0	8.5	3.0	6.0	11.5	4.0	8.0

SANDY RIVER BASIN

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14138900 NORTH FORK BULL RUN RIVER NEAR MULTNOMAH FALLS, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.0	7.0	7.5	10.5	9.0	10.0	11.5	10.0	10.5	12.5	---	---
2	8.5	7.5	8.0	10.5	10.0	10.0	12.0	9.5	10.5	12.5	10.0	11.0
3	8.5	7.5	8.0	10.5	9.0	10.0	12.5	10.0	11.0	12.5	10.5	11.5
4	8.5	7.5	8.0	10.0	8.5	9.0	13.0	10.5	11.5	12.0	10.5	11.5
5	7.5	7.0	7.5	9.5	8.5	9.0	12.0	10.5	11.5	12.5	10.5	11.5
6	9.0	7.0	7.5	10.5	8.5	9.0	11.0	10.0	10.5	11.5	10.0	10.5
7	8.0	7.5	8.0	11.5	8.5	10.0	12.0	10.0	10.5	11.5	10.0	10.5
8	9.5	7.5	8.0	12.5	10.0	11.0	12.5	10.0	11.0	11.0	9.0	10.0
9	8.5	7.5	8.0	12.5	10.0	11.0	13.0	10.5	11.5	11.0	9.0	9.5
10	8.5	8.0	8.0	12.5	10.0	11.0	12.5	11.0	11.5	9.5	8.5	9.0
11	10.0	7.0	8.5	11.0	10.0	10.0	12.0	11.0	11.0	10.0	8.0	9.0
12	10.5	7.5	9.0	11.0	10.0	10.0	12.5	10.5	11.0	10.5	8.5	9.5
13	11.5	8.0	9.5	11.0	10.5	10.5	11.0	10.5	11.0	10.5	9.0	9.5
14	12.0	9.0	10.5	12.0	10.0	10.5	12.0	10.5	10.5	10.5	9.0	9.5
15	12.5	10.0	11.0	11.5	10.0	10.5	11.0	10.5	10.5	9.5	8.5	9.0
16	12.5	10.0	11.0	12.0	9.5	10.5	11.5	10.5	11.0	9.0	8.5	9.0
17	12.0	10.0	11.0	12.0	9.5	10.5	12.0	11.0	11.5	9.0	8.0	8.5
18	11.0	10.5	10.5	12.5	10.0	11.0	13.0	10.5	11.5	9.0	7.5	8.0
19	12.5	9.5	10.5	13.5	10.5	11.5	13.0	10.5	11.5	9.5	8.5	9.0
20	12.5	9.5	11.0	13.5	11.0	12.0	12.5	11.0	11.5	9.5	8.5	9.0
21	12.5	10.0	11.0	13.5	11.0	12.0	13.0	---	---	9.5	8.0	8.5
22	12.5	10.5	11.5	13.0	10.5	11.5	13.0	---	---	9.0	7.5	8.5
23	11.0	10.0	10.5	12.5	10.0	11.5	14.0	---	---	8.5	8.0	8.0
24	12.0	9.0	10.5	13.5	10.5	12.0	14.0	12.0	12.5	9.5	8.5	9.0
25	11.5	10.5	11.0	14.0	11.0	12.5	14.0	10.5	12.5	9.0	9.0	9.0
26	10.5	10.0	10.0	14.5	11.5	12.5	13.5	---	---	9.0	9.0	9.0
27	10.0	9.0	9.5	13.5	11.5	12.5	14.0	12.0	13.0	10.0	9.0	9.5
28	9.5	8.5	9.0	13.0	10.5	11.5	14.5	12.5	13.5	9.5	---	---
29	9.5	8.5	9.0	13.5	10.5	11.5	14.0	12.5	13.0	10.5	7.0	9.0
30	10.5	7.5	9.0	13.5	11.0	12.0	13.0	---	---	11.0	9.5	10.0
31	---	---	---	12.0	10.5	11.5	13.5	---	---	---	---	---
MONTH	12.5	7.0	9.5	14.5	8.5	11.0	14.5	---	---	---	---	---

SANDY RIVER BASIN

14139000 BULL RUN RESERVOIR NUMBER ONE NEAR BULL RUN, OR

LOCATION.--Lat 45°28'50", long 122°04'50", in NW 1/4 SW 1/4 sec.16, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, in Mount Hood National Forest, in control house of Bear Creek Dam on Bull Run River, 8.2 mi northeast of Bull Run, and at mile 11.2.

DRAINAGE AREA.--74.6 mi².

PERIOD OF RECORD.--October 1928 to current year. Prior to October 1937, published as Bull Run Reservoir. October 1937 to September 1967, published as Lake Ben Morrow. Prior to October 1975, monthend contents only.

REVISED RECORDS.--WSP 814: 1935(M). WSP 1935: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Portland Water Bureau). Prior to Oct. 9, 1930, Oct. 1, 1962, to Dec. 31, 1975, nonrecording gage and Oct. 9, 1930, to Sept. 30, 1962, water-stage recorder at present site and datum.

REMARKS.--Elevations for Oct. 8-11, Dec. 3-8, 10, provided by Portland Water Bureau. Lake is formed by concrete dam completed in March 1929 for water supply of city of Portland. Storage began about Apr. 29, 1929; first filling occurred May 15, 1929. Capacity, 26,930 acre-ft at crest of spillway, elevation, 1,036.0 ft; capacity increased in October 1954 to 30,140 acre-ft at elevation 1,044.0 ft by installation of three gates 40 ft wide and 8 ft high. No dead storage. Water is used for power generation by Portland General Electric Co. and municipal supply for city of Portland.

COOPERATION.--Capacity table furnished by Portland Water Bureau.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 31,600 acre-ft Mar. 31, 1931, elevation, 1,047.40 ft; minimum contents observed, 169 acre-ft Jan. 10, 1960, elevation, 887.5 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 30,690 acre-ft June 19, 20, elevation, 1,045.27 ft; minimum contents, 7,810 acre-ft Oct. 15, elevation, 968.67 ft.

Capacity table (elevation, in feet, and capacity, in acre-feet)

870	0	970	8,050
890	213	990	12,370
910	1,130	1,010	17,950
930	2,680	1,030	24,680
950	4,900	1,048	31,860

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	977.49	977.59	1032.74	1034.22	1035.19	1034.96	1034.72	1035.01	1044.94	1043.79	1035.57	1002.85
2	977.19	978.29	1036.08	1034.96	1034.71	1034.58	1035.20	1035.03	1044.98	1043.63	1034.68	1001.15
3	976.79	978.81	1036.40	1034.22	1034.54	1034.58	1036.25	1035.06	1044.63	1044.05	1032.93	1001.55
4	976.45	979.29	1036.30	1034.93	1034.47	1034.91	1035.77	1035.05	1044.72	1044.27	1031.75	1001.97
5	976.03	979.75	1035.50	1034.25	1034.53	1034.48	1035.54	1035.00	1044.57	1044.36	1031.22	1002.39
6	975.67	980.23	1035.50	1034.94	1034.36	1034.47	1036.52	1034.82	1045.01	1044.84	1030.48	1002.74
7	975.21	980.69	1035.50	1034.29	1034.23	1034.93	1035.70	1034.50	1044.25	1045.06	1029.70	1003.18
8	975.30	981.08	1035.50	1033.95	1035.18	1035.25	1035.75	1034.69	1044.62	1045.07	1028.64	1001.33
9	975.30	981.56	1042.23	1035.14	1039.77	1034.82	1034.95	1034.43	1044.53	1044.59	1027.36	1000.42
10	975.30	982.01	1038.00	1035.30	1037.48	1034.75	1034.99	1034.68	1044.52	1044.25	1026.07	998.78
11	975.30	982.79	1035.90	1035.51	1035.78	1034.26	1035.09	1034.75	1044.59	1044.01	1024.47	998.28
12	970.52	984.31	1035.29	1034.19	1035.90	1034.31	1035.24	1037.13	1044.54	1044.56	1023.43	996.22
13	970.44	988.12	1034.77	1035.09	1035.44	1034.28	1035.00	1039.47	1044.58	1045.05	1022.57	996.91
14	969.69	991.93	1035.65	1039.88	1034.64	1034.46	1034.77	1041.07	1044.39	1045.14	1021.79	994.48
15	968.96	993.93	1035.46	1036.15	1034.92	1034.52	1034.32	1041.23	1044.31	1045.25	1020.58	995.28
16	969.49	997.50	1033.99	1035.78	1034.86	1034.76	1034.83	1042.10	1044.89	1045.07	1020.73	992.52
17	970.03	999.67	1034.36	1034.80	1034.87	1034.60	1034.27	1042.67	1044.87	1044.99	1019.93	993.28
18	970.58	1001.06	1034.41	1034.18	1034.79	1034.66	1034.38	1042.98	1045.08	1045.04	1020.35	994.18
19	971.11	1002.22	1034.68	1034.56	1034.23	1034.51	1034.09	1042.96	1045.18	1044.81	1019.43	992.51
20	971.56	1003.21	1034.71	1034.78	1034.69	1034.57	1034.47	1043.05	1045.15	1044.01	1016.99	993.59
21	972.07	1004.46	1034.22	1034.92	1034.70	1034.80	1034.84	1043.20	1045.04	1043.31	1016.46	994.48
22	972.55	1006.61	1034.35	1034.47	1034.54	1034.99	1034.89	1043.14	1045.08	1042.69	1015.32	992.05
23	973.02	1010.24	1034.30	1034.76	1034.44	1034.83	1034.97	1043.25	1044.88	1042.68	1013.69	992.84
24	973.50	1014.46	1034.69	1034.89	1034.41	1035.75	1034.86	1043.35	1044.78	1042.72	1012.01	993.59
25	973.99	1018.42	1034.79	1034.74	1034.62	1037.70	1034.72	1043.60	1044.58	1042.72	1011.45	994.22
26	974.47	1020.95	1034.58	1034.33	1034.42	1038.21	1034.50	1043.75	1044.27	1039.85	1009.79	990.91
27	974.91	1022.76	1034.47	1034.22	1034.44	1035.72	1034.53	1044.77	1044.06	1038.59	1009.31	992.72
28	975.36	1024.20	1034.34	1034.74	1034.34	1035.67	1034.29	1044.52	1044.04	1037.96	1007.37	993.59
29	975.81	1025.40	1034.32	1034.95	1034.94	1035.85	1034.80	1044.78	1044.08	1036.79	1005.94	990.97
30	976.26	1026.44	1034.12	1035.05	---	1034.94	1035.19	1044.54	1044.02	1035.83	1006.05	991.59
31	976.79	---	1034.19	1034.54	---	1034.68	---	1044.77	---	1035.57	1004.09	---
MAX	977.49	1026.44	1042.23	1039.88	1039.77	1038.21	1036.52	1044.78	1045.18	1045.25	1035.57	1003.18
MIN	968.96	977.59	1032.74	1033.95	1034.23	1034.26	1034.09	1034.43	1044.02	1035.57	1004.09	990.91
(†)	9390	23400	26240	26380	26530	26430	26620	30470	30150	26770	16180	12770
(‡)	-220	+14010	+2840	+140	+150	-100	+190	+3850	-320	-3380	-10590	-3410

CAL YR 1987 MAX 1045.00 MIN 968.96 AC-FT+ -30
WTR YR 1988 MAX 1045.25 MIN 968.96 AC-FT+ +3160

† Contents, in acre-feet, at 2400, on last day of month.
‡ Change in contents, in acre-feet.

SANDY RIVER BASIN

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14139700 CEDAR CREEK NEAR BRIGHTWOOD, OR

LOCATION.--Lat 45°27'30", long 122°01'50", in NE 1/4 sec.26, T.1 S., R.6 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on right bank 5.8 mi north of Brightwood and at mile 2.5.

DRAINAGE AREA.--7.93 mi².

PERIOD OF RECORD.--July to November 1964, June 1965 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,960 ft, from topographic map.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--23 years, 66.6 ft³/s, 114.05 in/yr, 48,250 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,990 ft³/s Dec. 22, 1964, gage height, 7.20 ft, from rating curve extended above 320 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 4.7 ft³/s Oct. 28, 29, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	0900	763	4.04	Feb. 9	2400	815	4.11
Dec. 10	0230	*977	*4.31	Mar. 25	0600	515	3.76
Jan. 14	2030	727	3.99				

Minimum discharge, 4.7 ft³/s Oct. 28, 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.6	12	123	19	53	61	84	109	156	21	16	8.1
2	6.3	9.2	198	17	44	54	160	114	131	28	15	7.8
3	6.3	6.6	514	16	39	83	293	115	138	31	15	7.8
4	6.3	6.0	229	16	36	94	174	97	98	25	14	7.7
5	6.1	5.7	127	15	34	90	116	80	77	30	14	7.6
6	6.0	5.6	109	15	32	79	204	79	65	36	14	7.5
7	5.9	5.6	80	14	43	66	181	75	62	27	13	7.4
8	5.7	5.6	62	21	99	80	116	69	56	25	13	7.5
9	5.6	5.9	434	89	447	116	89	68	54	24	13	7.4
10	5.5	5.9	490	234	455	82	78	61	53	23	12	7.1
11	5.3	11	184	147	188	67	77	57	46	25	12	7.1
12	5.3	29	107	86	118	59	79	54	41	35	12	6.9
13	5.3	83	74	86	98	52	76	70	38	55	12	6.8
14	5.4	75	57	429	80	48	70	91	35	45	12	6.8
15	5.3	39	46	287	101	43	59	66	33	37	12	6.7
16	5.3	77	39	134	85	40	55	69	31	33	12	7.0
17	5.3	46	35	85	74	37	53	69	30	31	12	8.8
18	5.3	33	31	62	79	36	48	67	31	29	11	7.9
19	5.2	27	28	49	65	35	44	58	29	27	11	30
20	5.0	23	29	52	60	37	54	51	27	25	11	13
21	5.0	24	57	46	59	65	136	45	26	24	10	10
22	5.0	47	37	45	55	54	111	43	25	23	9.8	8.8
23	5.0	70	32	49	49	123	82	42	24	22	9.5	8.5
24	5.0	82	30	42	43	149	84	37	23	21	9.3	9.1
25	5.0	84	27	39	40	437	87	35	23	20	9.2	8.6
26	5.0	56	26	39	42	318	69	33	22	19	9.1	12
27	5.0	42	25	51	44	211	60	41	22	18	8.8	37
28	4.8	35	24	75	51	127	68	98	22	18	8.7	14
29	4.8	30	22	115	68	114	143	90	26	17	8.7	11
30	5.0	27	21	89	---	96	124	77	22	17	8.7	9.7
31	5.8	---	20	67	---	85	---	98	---	16	8.5	---
TOTAL	168.4	1008.1	3317	2530	2681	3038	3074	2158	1466	827	356.3	305.6
MEAN	5.43	33.6	107	81.6	92.4	98.0	102	69.6	48.9	26.7	11.5	10.2
MAX	6.6	84	514	429	455	437	293	115	156	55	16	37
MIN	4.8	5.6	20	14	32	35	44	33	22	16	8.5	6.7
AC-FT	334	2000	6580	5020	5320	6030	6100	4280	2910	1640	707	606
CFSM	.69	4.24	13.5	10.3	11.7	12.4	12.9	8.78	6.16	3.36	1.45	1.28
IN.	.79	4.73	15.56	11.87	12.58	14.25	14.42	10.12	6.88	3.88	1.67	1.43

CAL YR 1987 TOTAL 17046.5 MEAN 46.7 MAX 514 MIN 4.8 AC-FT 33810 CFSM 5.89 IN. 79.97
WTR YR 1988 TOTAL 20929.4 MEAN 57.2 MAX 514 MIN 4.8 AC-FT 41510 CFSM 7.21 IN. 98.18

SANDY RIVER BASIN

14139800 SOUTH FORK BULL RUN RIVER NEAR BULL RUN, OR

LOCATION.--Lat 45°26'38", long 122°06'20", in NE 1/4 NE 1/4 sec.31, T.1 S., R.6 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on right bank 6.2 mi northeast of Bull Run, and at mile 0.6.

DRAINAGE AREA.--15.4 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 990 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--14 years, 107 ft³/s, 94.35 in/yr, 77,520 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,520 ft³/s Dec. 2, 1977, gage height, 8.32 ft, from rating curve extended above 1,200 ft³/s; minimum discharge, 6.7 ft³/s Oct. 12, 13, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 1,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0130	*1,870	*7.19	No other peak greater than base discharge.			
Minimum discharge, 6.7 ft ³ /s Oct. 12, 13.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	13	155	41	110	118	151	197	224	34	26	14
2	10	17	319	36	90	106	211	194	212	38	26	15
3	10	10	1030	34	81	151	448	201	229	49	26	14
4	10	9.0	466	34	74	161	297	185	181	41	25	14
5	10	9.0	269	32	68	181	217	155	145	42	24	14
6	9.0	9.0	226	29	65	154	319	139	121	59	24	14
7	8.5	9.0	176	29	69	134	321	136	111	46	23	14
8	8.3	9.0	139	34	131	135	222	122	95	43	22	14
9	8.2	9.0	753	111	725	200	169	117	90	41	21	14
10	7.9	9.0	1020	e362	965	162	145	106	89	39	21	14
11	7.6	11	378	320	371	133	133	98	82	39	21	14
12	7.6	39	236	212	237	120	127	92	74	45	20	14
13	7.7	104	167	181	186	104	127	95	70	76	20	14
14	8.8	124	131	711	146	93	121	137	65	78	20	13
15	9.2	76	103	617	152	85	99	108	60	71	20	13
16	8.9	e114	88	296	156	77	92	103	57	64	20	13
17	8.9	e79	76	196	137	71	88	111	53	58	20	14
18	8.9	69	68	146	143	67	83	108	51	53	20	15
19	e8.0	56	61	112	130	66	76	99	51	49	19	46
20	8.0	48	57	100	120	65	82	87	47	45	19	41
21	7.4	44	97	98	112	95	202	79	44	43	18	18
22	7.4	62	78	89	104	93	210	73	41	41	18	16
23	7.4	106	69	95	95	160	e163	72	41	39	17	16
24	7.4	116	62	93	90	208	146	65	40	37	17	16
25	7.4	156	58	86	83	713	154	59	38	35	16	15
26	7.4	119	55	83	81	496	129	55	36	33	16	16
27	7.4	88	52	85	81	387	112	58	36	32	16	50
28	7.4	78	50	107	85	245	110	121	35	31	15	27
29	7.4	66	47	170	120	205	204	135	36	30	15	22
30	7.4	56	45	174	---	186	212	127	36	30	15	17
31	8.1	---	44	140	---	162	---	139	---	29	15	---
TOTAL	257.6	1714.0	6575	4853	5007	5333	5170	3573	2490	1390	615	551
MEAN	8.31	57.1	212	157	173	172	172	115	83.0	44.8	19.8	18.4
MAX	10	156	1030	711	965	713	448	201	229	78	26	50
MIN	7.4	9.0	44	29	65	65	76	55	35	29	15	13
AC-FT	511	3400	13040	9630	9930	10580	10250	7090	4940	2760	1220	1090
CFSM	.54	3.71	13.8	10.2	11.2	11.2	11.2	7.48	5.39	2.91	1.29	1.19
IN.	.62	4.14	15.88	11.72	12.09	12.88	12.49	8.63	6.01	3.36	1.49	1.33

CAL YR 1987 TOTAL 31785.9 MEAN 87.1 MAX 1030 MIN 7.4 AC-FT 63050 CFSM 5.65 IN. 76.78
WTR YR 1988 TOTAL 37528.6 MEAN 103 MAX 1030 MIN 7.4 AC-FT 74440 CFSM 6.66 IN. 90.65

e Estimated

SANDY RIVER BASIN

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14139800 SOUTH FORK BULL RUN RIVER NEAR BULL RUN, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1978 to current year.

pH: November 1980 to September 1981.

WATER TEMPERATURE: October 1978 to current year.

SUSPENDED SEDIMENT DISCHARGE: October 1978 to September 1986.

INSTRUMENTATION.--Water-quality monitor, prior to October 1980 conductivity/temperature recorder.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 54 microsiemens July 10, 1988; minimum, 9 microsiemens Jan. 4, 1983.

WATER TEMPERATURE: Maximum, 17.0°C July 18-20, 1979, Aug. 9-12, 1981, July 19, 20, 1985, July 14, 1987;

minimum, 0.0°C on many days during winter periods.

SEDIMENT CONCENTRATION: Maximum daily, 212 mg/L Nov. 7, 1985; minimum, 0 mg/L on many days.

SEDIMENT DISCHARGE: Maximum daily, 794 tons Nov. 7, 1985; minimum, 0 tons on many days.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 54 microsiemens July 10; minimum, 16 microsiemens Dec. 3, Mar. 25.

WATER TEMPERATURE: Maximum, 15.5°C July 26-27; minimum, 0.5°C Jan. 2-4.

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	39	38	38	42	40	41	26	21	24	33	33	33
2	39	38	39	42	40	41	21	18	20	33	33	33
3	39	38	39	42	41	41	21	16	18	33	33	33
4	39	39	39	42	41	42	23	21	22	34	33	34
5	39	39	39	42	41	41	25	23	24	34	34	34
6	40	39	40	42	41	42	25	25	25	34	34	34
7	40	39	40	42	41	41	26	25	26	35	34	34
8	40	39	40	41	40	41	28	26	27	35	34	34
9	40	40	40	42	41	41	28	23	24	34	29	32
10	40	40	40	41	40	41	26	23	24	29	26	28
11	40	40	40	41	40	41	28	26	27	28	27	27
12	40	39	40	40	37	38	29	28	28	29	28	29
13	40	40	40	38	28	33	30	29	29	30	29	29
14	40	39	40	28	27	27	31	30	30	29	25	27
15	40	40	40	27	27	27	30	30	30	27	25	26
16	40	40	40	27	25	26	31	30	30	27	26	27
17	40	40	40	25	24	25	31	30	30	28	27	28
18	40	40	40	27	25	26	31	30	31	30	28	29
19	40	40	40	28	26	27	31	31	31	30	29	30
20	40	40	40	28	27	27	31	31	31	31	20	29
21	40	40	40	31	28	29	31	30	30	21	20	20
22	40	40	40	28	26	28	30	30	30	21	21	21
23	41	40	40	26	25	25	30	30	30	21	21	21
24	40	40	40	25	24	25	31	30	30	21	20	21
25	41	40	40	24	23	24	31	30	31	20	20	20
26	41	40	40	24	23	24	31	31	31	21	20	21
27	41	40	40	24	24	24	31	31	31	21	20	20
28	41	40	40	25	24	24	32	31	31	30	20	28
29	41	40	41	25	25	25	32	31	32	29	28	29
30	42	41	41	26	25	26	32	32	32	29	27	28
31	42	41	42	---	---	---	33	32	33	27	27	27
MONTH	42	38	40	42	23	32	33	16	28	35	20	28

SANDY RIVER BASIN

14139800 SOUTH FORK BULL RUN RIVER NEAR BULL RUN, OR--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	27	27	27	---	---	---	23	22	22	23	23	23
2	28	27	28	---	---	---	23	19	21	23	23	23
3	29	28	28	20	18	19	19	18	19	23	23	23
4	29	28	29	20	18	19	20	19	20	24	23	23
5	29	19	28	19	18	18	22	20	21	24	24	24
6	20	19	19	19	19	19	22	19	21	24	24	24
7	20	19	20	20	19	20	21	19	20	25	24	24
8	29	19	27	20	19	20	22	21	21	25	24	25
9	27	24	25	19	18	19	24	22	23	25	25	25
10	25	23	24	20	19	19	24	23	24	26	25	25
11	26	25	25	20	20	20	25	24	24	27	26	26
12	26	26	26	21	20	21	25	24	24	27	26	27
13	27	26	27	22	21	21	24	24	24	26	25	26
14	27	27	27	22	22	22	25	24	24	25	24	25
15	27	26	27	23	22	22	25	24	25	27	25	26
16	27	26	27	23	22	23	26	25	25	---	---	---
17	26	26	26	24	23	23	25	25	25	---	---	---
18	28	26	27	24	24	24	26	25	26	---	---	---
19	28	28	28	25	24	24	27	26	26	31	26	27
20	28	25	27	25	24	24	27	25	26	39	24	25
21	26	25	26	24	22	23	25	22	23	40	25	26
22	26	25	26	22	22	22	23	22	22	38	24	26
23	26	26	26	22	20	21	24	23	23	28	24	24
24	27	26	26	20	19	20	24	23	23	26	25	25
25	27	27	27	19	16	17	24	23	23	34	26	26
26	28	27	28	19	17	18	25	24	24	27	26	27
27	28	27	28	19	17	19	26	25	25	27	26	27
28	28	28	28	21	19	20	26	25	26	26	21	23
29	28	27	28	21	20	21	25	22	23	21	21	21
30	---	---	---	22	21	21	23	22	23	22	21	21
31	---	---	---	22	22	22	---	---	---	22	20	22
MONTH	29	19	26	---	---	---	27	18	23	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	20	19	19	36	35	35	37	36	36	42	41	42
2	20	19	20	37	34	36	39	36	37	42	41	42
3	20	19	19	34	32	32	37	37	37	42	42	42
4	21	20	20	34	33	33	39	37	38	43	42	42
5	22	21	21	34	32	33	40	37	38	43	42	42
6	23	22	22	33	30	31	39	37	37	42	42	42
7	23	22	23	35	32	33	41	37	38	42	41	42
8	39	23	24	37	33	33	40	38	38	43	42	42
9	25	23	24	37	34	35	40	38	39	43	42	42
10	34	25	25	54	32	35	39	38	38	42	41	42
11	26	25	26	33	32	33	39	38	38	42	42	42
12	35	26	26	33	31	32	39	38	38	42	42	42
13	40	26	28	31	27	28	39	38	39	43	42	43
14	28	27	28	28	27	27	39	38	39	43	42	43
15	41	28	29	28	28	28	39	38	39	43	42	42
16	48	29	30	29	28	29	40	38	39	43	42	42
17	39	29	29	30	29	29	40	38	39	44	42	43
18	30	29	30	31	30	30	40	39	39	43	42	43
19	34	30	30	31	30	31	40	39	39	52	36	39
20	31	31	31	32	31	31	40	39	39	39	37	38
21	32	31	32	32	32	32	40	39	39	52	39	40
22	52	32	33	34	32	33	40	40	40	46	39	40
23	32	32	32	36	32	33	40	40	40	40	38	39
24	33	32	33	34	33	33	41	40	40	43	39	40
25	34	33	33	37	34	34	41	40	40	40	39	40
26	34	33	33	37	34	35	42	40	40	40	39	39
27	34	33	34	35	34	35	46	40	41	39	33	35
28	34	33	34	37	35	35	42	41	41	36	34	35
29	34	33	34	38	35	35	42	41	41	37	36	37
30	35	33	34	36	36	36	41	41	41	38	36	38
31	---	---	---	37	36	36	42	41	41	---	---	---
MONTH	52	19	28	54	27	33	46	36	39	52	33	41

SANDY RIVER BASIN

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14139800 SOUTH FORK BULL RUN RIVER NEAR BULL RUN, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	11.0	10.0	10.5	8.5	8.0	8.5	6.5	5.5	6.0	2.5	1.5	2.0
2	11.0	10.5	10.5	8.5	8.5	8.5	7.0	6.0	6.0	1.5	.5	1.0
3	11.5	10.5	11.0	8.5	8.5	8.5	7.0	7.0	7.0	1.0	.5	1.0
4	11.0	10.5	10.5	8.5	7.5	8.0	7.0	7.0	7.0	1.0	.5	1.0
5	10.5	10.0	10.5	7.5	7.5	7.5	7.5	7.0	7.0	1.5	1.0	1.0
6	10.5	10.0	10.0	8.0	7.5	7.5	7.5	7.0	7.5	1.5	1.0	1.5
7	10.5	10.0	10.0	8.5	7.5	8.0	7.0	6.0	6.5	2.0	1.5	2.0
8	10.5	10.0	10.0	8.0	7.5	7.5	6.5	6.0	6.0	2.0	1.0	1.5
9	10.0	9.5	10.0	8.5	7.5	8.0	7.5	5.5	6.5	2.5	2.0	2.0
10	9.5	9.0	9.5	8.0	7.5	7.5	7.5	6.5	6.5	3.5	2.5	3.0
11	9.0	8.5	9.0	8.0	7.5	8.0	6.0	6.0	6.0	4.0	3.5	4.0
12	9.0	8.5	9.0	8.5	8.0	8.0	6.0	5.0	5.5	4.5	4.0	4.0
13	8.5	8.0	8.5	8.5	8.0	8.5	5.0	4.0	4.5	4.5	4.0	4.5
14	8.5	8.0	8.0	8.0	7.0	7.5	5.0	4.5	4.5	4.5	3.0	4.0
15	8.0	7.5	8.0	7.0	6.5	7.0	4.5	4.0	4.0	4.5	3.0	4.0
16	8.0	7.5	7.5	7.0	6.0	7.0	4.0	3.5	4.0	4.5	4.0	4.5
17	7.5	7.0	7.0	6.0	6.0	6.0	3.5	3.0	3.0	4.0	4.0	4.0
18	7.0	6.5	7.0	6.5	5.5	6.0	3.5	3.0	3.5	4.0	3.5	3.5
19	7.0	6.5	7.0	6.5	6.0	6.5	3.5	2.5	3.0	4.0	4.0	4.0
20	7.0	6.5	7.0	7.0	6.5	6.5	3.0	2.5	2.5	4.0	3.5	4.0
21	7.0	6.5	7.0	7.5	7.0	7.0	3.5	3.0	3.5	4.0	3.5	4.0
22	7.0	6.5	7.0	7.0	6.5	7.0	3.0	2.5	3.0	4.0	3.5	4.0
23	7.0	6.5	6.5	7.0	6.5	7.0	3.0	2.0	2.5	4.0	4.0	4.0
24	7.0	6.5	6.5	7.0	6.0	6.5	2.5	2.0	2.5	4.0	3.5	3.5
25	7.5	6.5	7.0	6.5	5.5	6.0	2.0	1.5	1.5	4.0	3.5	3.5
26	7.0	6.0	6.5	6.0	5.5	5.5	1.5	1.5	1.5	4.5	3.5	4.0
27	7.0	6.5	6.5	6.0	5.0	5.5	1.5	1.0	1.5	5.0	4.5	4.5
28	6.5	6.5	6.5	5.0	4.5	4.5	2.0	1.5	1.5	4.5	4.5	4.5
29	7.0	6.5	6.5	4.5	4.0	4.0	2.5	1.5	2.0	5.0	4.5	4.5
30	8.0	7.0	7.5	5.5	4.5	5.0	2.5	2.0	2.5	4.5	3.5	4.0
31	8.5	8.0	8.0	---	---	---	2.5	2.0	2.0	3.5	3.5	3.5
MONTH	11.5	6.0	8.5	8.5	4.0	7.0	7.5	1.0	4.0	5.0	.5	3.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	3.5	2.0	2.5	---	---	---	6.0	4.0	5.0	6.0	4.5	5.0
2	2.5	1.5	2.0	---	---	---	5.5	5.0	5.5	6.0	5.0	5.5
3	3.0	2.5	3.0	6.0	5.0	5.0	5.0	4.0	4.5	6.0	5.5	5.5
4	3.0	3.0	3.0	5.5	5.0	5.5	5.0	3.5	4.5	6.5	5.0	6.0
5	3.5	3.0	3.0	5.5	5.0	5.0	5.5	4.5	5.0	6.5	5.5	6.0
6	4.0	3.5	3.5	5.0	4.0	4.5	5.5	4.5	5.0	6.5	6.0	6.0
7	4.0	4.0	4.0	5.0	4.0	4.5	5.0	4.0	4.5	7.5	5.5	6.5
8	4.5	4.0	4.0	5.5	4.5	5.0	6.0	4.5	5.0	7.0	6.0	6.5
9	4.5	4.0	4.0	5.0	4.0	4.0	6.5	4.5	5.5	8.0	6.0	7.0
10	5.0	4.0	4.5	4.5	3.5	4.0	7.5	5.5	6.0	9.5	7.0	8.5
11	5.0	---	---	4.5	3.5	4.0	8.0	5.5	6.5	11.0	8.5	9.5
12	5.0	---	---	4.5	3.5	4.0	8.0	6.0	7.0	10.5	9.5	10.0
13	5.0	4.5	5.0	5.0	3.5	4.5	7.5	6.5	7.0	9.5	8.0	8.5
14	5.0	4.5	5.0	5.0	4.0	4.5	6.5	6.5	6.5	9.0	7.5	8.0
15	5.0	4.0	4.5	4.5	3.5	4.0	7.0	6.0	6.5	10.0	7.5	9.0
16	4.5	4.0	4.5	4.5	4.0	4.5	7.0	6.5	7.0	---	---	---
17	4.5	4.0	4.0	5.0	4.0	4.5	7.0	6.5	6.5	---	---	---
18	5.0	4.0	4.5	5.5	4.5	5.0	7.5	6.5	7.0	---	---	---
19	5.0	4.5	4.5	6.0	5.0	5.5	7.5	6.5	7.0	10.0	7.5	8.5
20	5.0	4.0	4.5	6.5	6.0	6.5	7.5	7.0	7.0	10.5	7.5	9.0
21	5.0	4.0	4.5	6.5	5.5	6.0	7.0	6.0	6.5	11.5	8.5	10.0
22	4.5	3.5	4.0	5.5	5.0	5.5	6.5	5.5	6.0	11.0	9.5	10.5
23	5.0	4.0	4.0	5.5	4.0	5.0	6.5	6.0	6.5	10.0	8.5	9.5
24	4.5	4.0	4.5	4.0	3.5	4.0	6.5	5.0	5.5	10.5	8.5	9.5
25	5.0	4.0	4.5	5.0	4.0	4.5	7.5	5.0	6.0	10.0	9.0	9.5
26	5.0	---	---	5.0	4.0	5.0	8.0	5.5	6.5	9.5	8.5	9.0
27	5.0	---	---	4.0	3.5	4.0	8.5	7.0	7.5	9.5	9.0	9.0
28	---	---	---	5.0	4.0	4.5	8.0	7.5	7.5	9.5	8.0	9.0
29	---	---	---	4.0	4.0	4.0	7.5	5.0	6.5	8.0	7.5	8.0
30	---	---	---	5.0	3.5	4.0	5.0	4.5	5.0	8.0	7.0	7.5
31	---	---	---	6.0	4.0	5.0	---	---	---	8.0	7.5	8.0
MONTH	---	---	---	---	---	---	8.5	3.5	6.0	11.5	4.5	8.0

SANDY RIVER BASIN

14139800 SOUTH FORK BULL RUN RIVER NEAR BULL RUN, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.0	7.5	7.5	12.0	10.5	11.0	13.5	12.5	13.0	13.0	11.5	12.5
2	8.5	7.5	8.0	11.5	10.5	11.0	14.0	12.0	13.0	13.5	12.0	13.0
3	8.5	7.5	8.0	10.5	10.0	10.5	14.0	12.0	13.0	14.0	13.0	13.5
4	8.5	7.5	8.0	10.5	9.5	10.0	14.5	12.5	13.5	14.0	13.0	13.5
5	8.0	7.5	7.5	10.0	9.0	9.5	14.0	13.0	13.5	14.0	13.5	14.0
6	9.0	7.5	8.0	11.0	8.5	9.5	13.5	12.0	13.0	13.5	12.5	13.0
7	8.5	7.5	8.0	12.0	9.5	11.0	13.0	12.0	12.5	13.5	12.5	13.0
8	9.0	8.0	8.5	13.5	11.0	12.0	13.5	11.5	12.5	13.0	12.0	12.5
9	8.5	7.5	8.0	13.5	11.5	12.5	14.0	12.0	13.0	12.5	11.5	12.0
10	9.5	8.0	8.5	13.5	11.5	12.5	14.0	13.0	13.0	11.5	11.0	11.5
11	10.5	7.5	9.0	13.0	11.0	12.0	13.0	12.5	13.0	11.0	10.0	10.5
12	10.5	8.0	9.5	11.0	10.5	11.0	13.5	12.0	12.5	11.0	10.0	11.0
13	11.5	8.5	10.0	10.5	10.0	10.5	12.5	12.0	12.5	11.5	10.5	11.0
14	12.5	10.0	11.0	11.0	10.0	10.5	12.5	12.0	12.0	11.5	10.5	11.0
15	13.0	11.0	12.0	11.0	10.0	10.5	12.0	12.0	12.0	11.5	10.5	11.0
16	13.0	11.0	12.0	12.0	10.0	11.0	12.0	11.5	12.0	11.0	10.5	11.0
17	12.5	11.0	12.0	12.0	10.5	11.5	12.5	11.5	12.0	10.5	10.0	10.5
18	12.0	11.0	11.5	13.0	10.5	12.0	12.5	11.5	12.0	10.0	9.0	9.5
19	12.5	10.0	11.5	14.0	11.5	13.0	13.0	11.5	12.0	10.0	9.5	9.5
20	13.0	11.0	12.0	14.5	12.5	13.5	12.5	11.5	12.0	10.5	10.0	10.0
21	13.5	11.5	12.5	14.5	13.0	14.0	12.5	11.0	12.0	10.0	9.0	9.5
22	13.5	12.0	12.5	14.0	12.5	13.5	13.0	11.0	12.0	9.5	8.5	9.0
23	12.5	11.5	12.0	14.0	12.0	13.0	13.5	11.5	12.5	9.5	9.0	9.5
24	13.0	10.5	12.0	14.5	12.5	13.5	13.5	12.5	13.0	10.0	9.5	9.5
25	13.0	12.0	12.5	15.0	13.0	14.0	13.5	12.5	13.0	10.5	10.0	10.0
26	12.0	11.0	11.5	15.5	13.5	14.5	13.5	12.0	13.0	10.5	10.0	10.5
27	11.0	10.5	11.0	15.5	14.0	14.5	13.5	12.0	13.0	10.5	10.0	10.5
28	10.5	9.5	10.0	15.0	13.5	14.0	14.0	12.5	13.0	10.0	9.5	10.0
29	10.0	9.0	9.5	15.0	13.0	14.0	13.5	13.0	13.5	10.5	9.5	10.0
30	11.5	9.0	10.0	15.0	13.5	14.0	13.0	12.0	12.5	10.5	10.0	10.0
31	---	---	---	14.0	13.0	13.5	13.0	11.5	12.0	---	---	---
MONTH	13.5	7.5	10.0	15.5	8.5	12.0	14.5	11.0	12.5	14.0	8.5	11.0

SANDY RIVER BASIN

69

14139900 BULL RUN RESERVOIR NUMBER TWO NEAR BULL RUN, OR

LOCATION.--Lat 45°26'55", long 122°08'45", on line between secs.25 and 26, T.1 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on headworks dam on Bull Run River, 4.4 mi northeast of Bull Run, and at mile 6.5.

DRAINAGE AREA.--102 mi².

PERIOD OF RECORD.--December 1961 to current year. Prior to October 1975, monthend contents only.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Portland Water Bureau). Prior to Dec. 31, 1975, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earth and rockfill dam with concrete spillway built by Portland Water Bureau. Storage began about Dec. 20, 1961; first filling occurred Dec. 24, 1961. Capacity, 20,990 acre-ft at crest of spillway, elevation, 860.0 ft. Dead storage negligible. Water is used as municipal supply for city of Portland and for power generation by Portland General Electric Co.

COOPERATION.--Capacity table furnished by Portland Water Bureau.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 23,660 acre-ft Dec. 22, 1964, elevation, 866.00 ft; no contents at times during low-flow periods.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 22,360 acre-ft Dec. 10, elevation, 863.10 ft; minimum contents, 15,100 acre-ft Nov. 11, elevation, 845.28 ft.

Capacity table (elevation, in feet, and capacity in acre-feet)

752	0	830	10,000
770	234	850	16,800
790	1,860	870	25,500
810	5,070		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	851.56	846.00	850.67	858.32	858.89	859.43	858.69	859.06	859.48	859.37	859.13	859.28
2	851.46	845.99	857.21	857.25	858.93	858.83	859.61	858.99	859.83	859.83	858.71	859.31
3	851.44	845.93	862.10	857.44	858.68	858.79	861.08	859.07	859.54	859.79	859.31	857.91
4	851.38	845.95	860.70	856.28	858.19	858.64	860.33	858.96	859.03	859.57	858.98	856.75
5	851.17	845.78	859.36	856.15	858.00	858.52	859.54	859.26	859.26	859.88	858.44	855.74
6	851.01	845.73	859.09	855.24	858.08	858.95	861.16	859.02	859.47	859.98	858.40	854.57
7	850.81	845.67	858.86	855.89	858.27	859.73	860.58	859.15	859.74	859.75	858.39	853.52
8	850.79	845.51	859.05	856.42	859.23	859.16	859.46	858.98	859.46	859.47	858.47	854.16
9	850.89	845.44	862.73	857.69	862.35	859.14	859.14	859.43	859.49	859.55	858.48	854.08
10	850.94	845.38	861.51	859.80	861.53	859.35	859.15	859.65	859.60	859.54	858.73	854.59
11	850.85	845.38	860.11	859.34	860.61	859.72	859.34	859.86	859.36	859.71	859.33	854.43
12	850.72	845.61	859.30	858.55	859.85	859.83	859.47	859.03	858.81	859.75	859.47	855.02
13	850.96	845.99	859.11	859.17	859.05	859.71	859.46	859.33	859.07	859.98	859.44	853.73
14	851.28	846.59	859.12	862.47	858.60	859.71	859.59	859.86	859.44	859.93	859.44	854.49
15	851.29	846.91	859.85	861.21	858.61	859.68	859.32	859.78	859.80	859.72	859.78	853.47
16	850.80	847.43	859.92	860.18	859.09	859.62	859.50	859.38	859.52	859.85	859.32	854.88
17	850.32	847.77	859.39	859.09	859.09	859.70	859.47	859.53	859.96	859.90	859.43	854.05
18	849.91	847.96	859.64	858.64	859.25	859.44	859.48	859.51	859.67	859.38	858.61	853.22
19	849.58	848.08	859.48	858.69	859.77	859.57	859.45	859.55	859.62	859.14	858.58	854.97
20	849.04	848.03	859.80	858.80	859.68	859.71	859.12	859.45	859.53	859.33	859.75	854.31
21	848.45	848.01	859.47	858.88	859.65	859.31	859.28	859.45	859.48	859.39	859.44	853.65
22	848.04	848.19	859.64	859.17	859.75	858.98	858.98	859.46	859.31	859.78	859.40	855.04
23	847.67	848.56	859.88	858.42	859.82	858.64	859.20	859.43	859.42	859.62	859.53	854.30
24	847.40	849.15	859.69	858.45	859.72	859.01	859.18	859.26	859.37	859.65	859.82	853.67
25	847.03	849.70	859.57	858.66	859.69	861.50	859.25	859.20	859.27	859.70	859.33	852.97
26	846.79	849.91	859.73	858.53	859.84	861.71	859.21	859.42	859.41	859.50	859.70	854.89
27	846.53	850.14	859.67	858.67	859.90	860.75	858.96	859.21	859.46	859.85	859.29	854.33
28	846.36	850.10	859.51	858.87	859.81	860.19	858.99	859.26	859.40	859.52	859.70	853.73
29	846.16	850.00	859.32	859.04	859.71	859.17	859.06	859.63	859.41	859.71	859.74	854.90
30	846.08	849.94	859.16	859.11	---	859.12	858.98	859.42	859.41	859.67	859.00	853.93
31	845.99	---	858.75	859.36	---	859.13	---	859.81	---	859.78	859.52	---
MAX	851.56	850.14	862.73	862.47	862.35	861.71	861.16	859.86	859.96	859.98	859.82	859.31
MIN	845.99	845.38	850.67	855.24	858.00	858.52	858.69	858.96	858.81	859.14	858.39	852.97
(+)	15360	16780	20450	20720	20870	20620	20550	20920	20740	20900	20790	18370
(+)	-2180	+1420	+3670	+270	+150	-250	-70	+370	-180	+160	-110	-2420

CAL YR 1987 MAX 862.73 MIN 845.38 AC-FT+ -380

WTR YR 1988 MAX 862.73 MIN 845.38 AC-FT+ +830

† Contents, in acre-feet, at 2400, on last day of month.

* Change in contents, in acre-feet.

SANDY RIVER BASIN

14140001 BULL RUN RIVER NEAR BULL RUN, OR

LOCATION.--Lat 45°26'15", long 122°10'40", in NE 1/4 SW 1/4 sec.34, T.1 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on left bank 1.8 mi downstream from Bull Run Reservoir Number Two, 2.7 mi northeast of Bull Run, and at mile 4.7.

DRAINAGE AREA.--107 mi².

PERIOD OF RECORD.--September 1907 to current year. Records for January 1895 to August 1907, published in WSP 370, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1288: 1910-11, 1913, 1920-23, 1926, 1929. WSP 1318: 1919(M). WSP 1568: 1952. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 567.90 ft above National Geodetic Vertical Datum of 1929 (levels by Portland Water Bureau). Prior to July 27, 1909, nonrecording gage at site 1.5 mi upstream at different datum. July 27, 1909, to Sept. 30, 1959, water-stage recorder at site 2.5 mi upstream at different datums.

REMARKS.--No estimated daily discharges. Records good except those below 10 ft³/s, which are fair. Flow regulated since 1915 by Bull Run Lake, capacity, 12,270 acre-ft, since 1929 by Bull Run Reservoir Number One (station 14139000), since 1958 by North Fork Reservoir, capacity, 1,030 acre-ft, and since 1961 by Bull Run Reservoir Number Two (station 14139900). All records given herein include flow diverted from Bull Run Reservoir Number Two for city of Portland, and that used by Portland General Electric Co. for power generation, which returns to Bull Run River downstream from station. Total diversion, 173,600 acre-ft of which 54,060 acre-ft were used for power generation and returned to Bull Run River.

COOPERATION.--Records of daily diversion furnished by Portland Water Bureau.

AVERAGE DISCHARGE.--81 years, 775 ft³/s, 98.36 in/yr, 561,500 acre-ft/yr, adjusted for storage in Bull Run Reservoir Number One since 1929 and Bull Run Reservoir Number Two since 1961.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 24,800 ft³/s Dec. 22, 1964, gage height, 17.21 ft, from rating curve extended above 8,800 ft³/s on basis of computation of peak flow over dam; minimum discharge, 1.1 ft³/s Oct. 4, 1974.

Combined flow, maximum discharge, 25,100 ft³/s Dec. 22, 1964; minimum daily, 11 ft³/s Nov. 16, 1987.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 9,460 ft³/s Dec. 10, gage height, 12.14 ft; minimum discharge, 1.7 ft³/s several days in October.

Combined flow, maximum discharge, 9,770 ft³/s Dec. 10; minimum daily, 11 ft³/s Nov. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	167	33	106	327	668	936	1170	1360	1650	229	253	309
2	147	19	167	315	662	984	1580	1360	1410	196	304	318
3	110	19	3980	318	614	1030	2700	1330	1730	167	322	323
4	128	13	3540	316	583	1130	2290	1210	1340	190	325	277
5	143	21	2000	323	460	1290	1700	958	924	186	325	238
6	143	27	1720	251	395	966	1950	1030	657	173	324	259
7	143	28	1260	165	510	529	2550	947	836	219	273	234
8	143	28	953	178	843	978	1770	815	628	268	222	229
9	116	28	3080	167	3190	1490	1460	826	641	260	319	241
10	122	29	7320	1480	5850	1060	1010	617	577	253	318	223
11	146	22	3070	1600	3000	908	923	671	539	210	210	218
12	146	16	1760	1520	1790	701	950	471	605	171	250	266
13	116	62	1190	729	1610	717	1040	350	346	451	251	275
14	106	20	659	3460	1380	544	946	610	331	430	251	275
15	84	19	509	4820	1250	526	934	903	283	418	237	222
16	103	11	810	2240	1010	429	569	806	253	296	237	201
17	930	27	353	1700	1000	451	834	634	225	285	191	198
18	886	26	353	1210	956	448	603	709	317	336	259	210
19	98	27	334	630	824	390	665	696	256	325	258	195
20	98	49	325	651	695	436	631	654	283	325	238	164
21	116	79	705	593	774	756	1660	533	274	327	236	162
22	92	40	459	596	716	757	1580	532	248	324	273	134
23	94	40	372	579	661	1340	1090	469	231	269	253	179
24	79	41	340	533	576	1200	1070	463	235	278	254	163
25	70	59	329	513	469	3720	980	357	265	325	278	155
26	65	78	325	595	505	3790	898	273	224	327	269	157
27	353	48	359	586	494	3380	729	312	208	331	254	165
28	353	72	331	683	633	1810	966	1010	208	329	283	163
29	37	87	324	1400	767	1680	1460	817	213	329	283	191
30	330	72	336	1150	---	1480	1440	974	201	327	228	218
31	38	---	335	977	---	1170	---	892	---	296	253	---
TOTAL	3106	1140	37842	30795	32885	37006	38148	23569	16138	8868	8348	6563
MEAN	100	38.0	1221	993	1134	1194	1272	760	538	286	269	219
MAX	167	87	7320	4820	5850	3790	2700	1360	1730	451	325	323
MIN	28	11	106	165	395	390	569	273	201	167	191	134
AC-FT	6160	2260	75060	61080	65230	73400	75670	46750	32010	17590	16560	13020
MEAN†	61.1	22.7	1330	1000	1180	1190	1270	829	530	234	95.5	121
CFSM†	0.57	2.78	12.4	9.35	11.0	11.1	11.9	7.75	4.95	2.19	0.89	1.13
IN.†	0.66	3.10	14.29	10.78	11.48	12.80	13.28	8.93	5.52	2.52	1.03	1.26
AC-FT†	3760	17690	81570	61530	65540	73070	75780	50970	31510	14370	5870	7200

CAL YR 1987 TOTAL 199661 MEAN 547 MAX 7320 MIN 11 AC-FT 396000 MEAN† 547 CFSM† 5.11 IN.† 69.34 AC-FT† 395700
WTR YR 1988 TOTAL 244408 MEAN 668 MAX 7320 MIN 11 AC-FT 484800 MEAN† 673 CFSM† 6.29 IN.† 85.67 AC-FT† 488900

† Adjusted for change in contents of Bull Run Reservoir Number One and Bull Run Reservoir Number Two.

SANDY RIVER BASIN

71

14141500 LITTLE SANDY RIVER NEAR BULL RUN, OR

LOCATION.--Lat 45°24'55", long 122°10'20", in NE 1/4 NE 1/4 sec.10, T.2 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on left bank 0.25 mi upstream from Portland General Electric Co. dam and tunnel from Sandy River, 3.0 mi east of Bull Run, and at mile 1.95.

DRAINAGE AREA.--22.3 mi².

PERIOD OF RECORD.--May to July 1911, October 1911 to March 1912, June 1912 to April 1913, July 1919 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1154: 1949. WSP 1248: Drainage area. WSP 1288: 1912, 1920-21(M), 1922-23, 1931, 1945. WSP 1318: 1920. WDR OR-82-2: 1972(P), 1974-76(P), 1978-81(P).

GAGE.--Water-stage recorder. Elevation of gage is 720 ft, from topographic map. May 23, 1911, to Apr. 29, 1913, nonrecording gage at site 0.85 mi downstream at different datum, 0.5 mi downstream from Sandy River diversion tunnel. July 1, 1919, to Sept. 30, 1931, water-stage recorder at site 0.1 mi downstream at different datum. Oct 1, 1931, to Nov. 3, 1967, at site 0.1 mi downstream at datum 712 ft above National Geodetic Vertical Datum of 1929. Nov. 4, 1967, to Aug. 8, 1971, water-stage recorder at site 0.1 mi downstream at datum 697.44 ft above National Geodetic Vertical Datum of 1929 (Portland General Electric Co. bench mark).

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--69 years (water years 1920-88), 145 ft³/s, 88.30 in/yr, 105,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,320 ft³/s Nov. 20, 1921, gage height, 9.18 ft, site and datum then in use, from rating curve extended above 2,200 ft³/s; minimum discharge, 8 ft³/s Aug. 20, Sept. 16, 17, 1940.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	0500	1,400	4.86	Feb. 10	0100	1,710	5.19
Dec. 10	0300	*2,090	*5.55				

Minimum discharge, 9.9 ft³/s Oct. 11, 12, 19-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	16	152	64	128	194	201	221	289	39	24	17
2	12	19	290	56	109	161	317	235	234	43	23	15
3	12	14	1050	57	100	232	594	244	246	58	22	15
4	12	13	490	55	90	236	345	217	193	43	21	15
5	12	12	265	53	85	244	254	190	156	48	21	15
6	11	11	216	51	80	206	421	193	134	70	21	15
7	11	11	164	49	106	169	391	190	127	48	20	15
8	11	11	132	60	234	176	274	171	111	41	20	15
9	11	12	697	225	966	248	221	175	112	39	19	15
10	10	12	1110	594	1180	205	203	156	111	38	20	14
11	10	15	409	416	505	179	205	152	98	39	20	15
12	10	54	255	273	312	162	211	142	88	48	20	14
13	10	108	186	235	251	147	201	152	81	74	19	14
14	11	118	151	960	211	136	184	203	75	73	19	13
15	11	67	127	744	235	126	155	146	69	58	19	13
16	11	99	110	389	211	116	150	148	64	49	20	14
17	10	69	96	275	193	108	147	152	60	44	20	16
18	10	47	86	212	210	104	131	147	63	41	19	18
19	10	38	77	171	191	107	122	130	57	39	19	61
20	9.9	33	75	163	183	118	146	114	53	36	18	36
21	9.9	33	132	150	175	171	399	103	49	34	18	25
22	10	55	108	141	163	146	331	98	47	33	18	20
23	10	126	101	158	145	213	232	97	45	32	17	19
24	9.9	122	89	136	130	213	206	84	43	31	17	20
25	9.9	129	81	124	122	718	191	76	41	29	17	19
26	10	93	79	117	126	647	165	71	40	28	17	21
27	9.9	69	73	127	135	437	151	82	40	27	17	55
28	9.9	55	69	159	151	276	165	191	39	26	17	33
29	9.9	46	66	227	208	255	249	177	47	26	16	24
30	10	41	64	202	---	229	236	155	41	24	17	21
31	12	---	69	160	---	207	---	185	---	24	17	---
TOTAL	328.3	1548	7069	6803	6935	6886	7198	4797	2853	1282	592	622
MEAN	10.6	51.6	228	219	239	222	240	155	95.1	41.4	19.1	20.7
MAX	12	129	1110	960	1180	718	594	244	289	74	24	61
MIN	9.9	11	64	49	80	104	122	71	39	24	16	13
AC-FT	651	3070	14020	13490	13760	13660	14280	9510	5660	2540	1170	1230
CFSM	.47	2.31	10.2	9.84	10.7	9.96	10.8	6.94	4.26	1.85	.86	.93
IN.	.55	2.58	11.79	11.35	11.57	11.49	12.01	8.00	4.76	2.14	.99	1.04

CAL YR 1987 TOTAL 33483.3 MEAN 91.7 MAX 1110 MIN 9.9 AC-FT 66410 CFSM 4.11 IN. 55.86
WTR YR 1988 TOTAL 46913.3 MEAN 128 MAX 1180 MIN 9.9 AC-FT 93050 CFSM 5.75 IN. 78.26

e Estimated

SANDY RIVER BASIN

14142500 SANDY RIVER BELOW BULL RUN RIVER, NEAR BULL RUN, OR

LOCATION.--Lat 45°26'57", long 122°14'38", in SW 1/4 sec.30, T.1 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, on left bank 0.1 mi downstream from Bull Run River, 0.2 mi downstream from Dodge Park, 400 ft below city of Portland water conduit crossing Sandy River, and at mile 18.4.

DRAINAGE AREA.--436 mi².

PERIOD OF RECORD.--April 1910 to September 1914, October 1929 to September 1966, May 1984 to current year. Monthly discharge only for some periods, published in WSP 1318.

GAGE.--Water-stage recorder. Elevation of gage is 240 ft, from topographic map. April 1910 to September 1914, staff gage at present site at different datum. October 1929 to September 1966, water-stage recorder at site 0.8 mi downstream at different datum.

REMARKS.--Records good. Flow regulated since 1915 by Bull Run Lake, since 1929 by Bull Run Reservoir Number One (station 14139000), and since 1961 by Bull Run Reservoir Number Two (station 14139900). Some fluctuation caused by Bull Run powerplant of Portland General Electric Company. Portland Water Bureau diverted 173,600 acre-ft from Bull Run River during the 1988 water year, of which 54,060 acre-ft were used for power generation by Portland General Electric Company and returned to Bull Run River.

AVERAGE DISCHARGE.--45 years (water years 1911-14, 1930-66, 1985-88) 2,317 ft³/s, 1,679,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 84,400 ft³/s Dec. 22, 1964, gage height, 22.3 ft, site and datum then in use; minimum discharge, 45 ft³/s Sept. 26, 1962, minimum daily, 63 ft³/s Oct. 12, Nov. 9, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 30,500 ft³/s Dec. 10, gage height, 17.57 ft; minimum discharge, 215 ft³/s Oct. 12-16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	260	253	896	834	1900	2850	3460	3980	3940	681	457	330
2	259	323	2200	794	e1700	2660	4590	3950	3610	740	432	316
3	278	262	10300	787	e1550	2980	8170	3840	4050	857	420	341
4	256	244	7060	763	e1400	3030	6340	3530	3390	744	426	345
5	256	239	4070	758	e1300	3450	4720	3050	2710	723	426	342
6	253	261	3530	705	1290	2910	5480	3020	2250	878	415	343
7	256	235	2690	552	1420	2260	6460	2900	2380	699	413	317
8	256	232	2060	640	2180	2550	4780	2720	2100	653	411	304
9	250	231	8000	1230	7720	3770	4010	2880	1950	661	411	303
10	247	235	19300	5410	13900	3110	3330	2520	1890	636	417	295
11	247	277	7410	4560	7370	2620	3270	2710	1750	660	409	290
12	237	423	4350	3610	4790	2120	3410	2730	1710	654	396	287
13	219	646	3110	2680	4060	2060	3650	2730	1380	989	388	291
14	251	814	2270	9640	3430	1830	3530	3040	1260	1080	400	297
15	218	463	1790	11800	3470	1700	3190	3020	1170	930	365	306
16	256	508	1830	5860	3190	1620	2850	2910	1120	719	400	304
17	231	485	1520	4200	2860	1490	3020	2660	1070	661	407	314
18	232	382	1260	3220	2930	1400	2510	2690	1160	668	388	346
19	232	345	1110	2280	2620	1320	2460	2560	1060	577	344	690
20	226	319	1080	2260	2420	1320	2590	2420	1000	568	397	560
21	227	326	1820	2050	2530	1310	5440	2180	917	584	339	363
22	229	376	1490	1900	2370	1180	4900	2240	928	552	365	345
23	267	692	1260	2310	2190	2620	3770	2100	950	551	355	311
24	231	645	1130	1890	1950	3160	3550	1810	855	521	355	333
25	229	821	1050	1770	1730	8640	3230	1570	833	530	360	313
26	229	641	1030	1860	1730	9640	2920	1410	810	527	373	347
27	227	479	976	2020	1750	8870	2700	1450	790	518	352	506
28	227	433	984	2370	1980	5290	3420	2600	753	516	340	419
29	227	391	913	3480	2530	4690	4300	2550	792	490	351	337
30	262	366	877	3190	---	4180	4250	2650	715	478	341	335
31	233	---	927	2750	---	3510	---	2480	---	469	341	---
TOTAL	7508	12347	98293	88173	90260	100140	120300	82900	49293	20514	11994	10530
MEAN	242	412	3171	2844	3112	3230	4010	2674	1643	662	387	351
MAX	278	821	19300	11800	13900	9640	8170	3980	4050	1080	457	690
MIN	218	231	877	552	1290	1180	2460	1410	715	469	339	287
AC-FT	14890	24490	195000	174900	179000	198600	238600	164400	97770	40690	23790	20890

CAL YR 1987 TOTAL 538332 MEAN 1475 MAX 19300 MIN 218 AC-FT 1068000
WTR YR 1988 TOTAL 692252 MEAN 1891 MAX 19300 MIN 218 AC-FT 1373000

e Estimated

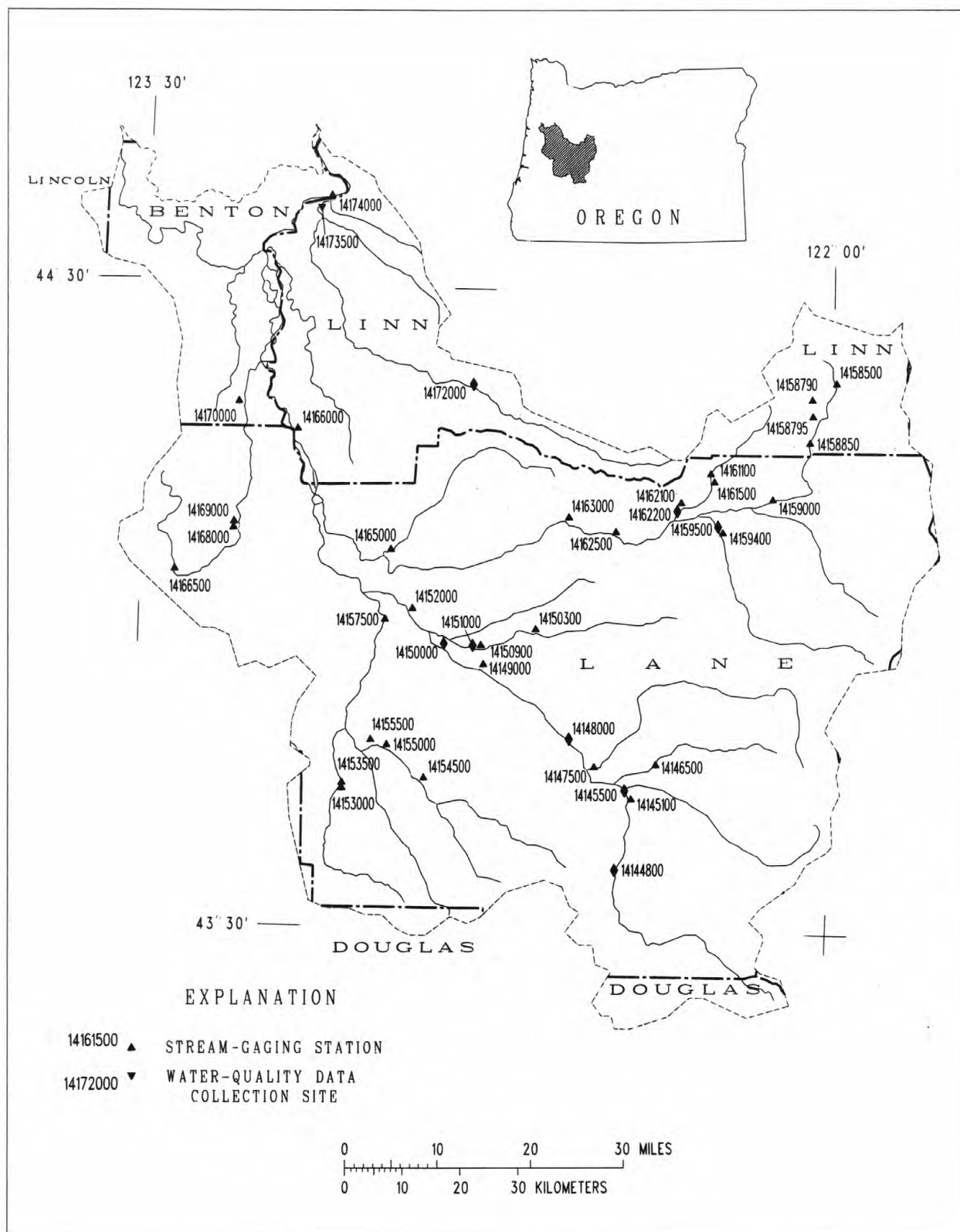


Figure 3.--Location of surface-water and water-quality stations in the Willamette River, upstream from the Luckiamute River, and McKenzie River basins.

MIDDLE FORK WILLAMETTE RIVER BASIN

14144800 MIDDLE FORK WILLAMETTE RIVER NEAR OAKRIDGE, OR

LOCATION.--Lat 43°35'50", long 122°27'20", in NW 1/4 NE 1/4 sec.9, T.23 S., R.3 E., Lane County, Hydrologic Unit 17090001, in Willamette National Forest, on right bank 0.2 mi upstream from Windfall Creek, 8.3 mi upstream from Hills Creek Dam, 10.2 mi south of Oakridge, and at mile 240.8.

DRAINAGE AREA.--258 mi².

PERIOD OF RECORD.--October 1958 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,556.83 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to June 21, 1967, at site 0.5 mi upstream at different datums. June 22, 1967, to June 23, 1971, water-stage recorder at same site at datum 5.00 ft higher.

REMARKS.--Water-discharge records good. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--30 years, 812 ft³/s, 42.74 in/yr, 588,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,800 ft³/s Dec. 22, 1964, gage height, 16.96 ft, from floodmark, site and datum then in use, from rating curve extended above 5,100 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 187 ft³/s Sept. 15, 16, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0430	5,840	9.61	Jan. 10	1130	(a)	*10.25
Jan. 10	1130	*6,080	9.75	Jan. 14	2400	3,530	8.04

Minimum discharge, 209 ft³/s, many days in October and November.

(a) From crest-stage gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	211	219	783	413	840	727	769	1140	1760	419	257	226
2	209	223	1260	401	752	681	846	1070	1610	409	258	222
3	210	215	1110	410	693	697	1450	1130	1520	403	254	219
4	213	215	955	410	649	800	1390	1060	1460	394	250	220
5	213	213	952	407	619	1010	1230	1040	1350	388	250	221
6	209	209	932	405	594	1030	1150	1040	1240	376	250	221
7	209	209	980	400	575	934	1150	1160	1180	366	248	220
8	209	209	801	451	668	881	1050	1190	1110	357	246	219
9	210	219	1840	1280	1520	1060	967	1180	1030	350	244	219
10	211	221	4220	5110	1300	982	905	1160	958	347	243	220
11	209	221	e1950	3370	1140	887	899	1260	877	345	246	220
12	209	317	e1240	1690	1030	823	927	1340	818	340	246	218
13	209	410	e1020	1320	972	773	958	1400	774	334	245	216
14	209	376	e828	2220	879	741	1100	1230	733	337	245	218
15	209	300	794	2680	841	703	1030	1110	707	330	243	217
16	209	318	722	1710	782	663	992	1150	687	321	241	218
17	209	314	656	1300	730	628	951	1110	670	313	241	220
18	209	291	606	1080	692	608	893	1020	635	307	239	220
19	209	267	567	918	652	600	848	931	610	299	238	266
20	209	256	536	828	627	597	857	875	586	294	237	265
21	209	272	576	761	614	636	1080	848	563	287	236	238
22	209	269	610	710	606	619	1110	847	540	286	233	231
23	209	282	572	693	592	783	1000	817	517	285	231	227
24	209	333	529	667	584	774	914	761	505	282	231	224
25	209	348	505	642	585	812	844	719	492	275	231	223
26	209	289	488	655	595	931	797	689	477	269	230	229
27	209	269	475	707	631	1030	795	670	459	268	229	291
28	209	258	467	776	670	949	822	785	444	268	228	248
29	209	248	452	982	695	901	1240	804	462	267	227	233
30	209	259	439	1110	---	840	1300	748	436	262	229	226
31	216	---	430	953	---	783	---	750	---	259	229	---
TOTAL	6500	8049	28295	35459	22127	24883	30264	31034	25210	10037	7455	6855
MEAN	210	268	913	1144	763	803	1009	1001	840	324	240	228
MAX	216	410	4220	5110	1520	1060	1450	1400	1760	419	258	291
MIN	209	209	430	400	575	597	769	670	436	259	227	216
AC-FT	12890	15970	56120	70330	43890	49360	60030	61560	50000	19910	14790	13600
CFSM	.81	1.04	3.54	4.43	2.96	3.11	3.91	3.88	3.26	1.25	.93	.89
IN.	.94	1.16	4.08	5.11	3.19	3.59	4.36	4.47	3.63	1.45	1.07	.99

CAL YR 1987 TOTAL 213314 MEAN 584 MAX 4220 MIN 209 AC-FT 423100 CFSM 2.27 IN. 30.76
WTR YR 1988 TOTAL 236168 MEAN 645 MAX 5110 MIN 209 AC-FT 468400 CFSM 2.50 IN. 34.05

e Estimated

MIDDLE FORK WILLAMETTE RIVER BASIN

75

14145100 HILLS CREEK LAKE NEAR OAKRIDGE, OR

LOCATION.--Lat 43°42'30", long 122°25'25", in NW 1/4 sec.35, T.21 S., R.3 E., Lane County, Hydrologic Unit 17090001, in Willamette National Forest, near right end of Hills Creek Dam on Middle Fork Willamette River, 600 ft downstream from Hills Creek, 3.5 mi southeast of Oakridge, and at mile 232.5.

DRAINAGE AREA.--389 mi².

PERIOD OF RECORD.--August 1961 to current year. Prior to October 1971, published as Hills Creek Reservoir near Oakridge.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam with concrete spillway completed in 1961 by the Corps of Engineers; storage began August 1961. Total capacity is 355,600 acre-ft at elevation 1,543.0 ft, top of spillway gates, and usable capacity is 248,900 acre-ft between elevations 1,414.0 ft, minimum power pool, and 1,543.0 ft. Reservoir used for flood control and power generation. Figures given herein represent total contents.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 354,200 acre-ft June 25, 1971, elevation, 1,542.52 ft; minimum contents, 104,800 acre-ft Jan. 2, 1969, elevation, 1,412.52 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 351,600 acre-ft May 13, elevation, 1,541.57 ft; minimum contents, 155,900 acre-ft Jan. 7, 8, elevation, 1,448.31 ft.

Capacity table (elevation, in feet, and total contents, in acre-feet)

1,410	101,500	1,460	174,900	1,520	297,200
1,420	114,600	1,480	211,000	1,540	347,300
1,440	143,000	1,500	251,900	1,544	358,500

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1517.96	1490.00	1458.25	1449.44	1468.98	1487.49	1512.07	1538.53	1541.35	1541.02	1540.72	1537.51
2	1516.86	1489.25	1458.90	1449.17	1469.84	1488.04	1512.96	1539.00	1540.89	1541.03	1540.68	1537.35
3	1515.77	1488.52	1459.14	1448.92	1470.56	1488.65	1514.74	1539.27	1540.59	1541.03	1540.63	1537.20
4	1514.67	1487.76	1458.88	1448.68	1471.18	1489.41	1516.39	1539.44	1540.52	1541.02	1540.57	1537.04
5	1513.55	1487.01	1458.42	1448.44	1471.76	1490.48	1517.78	1539.60	1540.54	1541.01	1540.50	1536.88
6	1512.38	1486.24	1458.01	1448.33	1472.30	1491.57	1519.06	1539.76	1540.58	1541.02	1540.44	1536.30
7	1511.24	1485.49	1457.69	1448.31	1472.82	1492.51	1520.30	1540.08	1540.73	1541.03	1540.38	1535.37
8	1510.09	1484.72	1456.91	1448.40	1473.49	1493.44	1521.38	1540.47	1540.87	1541.03	1540.32	1534.42
9	1508.92	1483.95	1456.34	1450.08	1475.56	1494.75	1522.32	1540.83	1540.97	1541.03	1540.26	1533.45
10	1507.75	1483.17	1464.78	1460.19	1476.94	1495.90	1523.16	1541.13	1540.99	1541.04	1540.20	1532.48
11	1506.54	1482.43	1466.34	1464.85	1477.80	1496.88	1523.95	1541.49	1541.01	1541.04	1540.15	1531.50
12	1505.33	1481.58	1466.43	1466.13	1478.48	1497.73	1524.77	1541.55	1541.01	1541.05	1540.09	1530.52
13	1504.41	1480.54	1465.87	1465.49	1479.01	1498.50	1525.61	1541.54	1541.02	1541.05	1540.04	1529.54
14	1503.64	1479.35	1464.97	1466.35	1479.37	1499.21	1526.73	1541.28	1541.02	1541.05	1539.98	1528.57
15	1502.91	1478.07	1463.91	1468.49	1479.69	1499.86	1527.70	1540.96	1541.02	1541.05	1539.92	1527.56
16	1502.15	1476.77	1462.70	1468.55	1480.06	1500.43	1528.57	1541.07	1541.02	1541.05	1539.85	1526.55
17	1501.41	1475.49	1461.37	1467.70	1480.66	1500.93	1529.38	1541.13	1541.01	1541.03	1539.74	1525.54
18	1500.65	1474.14	1459.95	1466.33	1481.30	1501.40	1530.07	1541.13	1541.01	1541.03	1539.60	1524.52
19	1499.90	1472.62	1458.44	1465.30	1481.87	1501.86	1530.76	1541.01	1541.01	1541.03	1539.46	1523.58
20	1499.13	1471.19	1456.89	1464.94	1482.43	1502.32	1531.54	1540.98	1541.01	1541.02	1539.33	1522.57
21	1498.35	1469.76	1455.44	1464.54	1482.94	1502.85	1532.43	1540.98	1541.03	1541.02	1539.20	1521.53
22	1497.57	1468.30	1454.11	1464.11	1483.44	1503.34	1532.67	1540.98	1541.03	1541.00	1539.08	1520.49
23	1496.79	1466.96	1452.66	1463.71	1483.91	1504.14	1532.75	1540.99	1541.03	1540.99	1538.91	1519.94
24	1496.01	1465.82	1451.88	1463.47	1484.35	1504.89	1532.72	1540.99	1541.02	1540.97	1538.77	1519.25
25	1495.22	1464.67	1451.42	1463.40	1484.81	1505.72	1532.87	1540.98	1541.02	1540.96	1538.61	1518.17
26	1494.44	1463.42	1450.98	1463.21	1485.24	1506.74	1533.40	1540.96	1541.02	1540.94	1538.45	1517.13
27	1493.67	1462.13	1450.56	1463.07	1485.71	1507.89	1534.03	1540.96	1541.01	1540.91	1538.29	1516.14
28	1492.94	1460.81	1450.25	1463.73	1486.26	1508.89	1534.68	1541.03	1541.04	1540.88	1538.14	1515.07
29	1492.18	1459.45	1450.08	1465.07	1486.85	1509.81	1536.02	1541.03	1541.06	1540.84	1537.98	1513.97
30	1491.45	1458.14	1449.89	1466.67	---	1510.62	1537.42	1540.98	1541.03	1540.80	1537.82	1512.85
31	1490.71	---	1449.69	1467.94	---	1511.35	---	1540.92	---	1540.76	1537.66	---
MAX	1517.96	1490.00	1466.43	1468.55	1486.85	1511.35	1537.42	1541.55	1541.35	1541.05	1540.72	1537.51
MIN	1490.71	1458.14	1449.69	1448.31	1468.98	1487.49	1512.07	1538.53	1540.52	1540.76	1537.66	1512.85
(†)	232300	171800	158000	188600	224400	277100	340600	349800	350100	349400	341200	280500
(‡)	-62700	-60500	-13800	+30600	+35800	+52700	+63500	+9200	+300	-700	-8200	-60700

CAL YR 1987 MAX 1541.83 MIN 1447.95 AC-FT† +2200
WTR YR 1988 MAX 1541.55 MIN 1448.31 AC-FT† -14500

† Contents, in acre-feet, at 2400, on last day of month.

‡ Change in contents, in acre-feet.

MIDDLE FORK WILLAMETTE RIVER BASIN

14145500 MIDDLE FORK WILLAMETTE RIVER ABOVE SALT CREEK, NEAR OAKRIDGE, OR

LOCATION.--Lat 43°43'20", long 122°26'15", in NW 1/4 NE 1/4 sec.27, T.21 S., R.3 E., Lane County, Hydrologic Unit 17090001, in Willamette National Forest, on right bank 90 ft upstream from highway bridge, 0.4 mi upstream from Salt Creek, 1.1 mi downstream from Hills Creek Dam, 2.3 mi southeast of Oakridge, and at mile 231.4.

DRAINAGE AREA.--392 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1913 to September 1914, September 1935 to current year. Monthly discharge only September 1935, published in WSP 1318.

REVISED RECORDS.--WSP 1248: 1914.

GAGE.--Water-stage recorder. Datum of gage is 1,208.01 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Oct. 3, 1913, to Sept. 30, 1914, nonrecording gage and Sept. 1, 1935, to Aug. 18, 1960, water-stage recorder at sites 400 ft and 1,000 ft downstream, respectively, at different datum.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated since 1961 by Hills Creek Lake (station 14145100). No diversions upstream from station.

AVERAGE DISCHARGE.--54 years, 1,152 ft³/s, 39.91 in/yr, 834,600 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,000 ft³/s Dec. 28, 1945, gage height, 12.06 ft, site and datum then in use, from rating curve extended above 13,000 ft³/s; minimum observed discharge, 0.70 ft³/s Sept. 8-11, 13, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,980 ft³/s Jan. 13, gage height, 6.07 ft; minimum discharge, 130 ft³/s Jan. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1530	1020	1450	655	285	312	280	376	2270	466	367	471
2	1550	1020	1740	656	284	315	279	1060	3440	455	362	469
3	1560	1020	1890	654	299	298	281	1450	3100	479	381	468
4	1560	1020	1910	651	318	298	284	1450	2610	476	381	467
5	1580	1020	1910	642	296	303	283	1450	2190	458	382	467
6	1610	1020	1910	549	300	302	286	1450	1940	423	381	958
7	1610	1020	1910	471	310	305	294	1450	1690	429	382	1480
8	1610	1030	1910	470	312	312	290	1460	1530	429	380	1500
9	1610	1040	1910	604	316	318	286	1450	1430	390	370	1510
10	1610	1040	1940	799	600	309	286	1450	1360	398	369	1510
11	1630	1040	1950	1430	853	299	286	1450	1200	398	370	1520
12	1630	1280	1950	1780	869	298	290	1940	1110	399	369	1510
13	1280	1630	1940	2740	870	297	282	2100	986	409	369	1510
14	1050	1700	1940	3290	869	297	280	2090	960	404	369	1490
15	1050	1700	1930	2990	869	295	294	1980	898	405	371	1530
16	1060	1690	1920	2970	719	294	309	1450	852	406	373	1520
17	1060	1670	1920	2920	417	301	309	1460	855	394	433	1520
18	1070	1670	1910	2920	303	299	311	1450	750	377	472	1520
19	1060	1700	1910	2330	313	286	308	1440	751	375	474	1550
20	1070	1690	1900	1510	300	286	310	1180	698	362	464	1570
21	1080	1680	1890	1430	298	285	691	1090	665	365	458	1560
22	1080	1700	1890	1380	308	285	1560	1090	624	364	455	1560
23	1080	1570	1890	1360	310	284	1480	990	613	365	473	966
24	1080	1470	1300	1150	323	277	1480	933	590	365	472	1050
25	1080	1470	939	979	311	270	1000	923	546	366	476	1570
26	1080	1470	916	1070	317	270	502	864	564	367	476	1580
27	1050	1460	869	1140	349	273	374	795	548	366	475	1590
28	1030	1460	787	547	308	278	375	972	479	366	473	1600
29	1020	1460	655	276	309	288	373	1080	546	369	472	1610
30	1020	1450	655	274	---	281	375	1100	566	369	474	1610
31	1020	---	655	273	---	281	---	1180	---	369	471	---
TOTAL	39410	41210	50196	40910	12535	9096	14038	40603	36361	12363	12994	39236
MEAN	1271	1374	1619	1320	432	293	468	1310	1212	399	419	1308
MAX	1630	1700	1950	3290	870	318	1560	2100	3440	479	476	1610
MIN	1020	1020	655	273	284	270	279	376	479	362	362	467
AC-FT	78170	81740	99560	81140	24860	18040	27840	80540	72120	24520	25770	77820
MEAN†	252	357	1395	1817	1055	1150	1535	1459	1217	387	286	291
CFSM†	0.64	0.91	3.56	4.64	2.69	2.93	3.92	3.72	3.10	0.99	0.73	0.74
IN.†	0.74	1.02	4.10	5.34	2.90	3.38	4.37	4.29	3.46	1.14	0.84	0.83
AC-FT†	15470	21240	85760	111700	60660	70740	91340	89740	72420	23820	17570	17320

CAL YR 1987 TOTAL 294936 MEAN 808 MAX 1950 MIN 102 AC-FT 585000 MEAN† 811 CFSM† 2.07 IN.† 28.09 AC-FT† 587200
WTR YR 1988 TOTAL 348952 MEAN 953 MAX 3440 MIN 270 AC-FT 692100 MEAN† 933 CFSM† 2.38 IN.† 32.41 AC-FT† 677600

† Adjusted for change in contents in Hills Creek Lake.

MIDDLE FORK WILLAMETTE RIVER BASIN

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14145500 MIDDLE FORK WILLAMETTE RIVER ABOVE SALT CREEK, NEAR OAKRIDGE, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1960 to current year.

INSTRUMENTATION.--Temperature recorder since October 1960.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 25.0°C Sept. 4, 1960; minimum, 1.5°C Jan. 4, 1961.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 15.5°C Oct. 9-12; minimum, 4.5°C Feb. 3.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	14.0	13.5	13.5	14.0	14.0	14.0	10.0	10.0	10.0	5.5	5.5	5.5
2	14.0	13.5	14.0	14.0	13.5	14.0	10.0	10.0	10.0	5.5	5.5	5.5
3	14.5	14.0	14.0	14.0	13.5	13.5	10.0	9.5	9.5	5.5	5.5	5.5
4	14.5	14.0	14.5	14.0	13.5	14.0	9.5	9.0	9.0	5.5	5.5	5.5
5	15.0	14.5	14.5	14.0	13.5	13.5	9.5	9.5	9.5	5.5	5.5	5.5
6	15.0	14.5	14.5	13.5	13.5	13.5	9.5	9.5	9.5	5.5	5.5	5.5
7	15.0	14.5	14.5	13.5	13.5	13.5	9.5	9.5	9.5	5.5	5.5	5.5
8	15.0	14.5	15.0	13.5	13.5	13.5	9.5	9.0	9.0	5.5	5.5	5.5
9	15.5	14.5	15.0	13.5	13.5	13.5	9.5	9.0	9.0	5.5	5.5	5.5
10	15.5	15.0	15.0	13.5	13.5	13.5	9.0	8.5	8.5	5.5	5.5	5.5
11	15.5	15.0	15.0	13.5	13.5	13.5	8.5	8.0	8.5	5.5	5.5	5.5
12	15.5	15.0	15.0	13.5	13.0	13.5	8.0	7.5	8.0	5.5	5.5	5.5
13	15.0	13.5	14.5	13.5	13.0	13.5	7.5	7.5	7.5	5.5	5.5	5.5
14	14.5	14.0	14.0	13.5	13.0	13.0	7.5	7.5	7.5	5.5	5.5	5.5
15	14.5	14.0	14.5	13.0	13.0	13.0	7.5	7.5	7.5	5.5	5.5	5.5
16	14.5	14.0	14.5	13.0	12.5	12.5	7.5	7.0	7.5	5.5	5.5	5.5
17	14.5	14.0	14.5	12.5	12.5	12.5	7.0	6.5	7.0	5.5	5.5	5.5
18	14.5	14.0	14.5	12.5	12.5	12.5	7.0	7.0	7.0	5.5	5.5	5.5
19	14.5	14.0	14.5	12.5	12.5	12.5	7.0	6.5	6.5	5.5	5.5	5.5
20	14.5	14.0	14.5	12.5	12.0	12.0	6.5	6.5	6.5	5.5	5.5	5.5
21	14.5	14.0	14.0	12.0	12.0	12.0	6.5	6.5	6.5	5.5	5.5	5.5
22	14.5	14.0	14.0	12.0	12.0	12.0	6.5	6.5	6.5	5.5	5.5	5.5
23	14.5	14.0	14.0	12.0	11.5	11.5	6.5	6.5	6.5	5.5	5.5	5.5
24	14.5	14.0	14.0	11.5	11.5	11.5	6.5	6.0	6.0	5.5	5.0	5.5
25	14.5	14.0	14.0	11.5	11.5	11.5	6.0	6.0	6.0	5.5	5.0	5.5
26	14.5	14.0	14.0	11.0	11.0	11.0	6.0	6.0	6.0	6.0	5.0	5.5
27	14.0	14.0	14.0	11.0	11.0	11.0	6.0	6.0	6.0	5.5	5.0	5.5
28	14.5	14.0	14.0	11.0	10.5	10.5	6.0	6.0	6.0	5.5	5.0	5.5
29	14.0	13.5	14.0	10.5	10.5	10.5	6.0	6.0	6.0	5.5	5.5	5.5
30	14.0	14.0	14.0	10.5	10.0	10.5	6.0	6.0	6.0	5.5	5.0	5.5
31	14.0	14.0	14.0	---	---	---	6.0	5.5	6.0	5.5	5.0	5.0
MONTH	15.5	13.5	14.5	14.0	10.0	12.5	10.0	5.5	7.5	6.0	5.0	5.5

14145500 MIDDLE FORK WILLAMETTE RIVER ABOVE SALT CREEK, NEAR OAKRIDGE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	5.5	5.0	5.0	6.0	5.5	5.5	7.0	5.5	6.0	7.0	6.0	6.5
2	5.5	5.0	5.0	6.0	5.0	5.5	6.5	6.0	6.0	7.5	6.0	6.5
3	5.5	4.5	5.0	6.0	5.0	5.5	6.5	5.5	6.0	7.0	6.5	7.0
4	5.5	5.0	5.0	6.0	5.5	5.5	6.5	5.5	6.0	7.5	7.0	7.0
5	5.5	5.0	5.0	6.0	5.5	5.5	7.5	6.0	6.5	7.5	6.5	7.5
6	5.5	5.0	5.0	6.0	5.5	5.5	6.0	5.5	5.5	7.5	6.5	7.0
7	5.5	5.0	5.5	6.5	5.5	6.0	6.5	5.5	6.0	7.5	7.0	7.0
8	5.5	5.5	5.5	6.5	5.5	6.0	7.0	5.5	6.0	7.5	7.0	7.0
9	5.5	5.5	5.5	6.0	5.0	5.5	7.5	5.5	6.0	7.5	7.0	7.5
10	5.5	5.0	5.5	6.0	5.0	5.5	7.5	5.5	6.0	7.5	7.0	7.5
11	6.0	5.5	5.5	6.5	5.5	5.5	7.5	5.5	6.5	8.0	7.0	7.5
12	6.0	5.0	5.5	6.5	5.0	5.5	7.5	6.0	6.5	8.5	7.5	8.0
13	5.5	5.0	5.5	6.5	5.5	5.5	6.5	5.5	6.0	8.5	7.5	8.0
14	5.5	5.0	5.5	6.5	5.0	5.5	7.0	6.0	6.5	8.5	7.5	8.0
15	5.5	5.0	5.0	6.5	5.0	5.5	7.0	5.5	6.0	9.0	7.0	8.0
16	6.0	5.0	5.5	7.0	5.5	6.0	7.0	5.5	6.5	8.0	7.0	7.5
17	5.5	5.0	5.5	7.0	5.5	6.0	7.0	6.0	6.0	7.5	7.0	7.5
18	6.0	5.0	5.5	6.5	5.5	6.0	7.0	6.0	6.0	8.0	7.0	7.5
19	6.5	5.0	5.5	6.5	5.5	6.0	6.5	5.5	6.0	8.0	7.0	7.5
20	6.5	5.0	5.5	6.5	5.5	6.0	6.5	6.0	6.0	8.5	7.0	7.5
21	6.5	5.0	5.5	6.5	5.5	5.5	7.0	6.0	6.5	8.5	6.5	7.5
22	6.5	5.5	5.5	6.5	5.5	6.0	7.0	6.5	7.0	8.0	7.0	7.5
23	6.5	5.5	5.5	6.5	5.5	6.0	7.5	6.5	7.0	8.5	6.5	7.5
24	6.5	5.5	5.5	6.0	5.5	5.5	7.0	6.5	7.0	8.0	6.5	7.5
25	6.5	5.0	5.5	7.0	5.5	6.0	7.5	6.5	7.0	8.5	7.0	7.5
26	6.5	5.5	6.0	6.5	5.5	6.0	7.5	6.0	6.5	8.0	6.5	7.5
27	7.0	5.0	5.5	6.5	5.5	5.5	7.0	6.0	6.5	8.0	7.0	7.5
28	6.0	5.0	5.5	7.0	5.5	6.0	7.5	6.0	6.5	8.0	7.0	7.5
29	6.5	5.5	5.5	6.0	5.5	6.0	7.0	6.0	6.5	8.0	7.0	7.5
30	---	---	---	7.0	5.5	6.0	7.0	5.5	6.0	8.5	7.0	7.5
31	---	---	---	7.0	5.5	6.0	---	---	---	8.0	7.5	7.5
MONTH	7.0	4.5	5.5	7.0	5.0	5.5	7.5	5.5	6.5	9.0	6.0	7.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	9.5	7.5	8.5	8.5	7.5	8.0	9.5	7.5	8.5	10.0	9.0	9.5
2	9.5	9.0	9.5	9.0	7.5	8.0	9.5	8.0	8.5	10.0	9.0	9.5
3	10.0	9.0	9.5	9.0	7.5	8.0	9.5	8.0	8.5	10.0	9.0	9.5
4	10.0	9.0	9.5	9.0	7.5	8.0	9.5	8.5	8.5	10.0	9.0	9.5
5	9.5	9.0	9.0	9.0	7.5	8.0	9.0	8.0	8.5	10.0	9.0	9.5
6	9.5	8.5	9.0	9.0	7.5	8.0	10.0	8.0	9.0	11.0	9.0	10.0
7	9.0	8.0	8.5	9.0	7.5	8.5	9.5	8.0	8.5	11.0	10.5	10.5
8	9.0	8.0	8.5	9.0	8.0	8.5	9.5	8.0	9.0	11.0	10.5	10.5
9	8.5	8.0	8.5	9.0	8.0	8.5	9.5	8.0	9.0	11.5	10.0	11.0
10	9.0	8.0	8.5	9.0	8.0	8.5	9.5	8.0	9.0	11.5	10.5	11.0
11	9.0	8.0	8.5	8.5	7.5	8.0	10.0	8.0	9.0	11.0	10.5	11.0
12	9.0	7.5	8.5	9.0	8.0	8.5	9.5	8.0	9.0	11.5	11.0	11.0
13	9.0	7.5	8.5	9.0	7.5	8.5	9.0	8.0	8.5	11.5	11.0	11.0
14	9.0	7.5	8.5	9.0	8.0	8.5	10.0	8.5	9.0	11.5	11.0	11.0
15	9.0	7.5	8.5	9.0	7.5	8.5	9.5	8.5	9.0	11.5	11.0	11.5
16	9.0	7.5	8.5	9.0	8.0	8.5	9.5	8.0	9.0	12.0	11.5	11.5
17	9.0	7.5	8.5	9.0	8.0	8.5	9.5	8.5	9.0	12.0	11.5	11.5
18	9.0	7.5	8.5	9.5	8.0	8.5	10.0	8.5	9.0	12.0	11.5	12.0
19	9.0	7.5	8.5	9.0	8.0	8.5	10.0	8.5	9.0	12.5	12.0	12.0
20	9.0	7.5	8.5	9.5	8.0	8.5	9.5	8.5	9.0	12.5	12.0	12.5
21	9.0	7.5	8.0	9.5	8.0	8.5	10.0	8.5	9.0	12.5	12.0	12.5
22	8.5	7.5	8.0	9.5	8.0	8.5	10.0	8.5	9.0	13.0	12.0	12.5
23	8.5	7.5	8.5	9.5	7.5	8.5	10.0	8.5	9.0	12.5	11.0	11.5
24	9.0	7.5	8.0	9.5	8.0	8.5	10.0	9.0	9.0	13.0	11.0	12.0
25	9.0	7.5	8.0	9.5	8.0	8.5	9.5	9.0	9.0	14.0	12.5	13.0
26	8.5	7.5	8.0	9.5	8.0	8.5	10.0	9.0	9.0	13.5	13.0	13.0
27	8.5	8.0	8.0	9.5	8.0	8.5	10.0	8.5	9.0	14.0	13.5	13.5
28	8.5	7.5	8.0	10.0	8.0	8.5	10.0	9.0	9.0	14.0	14.0	14.0
29	8.5	7.5	8.0	10.0	8.0	8.5	10.0	9.0	9.5	14.0	13.5	14.0
30	9.0	7.5	8.5	10.0	8.0	8.5	10.0	8.5	9.5	14.5	14.0	14.0
31	---	---	---	10.0	8.0	8.5	10.0	8.5	9.5	---	---	---
MONTH	10.0	7.5	8.5	10.0	7.5	8.5	10.0	7.5	9.0	14.5	9.0	11.5
YEAR	15.5	4.5	8.5									

WILLAMETTE RIVER BASIN

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14146500 SALMON CREEK NEAR OAKRIDGE, OR

LOCATION.--Lat 43°45'45", long 122°22'18", in NE 1/4 sec.7, T.21 S., R.4 E., Lane County, Hydrologic Unit 17090001, in Willamette National Forest, on right bank 190 ft upstream from Salmon Creek Falls, 0.1 mi upstream from Needle Creek, 4.6 mi east of Oakridge, and at mile 5.84.

DRAINAGE AREA.--117 mi², at measuring cable 0.25 mi downstream from gage.

PERIOD OF RECORD.--October to November 1909 (gage heights and one discharge measurement only), February 1913 to October 1919, October 1933 to September 1985, October 1986 to current year. Monthly discharge only for some periods, published in WSP 1318. Published as Kelsey River near Hazeldell and Salmon Creek near Hazeldell, 1909.

REVISED RECORDS.--WSP 794: 1934(M). WSP 814: Drainage area. WSP 1124: 1935, 1942(M), 1943, 1946(M). WSP 1248: 1915, 1918. WDR OR-71-1: 1968, 1969(M,P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,462.36 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1914, nonrecording gage at several sites within 4 mi of present site at various datums. Oct. 1, 1914, to Oct. 14, 1919, water-stage recorder at site 1.8 mi downstream at different datum. Nov. 5, 1933, to Oct. 27, 1964, water-stage recorder at site 0.8 mi downstream at datum 40.53 ft lower. Oct. 28, 1964, to Aug. 27, 1965, nonrecording gage at site 0.6 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station. All records given herein are for measuring cable site.

AVERAGE DISCHARGE.--60 years (water years 1914-19, 1934-85, 1987-88), 425 ft³/s, 49.33 in/yr, 307,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft³/s Dec. 22, 1964, gage height, 9.15 ft, from floodmark, site and datum then in use, from rating curve extended above 2,100 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 63 ft³/s Jan. 8, 1937.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0700	1,790	3.88	Jan. 10	1900	*1,830	*3.95

Minimum discharge, 95 ft³/s Nov. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP		
1	103	105	350	187	377	350	491	687	836	229	154	123		
2	103	106	533	180	343	330	550	647	837	223	153	123		
3	103	101	483	181	316	371	808	678	905	220	151	123		
4	103	100	465	179	296	419	808	648	874	214	150	122		
5	103	97	435	174	283	492	735	621	795	213	148	122		
6	103	97	408	171	272	492	752	588	715	207	148	123		
7	101	97	404	171	263	443	791	634	660	205	146	121		
8	101	97	348	181	352	430	704	657	608	200	145	121		
9	101	100	698	418	901	503	633	654	559	197	143	121		
10	101	99	1480	1620	978	473	579	652	515	194	143	118		
11	99	103	968	1310	816	432	559	719	472	191	143	118		
12	99	152	644	870	685	405	559	779	439	191	143	118		
13	99	171	487	671	611	381	560	790	417	188	143	118		
14	99	166	407	914	522	370	645	704	397	190	142	118		
15	99	140	359	1140	497	352	592	634	383	186	140	118		
16	99	160	319	849	457	331	550	672	374	182	138	118		
17	99	149	287	654	426	315	518	661	360	179	139	118		
18	99	138	264	543	404	304	487	595	341	178	138	118		
19	99	130	247	460	379	296	465	538	325	175	135	150		
20	99	128	234	422	365	295	505	501	310	172	135	139		
21	99	155	321	387	353	317	699	484	297	170	135	126		
22	99	149	340	358	341	310	708	486	286	167	132	123		
23	99	162	304	346	326	372	626	459	276	165	130	121		
24	99	181	268	329	318	372	556	422	265	165	130	118		
25	99	187	247	317	311	517	506	399	258	164	130	116		
26	99	163	236	320	310	643	480	379	250	161	128	124		
27	97	151	227	342	316	719	492	370	245	160	128	169		
28	97	145	217	374	328	634	510	408	245	159	128	137		
29	97	140	208	425	342	588	724	421	259	156	126	127		
30	98	143	201	450	---	535	730	404	239	156	126	122		
31	102	---	198	414	---	492	---	413	---	156	125	---		
TOTAL	3097	4012	12587	15357	12488	13283	18322	17704	13742	5713	4295	3733		
MEAN	99.9	134	406	495	431	428	611	571	458	184	139	124		
MAX	103	187	1480	1620	978	719	808	790	905	229	154	169		
MIN	97	97	198	171	263	295	465	370	239	156	125	116		
AC-FT	6140	7960	24970	30460	24770	26350	36340	35120	27260	11330	8520	7400		
CFSM	.85	1.14	3.47	4.23	3.68	3.66	5.22	4.88	3.92	1.58	1.18	1.06		
IN.	.98	1.28	4.00	4.88	3.97	4.22	5.83	5.63	4.37	1.82	1.37	1.19		
CAL YR 1987	TOTAL	99026	MEAN	271	MAX	1480	MIN	97	AC-FT	196400	CFSM	2.32	IN.	31.49
WTR YR 1988	TOTAL	124333	MEAN	340	MAX	1620	MIN	97	AC-FT	246600	CFSM	2.90	IN.	39.53

WILLAMETTE RIVER BASIN

14147500 NORTH FORK OF MIDDLE FORK WILLAMETTE RIVER NEAR OAKRIDGE, OR

LOCATION.--Lat 43°45'25", long 122°30'15", in SW 1/4 sec.7, T.21 S., R.3 E., Lane County, Hydrologic Unit 17090001, on left bank 2.5 mi northwest of Oakridge, and at mile 1.0.

DRAINAGE AREA.--246 mi², at measuring section 0.5 mi downstream.

PERIOD OF RECORD.--October 1909 to March 1916, September 1935 to September 1985, October 1986 to current year. Monthly discharge only for some periods, published in WSP 1318. Prior to October 1912, published as "near Hazeldell."

REVISED RECORDS.--WSP 1248: 1914-16.

GAGE.--Water-stage recorder. Datum of gage is 1,029.6 ft above National Geodetic Vertical Datum of 1929 (river profile survey). Oct. 1, 1909, to Mar. 31, 1916, water-stage recorder or nonrecording gage at several sites within 0.8 mi of present site at various datums. Sept. 10, 1935, to Oct. 3, 1938, nonrecording gage at present site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Slight regulation by Waldo Lake; occasional fluctuations during low-water periods caused by log-ponds upstream from station. No diversions upstream from station. All records given herein are for measuring site.

AVERAGE DISCHARGE.--58 years (water years 1910-15, 1936-85, 1987-88), 789 ft³/s, 43.56 in/yr, 571,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,400 ft³/s Dec. 22, 1964, gage height, 19.14 ft, from floodmark, from rating curve extended above 7,100 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 22 ft³/s Aug. 20, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0800	4,680	7.03	Jan. 10	0900	*5,040	*7.31

Minimum discharge, 100 ft³/s many days in October.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106	109	475	347	907	741	981	1350	1580	362	176	121
2	105	113	1070	329	808	700	1080	1290	1580	350	174	119
3	106	109	1180	329	737	771	1810	1360	1560	345	171	117
4	106	106	1080	323	684	852	1810	1310	1480	333	167	116
5	106	105	881	317	643	1010	1580	1270	1330	326	164	117
6	104	104	749	310	606	1060	1510	1230	1220	319	164	116
7	104	104	759	312	580	949	1560	1380	1160	306	161	116
8	104	104	650	348	765	891	1380	1400	1100	297	159	115
9	104	107	1780	1100	1920	1110	1240	1360	1020	287	157	115
10	102	107	3760	4550	2020	1050	1140	1290	955	280	155	114
11	101	110	2220	3390	1700	931	1100	1350	871	275	154	114
12	101	184	1410	2110	1430	856	1090	1390	803	274	153	e113
13	101	271	1050	1570	1350	794	1080	1430	746	266	153	e113
14	102	297	856	2260	1170	747	1240	1320	699	266	153	e113
15	102	198	735	2800	1120	703	1170	1190	662	260	149	e112
16	102	235	651	2100	1030	663	1080	1190	628	252	147	e112
17	102	225	574	1610	946	620	1000	1220	598	244	146	e112
18	102	187	515	1310	897	594	932	1100	568	237	144	e128
19	102	165	471	1090	831	581	890	998	538	231	142	e142
20	100	155	440	989	786	576	933	924	513	224	139	e130
21	101	199	623	916	757	618	1340	874	488	218	138	e122
22	101	205	661	839	733	615	1360	849	467	213	135	e119
23	101	241	581	809	703	799	1190	812	447	209	132	e117
24	102	262	515	763	681	817	1060	752	426	206	129	e115
25	102	316	471	721	666	1130	965	703	411	201	128	e117
26	102	230	445	720	666	1370	898	667	400	196	127	e130
27	101	197	419	764	685	1570	915	639	387	192	126	e160
28	100	177	404	857	710	1330	958	703	382	187	125	e130
29	100	165	385	1010	730	1220	1310	751	434	185	123	e122
30	102	162	370	1170	---	1110	1410	746	384	182	123	e120
31	109	---	364	1020	---	1010	---	735	---	179	123	---
TOTAL	3183	5249	26544	37083	27261	27788	36012	33583	23837	7902	4537	3607
MEAN	103	175	856	1196	940	896	1200	1083	795	255	146	120
MAX	109	316	3760	4550	2020	1570	1810	1430	1580	362	176	160
MIN	100	104	364	310	580	576	890	639	382	179	123	112
AC-FT	6310	10410	52650	73550	54070	55120	71430	66610	47280	15670	9000	7150
CFSM	.42	.71	3.48	4.86	3.82	3.64	4.88	4.40	3.23	1.04	.59	.49
IN.	.48	.79	4.01	5.61	4.12	4.20	5.45	5.08	3.60	1.19	.69	.55

CAL YR 1987 TOTAL 182783 MEAN 501 MAX 3760 MIN 100 AC-FT 362600 CFSM 2.04 IN. 27.64
WTR YR 1988 TOTAL 236586 MEAN 646 MAX 4550 MIN 100 AC-FT 469300 CFSM 2.63 IN. 35.78

e Estimated

MIDDLE FORK WILLAMETTE RIVER BASIN

81

14148000 MIDDLE FORK WILLAMETTE RIVER BELOW NORTH FORK, NEAR OAKRIDGE, OR

LOCATION.--Lat 43°48'05", long 122°33'35", in SW 1/4 sec.27, T.20 S., R.2 E., Lane County, Hydrologic Unit 17090001, on left bank 0.5 mi downstream from Whitehead Creek, 4.2 mi downstream from North Fork of Middle Fork Willamette River, 7.0 mi northwest of Oakridge, and at mile 220.2.

DRAINAGE AREA.--924 mi².

PERIOD OF RECORD.--March 1911 to September 1912, July 1923 to current year. Monthly discharge only for some periods, published in WSP 1318. Published as "near Hazeldell" 1911-12 and as "at Eula" 1923-50.

REVISED RECORDS.--WSP 694: 1925-28. WSP 814: Drainage area at Eula. WSP 1248: 1924, 1925(M), 1926-28, 1929(M), 1930, 1933, 1946(M). WSP 1398: 1927(M). WSP 1638: 1936(M).

GAGE.--Water-stage recorder. Datum of gage is 934.76 ft above National Geodetic Vertical Datum of 1929. Mar. 22, 1911, to Sept. 30, 1912, nonrecording gage at site 4.0 mi upstream, just downstream from North Fork at different datum. July 1, 1923, to Aug. 11, 1935, nonrecording gage and Aug. 12, 1935, to Sept. 30, 1950, water-stage recorder at site 4.0 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1961 by Hills Creek Lake (station 14145100); slight regulation at times by logponds upstream from station. No diversion upstream from station.

AVERAGE DISCHARGE.--66 years, 2,778 ft³/s, 2,013,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 81,800 ft³/s Dec. 28, 1945, gage height, 18.8 ft, from floodmark, site and datum then in use, from rating curve extended above 39,000 ft³/s; minimum discharge, 322 ft³/s Aug. 30, 1961, caused by closing outlet gates at Hills Creek Dam.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1861 and prior to beginning of record, 17.0 ft in February 1890 at site used 1923-50, from information by local resident, discharge, about 55,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,500 ft³/s Dec. 10, gage height, 5.94 ft; minimum discharge, 769 ft³/s Aug. 17, 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1860	1370	2590	1450	2070	1760	2330	3370	5280	1460	838	838
2	1890	1380	3990	1410	1880	1690	2450	3800	6840	1320	832	828
3	1890	1370	4230	1420	1780	1790	3700	4400	6530	1270	820	822
4	1890	1360	4040	1410	1700	1950	3880	4250	5950	1290	831	822
5	1900	1360	3780	1390	1600	2330	3470	4130	5300	1270	829	824
6	1920	1360	3560	1300	1540	2390	3350	4010	4770	1240	826	1220
7	1920	1360	3640	1210	1500	2220	3510	4280	4300	1180	825	1840
8	1920	1370	3340	1250	1740	2110	3130	4330	3990	1160	821	1870
9	1920	1380	4990	2510	3710	2620	2840	4240	3690	1130	818	1870
10	1910	1390	9310	9700	4260	2520	2620	4090	3480	1080	797	1880
11	1920	1390	6310	8230	4080	2270	2520	4200	3130	1070	789	1880
12	1920	1740	4780	6040	3610	2110	2510	4780	2910	1060	791	1880
13	1670	2220	4050	5650	3400	1970	2500	5160	2650	1050	789	1870
14	1400	2380	3660	7460	3090	1880	2840	4900	2520	1050	788	1860
15	1400	2220	3410	8750	2990	1790	2720	4540	2410	1050	789	1890
16	1400	2290	3230	7100	2710	1690	2580	4030	2300	1040	782	1890
17	1400	2230	3090	6100	2270	1610	2450	4080	2240	1020	781	1890
18	1400	2150	2970	5490	2050	1550	2330	3820	2070	995	822	1890
19	1400	2120	2880	4580	1940	1510	2220	3600	1990	961	873	2000
20	1410	2100	2810	3480	1850	1490	2330	3220	1880	944	859	2040
21	1410	2190	3110	3250	1790	1580	3580	3030	1790	909	842	1970
22	1420	2200	3250	3070	1760	1580	4670	3020	1710	902	842	1950
23	1420	2170	3120	3000	1700	1920	4160	2860	1680	892	848	1470
24	1420	2120	2530	2730	1660	1950	3850	2640	1650	884	847	1370
25	1420	2230	2000	2480	1610	2410	3220	2520	1580	880	850	1940
26	1420	2050	1930	2450	1610	2850	2530	2390	1490	868	847	1960
27	1390	1990	1810	2730	1670	3310	2380	2270	1490	858	844	2140
28	1360	1940	1720	2270	1670	2940	2440	2510	1450	848	842	2060
29	1360	1910	1530	2160	1710	2750	3300	2860	1360	843	841	2010
30	1360	1900	1500	2470	---	2570	3530	2780	1510	842	842	1990
31	1370	---	1480	2250	---	2370	---	2810	---	841	841	---
TOTAL	49690	55240	104640	114790	64950	65480	89940	112920	89940	32207	25586	50764
MEAN	1603	1841	3375	3703	2240	2112	2998	3643	2998	1039	825	1692
MAX	1920	2380	9310	9700	4260	3310	4670	5160	6840	1460	873	2140
MIN	1360	1360	1480	1210	1500	1490	2220	2270	1360	841	781	822
AC-FT	98560	109600	207600	227700	128800	129900	178400	224000	178400	63880	50750	100700

CAL YR 1987 TOTAL 695582 MEAN 1906 MAX 9310 MIN 607 AC-FT 1380000
WTR YR 1988 TOTAL 856147 MEAN 2339 MAX 9700 MIN 781 AC-FT 1698000

MIDDLE FORK WILLAMETTE RIVER BASIN

14149000 LOOKOUT POINT LAKE NEAR LOWELL, OR

LOCATION.--Lat 43°54'50", long 122°45'00", in SE 1/4 sec.13, T.19 S., R.1 W., Lane County, Hydrologic Unit 17090001, in elevator house at right end of spillway section of dam on Middle Fork Willamette River, 1.5 mi east of Lowell, and at mile 206.9.

DRAINAGE AREA.--991 mi².

PERIOD OF RECORD.--November 1953 to current year. Prior to October 1971, published as Lookout Point Reservoir near Lowell.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Nov. 7, 1953, to Dec. 4, 1954, approximate elevations obtained from reference marks and Dec. 5, 1954, to Feb. 4, 1955, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam with concrete gate and spillway section, completed in 1954 by Corps of Engineers. Planned storage began in November 1953. Total capacity is 455,800 acre-ft at elevation 929 ft, and usable capacity is 349,200 acre-ft between elevations 819 ft and 929 ft, top of spillway gates. Reservoir used for flood control, improvement of navigation, power generation, pollution abatement, and other purposes. Figures given herein represent total contents.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 464,900 acre-ft Dec. 26, 1964, elevation, 931.09 ft; minimum contents observed since first filling, 91,450 acre-ft Dec. 1, 1954, elevation, 811.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 451,600 acre-ft June 7, elevation, 928.02 ft; minimum contents, 118,800 acre-ft Dec. 31, elevation, 825.04 ft.

Capacity table (elevation, in feet, and total contents, in acre-feet)

820	108,600	860	205,500	900	338,900
830	129,500	870	235,500	910	377,400
840	152,500	880	267,800	920	417,800
850	177,700	890	302,300	930	460,200

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	844.49	849.30	849.77	825.94	840.91	866.42	885.78	920.54	926.30	925.98	915.20	895.23
2	844.58	849.62	850.28	826.26	841.56	866.85	886.71	921.75	926.06	925.89	914.64	894.43
3	844.70	849.95	850.97	826.63	842.11	867.32	888.43	922.45	925.77	925.79	914.09	893.66
4	844.82	850.26	851.31	826.93	842.62	867.99	890.23	922.74	926.47	925.65	913.60	892.85
5	844.92	850.53	851.27	827.17	842.96	868.87	891.72	923.00	927.07	925.51	913.13	892.00
6	845.06	850.68	851.10	827.07	843.33	869.94	893.19	923.69	927.67	925.35	912.68	891.43
7	845.16	850.68	850.92	827.14	843.69	870.27	894.72	924.50	927.16	925.16	912.21	891.22
8	845.36	850.62	850.56	827.31	844.19	870.14	895.98	925.39	926.08	924.98	911.73	890.99
9	845.50	850.61	851.71	828.64	846.52	870.46	897.03	925.69	926.11	924.71	911.24	890.73
10	845.59	850.54	856.58	837.96	849.13	870.73	897.93	925.82	926.10	924.43	910.73	890.48
11	845.70	850.35	858.08	843.68	851.62	871.06	898.78	925.96	926.18	924.16	910.16	890.24
12	845.81	849.78	857.64	845.32	853.58	871.82	899.59	926.45	926.15	923.87	909.49	890.14
13	845.76	849.85	856.47	844.02	855.34	872.44	900.45	926.85	925.93	923.58	908.77	889.93
14	845.77	850.66	854.92	844.08	856.78	873.00	901.54	926.54	925.96	923.30	908.08	889.72
15	845.75	851.40	853.24	847.42	858.16	873.49	902.54	926.03	926.77	923.00	907.35	889.52
16	845.71	852.08	851.88	847.18	859.34	873.86	903.39	925.34	926.48	922.63	906.67	889.31
17	845.94	852.71	849.18	845.81	860.17	874.23	904.18	925.07	926.71	922.20	905.99	889.15
18	846.08	853.28	846.99	843.85	860.82	874.54	904.83	925.14	926.73	921.79	905.31	888.98
19	846.19	853.61	844.61	841.24	861.37	874.82	905.49	925.27	926.71	921.39	904.63	888.98
20	846.34	853.65	842.10	840.61	861.91	875.09	906.27	925.39	926.65	920.98	904.00	888.92
21	846.46	853.79	839.96	839.97	862.48	875.46	907.89	925.64	926.48	920.57	903.35	888.82
22	846.61	853.96	839.05	839.04	862.98	875.86	909.99	925.87	926.42	920.16	902.70	888.70
23	846.77	854.13	837.57	838.14	863.34	876.57	911.71	926.04	926.39	919.74	902.02	888.32
24	847.00	853.93	836.01	837.03	863.89	877.25	913.25	926.07	926.34	919.24	901.27	887.72
25	847.22	853.47	834.02	835.62	864.28	878.18	914.38	926.14	926.23	918.78	900.54	887.55
26	847.37	852.82	831.73	835.22	864.65	879.42	915.16	926.18	926.14	918.29	899.79	887.42
27	847.72	852.10	829.71	835.87	865.12	880.94	915.83	926.14	926.14	917.81	899.05	887.39
28	848.02	851.33	827.42	836.65	865.51	882.15	916.58	926.05	926.15	917.31	898.36	887.29
29	848.37	850.52	825.82	837.72	865.89	883.25	917.85	925.95	926.13	916.79	897.58	887.15
30	848.66	849.77	825.41	839.03	---	884.20	919.20	925.76	926.08	916.28	896.80	886.99
31	848.95	---	825.58	840.07	---	885.01	---	925.49	---	915.77	896.02	---
MAX	848.95	854.13	858.08	847.42	865.89	885.01	919.20	926.85	927.67	925.98	915.20	895.23
MIN	844.49	849.30	825.41	825.94	840.91	866.42	885.78	920.54	925.77	915.77	896.02	886.99
(†)	175000	177100	120000	152600	222900	284900	414500	440800	443300	400500	324100	291700
(‡)	+11700	+2100	-57100	+32600	+73000	+62000	+129600	+26300	+2500	-42800	-76400	-32400

CAL YR 1987 MAX 897.28 MIN 824.26 AC-FT† -4200
WTR YR 1988 MAX 927.67 MIN 825.41 AC-FT‡ +128400

† Contents, in acre-feet, at 2400, on last day on month.
‡ Change in contents, in acre-feet.

MIDDLE FORK WILLAMETTE RIVER BASIN

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14150000 MIDDLE FORK WILLAMETTE RIVER NEAR DEXTER, OR

LOCATION.--Lat 43°56'45", long 122°50'10", in SE 1/4 NW 1/4 sec.5, T.19 S., R.1 W., Lane County, Hydrologic Unit 17090001, on right bank 0.6 mi upstream from Lost Creek, 2.0 mi northwest of Dexter, 2.6 mi downstream from Dexter Dam, and at mile 201.2.

DRAINAGE AREA.--1,001 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1946 to September 1954 (published as "at Lowell"), June 1955 to current year. Monthly discharge only for October 1954 to June 1955, published in WSP 1738.

REVISED RECORDS.--WSP 1638: 1948(P).

GAGE.--Water-stage recorder. Datum of gage is 592.30 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Aug. 23, 1950, nonrecording gage and Aug. 23, 1950, to Sept. 30, 1954, at site 4.0 mi upstream at different datum, and June 9, 1955, to Feb. 18, 1977, at datum 3.00 ft higher.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated since 1953 by Lookout Point Lake (station 14149000), since 1955 by Dexter Lake (re-regulating), and since 1961 by Hills Creek Lake (station 14145100).

AVERAGE DISCHARGE.--42 years, 3,144 ft³/s, 2,278,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,600 ft³/s Jan. 18, 1953, gage height, 12.46 ft, site and datum then in use, from rating curve extended above 33,000 ft³/s; minimum daily discharge, 100 ft³/s Nov. 25, 1960.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 13.9 ft Dec. 28, 1945, former site and datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,690 ft³/s Jan. 14, gage height, 8.34 ft; minimum discharge, 806 ft³/s Mar. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1740	959	3020	1140	1150	1110	1110	1140	4520	1560	1900	2210
2	1730	953	3810	1120	1150	1120	1110	1770	8240	1540	1890	2210
3	1740	957	4520	1120	1150	1110	1120	3610	8400	1540	1850	2220
4	1740	955	4440	1130	1150	1110	1110	4470	5280	1540	1740	2230
5	1740	961	4380	1140	1160	1120	1120	4360	4430	1540	1640	2230
6	1740	1170	4380	1370	1150	1120	1120	3240	4370	1540	1680	2240
7	1740	1390	4390	1140	1150	1870	1130	3190	5720	1540	1700	2230
8	1740	1410	4380	1120	1150	2580	1140	3150	7230	1530	1700	2240
9	1740	1420	4380	1480	1160	2590	1130	4210	4340	1610	1670	2270
10	1740	1460	4400	1560	1150	2590	1120	4500	3720	1630	1670	2280
11	1740	1790	4950	2900	1210	2000	1120	4500	3380	1630	1860	2190
12	1740	2470	6090	4700	1210	1120	1090	4510	3380	1640	2080	2150
13	1740	2230	6110	7870	1220	1130	1090	5000	3390	1630	2090	2170
14	1420	1430	6120	8610	1220	1110	1120	6120	2560	1630	2090	2180
15	1420	1440	6130	5830	1220	1120	1150	6140	1890	1620	2070	2180
16	1420	1440	6100	8570	1220	1110	1150	6120	1880	1790	2080	2190
17	1210	1440	6150	8620	1190	1100	1150	5260	1880	1810	2090	2180
18	1230	1430	6150	8640	1190	1100	1160	4220	2110	1790	2070	2200
19	1230	1690	6160	8550	1190	1100	1120	3810	2100	1710	2050	2190
20	1230	1960	6160	4830	1070	1100	1150	3170	2110	1700	2000	2150
21	1230	1990	6080	4590	1050	1090	1190	2700	2290	1690	2000	2160
22	1230	2000	5300	4590	1050	1090	1190	2700	1870	1690	2000	2150
23	1230	2000	5140	4580	1060	1100	1170	2720	1680	1770	2040	2210
24	1120	2480	4870	4580	1060	1030	1180	2700	1710	1780	2200	2280
25	1120	2900	4610	4320	1050	1120	1180	2580	1750	1790	2180	2290
26	1120	2970	4580	3210	1060	1120	1130	2480	1740	1790	2180	2290
27	999	2990	4560	2040	1090	1120	1130	2480	1530	1800	2180	2300
28	955	3000	4550	1530	1100	1120	1150	3070	1410	1800	2120	2290
29	983	3010	3320	1190	1100	1120	1130	3540	1600	1750	2240	2280
30	965	3010	2030	1140	---	1120	1130	3650	1560	1750	2220	2280
31	960	---	1370	1150	---	1110	---	4180	---	1760	2220	---
TOTAL	43682	55305	148630	114360	33080	40450	34090	115290	98070	51890	61500	66670
MEAN	1409	1843	4795	3689	1141	1305	1136	3719	3269	1674	1984	2222
MAX	1740	3010	6160	8640	1220	2590	1190	6140	8400	1810	2240	2300
MIN	955	953	1370	1120	1050	1030	1090	1140	1410	1530	1640	2150
AC-FT	86640	109700	294800	226800	65610	80230	67620	228700	194500	102900	122000	132200

CAL YR 1987 TOTAL 733877 MEAN 2011 MAX 6160 MIN 953 AC-FT 1456000
WTR YR 1988 TOTAL 863017 MEAN 2358 MAX 8640 MIN 953 AC-FT 1712000

MIDDLE FORK WILLAMETTE RIVER BASIN

14150000 MIDDLE FORK WILLAMETTE RIVER NEAR DEXTER, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1955 to current year.

INSTRUMENTATION.--Temperature recorder since August 1955.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 19.0°C Sept. 6-9, 1987; minimum, 3.0°C Jan. 2, 7-9, Feb. 2-4, 1979.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 18.0°C Oct. 1, 4, 5; minimum, 5.0°C Feb. 3-7.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	18.0	16.0	17.0	15.0	14.5	15.0	10.5	10.5	10.5	6.0	5.5	6.0
2	17.5	16.5	17.0	15.0	14.5	15.0	10.5	10.5	10.5	6.0	5.5	6.0
3	17.5	16.0	16.5	15.0	14.5	14.5	11.0	10.5	11.0	6.0	5.5	5.5
4	18.0	16.0	17.0	15.0	14.0	14.5	11.0	10.5	10.5	5.5	5.5	5.5
5	18.0	16.0	17.0	14.5	14.0	14.0	10.5	10.5	10.5	5.5	5.5	5.5
6	17.5	16.0	16.5	14.5	14.0	14.0	10.5	10.5	10.5	6.0	5.5	5.5
7	17.5	16.0	16.5	15.0	14.0	14.5	10.5	10.0	10.5	5.5	5.5	5.5
8	17.5	16.5	16.5	14.5	14.0	14.0	10.5	10.0	10.0	6.0	5.5	5.5
9	17.5	16.0	16.5	14.5	14.0	14.0	10.5	10.0	10.0	6.0	5.5	5.5
10	17.5	16.0	16.5	14.0	13.5	13.5	10.5	10.0	10.0	6.5	5.5	6.0
11	17.0	15.5	16.0	13.5	13.5	13.5	10.0	9.5	10.0	6.5	5.5	6.0
12	17.0	15.5	16.0	14.0	13.5	13.5	9.5	9.0	9.5	6.5	5.5	6.0
13	17.0	15.5	16.0	13.5	13.5	13.5	9.0	9.0	9.0	5.5	5.5	5.5
14	17.0	15.5	16.0	13.5	13.0	13.5	9.0	8.5	8.5	6.0	5.5	5.5
15	16.5	15.5	16.0	13.0	12.5	13.0	8.5	8.5	8.5	6.0	5.5	5.5
16	16.5	15.0	15.5	13.0	12.5	12.5	8.5	8.0	8.0	5.5	5.5	5.5
17	16.5	15.0	15.5	13.0	12.0	12.5	8.0	8.0	8.0	5.5	5.5	5.5
18	16.0	14.5	15.5	12.5	12.0	12.5	8.0	7.5	8.0	5.5	5.5	5.5
19	16.0	14.5	15.5	12.5	12.0	12.0	7.5	7.5	7.5	5.5	5.5	5.5
20	16.0	14.5	15.0	12.0	12.0	12.0	7.5	7.5	7.5	6.0	5.5	6.0
21	16.0	14.5	15.0	12.5	12.0	12.0	7.5	7.5	7.5	6.0	5.5	6.0
22	16.0	14.5	15.0	12.5	12.0	12.0	7.5	7.5	7.5	6.0	6.0	6.0
23	15.5	14.5	15.0	12.0	11.5	12.0	7.5	7.0	7.5	6.5	6.0	6.0
24	15.5	14.5	15.0	12.0	11.5	11.5	7.5	7.0	7.5	6.0	6.0	6.0
25	15.5	14.5	15.0	12.0	11.5	11.5	7.5	7.0	7.0	6.5	6.0	6.0
26	15.5	14.5	15.0	11.5	11.0	11.5	7.0	7.0	7.0	6.0	6.0	6.0
27	15.5	14.0	15.0	11.5	11.0	11.0	7.0	7.0	7.0	6.0	5.5	5.5
28	15.5	14.0	14.5	11.0	10.5	11.0	7.0	6.5	7.0	6.5	5.5	5.5
29	15.0	14.5	14.5	11.0	10.5	10.5	7.0	6.5	6.5	6.0	5.5	6.0
30	15.5	14.5	15.0	11.0	10.5	10.5	6.5	6.0	6.0	6.0	5.5	5.5
31	15.0	15.0	15.0	---	---	---	6.5	6.0	6.5	5.5	5.5	5.5
MONTH	18.0	14.0	15.5	15.0	10.5	13.0	11.0	6.0	8.5	6.5	5.5	5.5

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	5.5	5.5	5.5	8.0	7.0	7.5	10.0	8.5	9.0	10.5	9.5	10.0
2	6.0	5.5	5.5	7.5	7.0	7.5	9.0	8.5	9.0	10.5	9.5	10.0
3	6.0	5.0	5.5	8.0	7.0	7.5	9.5	8.5	9.0	10.0	9.5	9.5
4	5.5	5.0	5.0	7.5	7.5	7.5	10.0	9.0	9.0	9.5	9.0	9.5
5	5.5	5.0	5.0	7.5	7.5	7.5	10.5	9.0	9.5	9.5	9.0	9.0
6	6.0	5.0	5.5	8.0	7.5	7.5	9.0	8.5	9.0	9.5	8.5	9.0
7	6.0	5.0	5.5	8.0	7.0	7.5	10.0	8.5	9.0	10.0	8.5	9.5
8	6.0	5.5	5.5	8.0	7.0	7.5	10.0	8.5	9.0	9.5	8.5	9.0
9	6.0	5.5	5.5	8.0	7.0	7.5	10.5	8.5	9.5	9.5	8.5	9.0
10	7.0	6.0	6.0	8.0	7.0	7.0	10.5	9.0	9.5	10.0	9.0	9.5
11	7.0	6.0	6.5	9.0	6.5	7.5	11.0	9.0	9.5	10.0	9.5	9.5
12	6.5	6.0	6.0	8.5	6.5	7.5	11.0	9.0	10.0	10.0	9.5	9.5
13	6.5	6.0	6.0	8.5	6.5	7.5	10.0	9.5	10.0	10.0	9.0	9.5
14	7.0	6.0	6.5	9.0	7.0	7.5	9.5	9.5	9.5	10.0	9.0	9.5
15	7.0	6.0	6.5	10.0	7.0	8.0	10.0	9.5	9.5	10.0	9.0	9.5
16	7.0	6.0	6.5	9.0	7.0	8.0	10.0	9.5	9.5	9.5	9.0	9.5
17	6.5	6.0	6.0	9.0	7.5	8.0	10.0	9.0	9.5	10.0	9.0	9.5
18	7.0	6.0	6.5	9.5	7.5	8.0	10.0	9.0	9.5	10.0	9.5	9.5
19	7.0	6.0	6.5	9.5	7.5	8.5	10.0	9.5	9.5	10.5	9.0	9.5
20	7.0	6.0	6.5	9.5	8.5	8.5	10.0	9.5	9.5	11.0	9.5	10.0
21	7.5	6.0	6.5	9.0	8.5	8.5	9.5	9.0	9.5	12.0	10.0	10.5
22	7.5	6.5	6.5	9.5	8.5	8.5	11.0	9.0	9.5	11.0	10.0	10.5
23	7.0	6.5	6.5	9.0	8.5	8.5	10.5	9.0	9.5	11.5	10.0	10.5
24	7.5	6.5	7.0	8.5	8.5	8.5	9.5	9.0	9.5	12.0	10.0	10.5
25	7.5	6.5	7.0	9.5	8.5	9.0	11.5	9.0	10.0	11.5	10.0	10.5
26	7.5	6.5	7.0	9.0	8.0	8.5	11.5	9.5	10.5	11.5	10.0	10.5
27	8.0	6.5	7.0	9.5	8.0	8.5	11.5	10.0	10.5	12.0	10.0	11.0
28	7.0	7.0	7.0	9.5	8.0	8.5	10.5	10.0	10.5	11.0	10.5	10.5
29	7.5	7.0	7.5	9.0	8.5	8.5	10.5	10.0	10.0	11.0	10.0	10.5
30	---	---	---	9.5	8.0	8.5	10.5	9.5	10.0	11.5	10.0	10.5
31	---	---	---	10.0	8.0	9.0	---	---	---	11.0	10.0	10.5
MONTH	8.0	5.0	6.0	10.0	6.5	8.0	11.5	8.5	9.5	12.0	8.5	10.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	11.0	10.0	10.5	14.0	12.0	12.5	15.0	13.0	14.0	16.5	14.5	15.5
2	10.0	9.5	10.0	13.0	12.0	12.5	15.0	13.0	14.0	16.5	14.5	15.5
3	10.0	9.5	10.0	12.5	12.0	12.5	15.0	13.0	14.0	16.5	15.0	15.5

MIDDLE FORK WILLAMETTE RIVER BASIN

14150300 FALL CREEK NEAR LOWELL, OR

LOCATION.--Lat 43°58'15", long 122°38'15", in SW 1/4 sec.25, T.18 S., R.1 E., Lane County, Hydrologic Unit 17090001, on right bank 0.1 mi downstream from North Fork, 8.0 mi northeast of Lowell, and at mile 14.4.

DRAINAGE AREA.--118 mi².

PERIOD OF RECORD.--August 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 844.42 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--25 years, 410 ft³/s, 47.18 in/yr, 297,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,100 ft³/s Jan. 21, 1972, which may have been caused by release from breakup of temporary logjam 12 mi upstream, gage height, 11.84 ft; minimum discharge, 16 ft³/s Oct. 3, 4, 1965, Oct. 21, 28, 29, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0600	4,380	7.06	Jan. 10	0900	*5,870	*8.16

Minimum discharge, 16 ft³/s Oct. 21, 28, 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	27	555	234	407	209	504	1090	1820	111	e47	41
2	21	26	777	208	346	191	515	1000	1260	110	e46	38
3	21	24	1320	204	302	306	943	1100	1090	116	e46	35
4	21	22	923	202	273	354	1130	1150	918	109	e45	35
5	21	21	568	199	254	503	946	1020	703	105	e44	36
6	21	21	418	188	235	684	800	847	572	102	e44	36
7	20	21	419	190	222	610	819	1060	543	95	e43	37
8	20	21	357	237	453	536	713	929	510	90	e43	36
9	20	23	1380	1390	1390	919	615	769	454	87	e42	35
10	20	23	2880	4720	1220	834	512	629	453	84	e42	35
11	19	27	1320	2430	878	619	436	534	389	82	e41	34
12	18	105	752	1370	645	499	384	496	337	82	41	35
13	19	253	500	961	572	415	343	567	297	81	40	35
14	18	229	379	1430	477	361	505	596	265	82	42	34
15	18	124	305	2070	454	315	459	506	240	80	39	35
16	19	212	262	1340	436	275	403	514	220	75	38	37
17	18	125	219	951	400	245	377	542	203	72	37	40
18	18	85	191	694	404	224	352	474	191	69	36	40
19	18	63	172	525	367	210	353	407	180	67	35	99
20	17	53	167	499	337	198	519	357	169	64	34	72
21	17	76	490	510	307	214	1400	317	158	61	34	43
22	17	92	570	462	280	203	1310	283	149	59	34	35
23	17	167	445	465	255	660	878	258	143	58	33	33
24	17	222	346	417	233	753	637	238	136	58	33	31
25	17	290	286	372	216	1190	508	220	131	56	34	31
26	17	145	257	359	205	1110	429	205	126	54	35	49
27	17	104	234	357	197	1210	384	196	124	52	39	189
28	17	82	223	354	194	913	419	290	121	51	40	78
29	17	68	213	453	193	777	871	314	135	e50	40	48
30	17	64	198	618	---	685	1050	356	118	e49	41	38
31	24	---	228	489	---	569	---	373	---	e48	41	---
TOTAL	583	2815	17354	24898	12152	16791	19514	17637	12155	2359	1229	1400
MEAN	18.8	93.8	560	803	419	542	650	569	405	76.1	39.6	46.7
MAX	24	290	2880	4720	1390	1210	1400	1150	1820	116	47	189
MIN	17	21	167	188	193	191	343	196	118	48	33	31
AC-FT	1160	5580	34420	49390	24100	33300	38710	34980	24110	4680	2440	2780
CFSM	.16	.80	4.74	6.81	3.55	4.59	5.51	4.82	3.43	.64	.34	.40
IN.	.18	.89	5.47	7.85	3.83	5.29	6.15	5.56	3.83	.74	.39	.44

CAL YR 1987 TOTAL 87061 MEAN 239 MAX 2880 MIN 17 AC-FT 172700 CFSM 2.02 IN. 27.45
WTR YR 1988 TOTAL 128887 MEAN 352 MAX 4720 MIN 17 AC-FT 255600 CFSM 2.98 IN. 40.63

e Estimated

MIDDLE FORK WILLAMETTE RIVER BASIN

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14150900 FALL CREEK LAKE NEAR LOWELL, OR

LOCATION.--Lat 43°56'40", long 122°45'20", in SW 1/4 sec.1, T.19 S., R.1 W., Lane County, Hydrologic Unit 17090001, in regulating tower near the center of Fall Creek Dam on Fall Creek, 2.2 mi northeast of Lowell, and at mile 7.2.

DRAINAGE AREA.--184 mi².

PERIOD OF RECORD.--January 1966 to current year. Prior to October 1971, published as Fall Creek Reservoir near Lowell.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam with concrete gate and spillway section, completed in 1965 by Corps of Engineers; storage began January 1966. Total capacity is 125,100 acre-ft at elevation 834 ft and usable capacity is 115,500 acre-ft between elevation 728 ft and 834 ft. Reservoir used for flood control, conservation, and recreation. Figures given herein represent total contents.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 123,200 acre-ft May 30, 31, 1972; maximum elevation, 832.98 ft May 31, 1972; minimum contents, no contents Nov. 7 to Dec. 6, 1969, Nov. 14-16, 1970, Nov. 18-25, 1972.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 119,700 acre-ft June 1, elevation, 831.08 ft; minimum contents, 1,070 acre-ft Dec. 20, elevation, 692.26 ft.

Capacity table (elevation, in feet, and total contents, in acre-feet)

670.4	0	725	8,340	785	53,120
679	59	735	13,270	795	64,590
685	366	745	19,480	805	77,880
695	1,400	755	26,130	815	97,750
705	2,850	765	33,770	825	109,200
715	5,200	775	42,580	833	123,200

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	802.38	760.39	698.21	721.65	749.17	779.43	814.85	826.83	830.97	830.04	830.39	829.47
2	801.12	759.37	695.01	722.44	750.46	779.96	815.55	826.85	829.47	830.04	830.35	829.44
3	799.92	758.63	698.19	723.18	751.55	780.83	816.82	826.91	829.45	830.04	830.32	829.41
4	798.64	757.97	693.04	723.85	752.46	781.83	817.67	827.08	829.57	830.03	830.30	829.37
5	797.44	757.19	692.97	724.48	753.28	783.21	817.68	827.24	829.74	830.02	830.24	829.34
6	796.37	756.44	693.76	725.01	754.02	784.96	817.27	827.70	829.75	829.99	830.21	828.83
7	795.40	755.71	693.56	725.56	754.73	786.58	816.74	828.60	829.97	829.98	830.18	827.94
8	794.26	754.98	693.34	726.30	756.19	787.99	816.44	829.28	830.13	830.04	830.14	827.00
9	793.23	754.23	697.14	732.47	760.28	790.29	816.37	829.71	830.21	830.09	830.11	826.00
10	792.15	753.48	709.09	753.74	763.19	792.07	816.45	830.06	830.17	830.14	830.08	825.02
11	791.12	752.82	700.29	762.62	765.04	793.55	816.83	830.23	830.18	830.18	830.03	824.04
12	790.00	752.10	693.80	761.00	766.09	794.70	817.25	830.21	830.20	830.24	830.01	823.05
13	788.92	750.86	692.93	755.13	766.85	795.65	817.62	830.31	830.14	830.29	829.98	822.04
14	787.82	749.13	693.32	749.39	767.30	796.46	818.37	830.42	830.13	830.34	829.95	821.03
15	786.72	747.01	693.13	746.91	767.88	797.17	818.98	830.36	830.10	830.39	829.91	820.01
16	785.41	745.19	693.35	742.33	768.89	797.73	819.48	830.25	830.07	830.39	829.88	818.99
17	784.02	742.87	693.03	739.63	770.03	798.25	819.94	830.11	830.12	830.45	829.85	817.97
18	782.62	740.26	693.07	739.01	771.21	798.71	820.38	830.10	830.16	830.49	829.83	816.95
19	781.20	737.43	692.49	738.53	772.31	799.12	820.88	830.07	830.19	830.50	829.81	816.17
20	779.78	734.46	692.89	738.56	773.31	799.51	821.65	830.08	830.19	830.56	829.79	815.24
21	778.29	731.44	696.40	738.89	774.19	799.95	823.86	830.07	830.19	830.59	829.77	814.21
22	776.81	728.17	---	739.19	774.95	800.39	825.82	830.06	830.16	830.59	829.75	813.18
23	775.23	725.22	---	739.74	775.64	801.67	826.82	830.12	830.03	830.59	829.73	812.15
24	773.65	722.26	---	740.06	776.27	803.12	827.43	830.11	830.01	830.59	829.70	811.05
25	772.05	719.76	---	740.15	776.83	805.38	827.80	830.07	830.00	830.58	829.67	809.97
26	770.44	715.78	---	740.19	777.37	807.43	827.68	830.07	830.00	830.55	829.65	808.97
27	768.61	711.71	---	740.33	777.87	809.61	826.91	830.04	830.01	830.53	829.63	808.20
28	766.88	707.36	---	741.25	778.35	811.15	826.44	830.11	830.02	830.50	829.60	807.22
29	765.08	701.91	---	743.15	778.85	812.38	826.50	830.10	830.04	830.47	829.56	806.19
30	763.47	697.18	---	745.70	---	813.36	826.60	830.12	830.04	830.45	829.53	805.13
31	761.92	---	720.64	747.62	---	814.16	---	830.17	---	830.41	829.50	---
MAX	802.38	760.39	---	762.62	778.85	814.16	827.80	830.42	830.97	830.59	830.39	829.47
MIN	761.92	697.18	---	721.65	749.17	779.43	814.85	826.83	829.45	829.98	829.50	805.13
(†)	31310	1670	6810	21180	46460	91440	111900	118100	117900	118600	116900	78060
(#)	-44660	-29640	+5140	+14370	+25280	+44980	+20460	+6200	-200	+700	-1700	-38840

CAL YR 1987 AC-FT# +5660
WTR YR 1988 AC-FT# +2090

† Contents, in acre-feet, at 2400, on last day of month.
Change in contents, in acre-feet.

MIDDLE FORK WILLAMETTE RIVER BASIN

14151000 FALL CREEK BELOW WINBERRY CREEK, NEAR FALL CREEK, OR

LOCATION.--Lat 43°56'40", long 122°46'25", in NW 1/4 SE 1/4 sec.2, T.19 S., R.1 W., Lane County, Hydrologic Unit 17090001, on right bank 10 ft upstream from highway bridge, 1.1 mi downstream from Fall Creek Dam, 2.3 mi southeast of town of Fall Creek, and at mile 6.1.

DRAINAGE AREA.--186 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October to December 1911 (published as Big Fall Creek near Fall Creek; gage heights and discharge measurements only), September 1935 to current year.

REVISED RECORDS.--WSP 1094: 1946(M). WSP 1248: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 637.81 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Oct. 1 to Dec. 31, 1911, nonrecording gage at site 0.25 mi downstream at different datum. Sept. 9, 1935, to Aug. 3, 1950, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated since 1966 by Fall Creek Lake (station 14150900). No diversion upstream from station.

AVERAGE DISCHARGE.--53 years, 581 ft³/s, 42.42 in/yr, 420,900 acre-ft/yr, adjusted for storage in Fall Creek Lake since January 1965.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,700 ft³/s Dec. 11, 1956, gage height, 18.80 ft, from rating curve extended above 9,700 ft³/s; minimum discharge, 1.5 ft³/s Oct. 7, 8, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,860 ft³/s Jan. 14, gage height, 7.41 ft; minimum discharge, 19 ft³/s Feb. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	869	630	538	149	91	32	165	1230	1870	143	65	46
2	886	432	1250	149	82	32	165	1350	3080	142	65	46
3	869	287	1620	150	82	32	165	1400	1470	142	65	46
4	846	287	1620	151	82	34	671	1400	1100	142	65	46
5	829	287	828	152	82	37	1210	1260	795	141	65	46
6	726	287	604	152	82	31	1380	811	793	139	64	459
7	695	287	614	154	82	28	1510	721	614	139	62	809
8	695	283	526	155	83	29	1180	721	615	106	62	837
9	695	283	1440	166	312	33	876	721	616	50	62	850
10	685	283	2450	204	497	31	609	568	702	49	62	851
11	685	283	2570	1040	493	29	294	611	529	49	62	849
12	685	420	1980	2590	497	28	179	727	485	49	62	846
13	680	743	805	3440	499	27	162	731	485	49	62	844
14	675	899	527	3780	502	26	164	740	384	49	62	842
15	675	896	465	3730	411	26	174	763	356	49	62	841
16	742	884	372	3270	199	26	197	841	333	49	62	840
17	784	873	332	2100	86	26	206	880	231	49	62	836
18	774	889	269	1150	53	28	180	650	212	49	52	834
19	763	890	269	864	53	29	139	601	212	49	47	835
20	763	879	211	666	53	29	140	489	212	38	47	832
21	752	884	365	596	53	29	188	429	212	31	46	818
22	752	899	161	543	53	29	258	361	212	29	46	813
23	757	878	160	489	47	31	405	295	212	50	46	833
24	747	884	150	489	42	29	407	316	212	67	46	851
25	742	883	142	489	42	29	407	316	183	66	46	848
26	736	896	142	489	34	28	738	278	161	65	46	846
27	726	766	142	450	30	29	1180	276	147	65	46	814
28	747	671	144	224	30	84	982	365	147	65	46	795
29	747	661	144	93	30	144	1020	480	146	65	46	791
30	678	450	147	97	---	161	1230	480	144	65	46	789
31	635	---	149	97	---	165	---	512	---	65	46	---
TOTAL	23040	18874	21136	28268	4682	1351	16581	21323	16870	2305	1723	20633
MEAN	743	629	682	912	161	43.6	553	688	562	74.4	55.6	688
MAX	886	899	2570	3780	502	165	1510	1400	3080	143	65	851
MIN	635	283	142	93	30	26	139	276	144	29	46	46
AC-FT	45700	37440	41920	56070	9290	2680	32890	42290	33460	4570	3420	40930
MEAN†	16.9	131	765	1,146	601	775	897	789	559	85.7	28.0	35.1
CFSM†	.09	.70	4.11	6.16	3.23	4.17	4.82	4.24	3.01	.46	.15	.19
IN†	.10	.79	4.74	7.10	3.48	4.80	5.38	4.89	3.35	.53	.17	.21
AC-FT†	1040	7800	47060	70440	34570	47660	53350	48490	33260	5270	1720	2090

CAL YR 1987 TOTAL 118961 MEAN 326 MAX 2570 MIN 23 AC-FT 236000 MEAN† 334 CFSM 1.80 IN.† 24.36 AC-FT† 241,700
WTR YR 1988 TOTAL 176786 MEAN 483 MAX 3780 MIN 26 AC-FT 350700 MEAN† 486 CFSM 2.61 IN.† 35.56 AC-FT† 352,800

† Adjusted for change in contents in Fall Creek Lake.

MIDDLE FORK WILLAMETTE RIVER BASIN

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14151000 FALL CREEK BELOW WINBERRY CREEK, NEAR FALL CREEK, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1950 to current year.

INSTRUMENTATION.--Temperature recorder since August 1950.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 26.0°C July 28, 1958; minimum recorded, 0.5°C on several days in 1962 and 1965.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 17.0°C July 8-10, 16-18; minimum, 3.5°C Dec. 29 to Jan. 9.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	9.5	9.5	9.5	15.5	15.5	15.5	7.5	7.0	7.0	3.5	3.5	3.5
2	9.5	9.5	9.5	15.5	15.0	15.0	8.5	7.5	8.0	3.5	3.5	3.5
3	10.0	9.5	10.0	15.0	15.0	15.0	9.5	8.5	9.0	3.5	3.5	3.5
4	10.0	9.5	10.0	15.0	15.0	15.0	9.5	8.5	9.0	3.5	3.5	3.5
5	10.5	10.0	10.0	15.0	15.0	15.0	9.0	8.5	9.0	3.5	3.5	3.5
6	10.5	10.0	10.5	15.0	14.5	15.0	9.5	8.5	9.0	3.5	3.5	3.5
7	10.5	10.5	10.5	15.0	14.5	14.5	8.5	7.5	8.0	3.5	3.5	3.5
8	11.0	10.5	11.0	14.5	14.5	14.5	7.5	7.0	7.5	3.5	3.5	3.5
9	11.5	11.0	11.0	14.5	14.0	14.5	9.5	7.0	8.0	4.0	3.5	4.0
10	11.5	11.0	11.5	14.5	14.0	14.5	9.5	8.5	9.0	5.0	4.5	4.5
11	12.0	11.5	12.0	14.0	14.0	14.0	8.5	7.5	8.0	6.5	4.5	5.5
12	12.5	12.0	12.0	14.0	14.0	14.0	7.5	6.5	7.0	6.5	6.5	6.5
13	13.0	12.5	12.5	14.0	13.5	13.5	6.5	5.0	6.0	6.5	6.5	6.5
14	13.5	12.5	13.0	13.5	13.0	13.5	5.0	4.5	5.0	6.5	6.0	6.5
15	14.0	13.0	13.5	13.0	12.5	13.0	5.0	4.5	5.0	6.5	6.5	6.5
16	14.5	13.5	14.0	12.5	12.0	12.0	4.5	4.0	4.5	6.5	6.5	6.5
17	15.0	14.5	15.0	12.0	11.5	12.0	4.5	4.0	4.5	6.5	6.0	6.5
18	15.5	15.0	15.5	12.0	12.0	12.0	4.5	4.0	4.5	6.0	6.0	6.0
19	16.0	15.5	16.0	12.0	12.0	12.0	5.0	4.0	4.5	6.0	6.0	6.0
20	16.0	16.0	16.0	12.0	12.0	12.0	4.5	4.0	4.5	6.0	5.5	6.0
21	16.0	16.0	16.0	12.0	12.0	12.0	5.5	4.5	5.0	6.0	5.5	5.5
22	16.0	16.0	16.0	12.0	11.5	12.0	6.0	5.5	5.5	5.5	5.5	5.5
23	16.0	16.0	16.0	11.5	11.5	11.5	5.5	5.0	5.0	5.5	5.5	5.5
24	16.0	16.0	16.0	11.0	10.5	11.0	5.0	4.5	5.0	5.5	5.5	5.5
25	16.0	15.5	16.0	10.5	10.0	10.0	5.0	4.5	5.0	5.5	5.5	5.5
26	16.0	15.5	15.5	10.0	9.0	9.5	5.0	4.5	5.0	5.5	5.5	5.5
27	16.0	15.5	15.5	9.5	8.5	9.5	4.5	4.5	4.5	5.5	5.5	5.5
28	15.5	15.5	15.5	9.0	8.5	8.5	4.5	4.0	4.0	6.0	5.5	5.5
29	15.5	15.5	15.5	8.5	8.0	8.5	4.0	3.5	4.0	6.0	5.5	5.5
30	15.5	15.5	15.5	8.0	7.5	8.0	3.5	3.5	3.5	6.0	5.5	5.5
31	15.5	15.5	15.5	---	---	---	4.0	3.5	4.0	6.0	5.5	5.5
MONTH	16.0	9.5	13.5	15.5	7.5	12.5	9.5	3.5	6.0	6.5	3.5	5.0

14151000 FALL CREEK BELOW WINBERRY CREEK, NEAR FALL CREEK, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	6.0	5.5	5.5	7.5	5.5	6.5	8.0	7.0	7.5	8.0	8.0	8.0
2	6.0	5.5	5.5	7.0	5.5	6.0	7.5	7.0	7.5	8.0	8.0	8.0
3	6.5	5.5	5.5	7.5	6.0	6.5	7.5	7.0	7.5	8.0	8.0	8.0
4	6.0	5.0	5.5	7.0	6.5	6.5	7.5	7.0	7.0	8.0	8.0	8.0
5	6.0	5.0	5.5	7.0	6.0	6.5	7.0	7.0	7.0	8.0	8.0	8.0
6	6.0	5.5	5.5	8.0	5.5	6.5	7.0	7.0	7.0	8.5	8.0	8.5
7	6.0	5.5	5.5	9.0	5.0	6.5	7.5	7.0	7.0	8.5	8.5	8.5
8	6.0	5.5	6.0	7.5	6.0	6.5	7.5	7.0	7.0	8.5	8.0	8.5
9	6.0	5.0	5.5	7.5	6.0	6.5	7.5	7.0	7.5	8.5	8.0	8.5
10	6.0	5.0	5.5	8.5	5.5	6.5	7.5	7.5	7.5	9.0	8.5	8.5
11	6.0	5.5	5.5	9.0	5.0	6.5	8.5	7.5	8.0	9.0	8.5	8.5
12	6.0	5.5	5.5	9.5	5.5	7.0	9.0	8.0	8.5	9.0	8.5	8.5
13	6.0	5.5	6.0	9.0	5.5	7.0	8.5	8.0	8.0	9.0	8.5	8.5
14	6.5	6.0	6.5	9.5	5.5	7.0	8.5	8.0	8.0	9.0	8.5	8.5
15	6.0	6.0	6.0	9.5	5.5	7.0	8.5	7.5	8.0	9.0	8.5	8.5
16	6.5	6.0	6.0	9.5	5.5	7.0	8.0	7.5	8.0	9.0	8.5	8.5
17	7.0	6.0	6.5	10.0	5.5	7.0	8.5	8.0	8.0	9.0	8.5	8.5
18	7.5	6.0	6.5	10.0	6.0	7.5	8.5	8.0	8.0	9.5	8.5	9.0
19	8.0	5.5	6.5	10.0	6.0	7.5	8.5	8.0	8.0	9.5	9.0	9.0
20	8.0	5.5	6.5	9.0	6.5	7.0	8.5	8.0	8.0	9.5	9.5	9.5
21	8.5	5.5	6.5	8.0	6.5	7.0	11.0	8.0	9.5	10.0	9.5	10.0
22	7.5	5.5	6.0	8.5	6.5	7.0	11.5	8.5	10.0	10.5	9.5	10.0
23	7.5	5.5	6.0	8.0	6.5	7.0	9.0	8.5	8.5	11.0	10.0	10.5
24	8.0	5.5	6.5	7.5	6.5	7.0	9.0	8.5	8.5	11.0	10.0	10.5
25	8.0	5.5	6.5	10.0	7.0	8.0	9.5	8.5	9.0	10.5	10.0	10.5
26	9.0	5.5	6.5	7.5	6.5	7.0	9.5	7.5	8.5	11.5	10.5	11.0
27	8.0	5.5	6.5	8.5	6.5	7.0	8.0	7.5	8.0	11.5	10.5	11.0
28	7.0	5.5	6.0	9.0	6.0	7.5	8.0	7.5	8.0	11.0	9.5	10.5
29	7.5	6.0	6.5	8.0	7.0	7.5	8.5	7.5	8.0	10.0	9.5	10.0
30	---	---	---	8.5	7.0	7.5	8.0	8.0	8.0	10.5	9.5	10.0
31	---	---	---	8.0	7.0	7.5	---	---	---	10.0	9.5	10.0
MONTH	9.0	5.0	6.0	10.0	5.0	7.0	11.5	7.0	8.0	11.5	8.0	9.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	9.5	8.5	9.0	14.5	13.5	14.0	12.0	9.0	10.0	12.5	9.0	10.0
2	9.0	8.5	9.0	14.0	13.5	13.5	12.0	9.0	10.0	12.5	9.0	10.0
3	9.5	9.0	9.0	14.0	13.5	13.5	12.0	9.0	10.0	12.0	9.0	10.0
4	9.5	9.5	9.5	14.0	13.5	13.5	12.0	9.5	10.5	12.0	9.0	10.0
5	9.5	9.5	9.5	14.0	13.5	14.0	11.0	9.0	10.0	12.0	9.0	10.0
6	10.0	9.5	9.5	14.5	13.0	14.0	11.5	9.0	10.0	9.5	9.0	9.0
7	10.0	10.0	10.0	15.5	13.5	14.5	11.5	8.5	9.5	9.5	9.0	9.0
8	10.5	9.5	10.0	17.0	13.5	14.5	11.5	8.5	10.0	12.0	9.0	10.5
9	10.0	10.0	10.0	17.0	13.5	15.0	12.0	8.5	10.0	12.0	11.5	12.0
10	10.0	9.5	10.0	17.0	13.0	15.0	11.5	9.0	9.5	12.0	12.0	12.0
11	10.5	10.0	10.0	15.0	13.5	14.0	10.0	9.0	9.5	12.5	12.0	12.0
12	10.5	10.0	10.5	15.5	14.0	14.5	11.5	9.0	9.5	12.5	12.0	12.0
13	10.5	10.0	10.5	16.0	14.0	14.5	10.0	9.0	9.5	12.5	12.0	12.0
14	11.5	10.5	11.0	16.0	13.5	14.5	11.5	9.0	10.0	12.5	10.0	11.0
15	11.5	11.0	11.0	16.5	13.5	14.5	11.0	8.5	9.5	10.0	10.0	10.0
16	12.0	11.0	11.5	17.0	13.5	15.0	11.0	9.0	9.5	10.0	10.0	10.0
17	14.0	12.0	13.0	17.0	13.5	15.0	12.0	9.0	10.0	10.5	10.0	10.0
18	13.5	12.5	13.0	17.0	13.5	15.0	12.5	8.5	10.0	10.5	10.0	10.5
19	13.5	12.5	13.0	16.5	10.5	14.0	12.5	8.5	10.0	10.5	10.5	10.5
20	13.5	12.5	13.0	15.5	10.0	12.0	12.0	9.0	10.0	10.5	10.0	10.0
21	14.0	12.5	13.0	15.0	10.0	12.0	12.0	8.5	10.0	10.0	10.0	10.0
22	14.0	13.0	13.5	12.5	9.5	10.5	12.5	8.5	10.0	10.0	10.0	10.0
23	14.0	13.0	13.0	12.0	9.0	10.0	12.5	8.5	10.0	10.0	10.0	10.0
24	14.0	13.0	13.5	12.0	9.0	10.5	12.5	9.0	10.0	10.5	10.0	10.0
25	14.0	13.0	13.5	12.5	9.0	10.5	12.5	8.5	10.0	10.5	10.0	10.0
26	14.0	13.0	13.5	12.0	9.5	10.5	12.0	8.5	10.0	10.5	10.0	10.5
27	14.0	13.0	13.5	12.0	9.5	10.5	12.5	9.0	10.0	10.5	10.5	10.5
28	13.5	13.0	13.5	12.0	9.0	10.0	12.5	9.0	10.0	10.5	10.5	10.5
29	14.5	13.0	13.5	12.0	9.0	10.5	12.5	9.0	10.0	10.5	10.5	10.5
30	14.0	13.0	13.5	12.0	9.0	10.5	12.0	8.5	10.0	10.5	10.5	10.5
31	---	---	---	12.0	9.0	10.0	12.0	8.5	10.0	---	---	---
MONTH	14.5	8.5	11.5	17.0	9.0	13.0	12.5	8.5	10.0	12.5	9.0	10.5
YEAR	17.0	3.5	9.5									

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LOCATION.--Lat 43°59'55", long 122°54'20", in SW 1/4 SW 1/4 sec.14, T.18 S., R.2 W., Lane County, Hydrologic Unit 17090001, on right bank 25 ft downstream from highway bridge at Jasper, 0.1 mi downstream from Hills Creek, and at mile 195.0.

PERIOD OF RECORD.--September 1905 to February 1912, July 1913 to March 1917, October 1952 to current year.
Monthly discharge only for some periods, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 513.45 ft above National Geodetic Vertical Datum of 1929. September 1905 to February 1912 and July 1913 to March 1917, nonrecording gage at approximately same site at datum about 1.5 ft higher Oct. 22, 1952, to Sept. 30, 1953, nonrecording gage at site 25 ft upstream at same datum.

AVERAGE DISCHARGE.--45 years (water years 1906-11, 1914-16, 1953-88), 4,095 ft³/s, 2,967,000 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,900 ft³/s Jan. 14, gage height, 8.41 ft; minimum discharge, 1,190 ft³/s Feb. 27.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2650	1670	3630	1720	1910	1400	1750	3160	6870	1830	2090	2360
2	2660	1530	5250	1630	1800	1390	1750	3780	12500	1820	2090	2360
3	2640	1320	6870	1630	1730	1450	2040	5550	10900	1830	2060	2360
4	2620	1310	6970	1620	1690	1500	2580	6550	6970	1830	1960	2370
5	2600	1310	5650	1610	1650	1640	3150	6250	5490	1830	1830	2370
6	2520	1490	5370	1820	1620	1840	3280	4840	5320	1820	1870	2680
7	2470	1750	5440	1620	1590	2430	3550	4850	6440	1800	1880	3120
8	2470	1770	5210	1600	1730	3160	3130	4650	8180	1710	1890	3180
9	2470	1790	6230	2570	2470	3610	2670	5340	5320	1790	1860	3220
10	2470	1830	8780	6900	2580	3520	2310	5420	4740	1810	1860	3230
11	2470	2120	8540	6670	2480	2830	1930	5330	4240	1810	2020	3160
12	2470	3070	8870	8890	2370	1750	1690	5440	4100	1820	2290	3090
13	2470	3230	7470	12600	2320	1650	1630	6010	4080	1820	2300	3110
14	2140	2530	6970	14300	2240	1560	1810	7300	3280	1820	2300	3110
15	2110	2510	6850	12600	2150	1530	1810	7290	2540	1810	2290	3120
16	2170	2530	6710	14200	1910	1480	1790	7410	2440	1970	2290	3120
17	2040	2480	6660	12400	1720	1440	1780	6470	2320	2000	2290	3110
18	2040	2460	6560	10900	1660	1410	1740	5190	2520	1990	2260	3130
19	2030	2710	6560	10300	1630	1390	1670	4610	2510	1900	2240	3180
20	2030	2980	6500	6220	1490	1370	1770	4000	2510	1870	2190	3110
21	2020	3050	6860	5610	1440	1360	2470	3470	2670	1860	2190	3070
22	2040	3070	6090	5490	1420	1350	2560	3340	2280	1860	2180	3050
23	2050	3090	5770	5380	1400	1710	2420	3250	2060	1970	2260	3130
24	1940	3590	5340	5330	1370	1690	2260	3240	2050	1990	2310	3220
25	1930	4050	4940	5070	1350	2070	2150	3110	2060	2000	2350	3230
26	1920	4080	4860	4120	1340	1950	2280	2970	2040	1990	2340	3270
27	1820	3960	4800	3010	1360	1980	2760	2940	1850	1990	2350	3290
28	1770	3820	4780	2270	1360	1910	2580	3550	1700	2000	2280	3220
29	1800	3800	3760	2020	1360	1930	2580	4140	1880	1960	2400	3180
30	1730	3650	2590	2210	---	1880	3030	4220	1840	1960	2370	3160
31	1670	---	2010	2020	---	1810	---	4680	---	1960	2380	---
TOTAL	68230	78550	182890	174330	51140	57990	68920	148350	123700	58420	67270	90310
MEAN	2201	2618	5900	5624	1763	1871	2297	4785	4123	1885	2170	3010
MAX	2660	4080	8870	14300	2580	3610	3550	7410	12500			

COAST FORK WILLAMETTE RIVER BASIN

14153000 COTTAGE GROVE LAKE NEAR COTTAGE GROVE, OR

LOCATION.--Lat 43°43'00", long 123°02'55", in NE 1/4 sec.28, T.21 S., R.3 W., Lane County, Hydrologic Unit 17090002, in east abutment of dam on Coast Fork Willamette River 5.8 mi south of Cottage Grove, and at mile 29.7.

DRAINAGE AREA.--104 mi².

PERIOD OF RECORD.--October 1942 to current year. Prior to October 1971, published as Cottage Grove Reservoir near Cottage Grove.

REVISED RECORDS.--WSP 1218: 1950.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Lake is formed by earthfill dam with concrete spillway completed by Corps of Engineers in 1942; storage began Oct. 31, 1942. Capacity, 32,930 acre-ft between elevation 719.0 ft, outlet conduit, and 791.0 ft, crest of spillway. Dead storage negligible. Reservoir used for flood control and improvement of navigation. Figures given herein represent total contents.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 36,750 acre-ft Dec. 24, 1964, elevation, 794.23 ft; minimum contents since first filling, no contents Sept. 26 to Oct. 19, 1966, and Nov. 14, 15, Nov. 20 to Dec. 8, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 34,660 acre-ft June 6, elevation, 792.48 ft; minimum contents, 2,880 acre-ft Dec. 29, elevation, 749.10 ft.

Capacity table (elevation, in feet, and total contents, in acre-feet)

710.9	0	755	4,860	780	21,460
730	151	760	7,150	785	26,370
740	926	765	9,970	790	31,780
745	1,840	770	13,260	793	35,270
750	3,140	775	17,070		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	767.98	757.62	754.96	749.53	757.36	762.42	776.15	787.67	790.31	790.11	788.84	786.66
2	767.84	757.45	755.36	749.35	757.33	762.60	776.52	787.77	790.10	790.12	788.77	786.59
3	767.70	757.26	756.70	749.66	757.43	762.76	777.30	787.82	790.00	790.13	788.69	786.52
4	767.57	757.07	755.63	749.89	757.54	763.03	778.30	787.86	790.05	790.14	788.62	786.45
5	767.43	756.87	752.68	750.07	757.56	763.49	779.10	787.85	790.05	790.15	788.54	786.38
6	767.30	756.67	751.51	750.19	757.51	764.26	779.78	787.96	792.43	790.15	788.46	786.13
7	767.16	756.46	750.41	750.32	757.40	764.94	780.52	788.49	792.31	790.13	788.38	785.69
8	767.03	756.27	749.58	750.71	757.35	765.63	781.16	788.90	789.92	790.11	788.30	785.23
9	766.79	756.07	750.82	752.74	757.56	766.96	781.69	789.05	790.02	790.09	788.22	784.76
10	766.46	755.86	754.11	765.04	757.76	768.10	782.09	788.95	790.12	790.05	788.15	784.29
11	766.13	755.73	749.90	768.39	758.15	768.88	782.41	788.89	789.97	790.03	788.08	783.81
12	765.80	755.80	749.72	765.09	758.51	769.43	782.68	789.02	789.94	789.99	788.01	783.35
13	765.46	755.96	750.28	759.03	758.79	769.86	782.93	789.32	789.97	789.97	787.94	782.88
14	765.13	756.15	750.25	754.25	759.09	770.19	783.28	789.59	790.00	789.94	787.87	782.42
15	764.79	756.19	749.96	754.05	759.47	770.45	783.55	789.77	790.03	789.90	787.79	781.94
16	764.28	756.20	749.97	753.61	759.84	770.66	783.79	789.92	790.04	789.87	787.72	781.46
17	763.66	756.20	750.01	753.20	760.21	770.82	784.01	789.91	790.04	789.82	787.65	780.99
18	762.99	756.13	749.91	752.70	760.59	770.94	784.21	789.85	790.02	789.77	787.59	780.49
19	762.29	756.02	749.69	752.41	760.87	771.06	784.45	789.86	790.01	789.73	787.52	780.09
20	761.58	755.89	749.44	752.43	761.00	771.16	784.70	789.92	790.01	789.67	787.45	779.66
21	760.84	755.79	749.96	752.47	761.11	771.27	785.42	789.98	790.01	789.61	787.39	779.20
22	760.35	755.72	749.96	752.55	761.24	771.44	785.76	790.03	790.00	789.55	787.32	778.71
23	759.95	755.65	749.96	752.85	761.41	772.03	785.76	790.05	789.99	789.48	787.26	778.23
24	759.54	755.65	749.96	752.98	761.74	772.58	785.77	790.05	789.99	789.42	787.20	777.74
25	759.13	755.75	749.96	752.95	761.89	773.10	785.91	790.05	790.01	789.36	787.13	777.26
26	758.81	755.58	749.96	752.77	762.00	773.65	786.17	790.04	790.03	789.30	787.07	776.83
27	758.61	755.31	749.96	752.71	762.09	774.27	786.43	790.03	790.04	789.22	787.00	776.44
28	758.40	755.00	749.96	753.06	762.21	774.78	786.67	790.07	790.08	789.15	786.93	775.98
29	758.20	754.64	749.67	754.10	762.32	775.21	786.92	790.10	790.10	789.08	786.86	775.49
30	758.00	754.39	750.48	755.68	---	775.58	787.30	790.11	790.11	789.00	786.79	775.00
31	757.80	---	750.37	756.93	---	775.89	---	790.17	---	788.93	786.72	---
MAX	767.98	757.62	756.70	768.39	762.32	775.89	787.30	790.17	792.43	790.15	788.84	786.66
MIN	757.80	754.39	749.44	749.35	757.33	762.42	776.15	787.67	789.92	788.93	786.72	775.00
(†)	6070	4630	3250	5680	8410	17820	28800	31980	31910	30580	28180	17070
(‡)	-5890	-1440	-1380	+2430	+2730	+9410	+10980	+3180	-70	-1330	-2400	-11110

CAL YR 1987 MEAN 767.27 MAX 778.44 MIN 749.44 AC-FT‡ +40
WTR YR 1988 MEAN 772.95 MAX 792.43 MIN 749.35 AC-FT‡ +5110

† Contents, in acre-feet, at 2400, on last day of month.

‡ Change in contents, in acre-feet.

COAST FORK WILLAMETTE RIVER BASIN

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14153500 COAST FORK WILLAMETTE RIVER BELOW COTTAGE GROVE DAM, OR

LOCATION.--Lat 43°43'15", long 123°02'55", in NE 1/4 sec.28, T.21 S., R.3 W., Lane County, Hydrologic Unit 17090002, on right bank at bridge 0.3 mi downstream from Cottage Grove Dam, 5.5 mi south of Cottage Grove, and at mile 29.4.

DRAINAGE AREA.--104 mi².

PERIOD OF RECORD.--January 1939 to current year. Prior to October 1944, published as "near Cottage Grove."

REVISED RECORDS.--WSP 1448: 1949(M).

GAGE.--Water-stage recorder. Datum of gage is 711.00 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Jan. 1 to Oct. 12, 1939, nonrecording gage and Oct. 13, 1939, to Sept. 30, 1944, water-stage recorder at several sites and datums 0.8 mi downstream.

REMARKS.--No estimated daily discharges. Records excellent. Flow regulated since 1942 by Cottage Grove Lake (station 14153000). Small diversions for irrigation upstream from station. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--49 years, 272 ft³/s, 35.52 in/yr, 197,100 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,910 ft³/s Dec. 24, 1964, gage height, 11.83 ft; no flow July 5-7, 1945, and for part of Aug. 24, 1947.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,590 ft³/s Jan. 12, 13, gage height, 8.16 ft; minimum discharge, 44 ft³/s Aug. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	59	104	303	273	82	84	223	438	55	54	45
2	54	59	306	197	320	83	85	340	693	55	54	45
3	54	59	842	131	251	83	88	388	526	55	54	45
4	54	59	1090	131	224	84	91	388	306	55	54	45
5	54	59	1050	131	224	83	90	388	305	55	55	45
6	54	59	1020	131	224	81	90	326	306	55	55	137
7	54	59	1010	131	224	83	91	280	306	55	55	245
8	54	59	669	133	224	83	91	280	218	55	55	246
9	88	59	418	434	287	86	91	385	169	55	55	246
10	116	59	1260	405	242	88	90	439	215	55	55	244
11	114	59	1540	1030	167	86	91	336	309	55	55	243
12	114	59	526	2230	151	86	87	246	202	55	55	242
13	114	59	279	2430	151	85	83	195	152	55	55	241
14	113	59	280	2150	126	84	84	195	130	55	55	241
15	112	59	277	2040	93	84	84	195	115	54	55	241
16	161	59	212	1530	81	84	84	241	116	54	55	239
17	188	59	176	997	79	84	84	289	116	54	49	238
18	197	59	176	761	79	84	84	289	116	54	45	238
19	204	59	176	564	79	82	86	211	104	54	45	238
20	202	59	176	429	79	79	85	169	89	54	45	237
21	200	58	147	383	79	79	189	145	84	54	45	235
22	137	58	257	330	79	80	409	133	83	54	45	234
23	112	73	406	284	79	84	444	133	83	54	45	232
24	112	83	277	286	79	84	330	133	66	54	45	232
25	111	98	184	286	79	84	204	136	55	54	45	230
26	90	108	238	284	80	84	103	136	55	54	45	230
27	60	106	259	251	80	84	75	136	55	54	45	230
28	59	106	256	173	81	84	75	137	55	54	45	227
29	59	106	151	146	81	84	118	138	55	54	45	227
30	59	104	84	150	---	84	163	137	55	54	45	224
31	59	---	233	154	---	84	---	138	---	54	45	---
TOTAL	3213	2080	14079	19015	4295	2589	3853	7305	5577	1688	1555	6042
MEAN	104	69.3	454	613	148	83.5	128	236	186	54.5	50.2	201
MAX	204	108	1540	2430	320	88	444	439	693	55	55	246
MIN	54	58	84	131	79	79	75	133	55	54	45	45
AC-FT	6370	4130	27930	37720	8520	5140	7640	14490	11060	3350	3080	11980
MEAN†	7.81	45.2	432	653	196	237	313	287	185	32.9	11.1	14.6
CFSM†	0.08	0.43	4.15	6.28	1.88	2.28	3.01	2.76	1.78	0.32	0.11	0.14
IN.†	0.09	0.48	4.79	7.24	2.03	2.62	3.36	3.19	1.98	0.36	0.12	0.16
AC-FT†	480	2690	26550	40150	11250	14550	18620	17670	10990	2020	680	870

CAL YR 1987 TOTAL 58719 MEAN 161 MAX 1830 MIN 40 AC-FT 116500 MEAN† 161 CFSM† 1.55 IN.† 21.00 AC-FT† 116500
WTR YR 1988 TOTAL 71291 MEAN 195 MAX 2430 MIN 45 AC-FT 141400 MEAN† 202 CFSM† 1.94 IN.† 26.42 AC-FT† 146500

† Adjusted for change in contents in Cottage Grove Lake.

COAST FORK WILLAMETTE RIVER BASIN

14154500 ROW RIVER ABOVE PITCHER CREEK, NEAR DORENA, OR

LOCATION.--Lat 43°44'10", long 122°52'20", in NE 1/4 sec.24, T.21 S., R.2 W., Lane County, Hydrologic Unit 17090002, on right bank 0.5 mi upstream from Pitcher Creek, 1.2 mi northwest of Dorena, and at mile 13.2.

DRAINAGE AREA.--211 mi².

PERIOD OF RECORD.--September 1935 to current year. Prior to October 1949, published as "at Star."

GAGE.--Water-stage recorder. Datum of gage is 856.16 ft above National Geodetic Vertical Datum of 1929. Sept. 16, 1935, to Oct. 17, 1938, nonrecording gage at site 450 ft upstream at datum 1.00 ft higher.

REMARKS.--No estimated daily discharges. Records good except those for June through September, which are fair. Slight regulation caused by upstream logponds. No diversion upstream from station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--53 years, 599 ft³/s, 38.55 in/yr, 434,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,100 ft³/s Dec. 22, 1964, gage height, 18.19 ft, from rating curve extended above 12,000 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 10 ft³/s Sept. 24, 25, 1951, Oct. 7, 8, 1958.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0530	8,460	9.74	Jan. 10	0900	*10,500	*10.54

Minimum discharge, 11 ft³/s Oct. 20-29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	21	1120	251	694	270	708	1300	2600	112	40	19
2	15	25	1720	226	573	248	737	1250	1960	108	39	18
3	14	28	2430	226	489	313	1540	1460	1340	112	38	16
4	14	29	1880	278	435	385	1760	1310	1100	109	37	15
5	14	30	1290	289	411	677	1420	1120	955	102	36	15
6	14	31	1270	265	384	751	1200	1010	802	98	36	15
7	14	33	1510	252	354	722	1390	1620	812	90	35	15
8	13	35	892	280	400	622	1120	1450	896	84	34	15
9	13	38	1930	1730	1240	1260	936	1330	792	79	33	15
10	14	42	5590	8280	1020	1180	768	1080	764	75	32	15
11	13	47	2060	4210	823	855	646	950	644	73	33	14
12	13	115	1080	2100	675	705	560	804	531	74	35	14
13	13	203	710	1380	608	616	495	896	447	71	34	14
14	13	341	524	2720	521	573	665	780	383	71	35	13
15	13	153	427	4080	491	510	694	666	331	71	33	13
16	13	229	380	2100	460	436	614	652	294	67	32	14
17	13	180	319	1410	422	373	583	734	263	63	31	14
18	12	137	270	993	416	336	548	647	237	60	30	14
19	12	98	240	732	388	314	511	547	215	58	29	40
20	12	84	217	645	370	293	524	471	198	55	28	87
21	11	100	509	707	350	298	1880	412	180	53	27	48
22	11	120	732	657	326	293	2050	365	165	51	25	35
23	11	168	593	755	301	527	1340	326	155	50	24	29
24	11	197	457	677	278	627	940	291	144	50	23	26
25	11	355	373	617	261	787	743	263	136	49	21	24
26	11	188	331	636	252	971	604	240	131	47	21	33
27	11	133	308	650	252	1180	532	223	129	45	21	117
28	11	105	294	653	250	962	501	296	126	44	20	84
29	12	91	302	791	256	861	932	439	160	42	19	51
30	14	87	275	1170	---	831	1280	564	125	42	19	40
31	16	---	269	860	---	716	---	511	---	41	19	---
TOTAL	398	3443	30302	40620	13700	19492	28221	24007	17015	2146	919	882
MEAN	12.8	115	977	1310	472	629	941	774	567	69.2	29.6	29.4
MAX	16	355	5590	8280	1240	1260	2050	1620	2600	112	40	117
MIN	11	21	217	226	250	248	495	223	125	41	19	13
AC-FT	789	6830	60100	80570	27170	38660	55980	47620	33750	4260	1820	1750
CFSM	.06	.54	4.63	6.21	2.24	2.98	4.46	3.67	2.69	.33	.14	.14
IN.	.07	.61	5.34	7.16	2.42	3.44	4.98	4.23	3.00	.38	.16	.16

CAL YR 1987 TOTAL 131092 MEAN 359 MAX 5590 MIN 11 AC-FT 260000 CFSM 1.70 IN. 23.11
WTR YR 1988 TOTAL 181145 MEAN 495 MAX 8280 MIN 11 AC-FT 359300 CFSM 2.35 IN. 31.94

COAST FORK WILLAMETTE RIVER BASIN

95

14155000 DORENA LAKE NEAR COTTAGE GROVE, OR

LOCATION.--Lat 43°47'10", long 122°57'15", in SE 1/4 sec.32, T.20 S., R.2 W., Lane County, Hydrologic Unit 17090002, on left end of Dorena Dam on Row River, 5.0 mi east of Cottage Grove, and at mile 7.61.

DRAINAGE AREA.--265 mi².

PERIOD OF RECORD.--October 1949 to current year. Prior to October 1971, published as Dorena Reservoir near Cottage Grove.

REVISED RECORDS.--WRD OR-78-1: 1969.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam with concrete outlet and spillway, completed in 1949 by Corps of Engineers; controlled storage began Oct. 11, 1949. Capacity, 77,580 acre-ft between elevations 739.0 ft, sill of outlet gates, and 835.0 ft, crest of spillway. Dead storage, 18 acre-ft below elevation 739.0 ft. Reservoir used for flood control and improvement of navigation. Figures given herein represent total contents.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 95,550 acre-ft Dec. 23, 1964, elevation, 844.03 ft; minimum contents observed since first filling, 159 acre-ft Dec. 14, 1970, elevation, 743.60 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 75,600 acre-ft June 2, elevation, 833.93 ft; minimum contents, 6,920 acre-ft Dec. 25, elevation, 770.17 ft.

Capacity table (elevation, in feet, and total contents, in acre-feet)

760	2,810	785	15,850	810	39,380	835	77,600
765	4,560	790	19,580	815	45,620	840	87,320
770	6,840	795	23,780	820	52,480		
775	9,540	800	28,490	825	60,060		
780	12,530	805	33,700	830	68,470		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	809.31	782.38	782.64	770.27	781.98	793.58	816.56	828.21	833.77	832.23	830.99	828.11
2	808.20	782.22	785.66	770.31	781.85	793.91	816.87	828.15	832.80	832.27	830.90	828.00
3	807.24	782.03	787.47	770.54	781.80	794.45	818.24	828.42	831.61	832.31	830.82	827.91
4	806.24	781.82	786.14	770.93	781.78	795.20	819.25	828.71	831.63	832.33	830.75	827.80
5	805.30	781.62	783.19	771.07	781.82	796.63	819.19	828.97	831.69	832.32	830.66	827.69
6	804.25	781.40	779.41	770.86	781.78	798.29	818.79	829.21	831.73	832.27	830.58	827.44
7	803.19	781.19	776.92	770.60	781.64	799.77	818.71	830.15	831.74	832.21	830.50	826.88
8	802.16	780.99	774.31	770.50	781.73	801.04	818.42	830.70	831.93	832.14	830.41	826.22
9	801.13	780.76	776.09	775.38	784.20	803.81	818.21	830.75	831.97	832.06	830.33	825.56
10	800.08	780.56	787.72	799.13	785.44	805.86	818.37	830.47	832.00	832.00	830.24	824.89
11	799.03	780.40	786.88	805.69	786.01	806.77	818.80	830.30	832.01	832.00	830.15	824.20
12	797.94	780.58	784.56	803.14	786.26	807.31	819.26	830.29	832.01	831.99	830.06	823.52
13	796.81	781.10	782.54	797.95	786.43	807.62	819.74	830.55	832.06	831.97	829.98	822.84
14	795.70	782.05	781.05	794.98	786.33	807.79	820.54	830.66	832.17	831.96	829.89	822.14
15	794.57	782.39	780.10	798.02	786.29	808.09	821.28	830.65	832.21	831.95	829.80	821.43
16	793.36	782.91	779.52	794.68	786.79	808.35	821.82	830.80	832.22	831.92	829.71	820.71
17	792.15	783.20	778.25	787.68	787.54	808.70	822.28	831.20	832.19	831.89	829.62	819.99
18	790.93	783.27	776.85	778.54	788.37	809.00	822.68	831.50	832.11	831.85	829.53	819.27
19	789.68	783.24	775.55	772.88	789.08	809.46	823.08	831.65	832.07	831.82	829.43	818.72
20	788.42	783.10	774.16	772.68	789.74	809.78	823.52	831.71	832.07	831.77	829.33	818.13
21	787.14	783.00	774.32	773.60	790.33	810.12	825.69	831.77	832.07	831.72	829.24	817.44
22	786.02	782.99	774.49	774.18	790.84	810.49	826.68	831.91	832.07	831.66	829.14	816.71
23	785.37	782.99	773.24	775.06	791.28	811.25	826.46	832.01	832.07	831.61	829.05	815.96
24	784.80	782.94	771.10	775.55	791.64	811.68	826.03	832.03	832.06	831.55	828.94	815.20
25	784.21	783.33	770.34	775.74	791.96	812.74	825.93	832.03	832.04	831.49	828.84	814.43
26	783.68	783.17	770.59	775.95	792.27	813.77	826.14	832.00	832.00	831.43	828.74	813.73
27	783.44	782.69	770.65	776.20	792.57	814.92	826.35	831.93	831.98	831.36	828.64	813.14
28	783.22	782.03	770.65	776.67	792.85	815.49	826.52	832.00	832.04	831.29	828.53	812.47
29	783.00	781.30	770.65	777.88	793.15	815.91	827.03	832.19	832.13	831.21	828.43	811.72
30	782.78	780.58	770.60	780.35	---	816.26	827.81	832.25	832.19	831.14	828.32	810.91
31	782.57	---	770.49	781.64	---	816.40	---	832.16	---	831.06	828.22	---
MAX	809.31	783.33	787.72	805.69	793.15	816.40	827.81	832.25	833.77	832.33	830.99	828.11
MIN	782.57	780.40	770.34	770.27	781.64	793.58	816.56	828.15	831.61	831.06	828.22	810.91
(†)	14180	12890	7090	13570	22170	47470	64680	72340	72400	70360	65380	40470
(‡)	-25280	-1290	-5800	+6480	+8600	+25300	+17210	+7660	+60	-2040	-4980	-24910

CAL YR 1987 MAX 825.47 MIN 770.01 AC-FT# -320
WTR YR 1988 MAX 833.77 MIN 770.27 AC-FT# +1010

† Contents, in acre-feet, at 2400, on last day of month.
‡ Change in contents, in acre-feet.

COAST FORK WILLAMETTE RIVER BASIN

14155500 ROW RIVER NEAR COTTAGE GROVE, OR

LOCATION.--Lat 43°47'35", long 122°59'25", in NE 1/4 sec.36, T.20 S., R.3 W., Lane County, Hydrologic Unit 17090002, on right bank 1.7 mi upstream from Mosby Creek, 2.1 mi downstream from Dorena Dam, 3.5 mi east of Cottage Grove, and at mile 5.5.

DRAINAGE AREA.--270 mi².

PERIOD OF RECORD.--January 1939 to current year. Prior to October 1947, published as "near Dorena."

GAGE.--Water-stage recorder. Datum of gage is 685.24 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Jan. 5 to Oct. 12, 1939, nonrecording gage at site 180 ft upstream at datum 1.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since October 1949 by Dorena Lake (station 14155000). No diversion upstream from station.

AVERAGE DISCHARGE.--49 years, 751 ft³/s, 37.77 in/yr, 544,100 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,400 ft³/s Dec. 28, 1945, gage height, 18.20 ft; minimum discharge, 0.20 ft³/s Sept. 25 to Oct. 7, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,060 ft³/s Jan. 17, gage height, 8.25 ft; minimum discharge, 91 ft³/s Aug. 2-10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	611	94	338	410	750	174	722	1230	1540	110	101	101
2	608	94	741	333	775	167	680	1580	3280	109	97	101
3	603	94	2190	282	669	167	781	1530	2790	109	91	101
4	598	94	2930	286	564	167	1350	1380	1340	134	91	101
5	592	94	2850	363	510	167	1760	1220	1070	167	91	101
6	589	94	2710	400	510	169	1770	1130	935	167	91	203
7	586	94	2630	400	504	170	1780	1200	933	167	91	422
8	581	94	1950	400	504	173	1610	1290	935	167	91	516
9	576	94	1610	730	647	182	1320	1560	935	167	91	516
10	571	94	2280	660	786	385	839	1550	929	139	96	516
11	565	94	2800	1560	797	583	493	1290	783	101	105	516
12	559	94	2320	4090	750	586	372	1000	690	101	101	515
13	553	94	1710	4380	705	584	268	868	508	101	101	511
14	546	94	1210	4650	705	581	268	868	374	101	101	516
15	540	94	886	3590	658	457	294	874	374	101	101	516
16	534	94	695	4280	421	368	361	716	374	101	101	511
17	545	119	811	4830	235	251	363	528	374	101	101	510
18	553	144	797	4630	188	163	363	528	374	101	101	508
19	544	144	715	2700	188	163	365	528	294	101	101	505
20	537	144	703	979	184	163	369	528	251	101	101	504
21	529	144	696	715	181	163	779	446	215	101	101	507
22	351	144	1010	705	181	164	1760	322	195	101	101	510
23	232	198	1190	705	181	254	1900	298	195	101	101	515
24	230	234	1150	710	181	378	1550	338	195	101	101	522
25	230	292	747	715	176	436	1020	338	195	101	101	518
26	185	338	426	715	174	481	607	338	195	101	101	517
27	95	338	421	715	174	632	499	338	155	101	101	511
28	94	338	416	641	174	770	499	342	111	101	101	518
29	94	338	416	614	174	770	660	386	111	101	101	533
30	94	338	410	636	---	768	895	626	111	101	101	528
31	94	---	410	652	---	765	---	755	---	101	101	---
TOTAL	13619	4757	40168	47476	12646	11401	26297	25925	20761	3557	3056	12969
MEAN	439	159	1296	1531	436	368	877	836	692	115	98.6	432
MAX	611	338	2930	4830	797	770	1900	1580	3280	167	105	533
MIN	94	94	338	282	174	163	268	298	111	101	91	101
AC-FT	27010	9440	79670	94170	25080	22610	52160	51420	41180	7060	6060	25720
MEAN†	28.1	137	1201	1637	586	779	1166	961	693	81.6	17.6	13.6
CFSM†	0.10	0.51	4.45	6.06	2.17	2.89	4.32	3.56	2.57	0.30	0.07	0.05
IN.†	0.12	0.57	5.13	6.99	2.34	3.33	4.82	4.10	2.86	0.35	0.07	0.06
AC-FT†	1730	8150	73870	100650	33680	47910	69370	59080	41240	5020	1080	810

CAL YR 1987 TOTAL 162831 MEAN 446 MAX 3800 MIN 82 AC-FT 323000 MEAN† 446 CFSM† 1.65 IN.† 22.40 AC-FT† 322700
WTR YR 1988 TOTAL 222632 MEAN 608 MAX 4830 MIN 91 AC-FT 441600 MEAN† 610 CFSM† 2.26 IN.† 30.73 AC-FT† 442600

† Adjusted for change in contents in Dorena Lake.

97

LOCATION.--Lat 43°58'50", long 122°57'55", in NW 1/4 sec.29, T.18-S., R.2-W., Lane County, Hydrologic Unit 170900002, on right bank at downstream side of bridge on State Highway 58, 2.5 mi southeast of Goshen, and at mile 6.4.

PERIOD OF RECORD.--August 1905 to February 1912, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 473.80 ft above National Geodetic Vertical Datum of 1929.
Aug. 23, 1905, to Feb. 7, 1912, nonrecording gage at site 600 ft upstream at different datum.

AVERAGE DISCHARGE.--44 years (water years 1906-11, 1951-88), 1,631 ft³/s, 1,182,000 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,800 ft³/s Jan. 15, gage height, 12.07 ft; minimum discharge, 127 ft³/s Aug. 29-31.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	644	161	555	1300	1870	558	1230	2230	2320	218	149	131
2	643	164	1570	1080	1920	486	1160	2700	4460	215	146	131
3	637	162	4200	835	1600	485	1730	2920	4780	217	146	131
4	635	161	5960	840	1350	568	2400	2810	2440	222	145	132
5	628	159	5080	834	1220	734	2800	2570	2050	274	143	136
6	623	159	5240	877	1170	973	2660	2320	1730	274	143	137
7	619	156	5550	863	1130	968	2900	2960	1710	265	145	545
8	616	154	4240	923	1220	874	2690	2690	1710	260	141	721
9	614	157	3530	2180	1710	1460	2220	2810	1640	255	136	728
10	679	154	7220	9000	1830	1460	1730	2850	1690	253	138	732
11	676	161	6860	7140	1610	1480	1100	2410	1690	197	152	732
12	670	199	4510	8690	1470	1290	977	1900	1350	184	152	730
13	661	213	2910	8320	1330	1180	751	1760	1080	185	150	723
14	655	252	2270	8880	1260	1090	913	1700	823	181	151	724
15	651	244	1820	10800	1160	988	912	1610	733	180	153	722
16	659	232	1500	9280	920	800	937	1580	698	179	148	724
17	730	222	1450	7820	674	697	934	1360	673	175	146	720
18	761	246	1420	6970	565	493	907	1300	653	174	136	719
19	771	236	1270	5090	532	468	923	1200	597	167	135	750
20	759	229	1220	2550	511	446	1170	1070	481	165	135	744
21	749	226	1420	1950	489	439	2510	985	439	160	136	744
22	660	234	2170	1820	475	433	3610	780	383	157	137	739
23	358	259	2560	1750	464	830	3590	675	374	155	133	732
24	343	377	2250	1670	452	1110	2820	705	369	157	132	740
25	337	473	1630	1600	436	1230	2180	683	337	159	132	735
26	335	551	1120	1540	421	1170	1400	665	334	154	130	754
27	207	512	1080	1490	413	1360	1070	652	325	151	132	769
28	163	492	1050	1340	408	1500	1010	695	244	150	133	764
29	161	480	1000	1850	407	1430	1130	777	238	149	132	762
30	161	476	940	2130	---	1380	1830	943	227	148	129	749
31	159	---	1570	1850	---	1310	---	1150	---	149	130	---
TOTAL	16964	7901	85165	113262	29017	29690	52194	51460	36578	5929	4346	18300
MEAN	547	263	2747	3654	1001	958	1740	1660	1219	191	140	610
MAX	771	551	7220	10800	1920	1500	3610	2960	4780	274	153	769
MIN	159	154	555	834	407	433	751	652	227	148	129	131
AC-FT	33650	15670	168900	224700	57560	58890	103500	102100	72550	11760	8620	36300
CAL YR 1987	TOTAL 344758		MEAN 945	MAX 8150	MIN 101	AC-FT 683800						
WTR YR 1988	TOTAL 450806		MEAN 1232	MAX 10800	MIN 129	AC-FT 894200						

MCKENZIE RIVER BASIN

14158500 MCKENZIE RIVER AT OUTLET OF CLEAR LAKE, OR

LOCATION.--Lat 44°21'40", long 121°59'40", in SE 1/4 sec.8, T.14 S., R.7 E., Linn County, Hydrologic Unit 17090004, Willamette National Forest, on west bank of Clear Lake in narrow channel, 150 ft upstream from outlet and at mile 89.6.

DRAINAGE AREA.--92.4 mi², hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--June 1912 to September 1915, October 1947 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1288: 1949. WSP 1318: 1915(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,015.32 ft above National Geodetic Vertical Datum of 1929 (levels by Eugene Water and Electric Board). June 20, 1912, to July 31, 1915, nonrecording gage at site 1.0 mi north at different datum.

REMARKS.--Records good. Flow regulated by natural storage in lake. At high stages an undetermined flow enters numerous sinkholes in lava rock along south edge of lake upstream from station.

AVERAGE DISCHARGE.--44 years, 464 ft³/s, 68.19 in/yr, 336,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,300 ft³/s Dec. 23, 1964, gage height, 8.15 ft; minimum discharge, 136 ft³/s Nov. 9-11, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 883 ft³/s Dec. 10, gage height, 3.79 ft; minimum discharge, 136 ft³/s Nov. 9-11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	165	144	157	320	371	385	526	547	452	353	245	205
2	164	142	171	307	366	387	547	536	474	349	242	204
3	163	141	187	295	361	394	658	538	504	345	240	203
4	161	139	217	280	358	411	679	532	516	339	239	202
5	e160	139	260	265	353	444	630	527	506	334	237	202
6	e160	139	298	250	347	500	625	523	499	329	236	201
7	e159	137	318	238	342	497	661	523	501	323	234	200
8	e158	137	328	232	345	493	647	524	501	318	232	199
9	e158	137	385	239	362	514	626	530	499	312	231	198
10	e157	136	746	274	364	507	618	527	494	306	230	197
11	e157	137	766	289	361	492	622	542	484	301	229	196
12	e156	140	621	301	366	480	639	572	471	297	228	195
13	e156	144	558	326	378	469	657	591	461	293	226	194
14	e155	142	540	379	381	461	663	586	454	288	225	193
15	e156	140	541	406	389	452	643	560	445	284	223	192
16	e154	142	540	407	391	440	632	557	435	281	222	191
17	e153	140	531	411	394	425	623	562	424	278	221	191
18	e153	140	513	426	400	414	609	549	414	274	220	189
19	e152	140	489	467	404	405	597	534	405	272	219	193
20	e152	140	469	470	403	402	595	525	399	270	217	190
21	e151	142	458	464	400	406	605	519	395	268	216	188
22	e151	142	439	458	396	406	592	516	391	266	215	187
23	e150	143	414	447	392	434	568	507	388	264	214	186
24	e150	144	396	428	388	432	551	490	384	261	213	186
25	e149	145	386	410	384	439	538	472	382	259	212	186
26	e148	142	378	397	381	471	524	458	377	257	211	186
27	e148	142	370	389	380	567	520	453	372	255	210	187
28	148	142	361	383	380	561	534	452	368	253	209	185
29	148	142	352	387	383	548	567	447	365	251	208	184
30	147	142	344	384	---	533	571	444	358	249	207	184
31	145	---	337	377	---	524	---	442	---	247	206	---
TOTAL	4784	4222	12870	11106	10920	14293	18067	16085	13118	8976	6917	5794
MEAN	154	141	415	358	377	461	602	519	437	290	223	193
MAX	165	145	766	470	404	567	679	591	516	353	245	205
MIN	145	136	157	232	342	385	520	442	358	247	206	184
AC-FT	9490	8370	25530	22030	21660	28350	35840	31900	26020	17800	13720	11490
CFSM	1.67	1.52	4.49	3.88	4.08	4.99	6.52	5.62	4.73	3.13	2.41	2.09
IN.	1.93	1.70	5.18	4.47	4.40	5.75	7.27	6.48	5.28	3.61	2.78	2.33

CAL YR 1987 TOTAL 115387 MEAN 316 MAX 766 MIN 136 AC-FT 228900 CFSM 3.42 IN. 46.45
WTR YR 1988 TOTAL 127152 MEAN 347 MAX 766 MIN 136 AC-FT 252200 CFSM 3.76 IN. 51.19

e Estimated

MCKENZIE RIVER BASIN

99

14158790 SMITH RIVER ABOVE SMITH RIVER RESERVOIR, NEAR BELKNAP SPRINGS, OR

LOCATION.--Lat 44°20'05", long 122°02'45", in SW 1/4 SW 1/4 sec.24, T.14 S., R.6 E., Linn County, Hydrologic Unit 17090004, in Willamette National Forest, on right bank 200 ft upstream from Smith River Reservoir, 0.7 mi downstream from Browder Creek, 10 mi north of town of Belknap Springs, and at mile 4.4.

DRAINAGE AREA.--16.2 mi².

PERIOD OF RECORD.--October 1960 to current year.

REVISED RECORDS.--WDR OR 80-2: 1978(P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,610.00 ft above National Geodetic Vertical Datum of 1929 (levels by Eugene Water and Electric Board). Prior to Sept. 10, 1964, at datum 1.56 ft higher.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--28 years, 90.3 ft³/s, 75.70 in/yr, 65,420 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,160 ft³/s Dec. 22, 1964, gage height, 11.9 ft, from floodmark, from rating curve extended above 560 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 2.5 ft³/s Sept. 15-18, 1980.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0100	*2,010	*8.76	No other peak greater than base discharge.			
Minimum discharge, 2.9 ft ³ /s Sept. 12-16.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	4.6	134	17	87	134	109	122	187	13	5.3	3.3
2	3.5	4.6	178	22	70	120	207	117	170	14	5.2	3.3
3	3.6	3.4	431	16	59	134	427	118	177	14	5.2	3.2
4	3.7	3.3	266	15	52	175	271	105	148	12	5.0	3.2
5	3.7	3.1	172	14	46	199	197	101	117	12	4.9	3.2
6	3.7	3.1	170	14	42	170	230	104	98	12	4.8	3.2
7	3.6	3.1	145	13	40	135	236	114	96	11	4.8	3.2
8	3.6	3.0	111	14	68	132	177	133	85	10	4.8	3.2
9	3.6	4.0	610	100	229	155	147	140	79	9.9	4.6	3.1
10	3.5	3.6	1020	454	251	122	139	149	76	9.5	4.6	3.1
11	3.5	4.0	359	320	199	101	159	184	66	9.2	4.6	3.1
12	3.3	8.7	203	173	165	87	184	194	58	8.9	4.5	3.0
13	3.3	23	138	127	153	76	203	200	51	9.5	4.4	3.0
14	3.3	13	104	394	127	69	190	188	46	9.4	4.4	2.9
15	3.3	7.9	81	331	122	64	164	155	42	8.6	4.4	2.9
16	3.3	11	65	201	102	58	158	156	38	8.2	4.3	3.0
17	3.3	9.1	53	141	88	54	140	137	35	7.9	4.2	3.1
18	3.3	7.5	45	107	75	55	120	115	32	7.6	4.2	3.1
19	3.3	6.6	39	84	67	61	112	98	29	7.4	4.1	7.9
20	3.3	6.2	35	72	65	71	112	87	26	7.1	4.0	4.7
21	3.2	7.3	42	61	72	90	121	84	24	6.9	4.0	3.9
22	3.1	9.1	39	53	78	93	111	82	22	6.8	3.9	3.7
23	3.1	12	34	50	75	176	98	71	20	6.6	3.8	3.7
24	3.1	14	30	45	70	131	88	61	19	6.4	3.7	3.7
25	3.1	13	27	41	74	150	80	53	17	6.3	3.7	4.7
26	3.1	9.8	25	42	87	286	77	47	16	6.0	3.7	7.5
27	3.0	8.3	24	54	102	276	87	45	15	5.8	3.6	12
28	3.0	7.5	23	76	119	184	124	73	15	5.7	3.5	6.1
29	3.0	6.7	21	159	146	144	173	74	16	5.6	3.5	5.1
30	3.0	6.7	20	150	---	114	150	67	14	5.5	3.5	4.7
31	3.4	---	20	112	---	101	---	75	---	5.4	3.5	---
TOTAL	103.3	227.2	4664	3472	2930	3917	4791	3449	1834	268.2	132.7	123.8
MEAN	3.33	7.57	150	112	101	126	160	111	61.1	8.65	4.28	4.13
MAX	3.7	23	1020	454	251	286	427	200	187	14	5.3	12
MIN	3.0	3.0	20	13	40	54	77	45	14	5.4	3.5	2.9
AC-FT	205	451	9250	6890	5810	7770	9500	6840	3640	532	263	246
CFSM	.21	.47	9.29	6.91	6.24	7.80	9.86	6.87	3.77	.53	.26	.25
IN.	.24	.52	10.71	7.97	6.73	8.99	11.00	7.92	4.21	.62	.30	.28

CAL YR 1987	TOTAL 20949.5	MEAN 57.4	MAX 1020	MIN 3.0	AC-FT 41550	CFSM 3.54	IN. 48.11
WTR YR 1988	TOTAL 25912.2	MEAN 70.8	MAX 1020	MIN 2.9	AC-FT 51400	CFSM 4.37	IN. 59.50

MCKENZIE RIVER BASIN

14158795 SMITH RIVER RESERVOIR NEAR BELKNAP SPRINGS, OR

LOCATION.--Lat 44°18'20", long 122°02'40", in SW 1/4 SW 1/4 sec.36, T.14 S., R.6 E., Linn County, Hydrologic Unit 17090004, Willamette National Forest, in intake tower near left end of Smith River Dam on Smith River, 800 ft upstream from Bunchgrass Creek, 8 mi north of town of Belknap Springs, and at mile 2.1.

DRAINAGE AREA.--18.2 mi²

PERIOD OF RECORD.--March 1963 to current year.

REVISED RECORDS.--WDR OR-86-2: 1985.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Eugene Water and Electric Board).

REMARKS.--Reservoir is formed by earthfill dam with concrete spillway completed in 1963 by Eugene Water and Electric Board; storage began Mar. 18, 1963. Total capacity is 15,000 acre-ft at elevation 2,605.0 ft, top of spillway gates, and usable capacity is 9,900 acre-ft between elevations 2,525.0 ft, minimum power pool, and 2,605.0 ft. Storage of 5,100 acre-ft, below elevation 2,525.0 ft, not normally available for release. Water used for power generation. Figures herein represent total contents.

COOPERATION.--Elevations and area-volume curves furnished by Eugene Water and Electric Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 15,200 acre-ft Dec. 22, 1964, elevation, 2,606.5 ft; minimum contents, 5,700 acre-ft Apr. 11, 14, 1964, elevation, 2,532.90 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 14,800 acre-ft June 11, elevation, 2,603.86 ft; minimum contents, 13,400 acre-ft Feb. 12, elevation, 2,595.73 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30.....	2,601.56	14,370	--
Oct. 31.....	2,601.77	14,400	+30
Nov. 30.....	2,597.29	13,670	-730
Dec. 31.....	2,597.03	13,630	-40
CAL YR 1987.....	--	--	+400
Jan. 31.....	2,597.89	13,760	+130
Feb. 29.....	2,597.71	13,730	-30
Mar. 31.....	2,598.66	13,890	+160
Apr. 30.....	2,599.22	13,980	+90
May 31.....	2,601.33	14,330	+350
June 30.....	2,601.51	14,360	+30
July 31.....	2,601.39	14,340	-20
Aug. 31.....	2,601.72	14,390	+50
Sept.30.....	2,602.49	14,520	+130
WTR YR 1988.....	--	--	+150

MCKENZIE RIVER BASIN

101

14158850 MCKENZIE RIVER BELOW TRAIL BRIDGE DAM, NEAR BELKNAP SPRINGS, OR

LOCATION.--Lat 44°16'05", long 122°02'55", in T.15 S., R.6 E., (unsurveyed), Linn County, Hydrologic Unit 17090004, in Willamette National Forest, on left bank 0.4 mi downstream from Trail Bridge Dam, 0.5 mi upstream from Anderson Creek, 5 mi north of town of Belknap Springs, and at mile 81.5.

DRAINAGE AREA.--184 mi².

PERIOD OF RECORD.--October 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,980.00 ft above National Geodetic Vertical Datum of 1929 (levels by Eugene Water and Electric Board). Prior to Oct. 11, 1963, at datum 5.60 ft higher.

REMARKS.--Records good. Flow regulated since 1963 by Smith River Reservoir (station 14158795). Diurnal fluctuations by powerplants and by Trail Bridge re-regulating reservoir upstream. Water is diverted from McKenzie River in SW 1/4 sec.20, T.14 S., R.7 E., to Smith River Reservoir and returned to river upstream from station.

AVERAGE DISCHARGE.--29 years, 1,022 ft³/s, 75.43 in/yr, 740,400 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,200 ft³/s Dec. 22, 1964, gage height, 12.45 ft, from rating curve extended above 3,700 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 185 ft³/s Feb. 3, 1963; minimum daily, 425 ft³/s Nov. 23, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,500 ft³/s Dec. 10, gage height, 9.06 ft; minimum discharge, 504 ft³/s Nov. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	618	601	861	750	939	992	1140	1190	1130	828	664	639
2	615	609	856	739	937	990	1270	1170	1120	813	665	614
3	615	589	1140	724	908	978	1470	1180	1150	803	665	610
4	618	595	981	699	872	1030	1390	1180	1110	787	664	623
5	618	595	928	701	849	1170	1320	1170	1080	777	664	621
6	623	594	955	696	830	1160	1340	1170	1050	777	665	622
7	622	594	966	671	813	1100	1420	1170	1070	756	647	622
8	625	594	911	653	901	1100	1330	1170	1070	752	654	622
9	626	598	1650	807	1120	1160	1270	1210	1040	761	659	622
10	620	602	2310	1380	1170	1140	1240	1190	1030	758	659	620
11	611	598	1440	1250	1070	1090	1300	1180	1030	743	658	600
12	602	615	1360	953	1060	1010	1310	1240	1030	745	659	597
13	596	663	1270	994	1040	1000	1270	1240	1000	746	650	605
14	600	681	1180	1330	1020	1000	1360	1240	992	739	655	605
15	608	663	1210	1350	984	979	1300	1200	990	721	675	606
16	610	698	1090	1160	1010	973	1240	1210	959	719	660	605
17	612	691	1060	1060	1010	976	1250	1220	957	706	645	606
18	612	664	1060	1040	970	931	1210	1140	914	681	647	608
19	606	617	1020	1020	956	923	1220	1140	869	696	636	638
20	599	615	935	1050	950	922	1230	1130	869	703	631	616
21	606	598	949	1010	928	937	1240	1120	888	702	636	600
22	604	593	967	981	948	986	1210	1100	884	697	637	590
23	597	602	937	962	951	1150	1160	1070	865	698	634	588
24	599	608	852	946	942	1010	1130	1030	852	687	634	592
25	598	634	844	899	941	1060	1120	1010	848	670	636	598
26	598	615	832	898	940	1320	1120	984	838	671	636	617
27	606	582	814	917	941	1390	1150	966	827	687	634	646
28	616	584	814	934	969	1240	1160	991	827	686	641	602
29	598	591	818	1040	984	1180	1210	990	826	683	642	584
30	578	593	807	1060	---	1190	1240	969	825	669	642	581
31	594	---	779	940	---	1160	---	977	---	664	642	---
TOTAL	18850	18476	32596	29614	27953	33247	37620	34947	28940	22525	20136	18299
MEAN	608	616	1051	955	964	1072	1254	1127	965	727	650	610
MAX	626	698	2310	1380	1170	1390	1470	1240	1150	828	675	646
MIN	578	582	779	653	813	922	1120	966	825	664	631	581
AC-FT	37390	36650	64650	58740	55440	65950	74620	69320	57400	44680	39940	36300
MEAN†	609	604	1051	957	963	1075	1256	1133	965	726	650	612
CFSM†	3.31	3.28	5.71	5.20	5.23	5.84	6.83	6.16	5.24	3.95	3.53	3.33
IN.†	3.81	3.66	6.58	6.00	5.65	6.74	7.61	7.10	5.85	4.55	4.07	3.71
AC-FT†	37420	35920	64610	58870	55410	66110	74710	69670	57430	44660	39990	36430

CAL YR 1987 TOTAL 316363 MEAN 867 MAX 2310 MIN 578 AC-FT 627500 MEAN† 867 CFSM† 4.71 IN.† 63.98 AC-FT† 627900
WTR YR 1988 TOTAL 323203 MEAN 883 MAX 2310 MIN 578 AC-FT 641100 MEAN† 883 CFSM† 4.80 IN.† 65.34 AC-FT† 641200

† Adjusted for change in contents in Smith River Reservoir.

MCKENZIE RIVER BASIN

14159000 MCKENZIE RIVER AT MCKENZIE BRIDGE, OR

LOCATION.--Lat 44°10'45", long 122°07'45", on line between NE 1/4 and NW 1/4 sec.18, T.16 S., R.6 E., Lane County, Hydrologic Unit 17090004, Willamette National Forest, on left bank 1.0 mi upstream from Glen Creek, 1.7 mi east of town of McKenzie Bridge, and at mile 69.9.

DRAINAGE AREA.--348 mi² at cableway 1.2 mi upstream, where all discharge measurements are made.

PERIOD OF RECORD.--August 1910 to current year. Monthly discharge only for some periods, published in WSP 1318. Published as "near McKenzie Bridge" August 1910 to September 1911 and October 1914 to September 1916.

REVISED RECORDS.--WSP 1248: 1911-16, 1920-25. WSP 1448: 1919. WSP 1638: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,419.04 ft above National Geodetic Vertical Datum of 1929. Prior to June 2, 1932, nonrecording gage at several sites within 2 mi of present site at various datums.

REMARKS.--Records excellent except for estimated daily discharges and flows less than 1,500 ft³/s, which are fair. Flow regulated since March 1963 by Smith River Reservoir (Carmen-Smith Project) 12 mi upstream (station 14158795). No diversion upstream from station. All records given herein are for measuring site.

AVERAGE DISCHARGE.--78 years, 1,684 ft³/s, 1,220,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,100 ft³/s Dec. 22, 1964, gage height, 10.36 ft, from rating curve extended above 7,100 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 805 ft³/s Oct. 20, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,770 ft³/s Dec. 10, gage height, 4.63 ft; minimum daily discharge, 939 ft³/s Oct. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	983	962	1370	1310	e1690	1700	1990	2020	1930	1360	1130	1060
2	980	969	1540	1300	e1670	1700	2210	1980	1920	1350	1140	1030
3	980	949	1950	1290	e1610	1710	2860	2010	1940	1340	1140	1030
4	982	950	1730	1260	e1550	1810	2610	2010	1880	1320	1140	1040
5	981	951	1560	1250	e1520	2010	2400	1980	1810	1300	1130	1040
6	985	950	1540	1260	e1500	1990	2410	1970	1740	1280	1140	1040
7	986	951	1540	1230	e1480	1870	2490	1970	1760	1260	1110	1040
8	986	951	1440	1230	e1460	1860	2310	1980	1740	1250	1120	1030
9	986	953	2910	1550	e2160	2000	2170	2000	1700	1260	1120	1030
10	981	960	4720	3260	e2320	1930	2110	1990	1690	1260	1120	1030
11	975	964	2570	2760	2090	1870	2150	2000	1680	1250	1120	1020
12	969	1070	2210	2030	1980	1740	2200	2080	1660	1250	1120	1010
13	962	1130	2010	1930	1950	1720	2160	2110	1640	1250	1110	1020
14	960	1120	1840	2700	1870	1710	2230	2100	1620	1250	1100	1020
15	970	1070	1830	2790	1810	1700	2130	2000	1600	1220	1120	1020
16	966	1110	1700	2330	1800	1700	2040	2000	1580	1210	1110	1020
17	971	1100	1660	2050	1780	1690	2020	1980	1560	1210	1090	1020
18	972	1070	1650	1950	1720	1650	1940	1860	1540	1170	1090	1020
19	967	1030	1600	1850	1700	1640	1930	1840	1490	1190	1080	1060
20	959	1020	1510	1850	1700	1640	1960	1810	1480	1190	1070	1030
21	962	1020	1540	1760	1680	1670	2030	1800	1480	1190	1070	1020
22	964	1010	1570	1710	1680	1700	1980	1770	1470	1170	1070	1010
23	955	1030	1520	1700	1680	2010	1880	1720	1450	1180	1070	1000
24	958	1050	1440	1680	1660	1840	1840	1670	1430	1170	1060	1000
25	959	1070	1420	e1610	1650	1990	1810	1650	1420	1150	1060	1010
26	958	1040	1410	e1600	1660	2460	1810	1640	1410	1150	1060	1040
27	960	1010	1390	e1620	1670	2600	1840	1640	1390	1160	1060	1090
28	972	990	1370	e1640	1690	2250	1900	1650	1380	1160	1060	1020
29	960	991	1380	e1830	1710	2120	2090	1650	1380	1150	1060	1000
30	939	997	1370	e1900	---	2080	2100	1650	1360	1140	1060	998
31	952	---	1350	e1690	---	2020	---	1650	---	1130	1060	---
TOTAL	30040	30438	54640	55920	50440	58380	63600	58180	48130	37920	33990	30798
MEAN	969	1015	1763	1804	1739	1883	2120	1877	1604	1223	1096	1027
MAX	986	1130	4720	3260	2320	2600	2860	2110	1940	1360	1140	1090
MIN	939	949	1350	1230	1460	1640	1810	1640	1360	1130	1060	998
AC-FT	59580	60370	108400	110900	100000	115800	126200	115400	95470	75210	67420	61090

CAL YR 1987 TOTAL 512949 MEAN 1405 MAX 4720 MIN 939 AC-FT 1017000
WTR YR 1988 TOTAL 552476 MEAN 1509 MAX 4720 MIN 939 AC-FT 1096000

e Estimated

MCKENZIE RIVER BASIN

103

14159400 COUGAR LAKE NEAR RAINBOW, OR

LOCATION.--Lat 44°07'40", long 122°14'25", in SE 1/4 SE 1/4 sec.31, T.16 S., R.5 E., Lane County, Hydrologic Unit 17090004, Willamette National Forest, in intake tower near left end of Cougar Dam on South Fork McKenzie River, 2.7 mi south of Rainbow, and at mile 4.5.

DRAINAGE AREA.--207 mi².

PERIOD OF RECORD.--October 1963 to current year. Prior to October 1971, published as Cougar Reservoir near Rainbow.

GAGE.--Water-stage recorder. Datum gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Lake is formed by earthfill dam with concrete spillway completed in 1963 by the Corps of Engineers; storage began September 1963. Total capacity is 219,100 acre-ft at elevation 1,699 ft, maximum pool, and usable capacity is 164,800 acre-ft between elevations 1,516 ft, minimum power pool, and 1,699 ft. Lake used for flood control and power generation. Figures given herein represent total contents.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 214,100 acre-ft June 29, 1977, elevation, 1,695.06 ft; minimum contents, 33,690 acre-ft Oct. 31 to Nov. 2, 1965, elevation, 1,475.40 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 209,000 acre-ft June 2, elevation, 1,691.02 ft; minimum contents, 64,880 acre-ft Jan. 8, 9, elevation, 1,533.53 ft.

Capacity table (elevation, in feet, and total contents, in acre-feet)

1,510	50,920	1,650	162,300
1,550	75,940	1,696	215,300
1,600	114,800		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1634.41	1582.46	1564.73	1536.63	1563.90	1603.03	1652.95	1684.96	1690.97	1690.21	1681.08	1648.94
2	1632.99	1580.88	1565.82	1536.19	1565.00	1604.26	1655.21	1685.87	1690.87	1690.17	1680.81	1647.70
3	1631.55	1580.00	1567.26	1535.78	1566.06	1605.74	1659.04	1686.92	1690.50	1690.11	1680.54	1646.41
4	1630.09	1579.43	1567.77	1535.31	1567.07	1607.55	1662.07	1687.79	1690.07	1690.03	1679.96	1645.11
5	1628.58	1578.84	1567.48	1534.83	1567.98	1609.66	1663.85	1688.52	1689.95	1689.92	1679.20	1643.78
6	1627.10	1578.24	1566.94	1534.32	1568.83	1611.84	1665.44	1689.21	1690.02	1689.81	1678.26	1642.31
7	1625.57	1577.66	1566.23	1533.81	1569.65	1613.12	1666.96	1689.92	1690.11	1689.67	1677.25	1640.94
8	1624.03	1577.06	1565.21	1533.53	1571.39	1614.90	1668.07	1690.13	1690.14	1689.52	1676.23	1639.57
9	1622.47	1576.50	1568.70	1536.25	1576.87	1617.08	1668.89	1690.07	1690.06	1689.36	1675.20	1638.19
10	1620.90	1575.90	1578.70	1550.48	1581.94	1618.85	1669.56	1690.06	1690.01	1689.17	1674.17	1636.78
11	1619.31	1575.38	1579.72	1557.13	1584.61	1620.37	1669.75	1690.29	1690.04	1689.01	1673.12	1635.36
12	1617.69	1574.83	1575.11	1559.46	1585.81	1621.69	1670.54	1690.41	1690.00	1688.84	1672.05	1633.89
13	1616.00	1574.55	1569.43	1559.08	1586.62	1622.86	1671.34	1690.32	1689.92	1688.67	1670.99	1632.44
14	1614.34	1574.13	1564.53	1560.74	1586.99	1623.93	1672.50	1689.93	1690.02	1688.51	1669.93	1630.97
15	1612.66	1573.48	1562.36	1562.75	1587.29	1624.89	1673.88	1689.85	1690.08	1688.32	1668.86	1629.48
16	1610.96	1572.92	1561.08	1562.31	1587.32	1625.75	1674.59	1690.16	1690.10	1688.13	1667.77	1627.97
17	1609.25	1572.30	1559.47	1560.46	1588.03	1626.53	1675.14	1690.26	1690.09	1687.93	1666.67	1626.44
18	1607.52	1571.59	1557.65	1557.88	1589.12	1627.26	1675.53	1690.19	1690.05	1687.72	1665.56	1624.88
19	1605.76	1570.80	1555.70	1556.28	1590.34	1627.98	1675.87	1690.16	1690.05	1687.40	1664.46	1623.54
20	1603.97	1570.03	1553.83	1555.86	1591.56	1628.75	1676.17	1690.22	1690.01	1686.91	1663.34	1622.04
21	1602.17	1569.34	1552.35	1555.20	1592.75	1629.20	1677.54	1690.43	1690.00	1686.13	1662.20	1620.74
22	1601.11	1568.73	1551.02	1554.32	1593.91	1630.18	1678.44	1690.62	1690.08	1685.22	1661.06	1619.43
23	1599.26	1568.12	1549.51	1553.39	1594.98	1631.92	1679.04	1690.71	1690.14	1684.32	1659.90	1617.81
24	1597.39	1567.79	1547.79	1552.30	1595.99	1633.46	1679.46	1690.72	1690.17	1683.41	1658.75	1616.17
25	1595.50	1567.36	1546.00	1552.04	1596.99	1635.70	1680.21	1690.64	1690.19	1682.89	1657.56	1614.56
26	1594.07	1566.66	1544.18	1553.57	1598.02	1638.95	1680.43	1690.47	1690.19	1682.64	1656.35	1613.02
27	1592.10	1565.91	1542.28	1554.91	1599.16	1642.25	1680.75	1690.27	1690.19	1682.40	1655.15	1611.63
28	1590.11	1565.09	1540.58	1556.54	1600.41	1645.78	1681.35	1690.28	1690.19	1682.14	1653.94	1610.01
29	1588.09	1564.23	1539.17	1558.70	1601.70	1647.96	1682.77	1690.29	1690.23	1681.88	1652.71	1608.31
30	1586.17	1563.37	1537.78	1560.83	---	1649.76	1684.02	1690.25	1690.23	1681.63	1651.46	1606.58
31	1584.29	---	1537.01	1562.55	---	1651.34	---	1690.28	---	1681.36	1650.21	---
MAX	1634.41	1582.46	1579.72	1562.75	1601.70	1651.34	1684.02	1690.72	1690.97	1690.21	1681.08	1648.94
MIN	1584.29	1563.37	1537.01	1533.53	1563.90	1603.03	1652.95	1684.96	1689.92	1681.36	1650.21	1606.58
(+)	101700	85520	67140	84910	116200	163700	200500	208100	208000	197300	162500	120500
(#)	-46200	-16180	-18380	+17770	+31290	+47500	+36800	+7600	-100	-10700	-34800	-42000

CAL YR 1987 MAX 1678.33 MIN 1532.09 AC-FT# +3100
WTR YR 1988 MAX 1690.97 MIN 1533.53 AC-FT# -27400

† Contents, in acre-feet, at 2400, on last day of month.
‡ Change in contents, in acre-feet.

MCKENZIE RIVER BASIN

14159500 SOUTH FORK MCKENZIE RIVER NEAR RAINBOW, OR

LOCATION.--Lat 44°08'10", long 122°14'50", in NE 1/4 sec.31, T.16 S., R.5 E., Lane County, Hydrologic Unit 17090004, in Willamette National Forest, on right bank 0.2 mi upstream from Cougar Creek, 0.6 mi downstream from Cougar Dam, 2.1 mi south of Rainbow, and at mile 3.9.

DRAINAGE AREA.--208 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1947 to current year.

REVISED RECORDS.--WSP 1638: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,236.42 ft above National Geodetic Vertical Datum of 1929 (Federal Highway Administration bench mark). Oct. 1 to Nov. 4, 1947, nonrecording gage at site 40 ft upstream at datum 0.80 ft higher.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated since 1963 by Cougar Lake (station 14159400), usable capacity, 165,000 acre-ft. No diversion upstream from station.

AVERAGE DISCHARGE.--41 years, 859 ft³/s, 56.08 in/yr, 622,300 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,600 ft³/s Dec. 11, 1956, gage height, 8.66 ft, from rating curve extended above 8,100 ft³/s; maximum gage height, 8.90 ft Dec. 22, 1955 (backwater from debris); minimum discharge, 17 ft³/s Nov. 18, 1965; minimum daily, 85 ft³/s Apr. 26-28, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 24,500 ft³/s Dec. 28, 1945, gage height, 8.8 ft, from floodmarks, at Corps of Engineers gage at site 40 ft upstream at datum 0.80 ft higher; gage height at present site and datum, about 9.3 ft, computed by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,090 ft³/s Dec. 12, gage height, 3.83 ft; minimum discharge, 172 ft³/s Nov. 2; minimum daily, 268 ft³/s Mar. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	888	951	588	505	364	272	281	805	1290	402	409	812
2	890	781	972	507	366	268	275	818	1630	418	408	812
3	893	549	1230	509	320	274	294	802	1770	408	406	812
4	896	433	1210	508	288	274	364	800	1710	412	548	820
5	904	434	1180	511	288	279	693	805	1340	428	673	820
6	913	434	1140	513	290	281	823	813	1130	425	758	829
7	917	434	1130	515	290	278	828	857	1050	426	789	829
8	923	438	1130	520	290	271	828	1230	1050	424	789	829
9	929	431	1140	631	289	274	828	1360	1060	425	789	829
10	932	439	1080	542	287	275	831	1310	902	426	789	855
11	936	445	1830	816	721	271	833	1370	802	424	797	846
12	943	499	3040	1080	1030	270	837	1510	797	424	797	838
13	946	541	3040	1590	1020	270	825	1680	713	425	797	855
14	950	543	2510	2020	1010	273	822	1680	592	425	797	864
15	951	548	1540	2060	1010	274	833	1330	589	425	789	873
16	953	550	1110	2080	1030	272	815	1180	593	423	797	873
17	961	556	1160	2070	643	271	822	1270	597	423	797	882
18	961	555	1180	2050	421	276	833	1200	555	422	797	882
19	965	552	1180	1550	309	276	820	1100	521	483	797	892
20	974	549	1140	1080	270	277	684	908	519	555	797	892
21	977	552	1100	1080	271	282	642	796	426	690	804	758
22	651	560	1090	1090	272	285	804	798	402	782	804	774
23	990	565	1080	1090	277	284	804	800	403	776	804	901
24	990	574	1070	1090	279	279	805	801	402	775	797	892
25	995	580	1070	766	279	283	810	796	406	572	812	901
26	787	576	1060	372	278	284	810	800	406	404	812	901
27	1010	580	1060	372	278	281	818	796	403	404	820	901
28	1020	568	957	373	276	284	821	802	403	407	820	901
29	1030	574	846	368	281	286	810	804	406	408	820	910
30	986	572	838	362	---	276	807	804	406	407	820	920
31	949	---	650	365	---	285	---	806	---	408	812	---
TOTAL	29010	16363	39351	28985	13027	8585	22100	31631	23273	14656	23245	25703
MEAN	936	545	1269	935	449	277	737	1020	776	473	750	857
MAX	1030	951	3040	2080	1030	286	837	1680	1770	782	820	920
MIN	651	431	588	362	270	268	275	796	402	402	406	758
AC-FT	57540	32460	78050	57490	25840	17030	43840	62740	46160	29070	46110	50980
MEAN†	184	274	970	1224	993	1049	1355	1144	774	299	184	151
CFSM†	0.88	1.32	4.66	5.88	4.77	5.04	6.51	5.50	3.72	1.44	0.88	0.73
IN.†	1.02	1.47	5.37	6.78	5.15	5.81	7.27	7.34	4.15	1.66	1.02	0.81
AC-FT†	11340	16280	59670	75260	57130	64530	80640	70340	46060	18370	11310	8980

CAL YR 1987 TOTAL 207902 MEAN 570 MAX 3040 MIN 298 AC-FT 412400 MEAN† 574 CFSM† 2.76 IN.† 37.45 AC-FT† 415500
WTR YR 1988 TOTAL 275929 MEAN 754 MAX 3040 MIN 268 AC-FT 547300 MEAN† 716 CFSM† 3.44 IN.† 46.87 AC-FT† 519900

† Adjusted for change in contents in Cougar Lake.

MCKENZIE RIVER BASIN

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14159500 SOUTH FORK MCKENZIE RIVER NEAR RAINBOW, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July 1955 to current year.

INSTRUMENTATION.--Temperature recorder since July 1955.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 20.0°C July 28, 1958; minimum, 0.5°C Jan. 20-23, 1962.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 13.5°C Oct. 6-19, 24-27; minimum, 4.0°C many days in January and February.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	13.0	12.5	12.5	13.0	13.0	13.0	9.5	9.0	9.0	4.5	4.5	4.5
2	13.0	12.5	13.0	13.0	12.5	13.0	9.0	8.0	9.0	4.5	4.5	4.5
3	13.0	12.5	13.0	12.5	12.0	12.5	9.0	8.5	8.5	4.5	4.0	4.5
4	13.0	12.5	13.0	12.5	12.0	12.5	8.5	8.5	8.5	4.5	4.0	4.5
5	13.0	13.0	13.0	12.0	12.0	12.0	8.5	8.5	8.5	4.5	4.0	4.0
6	13.5	13.0	13.0	12.5	12.0	12.0	8.5	8.0	8.5	4.5	4.0	4.0
7	13.5	12.5	13.0	12.5	12.0	12.0	8.5	8.0	8.5	4.5	4.0	4.0
8	13.5	13.0	13.0	12.0	11.5	12.0	8.5	8.0	8.0	4.0	4.0	4.0
9	13.5	13.0	13.0	12.0	11.5	12.0	8.5	8.0	8.0	4.5	4.0	4.5
10	13.5	13.0	13.5	12.5	11.5	12.0	8.5	7.5	8.0	5.0	4.5	5.0
11	13.5	13.0	13.0	11.5	11.5	11.5	7.5	7.0	7.0	5.0	4.5	4.5
12	13.5	13.0	13.5	12.0	11.5	11.5	7.0	7.0	7.0	4.5	4.0	4.5
13	13.5	13.0	13.5	12.0	11.5	11.5	7.0	7.0	7.0	4.5	4.0	4.0
14	13.5	13.0	13.5	12.0	11.0	11.5	7.0	6.5	7.0	4.5	4.0	4.0
15	13.5	13.0	13.0	11.5	11.0	11.5	6.5	6.5	6.5	4.5	4.5	4.5
16	13.5	13.0	13.0	11.5	11.0	11.0	6.5	6.0	6.5	4.5	4.0	4.5
17	13.5	13.0	13.0	11.5	11.0	11.0	6.5	6.0	6.0	4.5	4.0	4.0
18	13.5	13.0	13.0	11.5	11.0	11.5	6.5	6.0	6.0	4.5	4.0	4.5
19	13.5	13.0	13.0	11.5	11.0	11.0	6.0	6.0	6.0	4.5	4.0	4.0
20	13.0	13.0	13.0	11.0	10.5	11.0	6.0	6.0	6.0	4.5	4.0	4.5
21	13.0	13.0	13.0	11.0	10.5	10.5	6.0	5.5	5.5	4.5	4.0	4.0
22	13.0	13.0	13.0	10.5	10.5	10.5	5.5	5.5	5.5	4.5	4.0	4.0
23	13.0	13.0	13.0	10.5	10.0	10.5	5.5	5.5	5.5	4.5	4.0	4.0
24	13.5	13.0	13.0	10.5	10.0	10.5	5.5	5.0	5.5	4.5	4.0	4.0
25	13.5	13.0	13.0	10.0	9.5	10.0	5.0	5.0	5.0	4.5	4.0	4.0
26	13.5	12.5	13.0	10.0	9.5	10.0	5.0	5.0	5.0	4.5	4.0	4.5
27	13.5	13.0	13.0	10.0	9.5	10.0	5.0	5.0	5.0	4.5	4.0	4.5
28	13.0	13.0	13.0	9.5	9.5	9.5	5.0	5.0	5.0	4.5	4.5	4.5
29	13.0	13.0	13.0	9.5	9.0	9.5	5.0	5.0	5.0	4.5	4.5	4.5
30	13.0	13.0	13.0	9.5	9.0	9.5	5.0	4.5	4.5	4.5	4.0	4.5
31	13.0	13.0	13.0	---	---	---	4.5	4.5	4.5	4.5	4.5	4.5
MONTH	13.5	12.5	13.0	13.0	9.0	11.0	9.5	4.5	6.5	5.0	4.0	4.5

MCKENZIE RIVER BASIN

14159500 SOUTH FORK MCKENZIE RIVER NEAR RAINBOW, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4.5	4.0	4.5	5.0	4.5	5.0	6.0	5.0	5.5	6.0	5.5	5.5
2	4.5	4.0	4.0	5.0	4.5	5.0	5.0	5.0	5.0	5.5	5.0	5.5
3	4.0	4.0	4.0	5.0	4.5	5.0	5.5	5.0	5.0	6.0	5.0	5.5
4	4.0	4.0	4.0	5.0	4.5	5.0	6.0	5.0	5.5	6.0	5.0	5.5
5	4.0	4.0	4.0	5.5	5.0	5.0	5.5	5.0	5.0	6.0	5.5	5.5
6	4.5	4.0	4.0	5.5	4.5	5.0	5.5	5.0	5.0	6.0	5.0	5.5
7	4.5	4.0	4.0	6.0	4.5	5.0	5.5	5.0	5.0	6.0	5.5	5.5
8	4.5	4.0	4.5	5.0	5.0	5.0	5.5	5.0	5.0	6.0	5.0	5.5
9	4.5	4.5	4.5	5.5	4.5	5.0	5.5	5.0	5.5	6.0	5.5	5.5
10	4.5	4.5	4.5	5.5	4.5	5.0	5.5	5.0	5.5	6.0	5.0	5.5
11	5.0	4.5	4.5	5.5	4.5	4.5	5.5	5.5	5.5	6.5	5.0	5.5
12	5.0	4.5	5.0	5.5	4.5	5.0	5.5	5.0	5.5	6.0	5.5	5.5
13	5.0	4.5	4.5	6.0	4.5	5.0	5.5	5.0	5.5	6.0	5.5	5.5
14	5.0	4.5	5.0	6.0	4.5	5.0	5.5	5.0	5.5	6.0	5.5	6.0
15	5.0	4.5	5.0	6.0	4.5	5.0	5.5	5.0	5.0	6.0	5.0	5.5
16	5.0	4.5	5.0	5.5	4.5	5.0	5.5	5.5	5.5	6.0	5.5	6.0
17	5.0	4.5	5.0	5.5	4.5	5.0	5.5	5.0	5.0	6.5	5.5	6.0
18	5.0	4.5	4.5	5.5	4.5	5.0	5.5	5.0	5.5	6.0	5.5	6.0
19	5.0	4.5	5.0	5.5	4.5	5.0	5.5	5.0	5.5	6.5	5.5	6.0
20	5.5	4.5	5.0	5.0	4.5	5.0	5.5	5.0	5.0	6.5	5.5	6.0
21	5.5	4.5	5.0	5.5	4.5	5.0	5.5	5.0	5.5	6.5	5.5	6.0
22	5.5	4.5	5.0	5.0	5.0	5.0	5.5	5.0	5.5	6.5	5.5	6.0
23	5.5	5.0	5.0	5.0	5.0	5.0	5.5	5.0	5.5	6.5	5.5	6.0
24	5.5	5.0	5.0	5.0	5.0	5.0	5.5	5.0	5.5	6.5	5.5	6.0
25	5.5	5.0	5.0	6.0	5.0	5.0	6.0	5.0	5.5	6.5	5.5	6.0
26	6.0	5.0	5.0	5.5	5.0	5.0	6.0	5.0	5.5	6.5	6.0	6.0
27	5.5	4.5	5.0	5.5	5.0	5.0	6.0	5.0	5.5	6.5	5.5	6.0
28	5.5	4.5	5.0	6.0	5.0	5.0	6.0	5.0	5.5	6.5	5.5	6.0
29	5.5	4.5	5.0	5.5	5.0	5.0	5.5	5.0	5.5	6.5	6.0	6.0
30	---	---	---	6.0	5.0	5.0	5.5	5.0	5.5	6.5	6.0	6.5
31	---	---	---	6.0	4.5	5.0	---	---	---	6.5	6.0	6.0
MONTH	6.0	4.0	4.5	6.0	4.5	5.0	6.0	5.0	5.5	6.5	5.0	6.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	6.5	6.0	6.5	8.0	6.0	7.0	9.0	7.0	8.0			
2	6.5	6.0	6.5	7.5	6.0	7.0	9.0	7.5	8.0			
3	7.0	6.0	6.5	8.0	6.0	7.0	---	---	---			
4	7.0	6.0	6.5	8.0	6.5	7.0	---	---	---			
5	7.0	5.5	6.0	8.0	6.5	7.0	---	---	---			
6	7.0	6.0	6.5	8.0	6.5	7.5	---	---	---			
7	7.0	6.0	6.5	8.5	6.5	7.5	---	---	---			
8	7.0	6.0	6.5	8.5	6.5	7.5	---	---	---			
9	7.0	6.0	6.5	8.5	6.5	7.5	---	---	---			
10	7.0	6.0	6.5	8.5	7.0	7.5	---	---	---			
11	7.0	6.0	6.5	8.0	6.5	7.5	---	---	---			
12	7.0	5.5	6.5	8.0	7.0	7.5	---	---	---			
13	7.0	6.0	6.5	8.5	6.5	7.5	---	---	---			
14	7.0	6.0	6.5	8.5	6.5	7.5	---	---	---			
15	7.0	6.0	6.5	8.5	6.5	7.5	---	---	---			
16	7.5	6.5	7.0	8.5	7.0	7.5	---	---	---			
17	7.5	6.0	7.0	8.5	6.5	7.5	---	---	---			
18	8.0	6.0	7.0	8.5	7.0	7.5	---	---	---			
19	7.5	6.0	7.0	8.5	6.5	7.5	---	---	---			
20	7.5	6.0	7.0	8.5	6.5	8.0	---	---	---			
21	7.5	6.0	7.0	9.5	7.0	8.0	---	---	---			
22	7.5	6.0	6.5	8.5	7.0	8.0	---	---	---			
23	8.0	6.0	7.0	8.5	7.5	8.0	---	---	---			
24	8.0	6.0	7.0	8.5	7.5	8.0	---	---	---			
25	7.5	6.0	6.5	9.0	7.5	8.0	---	---	---			
26	8.0	6.0	7.0	9.0	7.0	8.0	---	---	---			
27	8.0	6.0	7.0	9.0	6.5	8.0	---	---	---			
28	7.5	6.5	7.0	9.0	7.0	8.0	---	---	---			
29	8.0	6.5	7.0	9.0	6.5	8.0	---	---	---			
30	8.0	6.0	7.0	9.0	7.0	8.0	---	---	---			
31	---	---	---	9.0	7.0	8.0	---	---	---			
MONTH	8.0	5.5	6.5	9.5	6.0	7.5	---	---	---			

MCKENZIE RIVER BASIN

107

14161100 BLUE RIVER BELOW TIDBITS CREEK, NEAR BLUE RIVER, OR

LOCATION.--Lat 44°13'05", long 122°15'50", in SE 1/4 NE 1/4 sec.36, T.15 S., R.4 E., Lane County, Hydrologic Unit 17090004, in Willamette National Forest, on left bank 0.2 mi downstream from Tidbits Creek, 5.5 mi northeast of town of Blue River, and at mile 8.5.

DRAINAGE AREA.--45.8 mi².

PERIOD OF RECORD.--September 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,386.90 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--25 years, 255 ft³/s, 75.61 in/yr, 184,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,400 ft³/s Dec. 22, 1964, gage height, 15.32 ft, from floodmarks, from rating curve extended above 2,800 ft³/s on basis of slope-area measurement of peak flow; minimum daily discharge, 6.0 ft³/s Oct. 27-29, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0200	*4,620	*9.13	Jan. 10	0330	2,760	7.69

Minimum daily discharge, 6.0 ft³/s Oct. 27-29, but may have been less during period of no gage-height record Oct. 2-31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	10	462	106	321	234	327	345	782	52	21	12
2	e6.9	14	585	100	267	212	523	357	514	52	20	12
3	e6.9	12	998	98	230	251	1110	408	419	52	20	11
4	e6.8	11	592	94	204	333	785	366	338	49	19	11
5	e6.8	11	347	91	188	391	553	331	273	47	19	11
6	e6.7	9.8	341	89	177	393	526	310	228	47	19	10
7	e6.7	9.6	355	90	173	319	499	339	218	44	19	10
8	e6.6	10	290	141	352	309	387	341	191	42	19	10
9	e6.6	11	1980	859	930	429	323	321	182	39	18	10
10	e6.5	12	2650	2350	927	345	300	304	187	38	18	10
11	e6.4	14	869	1260	636	285	306	300	165	38	18	10
12	e6.4	41	494	626	487	252	306	281	153	38	18	10
13	e6.4	109	348	469	472	228	291	285	137	37	18	10
14	e6.3	84	283	1510	377	217	282	297	126	37	17	10
15	e6.3	44	238	1190	344	204	247	251	117	35	16	10
16	e6.2	66	205	682	307	186	229	245	107	33	16	10
17	e6.2	61	176	458	276	171	209	228	100	32	15	10
18	e6.2	46	157	356	254	165	187	203	95	31	15	10
19	e6.2	35	142	300	232	164	187	181	90	30	15	31
20	e6.1	30	133	271	227	164	203	165	84	28	15	20
21	e6.1	39	212	250	243	186	318	154	79	28	15	14
22	e6.1	52	226	238	246	191	335	143	75	27	14	13
23	e6.1	88	186	241	221	484	273	132	71	26	14	12
24	e6.1	107	160	237	203	392	236	120	68	26	13	11
25	e6.1	112	145	234	203	553	212	109	65	25	13	11
26	e6.1	72	136	277	217	862	195	105	63	23	13	19
27	e6.0	56	127	301	235	817	189	102	61	23	13	72
28	e6.0	47	122	338	246	500	215	146	58	22	13	32
29	e6.0	41	119	725	258	402	337	167	58	22	13	22
30	e6.6	39	116	675	---	344	378	164	56	22	12	19
31	e7.3	---	117	424	---	305	---	194	---	21	12	---
TOTAL	198.9	1293.4	13311	15080	9453	10288	10468	7394	5160	1066	500	463
MEAN	6.42	43.1	429	486	326	332	349	239	172	34.4	16.1	15.4
MAX	7.3	112	2650	2350	930	862	1110	408	782	52	21	72
MIN	6.0	9.6	116	89	173	164	187	102	56	21	12	10
AC-FT	395	2570	26400	29910	18750	20410	20760	14670	10230	2110	992	918
CFSM	.14	.94	9.38	10.6	7.12	7.25	7.62	5.21	3.76	.75	.35	.34
IN.	.16	1.05	10.81	12.25	7.68	8.36	8.50	6.01	4.19	.87	.41	.38

CAL YR 1987 TOTAL 55707.9 MEAN 153 MAX 2650 MIN 6.0 AC-FT 110500 CFSM 3.33 IN. 45.25
WTR YR 1988 TOTAL 74675.3 MEAN 204 MAX 2650 MIN 6.0 AC-FT 148100 CFSM 4.45 IN. 60.65

e Estimated

MCKENZIE RIVER BASIN

14161500 LOOKOUT CREEK NEAR BLUE RIVER, OR

LOCATION.--Lat 44°12'35", long 122°15'20", in T.15 or 16 S., R.5 E. (unsurveyed), Lane County, Hydrologic Unit 17090004, in Willamette National Forest, on left bank 6.0 mi northeast of town of Blue River, and at mile 0.5.

DRAINAGE AREA.--24.1 mi².

PERIOD OF RECORD.--August 1949 to September 1955, September 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,377.76 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--Water-discharge records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--31 years, 124 ft³/s, 69.87 in/yr, 89,840 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,660 ft³/s Dec. 22, 1964, gage height, 8.88 ft, from rating curve extended above 1,300 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 4.8 ft³/s Sept. 16, 17, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 9	1200	*1,090	*5.18	Jan. 10	0330	1,010	5.07

Minimum discharge, 5.0 ft³/s Oct. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.1	6.4	93	44	161	106	156	177	256	33	16	9.5
2	6.0	7.2	159	42	135	98	205	175	217	33	16	9.2
3	5.9	5.7	259	41	117	111	385	189	213	33	15	9.0
4	5.9	5.4	201	39	105	149	334	182	190	31	15	9.0
5	5.9	5.3	135	37	94	181	267	167	161	30	15	e9.0
6	5.8	5.2	115	37	86	194	248	155	139	29	14	e9.0
7	5.7	5.2	105	37	81	166	221	158	129	e29	14	e8.9
8	5.6	5.2	92	56	138	154	185	157	115	e28	14	e8.8
9	5.6	5.4	628	320	305	188	163	153	106	e27	13	e8.7
10	5.5	5.3	778	937	348	173	151	158	104	e26	13	8.6
11	5.5	6.2	389	579	283	147	149	172	93	e25	13	8.6
12	5.5	15	242	343	235	129	150	166	85	24	13	8.4
13	5.5	30	171	271	211	114	145	167	78	24	13	8.4
14	5.4	19	132	537	181	105	140	168	71	24	13	8.4
15	5.3	11	108	508	169	97	124	146	66	23	13	8.4
16	5.3	17	90	349	149	90	116	143	62	22	13	8.4
17	5.3	13	76	256	134	83	106	130	59	22	12	8.6
18	5.3	10	66	198	122	79	97	117	57	21	12	8.7
19	5.3	8.6	59	158	111	78	96	105	54	20	12	16
20	5.2	7.8	56	137	105	78	109	97	51	20	12	12
21	5.2	8.7	84	122	102	88	167	91	48	19	11	10
22	5.2	11	92	110	99	88	167	85	46	19	11	9.5
23	5.2	19	78	104	94	167	142	78	44	19	11	9.2
24	5.2	26	67	97	89	166	124	72	42	19	10	9.0
25	5.2	28	61	91	87	275	111	66	41	18	10	9.5
26	5.2	16	56	95	91	346	103	63	39	18	10	13
27	5.2	13	53	113	97	337	106	61	38	17	10	26
28	5.1	11	50	138	104	254	122	78	37	17	10	13
29	5.2	9.7	48	214	112	214	187	82	38	17	9.9	11
30	5.2	9.9	47	245	---	187	191	78	35	17	9.9	10
31	5.8	---	46	196	---	164	---	85	---	16	9.9	---
TOTAL	169.3	346.2	4636	6451	4145	4806	4967	3921	2714	720	383.7	305.8
MEAN	5.46	11.5	150	208	143	155	166	126	90.5	23.2	12.4	10.2
MAX	6.1	30	778	937	348	346	385	189	256	33	16	26
MIN	5.1	5.2	46	37	81	78	96	61	35	16	9.9	8.4
AC-FT	336	687	9200	12800	8220	9530	9850	7780	5380	1430	761	607
CFSM	.23	.48	6.21	8.63	5.93	6.43	6.87	5.25	3.75	.96	.51	.42
IN.	.26	.53	7.16	9.96	6.40	7.42	7.67	6.05	4.19	1.11	.59	.47

CAL YR 1987 TOTAL 24845.6 MEAN 68.1 MAX 778 MIN 5.1 AC-FT 49280 CFSM 2.82 IN. 38.35
WTR YR 1988 TOTAL 33565.0 MEAN 91.7 MAX 937 MIN 5.1 AC-FT 66580 CFSM 3.81 IN. 51.81

e Estimated

MCKENZIE RIVER BASIN

109

14162100 BLUE RIVER LAKE NEAR BLUE RIVER, OR

LOCATION.--Lat 44°10'20", long 122°19'40", in SE 1/4 SE 1/4 sec.16, T.16 S., R.4 E., Lane County, Hydrologic Unit 17090004, in intake tower near left end of Blue River Dam on Blue River, 1.4 mi north of town of Blue River, and at mile 1.7.

DRAINAGE AREA.--87.3 mi².

PERIOD OF RECORD.--October 1968 to current year. Prior to October 1971, published as Blue River Reservoir near Blue River.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam with concrete gate and spillway section, completed in 1968 by Corps of Engineers; storage began October 1968. Total capacity is 89,520 acre-ft at elevation 1,357 ft, maximum pool, and usable capacity is 85,550 acre-ft between elevations 1,180 ft, minimum flood control pool, and 1,357 ft, maximum pool. Reservoir used for flood control. Figures given herein represent total contents.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 85,680 acre-ft June 12, 13, 1977, elevation, 1,353.02 ft; minimum contents observed since first filling in 1968, 305 acre-ft Dec. 7, 1973, elevation, 1,125.47 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 83,770 acre-ft June 1, elevation, 1,351.01 ft; minimum contents recorded, 3930 acre-ft Dec. 29, elevation 1179.67 ft, but may have been lower during period of missing record, Dec. 5-8.

Capacity table (elevation, in feet, and total contents, in acre-feet)

1,120	136	1,160	1,880	1,250	19,260
1,130	437	1,180	3,970	1,290	36,960
1,140	764	1,200	7,030	1,340	73,710
1,150	1,210	1,220	11,040	1,354	86,620

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1203.10	1186.17	1206.02	1180.32	1237.75	1283.08	1327.09	1346.48	1350.72	1350.54	1335.09	1276.85
2	1202.65	1186.00	1210.50	1180.15	1238.92	1284.22	1328.25	1347.20	1350.01	1350.60	1333.59	1273.91
3	1202.18	1185.74	1213.13	1180.06	1239.59	1285.64	1330.86	1347.68	1350.17	1350.64	1332.14	1270.92
4	1201.73	1185.44	1207.62	1180.05	1239.97	1287.66	1331.06	1347.82	1350.10	1350.65	1330.68	1267.87
5	1201.28	1185.12	---	1180.00	1240.15	1290.12	1330.44	1347.93	1350.05	1350.64	1329.20	1264.77
6	1200.82	1184.80	---	1179.90	1240.20	1292.65	1329.84	1348.25	1350.16	1350.61	1327.74	1263.64
7	1200.29	1184.48	---	1180.24	1240.23	1294.54	1329.05	1348.76	1350.22	1350.55	1326.25	1263.47
8	1199.70	1184.14	---	1181.70	1242.22	1296.35	1328.73	1349.25	1350.17	1350.49	1324.99	1263.31
9	1199.07	1183.85	1200.83	1199.60	1248.89	1299.08	1328.97	1349.62	1350.04	1350.43	1323.82	1263.14
10	1198.45	1183.56	1223.87	1240.58	1254.59	1301.16	1329.24	1349.94	1350.00	1350.40	1322.53	1262.97
11	1197.85	1183.39	1218.09	1248.94	1257.59	1302.74	1330.03	1350.04	1350.04	1350.40	1320.95	1262.78
12	1197.22	1182.95	1210.31	1242.74	1259.26	1304.06	1331.12	1349.94	1350.12	1350.24	1319.20	1262.59
13	1196.61	1184.86	1202.84	1230.49	1260.70	1305.19	1332.11	1349.99	1350.16	1349.87	1317.47	1262.42
14	1195.99	1186.86	1198.70	1228.16	1261.34	1306.18	1333.08	1350.10	1350.17	1349.49	1315.70	1262.25
15	1195.37	1187.61	1197.95	1222.74	1261.75	1307.12	1333.86	1349.98	1350.14	1349.10	1313.94	1262.06
16	1194.74	1189.02	1197.06	1215.58	1262.67	1307.93	1334.56	1350.09	1350.09	1348.69	1312.17	1261.89
17	1194.11	1189.99	1195.52	1211.80	1264.41	1308.62	1335.14	1350.12	1350.05	1348.30	1310.39	1261.71
18	1193.50	1190.53	1193.85	1207.19	1266.25	1309.33	1335.71	1350.08	1350.07	1347.89	1308.58	1261.53
19	1192.85	1190.71	1192.54	1204.03	1267.84	1309.99	1336.37	1349.91	1350.10	1347.45	1306.66	1261.62
20	1192.21	1190.70	1191.35	1203.92	1269.32	1310.68	1337.21	1349.85	1350.12	1347.03	1304.69	1261.57
21	1191.55	1191.25	1191.10	1203.72	1270.88	1311.45	1338.31	1349.91	1350.12	1346.60	1302.72	1261.44
22	1190.91	1191.48	1189.96	1204.22	1272.37	1312.29	1338.81	1349.97	1350.10	1346.10	1300.82	1261.29
23	1190.25	1192.85	1187.38	1205.80	1273.74	1314.72	1339.08	1350.01	1350.07	1345.46	---	1261.13
24	1189.68	1194.81	1183.72	1207.03	1274.98	1316.88	1339.46	1350.04	1350.01	1344.72	1296.68	1260.96
25	1189.03	1196.98	1181.04	1208.04	1276.17	1319.59	1339.71	1350.06	1350.00	1343.83	1294.58	1260.83
26	1188.24	1197.65	1180.59	1209.71	1277.47	1322.75	1340.28	1350.06	1350.09	1342.84	---	1260.80
27	1187.76	1197.92	1180.25	1212.58	1278.81	1324.99	1340.99	1350.07	1350.19	1341.72	---	1261.12
28	1187.43	1197.95	1179.86	1216.43	1280.26	1325.44	1341.80	1350.16	1350.32	1340.45	---	1261.12
29	1187.07	1197.93	1179.72	1224.67	1281.72	1325.78	1343.32	1350.12	1350.44	1339.20	1284.97	1261.05
30	1186.74	1197.83	1180.19	1232.03	---	1326.14	1344.97	1350.04	1350.50	1337.91	1282.35	1260.93
31	1186.42	---	1180.56	1235.75	---	1326.51	---	1350.27	---	1336.53	1279.68	---
MAX	1203.10	1197.95	---	1248.94	1281.72	1326.51	1344.97	1350.27	1350.72	1350.65	---	1276.85
MIN	1186.42	1182.95	---	1179.90	1237.75	1283.08	1327.09	1346.48	1350.00	1336.53	---	1260.80
(+)	4860	6660	4050	14990	32430	62340	78160	83070	83290	70680	31380	23120
(+)	-2800	+1800	-2610	+10940	+17440	+29910	+15820	+4910	+220	-12610	-39300	-8260

CAL YR 1987 AC-FT# +120
WTR YR 1988 AC-FT# +15460

† Contents, in acre-feet, at 2400, on last day of month.

* Change in contents, in acre-feet.

MCKENZIE RIVER BASIN

14162200 BLUE RIVER AT BLUE RIVER, OR

LOCATION.--Lat 44°09'45", long 122°19'55", in NW 1/4 SE 1/4 sec.21, T.16 S., R.4 E., Lane County, Hydrologic Unit 17090004, on right bank 0.3 mi upstream from Simmonds Creek, 0.7 mi north of town of Blue River, 0.8 mi downstream from Blue River Dam, and at mile 0.9.

DRAINAGE AREA.--87.7 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,056.53 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Aug. 25, 1966, nonrecording gage at datum 0.80 ft higher.

REMARKS.--No estimated daily discharges. Water-discharge records excellent. Flow regulated since October 1968 by Blue River Lake (station 14162100). No diversion upstream from station. Discharge not adjusted for storage or release from Blue River Lake as losses from reservoir at times exceed natural flow.

AVERAGE DISCHARGE.--22 years, 461 ft³/s, 334,000 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,270 ft³/s Feb. 23, 1968, gage height, 8.93 ft; minimum discharge, 0.80 ft³/s Oct. 8, 10, 11, 1968; minimum daily, 3.7 ft³/s Oct. 8, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,410 ft³/s Dec. 10, gage height, 7.93 ft; minimum discharge, 28 ft³/s Oct. 27, 28, Nov. 9-12; minimum daily, 28 ft³/s Nov. 9-12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	30	61	186	285	62	408	72	1320	84	611	695
2	53	29	567	164	288	62	524	425	1320	84	608	697
3	52	29	1310	157	288	61	881	611	793	84	606	689
4	51	29	1420	144	288	61	1340	655	737	106	603	682
5	51	29	1390	142	288	62	1270	594	577	114	602	675
6	48	29	1350	138	288	64	1180	464	441	114	601	268
7	51	29	648	133	288	64	1180	424	406	114	597	61
8	56	29	324	180	292	64	822	424	416	113	522	61
9	55	28	1670	562	404	69	505	424	416	112	482	61
10	54	28	2580	370	544	62	440	424	379	82	511	60
11	54	28	2180	1010	532	52	248	541	288	67	615	60
12	53	28	1510	2270	528	55	133	593	240	152	658	60
13	52	29	1090	2660	529	61	133	546	240	242	655	60
14	52	30	685	2820	532	61	134	529	240	242	652	60
15	51	30	388	2850	534	61	134	529	241	242	648	59
16	51	31	342	1970	369	61	134	450	230	242	647	60
17	51	30	338	1170	136	62	134	416	210	242	642	59
18	50	30	314	1000	57	62	104	416	168	242	639	59
19	50	40	269	745	59	62	69	416	157	242	660	60
20	50	53	258	469	59	62	70	330	157	242	665	59
21	49	53	345	444	59	62	248	264	157	242	661	59
22	49	54	435	351	59	63	468	245	157	271	656	59
23	49	55	427	270	59	67	412	234	158	320	653	59
24	43	57	416	273	60	67	295	215	158	362	648	59
25	46	59	328	274	61	270	277	204	121	423	646	59
26	52	58	218	277	61	434	141	204	84	474	686	60
27	37	57	199	280	61	639	67	204	66	514	704	61
28	28	57	196	283	61	805	67	281	66	567	698	60
29	29	57	178	290	61	710	69	342	66	567	692	59
30	29	57	159	287	---	576	71	342	79	567	686	59
31	29	---	174	281	---	473	---	303	---	599	679	---
TOTAL	1479	1182	21769	22450	7130	5396	11958	12121	10088	8068	19633	5139
MEAN	47.7	39.4	702	724	246	174	399	391	336	260	633	171
MAX	56	59	2580	2850	544	805	1340	655	1320	599	704	697
MIN	28	28	61	133	57	52	67	72	66	67	482	59
AC-FT	2930	2340	43180	44530	14140	10700	23720	24040	20010	16000	38940	10190

CAL YR 1987 TOTAL 100194 MEAN 275 MAX 2580 MIN 28 AC-FT 198700
WTR YR 1988 TOTAL 126413 MEAN 345 MAX 2850 MIN 28 AC-FT 250700

MCKENZIE RIVER BASIN

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14162200 BLUE RIVER AT BLUE RIVER, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1966 to current year.

INSTRUMENTATION.--Temperature recorder since August 1966.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 26.0°C July 6, 1968; minimum, 0.0°C Jan. 5-9, 1974, Dec. 23, 24, 1983.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 20.0°C Sept. 6; minimum, 3.0°C several days in December, January.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	13.0	12.5	13.0	6.5	6.5	6.5	4.0	3.5	3.5
2	---	---	---	13.0	12.5	13.0	7.0	6.5	7.0	3.5	3.0	3.5
3	---	---	---	13.5	12.0	12.5	7.5	7.5	7.5	3.0	3.0	3.0
4	---	---	---	13.5	12.0	12.5	8.0	7.5	8.0	3.0	3.0	3.0
5	---	---	---	13.5	12.0	12.5	8.5	8.0	8.0	3.0	3.0	3.0
6	---	---	---	12.5	12.0	12.0	8.5	8.5	8.5	3.0	3.0	3.0
7	17.5	17.0	17.5	13.0	12.0	12.0	8.5	7.5	8.0	3.5	3.0	3.5
8	17.5	17.0	17.0	12.0	11.5	12.0	7.5	6.0	7.5	3.5	3.5	3.5
9	17.5	17.0	17.0	12.0	11.5	12.0	7.5	5.5	7.0	5.0	3.5	4.5
10	17.5	16.5	17.0	12.0	11.5	11.5	8.5	8.0	8.0	6.5	5.0	6.0
11	17.0	16.5	16.5	11.5	11.5	11.5	8.0	7.5	8.0	6.5	5.5	6.0
12	16.5	16.0	16.5	12.0	11.0	11.5	7.5	7.0	7.5	6.0	6.0	6.0
13	16.5	16.0	16.0	11.0	10.5	11.0	7.0	6.5	7.0	6.0	6.0	6.0
14	16.5	15.5	16.0	10.5	10.0	10.5	6.5	6.0	6.0	6.5	6.0	6.0
15	16.0	15.5	15.5	10.0	9.5	9.5	6.0	5.5	5.5	6.5	6.0	6.0
16	16.0	15.0	15.0	10.0	9.5	9.5	5.5	5.5	5.5	6.5	6.0	6.0
17	15.5	14.5	15.0	10.0	8.5	9.0	5.5	5.0	5.5	6.0	6.0	6.0
18	15.5	14.5	14.5	9.0	7.5	8.5	5.0	5.0	5.0	6.0	5.5	5.5
19	15.0	14.5	14.5	9.5	7.0	8.5	5.0	5.0	5.0	5.5	5.0	5.5
20	15.0	14.0	14.5	8.5	8.5	8.5	5.0	5.0	5.0	5.0	5.0	5.0
21	14.5	13.5	14.0	8.5	6.5	8.0	5.0	5.0	5.0	5.5	5.0	5.0
22	14.5	13.5	14.0	9.0	6.5	8.5	5.0	4.5	5.0	5.0	5.0	5.0
23	14.5	13.5	13.5	9.0	8.0	8.5	5.0	4.5	4.5	5.5	5.0	5.0
24	14.5	13.5	13.5	8.0	8.0	8.0	4.5	4.5	4.5	5.5	5.0	5.0
25	14.0	12.5	13.5	8.5	6.0	8.0	4.0	3.5	4.0	5.5	5.0	5.0
26	14.0	12.0	13.5	8.0	7.0	7.5	3.5	3.5	3.5	5.5	5.0	5.0
27	14.0	12.5	13.0	7.5	7.0	7.5	3.5	3.0	3.5	5.5	5.0	5.0
28	14.0	12.5	13.0	7.0	5.5	6.5	3.5	3.0	3.0	5.5	5.0	5.0
29	13.0	12.5	13.0	7.0	6.5	6.5	3.5	3.0	3.5	5.5	5.0	5.5
30	13.5	13.0	13.0	6.5	6.5	6.5	3.5	3.0	3.5	5.5	5.0	5.5
31	13.0	13.0	13.0	---	---	---	4.0	3.5	3.5	5.5	5.0	5.5
MONTH	---	---	---	13.5	5.5	10.0	8.5	3.0	6.0	6.5	3.0	5.0

MCKENZIE RIVER BASIN

14162200 BLUE RIVER AT BLUE RIVER, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	6.0	5.5	5.5	6.0	5.5	5.5	6.5	6.0	6.0	7.5	6.0	7.0
2	5.5	5.0	5.5	6.5	5.5	5.5	6.0	6.0	6.0	6.5	6.5	6.5
3	5.5	5.0	5.5	6.0	5.5	6.0	6.0	6.0	6.0	6.5	6.5	6.5
4	5.5	5.0	5.5	6.0	5.5	5.5	6.0	6.0	6.0	7.0	6.5	6.5
5	5.5	5.0	5.5	6.0	5.0	6.0	6.5	6.0	6.5	7.0	6.5	6.5
6	5.5	5.0	5.0	6.5	5.5	6.0	6.5	6.5	6.5	7.0	6.5	7.0
7	5.5	5.0	5.0	6.5	5.5	6.0	6.5	6.5	6.5	7.0	6.5	7.0
8	5.0	5.0	5.0	6.0	5.5	5.5	6.5	6.0	6.5	7.0	7.0	7.0
9	5.0	5.0	5.0	6.5	5.5	6.0	6.5	6.0	6.5	7.0	6.5	7.0
10	5.5	5.0	5.0	6.5	5.5	6.0	6.5	6.5	6.5	7.0	6.5	7.0
11	5.5	5.0	5.0	7.5	5.5	6.0	7.0	6.5	6.5	7.0	6.5	7.0
12	5.5	5.0	5.0	7.0	5.0	6.0	7.0	6.0	6.5	7.0	7.0	7.0
13	5.5	5.0	5.0	6.5	5.5	6.0	6.5	6.5	6.5	7.0	7.0	7.0
14	6.0	5.5	5.5	7.0	5.5	6.0	6.5	6.5	6.5	7.5	7.0	7.0
15	5.5	5.5	5.5	7.0	5.5	6.0	7.0	6.5	6.5	7.0	7.0	7.0
16	6.0	5.5	5.5	7.0	5.5	6.0	7.0	6.5	6.5	7.0	7.0	7.0
17	6.0	5.5	5.5	6.5	5.5	6.0	6.5	6.5	6.5	7.5	7.0	7.0
18	6.5	5.5	5.5	7.0	5.5	6.0	7.0	6.5	6.5	7.0	7.0	7.0
19	7.0	5.5	6.0	6.5	5.5	6.0	7.0	6.5	6.5	7.5	7.0	7.5
20	7.0	5.5	6.0	7.0	5.5	6.0	6.5	6.5	6.5	7.5	7.0	7.5
21	6.5	5.5	6.0	6.5	5.5	6.0	6.5	6.5	6.5	7.5	7.0	7.5
22	6.5	5.5	5.5	6.5	5.0	6.0	6.5	6.5	6.5	7.5	7.0	7.5
23	6.5	5.5	5.5	6.0	5.5	6.0	6.5	6.5	6.5	7.5	6.0	7.5
24	6.5	5.5	5.5	6.5	6.0	6.0	6.5	6.5	6.5	8.0	7.5	7.5
25	6.5	5.5	5.5	6.0	6.0	6.0	7.0	6.5	6.5	7.5	7.5	7.5
26	6.5	5.5	6.0	6.0	6.0	6.0	8.0	6.5	7.0	8.0	7.5	7.5
27	6.5	5.5	5.5	6.0	6.0	6.0	8.0	6.5	7.0	7.5	7.5	7.5
28	6.0	5.5	5.5	6.0	6.0	6.0	7.5	6.5	7.0	7.5	7.5	7.5
29	6.5	5.5	6.0	6.0	6.0	6.0	7.0	6.5	6.5	7.5	7.5	7.5
30	---	---	---	6.5	6.0	6.0	7.0	6.5	6.5	7.5	7.5	7.5
31	---	---	---	6.0	6.0	6.0	---	---	---	7.5	7.5	7.5
MONTH	7.0	5.0	5.5	7.5	5.0	6.0	8.0	6.0	6.5	8.0	6.0	7.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	7.5	7.5	7.5	9.5	7.5	8.5	9.5	9.0	9.0	17.0	16.0	16.5
2	7.5	7.5	7.5	9.0	8.0	8.5	9.5	9.0	9.5	18.0	17.0	17.5
3	7.5	7.5	7.5	9.5	7.5	8.5	9.5	9.0	9.5	18.5	18.0	18.5
4	7.5	7.5	7.5	9.0	7.5	8.5	9.5	9.5	9.5	19.5	18.5	19.0
5	7.5	7.5	7.5	9.0	7.5	8.5	9.5	9.5	9.5	19.5	19.5	19.5
6	7.5	7.5	7.5	9.0	7.0	8.5	9.5	9.5	9.5	20.0	19.0	19.5
7	8.0	7.5	8.0	9.0	7.5	8.5	10.0	9.5	9.5	19.5	18.5	19.0
8	8.0	8.0	8.0	9.5	7.0	8.5	10.0	9.5	10.0	19.5	18.5	19.0
9	8.5	7.5	8.0	9.5	7.0	8.5	10.0	9.5	10.0	19.5	18.5	19.0
10	8.0	8.0	8.0	10.0	8.0	8.5	10.0	9.5	10.0	19.5	18.5	18.5
11	8.0	7.0	8.0	9.0	8.0	8.5	10.0	10.0	10.0	19.5	18.5	18.5
12	8.5	7.5	8.0	8.5	7.0	8.5	10.5	10.0	10.0	19.5	18.5	19.0
13	8.5	6.0	8.0	9.0	6.5	8.5	10.0	10.0	10.0	19.5	18.5	19.0
14	9.0	8.0	8.0	8.5	6.0	8.0	10.5	10.0	10.5	19.5	18.5	19.0
15	8.5	6.5	8.0	8.5	6.5	8.0	10.5	10.5	10.5	19.0	18.5	19.0
16	8.5	7.5	8.0	8.5	7.0	8.5	10.5	10.5	10.5	19.5	18.5	19.0
17	9.0	7.5	8.0	9.5	6.5	8.5	10.5	10.5	10.5	19.0	18.5	18.5
18	8.5	7.5	8.0	9.0	6.5	8.5	11.0	10.5	11.0	19.5	18.5	19.0
19	9.0	8.0	8.0	9.0	7.0	8.5	11.0	11.0	11.0	18.5	18.5	18.5
20	9.0	7.5	8.5	9.5	8.0	8.5	11.0	11.0	11.0	19.0	18.0	18.5
21	8.5	7.0	8.0	9.0	7.5	8.5	11.5	11.0	11.5	19.0	17.5	18.0
22	8.5	7.5	8.0	9.0	7.0	8.5	11.5	11.0	11.5	18.5	17.5	18.0
23	9.0	7.5	8.5	9.0	7.0	8.5	12.0	11.5	11.5	18.5	17.5	18.0
24	8.5	7.5	8.0	8.5	8.0	8.5	12.0	12.0	12.0	18.5	17.5	18.0
25	9.0	8.0	8.5	9.0	7.5	8.5	12.5	12.0	12.5	18.0	17.5	17.5
26	9.0	8.0	8.5	9.0	8.0	8.5	13.0	12.5	12.5	18.0	17.5	18.0
27	9.5	7.0	8.5	9.5	7.5	9.0	13.5	12.5	13.0	18.0	17.5	17.5
28	9.5	7.5	8.5	9.5	8.0	8.5	14.0	13.0	14.0	18.5	17.0	17.5
29	9.5	7.5	8.5	9.5	8.5	9.0	14.5	14.0	14.5	18.0	17.0	17.5
30	9.5	8.0	8.5	9.0	7.5	9.0	15.5	14.5	15.0	18.0	16.5	17.0
31	---	---	---	9.5	8.0	9.0	16.0	15.5	16.0	---	---	---
MONTH	9.5	6.0	8.0	10.0	6.0	8.5	16.0	9.0	11.0	20.0	16.0	18.5

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14162500 MCKENZIE RIVER NEAR VIDA, OR

LOCATION.--Lat 44°07'30", long 122°28'10", in NE 1/4 NE 1/4 sec.5, T.17 S., R.3 E., Lane County, Hydrologic Unit 17090004, on right bank 0.4 mi downstream from Mason Creek, 5.4 mi east of Vida, and at mile 47.7.

DRAINAGE AREA.--930 mi² at cableway 0.4 mi downstream, where all discharge measurement are made.

PERIOD OF RECORD.--July 1910 to March 1911 (published as "at Martins Rapids, near Vida"), September 1924 to current year. Monthly discharge only for some periods, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 855.71 ft above National Geodetic Vertical Datum of 1929 (levels by Eugene Water and Electric Board). July 1, 1910, to Mar. 31, 1911, nonrecording gage at site 3 mi downstream at different datum. Sept. 1, 1924, to Nov. 16, 1928, nonrecording gage at site 20 ft upstream at datum 0.15 ft lower. Nov. 17, 1928, to Sept. 23, 1968, water-stage recorder at present site on left bank at datum 0.15 ft lower.

REMARKS.--No estimated daily discharges. Records excellent. Flow regulated since 1963 by Smith River Reservoir (station 14158795) and Cougar Lake (station 14159400), and since 1968 by Blue River Lake (station 14162100). No diversion upstream from station. All records given herein are for measuring site.

AVERAGE DISCHARGE.--64 years (water years 1925-88), 4,042 ft³/s, 2,928,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 64,400 ft³/s Dec. 28, 1945, gage height, 17.70 ft, site and datum then in use, from rating curve extended above 32,000 ft³/s; minimum discharge, 1,260 ft³/s Nov. 7, 1930, Sept. 17, Oct. 4, 8, 9, 1931.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in January 1923 reached a stage of 17.2 ft, from floodmarks, discharge, 62,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16,500 ft³/s Dec. 10, gage height, 6.51 ft; minimum discharge, 1,620 ft³/s Nov. 9, 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2200	2230	2820	2600	3350	2800	3960	4800	6680	2380	2520	2930
2	2200	2120	4620	2500	3220	2750	4310	4990	6880	2380	2510	2900
3	2200	1860	6460	2440	3080	2870	6390	5410	6610	2380	2500	2840
4	2200	1650	6160	2390	2910	3060	6690	5370	6250	2370	2600	2860
5	2210	1640	5410	2350	2820	3570	6320	5120	5370	2360	2730	2860
6	2210	1640	5110	2340	2770	3770	6280	4810	4770	2360	2830	2520
7	2210	1640	4470	2310	2720	3440	6440	4890	4570	2320	2900	2230
8	2240	1640	3820	2450	3080	3310	5680	5160	4520	2280	2830	2230
9	2250	1640	7500	4600	4990	3920	5030	5310	4390	2270	2780	2230
10	2250	1630	12800	11000	5460	3710	4770	5180	4200	2250	2760	2230
11	2240	1660	8890	8770	5090	3400	4560	5320	3900	2230	2840	2220
12	2230	1870	8400	7900	5040	3150	4480	5620	3730	2260	2940	2200
13	2230	2140	7480	7960	4880	3010	4410	5880	3590	2370	2950	2200
14	2230	2200	6300	10600	4650	2950	4630	5910	3370	2380	2930	2200
15	2230	1980	4890	11500	4530	2860	4440	5350	3320	2350	2930	2200
16	2230	2070	4090	9090	4330	2780	4270	5100	3270	2330	2950	2200
17	2230	2070	3930	7340	3710	2710	4200	5140	3220	2310	2940	2200
18	2240	2000	3870	6640	3220	2650	4030	4850	3100	2270	2930	2210
19	2250	1900	3730	5630	3000	2580	3950	4550	2920	2280	2930	2340
20	2250	1890	3570	4650	2880	2570	3970	4240	2880	2340	2930	2360
21	2260	1910	3840	4460	2820	2670	5000	3980	2800	2530	2930	2170
22	1930	1920	4110	4240	2780	2720	5230	3910	2710	2670	2870	2070
23	2230	2070	3920	4060	2750	3700	4690	3820	2670	2720	2850	2190
24	2250	2160	3700	3980	2700	3550	4290	3660	2610	2760	2860	2200
25	2250	2360	3530	3640	2660	4350	4100	3560	2560	2630	2860	2200
26	2060	2100	3330	3150	2640	5070	3890	3490	2490	2410	2900	2250
27	2270	2000	3260	3180	2650	5710	3840	3430	2440	2440	2930	2520
28	2280	1930	3150	3290	2710	5120	4000	3730	2410	2500	2930	2370
29	2280	1920	3000	3660	2800	4760	4830	3880	2460	2500	2930	2310
30	2260	1910	2950	4040	---	4410	4960	3770	2420	2490	2930	2260
31	2210	---	2870	3570	---	4110	---	3730	---	2500	2930	---
TOTAL	68810	57750	151980	156330	100240	108030	143640	143960	113110	74620	88150	70700
MEAN	2220	1925	4903	5043	3457	3485	4788	4644	3770	2407	2844	2357
MAX	2280	2360	12800	11500	5460	5710	6690	5910	6880	2760	2950	2930
MIN	1930	1630	2820	2310	2640	2570	3840	3430	2410	2230	2500	2070
AC-FT	136500	114500	301500	310100	198800	214300	284900	285500	224400	148000	174800	140200

CAL YR 1987	TOTAL 1106120	MEAN 3030	MAX 12800	MIN 1630	AC-FT 2194000
WTR YR 1988	TOTAL 1277320	MEAN 3490	MAX 12800	MIN 1630	AC-FT 2534000

MCKENZIE RIVER BASIN

14163000 GATE CREEK AT VIDA, OR

LOCATION.--Lat 44°08'45", long 122°34'15", in SW 1/4 sec.28, T.16 S., R.2 E., Lane County, Hydrologic Unit 17090004, on right bank 300 ft downstream from bridge on State Highway 126, at Vida, and at mile 0.2.

DRAINAGE AREA.--47.6 mi².

PERIOD OF RECORD.--June 1951 to September 1957; annual maximums, water years 1958-65; August 1966 to current year.

REVISED RECORDS.--WDR OR-83-2: 1976(M,P), 1978(M,P), 1979(M,P), 1980(M), 1981(M,P), 1982(M,P).

GAGE.--Water-stage recorder. Datum of gage is 764.56 ft above National Geodetic Vertical Datum of 1929.

June 11, 1951, to Sept. 30, 1957, water-stage recorder, and Oct. 1, 1957, to Aug. 1, 1966, crest-stage gage at same site and datum.

REMARKS.--Records good. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--28 years (water years 1952-57, 1967-88), 211 ft³/s, 60.20 in/yr, 152,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,140 ft³/s Dec. 22, 1964, gage height, 12.18 ft, from slope-area measurement of peak flow; minimum discharge, 11 ft³/s Oct. 2, 12, 13, 19, 20, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 10	0900	*2,200	6.47	Jan. 10	0900	(a)	*6.68

Minimum discharge, 11 ft³/s Oct. 2, 12, 13, 19, 20.

(a) From crest-stage gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	18	160	144	319	137	319	364	603	65	32	21
2	12	20	264	128	272	129	331	354	410	66	32	20
3	12	16	528	124	239	165	569	403	337	67	31	20
4	13	15	357	122	216	214	630	411	273	63	30	20
5	13	14	220	118	200	286	520	337	226	63	29	20
6	12	14	210	114	186	406	455	291	205	60	28	20
7	12	14	226	121	176	330	434	310	195	57	28	20
8	12	14	190	173	246	289	378	280	185	55	28	20
9	12	15	728	733	474	443	334	251	173	53	27	20
10	12	15	1190	1970	585	404	297	224	179	51	27	19
11	12	18	546	1100	423	325	267	204	161	52	27	19
12	12	62	326	653	341	280	243	194	147	52	27	18
13	12	78	237	490	302	249	223	208	136	52	27	18
14	12	85	190	884	265	228	256	218	126	51	28	18
15	12	52	160	1100	259	209	224	195	119	49	27	18
16	12	88	142	700	259	190	208	203	114	47	26	19
17	12	54	127	510	246	175	199	200	107	45	26	20
18	12	35	117	396	243	163	191	185	104	44	26	20
19	12	27	106	319	227	155	195	169	99	42	25	50
20	11	23	102	293	213	149	228	157	93	41	25	32
21	12	30	203	279	198	158	576	148	88	39	24	25
22	12	40	232	258	185	153	502	139	85	38	24	23
23	12	85	191	258	173	367	362	131	82	38	23	22
24	12	94	155	242	161	374	296	124	79	37	23	22
25	12	151	135	222	153	681	260	118	77	36	22	22
26	12	77	127	218	147	558	229	113	76	35	22	38
27	12	53	121	215	140	571	205	111	74	34	22	91
28	12	42	118	210	136	460	197	161	74	34	22	40
29	12	35	116	442	132	430	256	166	76	33	22	28
30	13	33	113	535	---	410	338	165	69	33	22	25
31	17	---	141	390	---	354	---	177	---	33	22	---
TOTAL	379	1317	7778	13461	7116	9442	9722	6711	4772	1465	804	768
MEAN	12.2	43.9	251	434	245	305	324	216	159	47.3	25.9	25.6
MAX	17	151	1190	1970	585	681	630	411	603	67	32	91
MIN	11	14	102	114	132	129	191	111	69	33	22	18
AC-FT	752	2610	15430	26700	14110	18730	19280	13310	9470	2910	1590	1520
CFSM	.26	.92	5.27	9.12	5.16	6.40	6.81	4.55	3.34	.99	.54	.54
IN.	.30	1.03	6.08	10.52	5.56	7.38	7.60	5.24	3.73	1.14	.63	.60

CAL YR 1987 TOTAL 45692 MEAN 125 MAX 1190 MIN 11 AC-FT 90630 CFSM 2.63 IN. 35.71
WTR YR 1988 TOTAL 63735 MEAN 174 MAX 1970 MIN 11 AC-FT 126400 CFSM 3.66 IN. 49.81

MCKENZIE RIVER BASIN

115

14165000 MOHAWK RIVER NEAR SPRINGFIELD, OR

LOCATION.--Lat 44°05'34", long 122°57'20", in SE 1/4 NW 1/4 sec.17, T.17 S., R.2 W., Lane County, Hydrologic Unit 17090004, on left bank 50 ft downstream from bridge, 1.3 mi northeast of Springfield, and at mile 1.59.

DRAINAGE AREA.--177 mi².

PERIOD OF RECORD.--September 1935 to September 1952, October 1963 to current year. Prior to October 1935 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1248: 1939. WSP 1738: Drainage area. WDR OR-86-2: 1985(m).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 442.47 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1935, to Sept. 30, 1952, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--42 years, 533 ft³/s, 40.89 in/yr, 386,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,000 ft³/s Dec. 22, 1964, gage height, 22.60 ft; minimum discharge, 8.2 ft³/s Sept. 9, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1955, reached at stage of 22.9 ft, from floodmark, probably affected by backwater from McKenzie River, discharge, 9,200 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 10	1900	*4,850	12.79	Jan. 15	0800	3,780	11.05
Jan. 10	1900	(a)	*13.00				

Minimum discharge, 13 ft³/s Oct. 2, 8.

(a) From crest-stage gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	30	90	700	796	307	584	797	790	155	54	25
2	14	49	319	562	699	279	606	800	844	153	54	24
3	15	44	914	491	625	328	1060	955	788	161	54	22
4	17	34	857	436	578	380	1200	1070	680	155	50	20
5	19	32	496	391	541	536	1040	933	586	151	47	21
6	18	32	594	346	507	625	962	877	527	147	47	20
7	17	30	640	322	479	598	1110	1060	529	134	48	21
8	15	30	445	376	554	570	942	920	528	128	47	24
9	17	31	718	805	667	847	821	832	509	120	43	23
10	19	34	2290	3850	805	840	727	737	493	116	41	21
11	17	37	1260	3840	727	711	651	664	441	114	45	20
12	17	101	821	2320	664	617	597	614	396	117	50	22
13	18	140	608	1710	621	550	551	717	362	116	48	19
14	18	140	486	1840	560	505	672	691	334	115	49	19
15	18	90	403	3270	534	464	615	620	305	108	46	17
16	19	134	387	2630	509	425	558	657	288	102	44	21
17	20	94	339	1940	475	386	532	664	271	96	44	23
18	19	65	284	1480	479	356	498	607	261	90	41	22
19	19	54	256	1180	438	334	488	555	247	88	40	69
20	21	48	237	1010	413	318	561	513	230	81	39	71
21	20	45	437	892	391	319	1030	472	216	76	37	44
22	20	53	576	787	366	311	1160	435	205	73	35	36
23	20	74	575	737	347	433	921	409	199	70	33	34
24	21	71	477	670	327	530	767	380	192	69	30	33
25	23	126	405	615	309	1100	702	355	182	67	27	33
26	23	91	356	573	294	888	620	334	179	63	27	54
27	24	70	313	541	280	926	567	320	178	59	27	107
28	23	60	295	512	269	789	532	402	170	57	27	73
29	22	54	291	783	267	758	602	395	184	57	25	49
30	22	52	298	1090	---	700	746	347	164	56	25	41
31	25	---	834	904	---	629	---	367	---	55	25	---
TOTAL	595	1945	17301	37603	14521	17359	22422	19499	11278	3149	1249	1028
MEAN	19.2	64.8	558	1213	501	560	747	629	376	102	40.3	34.3
MAX	25	140	2290	3850	805	1100	1200	1070	844	161	54	107
MIN	14	30	90	322	267	279	488	320	164	55	25	17
AC-FT	1180	3860	34320	74590	28800	34430	44470	38680	22370	6250	2480	2040
CFSM	.11	.37	3.15	6.85	2.83	3.16	4.22	3.55	2.12	.57	.23	.19
IN.	.13	.41	3.64	7.90	3.05	3.65	4.71	4.10	2.37	.66	.26	.22

CAL YR 1987 TOTAL 119536 MEAN 327 MAX 3480 MIN 14 AC-FT 237100 CFSM 1.85 IN. 25.12
WTR YR 1988 TOTAL 147949 MEAN 404 MAX 3850 MIN 14 AC-FT 293500 CFSM 2.28 IN. 31.09

WILLAMETTE RIVER BASIN

14166000 WILLAMETTE RIVER AT HARRISBURG, OR

LOCATION.--Lat 44°16'14", long 123°10'21", in NW 1/4 NE 1/4 sec.16, T.15 S., R.4 W., Linn County, Hydrologic Unit 17090003, on right bank 75 ft north of intersection of First Street and Kesling Street in Harrisburg and at mile 161.0.

DRAINAGE AREA.--3,420 mi², approximately.

PERIOD OF RECORD.--October 1944 to current year. Gage-height records collected at same site in 1927-28, 1931, 1934, are contained in reports of National Weather Service.

GAGE.--Water-stage recorder. Datum of gage is 288.39 ft above National Geodetic Vertical Datum of 1929. Oct 1 to Nov. 14, 1944, nonrecording gage at bridge 1,110 ft upstream at different datum. Nov. 15, 1944, to Aug. 15, 1973, at site 1,100 ft upstream at datum 2.00 ft higher.

REMARKS.--Records good. Flow regulated by 8 reservoirs upstream from station. Many small diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--44 years, 12,080 ft³/s, 8,752,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 210,000 ft³/s Dec. 29, 1945, gage height, 19.69 ft, from rating curve extended above 115,000 ft³/s; minimum discharge, 1,990 ft³/s Oct. 30, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood stage of 20.5 ft was reached in December 1861, and 20.1 ft in February 1890 (information from Corps of Engineers). Flood of Jan. 1, 1943, reached a stage of 19.1 ft from National Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 51,200 ft³/s Jan. 15, gage height, 11.59 ft; minimum discharge, 3,220 ft³/s Nov. 4, 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e5200	4030	6370	7730	9660	5360	8530	12100	12600	4420	4310	4910
2	5300	4100	10400	6870	9150	5370	8240	12700	26600	4410	4360	4920
3	5310	3670	16600	6220	8380	5370	10800	16000	27400	4430	4310	4850
4	5320	3310	25100	6050	7700	5630	14300	18000	21000	4460	4290	4860
5	5350	3250	20100	5810	7250	6770	15800	17600	16400	4400	4230	4960
6	5240	3220	18100	5800	6920	7650	14900	15500	14100	4410	4330	4960
7	5150	3540	19400	5760	6670	8250	16200	15800	13900	4340	4480	5320
8	5180	3610	16300	5620	6920	8590	15500	15300	15700	4180	4530	5680
9	5200	3630	16200	7340	9500	10200	13000	15700	14100	4120	4410	5740
10	5230	3650	34600	32300	12300	11300	11400	16300	12300	4180	4310	5750
11	5350	3720	34500	38900	11700	10400	9810	15200	11400	4130	4240	5810
12	5350	4890	28700	35200	11100	8270	8740	14800	10300	4080	4800	5650
13	5350	5640	22800	35400	10600	7390	8190	15600	9680	4170	4890	5630
14	5350	5590	19600	40100	9990	6890	8490	16900	8590	4240	4930	5660
15	5110	5130	16500	48300	9530	6550	8960	16900	7440	4210	4910	5670
16	4850	5140	14700	45800	8940	6120	8360	16200	6910	4220	4910	5710
17	4920	5120	13700	39700	7930	5820	8130	15600	6640	4280	4900	5770
18	4870	4840	13400	33700	6960	5510	7840	14100	6550	4230	4950	5760
19	4850	4850	13000	29700	6470	5270	7610	12200	6440	4120	4900	6110
20	4850	5040	12600	20300	6080	5140	8130	11100	6130	4110	4840	6210
21	4830	5240	13100	15900	5820	5130	10600	9910	6030	4120	4780	5910
22	4830	5320	14200	14800	5650	5230	14800	9080	5750	4230	4770	5740
23	4370	5530	14800	14100	5530	6000	14300	8720	5310	4440	4750	5770
24	4490	5920	13600	13500	5390	7940	12000	8470	5140	4530	4850	5920
25	4420	6980	12000	13000	5240	9220	10800	8090	5050	4550	4900	6000
26	4400	7010	10800	11300	5140	10200	9380	7790	4960	4300	4850	6260
27	4190	6720	10400	9830	5080	11300	9070	7600	4870	4200	4810	6520
28	4130	6410	10100	8750	5060	11200	8900	7840	4480	4270	4840	6440
29	4160	6330	9350	8780	5130	10400	8970	9430	4560	4300	4820	6150
30	4150	6290	7860	12000	---	9880	11300	9440	4520	4260	4880	6090
31	4040	---	8430	10700	---	9200	---	9950	---	4250	4920	---
TOTAL	151340	147720	497310	589260	221790	237550	323050	399920	304850	132590	145000	170730
MEAN	4882	4924	16040	19010	7648	7663	10770	12900	10160	4277	4677	5691
MAX	5350	7010	34600	48300	12300	11300	16200	18000	27400	4550	4950	6520
MIN	4040	3220	6370	5620	5060	5130	7610	7600	4480	4080	4230	4850
AC-FT	300200	293000	986400	1169000	439900	471200	640800	793200	604700	263000	287600	338600
CAL YR 1987	TOTAL 2597470 MEAN 7116 MAX 35600 MIN 3220 AC-FT 5152000											
WTR YR 1988	TOTAL 3321110 MEAN 9074 MAX 48300 MIN 3220 AC-FT 6587000											

e Estimated

WILLAMETTE RIVER BASIN

117

14166500 LONG TOM RIVER NEAR NOTI, OR

LOCATION.--Lat 44°03'00", long 123°25'30", in SE 1/4 NW 1/4 sec.33, T.17 S., R.6 W., Lane County, Hydrologic Unit 17090003, on left bank 0.2 mi upstream from Southern Pacific Railroad bridge, 0.8 mi downstream from Noti Creek, 1.3 mi southeast of Noti, and at mile 37.4.

DRAINAGE AREA.--89.3 mi².

PERIOD OF RECORD.--October 1935 to current year.

REVISED RECORDS.--WSP 1318: 1936(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 389.05 ft above National Geodetic Vertical Datum of 1929 (levels by National Weather Service). Prior to Nov. 6, 1940, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Slight regulation caused by logpond upstream from Noti. No diversion upstream from station.

AVERAGE DISCHARGE.--53 years, 231 ft³/s, 35.13 in/yr, 167,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,990 ft³/s Dec. 22, 1955, gage height, 20.17 ft; minimum discharge, 0.04 ft³/s Aug. 13, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	1430	2,550	14.53	Jan. 15	1230	*3,120	*15.60
Jan. 11	0830	2,790	15.06				

Minimum discharge, 5.3 ft³/s Oct. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	15	91	589	257	160	208	196	129	52	17	9.8
2	7.9	22	268	412	235	154	193	183	136	50	17	9.7
3	10	19	1040	336	220	142	267	227	133	51	17	9.9
4	8.6	15	1080	280	208	143	288	241	118	51	16	9.2
5	8.4	12	459	237	199	151	280	219	110	58	15	8.3
6	7.5	12	551	214	190	189	254	231	107	49	15	8.3
7	7.1	12	804	200	180	185	249	342	109	42	14	8.8
8	7.9	11	543	226	196	172	220	359	113	40	15	8.3
9	8.1	15	926	413	238	217	200	329	115	37	15	8.5
10	8.4	16	2280	1410	266	238	184	276	111	35	14	7.9
11	7.9	18	1200	2510	233	212	173	231	103	36	15	8.1
12	7.7	37	595	1310	225	190	165	203	95	37	17	7.7
13	7.3	54	412	828	225	174	157	222	88	39	16	7.1
14	7.8	53	318	1230	207	164	167	203	83	40	16	7.3
15	7.5	40	271	2800	206	155	164	176	78	38	16	7.9
16	7.8	56	246	1780	202	145	150	180	74	37	15	15
17	9.9	43	216	1060	189	137	142	172	71	32	15	11
18	7.5	29	189	801	188	131	133	157	70	30	14	10
19	7.6	23	172	637	175	125	132	147	69	30	13	16
20	7.4	20	160	529	170	122	179	138	66	28	11	22
21	7.2	19	169	458	166	122	216	130	62	24	10	17
22	7.1	23	204	408	163	120	232	123	59	24	10	15
23	7.8	38	248	373	158	164	194	119	58	22	10	15
24	7.6	40	224	340	153	197	170	114	56	23	11	14
25	8.3	59	196	315	149	426	158	112	54	22	12	14
26	8.2	46	178	293	146	375	148	108	53	20	12	15
27	8.2	33	163	274	141	366	141	108	54	19	12	19
28	8.1	27	158	268	138	342	134	117	54	18	12	20
29	8.2	24	151	296	136	300	146	117	59	17	11	17
30	8.7	23	173	281	---	258	182	107	55	17	10	15
31	9.5	---	715	265	---	222	---	106	---	17	10	---
TOTAL	248.1	854	14400	21373	5559	6198	5626	5693	2542	1035	423	361.8
MEAN	8.00	28.5	465	689	192	200	188	184	84.7	33.4	13.6	12.1
MAX	10	59	2280	2800	266	426	288	359	136	58	17	22
MIN	6.9	11	91	200	136	120	132	106	53	17	10	7.1
AC-FT	492	1690	28560	42390	11030	12290	11160	11290	5040	2050	839	718
CFSM	.09	.32	5.20	7.72	2.15	2.24	2.10	2.06	.95	.37	.15	.14
IN.	.10	.36	6.00	8.90	2.32	2.58	2.34	2.37	1.06	.43	.18	.15

CAL YR 1987 TOTAL 63468.0 MEAN 174 MAX 2280 MIN 6.6 AC-FT 125900 CFSM 1.95 IN. 26.44
WTR YR 1988 TOTAL 64312.9 MEAN 176 MAX 2800 MIN 6.9 AC-FT 127600 CFSM 1.97 IN. 26.79

WILLAMETTE RIVER BASIN

14168000 FERN RIDGE LAKE NEAR ELMIRA, OR

LOCATION.--Lat 44°07'15", long 123°18'00", near center of sec.4, T.17 S., R.5 W., Lane County, Hydrologic Unit 17090003, in control house at spillway section of dam across Long Tom River and Coyote Creek, 4.5 mi northeast of Elmira, and at mile 25.7.

DRAINAGE AREA.--252 mi², not including Amazon Creek basin (see REMARKS).

PERIOD OF RECORD.--October 1941 to current year. Prior to October 1971, published as Fern Ridge Reservoir near Elmira.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Midnight elevations for Nov. 11 through Dec. 16 furnished by Corps of Engineers. Lake is formed by earth-fill dam with concrete outlet and spillway, completed in 1941 by Corps of Engineers; storage began Nov. 13, 1941. Total capacity, 116,800 acre-ft at elevation 375.1 ft, maximum pool elevation. Usable capacity, 101,100 acre-ft between elevations 340.0 ft, sill of outlet gate, and 373.5 ft, normal maximum operating pool level. Reservoir used for flood control and improvement of navigation. Since November 1951, most of flow of Amazon Creek has been diverted in SE 1/4 sec.29, T.17 S., R.4 W., and discharged into Fern Ridge Lake; drainage area at point of diversion, 21.3 mi².

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 124,500 acre-ft Dec. 27, 1955, elevation, 375.83 ft; minimum contents since first filling in 1942, 163 acre-ft Nov. 11, 1950, elevation, 344.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 102,600 acre-ft June 8, 9, elevation, 373.66 ft; minimum contents, 7,570 acre-ft Dec. 28, elevation, 353.26 ft.

Capacity table (elevation, in feet, and usable contents, in acre-feet)

349	2,270	356	12,440	364	37,490	372	87,720
350	3,250	358	17,020	366	46,940	374	105,800
352	5,730	360	22,670	368	58,320	376	126,300
354	8,760	362	29,460	370	71,900		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	368.76	362.92	355.96	356.61	359.19	363.95	368.64	372.43	373.56	373.44	372.76	371.88
2	368.73	362.56	356.47	356.74	359.45	364.13	368.79	372.56	373.57	373.43	372.70	371.85
3	368.71	362.19	356.25	356.65	359.65	364.28	368.98	372.69	373.56	373.43	372.70	371.82
4	368.66	361.80	356.81	356.43	359.82	364.43	369.17	372.80	373.54	373.42	372.67	371.80
5	368.66	361.39	356.41	356.05	359.98	364.59	369.36	372.91	373.52	373.41	372.64	371.77
6	368.64	360.94	355.89	355.57	360.12	364.80	369.53	373.06	373.57	373.40	372.59	371.74
7	368.62	360.48	355.47	355.10	360.28	364.97	369.71	373.23	373.62	373.39	372.57	371.68
8	368.59	360.02	355.02	354.73	360.50	365.15	369.85	373.41	373.65	373.38	372.54	371.68
9	368.56	359.65	355.65	355.10	360.78	365.42	369.97	373.49	373.62	373.36	372.51	371.64
10	368.54	359.45	355.95	358.78	361.05	365.64	370.08	373.48	373.56	373.35	372.48	371.61
11	368.52	359.27	357.31	361.28	361.25	365.82	370.17	373.46	373.53	373.32	372.45	371.56
12	368.46	359.11	356.92	361.68	361.45	365.97	370.25	373.49	373.50	373.31	372.43	371.55
13	368.35	359.00	357.10	360.90	361.63	366.10	370.33	373.54	373.49	373.30	372.40	371.53
14	368.14	358.82	355.57	360.83	361.79	366.21	370.46	373.58	373.50	373.28	372.37	371.50
15	367.90	358.69	355.45	361.91	361.92	366.33	370.57	373.57	373.50	373.26	372.35	371.47
16	367.65	358.49	355.54	362.59	362.03	366.41	370.64	373.57	373.51	373.25	372.32	371.45
17	367.39	358.27	355.57	362.13	362.25	366.49	370.70	373.55	373.50	373.21	372.29	371.42
18	367.15	358.05	355.45	361.19	362.43	366.56	370.78	373.52	373.51	373.20	372.27	371.41
19	366.89	357.84	355.30	359.82	362.57	366.63	370.89	373.51	373.51	373.19	372.23	371.43
20	366.60	357.55	355.11	358.14	362.70	366.71	371.03	373.51	373.50	373.16	372.21	371.41
21	366.33	357.27	355.01	357.42	362.84	366.77	371.34	373.51	373.50	373.13	372.17	371.39
22	366.05	357.02	355.01	357.29	362.95	366.87	371.55	373.49	373.50	373.09	372.16	371.37
23	365.76	356.74	354.96	357.21	363.06	366.98	371.69	373.50	373.49	373.07	372.12	371.35
24	365.47	356.48	354.77	357.07	363.17	367.19	371.80	373.51	373.49	373.04	372.10	371.34
25	365.17	356.20	354.42	357.06	363.27	367.45	371.90	373.52	373.48	372.99	372.08	371.32
26	364.85	355.90	353.98	357.18	363.36	367.70	371.98	373.52	373.47	372.98	372.05	371.34
27	364.55	355.75	353.45	357.31	363.45	367.92	372.04	373.54	373.47	372.94	372.02	371.32
28	364.20	355.69	353.29	357.59	363.55	368.12	372.12	373.54	373.46	372.91	372.00	371.31
29	363.87	355.63	353.29	358.02	363.69	368.27	372.23	373.54	373.45	372.87	371.95	371.30
30	363.54	355.64	354.09	358.46	---	368.41	372.32	373.54	373.45	372.84	371.93	371.28
31	363.22	---	355.78	358.84	---	368.52	---	373.54	---	372.80	371.90	---
MAX	368.76	362.92	357.31	362.59	363.69	368.52	372.32	373.58	373.65	373.44	372.76	371.88
MIN	363.22	355.63	353.29	354.73	359.19	363.95	368.64	372.43	373.45	372.80	371.90	371.28
(†)	34210	11710	11990	19260	36160	61630	90460	101400	100600	94680	86880	81770
(‡)	-29070	-22500	+280	+7270	+16900	+25470	+28830	+10940	-800	-5920	-7800	-5110

CAL YR 1987 MAX 371.33 MIN 352.81 AC-FT+ 4920
WTR YR 1988 MAX 373.65 MIN 353.29 AC-FT+ 18490

† Contents, in acre-feet, at 2400, on last day of month.

‡ Change in contents, in acre-feet.

WILLAMETTE RIVER BASIN

119

14169000 LONG TOM RIVER NEAR ALVADORE, OR

LOCATION.--Lat 44°07'25", long 123°17'55", in SW 1/4 NE 1/4 sec.4, T.17 S., R.5 W., Lane County, Hydrologic Unit 17090003, on left bank 0.2 mi downstream from Fern Ridge Dam, 1.7 mi west of Alvadore, and at mile 25.5.

DRAINAGE AREA.--252 mi², not including Amazon Creek basin.

PERIOD OF RECORD.--August 1939 to current year. Prior to October 1943, published as "at Smithfield," and October 1943 to September 1959, as "below Fern Ridge Dam, near Smithfield." Prior to October 1985, published figures included diversion from Fern Ridge Reservoir into Coyote Creek channel (station 14169001).

REVISED RECORDS.--WSP 1248: 1940-41, 1948.

GAGE.--Water-stage recorder and masonry control. Datum of gage is 332.00 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 21, 1939, nonrecording gage and Sept. 21, 1939, to Sept. 30, 1943, water-stage recorder at site 2.5 mi downstream at datum 11.09 ft lower.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1941 by Fern Ridge Lake (station 14168000). Several small diversions for irrigation upstream from station. Approximately 7 ft³/s diverted from Fern Ridge Reservoir into Coyote Creek channel. Discharge not adjusted for storage or release from Fern Ridge Lake as evaporation from reservoir at times exceeds natural flow and diversions, and beginning in November 1951, most of flow of Amazon Creek has been diverted into Fern Ridge Lake.

AVERAGE DISCHARGE.--45 years (water years 1944-88), 528 ft³/s, 382,500 acre-ft/yr (river only).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s Jan. 1, 1943, gage height, 15.12 ft, site and datum then in use; minimum daily discharge, 2 ft³/s Aug. 7, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,630 ft³/s Jan. 16, gage height, 7.81 ft; minimum discharge, 16 ft³/s Mar. 2-4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	698	83	1010	167	21	23	24	224	28	70	62
2	44	738	246	1020	166	17	24	25	273	29	70	62
3	44	745	1260	1020	165	16	23	26	268	28	63	52
4	43	764	2030	1020	163	18	23	27	248	28	60	47
5	43	742	2320	999	163	20	23	28	194	27	60	47
6	44	771	2590	981	164	21	24	28	181	28	62	47
7	43	783	2550	963	163	20	24	27	172	27	62	47
8	46	760	2150	943	163	21	24	98	256	41	62	51
9	49	566	2100	1230	161	22	24	398	404	51	62	53
10	50	385	2560	928	161	21	24	623	449	51	62	53
11	50	371	2880	1630	160	21	24	535	283	49	62	53
12	161	362	2670	3680	160	21	24	307	203	46	62	53
13	365	368	2120	4350	159	21	24	230	132	49	62	51
14	628	381	1380	4010	157	22	26	223	65	50	62	50
15	765	381	843	2830	157	22	25	359	32	48	62	50
16	756	372	580	3980	86	22	25	427	24	47	62	51
17	744	364	584	4550	38	22	27	420	24	47	54	51
18	732	355	590	4440	40	22	27	413	24	46	47	51
19	773	344	587	4260	37	22	27	274	24	45	47	51
20	792	351	581	4040	34	22	27	198	24	50	47	50
21	778	349	578	2230	33	22	26	188	24	60	47	45
22	764	336	703	1050	43	22	24	179	24	65	47	42
23	778	371	777	879	50	23	24	108	24	65	47	41
24	774	384	768	870	42	24	24	80	24	65	47	41
25	758	374	759	634	39	22	24	79	24	65	47	41
26	735	364	739	419	26	22	24	78	23	65	58	41
27	726	197	717	367	18	22	24	78	25	68	64	41
28	765	93	494	226	18	22	24	128	27	72	63	41
29	777	89	371	163	19	22	24	148	27	71	62	41
30	753	85	333	163	---	22	25	148	27	70	62	42
31	728	---	764	165	---	23	---	148	---	70	62	---
TOTAL	14551	13243	37707	55050	2952	660	735	6052	3753	1551	1806	1448
MEAN	469	441	1216	1776	102	21.3	24.5	195	125	50.0	58.3	48.3
MAX	792	783	2880	4550	167	24	27	623	449	72	70	62
MIN	43	85	83	163	18	16	23	24	23	27	47	41
AC-FT	28860	26270	74790	109200	5860	1310	1460	12000	7440	3080	3580	2870
CAL YR 1987	TOTAL 143002	MEAN 392	MAX 4020	MIN 19	AC-FT 283600							
WTR YR 1988	TOTAL 139508	MEAN 381	MAX 4550	MIN 16	AC-FT 276700							

WILLAMETTE RIVER BASIN

14170000 LONG TOM RIVER AT MONROE, OR

LOCATION.--Lat 44°18'50", long 123°17'45", in NE 1/4 sec.33, T.14 S., R.5 W., Benton County, Hydrologic Unit 17090003, on left bank in canalized river channel at Monroe, 110 ft upstream from bridge on State Highway 99W, 0.1 mi downstream from Shafer Creek, and at mile 6.8.

DRAINAGE AREA.--391 mi².

PERIOD OF RECORD.--November 1920 to July 1921, October 1921 to April 1926, November 1926 to May 1927, October 1927 to current year. Prior to October 1930, published as "near Monroe."

REVISED RECORDS.--WSP 654: Drainage area. WSP 1248: 1923, 1927, 1928(M). WSP 1288: 1952.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 270.57 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 24, 1944, nonrecording gage at various sites ranging from present site to 1.5 mi downstream at different datums.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1941 by Fern Ridge Lake (station 14168000). Several small diversions upstream from station.

AVERAGE DISCHARGE.--65 years (water years 1922-25, 1928-88), 766 ft³/s, 555,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,300 ft³/s Jan. 2, 1943, gage height, 17.14 ft, site and datum then in use, from graph based on gage readings, includes some overflow from Willamette River near Junction City; no flow Oct. 20-22, 1944 (water filling pool at gage); minimum discharge observed prior to regulation, 7 ft³/s Sept. 29, Oct. 1, 1939.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,530 ft³/s Jan. 14, gage height, 8.87 ft; minimum discharge, 19 ft³/s Aug. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	673	104	1450	431	216	168	185	266	34	42	38
2	39	681	244	1290	371	178	174	173	361	36	42	41
3	40	718	1570	1250	335	135	257	245	347	46	46	43
4	43	709	3110	1230	314	135	258	234	335	54	40	37
5	40	715	2530	1180	305	163	230	190	273	40	42	36
6	38	706	3150	1140	296	194	198	197	251	36	46	35
7	39	747	3320	1120	288	173	223	404	315	32	46	30
8	37	719	2750	1230	413	149	201	305	348	27	42	29
9	41	630	3160	1680	400	263	172	444	518	34	40	31
10	41	356	4610	3860	380	245	162	779	560	42	37	37
11	43	344	3570	3510	343	183	154	707	425	42	37	40
12	66	341	3170	4200	323	158	148	503	275	40	37	41
13	251	358	2550	4590	336	149	141	382	233	40	40	38
14	481	363	1920	5770	338	139	171	373	144	40	42	38
15	724	371	1200	5670	310	126	195	398	110	40	40	37
16	709	370	882	4870	271	120	158	544	84	37	42	37
17	693	357	896	5030	163	114	144	539	65	40	49	39
18	681	338	846	4730	165	110	135	509	65	32	42	40
19	694	323	789	4470	153	106	133	428	65	27	37	42
20	741	318	751	4170	149	104	200	294	65	25	37	45
21	728	318	763	3140	144	103	390	271	54	25	37	45
22	714	311	913	1490	139	103	331	260	44	32	37	41
23	713	327	1130	1170	149	129	209	228	42	34	32	38
24	716	363	999	1120	139	194	175	163	40	37	30	37
25	699	359	941	975	126	608	164	162	40	42	27	35
26	685	350	897	618	122	350	153	153	42	34	22	39
27	674	278	855	580	106	335	147	150	42	32	29	44
28	696	95	722	452	106	270	139	181	37	34	37	47
29	735	87	504	397	103	229	142	231	37	37	43	66
30	715	84	591	406	---	203	165	216	36	40	40	38
31	699	---	1540	393	---	180	---	212	---	40	37	---
TOTAL	13254	12709	50977	73181	7218	5864	5637	10060	5519	1131	1197	1184
MEAN	428	424	1644	2361	249	189	188	325	184	36.5	38.6	39.5
MAX	741	747	4610	5770	431	608	390	779	560	54	49	66
MIN	37	84	104	393	103	103	133	150	36	25	22	29
AC-FT	26290	25210	101100	145200	14320	11630	11180	19950	10950	2240	2370	2350

CAL YR 1987 TOTAL 198137 MEAN 543 MAX 4900 MIN 17 AC-FT 393000
WTR YR 1988 TOTAL 187931 MEAN 513 MAX 5770 MIN 22 AC-FT 372800

WILLAMETTE RIVER BASIN

121

14172000 CALAPOOIA RIVER AT HOLLEY, OR

LOCATION.--Lat 44°21'05", long 122°47'10", in SE 1/4 sec.15, T.14-S., R.1 W., Linn County, Hydrologic Unit 17090003, on right bank 200 ft downstream from bridge on State Highway 228, 0.3 mi southwest of Holley, 5.0 mi upstream from Brush Creek, and at mile 45.4.

DRAINAGE AREA.--105 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1935 to current year. Prior to October 1963, published as Calapooya River at Holley.

REVISED RECORDS.--WSP 1044: 1943. WSP 1218: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 527.58 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 7, 1963, nonrecording gage at present site and datum.

REMARKS.--Water-discharge records good. Slight regulation at times during low-water periods by small dam upstream. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--53 years, 435 ft³/s, 56.26 in/yr, 315,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,600 ft³/s Dec. 22, 1964, gage height, 14.60 ft; maximum gage height, 15.30 ft Dec. 22, 1964 (backwater from debris); minimum discharge observed, 13 ft³/s Sept. 8, 1940.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 3,400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0400	*4,220	*6.18	Jan. 10	0830	3,970	5.98

Minimum discharge, 15 ft³/s Oct. 11-13, 20-22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	20	184	309	624	230	537	618	954	108	39	24
2	17	23	483	267	521	215	575	625	872	107	39	23
3	17	23	969	250	451	270	1130	743	805	118	38	21
4	18	20	811	250	401	341	1100	734	664	109	36	21
5	18	19	488	246	364	555	878	652	539	106	35	21
6	17	19	751	230	334	651	860	603	462	103	35	21
7	16	19	677	227	312	570	957	659	448	94	35	21
8	16	18	497	271	383	504	799	619	416	88	34	21
9	17	20	1480	806	762	748	678	568	393	82	34	21
10	17	21	2960	3680	977	667	591	509	410	79	34	21
11	16	22	1260	2430	748	553	533	473	366	77	36	21
12	15	65	785	1390	607	480	481	438	322	79	37	20
13	15	134	567	1050	549	423	434	531	289	79	35	20
14	16	144	451	1650	471	381	531	575	263	78	36	19
15	16	84	378	2220	442	348	470	485	239	75	34	19
16	17	103	335	1500	416	314	420	490	222	71	32	19
17	17	93	284	1100	382	285	392	481	208	66	32	20
18	16	66	253	861	373	267	361	430	199	62	31	20
19	16	52	227	690	340	252	361	380	186	60	30	47
20	15	45	215	610	320	240	422	342	172	56	29	55
21	15	45	361	545	307	252	974	310	161	53	29	34
22	15	57	417	489	290	253	966	283	153	52	28	28
23	16	95	374	479	272	468	728	268	147	51	26	26
24	16	104	311	439	255	536	592	246	139	50	25	25
25	16	185	273	403	242	1010	514	228	131	49	25	24
26	16	113	253	402	233	1030	443	214	128	47	25	40
27	16	85	233	412	228	1160	395	207	126	45	25	180
28	16	70	225	431	225	831	382	318	122	44	25	80
29	16	61	227	813	229	731	522	373	134	43	24	49
30	16	58	240	1070	---	653	633	355	116	41	24	38
31	19	---	368	781	---	572	---	347	---	41	24	---
TOTAL	506	1883	17337	26301	12058	15790	18659	14104	9786	2213	971	999
MEAN	16.3	62.8	559	848	416	509	622	455	326	71.4	31.3	33.3
MAX	19	185	2960	3680	977	1160	1130	743	954	118	39	180
MIN	15	18	184	227	225	215	361	207	116	41	24	19
AC-FT	1000	3730	34390	52170	23920	31320	37010	27980	19410	4390	1930	1980
CFSM	.16	.60	5.33	8.08	3.96	4.85	5.92	4.33	3.11	.68	.30	.32
IN.	.18	.67	6.14	9.32	4.27	5.59	6.61	5.00	3.47	.78	.34	.35

CAL YR 1987	TOTAL 90942	MEAN 249	MAX 2960	MIN 15	AC-FT 180400	CFSM 2.37	IN. 32.22
WTR YR 1988	TOTAL 120607	MEAN 330	MAX 3680	MIN 15	AC-FT 239200	CFSM 3.14	IN. 42.73

WILLAMETTE RIVER BASIN

14172000 CALAPOOIA RIVER AT HOLLEY, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1963 to current year.

INSTRUMENTATION.--Temperature recorder since October 1963.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 29.5°C July 17, Aug, 7, 1972, Aug. 12, 16, 1977; minimum, 0.0°C at times during winter months.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 27.5°C July 26; minimum recorded, 3.0°C Nov. 29, 30, Dec. 26, Jan. 2, Feb. 3, 4.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	19.0	11.5	15.5	13.0	11.5	12.0	8.0	6.5	7.5	5.0	4.0	4.5
2	18.0	13.0	15.5	12.5	11.0	11.5	9.0	8.0	8.0	4.0	3.0	3.5
3	17.5	12.0	14.5	12.0	10.5	11.0	9.5	9.0	9.5	4.5	3.5	4.0
4	18.0	12.0	15.0	11.5	9.0	10.5	9.0	8.5	9.0	4.5	4.0	4.5
5	18.0	11.0	14.5	10.0	8.0	9.0	9.5	8.5	9.0	4.5	4.5	4.5
6	17.5	11.0	14.0	9.5	8.5	9.0	9.5	8.5	9.5	5.5	4.5	5.0
7	15.5	11.5	13.5	11.5	8.0	9.5	8.5	7.5	8.0	5.5	5.0	5.5
8	14.5	11.5	13.0	10.5	7.5	9.0	8.0	7.5	7.5	6.5	5.0	5.5
9	16.0	10.5	13.0	12.0	9.0	10.0	10.0	7.5	9.0	7.5	6.5	7.0
10	16.0	10.0	13.0	10.0	7.5	9.0	10.0	8.0	9.0	8.0	7.0	7.5
11	15.0	8.5	12.0	10.0	8.5	9.5	8.0	7.0	7.5	7.0	6.5	6.5
12	13.5	9.5	11.5	11.5	10.0	10.5	7.0	6.0	7.0	7.0	6.0	6.5
13	13.5	7.5	10.5	12.0	10.0	11.0	6.0	5.5	5.5	7.5	6.5	7.0
14	12.5	7.5	10.0	10.0	8.0	9.0	6.0	5.0	5.5	8.5	7.0	8.0
15	12.5	6.5	9.5	7.5	7.0	7.0	6.0	5.0	5.5	7.0	6.5	7.0
16	12.0	6.5	9.0	8.5	7.0	8.0	5.0	4.5	5.0	7.0	6.0	6.5
17	11.5	6.0	8.5	9.5	7.5	8.5	5.0	5.0	5.0	6.0	5.0	5.5
18	11.0	5.5	8.5	8.5	6.5	7.5	5.0	4.5	5.0	6.0	5.0	5.5
19	11.5	5.0	8.5	8.0	6.5	7.0	5.5	5.0	5.0	6.0	5.0	5.5
20	11.5	6.0	8.5	8.5	6.5	7.5	6.0	4.5	5.0	6.5	5.0	6.0
21	11.0	5.5	8.0	9.0	7.5	8.0	6.5	6.0	6.0	6.0	5.0	5.5
22	10.5	6.5	8.5	9.5	7.5	8.5	6.5	5.5	6.0	6.5	4.5	5.5
23	10.5	6.0	8.5	8.0	6.5	7.5	5.5	5.5	5.5	7.0	6.5	6.5
24	11.0	6.0	8.0	8.0	7.0	7.5	5.0	4.0	4.5	6.0	5.5	5.5
25	11.0	6.0	8.5	7.0	6.0	6.5	4.0	3.5	3.5	5.5	4.5	5.0
26	11.0	6.0	8.5	5.5	5.0	5.5	4.0	3.0	3.5	6.5	4.5	5.5
27	10.5	5.0	7.5	6.0	5.0	5.0	4.0	3.5	3.5	7.5	6.5	7.0
28	10.5	5.5	8.0	5.0	4.0	4.5	4.5	4.0	4.0	8.0	7.0	7.5
29	10.0	7.0	8.5	4.0	3.0	3.5	5.0	4.0	4.5	8.0	6.5	7.5
30	13.0	9.5	11.0	6.5	3.0	4.5	5.0	4.0	4.5	6.5	5.5	6.0
31	12.5	11.0	12.0	---	---	---	6.0	5.0	5.5	6.0	5.5	6.0
MONTH	19.0	5.0	11.0	13.0	3.0	8.0	10.0	3.0	6.0	8.5	3.0	6.0

WILLAMETTE RIVER BASIN

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14172000 CALAPOOIA RIVER AT HOLLEY, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5.5	4.5	5.0	9.5	7.5	8.5	---	---	---	9.0	6.5	8.0
2	5.5	4.0	4.5	8.0	6.5	7.0	---	---	---	8.5	7.5	8.0
3	4.5	3.0	4.0	8.5	7.5	8.0	---	---	---	8.5	7.0	7.5
4	4.5	3.0	4.0	8.5	8.0	8.0	---	---	---	9.5	6.5	8.0
5	5.0	3.5	4.5	7.5	7.0	7.5	---	---	---	9.0	7.5	8.5
6	6.5	5.0	6.0	7.5	6.0	7.0	---	---	---	9.0	7.5	8.5
7	7.5	6.5	7.0	7.5	4.5	6.0	---	---	---	11.0	8.0	9.5
8	8.0	7.0	7.5	7.5	6.0	7.0	---	---	---	10.0	8.5	9.0
9	8.0	7.0	7.5	7.0	6.0	6.5	---	---	---	10.5	7.5	9.0
10	8.0	7.0	7.5	7.5	5.5	6.5	---	---	---	13.5	9.0	11.5
11	7.5	6.0	6.5	7.0	4.0	6.0	12.5	---	---	15.5	10.5	13.0
12	7.5	5.5	6.5	7.5	4.5	6.0	13.0	9.0	11.0	14.0	11.5	13.0
13	7.0	6.0	7.0	8.0	4.5	6.5	12.0	9.5	10.5	---	10.5	---
14	7.5	5.0	6.5	8.5	5.0	7.0	9.5	8.5	9.0	---	---	---
15	7.5	6.5	7.0	8.0	5.0	6.5	10.5	8.5	9.5	---	---	---
16	7.0	6.0	6.5	8.5	5.0	7.0	10.5	9.5	10.0	---	---	---
17	6.0	4.5	5.5	9.0	5.5	7.5	10.0	8.5	9.5	---	---	---
18	7.0	5.5	6.5	10.0	6.0	8.0	11.0	7.5	9.5	---	---	---
19	6.5	4.5	5.5	10.5	7.0	9.0	10.5	9.0	9.5	---	---	---
20	6.5	4.5	5.5	10.5	9.0	10.0	9.5	8.5	9.5	---	---	---
21	7.5	5.0	6.5	9.5	8.0	9.0	9.0	8.0	8.5	---	---	---
22	6.5	5.0	6.0	9.5	7.0	8.0	10.5	7.5	9.0	---	---	---
23	6.5	4.0	5.5	8.5	7.0	7.5	10.0	7.0	8.5	---	---	---
24	7.5	5.0	6.5	7.0	6.0	6.5	9.5	8.0	8.5	---	---	---
25	8.0	5.5	7.0	9.0	7.0	8.0	12.0	7.5	9.5	---	---	---
26	9.5	7.0	8.0	8.5	6.5	8.0	12.5	9.0	11.0	---	---	---
27	9.0	7.0	8.0	7.5	6.0	6.5	13.5	10.5	12.0	---	---	---
28	8.5	7.0	8.0	8.5	5.5	7.0	12.5	10.5	11.5	---	---	---
29	9.5	8.0	8.5	7.5	6.5	7.0	11.0	8.0	9.5	---	---	---
30	---	---	---	8.0	6.0	7.0	8.5	7.0	7.5	---	---	---
31	---	---	---	---	5.5	---	---	---	---	---	---	---
MONTH	9.5	3.0	6.5	---	4.0	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	---	18.5	14.0	16.5	24.5	17.0	20.0	24.5	15.0	19.5
2	---	---	---	17.0	16.0	16.5	24.5	16.0	19.5	25.5	16.0	20.5
3	---	---	---	16.0	14.0	15.0	25.5	16.5	20.5	25.5	17.0	21.0
4	---	---	---	15.0	12.5	14.0	27.0	17.5	22.0	24.5	17.0	20.5
5	---	---	---	16.0	13.5	14.5	24.0	18.5	21.0	25.0	17.0	20.5
6	---	---	---	19.0	12.0	15.0	24.5	17.0	20.0	23.5	16.0	20.0
7	---	---	---	21.0	14.0	17.5	23.5	15.5	19.0	22.5	16.5	19.0
8	---	---	---	23.0	16.0	19.0	24.5	15.5	19.5	21.5	14.0	17.5
9	---	---	---	23.0	16.5	19.5	25.5	16.5	20.5	21.0	14.0	17.0
10	---	---	---	23.0	16.5	19.5	21.0	18.0	19.0	19.5	12.5	16.0
11	---	---	---	19.0	16.5	18.0	18.0	16.5	17.0	19.5	11.0	15.0
12	---	---	---	17.5	15.5	16.5	22.0	15.0	18.0	19.5	11.5	15.5
13	16.5	---	---	18.0	16.0	16.5	19.0	16.5	17.5	20.5	12.0	16.0
14	18.0	13.0	15.5	19.0	15.0	17.0	22.5	15.0	18.5	20.0	12.5	16.0
15	19.0	14.0	16.5	19.5	15.0	16.5	22.5	15.5	18.5	18.0	12.0	15.0
16	18.5	14.5	16.5	22.0	14.5	18.0	21.0	16.5	18.5	17.5	14.0	15.5
17	18.5	14.0	16.0	22.5	15.5	19.0	22.5	16.5	18.5	16.5	11.5	14.0
18	17.5	15.0	16.0	23.5	15.5	19.5	22.5	14.0	18.0	17.5	9.5	13.5
19	19.5	13.5	16.5	25.5	17.0	21.0	23.0	14.5	18.5	15.0	12.5	14.0
20	20.0	14.5	17.0	27.0	18.5	22.5	22.5	15.0	18.5	16.0	12.5	14.0
21	20.5	15.0	18.0	26.5	19.0	22.5	22.5	14.0	18.0	17.5	11.0	13.5
22	21.0	16.0	18.5	25.5	18.0	21.5	24.5	14.5	19.0	17.5	10.5	13.5
23	18.5	16.0	17.0	25.0	17.0	20.5	25.0	15.5	20.0	17.5	10.5	13.5
24	20.5	14.0	17.0	25.5	17.5	21.0	24.5	16.5	20.5	18.5	11.5	14.5
25	18.0	16.0	17.0	27.0	18.0	22.0	24.5	15.5	20.0	16.0	13.5	14.5
26	17.0	15.0	15.5	27.5	19.5	23.0	24.0	15.5	19.5	---	14.5	---
27	15.5	13.5	14.5	27.0	19.5	23.0	24.5	15.5	20.0	---	---	---
28	14.5	12.5	13.5	26.0	18.5	22.0	25.5	16.5	20.5	---	---	---
29	16.5	12.0	14.0	26.5	18.5	22.0	24.5	17.0	20.5	---	---	---
30	18.5	12.0	15.5	26.5	18.5	22.0	23.0	15.5	19.0	---	---	---
31	---	---	---	25.5	18.5	21.5	23.0	14.5	18.5	---	---	---
MONTH	---	---	---	27.5	12.0	19.0	27.0	14.0	19.5	---	---	---

WILLAMETTE RIVER BASIN

14173500 CALAPOOIA RIVER AT ALBANY, OR

LOCATION.--Lat 44°37'15", long 123°07'40", in NW 1/4 sec.13, T.11 S., R.4 W., Linn County, Hydrologic Unit 17090003, near right bank on upstream side of bridge on Riverside Drive at Albany, 0.6 mi downstream from Oak Creek, and at mile 3.0.

DRAINAGE AREA.--372 mi².

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: January 1964 to current year.

INSTRUMENTATION.--Temperature recorder since January 1964.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 29.0°C July 19, 20, 1985; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 27.0°C July 26; minimum recorded, 3.5°C Dec. 26-29, Jan. 4-6.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	13.5	13.0	13.0	8.0	6.0	7.0	5.0	4.5	4.5
2	---	---	---	13.5	13.5	13.5	8.5	7.5	8.0	5.0	4.0	4.5
3	---	---	---	13.5	12.5	13.0	10.0	9.0	9.5	4.0	4.0	4.0
4	---	---	---	13.0	12.5	12.5	10.0	9.5	10.0	4.0	3.5	3.5
5	---	---	---	12.0	11.5	11.5	9.5	9.5	9.5	3.5	3.5	3.5
6	---	---	---	11.5	11.5	11.5	9.5	9.5	9.5	4.0	3.5	3.5
7	---	---	---	12.0	11.5	11.5	9.5	8.5	9.0	4.0	4.0	4.0
8	---	---	---	12.0	11.0	11.5	8.5	8.0	8.5	5.0	4.0	4.5
9	---	---	---	12.5	11.5	12.0	9.5	8.0	8.5	6.5	5.0	5.5
10	---	---	---	12.5	11.5	11.5	10.0	9.5	10.0	7.5	6.5	7.0
11	---	---	---	11.5	11.5	11.5	10.0	8.0	9.0	7.0	6.5	6.5
12	---	---	---	12.5	11.5	12.0	8.0	7.5	8.0	6.5	6.5	6.5
13	---	---	---	12.5	12.5	12.5	7.5	6.5	7.0	6.5	6.5	6.5
14	---	---	---	12.5	11.5	11.5	6.5	6.0	6.0	8.5	6.5	7.5
15	---	---	---	11.5	10.0	10.5	6.0	5.5	5.5	8.5	7.0	8.0
16	---	---	---	10.0	10.0	10.0	5.5	5.0	5.0	7.0	6.5	6.5
17	---	---	---	10.0	9.5	10.0	5.0	4.5	4.5	6.5	6.0	6.0
18	---	---	---	9.5	8.5	9.0	4.5	4.5	4.5	6.0	5.5	6.0
19	---	---	---	8.5	8.0	8.5	4.5	4.5	4.5	6.0	5.5	6.0
20	---	---	---	8.5	8.0	8.0	5.0	4.5	4.5	---	---	---
21	---	---	---	9.0	8.5	8.5	5.5	5.0	5.0	---	---	---
22	12.5	---	---	9.0	9.0	9.0	6.0	5.5	5.5	---	---	---
23	12.5	11.0	11.5	9.0	8.5	8.5	6.0	5.5	6.0	---	---	---
24	12.0	11.0	11.5	8.5	8.5	8.5	5.0	4.5	5.0	---	---	---
25	12.5	11.0	11.5	8.5	8.0	8.0	4.5	4.0	4.5	---	---	---
26	13.0	11.5	12.0	8.0	7.5	8.0	4.0	3.5	4.0	---	---	---
27	12.0	11.0	11.5	7.5	7.0	7.5	3.5	3.5	3.5	---	---	---
28	12.5	10.5	11.5	7.0	6.5	7.0	3.5	3.5	3.5	---	---	---
29	12.0	11.0	11.5	6.0	6.0	6.0	4.0	3.5	3.5	---	---	---
30	13.0	11.5	12.0	6.0	5.5	6.0	4.0	4.0	4.0	---	---	---
31	13.0	13.0	13.0	---	---	---	4.5	4.0	4.0	---	---	---
MONTH	---	---	---	13.5	5.5	10.0	10.0	3.5	6.5	---	---	---

WILLAMETTE RIVER BASIN

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14173500 CALAPOOIA RIVER AT ALBANY, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	10.0	9.5	10.0	11.0	9.0	10.0	11.0	10.5	10.5
2	---	---	---	10.0	10.0	10.0	10.5	10.5	10.5	10.5	10.5	10.5
3	---	---	---	10.0	9.5	9.5	10.5	9.5	10.5	10.5	9.5	10.0
4	---	---	---	10.0	9.5	9.5	9.5	8.5	9.0	9.5	9.5	9.5
5	---	---	---	9.5	8.5	9.0	9.0	8.5	9.0	10.0	9.5	10.0
6	---	---	---	8.5	8.0	8.5	9.5	9.0	9.5	10.0	9.5	9.5
7	---	---	---	8.0	7.5	8.0	9.5	8.5	9.0	11.0	9.5	10.0
8	---	---	---	7.5	7.5	7.5	9.0	8.5	8.5	11.0	11.0	11.0
9	---	---	---	7.5	7.5	7.5	10.0	8.5	9.0	11.0	10.5	11.0
10	---	---	---	7.5	7.5	7.5	11.5	9.5	10.5	11.5	10.5	11.0
11	9.0	---	---	8.0	7.5	7.5	13.0	11.5	12.0	14.0	11.5	12.5
12	8.5	8.5	8.5	8.0	7.0	7.5	13.5	12.5	13.0	15.0	14.0	14.0
13	8.0	8.0	8.0	8.0	7.5	7.5	13.5	13.0	13.0	15.0	13.5	14.5
14	8.0	8.0	8.0	8.5	7.5	8.0	13.0	11.5	12.5	13.5	13.0	13.0
15	8.0	7.5	8.0	9.5	8.0	8.5	11.0	11.0	11.0	14.0	13.0	13.5
16	8.0	7.5	8.0	10.0	8.0	9.0	11.0	11.0	11.0	14.0	14.0	14.0
17	8.0	7.5	7.5	10.0	8.5	9.0	11.5	11.0	11.0	14.0	13.5	13.5
18	7.0	6.5	7.0	10.5	8.5	9.5	11.5	11.0	11.0	13.5	13.0	13.0
19	8.0	7.0	7.5	11.0	9.0	10.0	11.5	11.0	11.0	13.5	12.5	13.0
20	8.0	7.5	7.5	11.0	10.5	11.0	11.5	11.0	11.0	15.0	13.0	14.0
21	7.5	7.0	7.0	11.0	11.0	11.0	11.0	10.5	11.0	16.5	14.5	15.0
22	8.0	7.0	7.5	11.0	10.5	10.5	10.5	9.5	10.5	16.0	16.0	16.0
23	7.5	7.0	7.5	10.5	10.0	10.0	10.5	10.5	10.5	15.5	15.0	15.5
24	7.5	6.5	7.0	10.0	8.5	9.5	10.5	10.0	10.5	15.0	14.5	15.0
25	8.0	6.5	7.5	9.0	8.5	8.5	11.5	10.0	10.5	15.0	14.5	14.5
26	9.0	7.5	8.5	9.5	9.0	9.5	13.0	11.0	12.0	14.5	14.0	14.5
27	9.5	8.5	9.0	9.5	8.0	9.0	14.0	12.5	13.0	14.5	14.5	14.5
28	10.0	9.0	9.5	8.5	8.0	8.5	14.0	14.0	14.0	15.0	14.5	15.0
29	10.0	9.5	9.5	9.0	8.5	8.5	13.5	12.5	13.0	15.0	14.5	14.5
30	---	---	---	9.5	8.5	9.0	12.5	11.0	11.5	14.0	13.5	13.5
31	---	---	---	10.0	8.5	9.0	---	---	---	13.5	13.0	13.0
MONTH	---	---	---	11.0	7.0	9.0	14.0	8.5	11.0	16.5	9.5	13.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	13.0	13.0	13.0	18.5	17.5	18.0	24.5	21.5	23.5	23.5	20.5	22.0
2	13.0	11.5	12.5	18.5	18.5	18.5	24.0	21.5	22.5	23.5	21.5	22.5
3	12.5	11.5	12.0	19.0	18.5	18.5	24.0	22.0	23.0	24.5	21.5	23.5
4	13.0	12.5	12.5	19.5	18.5	19.0	26.0	23.0	24.0	24.0	21.5	22.5
5	13.0	12.5	13.0	19.0	18.0	18.5	25.0	23.0	23.5	23.0	21.5	22.5
6	13.5	13.0	13.0	20.0	17.0	18.0	24.0	22.0	23.0	23.5	20.5	22.5
7	13.0	13.0	13.0	21.0	17.5	19.0	23.5	21.0	22.5	23.0	20.5	22.0
8	14.0	13.0	13.5	22.0	19.0	20.5	23.0	21.5	22.5	22.0	20.0	21.0
9	14.0	13.5	13.5	23.0	20.0	21.5	24.0	22.0	22.5	22.0	19.5	20.5
10	14.0	13.5	13.5	24.0	20.5	22.0	24.0	22.5	23.5	20.5	18.5	19.5
11	14.5	13.0	14.0	22.5	20.5	21.0	23.5	21.5	22.0	21.5	18.5	19.5
12	15.5	14.0	15.0	20.5	19.5	19.5	22.5	20.5	21.5	20.5	18.0	19.5
13	17.0	15.0	16.0	19.5	19.0	19.0	22.5	21.0	21.5	20.5	18.0	19.5
14	18.5	16.5	17.5	20.5	19.0	19.5	22.0	20.0	21.0	20.5	18.5	19.5
15	19.5	17.5	18.5	20.5	19.0	20.0	21.5	20.5	21.0	19.5	17.5	18.5
16	20.5	18.5	19.5	23.0	19.0	20.5	21.0	20.0	20.5	18.0	17.0	18.0
17	20.0	18.5	19.0	22.5	19.5	21.5	21.5	19.5	20.5	17.5	16.0	17.0
18	20.0	18.5	19.5	23.5	20.0	22.0	21.0	19.0	20.5	17.0	15.0	16.5
19	20.5	18.0	19.5	25.0	21.5	23.5	21.5	20.0	20.5	17.0	16.0	16.5
20	20.5	18.5	19.5	26.5	23.0	24.5	22.0	19.5	21.0	16.5	15.5	16.0
21	21.5	18.5	20.0	26.0	23.5	24.5	22.0	19.5	21.0	17.5	16.0	16.5
22	21.5	19.5	20.5	24.5	22.5	23.5	22.0	20.0	21.0	17.5	16.0	16.5
23	21.0	19.5	20.0	25.0	22.0	24.0	24.5	21.0	22.5	17.0	16.0	16.0
24	21.0	19.0	20.0	25.5	22.5	24.0	23.0	21.0	22.0	17.5	16.5	17.0
25	21.0	20.0	20.0	25.5	22.5	24.0	23.5	20.5	22.0	17.5	17.0	17.0
26	20.0	18.5	19.0	27.0	24.0	25.5	23.0	20.5	21.5	17.0	16.5	17.0
27	19.0	19.0	19.0	26.5	24.0	25.5	25.0	21.5	23.0	18.0	16.0	17.0
28	19.0	17.5	18.5	25.5	23.0	24.0	24.0	21.5	23.0	17.5	15.5	16.5
29	18.0	17.0	17.5	26.0	23.5	24.5	23.5	22.0	23.5	17.5	15.5	16.5
30	19.0	17.0	18.0	26.0	23.5	25.0	23.5	20.5	22.5	18.5	16.0	17.0
31	---	---	---	25.5	23.0	24.5	23.5	20.0	21.5	---	---	---
MONTH	21.5	11.5	16.5	27.0	17.0	21.5	26.0	19.0	22.0	24.5	15.0	19.0

WILLAMETTE RIVER BASIN

14174000 WILLAMETTE RIVER AT ALBANY, OR

LOCATION.--Lat 44°38'20", long 123°06'20", in SW 1/4 sec.6, T.11 S., R.3 W., Linn County, Hydrologic Unit 17090003, on right bank 5 ft upstream from bridge on U.S. Highway 20 (Ellsworth Street) in Albany, 0.2 mi downstream from Calapooia River, and at mile 119.31.

DRAINAGE AREA.--4,840 mi², approximately.

PERIOD OF RECORD.--November 1878 to April 1888 (fragmentary), January to June 1892, November 1892 to September 1894, December 1894 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 694: Drainage area. WSP 904: 1939. WSP 964: 1881, 1890, 1894, 1897, 1901, 1903, 1908, 1910, 1916, 1923, 1927, 1932(M). WSP 984: 1916. WSP 1248: 1895, 1902, 1907, 1915(M), 1917(M), 1918-19, 1934(M). WSP 1318 (monthly and annual figures only): 1894, 1897, 1901-3, 1907-8, 1910, 1916, 1918-19, 1923, 1927.

GAGE.--Water-stage recorder. Datum of gage is 167.18 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 27, 1906, nonrecording gage at site 0.2 mi upstream at datum 5.00 ft higher. Sept. 27, 1906, to Nov. 12, 1934, nonrecording gage at site 300 ft upstream at datum 5.00 ft higher. Nov. 14, 1934, to Sept. 30, 1962, at datum 5.00 ft higher.

REMARKS.--No estimated daily discharges. Records excellent. Flow regulated by nine reservoirs upstream from station (see elsewhere in this report). Albany power canal diverts water from South Santiam River at Lebanon and discharges into Calapooia River near mouth; small diversions for irrigation and municipal water supply.

AVERAGE DISCHARGE.--94 years (water years 1894, 1896-88), 14,440 ft³/s, 40.52 in/yr, 10,460,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 266,000 ft³/s Jan. 14, 1881, gage height, 37.8 ft, present datum; minimum discharge, 1,840 ft³/s Sept. 1, 2, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 4, 1861, reached a stage of 41.0 ft, discharge, 340,000 ft³/s, from rating curve extended above 220,000 ft³/s. Flood of Feb. 4, 1890, reached a stage of 38.9 ft, discharge, 291,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 67,600 ft³/s Jan. 16, gage height, 21.16 ft; minimum discharge, 3,960 ft³/s Nov. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5370	4860	6590	13000	13600	6580	11000	13500	11700	5140	4610	5230
2	5370	4870	8330	11100	12500	7050	10400	14100	19300	5060	4670	5230
3	5430	4740	16300	9930	11400	6780	11600	16200	26300	5040	4680	5250
4	5410	4330	27800	9380	10400	7000	15600	19600	25100	5090	4640	5190
5	5390	4080	28400	8930	9660	7840	17600	19800	19500	5060	4610	5230
6	5370	4020	24600	8550	9160	9230	17300	18500	16400	5030	4660	5220
7	5280	4130	27300	8470	8790	10800	18000	18000	15100	4970	4760	5330
8	5250	4390	25100	8380	9260	10400	18600	18500	15800	4860	4860	5700
9	5270	4410	22800	10200	10700	12000	16400	17700	16700	4680	4780	5920
10	5270	4240	34400	24700	14500	14200	14200	18200	14400	4660	4680	5930
11	5290	4160	47200	54100	15300	13300	12500	17600	13500	4690	4690	5990
12	5310	4670	42000	57100	14000	11500	11100	16700	12300	4570	4930	5950
13	5310	5740	32600	48800	13300	9770	10200	16700	11300	4570	5280	5830
14	5510	6110	25800	49100	12600	8930	10100	17600	10500	4690	5330	5870
15	5560	5920	21600	59700	11900	8380	11500	18300	9160	4700	5350	5860
16	5550	5720	18800	66600	11500	7870	10600	17900	8190	4620	5320	5920
17	5640	5700	17300	62300	10500	7370	10000	18000	7820	4700	5330	5970
18	5580	5510	16500	51200	9430	7000	9600	16700	7510	4690	5300	6030
19	5600	5340	15600	42800	8640	6660	9250	14800	7470	4580	5280	6130
20	5610	5410	14900	35200	8100	6430	10400	13400	7190	4480	5210	6500
21	5610	5590	14500	25900	7680	6300	12700	12000	6910	4450	5180	6310
22	5610	5710	15900	21100	7390	6340	18700	10900	6830	4470	5170	6140
23	5420	5770	17800	18900	7160	6450	18300	10200	6330	4630	5110	6010
24	5270	6100	17200	17700	6970	8770	15500	9850	6030	4810	5110	6110
25	5250	6740	15400	16800	6750	12700	13400	9400	5880	4900	5170	6190
26	5210	7500	13800	15300	6570	14600	11900	9020	5760	4830	5170	6340
27	5130	7250	12700	13500	6430	15000	10800	8720	5670	4570	5220	6590
28	4930	6810	12300	12100	6360	15300	10500	8610	5430	4520	5260	6790
29	4930	6490	11800	11400	6380	13800	10200	9790	5190	4640	5210	6560
30	4960	6430	10600	14200	---	12900	11700	10500	5290	4640	5290	6440
31	4920	---	11700	15000	---	11900	---	10600	---	4610	5270	---
TOTAL	165610	162740	627620	821440	286930	303150	389650	451390	334560	146950	156130	177760
MEAN	5342	5425	20250	26500	9894	9779	12990	14560	11150	4740	5036	5925
MAX	5640	7500	47200	66600	15300	15300	18700	19800	26300	5140	5350	6790
MIN	4920	4020	6590	8380	6360	6300	9250	8610	5190	4450	4610	5190
AC-FT	328500	322800	1245000	1629000	569100	601300	772900	895300	663600	291500	309700	352600
CFSM	1.10	1.12	4.18	5.47	2.04	2.02	2.68	3.01	2.30	.98	1.04	1.22
IN.	1.27	1.25	4.82	6.31	2.21	2.33	2.99	3.47	2.57	1.13	1.20	1.37

CAL YR 1987 TOTAL 3436640 MEAN 9415 MAX 58000 MIN 3870 AC-FT 6817000 CFSM 1.95 IN. 26.41
WTR YR 1988 TOTAL 4023930 MEAN 10990 MAX 66600 MIN 4020 AC-FT 7981000 CFSM 2.27 IN. 30.93

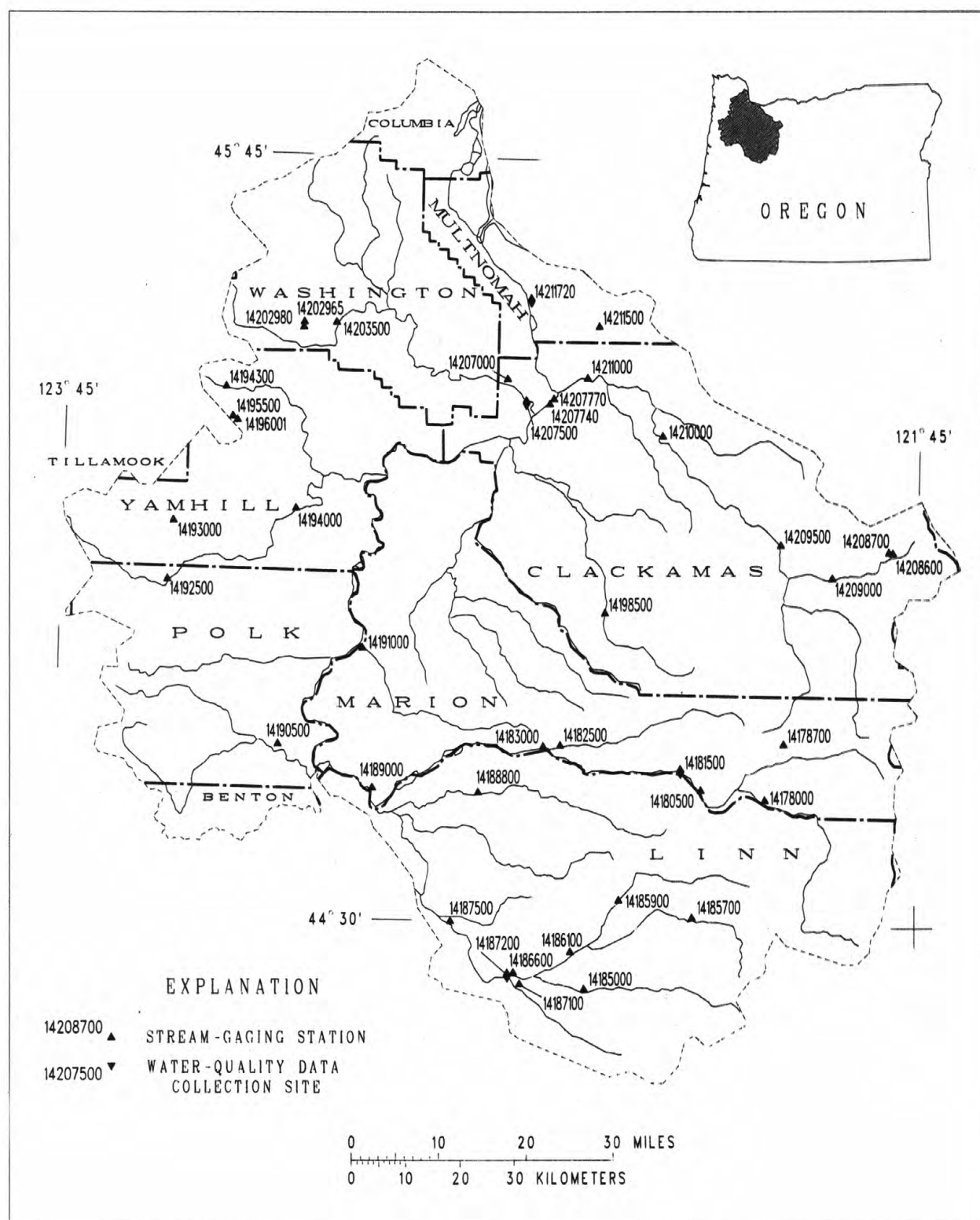


Figure 4.--Location of surface-water and water-quality stations in the Santiam River, Willamette River, downstream from the Luckiamute River, Yamhill River, Molalla-Pudding River, Tualatin River, and Clackamas River basins.

NORTH SANTIAM RIVER BASIN

14178000 NORTH SANTIAM RIVER BELOW BOULDER CREEK, NEAR DETROIT, OR

LOCATION.--Lat 44°42'25", long 122°06'00", in SE 1/4 NW 1/4 sec.17, T.10 S., R.6 E., Marion County, Hydrologic Unit 17090005, on right bank 0.5 mi downstream from Boulder Creek, 3.0 mi southeast of Detroit, and at mile 70.7.

DRAINAGE AREA.--216 mi².

PERIOD OF RECORD.--January 1907 to October 1909, October 1928 to current year. Monthly discharge only January 1907, published in WSP 1318. Prior to October 1952, published as "at Detroit."

REVISED RECORDS.--WSP 814: Drainage area at former site. WSP 1248: 1931. WRD OR-85-2: 1982-82(P).

GAGE.--Water-stage recorder. Datum of gage is 1,590.07 ft above National Geodetic Vertical Datum of 1929. See WSP 1738 for history of changes prior to Oct. 1, 1952.

REMARKS.--No estimated daily discharges. Records excellent except for flows above 3,000 ft³/s, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--62 years, 1,005 ft³/s, 63.18 in/yr, 728,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,700 ft³/s Dec. 22, 1964, slope-area measurement of peak flow, gage height, 13.76 ft, temporary backwater from debris; minimum discharge, 250 ft³/s Sept. 13, 1909.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0200	*8,430	*8.16	No other peak greater than base discharge.			
Minimum discharge, 303 ft ³ /s Nov. 8.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	326	326	789	467	995	1340	1260	1480	1480	605	436	376
2	326	324	1140	446	901	1260	1560	1430	1470	625	429	376
3	326	315	2000	451	840	1320	2590	1420	1680	631	424	379
4	325	311	1420	443	789	1470	2160	1330	1580	593	425	382
5	322	309	1050	434	752	1690	1810	1270	1400	583	424	383
6	321	307	1060	427	722	1540	1840	1250	1270	573	420	381
7	321	307	994	424	707	1330	1860	1230	1200	554	415	373
8	319	306	850	454	832	1260	1610	1290	1130	548	413	367
9	319	313	3170	786	1590	1380	1460	1320	1080	547	414	368
10	317	312	5510	2390	1870	1220	1410	1300	1060	539	416	367
11	314	322	2480	2110	1670	1110	1480	1430	994	535	413	365
12	313	382	1670	1500	1480	1030	1610	1580	950	530	406	362
13	314	490	1280	1290	1430	963	1720	1760	918	562	406	359
14	315	439	1080	2700	1280	915	1750	1680	913	542	403	360
15	315	376	939	2860	1290	876	1600	1490	919	523	406	362
16	313	389	838	2060	1180	836	1610	1570	927	512	403	360
17	311	366	755	1600	1090	805	1530	1460	907	503	402	361
18	311	347	696	1320	1020	798	1410	1310	879	497	399	363
19	310	336	650	1130	953	816	1350	1210	842	490	396	432
20	309	330	622	1030	917	871	1420	1160	822	490	393	393
21	309	345	648	929	908	983	1690	1160	796	488	390	377
22	309	364	631	860	912	972	1580	1190	778	479	386	370
23	309	388	592	819	887	1370	1400	1120	757	475	386	366
24	309	417	555	771	862	1260	1300	1040	716	466	390	364
25	309	414	536	736	856	1420	1210	988	702	465	391	368
26	309	370	526	718	892	2090	1160	956	679	464	388	402
27	307	352	511	732	973	2280	1180	956	656	461	384	471
28	307	341	501	802	1080	1780	1460	1230	646	452	383	405
29	307	333	490	1180	1390	1590	1770	1210	661	452	383	386
30	307	335	490	1260	---	1400	1620	1100	618	449	381	379
31	315	---	494	1110	---	1280	---	1040	---	444	375	---
TOTAL	9744	10566	34967	34239	31068	39255	47410	39960	29430	16077	12480	11357
MEAN	314	352	1128	1104	1071	1266	1580	1289	981	519	403	379
MAX	326	490	5510	2860	1870	2280	2590	1760	1680	631	436	471
MIN	307	306	490	424	707	798	1160	956	618	444	375	359
AC-FT	19330	20960	69360	67910	61620	77860	94040	79260	58370	31890	24750	22530
CFSM	1.46	1.63	5.22	5.11	4.96	5.86	7.32	5.97	4.54	2.40	1.86	1.75
IN.	1.68	1.82	6.02	5.90	5.35	6.76	8.17	6.88	5.07	2.77	2.15	1.96

CAL YR 1987	TOTAL 272716	MEAN 747	MAX 5510	MIN 306	AC-FT 540900	CFSM 3.46	IN. 46.97
WTR YR 1988	TOTAL 316553	MEAN 865	MAX 5510	MIN 306	AC-FT 627900	CFSM 4.00	IN. 54.52

NORTH SANTIAM RIVER BASIN

129

14178700 EAST HUMBUG CREEK NEAR DETROIT, OR

LOCATION.--Lat 44°47'57", long 122°03'28", in NW 1/4 NE 1/4 sec.15, T.9 S., R.6 E., Marion County, Hydrologic Unit 17090005, in Willamette National Forest, on left bank 1.6 mi upstream from confluence with Humbug Creek, and 6.3 mi northeast of Detroit.

DRAINAGE AREA.--7.32 mi².

PERIOD OF RECORD.--August 1978 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,050 ft, from topographic map.

REMARKS.--Records excellent. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--10 years, 38.2 ft³/s, 70.87 in/yr, 27,680 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,310 ft³/s Dec. 25, 1980, from rating curve extended above 450 ft³/s, gage height, 4.42 ft; minimum discharge, 1.6 ft³/s Sept. 30, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 280 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	0730	350	3.55	Mar. 26	1600	316	3.49
Dec. 9	1130	*879	*4.14	Apr. 2	2100	305	3.47
Jan. 14	1830	386	3.61				

Minimum discharge, 1.8 ft³/s several days in October.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	2.8	90	e16	42	78	73	54	76	11	4.6	2.8
2	2.0	2.6	93	e14	36	66	151	57	73	11	4.6	2.8
3	2.0	2.2	259	e15	33	66	249	62	76	11	4.4	2.7
4	2.0	2.1	90	e15	29	87	133	54	61	10	4.3	2.7
5	2.0	2.1	57	e14	28	94	86	49	50	10	4.3	2.7
6	2.0	2.1	75	e13	27	76	103	47	44	9.9	4.2	2.7
7	1.9	2.1	66	e13	28	62	102	47	40	9.3	4.2	2.7
8	1.9	2.1	47	e18	60	59	75	52	37	8.9	4.1	2.6
9	1.9	2.4	521	e70	172	71	64	56	36	8.6	4.0	2.6
10	1.9	2.3	420	174	131	57	65	51	34	8.3	3.9	2.6
11	1.9	3.7	131	104	101	48	74	52	31	8.2	3.9	2.6
12	1.9	5.5	71	53	80	43	77	51	28	8.4	3.8	2.6
13	1.9	22	51	46	80	40	78	58	26	8.7	3.9	2.5
14	1.9	16	41	289	64	38	74	67	24	8.0	3.8	2.5
15	1.9	8.6	35	190	62	36	63	56	22	7.5	3.7	2.5
16	1.9	11	31	86	55	34	61	53	21	7.2	3.7	2.5
17	1.9	8.7	27	58	48	32	55	48	20	7.0	3.7	2.6
18	1.9	6.0	24	45	42	33	49	42	19	6.7	3.6	2.6
19	1.9	5.3	22	38	40	37	47	38	18	6.4	3.6	6.0
20	1.9	4.8	21	34	42	44	51	35	17	6.1	3.5	3.5
21	1.9	5.1	22	31	54	52	61	32	16	6.0	3.4	3.0
22	1.9	13	21	29	54	49	62	30	15	5.8	3.3	2.8
23	1.9	16	19	28	47	83	54	28	15	5.7	3.2	2.8
24	1.9	18	e17	27	42	68	47	26	14	5.6	3.2	2.7
25	1.9	17	e16	26	43	83	43	24	14	5.3	3.2	3.0
26	1.9	11	e16	29	55	206	40	22	13	5.2	3.1	3.7
27	1.9	8.5	e15	41	64	160	40	23	13	5.1	3.1	6.0
28	1.9	7.1	e14	59	75	86	47	39	13	5.0	3.0	3.6
29	1.8	6.1	e14	104	102	70	60	41	12	4.9	3.0	3.1
30	1.9	5.8	e17	83	---	59	58	35	12	4.8	3.0	2.8
31	2.0	---	19	55	---	56	---	37	---	4.7	2.9	---
TOTAL	59.5	222.0	2362	1817	1736	2073	2242	1366	890	230.3	114.2	90.3
MEAN	1.92	7.40	76.2	58.6	59.9	66.9	74.7	44.1	29.7	7.43	3.68	3.01
MAX	2.0	22	521	289	172	206	249	67	76	11	4.6	6.0
MIN	1.8	2.1	14	13	27	32	40	22	12	4.7	2.9	2.5
AC-FT	118	440	4690	3600	3440	4110	4450	2710	1770	457	227	179
CFSM	.26	1.01	10.4	8.01	8.18	9.14	10.2	6.02	4.05	1.01	.50	.41
IN.	.30	1.13	12.00	9.23	8.82	10.53	11.39	6.94	4.52	1.17	.58	.46

CAL YR 1987 TOTAL 10159.0 MEAN 27.8 MAX 521 MIN 1.8 AC-FT 20150 CFSM 3.80 IN. 51.63
WTR YR 1988 TOTAL 13202.3 MEAN 36.1 MAX 521 MIN 1.8 AC-FT 26190 CFSM 4.93 IN. 67.09

e Estimated

NORTH SANTIAM RIVER BASIN

14180500 DETROIT LAKE NEAR DETROIT, OR

LOCATION.--Lat 44°43'20", long 122°14'55", in SW 1/4 NW 1/4 sec.7, T.10 S., R.5 E., Marion County, Hydrologic Unit 17090005, in control house near right abutment of Detroit Dam on North Santiam River, 4.9 mi west of Detroit, and at mile 60.9.

DRAINAGE AREA.--437 mi².

PERIOD OF RECORD.--January 1953 to current year. Prior to October 1971, published as Detroit Reservoir near Detroit.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by concrete, gravity-type dam with six 42-ft by 28-ft control gates. Length of dam is 1,580 ft, built by Corps of Engineers. Storage began in January 1953. Total capacity is 455,100 acre-ft and usable capacity is 340,100 acre-ft between elevations 1,425.0 ft, proposed lower limit of operation, and 1,569.0 ft, top of spillway gates. Reservoir used for flood control, power development, irrigation, improvement of navigation, pollution abatement, and other purposes. Figures given herein represent total contents.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 457,900 acre-ft July 13, 1972, elevation, 1,569.79 ft; minimum contents, 115,500 acre-ft Jan. 30, 1969, elevation, 1,425.37 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 440,900 acre-ft May 29, elevation, 1,564.92 ft; minimum contents, 152,100 acre-ft Jan. 8, elevation, 1,448.70 ft.

Capacity table (elevation, in feet, and total contents, in acre-feet)

1,425	115,000	1,480	210,900	1,530	331,500
1,430	122,200	1,490	232,000	1,540	360,200
1,440	137,700	1,500	254,600	1,550	390,900
1,450	154,400	1,510	278,700	1,560	424,000
1,460	172,200	1,520	304,400	1,570	458,600

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1530.15	1498.10	1469.90	1450.19	1472.68	1505.10	1546.81	1562.97	1564.23	1563.79	1561.21	1555.14
2	1528.99	1497.28	1471.34	1450.12	1473.32	1506.63	1548.09	1563.43	1563.94	1563.86	1561.11	1554.59
3	1527.90	1496.43	1475.86	1449.91	1474.27	1508.12	1550.97	1563.54	1564.01	1563.81	1560.91	1554.34
4	1526.67	1495.61	1475.08	1449.66	1474.97	1510.03	1552.19	1563.47	1563.84	1563.73	1560.73	1554.06
5	1525.53	1494.73	1472.99	1449.55	1475.51	1512.40	1552.11	1563.37	1563.34	1563.68	1560.51	1553.82
6	1524.39	1493.85	1471.18	1449.29	1476.11	1514.42	1552.11	1563.25	1563.19	1563.65	1560.34	1553.23
7	1523.15	1492.91	1469.03	1449.06	1476.61	1515.96	1552.07	1563.26	1563.21	1563.61	1560.17	1552.70
8	1521.99	1492.01	1467.44	1449.00	1478.01	1517.32	1551.59	1563.39	1563.29	1563.58	1560.00	1552.19
9	1520.82	1491.41	1476.65	1451.10	1482.45	1519.12	1551.06	1563.56	1563.51	1563.54	1559.89	1551.62
10	1519.67	1490.27	1488.87	1459.93	1485.90	1520.55	1551.11	1563.52	1563.64	1563.47	1559.70	1551.02
11	1518.50	1489.47	1489.88	1463.81	1487.55	1521.63	1551.37	1563.63	1563.80	1563.49	1559.47	1550.43
12	1517.34	1488.67	1488.73	1464.52	1488.23	1522.57	1551.75	1563.99	1563.83	1563.44	1559.32	1550.03
13	1516.22	1488.07	1486.63	1463.78	1488.90	1523.44	1552.28	1564.21	1563.82	1563.36	1559.10	1549.32
14	1515.16	1486.93	1484.03	1469.63	1489.17	1524.09	1552.89	1564.06	1563.81	1563.34	1558.91	1548.69
15	1514.12	1485.57	1481.28	1474.56	1489.31	1524.75	1553.24	1563.62	1563.81	1563.28	1558.72	1548.04
16	1513.04	1484.24	1478.46	1474.79	1489.65	1525.31	1553.69	1563.29	1563.78	1563.21	1558.50	1547.15
17	1512.10	1483.07	1475.30	1473.67	1490.44	1525.82	1553.98	1562.77	1563.76	1563.11	1558.31	1546.31
18	1511.26	1481.95	1471.85	1471.72	1491.35	1526.25	1554.16	1562.41	1563.72	1563.03	1558.11	1545.46
19	1510.13	1480.68	1468.21	1469.22	1492.55	1526.76	1554.59	1562.32	1563.60	1562.92	1557.86	1544.77
20	1509.14	1479.50	1464.34	1467.75	1493.50	1527.31	1555.54	1562.52	1563.55	1562.83	1557.66	1543.95
21	1508.10	1478.26	1460.40	1466.93	1494.53	1528.14	1556.63	1562.97	1563.55	1562.70	1557.46	1543.09
22	1507.09	1477.26	1458.57	1465.79	1495.63	1528.93	1557.33	1563.47	1563.56	1562.56	1557.22	1542.21
23	1506.09	1476.20	1456.70	1464.68	1496.59	1530.64	1557.50	1563.82	1563.56	1562.43	1556.97	1541.22
24	1505.16	1475.33	1454.66	1463.39	1497.39	1532.19	1557.39	1563.93	1563.54	1562.33	1556.75	1540.27
25	1504.24	1474.31	1453.60	1461.96	1498.16	1534.30	1557.41	1564.08	1563.66	1562.22	1556.53	1539.32
26	1503.29	1473.19	1452.36	1461.49	1499.03	1538.24	1557.78	1564.11	1563.73	1562.09	1556.31	1538.46
27	1502.40	1471.87	1451.07	1462.05	1500.15	1541.75	1558.44	1564.12	1563.81	1561.97	1556.09	1537.66
28	1501.49	1470.83	1450.13	1462.98	1501.44	1543.98	1559.54	1564.64	1563.92	1561.84	1555.86	1536.78
29	1500.59	1469.71	1450.03	1466.32	1503.39	1545.62	1561.05	1564.49	1563.91	1561.65	1555.58	1535.82
30	1499.69	1468.64	1450.35	1469.36	---	1546.14	1562.09	1564.11	1563.85	1561.51	1555.34	1534.79
31	1498.89	---	1450.33	1471.31	---	1546.43	---	1563.84	---	1561.37	1555.09	---
MAX	1530.15	1498.10	1489.88	1474.79	1503.39	1546.43	1562.09	1564.64	1564.23	1563.86	1561.21	1555.14
MIN	1498.89	1468.64	1450.03	1449.00	1472.68	1505.10	1546.81	1562.32	1563.19	1561.37	1555.09	1534.79
(†)	252000	188500	155000	193700	262600	379700	431100	437200	437200	428700	407400	345100
(‡)	-83300	-63500	-33500	+38700	+68900	+117100	+51400	+6100	0	-8500	-21300	-62300

CAL YR 1987 MAX 1564.05 MIN 1449.56 AC-FT# -800

WTR YR 1988 MAX 1564.64 MIN 1449.00 AC-FT# +9800

† Contents, in acre-feet, at 2400, on last day of month.

‡ Change in contents, in acre-feet.

NORTH SANTIAM RIVER BASIN

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14181500 NORTH SANTIAM RIVER AT NIAGARA, OR

LOCATION.--Lat 44°45'10", long 122°17'50", in NE 1/4 NE 1/4 sec.34, T.9 S., R.4 E., Linn County, Hydrologic Unit 17090005, on left bank 0.1 mi downstream from Little Sardine Creek, 0.8 mi downstream from Big Cliff Dam, 2.1 mi east of Niagara, and at mile 57.3.

DRAINAGE AREA.--453 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1908 to January 1920, October 1921 to March 1922, October 1938 to current year.

Monthly discharge only for some periods, published in WSP 1318. Published as "North Fork of Santiam River near Niagara" prior to October 1913, and as "above Mayflower Creek, near Detroit" October 1938 to September 1952.

REVISED RECORDS.--WSP 1288: 1914-18, 1920. WSP 1718: 1953-54.

GAGE.--Water-stage recorder. Datum of gage is 1,093.78 ft above National Geodetic Vertical Datum of 1929 (Federal Highway Administration bench mark). See WSP 1738 for history of changes prior to Oct. 1, 1952.

REMARKS.--No estimated daily discharges. Water-discharge records excellent. Flow regulated since 1953 by Detroit Lake (station 14180500) and Big Cliff Reservoir, usable capacity for reregulating purposes, 2,930 acre-ft. No diversion upstream from station.

AVERAGE DISCHARGE.--60 years (water years 1910-19, 1939-88), 2,326 ft³/s, 69.73 in/yr, 1,685,000 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 63,200 ft³/s Nov. 22, 1909, gage height, 16.4 ft, from floodmark, site and datum then in use, from rating curve extended above 35,000 ft³/s; minimum discharge, 19 ft³/s Aug. 21, 1963; minimum daily, 395 ft³/s Mar. 25, 26, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,930 ft³/s Jan. 14, gage height, 6.00 ft; minimum discharge, 702 ft³/s July 6; minimum daily, 975 ft³/s Aug. 2, 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2160	1450	1710	1010	1110	1000	2430	1720	3410	1180	1000	976
2	2160	1460	2480	990	1520	1000	2360	2400	4360	1020	975	994
3	2150	1480	3450	988	1020	1000	2930	3120	4230	1110	994	985
4	2150	1480	5380	978	1020	991	3390	3020	4190	1250	976	989
5	2190	1500	5100	984	1030	1000	4660	2990	4130	1250	985	996
6	2180	1510	5380	994	1040	991	4810	2930	3530	996	980	1500
7	2150	1540	5300	987	1030	991	4870	2630	2530	989	995	1500
8	2090	1540	4110	985	1040	1000	4720	2620	2290	978	980	1480
9	2100	1520	3090	1020	1590	1000	4200	2690	1840	998	989	1500
10	2050	1500	3620	1380	2680	1000	2990	2910	1760	987	997	1580
11	2030	1490	5390	2390	3140	1000	2940	2940	1800	1000	989	1550
12	2020	1570	5420	3050	3140	1000	2920	3050	1820	996	996	1570
13	2020	1910	5400	4180	3070	1000	2920	3490	1870	1170	981	1570
14	1860	2250	5410	4350	3050	991	2640	4170	1850	1010	984	1560
15	1880	2280	5130	3860	3100	1000	2680	4150	1820	1000	987	1570
16	1870	2230	4910	5300	2500	1000	2550	4150	1830	1010	992	2000
17	1710	1930	5000	5070	1840	1000	2580	4130	1840	1010	983	2010
18	1710	1940	5030	5100	1250	983	2530	3760	1910	994	975	1960
19	1740	1950	5070	5060	1000	983	1810	2530	1820	984	990	1970
20	1740	1930	5150	3750	991	1000	1320	1860	1690	1000	994	1980
21	1750	1930	5220	3020	1000	991	1720	1490	1520	1010	995	1970
22	1750	1970	3150	2960	991	1000	2130	1490	1480	994	983	1980
23	1710	1960	3100	2980	991	1000	2710	1500	1290	993	996	1980
24	1600	1970	2960	2990	1000	1000	2760	1840	1390	1010	997	2010
25	1600	2000	2150	2960	1000	1010	2360	1730	1110	988	995	2000
26	1650	2030	2150	2030	1000	1020	1610	1820	1090	988	997	2060
27	1550	2020	2150	1380	1000	1000	1050	1850	1050	995	987	2100
28	1570	1710	1650	1330	991	1000	1020	2170	990	986	999	2110
29	1550	1710	1010	1100	1010	1450	1310	2690	1120	997	978	2110
30	1540	1710	1010	1060	---	2520	1740	3180	1180	979	994	2200
31	1500	---	996	1100	---	2470	---	2910	---	987	989	---
TOTAL	57730	53470	117076	75336	45144	34391	80660	83930	62740	31859	30652	50760
MEAN	1862	1782	3777	2430	1557	1109	2689	2707	2091	1028	989	1692
MAX	2190	2280	5420	5300	3140	2520	4870	4170	4360	1250	1000	2200
MIN	1500	1450	996	978	991	983	1020	1490	990	978	975	976
AC-FT	114500	106100	232200	149400	89540	68210	160000	166500	124400	63190	60800	100700
MEAN†	507	716	3231	3059	2754	3014	3553	2807	2091	889	642	645
CFSM†	1.12	1.58	7.13	6.75	6.08	6.65	7.84	6.20	4.62	1.96	1.42	1.42
IN.†	1.29	1.76	8.23	7.79	6.56	7.67	8.75	7.15	5.15	2.26	1.64	1.59
AC-FT†	31200	42600	198700	188100	158400	185300	211400	172600	124400	54690	39500	38400

CAL YR 1987 TOTAL 592688 MEAN 1624 MAX 5420 MIN 885 AC-FT 1176000 MEAN† 1623 CFSM† 3.58 IN.† 48.65 AC-FT† 1175000
WTR YR 1988 TOTAL 723748 MEAN 1977 MAX 5420 MIN 975 AC-FT 1436000 MEAN† 1992 CFSM† 4.40 IN.† 59.87 AC-FT† 1446000

† Adjusted for change in contents in Detroit Lake.

NORTH SANTIAM RIVER BASIN

14181500 NORTH SANTIAM RIVER AT NIAGARA, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: January 1953 to current year.

INSTRUMENTATION.--Temperature recorder since January 1953.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 16.5°C July 28, 29, 1958; minimum, 1.0°C Jan. 30 to Feb. 4, 1979.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 14.0°C Oct. 9-22; minimum, 3.5°C Feb. 1-7.

TEMPERATURE, (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	13.0	12.5	13.0	13.5	13.5	13.5	10.0	9.5	10.0	5.5	5.0	5.5
2	13.0	13.0	13.0	13.5	13.5	13.5	9.5	9.0	9.5	5.0	5.0	5.0
3	13.5	13.0	13.0	13.5	13.0	13.5	9.5	9.0	9.5	5.0	5.0	5.0
4	13.5	13.0	13.0	13.0	13.0	13.0	9.5	9.0	9.0	5.0	4.5	4.5
5	13.5	13.0	13.0	13.0	13.0	13.0	9.0	9.0	9.0	4.5	4.5	4.5
6	13.5	13.0	13.5	13.0	13.0	13.0	9.5	9.0	9.0	4.5	4.5	4.5
7	13.5	13.0	13.5	13.0	13.0	13.0	9.0	8.5	8.5	4.5	4.5	4.5
8	13.5	13.5	13.5	13.0	13.0	13.0	9.0	8.5	9.0	4.5	4.5	4.5
9	14.0	13.5	13.5	13.0	13.0	13.0	9.0	8.5	8.5	4.5	4.5	4.5
10	14.0	14.0	14.0	13.0	13.0	13.0	8.5	8.0	8.0	5.0	4.5	5.0
11	14.0	13.5	14.0	13.0	13.0	13.0	8.0	7.5	7.5	5.0	4.5	5.0
12	14.0	13.5	14.0	13.0	13.0	13.0	7.5	7.5	7.5	4.5	4.5	4.5
13	14.0	13.5	13.5	13.0	12.5	12.5	7.5	7.5	7.5	4.5	4.5	4.5
14	14.0	13.5	13.5	12.5	12.0	12.0	7.5	7.5	7.5	4.5	4.5	4.5
15	14.0	13.5	13.5	12.0	12.0	12.0	7.5	7.0	7.0	5.0	4.5	4.5
16	14.0	13.5	14.0	12.5	12.0	12.0	7.5	7.0	7.0	4.5	4.5	4.5
17	14.0	13.5	13.5	12.0	11.5	11.5	7.0	7.0	7.0	4.5	4.0	4.0
18	14.0	13.5	13.5	12.0	11.5	12.0	7.0	7.0	7.0	4.0	4.0	4.0
19	14.0	13.5	14.0	12.0	11.5	11.5	7.0	6.5	7.0	4.0	4.0	4.0
20	14.0	14.0	14.0	11.5	11.5	11.5	7.0	6.5	6.5	4.0	4.0	4.0
21	14.0	13.5	14.0	11.5	11.5	11.5	7.0	6.5	6.5	4.0	4.0	4.0
22	14.0	13.5	13.5	11.5	11.0	11.0	6.5	6.5	6.5	4.0	4.0	4.0
23	13.5	13.5	13.5	11.5	11.0	11.0	6.5	6.0	6.0	4.0	4.0	4.0
24	13.5	13.5	13.5	11.0	11.0	11.0	6.0	6.0	6.0	4.0	4.0	4.0
25	13.5	13.5	13.5	11.0	10.5	10.5	6.0	6.0	6.0	4.0	4.0	4.0
26	13.5	13.5	13.5	10.5	10.5	10.5	6.0	5.5	6.0	4.0	4.0	4.0
27	13.5	13.5	13.5	10.5	10.5	10.5	5.5	5.5	5.5	4.0	4.0	4.0
28	13.5	13.5	13.5	10.5	10.0	10.5	5.5	5.5	5.5	4.0	4.0	4.0
29	13.5	13.5	13.5	10.0	10.0	10.0	5.5	5.5	5.5	4.5	4.0	4.0
30	13.5	13.5	13.5	10.0	10.0	10.0	5.5	5.5	5.5	4.0	4.0	4.0
31	13.5	13.5	13.5	---	---	---	5.5	5.5	5.5	4.0	4.0	4.0
MONTH	14.0	12.5	13.5	13.5	10.0	12.0	10.0	5.5	7.5	5.5	4.0	4.5

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4.0	3.5	4.0	5.0	5.0	5.0	6.0	5.5	5.5	6.0	6.0	6.0
2	3.5	3.5	3.5	5.0	5.0	5.0	6.0	5.5	5.5	6.0	6.0	6.0
3	3.5	3.5	3.5	5.0	5.0	5.0	5.5	5.0	5.5	6.0	5.5	6.0
4	3.5	3.5	3.5	5.0	5.0	5.0	5.0	5.0	5.0	6.0	5.5	6.0
5	3.5	3.5	3.5	5.0	5.0	5.0	5.5	5.0	5.0	6.0	6.0	6.0
6	3.5	3.5	3.5	5.0	4.5	4.5	5.5	5.5	5.5	6.0	6.0	6.0
7	4.0	3.5	4.0	4.5	4.5	4.5	5.5	5.0	5.5	6.5	6.0	6.0
8	4.0	4.0	4.0	4.5	4.5	4.5	5.5	5.0	5.5	6.5	6.0	6.0
9	4.0	4.0	4.0	4.5	4.5	4.5	6.0	5.5	5.5	6.5	5.5	6.0
10	4.5	4.0	4.0	5.0	4.5	4.5	6.5	6.0	6.5	6.5	6.0	6.5
11	4.0	4.0	4.0	5.0	4.5	4.5	6.5	6.0	6.0	6.5	6.0	6.5
12	4.0	4.0	4.0	4.5	4.5	4.5	6.0	5.5	6.0	6.5	6.5	6.5
13	4.0	4.0	4.0	5.0	4.5	4.5	6.0	5.5	5.5	6.5	6.0	6.0
14	4.0	4.0	4.0	5.0	4.5	5.0	5.5	5.5	5.5	6.5	6.0	6.5
15	4.0	4.0	4.0	5.5	5.0	5.0	6.0	5.5	5.5	6.5	6.0	6.0
16	4.0	4.0	4.0	5.5	5.0	5.0	6.0	5.5	6.0	6.5	6.5	6.5
17	4.0	4.0	4.0	5.0	5.0	5.0	6.0	5.5	5.5	6.5	6.0	6.5
18	4.0	4.0	4.0	5.5	5.0	5.5	6.5	5.5	6.0	6.5	6.0	6.0
19	4.0	4.0	4.0	5.5	5.5	5.5	6.5	6.0	6.0	6.5	6.5	6.5
20	4.5	4.0	4.0	6.0	5.5	5.5	6.5	6.0	6.0	7.0	6.5	6.5
21	4.5	4.0	4.5	5.5	5.5	5.5	6.0	5.5	6.0	7.5	7.0	7.0
22	4.5	4.0	4.5	5.5	5.0	5.5	6.0	5.5	6.0	7.0	7.0	7.0
23	4.5	4.0	4.5	5.0	5.0	5.0	6.0	6.0	6.0	7.0	7.0	7.0
24	4.5	4.0	4.0	5.0	5.0	5.0	6.0	5.5	6.0	7.0	7.0	7.0
25	4.5	4.0	4.5	5.0	5.0	5.0	6.5	5.5	6.0	7.0	7.0	7.0
26	4.5	4.5	4.5	5.0	5.0	5.0	6.5	6.5	6.5	7.0	7.0	7.0
27	4.5	4.5	4.5	5.0	5.0	5.0	6.5	6.0	6.5	7.0	6.5	7.0
28	5.0	4.5	4.5	5.5	5.0	5.5	6.5	6.0	6.5	7.0	6.5	7.0
29	5.0	5.0	5.0	5.0	5.0	5.0	6.5	6.0	6.5	7.0	6.5	6.5
30	---	---	---	5.0	5.0	5.0	6.0	6.0	6.0	6.5	6.5	6.5
31	---	---	---	5.5	5.0	5.0	---	---	---	6.5	6.5	6.5
MONTH	5.0	3.5	4.0	6.0	4.5	5.0	6.5	5.0	6.0	7.5	5.5	6.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	7.0	6.5	6.5	8.5	8.0	8.5	9.5	9.5	9.5	10.5	10.0	10.0
2	6.5	6.5	6.5	8.5	8.0	8.0	10.0	9.0	9.5	10.5	10.0	10.5
3	7.0	6.5	7.0	8.5	8.0	8.0	10.0	9.0	9.5	10.5	10.0	10.5
4	7.0	6.5	7.0	8.0	8.0	8.0	10.5	9.0	9.5	11.0	10.0	10.

NORTH SANTIAM RIVER BASIN

14182500 LITTLE NORTH SANTIAM RIVER NEAR MEHAMA, OR

LOCATION.--Lat 44°47'30", long 122°34'40", in NW 1/4 sec.16, T.9 S., R.2 E., Marion County, Hydrologic Unit 17090005, on left bank 2.0 mi east of Mehama and at mile 2.0.

DRAINAGE AREA.--112 mi² at cableway 1.2 mi downstream where all discharge measurements are made.

PERIOD OF RECORD.--October 1931 to current year. Records for July to September 1924 and July to September 1931 at site 4 mi upstream not equivalent owing to difference in drainage areas.

REVISED RECORDS.--WSP 754: 1932. WSP 1218: 1934, 1936, 1949-50. WSP 1935: Maximum only, 1932-34, 1936, 1938, 1943, 1945-49, 1950(M,P), 1951-53(M), 1954(M,P), 1955(M), 1956(M,P), 1957(M), 1958-59(M,P). WSP 2135: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 655.41 ft above National Geodetic Vertical Datum of 1929. Prior to June 12, 1948, nonrecording gage at about same site and datum.

REMARKS.--No estimated daily discharges. Records excellent except those below 200 ft³/s, which are good. No regulation or diversion upstream from station. Records herein are for measuring site.

AVERAGE DISCHARGE.--57 years, 762 ft³/s, 92.39 in/yr, 552,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,000 ft³/s Dec. 22, 1964, gage height, 16.73 ft, from rating curve extended above 17,000 ft³/s; minimum discharge, 13 ft³/s Aug. 30, 1961.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 8,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0330	*10,900	*10.35	No other peak greater than base discharge.			
Minimum discharge, 15 ft ³ /s Oct. 11, 21.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	25	1090	329	757	662	978	978	2000	132	55	30
2	20	25	1780	296	618	563	1530	984	1800	133	54	28
3	19	23	4090	282	527	683	2990	1170	1890	146	53	28
4	19	21	2080	264	463	851	1910	1080	1320	134	50	27
5	20	19	1230	249	422	1230	1370	960	981	134	49	27
6	19	19	1530	237	391	1000	1660	901	776	147	48	27
7	18	18	1380	235	382	797	1890	919	687	127	47	27
8	18	18	951	303	701	746	1320	908	600	116	47	27
9	18	20	5080	2210	2970	1340	1040	944	551	106	46	26
10	16	22	6020	5700	3270	1060	938	886	583	100	45	26
11	16	37	2150	3110	1920	830	998	989	533	96	45	26
12	16	113	1360	1810	1370	707	1040	958	474	98	45	25
13	17	331	951	1480	1300	620	1020	1060	427	132	44	24
14	18	441	747	4340	1020	564	855	1390	387	139	44	24
15	17	228	609	3780	1000	511	706	1010	356	123	43	24
16	17	358	520	2010	968	458	656	1080	327	112	43	24
17	17	292	442	1400	851	412	617	1100	301	103	44	26
18	17	184	386	1060	792	379	550	861	283	96	42	26
19	16	147	342	830	702	368	511	717	258	90	40	69
20	16	124	318	745	676	383	578	630	236	84	39	70
21	16	132	513	674	705	551	1340	577	218	79	38	39
22	16	295	500	606	677	572	1300	561	202	75	37	31
23	16	605	442	601	592	1360	935	503	190	72	35	28
24	17	462	385	554	521	1280	757	427	177	71	34	27
25	17	562	346	516	482	2770	668	381	166	68	34	26
26	17	363	324	599	496	3410	586	348	159	65	33	35
27	17	267	302	754	551	2690	546	351	155	62	33	193
28	16	210	291	981	605	1670	635	808	151	60	32	114
29	16	173	279	1690	744	1400	1200	1000	166	59	31	68
30	16	154	282	1590	---	1170	1180	944	145	57	31	52
31	18	---	346	1020	---	978	---	860	---	56	30	---
TOTAL	536	5688	37066	40255	26473	32015	32304	26285	16499	3072	1291	1224
MEAN	17.3	190	1196	1299	913	1033	1077	848	550	99.1	41.6	40.8
MAX	20	605	6020	5700	3270	3410	2990	1390	2000	147	55	193
MIN	16	18	279	235	382	368	511	348	145	56	30	24
AC-FT	1060	11280	73520	79850	52510	63500	64070	52140	32730	6090	2560	2430
CFSM	.15	1.69	10.7	11.6	8.15	9.22	9.61	7.57	4.91	.88	.37	.36
IN.	.18	1.89	12.31	13.37	8.79	10.63	10.73	8.73	5.48	1.02	.43	.41

CAL YR 1987 TOTAL 170560 MEAN 467 MAX 6020 MIN 16 AC-FT 338300 CFSM 4.17 IN. 56.65
WTR YR 1988 TOTAL 222708 MEAN 608 MAX 6020 MIN 16 AC-FT 441700 CFSM 5.43 IN. 73.97

NORTH SANTIAM RIVER BASIN

135

14183000 NORTH SANTIAM RIVER AT MEHAMA, OR

LOCATION.--Lat 44°47'20", long 122°37'00", in NW 1/4 sec.18, T.9 S., R.2 E., Marion County, Hydrologic Unit 17090005, on right bank 300 ft downstream from highway bridge at Mehama, 0.5 mi downstream from Little North Santiam River, and at mile 38.71.

DRAINAGE AREA.--655 mi², at cableway 0.8 mi downstream, where all discharge measurements are made.

PERIOD OF RECORD.--July 1905 to March 1907, October 1910 to September 1914, September 1921 to current year. Monthly discharge only September 1921, published in WSP 1318. Prior to October 1913, published as North Fork of Santiam River at Mehama.

REVISED RECORDS.--WSP 739: 1922-23(M). WSP 1044: 1943. WSP 1248: 1906, 1911-14, 1924(M), 1926, 1934-36(M), 1937, 1938(M), 1942(M). WSP 2135: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 602.49 ft above National Geodetic Vertical Datum of 1929. Prior to June 15, 1933, nonrecording gage at site 100 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1953 by Detroit Lake (station 14180500) and Big Cliff Reservoir, usable capacity for reregulating purposes, 2,930 acre-ft. No diversion upstream from station. All records given herein are for measuring site.

AVERAGE DISCHARGE.--72 years (water years 1906, 1911-14, 1922-88), 3,366 ft³/s, 2,439,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,600 ft³/s Dec. 28, 1945, gage height, 15.37 ft, from rating curve extended above 36,000 ft³/s, on basis of slope-area measurement of peak flow; maximum gage height, 17.5 ft Nov. 20, 1921, from graph based on gage readings, and Jan. 6, 1923, from floodmark, at site then in use; minimum discharge, 254 ft³/s Aug. 3, 1970; minimum daily, 420 ft³/s Sept. 18, 1924.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17,600 ft³/s Dec. 10, gage height, 8.67 ft; minimum discharge, 990 ft³/s Aug. 4; minimum daily, 1,040 ft³/s Sept. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2070	1440	2960	1680	2250	1890	3750	3100	5790	1400	1080	1040
2	2050	1430	4370	1590	2340	1780	4350	3640	6770	1290	1060	1050
3	2040	1440	9060	1560	1960	1920	7150	4780	6720	1330	1060	1050
4	2050	1440	8360	1510	1790	2090	6160	4650	5980	1450	1050	1050
5	2080	1450	6690	1500	1740	2550	6580	4410	5430	1450	1060	1050
6	2080	1470	7710	1470	1700	2350	7150	4240	4770	1300	1060	1400
7	2050	1490	7260	1460	1680	2120	7710	3960	3460	1220	1080	1490
8	2000	1500	5650	1530	1990	2090	6670	3860	3190	1190	1070	1470
9	2010	1490	10100	3800	5230	2860	5960	3930	2610	1190	1080	1470
10	1970	1460	13100	10500	7190	2570	4450	4020	2590	1180	1070	1540
11	1940	1500	8860	7430	5790	2270	4270	4150	2520	1170	1070	1530
12	1940	1630	7460	5970	5000	2100	4230	4180	2450	1180	1080	1530
13	1940	2160	6810	6100	4780	2000	4240	4670	2430	1340	1060	1540
14	1830	2580	6490	11800	4380	1860	3740	5840	2370	1220	1060	1520
15	1810	2440	6030	9990	4390	1790	3530	5330	2260	1200	1060	1530
16	1820	2480	5610	8910	3950	1710	3370	5520	2220	1190	1070	1820
17	1660	2190	5570	7410	3120	1650	3300	5560	2190	1180	1070	1910
18	1650	2040	5540	6900	2510	1610	3190	5000	2240	1150	1060	1870
19	1670	2000	5500	6440	2030	1570	2560	3600	2130	1140	1070	1970
20	1680	1960	5550	5140	1970	1590	2180	2700	2020	1140	1070	1950
21	1680	1970	5950	4130	1980	1750	3550	2310	1790	1140	1060	1910
22	1690	2140	4170	3840	1940	1790	4000	2210	1770	1120	1050	1890
23	1660	2510	3720	3820	1850	2650	3990	2170	1580	1110	1050	1880
24	1580	2350	3560	3770	1770	2620	3810	2290	1650	1120	1060	1900
25	1550	2520	2740	3680	1720	4580	3370	2210	1430	1100	1060	1900
26	1610	2320	2620	2980	1720	5510	2530	2210	1350	1070	1060	1970
27	1540	2210	2570	2490	1770	4860	1970	2220	1320	1080	1050	2180
28	1520	1910	2350	2560	1810	3320	1940	3050	1260	1070	1050	2090
29	1530	1810	1530	3230	1960	3300	2740	3750	1360	1070	1050	2030
30	1500	1790	1560	3230	---	4050	3280	4270	1420	1060	1050	2090
31	1480	---	1710	2550	---	3860	---	3940	---	1050	1060	---
TOTAL	55680	57120	171160	138970	82310	78660	125720	117770	85070	36900	32940	49620
MEAN	1796	1904	5521	4483	2838	2537	4191	3799	2836	1190	1063	1654
MAX	2080	2580	13100	11800	7190	5510	7710	5840	6770	1450	1080	2180
MIN	1480	1430	1530	1460	1680	1570	1940	2170	1260	1050	1050	1040
AC-F	110400	113300	339500	275600	163300	156000	249400	233600	168700	73190	65340	98420

CAL YR 1987 TOTAL 823992 MEAN 2258 MAX 13100 MIN 954 AC-FT 1634000
WTR YR 1988 TOTAL 1031920 MEAN 2819 MAX 13100 MIN 1040 AC-FT 2047000

SOUTH SANTIAM RIVER BASIN

14185000 SOUTH SANTIAM RIVER BELOW CASCADIA, OR

LOCATION.--Lat 44°23'35", long 122°30'35", in SE 1/4 sec.36, T.13 S., R.2 E., Linn County, Hydrologic Unit 17090006, on left bank 100 ft downstream from bridge at Cascadia Ranger Station, 0.5 mi downstream from Mouse Creek, 0.5 mi upstream from Deer Creek, 1.5 mi southwest of Cascadia, and at mile 48.5.

DRAINAGE AREA.--174 mi², at cableway 0.7 mi upstream, where all discharge measurements are made.

PERIOD OF RECORD.--September 1935 to current year. Monthly discharge only September 1935, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 759.88 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 1, 1935, nonrecording gage.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station. All records given herein are for measuring site.

AVERAGE DISCHARGE.--53 years, 819 ft³/s, 63.92 in/yr, 593,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,600 ft³/s Dec. 22, 1964, gage height, 19.68 ft, from rating curve extended above 14,000 ft³/s; minimum discharge, 23 ft³/s Dec. 1, 2, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0230	*12,400	*12.18	Jan. 10	0500	8,200	10.19

Minimum discharge, 30 ft³/s Oct. 21-24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	39	976	455	1010	679	1130	1290	2580	218	76	44
2	34	41	1500	396	830	629	1300	1320	2140	211	75	43
3	34	40	3010	372	714	828	2810	1530	2160	231	70	41
4	34	37	1890	361	633	1030	2580	1340	1650	216	69	41
5	34	36	1110	362	578	1440	1910	1170	1240	206	66	40
6	33	36	1450	347	531	1410	1890	1130	996	211	66	40
7	32	35	1310	346	502	1190	2110	1270	958	191	66	40
8	32	35	930	381	718	1100	1630	1300	837	179	65	40
9	32	36	4220	1770	2210	1820	1360	1270	777	168	63	40
10	32	37	7580	7300	2880	1510	1200	1170	782	160	62	40
11	31	45	2820	4220	1910	1160	1160	1180	696	155	62	39
12	31	120	1630	2290	1420	973	1150	1120	615	153	63	39
13	31	281	1110	1630	1330	856	1100	1210	554	158	63	39
14	31	303	860	3140	1090	783	1080	1310	501	159	63	38
15	31	160	705	3730	1070	712	931	1060	459	149	62	38
16	31	198	613	2250	1010	646	861	1080	428	140	58	38
17	31	178	527	1560	918	591	793	1090	400	132	58	39
18	31	133	461	1190	888	559	722	933	380	125	58	40
19	31	104	413	937	799	549	720	816	354	120	58	117
20	31	88	398	866	751	552	806	724	332	112	55	103
21	30	90	858	806	718	613	1650	660	313	108	53	64
22	30	110	846	729	677	607	1730	613	295	105	53	53
23	30	204	693	741	626	1060	1280	563	282	101	51	49
24	30	237	572	675	591	1050	1040	509	269	98	49	46
25	31	329	501	632	571	2130	905	469	257	94	48	45
26	31	206	453	657	574	2490	803	433	249	90	46	79
27	31	160	418	719	601	2790	760	421	243	86	46	280
28	31	134	403	801	636	1860	843	650	240	85	46	149
29	31	116	393	1670	723	1550	1280	778	278	82	45	95
30	31	112	376	1910	---	1370	1440	768	236	80	44	77
31	33	---	470	1320	---	1180	---	789	---	79	44	---
TOTAL	981	3680	39496	44563	27509	35717	38974	29966	21501	4402	1803	1876
MEAN	31.6	123	1274	1438	949	1152	1299	967	717	142	58.2	62.5
MAX	35	329	7580	7300	2880	2790	2810	1530	2580	231	76	280
MIN	30	35	376	346	502	549	720	421	236	79	44	38
AC-FT	1950	7300	78340	88390	54560	70840	77300	59440	42650	8730	3580	3720
CFSM	.18	.70	7.32	8.26	5.45	6.62	7.47	5.56	4.12	.82	.33	.36
IN.	.21	.79	8.44	9.53	5.88	7.64	8.33	6.41	4.60	.94	.39	.40

CAL YR 1987 TOTAL 178068 MEAN 488 MAX 7580 MIN 30 AC-FT 353200 CFSM 2.80 IN. 38.07
WTR YR 1988 TOTAL 250468 MEAN 684 MAX 7580 MIN 30 AC-FT 496800 CFSM 3.93 IN. 53.55

SOUTH SANTIAM RIVER BASIN

137

14185700 MIDDLE SANTIAM RIVER NEAR UPPER SODA, OR

LOCATION.--Lat 44°30'45", long 122°15'52", in SE 1/4 NE 1/4 sec.24, T.12 S., R.4 E., Linn County, Hydrologic Unit 17090006, on right bank 0.8 mi upstream from Bear Creek, 7.5 mi north of Upper Soda, and at mile 23.9.

DRAINAGE AREA.--74.6 mi².

PERIOD OF RECORD.--October 1980 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,500 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair.

AVERAGE DISCHARGE.--8 years, 418 ft³/s, 76.09 in/yr, 302,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,400 ft³/s Feb. 23, 1986, gage height, 11.05 ft, from rating curve extended above 3,600 ft³/s on basis of slope-area measurement of December 1980; minimum discharge, 18 ft³/s Oct. 30, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0300	*5,720	*7.17	Jan. 10	unknown	unknown	unknown

Minimum discharge, 18 ft³/s Oct. 29-31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	20	404	e198	e560	e563	600	507	1040	147	53	29
2	21	23	651	e187	e450	e490	886	507	977	145	51	28
3	21	21	1060	e180	e390	e512	1640	522	920	149	50	27
4	21	20	779	e177	e345	e656	1290	473	801	139	48	27
5	21	20	511	e175	e320	763	990	464	667	135	47	27
6	21	20	549	e173	e295	690	990	464	573	139	46	27
7	20	19	518	e175	e285	584	1000	492	527	129	45	26
8	20	19	422	e205	e430	600	814	522	464	118	44	26
9	20	20	2540	e920	e1150	726	690	542	454	112	44	26
10	20	21	3820	e2320	e1470	628	633	563	427	106	43	25
11	19	24	1560	e1660	1040	512	622	606	400	104	43	25
12	19	58	e890	e1010	827	454	617	595	358	101	42	25
13	19	133	e615	e780	807	405	595	644	319	108	42	24
14	19	104	e490	e1790	673	375	573	656	297	102	42	24
15	19	65	e400	e1580	650	354	507	547	275	95	41	24
16	19	77	e350	e1100	600	338	478	579	258	91	40	24
17	19	70	e315	e805	537	330	431	542	244	87	40	24
18	19	51	e275	e630	483	323	391	502	231	84	39	24
19	19	43	e250	e510	436	319	359	436	219	81	37	56
20	19	39	e235	e460	427	315	375	396	209	78	36	46
21	19	44	375	e410	418	375	492	371	202	75	35	33
22	19	59	355	e380	409	363	459	346	193	73	34	30
23	19	96	325	e370	405	600	396	319	185	71	33	28
24	19	108	e290	e345	396	537	363	308	176	68	33	27
25	19	118	e255	e325	383	814	350	293	169	66	32	27
26	19	85	e238	e340	405	1360	331	286	162	63	31	45
27	19	70	e218	e390	445	1360	338	275	157	61	31	123
28	19	60	e210	e470	502	920	400	358	161	60	30	64
29	19	52	e195	e950	e633	763	589	445	194	58	30	44
30	19	51	e195	e900	---	644	547	414	158	57	30	37
31	19	---	e210	e695	---	579	---	422	---	55	30	---
TOTAL	604	1610	19500	20610	16171	18252	18746	14396	11417	2957	1222	1022
MEAN	19.5	53.7	629	665	558	589	625	464	381	95.4	39.4	34.1
MAX	21	133	3820	2320	1470	1360	1640	656	1040	149	53	123
MIN	18	19	195	173	285	315	331	275	157	55	30	24
AC-FT	1200	3190	38680	40880	32080	36200	37180	28550	22650	5870	2420	2030
CFSM	.26	.72	8.43	8.91	7.47	7.89	8.38	6.23	5.10	1.28	.53	.46
IN.	.30	.80	9.72	10.28	8.06	9.10	9.35	7.18	5.69	1.47	.61	.51

CAL YR 1987 TOTAL 92778 MEAN 254 MAX 3820 MIN 18 AC-FT 184000 CFSM 3.41 IN. 46.26
WTR YR 1988 TOTAL 126507 MEAN 346 MAX 3820 MIN 18 AC-FT 250900 CFSM 4.63 IN. 63.08

e Estimated

SOUTH SANTIAM RIVER BASIN

14185900 QUARTZVILLE CREEK NEAR CASCADIA, OR

LOCATION.--Lat 44°32'25", long 122°26'05", in NW 1/4 sec.10, T.12 S., R.3 E., Linn County, Hydrologic Unit 17090006, on Bureau of Land Management land, on right bank 80 ft downstream from Panther Creek, 10 mi north of Cascadia, and at mile 6.6.

DRAINAGE AREA.--99.2 mi².

PERIOD OF RECORD.--August 1963 to November 1964 (destroyed by flood of December 1964); October 1965 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,050 ft, from topographic map. Aug. 13, 1963, to Dec. 22, 1964, water-stage recorder on left bank at present datum.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--24 years (water years 1964, 1966-88), 667 ft³/s, 91.31 in/yr, 483,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,400 ft³/s Jan. 20, 1972, gage height, 16.38 ft; minimum discharge, 14 ft³/s Aug. 19-23, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 36,500 ft³/s Dec. 22, 1964, from slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	0930	5,980	10.64	Jan. 10	0330	7,000	11.30
Dec. 10	0030	*11,300	*13.12	Jan. 14	2030	6,430	11.01

Minimum discharge, 19 ft³/s Oct 20-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	24	1500	221	739	502	751	808	2010	118	46	27
2	23	26	1970	206	584	442	1330	825	1440	118	45	26
3	23	24	4310	201	489	526	3220	1060	1560	123	44	25
4	23	23	1710	193	429	722	1820	947	1080	113	43	25
5	23	22	952	186	389	970	1250	834	779	114	42	25
6	22	22	1500	182	365	986	1520	775	620	116	42	24
7	22	21	1220	189	360	718	1650	829	559	105	41	24
8	22	21	856	356	853	680	1110	850	490	98	40	24
9	22	25	6190	2670	2810	1130	856	843	447	93	39	23
10	21	26	6050	5360	2700	832	743	789	449	88	38	23
11	21	38	2010	2850	1490	641	741	805	410	85	38	23
12	21	103	1150	1400	1080	550	735	707	366	85	38	23
13	21	381	787	1110	974	484	694	916	330	92	37	22
14	21	224	613	4720	762	448	609	1160	300	88	37	22
15	21	123	500	3310	730	410	520	854	274	82	36	21
16	21	205	429	1620	684	371	490	857	252	77	36	22
17	21	155	366	1060	610	339	444	829	23	73	37	22
18	20	103	325	780	576	321	396	656	223	70	36	23
19	20	81	290	608	519	322	381	549	206	67	35	74
20	19	69	278	560	511	339	395	478	193	65	34	55
21	19	81	491	521	540	422	796	427	181	62	33	35
22	19	244	459	472	518	422	811	383	170	60	32	30
23	19	355	374	485	462	938	590	340	161	59	31	28
24	19	318	319	457	425	886	490	304	152	57	30	27
25	19	338	287	441	418	1890	440	277	144	56	30	27
26	20	215	267	572	445	2640	396	254	138	54	29	48
27	19	161	251	784	488	2260	379	257	133	52	28	206
28	19	131	246	987	517	1250	437	492	129	51	28	87
29	19	111	241	2400	585	990	1020	597	148	49	28	55
30	19	105	238	1760	---	846	1040	516	126	48	28	44
31	22	---	247	1040	---	721	---	591	---	47	27	---
TOTAL	644	3775	36426	37701	22052	24998	26054	20809	13704	2465	1108	1140
MEAN	20.8	126	1175	1216	760	806	868	671	457	79.5	35.7	38.0
MAX	24	381	6190	5360	2810	2640	3220	1160	2010	123	46	206
MIN	19	21	238	182	360	321	379	254	126	47	27	21
AC-FT	1280	7490	72250	74780	43740	49580	51680	41270	27180	4890	2200	2260
CFSM	.21	1.27	11.8	12.3	7.67	8.13	8.75	6.77	4.60	.80	.36	.38
IN.	.24	1.42	13.66	14.14	8.27	9.37	9.77	7.80	5.14	.92	.42	.43

CAL YR 1987	TOTAL 157032	MEAN 430	MAX 6190	MIN 19	AC-FT 311500	CFSM 4.34	IN. 58.89
WTR YR 1988	TOTAL 190876	MEAN 522	MAX 6190	MIN 19	AC-FT 378600	CFSM 5.26	IN. 71.58

SOUTH SANTIAM RIVER BASIN

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14186100 GREEN PETER LAKE NEAR FOSTER, OR

LOCATION.--Lat 44°27'10", long 122°32'40", in NE 1/4 SE 1/4 sec.10, T.13 S., R.2 E., Linn County, Hydrologic Unit 17090006, in Green Peter Dam on Middle Santiam River, 7.0 mi northeast of Foster, and at mile 5.7.

DRAINAGE AREA.--273 mi².

PERIOD OF RECORD.--October 1966 to current year. Prior to October 1971, published as Green Peter Reservoir near Foster.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by concrete, gravity-type dam with ogee spillway completed in 1966 by Corps of Engineers; controlled storage began Oct. 6, 1966. Total capacity, 428,100 acre-ft, usable capacity 330,800 acre-ft between elevations 887.0 ft, proposed lower limit of operation, and 1,015.0 ft, top of spillway gates. Reservoir used for flood control, power development, improvement of navigation, pollution abatement, and other purposes. Figures given herein represent total contents.

COOPERATION.--Midnight elevations furnished by Corps of Engineers and reviewed by Geological Survey. Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 420,200 acre-ft June 9, 1981, elevation, 1,012.86 ft; minimum contents, 116,900 acre-ft Dec. 15, 1972, elevation, 899.20 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 418,500 acre-ft June 2, elevation, 1,012.38 ft; minimum contents, 161,100 acre-ft Jan. 6, elevation, 922.60 ft.

Capacity table (elevation, in feet, and total contents, in acre-feet)

899	116,600	960	251,100
900	118,300	980	309,700
920	155,700	1,000	374,800
940	199,900	1,013	420,700

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	964.44	948.20	942.97	924.76	948.07	965.60	999.62	1009.09	1012.35	1009.57	1001.12	992.80
2	963.90	947.76	944.15	924.26	948.36	966.20	1000.83	1009.58	1012.18	1009.39	1000.91	992.49
3	963.33	947.38	948.15	923.74	949.05	966.97	1004.09	1010.21	1012.09	1009.25	1000.70	992.20
4	962.79	946.96	948.21	923.27	949.60	968.07	1005.30	1010.71	1011.49	1009.10	1000.44	991.90
5	962.17	946.52	946.57	923.08	950.09	969.52	1004.76	1011.07	1010.56	1008.97	1000.18	991.59
6	961.61	946.12	945.20	922.87	950.51	970.95	1004.14	1011.53	1010.20	1008.97	999.91	991.30
7	961.02	945.71	943.61	922.95	950.91	971.96	1003.26	1011.99	1010.19	1008.64	999.64	990.95
8	960.45	945.29	941.56	923.42	952.02	973.00	1002.16	1011.93	1010.14	1008.46	999.38	990.39
9	959.88	944.92	947.13	927.83	955.85	974.59	1001.35	1011.92	1010.14	1008.25	999.11	989.82
10	959.30	944.51	955.22	938.70	958.23	975.81	1001.03	1011.54	1010.28	1007.99	998.85	989.27
11	958.70	943.96	955.56	941.99	957.96	976.69	1000.72	1011.13	1010.36	1007.71	998.57	988.72
12	958.16	943.30	954.41	941.75	957.03	977.57	1000.76	1010.67	1010.36	1007.40	998.30	988.16
13	957.63	943.39	952.61	940.80	956.90	978.35	1000.85	1010.39	1010.36	1007.11	998.03	987.59
14	957.09	943.39	950.48	944.86	957.07	979.03	1000.91	1010.58	1010.38	1006.87	997.76	987.02
15	956.57	943.25	948.28	947.56	957.23	979.78	1000.82	1010.55	1010.43	1006.61	997.48	986.46
16	956.02	943.20	945.94	947.73	957.40	980.44	1000.84	1010.52	1010.49	1006.36	997.20	985.90
17	955.53	943.04	943.36	946.82	957.41	981.03	1000.80	1010.60	1010.52	1006.09	996.97	985.37
18	955.06	942.79	940.61	945.35	958.21	981.57	1001.18	1010.33	1010.53	1005.85	996.71	984.85
19	954.57	942.50	938.90	943.48	958.94	982.10	1001.78	1010.30	1010.52	1005.66	996.46	984.53
20	954.08	942.16	937.32	941.44	959.60	982.63	1002.49	1010.33	1010.49	1005.33	996.21	984.08
21	953.57	941.89	936.33	940.66	960.30	983.29	1003.60	1010.47	1010.40	1005.00	995.97	983.57
22	953.07	941.86	935.49	939.74	960.95	983.94	1004.15	1010.56	1010.38	1004.67	995.70	983.07
23	952.57	941.94	934.62	939.38	961.54	985.32	1004.12	1010.58	1010.34	1004.34	995.40	982.55
24	952.07	942.08	933.19	938.92	962.03	986.84	1003.99	1010.59	1010.29	1004.00	995.11	982.03
25	951.57	942.26	931.38	938.38	962.51	989.47	1004.25	1010.56	1010.20	1003.65	994.87	981.54
26	951.06	942.18	929.73	938.46	963.02	992.90	1004.63	1010.54	1010.12	1003.26	994.58	981.13
27	950.62	942.02	928.39	938.73	963.56	995.86	1005.13	1010.59	1010.03	1002.88	994.29	980.98
28	950.09	941.81	927.00	939.61	964.20	997.49	1005.78	1010.88	1009.95	1002.47	994.00	980.58
29	949.58	941.55	926.32	943.00	964.97	998.40	1007.04	1011.24	1009.85	1002.07	993.70	980.11
30	949.06	941.31	925.73	945.61	---	999.00	1008.20	1011.38	1009.71	1001.70	993.40	979.62
31	948.63	---	925.19	947.22	---	999.26	---	1011.28	---	1001.33	993.10	---
MAX	964.44	948.20	955.56	947.73	964.97	999.26	1008.20	1011.99	1012.35	1009.57	1001.12	992.80
MIN	948.63	941.31	925.19	922.87	948.07	965.60	999.62	1009.09	1009.71	1001.33	993.10	979.62
(†)	221100	203000	166600	217500	265000	372200	403400	414500	408800	379300	351600	308600
(‡)	-44000	-18100	-36400	+50900	+47500	+107200	+31200	+11100	-5700	-29500	-27700	-43000

CAL YR 1987 MAX 1002.62 MIN 923.57 AC-FT† +5600
WTR YR 1988 MAX 1012.35 MIN 922.87 AC-FT† +43500

† Contents, in acre-feet, at 2400, on last day of month.
‡ Change in contents, in acre-feet.

SOUTH SANTIAM RIVER BASIN

14186600 FOSTER LAKE AT FOSTER, OR

LOCATION.--Lat 44°25'00", long 122°40'25", in NW 1/4 NE 1/4 sec.27, T.13 S., R.1 E., Linn County, Hydrologic Unit 17090006, in Foster Dam on South Santiam River, 0.3 mi above Wiley Creek, 0.5 mi north of Foster, and at mile 37.7.

DRAINAGE AREA.--492 mi².

PERIOD OF RECORD.--December 1966 to current year. Prior to October 1971, published as Foster Reservoir at Foster.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Lake is formed by rockfill embankment with an impervious core and ogee spillway completed in 1966 by Corps of Engineers; controlled storage began in November 1966. Total capacity, 60,780 acre-ft and usable capacity 33,210 acre-ft between elevations 609.0 ft, proposed lower limit of operation, and 641.0 ft, top of spillway gates. Lake used for reregulation of water released from Green Peter Lake, flood control, power development, pollution abatement, and other purposes. Figures given herein represent total contents.

COOPERATION.--Midnight elevations furnished by Corps of Engineers and reviewed by Geological Survey. Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 60,090 acre-ft Sept. 17, 1968, elevation, 640.45 ft; minimum contents, 26,590 acre-ft Nov. 15, 16, 1971, elevation, 607.85 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 57,170 acre-ft June 1, elevation, 638.08 ft; minimum contents, 29,690 acre-ft Dec. 4, elevation, 611.45 ft.

Capacity table (elevation, in feet, and total contents, in acre-feet)

607	25,880	630	47,860
610	28,430	635	53,510
615	32,870	640	59,530
620	37,570	641	60,780
625	42,550		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	613.95	613.73	613.72	613.77	613.21	614.42	614.29	614.32	637.79	636.96	636.83	637.06
2	613.88	613.79	614.21	613.83	613.28	614.30	614.16	614.56	637.10	637.12	636.78	637.11
3	613.90	613.79	613.24	613.81	612.94	614.46	614.41	614.53	636.98	637.16	636.70	637.13
4	613.88	613.79	613.05	613.72	612.96	614.46	614.25	614.32	637.04	637.08	636.75	637.18
5	614.05	613.87	613.82	613.77	612.96	614.00	614.16	614.77	637.21	637.06	636.80	637.20
6	614.08	613.87	613.83	613.82	613.19	613.94	614.22	615.56	637.04	637.03	636.83	637.17
7	614.06	613.87	613.78	613.68	613.47	613.98	613.93	617.41	637.21	637.05	636.87	636.97
8	614.06	613.87	613.76	613.73	614.07	614.16	614.12	619.43	636.82	637.05	636.93	637.03
9	614.11	613.93	613.98	614.59	613.77	614.00	614.17	620.64	637.05	636.93	636.97	637.06
10	614.11	613.93	613.70	612.62	613.83	613.59	614.52	626.25	637.06	636.87	636.98	637.08
11	614.15	613.97	613.71	613.69	613.82	613.97	614.65	631.25	637.08	637.06	637.04	637.11
12	614.15	614.32	613.75	613.75	613.82	614.04	614.20	634.68	637.10	637.25	637.07	637.17
13	614.15	614.14	613.78	613.72	614.00	614.00	614.30	636.97	637.14	637.35	637.11	637.22
14	614.13	613.77	613.69	613.80	614.22	614.47	614.37	637.00	636.90	637.31	637.16	637.28
15	614.13	613.29	613.65	613.74	614.55	614.67	614.20	637.00	636.90	637.25	637.21	637.33
16	614.10	613.19	613.70	613.74	614.20	614.66	614.06	637.64	636.85	637.17	637.22	637.39
17	614.04	613.30	613.78	613.76	614.48	614.53	614.36	637.54	636.96	637.06	637.15	637.31
18	614.00	613.43	613.83	613.86	613.78	614.29	614.24	637.57	637.00	636.90	637.12	637.26
19	614.00	613.52	613.88	613.83	614.22	614.18	614.52	637.25	637.00	636.90	637.07	637.40
20	613.95	613.58	613.74	613.87	614.43	614.07	614.52	637.29	636.96	636.88	636.97	637.18
21	613.96	613.66	614.29	613.61	614.54	614.10	614.48	637.30	637.00	636.85	636.88	637.05
22	613.95	613.81	614.17	614.06	614.60	614.10	614.39	637.20	636.93	636.82	636.90	637.02
23	613.93	614.10	613.56	613.71	614.49	614.86	613.76	637.14	636.97	636.78	636.93	637.01
24	613.91	614.03	613.40	613.66	614.53	615.02	614.20	637.39	636.97	636.73	636.93	636.97
25	613.84	613.80	613.80	614.19	614.57	614.30	613.94	637.41	636.96	636.70	636.85	637.00
26	613.85	613.51	613.80	613.99	614.45	614.54	614.15	637.12	636.94	636.73	636.85	637.09
27	613.78	613.47	613.68	613.99	614.36	614.54	614.19	637.09	637.01	636.84	636.91	637.50
28	613.78	613.45	613.85	613.45	614.34	614.03	614.55	637.39	637.19	636.90	636.93	637.70
29	613.78	613.47	613.85	613.40	614.42	613.87	614.41	637.55	637.27	636.93	636.97	637.77
30	613.82	613.52	614.20	612.96	---	613.60	614.15	637.31	637.12	636.92	637.00	637.82
31	613.76	---	613.82	612.96	---	613.53	---	637.36	---	636.94	637.02	---
MAX	614.15	614.32	614.29	614.59	614.60	615.02	614.65	637.64	637.79	637.35	637.22	637.82
MIN	613.76	613.19	613.05	612.62	612.94	613.53	613.76	614.32	636.82	636.70	636.70	636.97
(+)	31750	31530	31800	31030	32350	31540	32100	56300	56020	55800	55900	56860
(#)	-170	-220	+270	-770	+1320	-810	+560	+24200	-280	-220	+100	+960

CAL YR 1987 MAX 637.96 MIN 612.99 AC-FT+ -20
WTR YR 1988 MAX 637.82 MIN 612.62 AC-FT+ +24940

† Contents, in acre-feet, at 2400, on last day of month.
Change in contents, in acre-feet.

SOUTH SANTIAM RIVER BASIN

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14187100 WILEY CREEK AT FOSTER, OR

LOCATION.--Lat 44°23'55", long 122°39'35", in SW 1/4 NW 1/4 sec.35, T.13 S., R.1 E., Linn County, Hydrologic Unit 17090006, on left bank 1.5 mi downstream from Jackson Creek, 1.0 mi southeast of Foster, and at mile 1.4.

DRAINAGE AREA.--62.3 mi².

PERIOD OF RECORD.--October 1973 to September 1988 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 590 ft, from topographic map. Prior to May 2, 1974, at present site at datum 5.00 ft lower.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--15 years, 230 ft³/s, 50.13 in/yr, 166,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,320 ft³/s Jan. 15, 1974, gage height, 9.28 ft; minimum discharge, 3.1 ft³/s Oct. 19, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0305	*3,060	*7.87	Jan. 10	1030	2,680	7.65

Minimum daily discharge, 5.4 ft³/s Sept. 14, 15, but may have been less during periods of estimated record.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e6.2	e8.0	166	179	318	98	281	324	641	e52	e16	e8.3
2	e6.0	e9.0	290	146	246	89	308	343	589	e53	e16	e7.6
3	e6.0	e9.0	687	134	207	129	638	445	569	e61	e14	e7.1
4	e6.2	e8.0	503	132	180	180	673	455	446	e54	e13	e6.8
5	e6.2	e7.5	284	132	161	303	542	371	331	e54	e13	e7.0
6	e6.0	e7.5	492	124	144	399	525	332	273	e53	e13	e7.2
7	e6.0	e7.5	397	124	135	344	604	381	296	e46	e13	e7.3
8	e6.0	e7.0	273	145	192	303	511	347	261	e42	e13	e7.2
9	e6.0	e8.0	715	509	400	524	407	308	244	e38	e13	e6.6
10	e6.0	e8.5	1850	2310	649	428	324	261	239	e36	e13	e5.9
11	e6.0	e9.0	765	1390	465	308	269	230	211	e35	e13	e6.1
12	e5.8	36	468	757	336	246	236	212	187	e36	e14	e5.9
13	e5.8	61	301	577	281	211	210	284	e170	e36	e13	e5.6
14	e6.0	55	236	869	231	184	269	299	e145	e36	e13	e5.4
15	e6.0	33	199	1320	219	163	239	250	e127	e34	e13	e5.4
16	e6.2	42	174	795	201	143	220	262	e118	e32	e14	e6.2
17	e6.2	31	147	581	183	128	213	259	e108	e29	e13	e6.5
18	e6.0	24	133	426	179	117	200	232	e104	e28	e12	e6.5
19	e6.0	20	121	310	162	107	204	205	e96	e26	e12	e34
20	e5.8	18	118	274	148	100	252	182	e88	e24	e11	e25
21	e5.8	19	233	239	138	104	654	161	e80	e22	e11	e14
22	e5.8	22	274	213	129	99	667	144	e76	e22	e10	e11
23	e5.8	31	233	212	120	197	495	137	e72	e22	e9.5	e9.7
24	e5.8	38	186	191	111	220	364	126	e68	e20	e9.0	e9.0
25	e5.8	65	157	172	103	597	287	116	e64	e19	e8.8	e8.6
26	e5.8	41	141	166	96	582	241	109	e62	e18	e8.6	e25
27	e5.8	31	129	171	91	643	211	104	e62	e17	e8.6	e79
28	e5.8	26	127	181	89	496	200	195	e62	e17	e8.3	e31
29	e5.8	23	131	504	94	428	288	204	e67	e16	e7.9	e19
30	e5.8	24	131	661	---	374	350	186	e55	e16	e8.0	e14
31	e7.0	---	211	453	---	318	---	202	---	e16	e8.3	---
TOTAL	185.4	729.0	10272	14397	6008	8562	10882	7666	5911	1010	363.0	397.9
MEAN	5.98	24.3	331	464	207	276	363	247	197	32.6	11.7	13.3
MAX	7.0	65	1850	2310	649	643	673	455	641	61	16	79
MIN	5.8	7.0	118	124	89	89	200	104	55	16	7.9	5.4
AC-FT	368	1450	20370	28560	11920	16980	21580	15210	11720	2000	720	789
CFSM	.10	.39	5.32	7.45	3.33	4.43	5.82	3.97	3.16	.52	.19	.21
IN.	.11	.44	6.13	8.60	3.59	5.11	6.50	4.58	3.53	.60	.22	.24

CAL YR 1987 TOTAL 47180.1 MEAN 129 MAX 1850 MIN 5.8 AC-FT 93580 CFSM 2.07 IN. 28.17
WTR YR 1988 TOTAL 66383.3 MEAN 181 MAX 2310 MIN 5.4 AC-FT 131700 CFSM 2.91 IN. 39.64

e Estimated

SOUTH SANTIAM RIVER BASIN

14187200 SOUTH SANTIAM RIVER NEAR FOSTER, OR

LOCATION.--Lat 44°24'45", long 122°41'15", in SE 1/4 NE 1/4 sec.28, T.13 S., R.1 E., Linn County, Hydrologic Unit 17090006, on left bank 0.6 mi downstream from Wiley Creek and at mile 37.0.

DRAINAGE AREA.--557 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1973 to current year. Records for October 1966 to July 1973 (published as South Santiam River at Foster, station 14186700) at site 0.5 mi upstream not equivalent owing to inflow between sites.

GAGE.--Water-stage recorder. Elevation of gage is 560 ft, from topographic map.

REMARKS.--No estimated daily discharges. Water-discharge records excellent. Flow regulated since October 1966 by Green Peter Lake (station 14186100) and since December 1966 by Foster Lake (station 14186600). No diversion upstream from station.

AVERAGE DISCHARGE.--15 years, 2,886 ft³/s, 70.36 in/yr, 2,091,000 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,800 ft³/s Feb. 26, 1982, gage height, 16.61 ft; minimum discharge, 425 ft³/s July 26, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16,000 ft³/s Dec. 10, gage height, 16.08 ft; minimum discharge, 485 ft³/s Oct. 27, July 19; minimum daily, 645 ft³/s Aug. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	941	750	1490	2000	2280	1370	2670	2210	5890	1040	672	654
2	945	695	3800	1820	2540	1360	3080	3050	7460	921	652	655
3	937	655	6440	1810	1760	1470	3950	3850	7000	961	652	652
4	938	655	6240	1800	1450	1810	5720	3710	6260	971	652	652
5	944	654	5740	1370	1370	2680	6980	3100	5610	948	652	652
6	942	651	6760	1340	1190	2570	7590	2650	4180	953	653	652
7	938	649	6520	1120	1140	2220	8740	2300	3150	888	653	866
8	935	651	5950	1100	1210	2000	7300	3190	3090	880	652	1040
9	932	651	9030	2720	3430	3180	5780	3530	2520	952	651	1050
10	936	652	12800	11900	6410	2920	4290	1450	2260	960	653	1050
11	937	1050	8520	9210	6950	2030	4170	1460	2080	941	652	1040
12	875	1270	6910	7990	6270	1640	3760	2420	1950	953	654	1040
13	874	1310	6250	7030	4810	1490	3220	3340	1880	950	651	1030
14	875	1170	5940	8770	3390	1120	3190	4000	1720	948	654	1040
15	877	1060	5440	10300	3350	994	3120	3760	1410	955	654	1040
16	884	903	5240	7970	3400	968	2690	3440	1320	955	652	1040
17	822	766	5120	6880	2960	950	2400	3630	1190	951	652	1040
18	801	732	5100	6290	2170	938	1630	3530	1180	905	651	1040
19	801	700	3730	5930	1400	933	1110	2930	1170	740	649	1100
20	800	701	3530	5800	1440	934	1280	2310	1160	937	654	1230
21	801	699	3650	4180	1420	946	3020	1900	1150	949	654	1130
22	807	702	3700	3570	1380	939	4060	1880	1000	947	655	1050
23	806	726	3670	3210	1350	1050	4030	1770	950	947	654	1040
24	806	950	3620	2940	1270	1400	3130	1440	946	947	654	1030
25	801	1170	3590	2620	1240	3270	2360	1570	937	947	654	1030
26	800	1000	3350	2410	1280	3170	1610	1580	911	950	652	1050
27	749	829	3060	2350	1310	3720	1310	1330	869	946	653	1120
28	800	789	2830	2330	1290	3270	1200	1760	871	943	651	1060
29	801	760	2070	2880	1330	3420	1980	1980	977	948	645	1050
30	777	746	1940	3610	---	3360	2530	2380	1040	907	651	1070
31	750	---	2490	2540	---	3280	---	2970	---	900	656	---
TOTAL	26632	24696	154520	135790	70790	61402	107900	80420	72131	29040	20244	29193
MEAN	859	823	4985	4380	2441	1981	3597	2594	2404	937	653	973
MAX	945	1310	12800	11900	6950	3720	8740	4000	7460	1040	672	1230
MIN	749	649	1490	1100	1140	933	1110	1330	869	740	645	652
AC-FT	52820	48980	306500	269300	140400	121800	214000	159500	143100	57600	40150	57900
MEAN†	141	515	4398	5194	3289	3711	4131	3168	2304	453	204	267
CFSM†	0.25	0.92	7.90	9.32	5.90	6.66	7.42	5.69	4.14	0.81	0.37	0.48
IN.†	0.29	1.03	9.10	10.75	6.37	7.68	8.27	6.56	4.62	0.94	0.42	0.53
AC-FT†	8650	30660	270400	319400	189200	228200	245800	194800	137100	27880	12550	15860

CAL YR 1987 TOTAL 622770 MEAN 1706 MAX 12800 MIN 649 AC-FT 1235000 MEAN† 1714 CFSM† 3.08 IN.† 41.79 AC-FT† 1241000
WTR YR 1988 TOTAL 812758 MEAN 2221 MAX 12800 MIN 645 AC-FT 1612000 MEAN† 2314 CFSM† 4.15 IN.† 56.57 AC-FT† 1680000

† Adjusted for change in contents of Green Peter Lake and Foster Lake.

SOUTH SANTIAM RIVER BASIN

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14187200 SOUTH SANTIAM RIVER NEAR FOSTER, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July 1973 to current year.

INSTRUMENTATION.--Temperature recorder since July 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 15.5°C at times in 1975, 1978, 1981, 1987; minimum recorded, 2.5°C Dec. 30, 31, 1978, Feb. 1, 1980, Feb. 7, 1985.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 14.0°C July 19, 22, 25, 26, 29, 30; minimum recorded, 4.5°C Feb. 3-5.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	12.5	11.0	12.0				---	---	---	6.0	5.5	5.5
2	12.5	11.5	12.0				---	---	---	5.5	5.0	5.5
3	12.5	10.5	11.5				---	---	---	5.5	5.5	5.5
4	12.5	10.5	11.5				---	---	---	5.5	5.5	5.5
5	12.5	10.5	11.5				---	---	---	5.5	5.5	5.5
6	12.5	11.0	11.5				---	---	---	5.5	5.5	5.5
7	12.5	11.0	12.0				---	---	---	5.5	5.5	5.5
8	11.5	10.5	11.5				---	---	---	6.0	5.5	5.5
9	13.5	10.5	11.5				---	---	---	7.0	6.0	6.0
10	12.5	10.5	11.0				9.5	8.5	9.0	7.0	6.5	7.0
11	11.5	10.5	11.0				8.5	8.0	8.0	6.5	6.0	6.5
12	11.5	10.5	11.0				8.0	7.5	8.0	6.5	6.0	6.0
13	11.5	10.5	11.0				7.5	7.5	7.5	6.5	6.0	6.5
14	11.5	10.0	11.0				8.0	7.5	7.5	7.5	6.5	7.0
15	11.5	10.5	11.0				7.5	7.5	7.5	6.5	6.0	6.5
16	11.5	10.5	10.5				7.5	7.5	7.5	6.5	6.0	6.0
17	11.5	10.0	10.5				7.5	7.5	7.5	6.0	5.5	6.0
18	11.0	10.0	10.5				7.5	7.5	7.5	6.0	5.5	5.5
19	11.0	10.0	10.5				7.5	7.5	7.5	6.0	5.5	5.5
20	11.0	10.0	10.5				7.5	7.0	7.5	6.0	5.5	6.0
21	11.0	10.0	10.5				7.5	7.0	7.5	6.0	5.5	5.5
22	---	---	---				7.5	6.5	7.0	6.0	5.5	5.5
23	---	---	---				7.0	6.5	6.5	6.0	5.5	6.0
24	---	---	---				6.5	6.5	6.5	5.5	5.5	5.5
25	---	---	---				6.5	6.0	6.5	5.5	5.0	5.5
26	---	---	---				6.5	6.0	6.5	6.0	5.5	5.5
27	---	---	---				6.5	6.0	6.5	6.5	6.0	6.0
28	---	---	---				6.5	6.0	6.0	6.5	6.0	6.5
29	---	---	---				6.5	6.0	6.0	7.0	6.0	6.5
30	---	---	---				6.0	6.0	6.0	6.0	6.0	6.0
31	---	---	---				6.5	6.0	6.0	6.0	5.5	6.0
MONTH	---	---	---				---	---	---	7.5	5.0	6.0

SOUTH SANTIAM RIVER BASIN

14187200 SOUTH SANTIAM RIVER NEAR FOSTER, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5.5	5.0	5.5				---	---	---	9.5	8.5	9.0
2	5.5	5.0	5.0				---	---	---	9.5	8.5	9.0
3	5.5	4.5	5.0				---	---	---	9.0	8.0	8.5
4	5.5	4.5	5.0				---	---	---	9.0	8.0	8.5
5	5.0	4.5	5.0				---	---	---	9.0	8.0	8.5
6	6.0	5.0	5.5				---	---	---	9.0	8.0	8.5
7	6.0	5.5	5.5				---	---	---	10.0	8.5	9.0
8	6.5	6.0	6.0				---	---	---	9.0	8.5	9.0
9	6.5	6.0	6.0				---	---	---	10.0	8.5	9.5
10	7.0	6.0	6.5				---	---	---	---	---	---
11	6.5	6.0	6.5				---	---	---	---	---	---
12	6.5	5.5	6.0				---	---	---	---	---	---
13	6.5	6.0	6.0				9.5	8.5	9.0	---	---	---
14	6.5	5.5	6.0				9.0	8.5	8.5	---	---	---
15	6.5	6.0	6.5				9.5	8.5	9.0	---	---	---
16	6.5	6.0	6.0				9.0	8.5	9.0	---	---	---
17	6.0	5.5	5.5				9.5	8.5	9.0	---	---	---
18	6.5	6.0	6.0				9.5	8.5	9.0	---	---	---
19	6.5	5.5	6.0				10.0	9.0	9.5	---	---	---
20	---	---	---				9.5	9.0	9.0	---	---	---
21	---	---	---				9.0	8.5	9.0	---	---	---
22	---	---	---				9.5	8.0	9.0	---	---	---
23	---	---	---				9.5	7.5	8.5	---	---	---
24	---	---	---				9.0	8.0	8.5	---	---	---
25	---	---	---				11.0	8.5	9.5	---	---	---
26	---	---	---				11.0	9.0	9.5	---	---	---
27	---	---	---				11.0	10.0	10.5	---	---	---
28	---	---	---				11.5	10.0	10.5	---	---	---
29	---	---	---				10.5	9.0	10.0	---	---	---
30	---	---	---				9.5	8.5	9.0	---	---	---
31	---	---	---				---	---	---	---	---	---
MONTH	---	---	---				---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	---	12.0	11.0	11.5	13.5	12.0	12.5	11.0	11.0	11.0
2	---	---	---	12.0	11.0	11.5	13.5	12.0	12.5	11.0	11.0	11.0
3	---	---	---	11.5	11.5	11.5	13.5	12.0	13.0	11.0	11.0	11.0
4	---	---	---	12.0	11.0	11.5	13.5	12.0	13.0	11.0	11.0	11.0
5	---	---	---	12.0	11.0	11.5	13.5	12.0	12.5	11.0	11.0	11.0
6	---	---	---	12.5	11.0	12.0	13.5	12.0	12.5	11.0	11.0	11.0
7	---	---	---	13.0	11.0	12.0	13.5	12.0	12.5	11.0	11.0	11.0
8	---	---	---	13.0	11.0	12.0	13.5	12.0	12.5	11.0	11.0	11.0
9	---	---	---	13.0	11.5	12.0	13.5	12.0	13.0	11.0	11.0	11.0
10	---	---	---	13.0	11.0	12.5	13.5	12.0	12.5	11.0	11.0	11.0
11	---	---	---	12.5	11.5	12.0	12.5	12.0	12.5	11.0	11.0	11.0
12	---	---	---	12.5	11.5	12.0	13.5	12.0	12.5	11.0	11.0	11.0
13	---	---	---	12.0	11.5	12.0	13.0	12.0	12.5	11.0	11.0	11.0
14	---	---	---	12.5	11.5	12.0	13.5	12.0	12.5	11.0	11.0	11.0
15	---	---	---	12.5	11.5	12.0	13.0	12.0	12.5	11.0	11.0	11.0
16	12.0	---	---	13.0	11.5	12.0	12.5	12.0	12.5	11.0	11.0	11.0
17	12.0	10.5	11.0	13.0	11.5	12.0	13.0	12.0	12.5	11.0	11.0	11.0
18	12.0	11.0	11.0	13.5	11.0	12.5	13.0	12.0	12.5	11.0	11.0	11.0
19	12.5	10.5	11.5	14.0	11.5	12.5	13.0	11.5	12.5	11.0	11.0	11.0
20	12.5	10.5	11.5	13.5	12.0	12.5	13.0	12.0	12.5	---	---	---
21	13.0	11.0	11.5	13.5	12.0	12.5	13.0	12.0	12.5	---	---	---
22	13.0	11.0	12.0	14.0	11.5	12.5	13.0	12.0	12.5	---	---	---
23	12.0	11.0	11.5	13.5	12.0	12.5	13.5	12.0	12.5	---	---	---
24	13.0	10.5	11.5	13.5	12.0	13.0	13.0	12.0	12.5	---	---	---
25	12.5	11.0	11.5	14.0	12.0	13.0	13.0	12.0	12.5	---	---	---
26	12.0	11.0	11.5	14.0	12.0	13.0	12.5	11.0	11.5	---	---	---
27	12.0	11.0	11.5	13.5	12.5	13.0	11.5	11.0	11.0	---	---	---
28	11.5	11.0	11.0	13.5	12.0	13.0	11.5	11.0	11.0	---	---	---
29	12.0	11.0	11.5	14.0	12.0	13.0	11.5	11.0	11.5	---	---	---
30	12.5	11.0	11.5	14.0	12.0	13.0	11.5	11.0	11.0	---	---	---
31	---	---	---	13.5	12.0	12.5	11.5	11.0	11.0	---	---	---
MONTH	---	---	---	14.0	11.0	12.5	13.5	11.0	12.5	---	---	---

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LOCATION.--Lat 44°29'55", long 122°49'20", in SW 1/4 NW 1/4 sec.28, T.12 S., R.1 W., Linn County, Hydrologic Unit 17090006, on left bank 0.1 mi downstream from highway bridge at Waterloo, 2.1 mi upstream from Hamilton Creek, and at mile 23.3.

PERIOD OF RECORD.--July 1905 to March 1907, October 1910 to December 1911 (gage heights only January to December 1911), July 1923 to current year. Monthly discharge only for some periods, published in WSP 1318. Published as South Fork of Santiam River at Waterloo 1905-07, 1910-11.

GAGE.--Water-stage recorder. Datum of gage is 370.39 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 31, 1911, nonrecording gage at site 0.5 mi downstream at datum about 5.0 ft lower. July 1, 1923, to Nov. 12, 1934, nonrecording gage, at present site and datum.

AVERAGE DISCHARGE.--66 years (water years 1906, 1924-88), 2,934 ft³/s, 2,126,000 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16,400 ft³/s Dec. 10, gage height, 9.54 ft; minimum discharge, 466 ft³/s July 19.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	959	740	1170	2290	2380	1410	2900	2510	5640	1120	716	601
2	958	701	3850	1950	2660	1390	3120	3110	7800	1010	627	607
3	952	619	6440	1910	2020	1470	4110	4170	7300	1020	622	597
4	948	621	6670	1890	1570	1850	5630	4140	6500	1050	620	595
5	955	621	5770	1550	1470	2860	7040	3440	5850	1000	616	598
6	953	614	6910	1370	1300	2790	7660	3010	4580	1030	621	595
7	948	616	6770	1220	1210	2450	8910	2640	3380	957	620	730
8	942	616	6080	1190	1240	2140	7680	3240	3300	929	619	1030
9	936	620	8690	2370	3210	3370	5960	3830	2810	987	615	1040
10	938	618	13400	12500	6190	3250	4550	1900	2560	1010	618	1050
11	948	936	9030	10400	7130	2310	4270	1550	2320	997	623	1040
12	881	1330	7120	8500	6370	1860	3980	2370	2160	1010	625	1040
13	862	1380	6370	7400	5070	1640	3330	3510	2060	1010	622	1030
14	863	1280	6010	8810	3640	1320	3340	4090	1920	1000	625	1040
15	862	1130	5550	11400	3350	1090	3350	3960	1590	1010	625	1030
16	867	998	5270	8610	3530	1050	2870	3640	1460	1010	620	1030
17	826	779	5140	7320	3050	1020	2580	3710	1340	1000	620	1040
18	781	746	5090	6650	2440	998	1940	3730	1290	993	619	1030
19	782	687	3920	6140	1520	983	1230	3130	1280	708	613	1100
20	776	686	3540	5970	1500	973	1480	2520	1250	988	616	1240
21	770	683	3720	4590	1500	988	3590	2000	1240	984	621	1160
22	782	703	3830	3780	1420	981	4620	1960	1120	995	612	1060
23	782	720	3790	3390	1420	1110	4400	1870	1030	982	616	1030
24	782	901	3690	3080	1320	1430	3610	1550	1020	983	612	1020
25	782	1230	3630	2770	1260	3470	2760	1580	1010	981	611	1020
26	779	1080	3450	2550	1310	3410	1860	1620	997	981	608	1040
27	728	859	3090	2450	1330	4070	1560	1430	932	983	607	1130
28	784	799	2940	2440	1320	3460	1380	1700	930	972	607	1070
29	782	755	2190	2800	1350	3610	2030	2120	1020	979	600	1050
30	769	740	2040	3990	---	3530	2760	2300	1080	939	598	1040
31	735	---	2610	2840	---	3410	---	3000	---	918	606	---
TOTAL	26412	24808	157770	144120	73080	65693	114500	85330	76769	30536	19200	28683
MEAN	852	827	5089	4649	2520	2119	3817	2753	2559	985	619	956
MAX	959	1380	13400	12500	7130	4070	8910	4170	7800	1120	716	1240
MIN	728	614	1170	1190	1210	973	1230	1430	930	708	598	5

14189000 SANTIAM RIVER AT JEFFERSON, OR

LOCATION.--Lat 44°42'55", long 122°00'40", in SE 1/4 sec.11, T.10 S., R.3 W., Marion County, Hydrologic Unit 17090005, on right bank 350 ft upstream from Southern Pacific railroad bridge at Jefferson, 2.1 mi downstream from confluence of North and South Santiam Rivers, and at mile 9.62.

DRAINAGE AREA.--1,790 mi², approximately.

PERIOD OF RECORD.--October 1905 to June 1906 (gage heights and discharge measurements only), October 1907 to September 1916, October 1939 to current year. Gage-height records collected at same site since 1907 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 904: Drainage area. WSP 1094: 1908, 1910, 1912, 1943. WSP 1248: 1911, 1915-16(M).
WSP 1935: 1909.

GAGE.--Water-stage recorder. Datum of gage is 199.63 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 22, 1940, nonrecording gages at sites within 350 ft downstream at datum 3.00 ft higher.

REMARKS.--No estimated daily discharges. Records excellent. Flow regulated since 1953 by Detroit Lake (station 14180500), since 1966 by Green Peter Lake (station 14186100) and by Foster Lake (station 14186600). Salem Canal diverts from North Santiam River at Stayton for irrigation and power; most of this water reaches Willamette River by way of Mill Creek at Salem. Stayton Canal diverts from North Santiam River at Stayton for irrigation of lands near town of West Stayton; some return flow reaches North Santiam River upstream from station. Albany power canal diverts from South Santiam River at Lebanon; return flow reaches Willamette River at Albany.

AVERAGE DISCHARGE.--58 years (water years 1908-16, 1940-88), 7,767 ft³/s, 5,627,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 197,000 ft³/s Dec. 22, 1964, gage height, 24.22 ft; minimum discharge observed, 260 ft³/s Aug. 15-22, Aug. 24 to Sept. 2, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood stage of 25.0 ft was reached in December 1861, and 23.4 ft in February 1890 (information from Corps of Engineers). On Nov. 21, 1921, the stage reached 19.5 ft at gage on railroad bridge 350 ft downstream, corresponding gage height at present site and datum, 24.4 ft, from curve of relation, discharge, 202,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 44,000 ft³/s Dec. 10, gage height, 14.07 ft; minimum discharge, 1,040 ft³/s Sept. 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2880	2070	3310	5740	6610	4140	8370	7850	11100	2580	1440	1090
2	2850	2040	9110	4870	6540	3990	8440	7760	17500	2460	1230	1070
3	2830	1940	18600	4650	5840	4150	14400	11000	16500	2370	1200	1080
4	2840	1920	21000	4550	4740	4500	15100	11900	14700	2560	1170	1090
5	2870	1950	15300	4240	4430	6830	15800	10400	13100	2520	1140	1100
6	2880	2000	17700	3770	4170	6850	16500	9570	11700	2500	1170	1230
7	2850	2010	17900	3660	3950	6360	20300	9270	8890	2250	1210	1610
8	2810	2030	14700	3670	4260	5640	17800	8930	8500	2100	1230	1990
9	2790	2060	19500	5880	8370	8310	14600	9680	7250	2060	1170	2070
10	2760	2010	37700	31300	15900	8340	11700	8250	6950	2100	1180	2120
11	2730	2130	25000	33000	16100	6790	10400	7210	6420	2070	1200	2180
12	2700	2970	18100	21700	13700	5710	9940	7620	5900	2070	1220	2150
13	2620	3510	15400	17800	12100	5050	9040	9310	5580	2190	1230	2160
14	2590	4360	14200	25500	10200	4600	8710	11200	5310	2240	1240	2160
15	2500	3920	13300	35000	9150	4090	8490	10900	4830	2120	1220	2180
16	2530	3810	12200	26000	9280	3840	7680	10900	4410	2090	1200	2320
17	2420	3580	11800	20000	7890	3640	7240	11400	4190	2060	1210	2580
18	2310	3110	11500	17300	6960	3480	6680	10700	4110	2010	1190	2590
19	2260	2920	10600	15500	5120	3370	5190	8930	3980	1730	1170	2810
20	2240	2830	9810	13900	4690	3300	5230	7000	3820	1780	1180	3030
21	2270	2800	10700	11700	4590	3440	9280	5830	3470	1790	1190	2920
22	2290	2980	9990	9770	4460	3670	12600	5350	3280	1800	1180	2780
23	2270	3670	9070	9290	4320	4650	11100	5160	2940	1770	1130	2730
24	2250	3450	8520	8640	4060	5660	9920	4850	2880	1780	1120	2720
25	2170	4200	7710	8100	3870	11000	8520	4630	2750	1760	1150	2730
26	2200	3880	7190	7320	3810	11600	6450	4590	2560	1670	1130	2790
27	2150	3500	6600	6530	3830	13600	5340	4570	2480	1650	1140	3110
28	2060	3130	6480	6420	3870	9790	4700	4980	2370	1600	1130	3270
29	2140	2880	4970	7490	4050	9110	5760	7040	2440	1570	1130	3040
30	2070	2790	4600	10400	---	9510	7880	7300	2600	1570	1080	2970
31	2070	---	5920	8020	---	9060	---	7770	---	1530	1140	---
TOTAL	77200	86450	398480	391710	196860	194070	303160	251850	192510	62350	36720	67670
MEAN	2490	2882	12850	12640	6788	6260	10110	8124	6417	2011	1185	2256
MAX	2880	4360	37700	35000	16100	13600	20300	11900	17500	2580	1440	3270
MIN	2060	1920	3310	3660	3810	3300	4700	4570	2370	1530	1080	1070
AC-FT	153100	171500	790400	777000	390500	384900	601300	499500	381800	123700	72830	134200
CAL YR 1987	TOTAL 1771960		MEAN	4855	MAX 37700	MIN 1110	AC-FT 3515000					
WTR YR 1988	TOTAL 2259030		MEAN	6172	MAX 37700	MIN 1070	AC-FT 4481000					

SANTIAM RIVER BASIN

147

14190500 LUCKIAMUTE RIVER NEAR SUVER, OR

LOCATION.--Lat 44°47'00", long 123°14'00", in SW 1/4 SW 1/4 sec.18, T.9 S., R.4 W., Polk County, Hydrologic Unit 17090003, on right bank 10 ft upstream from highway bridge at Helmick State Park, 3.0 mi northwest of Suver, 4.7 mi downstream from Little Luckiamute River, and at mile 13.5.

DRAINAGE AREA.--240 mi².

PERIOD OF RECORD.--August 1905 to October 1911, July 1940 to current year.

REVISED RECORDS.--WSP 1044: Drainage area. WSP 1094: 1945-46. WSP 1248: 1905-11.

GAGE.--Water-stage recorder. Datum of gage is 171.92 ft above National Geodetic Vertical Datum of 1929. Aug. 18, 1905, to Oct. 31, 1911, nonrecording gage at present site at different datum, Aug. 20 to Oct. 15, 1940, nonrecording gage at present site and datum.

REMARKS.--Records good. Some diurnal fluctuation during periods of low flow caused by millpond upstream from station. A few small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--54 years, 899 ft³/s, 50.87 in/yr, 651,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,900 ft³/s Dec. 22, 1964, gage height, 34.52 ft; minimum discharge, 0.65 ft³/s Aug. 13, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	1700	9,330	28.34	Jan. 15	1030	*12,100	*29.46

Minimum discharge, 17 ft³/s Oct. 9, 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	30	138	943	924	417	1090	447	390	144	58	29
2	21	50	645	795	838	402	986	450	487	141	49	29
3	20	55	1530	707	779	394	1360	671	534	145	49	27
4	19	38	1970	677	720	386	1380	779	476	142	47	26
5	21	31	1040	607	672	453	1240	717	433	136	44	27
6	21	28	871	570	632	576	1150	659	405	134	44	27
7	20	28	1450	590	602	605	1300	978	382	126	44	26
8	19	28	1540	653	695	538	1120	1020	383	141	48	27
9	18	28	2220	1480	966	629	993	916	370	118	42	26
10	18	30	7340	3160	1470	671	890	803	365	108	41	26
11	18	36	6310	5620	1390	616	801	704	345	107	43	26
12	19	57	3290	5220	1170	569	729	625	311	108	46	28
13	19	93	1850	3540	1110	526	667	705	288	139	46	25
14	19	118	1390	5100	1010	491	685	710	270	151	45	22
15	19	100	1140	10900	944	460	707	631	253	126	48	21
16	23	92	e1000	7440	907	430	603	582	241	112	45	23
17	23	106	e990	4910	824	402	553	561	229	104	47	27
18	21	82	e915	3310	810	381	517	521	221	101	48	28
19	23	65	e840	2470	735	364	491	491	213	91	45	31
20	22	54	e770	1990	684	350	514	451	203	83	43	58
21	21	49	e825	1700	644	355	499	418	194	77	41	51
22	21	57	e820	1460	605	365	473	386	183	75	42	40
23	23	93	803	1300	569	569	457	367	175	75	38	36
24	24	111	715	1150	535	783	417	352	170	73	35	34
25	23	172	653	1030	504	2900	397	333	162	72	32	34
26	25	157	600	929	479	2840	378	317	159	60	33	40
27	24	116	554	854	454	2840	364	318	159	57	34	56
28	23	97	533	799	433	2280	347	374	152	54	34	73
29	21	82	510	1030	420	1800	366	411	158	56	35	54
30	22	73	495	1010	---	1520	422	350	158	54	45	42
31	24	---	761	965	---	1260	---	330	---	55	33	---
TOTAL	656	2156	44508	72909	22525	27172	21896	17377	8469	3165	1324	1019
MEAN	21.2	71.9	1436	2352	777	877	730	561	282	102	42.7	34.0
MAX	25	172	7340	10900	1470	2900	1380	1020	534	151	58	73
MIN	18	28	138	570	420	350	347	317	152	54	32	21
AC-FT	1300	4280	88280	144600	44680	53900	43430	34470	16800	6280	2630	2020
CFSM	.09	.30	5.98	9.80	3.24	3.65	3.04	2.34	1.18	.43	.18	.14
IN.	.10	.33	6.90	11.30	3.49	4.21	3.39	2.69	1.31	.49	.21	.16

CAL YR 1987 TOTAL 248219 MEAN 680 MAX 9740 MIN 17 AC-FT 492300 CFSM 2.83 IN. 38.47
WTR YR 1988 TOTAL 223176 MEAN 610 MAX 10900 MIN 18 AC-FT 442700 CFSM 2.54 IN. 34.59

e Estimated

WILLAMETTE RIVER BASIN

14191000 WILLAMETTE RIVER AT SALEM, OR

LOCATION.--Lat 44°56'40", long 123°02'30", in SE 1/4 SW 1/4 sec. 22, T.7 S., R.3 W., Marion County, Hydrologic Unit 17090007, on right bank 300 ft upstream from Center Street Bridge in Salem and at mile 84.16.

DRAINAGE AREA.--7,280 mi², approximately.

PERIOD OF RECORD.--October 1909 to December 1916, January 1923 to current year. Monthly discharge only January 1923 to September 1927, published in WSP 1318. Gage-height records collected at about the same site since 1892 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 1318: 1915(M).

GAGE.--Water-stage recorder. Datum of gage is 106.14 ft above National Geodetic Vertical Datum of 1929.

Oct. 1, 1909, to Dec. 31, 1916, nonrecording gage at site 0.5 mi upstream at datum 8.00 ft higher.

Jan. 1, 1923, to Nov. 26, 1934, nonrecording gage at Center Street Bridge at datum 8.00 ft higher.

Nov. 27, 1934, to Sept. 30, 1962, water-stage recorder at present site at datum 8.00 ft higher.

REMARKS.--Records excellent. Flow regulated by 12 reservoirs upstream from station (see elsewhere in this report). Many small diversions for irrigation upstream from station; part of flow of Salem Canal, which diverts water from North Santiam River, returns to Willamette River downstream from station, through Mill Creek at Salem.

AVERAGE DISCHARGE.--72 years, 23,540 ft³/s, 43.91 in/yr, 17,050,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 348,000 ft³/s Jan. 8, 1923, gage height, 38.3 ft, present datum; minimum discharge, 2,470 ft³/s Aug. 27, 1940, gage height, 3.55 ft, present datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 500,000 ft³/s Dec. 4, 1861, gage height, about 47 ft present datum, from rating curve extended above 250,000 ft³/s in 1916. Floods of Jan. 16, 1881, and Feb. 5, 1890, reached stages of 44.3 ft, discharge, 428,000 ft³/s, and 45.1 ft, discharge, 448,000 ft³/s, respectively, from floodmarks and information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 106,000 ft³/s Jan. 16, gage height, 23.16 ft; minimum discharge, 6,080 ft³/s Aug. 6, gage height, 4.82 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8270	7220	9660	22500	24100	11700	22700	22600	e21400	e8270	e6370	6620
2	8250	7180	15000	19700	22100	12100	21200	22900	e34200	e8110	e6310	6570
3	8260	7110	31400	17400	20700	12000	26300	27300	e43600	e7950	e6240	6550
4	e8300	6750	51400	16400	18100	12400	33100	33400	e43300	e8030	e6160	6550
5	e8300	6400	50400	15500	16600	14600	36200	33600	e36600	e8110	e6140	6560
6	e8250	6340	45900	14400	15600	17000	36900	31100	e31300	e8000	e6120	6570
7	e8200	6280	50100	14000	14800	18600	40200	30100	e24500	e7790	e6200	6840
8	e8200	6480	47100	13800	15000	17800	40600	30500	e25600	e7500	e6350	7350
9	e8200	6590	44100	16800	18900	20500	35900	30200	e25700	e7260	6320	7880
10	8100	6560	68900	43200	30700	24500	30400	29400	e23300	e7130	6220	7990
11	8050	6420	80600	84500	35600	23000	26100	27500	e21600	e7160	6180	8100
12	8050	7110	72800	90300	32100	20000	23900	26200	e19700	e7060	6230	8190
13	8020	8630	57400	78600	29400	17100	21800	27300	e18100	e7000	6590	8030
14	8080	10200	47200	78300	26600	15500	20700	30200	e17000	e7290	6760	7990
15	8120	10200	41200	98300	24100	14200	22000	31600	e15400	e7160	6840	8020
16	8160	9740	36300	106000	23700	13300	20700	30600	e13800	e7080	6780	8070
17	8150	9630	33600	99200	21600	12500	19300	31800	e13000	e7030	6780	8400
18	8050	8990	31900	82100	19400	11800	18200	30100	e12500	e7060	6770	8590
19	7960	8550	30200	67800	16700	11300	16500	26900	e12200	e6830	6760	8870
20	7950	8340	27900	58000	15000	10900	16400	23100	e11900	e6470	6660	9320
21	7970	8360	27700	46700	14300	10700	21000	20100	e11300	e6500	6650	9510
22	7980	8570	28900	37800	13800	10900	31800	18000	e10800	e6470	6650	9150
23	7970	9110	29400	33700	13300	11400	32700	16800	e10200	e6500	6540	8870
24	7610	9600	29300	31000	12700	14800	29000	16000	e9580	e6720	6450	8820
25	7590	10400	26800	29000	12200	24800	24800	15300	e9370	e6830	6490	8900
26	7510	11500	24100	27000	11800	32100	21300	14700	e8900	e6720	6550	9040
27	7520	11300	22000	23800	11600	34100	18200	14300	e8820	e6500	6560	9440
28	7240	10600	21000	21700	11500	31400	16700	14100	e8540	e6350	6620	10100
29	7180	9720	19500	21400	11500	27600	16600	16700	e8240	e6370	6640	9840
30	7250	9440	17500	26000	---	26200	19700	18500	e8330	e6410	6620	9520
31	7260	---	19500	27400	---	24600	---	19000	---	e6390	6630	---
TOTAL	246000	253320	1138760	1362300	553500	559400	760900	759900	558780	220050	201180	246250
MEAN	7935	8444	36730	43950	19090	18050	25360	24510	18630	7098	6490	8208
MAX	8300	11500	80600	106000	35600	34100	40600	33600	43600	8270	6840	10100
MIN	7180	6280	9660	13800	11500	10700	16400	14100	8240	6350	6120	6550
AC-FT	487900	502500	2259000	2702000	1098000	1110000	1509000	1507000	1108000	436500	399000	488400
CFSM	1.09	1.16	5.05	6.04	2.62	2.48	3.48	3.37	2.56	.98	.89	1.13
IN.	1.26	1.29	5.82	6.96	2.83	2.86	3.89	3.88	2.86	1.12	1.03	1.26

CAL YR 1987 TOTAL 5860450 MEAN 16060 MAX 93900 MIN 5620 AC-FT 11620000 CFSM 2.21 IN. 29.95
WTR YR 1988 TOTAL 6860340 MEAN 18740 MAX 106000 MIN 6120 AC-FT 13610000 CFSM 2.57 IN. 35.06

e Estimated

YAMHILL RIVER BASIN

149

14192500 SOUTH YAMHILL RIVER NEAR WILLAMINA, OR

LOCATION.--Lat 45°02'50", long 123°30'10", in NE 1/4 SE 1/4 sec.14, T.6 S., R.7 W., Polk County, Hydrologic Unit 17090008, on left bank 2.3 mi southwest of Willamina, 2.8 mi upstream from Willamina Creek, and at mile 45.5.

DRAINAGE AREA.--133 mi².

PERIOD OF RECORD.--May 1934 to current year.

REVISED RECORDS.--WSP 814: Drainage area. WSP 1318: 1934.

GAGE.--Water-stage recorder. Datum of gage is 235.55 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair. Slight regulation occasionally at low flows by millpond upstream. No diversion upstream from station.

AVERAGE DISCHARGE.--54 years, 617 ft³/s, 63.00 in/yr, 447,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,600 ft³/s Dec. 22, 1964, gage height, 17.07 ft; minimum discharge, 2.6 ft³/s Oct. 11, 1952.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0030	10,800	12.00	Jan. 14	1800	*11,200	*12.23

Minimum discharge, 6.2 ft³/s Sept. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	30	885	342	821	279	742	347	413	84	22	9.4
2	11	57	1190	315	747	255	760	376	501	84	21	8.9
3	11	28	3310	309	692	260	1140	494	604	85	20	8.1
4	9.5	15	1800	296	575	298	1080	540	503	76	19	8.0
5	8.2	11	1020	271	533	310	919	467	441	77	18	9.0
6	8.2	10	1920	269	503	550	1100	466	392	84	19	8.7
7	8.0	11	1920	275	498	435	1030	632	377	72	19	9.2
8	8.8	11	1410	443	571	421	869	549	332	64	20	9.3
9	9.1	22	5890	1090	919	696	749	508	293	58	18	9.0
10	8.9	38	6430	1900	1320	630	651	462	275	55	17	8.4
11	8.1	26	2670	2920	955	547	576	418	248	55	18	8.1
12	8.3	55	1650	1940	805	482	510	385	225	60	17	8.4
13	8.5	115	1160	1950	895	435	455	501	208	129	18	7.7
14	9.2	182	925	8380	734	398	471	487	190	91	18	7.0
15	10	102	758	6860	720	366	407	441	174	74	18	7.0
16	10	107	643	3810	673	337	359	434	164	62	19	8.3
17	10	70	538	2440	633	314	328	438	154	53	23	9.7
18	10	51	469	1780	619	296	303	403	150	49	21	10
19	9.9	37	417	1360	555	279	288	e370	140	44	18	32
20	9.9	30	395	1180	508	271	297	e350	130	40	16	47
21	10	55	597	1000	468	297	265	e320	122	37	15	25
22	10	71	643	884	429	327	246	e300	114	35	13	18
23	10	119	611	801	397	920	231	e280	111	32	12	16
24	10	183	542	712	365	1460	224	e260	105	30	11	15
25	10	262	499	640	340	2600	201	e245	99	28	11	15
26	10	160	461	583	318	2050	184	231	98	26	11	33
27	10	112	427	541	297	1940	171	268	96	24	10	42
28	9.7	82	410	653	280	1460	168	407	94	24	10	41
29	10	65	383	1090	271	1270	232	365	101	24	9.9	25
30	9.9	76	366	937	---	1050	321	311	92	23	9.4	20
31	11	---	359	919	---	871	---	309	---	23	9.2	---
TOTAL	298.2	2193	40698	46890	17441	22104	15277	12364	6946	1702	500.5	483.2
MEAN	9.62	73.1	1313	1513	601	713	509	399	232	54.9	16.1	16.1
MAX	11	262	6430	8380	1320	2600	1140	632	604	129	23	47
MIN	8.0	10	359	269	271	255	168	231	92	23	9.2	7.0
AC-FT	591	4350	80720	93010	34590	43840	30300	24520	13780	3380	993	958
CFSM	.07	.55	9.87	11.4	4.52	5.36	3.83	3.00	1.74	.41	.12	.12
IN.	.08	.61	11.38	13.12	4.88	6.18	4.27	3.46	1.94	.48	.14	.14

CAL YR 1987 TOTAL 175945.3 MEAN 482 MAX 7000 MIN 8.0 AC-FT 349000 CFSM 3.62 IN. 49.21
WTR YR 1988 TOTAL 166896.9 MEAN 456 MAX 8380 MIN 7.0 AC-FT 331000 CFSM 3.43 IN. 46.68

e Estimated

YAMHILL RIVER BASIN

14193000 WILLAMINA CREEK NEAR WILLAMINA, OR

LOCATION.--Lat 45°08'35", long 123°29'35", in NE 1/4 NW 1/4 sec.13, T.5 S., R.7 W., Yamhill County, Hydrologic Unit 17090008, on right bank 4.5 mi north of Willamina and at mile 6.2.

DRAINAGE AREA.--64.7 mi².

PERIOD OF RECORD.--June 1934 to current year.

REVISED RECORDS.--WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 315 ft above National Geodetic Vertical Datum of 1929 (plane-table survey). Prior to Oct. 1, 1939, water-stage recorder at site on left bank at datum 1.00 ft higher. Oct. 1, 1939, to Aug. 5, 1968, water-stage recorder at site on left bank at present datum.

REMARKS.--No estimated daily discharges. Records excellent. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--54 years, 258 ft³/s, 54.15 in/yr, 186,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,800 ft³/s Dec. 22, 1964, gage height, 13.54 ft, from rating curve extended above 3,400 ft³/s on basis of slope-area measurement at gage height 11.65 ft; minimum discharge, 5.4 ft³/s July 15, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 31, 1931, reached a stage of about 12 ft, from information by local resident, discharge, 8,200 ft³/s, from rating curve extended above 3,400 ft³/s on basis of slope-area measurement at gage height 11.65 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 2,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 9	2300	3,400	8.21	Jan. 14	1530	*4,480	*9.27

Minimum discharge, 9.1 ft³/s Oct. 11, 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	20	243	116	329	129	345	133	157	54	22	13
2	9.8	25	366	109	293	125	350	152	174	54	22	12
3	11	16	850	106	267	123	414	201	170	52	21	12
4	11	13	472	101	243	129	400	209	149	50	19	12
5	10	12	269	96	224	131	358	179	138	53	19	12
6	10	12	381	101	208	194	407	186	131	51	20	12
7	9.6	12	593	99	198	154	401	259	144	48	20	12
8	9.6	13	442	123	223	160	354	227	134	45	20	12
9	10	17	1870	285	369	243	316	204	127	42	19	12
10	9.5	16	1940	492	531	230	282	184	124	41	19	12
11	9.2	19	927	822	408	204	254	166	112	41	20	12
12	9.3	22	605	631	354	184	231	156	105	47	20	11
13	9.6	36	435	680	357	169	212	206	99	55	19	11
14	10	50	348	3440	313	157	208	177	92	47	19	10
15	10	36	283	2700	319	147	186	159	86	43	19	11
16	10	34	242	1570	297	137	171	160	83	40	22	12
17	10	26	205	1080	286	129	160	153	80	38	23	12
18	10	21	179	802	271	123	150	146	78	36	20	12
19	10	19	159	618	250	118	144	138	74	34	18	33
20	9.4	18	156	547	233	115	151	129	71	32	18	21
21	9.5	22	181	473	217	120	135	121	68	30	17	16
22	9.9	32	214	418	201	128	128	115	65	29	16	15
23	10	45	202	377	187	269	122	110	63	29	15	14
24	10	72	179	340	174	551	117	105	61	28	14	15
25	10	80	164	308	163	885	111	100	59	27	14	18
26	11	46	153	285	154	736	107	97	59	24	14	21
27	10	36	143	270	145	729	104	108	57	23	14	24
28	9.9	30	137	314	138	592	103	132	58	23	14	19
29	9.8	27	129	467	133	546	114	113	60	23	13	16
30	10	29	125	401	---	468	134	103	56	23	13	14
31	14	---	120	375	---	398	---	106	---	22	13	---
TOTAL	312.0	856	12712	18546	7485	8523	6669	4734	2934	1184	556	438
MEAN	10.1	28.5	410	598	258	275	222	153	97.8	38.2	17.9	14.6
MAX	14	80	1940	3440	531	885	414	259	174	55	23	33
MIN	9.2	12	120	96	133	115	103	97	56	22	13	10
AC-FT	619	1700	25210	36790	14850	16910	13230	9390	5820	2350	1100	869
CFSM	.16	.44	6.34	9.25	3.99	4.25	3.44	2.36	1.51	.59	.28	.23
IN.	.18	.49	7.31	10.66	4.30	4.90	3.83	2.72	1.69	.68	.32	.25

CAL YR 1987 TOTAL 71909.0 MEAN 197 MAX 2890 MIN 9.2 AC-FT 142600 CFSM 3.04 IN. 41.34
WTR YR 1988 TOTAL 64949.0 MEAN 177 MAX 3440 MIN 9.2 AC-FT 128800 CFSM 2.74 IN. 37.34

YAMHILL RIVER BASIN

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14194000 SOUTH YAMHILL RIVER NEAR WHITESON, OR

LOCATION.--Lat 45°10'08", long 123°12'25", in NE 1/4 NW 1/4 sec.5, T.5 S., R.4 W., Yamhill County, Hydrologic Unit 17090008, near left bank on downstream side of Whiteson Bridge on State Highway 99W, 1.3 mi northwest of Whiteson, 1.4 mi downstream from Salt Creek, and at mile 16.71.

DRAINAGE AREA.--502 mi².

PERIOD OF RECORD.--July 1940 to current year.

GAGE.--Water-stage recorder. Datum of gage is 82.30 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 20, 1940, nonrecording gage at present site and datum.

REMARKS.--Records good. Slight regulation during low-water periods by logpond upstream. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--48 years, 1,742 ft³/s, 47.12 in/yr, 1,262,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,200 ft³/s Dec. 23, 1964, gage height, 47.20 ft; minimum discharge, 3.2 ft³/s Aug. 24, 1967, Sept. 4, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of December 1937 reached a stage of 46.9 ft, from Oregon State Highway Department bridge plans.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 13,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	2300	19,200	40.63	Jan. 15	1130	*28,200	*43.61

Minimum discharge, 3.2 ft³/s Sept. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	26	462	1130	2340	692	2140	764	596	166	39	13
2	19	62	2520	1110	2000	654	1860	739	901	158	35	8.5
3	17	100	3760	1000	1750	634	2410	941	1140	159	37	4.9
4	18	75	5800	961	1550	613	2740	1350	1050	154	37	10
5	19	55	3550	895	1390	726	2590	1210	886	146	32	14
6	22	48	3150	856	1250	951	2380	1050	773	152	34	15
7	17	50	4900	940	1160	1050	2830	1360	707	143	35	16
8	18	56	4620	967	1230	918	2390	1460	755	128	37	16
9	16	50	4870	2060	1500	1280	2060	1310	658	113	34	17
10	17	50	12500	4480	3170	1590	1790	1160	638	104	36	18
11	17	76	13500	7160	3030	1350	1560	1010	574	101	26	12
12	17	75	9130	8540	2420	1170	1380	902	508	104	29	9.9
13	17	102	5550	6500	2290	1050	1210	974	456	123	30	9.0
14	17	215	3120	8120	2180	958	1160	1170	415	175	33	8.2
15	17	261	2430	23900	1970	883	1160	1070	375	136	33	9.2
16	18	183	2040	15000	1920	823	1010	950	343	119	35	8.5
17	20	178	1790	11500	1730	758	921	948	323	109	37	10
18	21	138	1550	9070	1710	697	841	876	305	100	47	16
19	19	115	1370	6420	1540	643	785	816	289	90	45	24
20	13	97	1230	4420	1390	607	792	742	265	81	40	53
21	14	99	1440	3560	1270	610	751	673	245	69	31	71
22	14	119	1720	2940	1160	628	690	606	228	65	26	50
23	17	156	1960	2580	1070	1100	641	563	215	63	27	41
24	20	219	1750	2260	982	2020	599	525	201	62	24	36
25	20	418	1540	1990	911	5280	564	477	185	60	19	34
26	22	358	1390	1770	851	5490	530	438	178	54	19	34
27	20	227	1250	1600	797	5240	509	428	178	48	16	50
28	17	170	1160	1510	749	4430	469	560	167	46	16	61
29	12	143	1090	2520	709	3520	474	751	174	42	18	64
30	18	129	1030	2750	---	3070	611	588	179	38	16	48
31	20	---	1050	2600	---	2530	---	520	---	37	16	---
TOTAL	552	4050	103222	141109	46019	52055	39847	26931	13907	3145	939	781.2
MEAN	17.8	135	3330	4552	1587	1679	1328	869	464	101	30.3	26.0
MAX	22	418	13500	23900	3170	5490	2830	1460	1140	175	47	71
MIN	12	26	462	856	709	607	469	428	167	37	16	4.9
AC-FT	1090	8030	204700	279900	91280	103300	79040	53420	27580	6240	1860	1550
CFSM	.04	.27	6.63	9.07	3.16	3.35	2.65	1.73	.92	.20	.06	.05
IN.	.04	.30	7.65	10.46	3.41	3.86	2.95	2.00	1.03	.23	.07	.06

CAL YR 1987	TOTAL 522483.5	MEAN 1431	MAX 20800	MIN 8.5	AC-FT 1036000	CFSM 2.85	IN. 38.72
WTR YR 1988	TOTAL 432557.2	MEAN 1182	MAX 23900	MIN 4.9	AC-FT 858000	CFSM 2.35	IN. 32.05

YAMHILL RIVER BASIN

14194300 NORTH YAMHILL RIVER NEAR FAIRDALE, OR

LOCATION.--Lat 45°21'55", long 123°22'40", in SW 1/4 sec.25, T.2 S., R.6 W., Yamhill County, Hydrologic Unit 17090008, on right bank 0.4 mi downstream from small tributary, 1.3 mi upstream from Kutch Creek, 2.1 mi west of Fairdale, 9.5 mi west of Yamhill and at mile 28.4.

DRAINAGE AREA.--9.03 mi².

PERIOD OF RECORD.--October 1958 to March 1966, October 1967 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 560 ft, from topographic map.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--28 years (water years 1959-65, 1968-88), 46.5 ft³/s, 69.93 in/yr, 33,690 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,330 ft³/s Dec. 22, 1964, gage height, 6.88 ft, from rating curve extended above 1,000 ft³/s; maximum gage height, 9.7 ft Dec. 23, 1964 (backwater from debris); minimum discharge, 1.9 ft³/s Oct. 1, 2, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 350 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 9	2000	*618	*4.92	Jan. 14	1430	550	4.73

Minimum discharge, 1.9 ft³/s Oct. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	7.4	69	22	60	28	61	32	30	11	5.0	2.9
2	2.1	6.7	66	21	53	27	69	34	33	11	4.9	2.7
3	2.4	4.3	135	21	49	26	100	39	33	11	4.6	2.6
4	2.4	3.9	79	20	44	28	94	39	32	10	4.4	2.7
5	2.3	3.8	57	19	41	30	80	36	30	11	4.4	2.8
6	2.1	3.8	109	19	39	38	91	36	29	10	4.6	2.8
7	2.1	4.1	125	19	38	32	89	40	32	9.8	4.6	2.9
8	2.2	4.1	92	20	42	35	77	37	30	9.3	4.5	2.7
9	2.4	5.4	400	37	76	46	67	35	28	8.7	4.3	2.6
10	2.2	4.9	346	50	97	44	60	32	27	8.6	4.4	2.7
11	2.2	7.0	170	80	78	40	53	30	25	8.8	4.6	2.6
12	2.2	6.1	108	64	68	37	50	29	23	11	4.5	2.4
13	2.4	14	79	80	72	34	46	38	22	11	4.5	2.4
14	2.3	20	65	407	63	32	43	33	20	9.6	4.5	2.3
15	2.4	11	56	331	64	30	40	31	19	9.0	4.5	2.5
16	2.3	10	49	195	60	28	37	31	18	8.5	4.8	2.7
17	2.2	8.0	44	129	58	26	35	30	17	7.9	4.6	2.7
18	2.3	6.9	39	98	55	25	33	29	17	7.5	4.3	2.7
19	2.1	6.3	36	77	51	24	31	27	16	7.0	4.1	6.6
20	2.1	6.1	35	71	48	23	31	26	15	6.7	4.0	3.7
21	2.1	8.5	36	64	45	23	29	24	15	6.5	3.9	3.3
22	2.1	15	36	59	43	30	27	23	14	6.4	3.6	3.1
23	2.1	13	33	55	40	55	26	22	14	6.2	3.4	3.1
24	2.2	22	30	52	37	88	25	21	13	6.0	3.3	3.4
25	2.2	15	29	49	35	132	24	20	13	5.6	3.4	4.7
26	2.3	8.7	28	47	33	122	23	20	12	5.3	3.3	4.1
27	2.3	6.8	26	47	31	115	22	22	12	5.2	3.3	5.2
28	2.3	6.0	25	61	30	92	22	25	12	5.2	3.1	3.8
29	2.3	5.6	24	91	29	84	27	22	12	5.2	3.1	3.3
30	2.8	8.2	23	82	---	75	32	20	11	5.1	3.2	2.9
31	5.0	---	23	70	---	66	---	21	---	5.0	3.1	---
TOTAL	72.5	252.6	2472	2457	1479	1515	1444	904	624	249.1	126.8	94.9
MEAN	2.34	8.42	79.7	79.3	51.0	48.9	48.1	29.2	20.8	8.04	4.09	3.16
MAX	5.0	22	400	407	97	132	100	40	33	11	5.0	6.6
MIN	2.1	3.8	23	19	29	23	22	20	11	5.0	3.1	2.3
AC-FT	144	501	4900	4870	2930	3010	2860	1790	1240	494	252	188
CFSM	.26	.93	8.83	8.78	5.65	5.41	5.33	3.23	2.30	.89	.45	.35
IN.	.30	1.04	10.18	10.12	6.09	6.24	5.95	3.72	2.57	1.03	.52	.39

CAL YR 1987 TOTAL 12984.7 MEAN 35.6 MAX 428 MIN 2.1 AC-FT 25760 CFSM 3.94 IN. 53.49
WTR YR 1988 TOTAL 11690.9 MEAN 31.9 MAX 407 MIN 2.1 AC-FT 23190 CFSM 3.54 IN. 48.16

YAMHILL RIVER BASIN

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14195500 HASKINS CREEK RESERVOIR NEAR MCMINNVILLE, OR

LOCATION.--Lat 45°18'43", long 123°21'23", in SW 1/4 NW 1/4 sec.18, T.3 S., R.5 W., Yamhill County, Hydrologic Unit 17090008, on control tower 250 ft upstream from dam on Haskins Creek, 11 mi northwest of McMinnville, and at mile 5.1.

DRAINAGE AREA.--6.88 mi².

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WSP 1738: Drainage area. WDR OR-79-1: 1978 (maximum contents).

GAGE.--Nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by city of McMinnville). Prior to February 1981, at datum 20.0 ft lower.

REMARKS.--Reservoir is formed by earthfill dam equipped with five siphon spillways which act as overflow weirs until priming occurs, approximately 815.5 ft elevation. Capacity of reservoir is 733 acre-ft between elevations 741.5 ft, invert of outlet tunnel, and 815.0 ft, crest of siphon spillways. Dead storage negligible. Rated capacity of three siphons is 700 ft³/s each and remaining two siphons 350 ft³/s each. Water is used for municipal supply of city of McMinnville.

COOPERATION.--Elevations and capacity table furnished by city of McMinnville, Water and Light Department.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 748 acre-ft Nov. 17, 1954, elevation, 815.65 ft, present datum; no contents at times during winter months.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 733 acre-ft many days during the year, elevation, 815.0 ft, present datum; no contents many days in February and March.

MONTHEND ELEVATIONS AND CONTENTS AT 0800, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30.....	809.5	614	-
Oct. 31.....	811.3	651	+37
Nov. 30.....	813.7	703	+52
Dec. 31.....	815.0	733	+30
CAL YR 1987.....	-	-	0
Jan. 31.....	815.0	733	0
Feb. 29.....	750.0	0	-733
Mar. 31.....	815.0	733	+733
Apr. 30.....	815.0	733	0
May 31.....	815.0	733	0
June 30.....	815.0	733	0
July 31.....	803.8	503	-230
Aug. 31.....	803.7	502	-1
Sept.30.....	807.9	581	+79
WTR YR 1988.....	-	-	-33

YAMHILL RIVER BASIN

14196001 HASKINS CREEK BELOW RESERVOIR, NEAR MCMINNVILLE, OR

LOCATION.--Lat 45°18'39", long 123°21'06", in SE 1/4 NW 1/4 sec.18, T.3 S., R.5 W., Yamhill County, Hydrologic Unit 17090008, on right bank 800 ft downstream from Haskins Creek Reservoir, 11 mi northwest of McMinnville, and at mile 5.0.

DRAINAGE AREA.--6.90 mi².

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WSP 1738: Drainage area. Maximum discharge for water year 1957, published in WSP 1518, has been found to be unreliable and should not be used.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 707 ft above National Geodetic Vertical Datum of 1929, topographic survey of 1955. Prior to Aug. 5, 1952, water-stage recorder at site 600 ft upstream at different datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. All records given herein include flow in pipeline which diverts 600 ft upstream from station for municipal supply of McMinnville. Flow regulated by Haskins Creek Reservoir (station 14195500). Water from McGuire Lake (station 14302800) on the Nestucca River is diverted through a tunnel to Haskins Creek Reservoir to augment summer flows.

COOPERATION.--Meter readings for diversion and elevations of Haskins Creek Reservoir furnished by city of McMinnville.

AVERAGE DISCHARGE.--37 years, 31.7 ft³/s, 62.39 in/yr, 22,970 acre-ft/yr, adjusted for storage and diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,030 ft³/s Dec. 23, 1964, gage height, 5.98 ft, from floodmark, from rating curve extended above 400 ft³/s on basis of slope-area measurement of peak flow; maximum daily discharge, 515 ft³/s Jan. 21, 1972; minimum daily, 0.10 ft³/s Oct. 27, 28, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 314 ft³/s Jan. 14; minimum daily, 5.1 ft³/s Sept. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.1	6.0	40	11	42	19	40	20	18	10	11	13
2	6.8	6.1	51	10	38	18	42	21	20	6.9	13	16
3	6.6	5.4	83	9.7	34	18	54	22	20	5.9	14	13
4	6.8	5.2	48	9.4	33	19	47	22	18	8.7	17	10
5	8.6	6.1	34	9.3	30	20	43	21	16	8.1	14	12
6	9.1	6.1	73	9.6	28	23	47	20	15	8.3	11	11
7	8.9	6.3	84	9.8	28	19	46	24	19	11	12	10
8	6.7	6.2	54	10	81	22	42	22	19	12	13	10
9	6.1	6.1	219	22	55	27	38	20	17	11	15	9.9
10	8.1	6.0	211	31	59	25	36	19	17	10	12	9.6
11	8.5	5.8	109	49	73	24	32	19	16	7.9	13	8.7
12	9.0	5.9	75	35	71	21	30	18	15	9.2	12	10
13	7.7	6.3	55	50	70	20	28	24	15	10	11	12
14	7.5	5.9	41	314	69	19	26	21	14	9.9	11	10
15	7.0	5.9	37	277	68	14	24	20	13	10	12	7.6
16	7.0	5.9	32	163	58	5.9	24	19	12	11	9.2	7.3
17	7.5	5.9	26	111	65	6.0	23	20	11	11	11	9.5
18	7.6	6.0	23	85	63	5.9	21	19	12	12	11	7.9
19	7.7	7.2	20	73	61	5.8	20	17	12	16	12	6.1
20	7.1	8.1	19	64	59	5.8	23	17	12	17	10	7.3
21	7.5	7.2	22	55	59	5.9	20	16	9.2	14	10	7.4
22	7.6	6.1	22	49	55	5.7	18	15	10	14	14	7.6
23	7.5	6.2	20	44	49	5.9	18	15	9.0	12	15	7.5
24	6.9	6.6	17	40	45	5.9	18	14	9.9	12	14	7.3
25	5.9	6.2	16	39	43	5.9	17	14	9.4	15	12	6.4
26	6.5	6.2	15	37	45	5.8	16	13	6.5	19	11	5.1
27	5.9	6.3	14	36	21	11	16	14	11	15	11	6.4
28	7.0	6.5	13	38	20	59	16	16	8.7	14	12	6.1
29	6.5	6.1	13	39	20	57	18	15	8.2	14	12	6.3
30	5.3	6.4	12	54	---	49	19	13	9.2	12	11	7.0
31	5.8	---	11	71	---	44	---	13	---	12	11	---
TOTAL	224.8	186.2	1509	1854.8	1442	592.5	862	563	402.1	358.9	377.2	268.0
MEAN	7.25	6.21	48.7	59.8	49.7	19.1	28.7	18.2	13.4	11.6	12.2	8.93
MAX	9.1	8.1	219	314	81	59	54	24	20	19	17	16
MIN	5.3	5.2	11	9.3	20	5.7	16	13	6.5	5.9	9.2	5.1
AC-FT	446	369	2990	3680	2860	1180	1710	1120	798	712	748	532
MEAN†	2.54	5.36	49.1	59.8	37.0	31.1	28.7	18.2	13.4	6.37	4.65	3.45
CFSM†	0.37	0.78	7.12	8.67	5.36	4.51	4.16	2.64	1.94	0.92	0.67	0.50
IN.†	0.42	0.87	8.21	10.00	5.78	5.19	4.65	3.04	2.17	1.06	0.78	0.56
AC-FT†	156	319	3020	3680	2127	1910	1710	1120	798	391	286	205

CAL YR 1987 TOTAL 10458.2 MEAN 28.7 MAX 267 MIN 5.2 AC-FT 20740 MEAN† 26.3 CFSM† 3.81 IN.† 51.68 AC-FT† 19020
WTR YR 1988 TOTAL 8640.5 MEAN 23.6 MAX 314 MIN 5.1 AC-FT 17140 MEAN† 21.6 CFSM† 3.14 IN.† 42.72 AC-FT† 15720

† Adjusted for change in contents in Haskins Creek Reservoir and diversion from McGuire Lake.

MOLALLA-PUDDING RIVER BASIN

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14198500 MOLALLA RIVER ABOVE PINE CREEK, NEAR WILHOIT, OR

LOCATION.--Lat 45°00'35", long 122°28'45", in NE 1/4 NE 1/4 sec.31, T.6 S., R.3 E., Clackamas County, Hydrologic Unit 17090009, on right bank 0.5 mi upstream from Pine Creek, 5 mi southeast of Wilhoit, and at mile 32.5.

DRAINAGE AREA.--97.0 mi², at cableway 0.2 mi downstream.

PERIOD OF RECORD.--October 1935 to current year.

REVISED RECORDS.--WSP 1738: Drainage area. WDR OR-75-1: 1967(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 791.35 ft above National Geodetic Vertical Datum of 1929 (Bureau of Public Roads bench mark). Oct. 1, 1935, to Sept. 30, 1945, and Oct. 1, 1945, to Feb. 9, 1961, water-stage recorder at site 0.3 mi downstream at datums 8.42 ft and 10.44 ft lower, respectively. Feb. 10, 1961, to July 21, 1966, water-stage recorder at site 0.2 mi downstream at datum 5.99 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--53 years, 538 ft³/s, 75.32 in/yr, 389,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,300 ft³/s Dec. 22, 1964, gage height, 16.3 ft, from floodmark, site and datum then in use, from rating curve extended above 5,200 ft³/s; minimum discharge, 17 ft³/s Oct. 10-14, 21, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	0830	5,190	8.33	Jan. 10	unknown	unknown	unknown
Dec. 9	2400	*8,970	10.39	Jan. 14	unknown	unknown	unknown
Dec. 9	2400	(a)	*10.75				

Minimum discharge, 17 ft³/s Oct. 10-14, 21.

(a) From crest-stage gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	26	755	192	e670	431	645	666	1220	115	50	26
2	20	27	1150	178	e550	385	1080	660	1190	115	50	25
3	19	23	3980	171	e440	432	2320	660	1240	131	48	24
4	19	21	1810	162	380	575	1580	618	913	116	46	24
5	19	21	1030	154	348	730	1140	575	694	127	44	24
6	19	20	1630	148	326	685	1320	550	572	146	44	24
7	19	20	1340	145	320	559	1430	545	517	119	43	24
8	18	20	896	178	459	569	1120	540	472	108	43	24
9	18	21	3920	905	1590	825	899	538	450	100	42	22
10	18	26	5140	e4750	2150	694	792	503	488	92	42	22
11	17	29	1910	e3000	1290	576	758	505	447	85	41	22
12	17	86	1120	e1600	922	503	709	477	397	87	41	23
13	17	216	778	e1350	796	449	659	579	353	107	41	22
14	17	204	610	e3620	649	412	591	625	314	109	42	22
15	18	117	492	e3100	624	379	519	517	280	97	41	22
16	18	138	420	e1600	569	344	492	617	258	91	41	22
17	18	131	356	e1100	519	314	447	620	237	84	41	23
18	18	94	315	e820	494	296	405	539	225	79	40	24
19	18	77	281	e680	452	286	385	462	208	74	38	87
20	18	68	262	e560	439	294	423	404	190	74	36	63
21	18	80	306	e470	441	357	857	363	176	68	34	42
22	18	137	280	e420	425	372	913	332	167	65	33	36
23	18	235	255	e420	386	789	721	308	161	63	30	33
24	18	234	231	e350	351	757	598	284	150	62	30	32
25	18	257	217	e300	332	1410	489	261	140	60	30	31
26	19	176	207	e335	331	2250	428	243	136	57	29	36
27	19	138	196	e440	350	1980	397	245	135	55	29	104
28	19	115	189	e620	384	1200	410	528	133	53	28	70
29	18	98	184	e1130	484	932	781	601	144	52	26	48
30	18	94	183	e1000	---	759	767	526	124	52	26	41
31	19	---	199	e800	---	656	---	539	---	50	26	---
TOTAL	568	2949	30642	30698	17471	21200	24075	15430	12131	2693	1175	1042
MEAN	18.3	98.3	988	990	602	684	802	498	404	86.9	37.9	34.7
MAX	21	257	5140	4750	2150	2250	2320	666	1240	146	50	104
MIN	17	20	183	145	320	286	385	243	124	50	26	22
AC-FT	1130	5850	60780	60890	34650	42050	47750	30610	24060	5340	2330	2070
CFSM	.19	1.01	10.2	10.2	6.21	7.05	8.27	5.13	4.17	.90	.39	.36
IN.	.22	1.13	11.75	11.77	6.70	8.13	9.23	5.92	4.65	1.03	.45	.40

CAL YR 1987 TOTAL 127868 MEAN 350 MAX 5140 MIN 17 AC-FT 253600 CFSM 3.61 IN. 49.04
WTR YR 1988 TOTAL 160074 MEAN 437 MAX 5140 MIN 17 AC-FT 317500 CFSM 4.51 IN. 61.39

e Estimated

TUALATIN RIVER BASIN

14202965 HENRY HAGG LAKE NEAR GASTON, OR

LOCATION.--Lat 45°28'25", long 123°11'51", in SE 1/4 NE 1/4 sec.20, T.1 S., R.4 W., Washington County, Hydrologic Unit 17090010, at left end of Scoggins Dam on Scoggins Creek, 3.8 mi northwest of Gaston, and at mile 4.9.

DRAINAGE AREA.--38.7 mi².

PERIOD OF RECORD.--January 1975 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Reservoir is formed by earthfill dam with gated concrete spillway and a gated outlet tunnel. Storage began in January 1975. Total capacity at elevation 305.7 ft, maximum water-surface elevation, is 63,360 acre-ft, of which 56,160 acre-ft is active storage above elevation 239.3 ft, proposed minimum pool. Reservoir is used for irrigation, flood control, and recreation. Figures given herein represent active storage.

COOPERATION.--Monthend elevations and contents furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 53,730 acre-ft Apr. 30, 1988, elevation, 303.58 ft; minimum contents observed since first filling, 808 acre-ft Oct. 31, 1975, elevation, 237.21 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 53,730 acre-ft Apr. 30, elevation, 303.58 ft; minimum contents observed, 18,140 acre-ft Nov. 30, elevation, 266.07 ft.

MONTHEND ELEVATION AND CONTENTS AT 0800, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30.....	271.14	22,160	-
Oct. 31.....	266.61	18,560	-3,600
Nov. 30.....	266.07	18,140	-420
Dec. 31.....	277.61	27,670	+9,530
CAL YR 1987.....	-	-	-2,750
Jan. 31.....	287.72	37,070	+9,400
Feb. 29.....	293.74	43,100	+6,030
Mar. 31.....	300.19	49,950	+6,850
Apr. 30.....	303.58	53,730	+3,780
May 31.....	303.48	53,620	-110
June 30.....	302.84	52,890	-730
July 31.....	295.43	44,850	-8,040
Aug. 31.....	284.21	33,700	-11,150
Sept.30.....	274.78	25,210	-8,490
WTR YR 1988.....	-	-	+3,050

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LOCATION.--Lat 45°28'10", long 123°11'56", in SE 1/4 NE 1/4 sec.20, T.1 S., R.4 W., Washington County, Hydrologic Unit 17090010, on left bank 600 ft downstream from Scoggins Dam, 800 ft upstream from small left bank tributary, 3.7 mi northwest of Gaston, and at mile 4.8.

PERIOD OF RECORD.--January 1975 to current year.

GAGE.--Water-stage recorder. Datum of gage is 187.48 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good except those for the period Nov. 2 to Dec. 14, which are fair. Flow completely regulated by Henry Hagg Lake since January 1975. Discharge not adjusted for storage or release from Henry Hagg Lake as evaporation from reservoir at times exceeds natural flow.

AVERAGE DISCHARGE.--13 years, 104 ft³/s, 75,350 acre-ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,250 ft³/s Dec. 16, 1977, gage height, 13.50 ft; minimum discharge, 1.4 ft³/s Nov. 16, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 572 ft³/s Jan. 25, gage height, 9.31 ft; minimum discharge, 12 ft³/s Nov. 13, 14, 16-23, 30, Dec. 1-5, 7, 8.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71	34	12	13	71	14	14	116	58	66	189	160
2	72	23	12	13	72	14	14	116	72	85	189	160
3	72	16	12	13	34	14	14	104	71	85	188	160
4	73	17	12	13	13	14	14	97	71	85	188	160
5	72	17	12	13	13	14	14	66	71	85	195	159
6	71	16	13	13	13	14	14	59	48	85	199	159
7	71	16	13	13	13	14	85	73	37	85	198	158
8	71	16	12	13	13	14	114	73	47	85	191	158
9	70	16	13	13	13	14	114	73	47	85	177	151
10	70	16	13	13	13	14	82	56	47	85	170	146
11	70	16	13	13	13	14	66	46	48	98	169	146
12	69	16	13	13	13	14	38	46	48	116	169	146
13	69	14	13	13	13	14	17	65	48	116	169	146
14	69	12	118	15	13	14	14	73	49	116	168	146
15	68	13	204	15	13	14	14	72	44	133	161	138
16	44	12	203	16	13	14	14	63	34	143	149	133
17	28	12	202	15	13	14	14	52	28	143	145	130
18	28	12	85	91	13	14	14	52	28	143	145	130
19	27	12	13	214	13	14	35	52	28	160	144	130
20	37	12	13	324	13	14	80	48	27	169	144	130
21	45	12	13	388	14	14	86	44	40	177	144	130
22	40	12	13	384	14	14	56	44	50	183	149	129
23	40	17	13	381	14	14	41	37	50	182	162	118
24	40	21	13	378	14	14	41	35	52	182	167	112
25	39	21	13	486	14	14	44	35	53	181	166	112
26	39	21	13	324	14	14	46	35	53	181	166	111
27	39	21	13	103	14	14	51	35	47	186	166	111
28	38	21	13	71	14	14	74	35	42	191	165	111
29	35	21	13	71	14	14	71	35	42	190	165	86
30	34	15	13	72	---	14	96	35	42	190	159	75
31	34	---	13	72	---	14	---	35	---	190	157	---
TOTAL	1645	500	1144	3589	524	434	1391	1807	1422	4201	5213	4041
MEAN	53.1	16.7	36.9	116	18.1	14.0	46.4	58.3	47.4	136	168	135
MAX	73	34	204	486	72	14	114	116	72	191	199	160
MIN	27	12	12	13	13	14	14	35	27	66	144	75
AC-FT	3260	992	2270	7120	1040	861	2760	3580	2820	8330	10340	8020
CAL YR 1987	TOTAL 35116.4											
WTR YR 1988	TOTAL 25911											
	MEAN	70.8	MAX	838	MIN	8.3	AC-FT	69650				
			MAX	486	MIN	12	AC-FT	51390				

TUALATIN RIVER BASIN

14203500 TUALATIN RIVER NEAR DILLEY, OR

LOCATION.--Lat 45°28'30", long 123°07'23", in NE 1/4 NW 1/4 sec.24, T.1 S., R.4 W., Washington County, Hydrologic Unit 17090010, on left bank 5 ft upstream from highway bridge, 1.0 mi south of Dilley, 1.2 mi downstream from Scoggins Creek, and at mile 58.81.

DRAINAGE AREA.--125 mi².

PERIOD OF RECORD.--October 1939 to current year. Prior to October 1940 monthly discharge only, published in WSP 1318.

REVISID RECORDS.--WSP 1935: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 147.57 ft above National Geodetic Vertical Datum of 1929. Prior to June 16, 1950, nonrecording gage at several sites within 200 ft of present site at datum 4.00 ft higher. June 16, 1950, to Aug. 10, 1966, water-stage recorder at present site at datum 4.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Diurnal fluctuation caused by operation of millpond on Scoggins Creek upstream from station and regulation by Henry Hagg Lake since January 1975. Diversions upstream from station of approximately 3,000 acre-ft from J. W. Barney Reservoir on the Middle Fork of North Fork Trask River for municipal water supply and irrigation in Wapato Lake area.

AVERAGE DISCHARGE.--49 years, 394 ft³/s, 285,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,100 ft³/s Dec. 22, 1964, gage height, 19.34 ft, from rating curve extended above 6,000 ft³/s; minimum discharge, 0.08 ft³/s Sept. 3, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,990 ft³/s Jan. 15, gage height, 18.14 ft; minimum discharge, 31 ft³/s Nov. 20, 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	63	139	128	457	139	331	229	128	78	192	164
2	85	65	254	122	404	134	308	237	164	104	191	165
3	87	42	337	118	346	135	399	268	180	108	192	166
4	88	36	375	114	275	133	434	271	165	110	192	167
5	89	39	253	110	249	140	399	237	158	110	193	168
6	90	41	363	108	231	172	381	199	137	108	202	168
7	93	39	473	106	218	157	426	231	124	107	204	167
8	92	36	465	113	253	152	444	217	140	103	201	167
9	94	36	663	197	352	232	411	205	129	101	190	169
10	99	37	2480	365	487	242	361	184	134	98	180	159
11	102	38	1900	577	468	213	298	156	125	99	180	158
12	103	42	1000	578	399	190	257	146	117	124	179	158
13	102	45	609	528	377	173	207	176	112	133	179	156
14	100	63	486	1850	343	161	188	186	107	131	181	152
15	98	53	517	3680	326	151	177	179	98	137	179	149
16	83	43	492	2780	312	142	165	173	86	152	170	147
17	47	40	459	1850	289	132	156	156	75	151	163	142
18	46	36	357	1190	274	126	148	152	73	148	158	144
19	43	34	211	1000	251	123	149	149	72	153	153	152
20	44	32	189	919	235	118	193	138	67	163	154	158
21	67	32	205	930	220	117	209	126	65	166	151	154
22	59	38	202	860	206	121	183	118	78	175	153	147
23	58	54	199	800	192	257	154	112	78	180	163	140
24	57	65	184	751	180	348	148	102	80	184	169	128
25	57	103	174	735	170	552	142	98	81	184	170	129
26	54	72	164	739	161	610	139	94	80	178	167	131
27	53	58	155	515	154	649	137	100	79	181	167	132
28	52	48	147	404	148	563	148	114	73	188	171	132
29	51	44	141	518	144	496	163	110	73	189	170	115
30	49	41	135	541	---	448	192	101	72	190	168	92
31	52	---	130	508	---	385	---	100	---	190	161	---
TOTAL	2278	1415	13858	23734	8121	7711	7447	5064	3150	4423	5443	4476
MEAN	73.5	47.2	447	766	280	249	248	163	105	143	176	149
MAX	103	103	2480	3680	487	649	444	271	180	190	204	169
MIN	43	32	130	106	144	117	137	94	65	78	151	92
AC-FT	4520	2810	27490	47080	16110	15290	14770	10040	6250	8770	10800	8880
CAL YR 1987	TOTAL	116498	MEAN	319	MAX	2920	MIN	32	AC-FT	231100		
WTR YR 1988	TOTAL	87120	MEAN	238	MAX	3680	MIN	32	AC-FT	172800		

TUALATIN RIVER BASIN

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14207000 OSWEGO CANAL NEAR LAKE OSWEGO, OR

LOCATION.--Lat 45°23'18", long 122°43'11", in NW 1/4 NW 1/4 sec.20, T.2 S., R.1 E., Clackamas County, Hydrologic Unit 17090010, on left bank 0.4 mi downstream from point of diversion on Tualatin River, 1.0 mi upstream from Lake Oswego, and 3.5 mi southwest of town of Lake Oswego.

PERIOD OF RECORD.--October 1928 to current year. October 1951 to September 1970, Oswego Canal records were not published separately, but were combined with records for Tualatin River at West Linn.

GAGE.--Water-stage recorder. Datum of gage is 96.50 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 15, 1928, nonrecording gage 800 ft upstream at different datum. Nov. 15, 1928, to June 29, 1939, nonrecording gage 900 ft downstream at datum about 1.0 ft higher.

REMARKS.--No estimated daily discharges. Records good except those for Oct. 22 to Apr. 13, which are poor; Apr. 14 to June 2, which are fair. Oswego Canal diverts water from Tualatin River in NW 1/4 sec.20, but diversion dam is in NE 1/4 sec.33, about 3 mi downstream. Water used for recreational facilities and development of power downstream from Lake Oswego and returned to Willamette River at that point.

AVERAGE DISCHARGE.--60 years, 68.8 ft³/s, 49,850 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 6,000 ft³/s Dec. 23, 1933; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 140 ft³/s Dec. 10, gage height, 5.42 ft; minimum discharge, 5.3 ft³/s May 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	81	86	49	77	58	68	61	42	66	70	62
2	64	94	102	46	73	58	66	65	48	65	69	60
3	63	81	101	44	75	55	67	73	57	66	67	57
4	60	75	95	42	76	55	67	82	57	66	66	55
5	60	77	95	40	70	56	68	80	54	67	65	56
6	62	76	97	38	67	59	68	76	50	67	65	60
7	63	75	99	37	64	61	68	70	52	67	38	62
8	64	75	100	39	65	65	68	67	50	66	17	62
9	65	76	113	52	68	75	67	65	50	65	17	63
10	66	78	114	80	74	84	64	61	52	64	16	63
11	67	78	89	102	81	88	70	58	54	69	16	63
12	65	80	89	96	85	84	72	55	53	71	16	61
13	64	82	88	102	83	78	68	58	48	69	16	60
14	64	77	88	100	79	73	64	58	45	69	16	59
15	63	76	85	93	76	68	61	58	41	68	16	58
16	63	76	78	91	73	64	58	57	48	68	15	58
17	62	74	70	92	71	60	60	56	107	68	16	59
18	60	72	69	97	69	57	61	54	121	67	16	60
19	58	70	69	99	70	54	59	44	115	67	16	66
20	41	65	60	98	71	52	61	50	93	66	21	64
21	16	61	61	95	68	51	76	47	66	67	63	59
22	13	59	67	91	66	50	88	44	64	68	65	58
23	19	59	69	86	66	55	79	42	69	69	66	57
24	26	63	69	81	66	70	68	39	69	69	65	57
25	32	72	67	89	64	99	62	37	71	71	65	57
26	39	82	63	92	61	107	59	36	70	70	66	57
27	45	93	58	84	59	76	56	35	68	67	63	58
28	52	90	55	81	57	73	54	37	68	66	63	59
29	59	82	52	80	58	79	56	39	67	66	61	63
30	65	73	51	80	---	77	59	41	66	66	62	62
31	70	---	51	81	---	73	---	39	---	68	63	---
TOTAL	1675	2272	2450	2377	2032	2114	1962	1684	1915	2088	1356	1795
MEAN	54.0	75.7	79.0	76.7	70.1	68.2	65.4	54.3	63.8	67.4	43.7	59.8
MAX	70	94	114	102	85	107	88	82	121	71	70	66
MIN	13	59	51	37	57	50	54	35	41	64	15	55
AC-FT	3320	4510	4860	4710	4030	4190	3890	3340	3800	4140	2690	3560

CAL YR 1987 TOTAL 17060.4 MEAN 46.7 MAX 148 MIN 2.7 AC-FT 33840
WTR YR 1988 TOTAL 23720 MEAN 64.8 MAX 121 MIN 13 AC-FT 47050

TUALATIN RIVER BASIN

14207500 TUALATIN RIVER AT WEST LINN, OR
(National stream quality accounting network station)

LOCATION.--Lat 45°21'03", long 122°40'30", in SW 1/4 sec.34, T.2 S., R.1 E., Clackamas County, Hydrologic Unit 17090010, on left bank 300 ft upstream from bridge on State Highway 212, 0.4 mi west of West Linn city limits, and at mile 1.8.

DRAINAGE AREA.--706 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1928 to current year. Prior to October 1960, published as "near Willamette."

REVISED RECORDS.--WSP 1014: 1943. WSP 1184: 1947. WSP 1248: 1941. WSP 1935: Drainage area. WDR OR-75-1: 1974(M). WDR OR-77-1: 1971-73, 1975, 1976(M).

GAGE.--Water-stage recorder. Datum of gage is 85.61 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to June 12, 1941, nonrecording gage at datum 1.02 ft higher.

REMARKS.--Water-discharge records good. October 1951 to September 1970, records published for this station included the daily flow in Oswego Canal, which diverts at point 5.0 mi upstream from station for development of power between outlet of Lake Oswego and Willamette River. Some regulation in low-water season by flashboards on crest of diversion dam for Oswego Canal and regulation by Henry Hagg Lake since January 1975. Several diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--60 years, 1,522 ft³/s, 29.28 in/yr, 1,103,000 acre-ft/yr, adjusted for diversion in Oswego Canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,300 ft³/s Dec. 23, 1933, gage height, 17.72 ft; minimum daily discharge, 0.20 ft³/s July 30 to Aug. 2, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,430 ft³/s Jan. 19, gage height, 10.26 ft; minimum discharge, 27 ft³/s Oct. 23, 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	58	251	676	1980	740	1960	805	456	199	111	114
2	72	145	870	634	1790	739	1780	875	561	181	122	110
3	79	195	1830	603	1610	701	1830	1000	709	195	122	107
4	91	153	2200	579	1450	686	1870	1200	719	217	119	102
5	84	116	2200	551	1300	706	1920	1210	665	220	115	100
6	80	91	2210	525	1190	739	1920	1130	591	226	113	103
7	75	80	2310	504	1100	775	1890	1030	628	223	116	112
8	65	77	2360	539	e1110	848	1890	969	656	206	154	118
9	52	69	2720	753	e1220	1020	1850	922	661	177	184	119
10	51	67	3820	1290	e1390	1180	1720	854	701	157	178	115
11	52	70	3900	2450	e1640	1260	1580	789	731	143	161	110
12	81	80	3860	3060	e1760	1210	1430	709	704	133	156	116
13	87	163	3860	3340	e1690	1110	1290	751	616	133	159	123
14	85	188	3810	4510	e1580	1010	1180	769	532	161	161	116
15	79	167	3520	5990	e1490	930	1080	772	468	184	173	114
16	78	167	3010	5900	e1410	866	1020	754	321	171	189	114
17	75	177	2400	6250	e1340	796	953	735	128	161	191	113
18	72	164	1870	6950	e1270	735	889	712	233	153	193	113
19	67	142	1500	7380	e1210	689	827	664	243	147	187	141
20	247	133	1200	7310	e1140	647	854	613	246	131	169	197
21	168	121	1050	6840	e1080	629	1080	572	254	126	138	219
22	83	112	1000	6200	e1030	617	1410	523	240	121	124	201
23	30	106	1010	5510	e982	705	1290	480	229	116	115	182
24	28	113	1010	4840	e926	938	1050	443	232	116	107	173
25	31	124	967	4150	886	1580	881	415	226	120	100	163
26	36	147	897	3460	839	2220	776	391	208	127	98	165
27	38	176	831	2900	795	2620	722	379	198	124	99	173
28	36	167	775	2400	764	2660	684	401	199	113	100	175
29	38	169	731	2080	754	2620	709	437	210	107	98	166
30	42	171	702	2060	---	2450	762	471	211	105	102	154
31	48	---	713	2120	---	2220	---	443	---	106	110	---
TOTAL	2224	3908	59387	102354	36726	36646	39097	22218	12776	4799	4264	4128
MEAN	71.7	130	1916	3302	1266	1182	1303	717	426	155	138	138
MAX	247	195	3900	7380	1980	2660	1960	1210	731	226	193	219
MIN	28	58	251	504	754	617	684	379	128	105	98	100
AC-FT	4410	7750	117800	203000	72850	72690	77550	44070	25340	9520	8460	8190
MEAN†	126	206	1996	3378	1337	1250	1369	771	490	222	181	197
CFSM†	0.18	0.29	2.83	4.78	1.89	1.77	1.94	1.09	0.69	0.31	0.26	0.28
IN.†	0.21	0.33	3.26	5.52	2.04	2.04	2.16	1.26	0.77	0.36	0.30	0.31
AC-FT†	7730	12260	122700	207700	76880	76880	81440	47410	29140	13660	11150	11750

CAL YR 1987 TOTAL 497857 MEAN 1364 MAX 10800 MIN 28 AC-FT 987500 MEAN† 1410 CFSM† 1.98 IN.† 27.12 AC-FT† 1021000
WTR YR 1988 TOTAL 328527 MEAN 898 MAX 7380 MIN 28 AC-FT 651600 MEAN† 962 CFSM† 1.36 IN.† 18.55 AC-FT† 698600

• Estimated

† Adjusted for diversion in Oswego Canal.

TUALATIN RIVER BASIN

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14207500 TUALATIN RIVER AT WEST LINN, OR--Continued
(National stream quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1975 to September 1981.

WATER TEMPERATURE: October 1975 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCARB (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	
NOV 09...	1150	68	232	7.2	11.5	5.8	53	64	K34	63	0	16	
FEB 24...	1145	926	128	7.4	6.5	10.6	87	K9	55	40	0	10	
JUN 06...	1045	589	143	7.5	14.5	7.4	73	--	175	51	2	13	
AUG 25...	1302	100	193	7.4	20.0	6.3	69	M1	K21	51	7	13	
DATE		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WATER DIS IT FIELD (MG/L AS CACO3)	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3)	CAR- BONATE WATER DIS IT FIELD (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
NOV 09...	5.6	18	4.3	65	79	0	18	16	0.3	1.8	1.9	2.7	
FEB 24...	3.6	8.5	1.7	39	48	0	8.7	8.7	0.2	0.54	1.5	0.5	
JUN 06...	4.4	8.7	1.6	47	58	0	15	7.9	0.4	0.30	1.2	1.1	
AUG 25...	4.6	16	2.7	44	53	0	18	12	0.1	0.82	2.4	1.4	
DATE		PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS TOTAL (MG/L AS P)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	TUR- BID- ITY (NTU)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	
NOV 09...	0.21	0.26	0.29	25	133	154	24.4	0.5	6	1.1	94		
FEB 24...	0.18	0.27	0.33	21	89	95	223	6.8	13	33	97		
JUN 06...	0.07	0.11	0.14	21	96	108	153	5.0	17	27	99		
AUG 25...	0.10	0.12	0.15	19	118	124	31.8	1.6	6	1.6	83		

K - Results based on colony count outside acceptable range (non-ideal colony count).

TUALATIN RIVER BASIN

14207500 TUALATIN RIVER AT WEST LINN, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
NOV 09...	<10	1	16	<0.5	<1	<1	<3	4	51	<5
FEB 24...	40	<1	13	<0.5	<1	1	<3	4	120	<5
JUN 06...	40	1	15	<0.5	<1	<1	<3	4	220	<5
AUG 25...	<10	1	16	<0.5	<1	<1	<3	2	40	<5
DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 09...	<4	170	<0.1	<10	2	<1	<1	67	<6	22
FEB 24...	<4	45	<0.1	<10	4	<1	<1	56	<6	10
JUN 06...	<4	68	<0.1	<10	3	<1	<1	64	<6	13
AUG 25...	<4	11	<0.1	<10	1	<1	<1	61	<6	8

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LOCATION.--Lat 45°20'55", long 122°37'08", in SW 1/4 SW 1/4 sec.31, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090007, on right bank 0.2 mi above Willamette Falls, 0.6 mi downstream from Tualatin River, and at mile 26.8.

PERIOD OF RECORD.--October 1976 to current year (gage heights only).

REMARKS.--Flow regulated by many reservoirs upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 64.79 ft Dec. 17, 1977; minimum recorded, 52.65 ft Feb. 8, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 62.66 ft Jan. 16; minimum, 53.18 ft July 21.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54.10	54.48	55.57	55.66	56.47	54.38	56.19	56.18	55.40	53.57	53.85	54.50
2	54.16	54.62	56.06	55.71	56.14	54.39	55.98	56.30	56.09	53.57	53.84	54.50
3	54.17	54.67	57.27	55.37	55.92	54.41	56.18	56.44	57.16	53.54	53.89	54.48
4	54.20	54.79	58.50	55.15	55.64	54.42	56.87	56.91	57.53	53.54	54.04	54.46
5	54.22	54.53	58.67	55.01	55.36	54.59	57.19	57.19	57.27	53.55	54.11	54.39
6	54.33	54.16	58.30	54.85	55.17	54.98	57.27	57.05	56.75	53.57	54.11	54.34
7	54.36	53.77	58.44	54.72	55.03	55.24	57.41	56.92	56.35	53.64	54.11	54.38
8	54.31	53.40	58.51	54.68	54.97	55.35	57.62	56.91	56.06	53.57	54.23	54.62
9	54.30	53.50	58.24	54.92	55.25	55.43	57.41	56.88	56.00	53.48	54.43	54.79
10	54.27	54.04	59.54	56.51	56.36	55.97	56.97	56.84	55.93	53.37	54.44	54.93
11	54.26	54.21	60.43	59.45	57.25	56.11	56.51	56.71	55.71	53.33	54.33	54.95
12	54.27	54.35	60.62	60.66	57.15	55.84	56.22	56.55	55.53	53.33	54.24	54.94
13	54.34	54.89	59.88	60.79	56.83	55.48	55.99	56.51	55.29	53.32	54.37	54.84
14	54.37	55.31	58.76	60.74	56.56	55.43	55.74	56.70	55.10	53.34	54.76	54.78
15	54.34	55.53	57.90	61.78	56.27	55.49	55.68	56.88	54.91	53.39	54.84	54.68
16	54.36	55.77	57.40	62.52	56.11	55.36	55.71	56.86	54.66	53.35	54.66	54.54
17	54.40	56.03	57.03	62.47	55.97	55.24	55.52	56.89	54.44	53.32	54.53	54.66
18	54.40	56.03	56.76	61.84	55.73	55.11	55.37	56.88	54.35	53.30	54.41	54.87
19	54.35	56.00	56.57	60.83	55.47	55.01	55.21	56.70	54.27	53.31	54.34	55.01
20	54.39	55.99	56.35	59.84	55.14	54.93	55.03	56.39	54.24	53.28	54.32	55.07
21	54.47	55.98	56.20	58.95	54.96	54.87	55.43	56.10	54.23	53.42	54.17	55.13
22	54.66	56.01	56.29	58.09	54.85	54.89	56.48	55.83	54.06	53.81	54.06	55.24
23	54.47	56.05	56.37	57.52	54.74	54.97	56.96	55.61	53.95	54.24	54.11	55.17
24	54.35	56.15	56.43	57.18	54.64	55.33	56.70	55.28	53.85	54.62	54.16	55.08
25	54.21	56.20	56.28	56.89	54.53	56.20	56.52	54.88	53.78	54.89	54.18	55.07
26	54.04	56.31	56.01	56.64	54.43	57.41	56.35	54.77	53.69	55.02	54.20	55.08
27	53.81	56.30	55.76	56.34	54.37	57.79	56.01	54.70	53.62	54.93	54.43	55.12
28	53.62	56.23	55.56	56.05	54.33	57.65	55.76	54.70	53.63	54.54	54.71	55.19
29	53.54	56.15	55.45	55.97	54.34	57.02	55.68	54.82	53.59	54.35	54.82	55.26
30	53.67	55.85	55.24	56.26	---	56.67	55.87	55.16	53.57	54.18	54.70	55.22
31	54.14	---	55.25	56.62	---	56.47	---	55.25	---	53.97	54.	

CAL YR 1987	MEAN 55.29	MAX 62.05	MIN 52.94
WTR YR 1988	MEAN 55.50	MAX 62.52	MIN 53.28

WILLAMETTE RIVER BASIN

14207770 WILLAMETTE RIVER BELOW FALLS, AT OREGON CITY, OR

LOCATION.--Lat 45°21'28", long 122°36'35", in NE 1/4 NW 1/4 sec.31, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090007, on right bank 0.5 mi below Willamette Falls, 1.4 mi upstream from Clackamas River, and at mile 26.2.

DRAINAGE AREA.--10,000 mi², approximately.

PERIOD OF RECORD.--November 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Oregon State Highway Division bench mark).

REMARKS.--Flow regulated by many reservoirs upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 32.18 ft Feb. 21, 1982; minimum, 1.80 ft Aug. 11, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 24.49 ft Jan. 16; minimum, 2.20 ft July 24, but may have been lower during period of no record.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	6.72	3.77	4.68	4.92	2.79	3.52	9.05	4.37	6.53	9.14	7.95	8.57
2	6.59	3.37	4.42	5.76	2.59	3.32	9.54	6.51	8.01	8.78	7.36	8.03
3	5.46	2.99	3.80	6.10	2.66	3.54	12.75	7.68	10.70	8.62	7.07	7.83
4	5.02	2.79	3.38	5.68	3.03	3.79	14.94	12.36	13.88	8.85	6.82	7.67
5	6.19	2.92	3.50	6.05	3.20	3.73	14.75	13.87	14.47	8.66	6.95	7.68
6	5.50	3.51	4.55	7.01	3.34	4.17	14.14	13.17	13.57	8.33	6.82	7.73
7	4.72	4.34	4.43	5.76	3.61	4.40	14.62	13.27	13.95	8.27	6.85	7.68
8	7.17	4.38	5.06	4.16	3.01	3.24	14.37	13.81	14.15	8.38	6.89	7.75
9	6.75	4.34	4.90	5.04	2.61	3.44	16.37	13.13	14.05	8.22	6.80	7.46
10	6.90	3.87	4.98	5.38	2.91	4.06	19.95	16.45	18.95	13.90	8.06	10.46
11	6.46	3.38	4.25	4.97	2.34	3.58	19.97	19.62	19.84	18.66	14.08	16.91
12	4.65	3.07	3.59	5.19	2.47	3.87	19.81	18.45	19.28	19.72	18.71	19.33
13	5.96	3.24	4.08	5.18	3.22	3.98	18.46	15.47	16.99	19.82	19.18	19.63
14	5.06	3.63	3.87	4.87	3.21	3.69	15.47	13.50	14.46	22.34	19.15	20.15
15	4.80	3.78	3.96	4.90	3.35	4.10	13.46	12.05	12.90	23.89	22.45	23.54
16	4.82	3.66	4.39	4.37	2.84	3.71	12.14	11.15	11.74	24.49	23.92	24.22
17	5.30	3.26	4.04	6.37	3.35	4.22	11.66	10.51	11.18	24.16	22.85	23.60
18	4.88	2.41	3.37	6.79	3.73	4.64	11.28	10.17	10.67	22.76	21.20	22.01
19	3.77	2.47	2.75	6.40	3.72	4.75	10.99	9.96	10.38	21.14	18.47	19.88
20	5.51	2.66	3.27	5.56	3.84	4.60	10.57	9.03	10.36	18.41	16.67	17.56
21	7.07	3.82	4.97	6.64	3.94	4.65	10.84	8.55	9.62	16.65	14.91	15.61
22	5.08	4.10	4.61	6.41	3.89	4.68	11.07	10.19	10.56	14.91	12.81	13.66
23	5.70	4.00	4.83	7.95	4.41	5.62	10.69	9.41	9.92	13.08	11.61	12.32
24	5.78	3.84	4.66	8.03	4.30	5.89	10.10	9.11	9.60	11.90	10.56	11.19
25	4.39	3.20	3.38	7.38	4.37	5.58	9.44	8.51	9.02	10.99	9.93	10.38
26	4.83	2.97	3.42	7.03	4.50	5.54	8.86	7.64	8.24	10.54	9.29	9.90
27	6.93	3.55	4.23	6.55	4.46	5.44	8.57	6.98	7.91	9.95	8.44	9.14
28	5.37	3.66	4.06	6.58	3.93	5.04	8.74	6.71	7.52	9.56	7.78	8.73
29	4.62	3.38	3.78	6.16	3.14	4.49	8.79	6.81	7.56	9.82	7.75	8.62
30	6.07	3.01	3.50	6.51	3.22	4.73	8.86	6.91	7.85	10.12	8.31	9.23
31	5.85	3.05	4.19	---	---	---	8.83	7.08	7.93	10.88	9.36	10.12
MONTH	7.17	2.41	4.09	8.03	2.34	4.33	19.97	4.37	11.67	24.49	6.80	13.12

WILLAMETTE RIVER BASIN

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14207770 WILLAMETTE RIVER BELOW FALLS, AT OREGON CITY, OR--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	10.52	9.55	9.98	7.46	4.76	6.05	9.74	8.48	9.05	9.60	8.09	8.79
2	10.06	9.06	9.47	7.69	5.02	6.23	9.51	7.97	8.68	---	8.29	---
3	9.60	8.63	9.10	7.74	5.41	6.45	10.85	8.47	9.92	---	8.58	---
4	8.90	7.70	8.24	8.19	5.36	6.73	11.99	10.43	11.34	---	---	---
5	8.45	7.15	7.80	8.01	5.92	7.14	12.16	11.33	11.77	---	---	---
6	8.03	6.53	7.23	8.70	6.30	7.46	12.62	11.77	12.27	---	---	---
7	8.05	6.07	6.86	8.59	6.70	7.50	12.84	12.30	12.53	---	9.57	---
8	7.93	5.74	6.90	9.07	7.11	7.83	12.81	11.97	12.42	---	---	---
9	8.61	6.57	7.75	8.89	7.31	7.91	11.97	10.62	11.44	10.18	9.44	---
10	11.45	8.62	10.12	9.15	7.74	8.37	10.73	9.40	10.22	10.33	9.69	10.06
11	12.30	11.49	11.84	9.30	8.15	8.63	9.75	8.48	9.26	10.59	9.99	10.29
12	11.57	10.37	11.13	8.62	6.92	7.95	9.43	8.03	8.88	11.10	10.06	10.60
13	10.73	9.58	10.36	7.90	6.05	7.01	9.44	7.90	8.67	---	10.15	---
14	10.41	9.11	9.75	7.78	5.86	6.67	---	7.79	---	---	10.59	---
15	10.44	8.93	9.42	8.19	5.87	6.79	9.86	7.95	8.85	---	10.83	---
16	10.31	8.53	9.17	8.13	5.65	6.62	10.25	8.33	9.07	---	10.89	---
17	10.60	8.70	9.33	8.09	5.53	6.55	---	7.92	---	---	10.96	---
18	9.87	8.30	9.13	7.95	5.09	6.35	9.87	7.66	8.48	---	10.95	---
19	9.38	7.69	8.57	7.81	4.87	6.16	---	7.51	---	11.43	10.36	10.95
20	8.93	6.69	7.67	7.91	4.88	6.16	---	7.18	---	10.60	9.60	10.16
21	8.74	6.26	7.32	7.84	4.78	6.24	---	---	---	10.11	9.13	9.72
22	8.31	6.08	6.89	7.97	5.15	6.32	10.92	9.61	10.30	---	7.94	---
23	8.40	6.28	7.44	8.30	5.53	6.83	11.12	10.32	10.81	---	7.09	---
24	7.89	5.80	7.07	8.18	6.46	7.24	10.51	9.33	10.09	8.00	7.27	7.69
25	7.28	5.23	6.17	10.36	8.09	9.34	9.65	8.10	8.93	8.51	7.90	8.20
26	6.90	4.88	5.79	12.09	10.48	11.42	8.90	7.52	8.29	8.86	7.61	8.35
27	6.86	4.85	5.66	12.60	12.11	12.33	8.63	7.15	---	8.90	7.63	8.17
28	6.99	4.83	5.75	12.29	11.45	11.99	---	7.17	---	9.16	7.63	8.30
29	7.29	4.58	5.83	11.54	10.68	11.25	---	7.20	---	9.00	7.05	7.85
30	---	---	---	11.10	10.22	10.81	---	7.64	8.49	9.23	7.19	7.91
31	---	---	---	10.27	9.02	9.76	---	---	---	9.46	7.18	8.24
MONTH	12.30	4.58	8.20	12.60	4.76	7.87	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	10.29	8.18	9.49	7.38	3.53	5.30	6.13	2.44	4.18	---	---	---
2	11.96	10.08	11.04	7.16	3.59	5.18	6.36	2.75	4.49	---	---	---
3	13.52	11.93	12.81	6.96	3.56	5.00	6.05	2.42	4.20	---	---	---
4	13.66	12.86	13.28	6.86	3.48	5.03	6.63	2.59	4.24	---	---	---
5	13.11	11.62	12.42	6.20	3.66	4.77	6.66	2.95	4.43	---	---	---
6	11.94	10.58	11.28	6.64	3.20	4.61	---	---	---	---	---	---
7	11.08	9.52	10.41	6.87	3.64	4.87	5.61	2.22	3.62	---	---	---
8	10.23	8.95	9.76	7.23	3.68	5.32	5.85	2.49	3.97	---	---	---
9	10.04	9.28	9.65	6.86	3.29	4.64	5.95	2.30	4.02	---	---	---
10	10.50	8.96	9.69	6.70	3.59	4.94	---	---	---	---	---	---
11	10.06	7.99	8.91	6.86	3.35	4.86	---	---	---	---	---	---
12	---	7.20	---	6.78	3.12	4.87	---	---	---	---	---	---
13	9.07	6.98	7.74	7.57	3.78	5.42	---	---	---	---	---	---
14	8.83	6.34	7.33	7.43	4.17	5.45	---	---	---	---	---	---
15	8.64	6.33	7.24	7.30	3.74	5.90	---	---	---	---	---	---
16	---	6.23	---	6.90	3.19	4.97	---	---	---	---	---	---
17	8.04	5.77	6.81	5.86	2.48	4.10	---	---	---	---	---	---
18	7.72	5.55	6.55	5.58	2.57	3.99	---	---	---	---	---	---
19	7.07	5.15	6.15	5.82	2.39	3.79	---	---	---	---	---	---
20	6.74	4.85	5.85	5.89	2.72	4.13	---	---	---	---	---	---
21	6.61	4.54	5.48	5.86	2.53	3.82	---	---	---	---	---	---
22	6.48	4.27	5.25	5.81	2.74	3.84	---	---	---	---	---	---
23	6.74	4.73	5.42	5.84	2.35	3.66	---	---	---	---	---	---
24	6.87	4.67	5.54	5.53	2.20	3.41	---	---	---	---	---	---
25	7.23	4.79	5.74	5.67	2.40	3.86	---	---	---	---	---	---
26	7.18	4.42	5.42	6.51	3.00	4.64	---	---	---	---	---	---
27	7.37	4.43	5.56	6.87	3.04	4.75	---	---	---	---	---	---
28	7.65	4.33	5.56	6.53	2.62	4.77	---	---	---	7.42	4.04	5.34
29	7.75	4.38	5.70	6.44	2.64	4.60	---	---	---	7.50	4.09	5.44
30	7.94	4.08	5.65	6.61	2.85	4.63	---	---	---	7.07	3.95	5.20
31	---	---	---	6.43	2.60	4.43	---	---	---	---	---	---
MONTH	---	4.08	---	7.57	2.20	4.63	---	---	---	---	---	---

CLACKAMAS RIVER BASIN

14208600 TIMOTHY LAKE NEAR GOVERNMENT CAMP, OR

LOCATION.--Lat 45°06'50", long 121°48'35", in NE 1/4 sec.27, T.5 S., R.8 E., Clackamas County, Hydrologic Unit 17090011, Mount Hood National Forest, in intake structure 350 ft upstream from dam on Oak Grove Fork, 0.4 mi upstream from Anvil Creek, 14 mi south of Government Camp, and at mile 15.8.

DRAINAGE AREA.--53.8 mi².

PERIOD OF RECORD.--May 1956 to current year. Prior to October 1957, published as Timothy Meadows Reservoir.

GAGE.--Nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Portland General Electric Co.).

REMARKS.--Reservoir is formed by earthfill dam with concrete spillway built by Portland General Electric Co. Usable storage began May 28, 1956. Capacity, 65,710 acre-ft at elevation 3,190 ft, normal maximum operating level. Usable capacity increased in 1966 water year to 64,450 acre-ft between elevations 3,125.0 ft, invert of outlet pipe, and 3,192.0 ft, top of radial gates. Storage of 4,060 acre-ft below elevation 3,125.0 ft not normally available for release. Water is used for power generation. Figures given herein represent total contents.

COOPERATION.--Elevations and capacity table furnished by Portland General Electric Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 68,800 acre-ft Oct. 3, 1967, elevation, 3,192.2 ft; minimum contents observed, 16,010 acre-ft Feb. 24, 1957, elevation, 3,144.5 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 66,750 acre-ft May 18, 19, elevation, 3,190.75 ft; minimum contents observed, 40,750 acre-ft Feb. 2, elevation, 3,170.03 ft.

MONTHEND ELEVATION AND CONTENTS AT 0800, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30.....	3,187.22	61,950	-
Oct. 31.....	3,179.68	52,270	-9,680
Nov. 30.....	3,178.59	50,930	-1,340
Dec. 31.....	3,176.50	48,380	-2,550
CAL YR 1987.....	-	-	+2,880
Jan. 31.....	3,170.24	41,000	-7,380
Feb. 29.....	3,174.09	45,490	+4,490
Mar. 31.....	3,181.35	54,360	+8,870
Apr. 30.....	3,190.74	66,740	+12,380
May 31.....	3,189.95	65,640	-1,100
June 30.....	3,189.55	65,090	-550
July 31.....	3,189.93	65,610	+520
Aug. 31.....	3,189.90	65,570	-40
Sept.30.....	3,188.50	63,660	-1,910
WTR YR 1988.....	-	-	+1,710

CLACKAMAS RIVER BASIN

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14208700 OAK GROVE FORK NEAR GOVERNMENT CAMP, OR

LOCATION.--Lat 45°06'50", long 121°48'50", in NE 1/4 sec.27, T.5 S., R.8 E., Clackamas County, Hydrologic Unit 17090011, Mount Hood National Forest, on right bank 0.1 mi upstream from Anvil Creek, 0.3 mi downstream from Timothy Lake, 14 mi south of Government Camp, and at mile 15.5.

DRAINAGE AREA.--54.4 mi².

PERIOD OF RECORD.--July 1956 to current year.

GAGE.--Water-stage recorder and artificial control. Datum of gage is 3,041.83 ft above National Geodetic Vertical Datum of 1929 (Portland General Electric Co. bench mark).

REMARKS.--No estimated daily discharges. Records excellent. Flow regulated since 1956 by Timothy Lake (station 14208600). No diversion upstream from station.

AVERAGE DISCHARGE.--32 years, 131 ft³/s, 32.70 in/yr, 94,910 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,110 ft³/s Dec. 24, 1964, gage height, 3.93 ft, from rating curve extended above 290 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 3.7 ft³/s Sept. 23, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 441 ft³/s May 4, Aug. 26, gage height, 2.64 ft; minimum discharge, 35 ft³/s June 19-28, 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	152	92	40	395	129	41	43	294	181	36	53	60
2	152	105	39	408	45	41	44	331	203	37	53	60
3	152	109	41	408	44	41	46	415	184	82	53	60
4	152	102	40	408	42	42	44	334	187	87	53	59
5	149	101	39	415	41	43	44	222	221	74	53	63
6	143	99	39	415	41	43	45	222	230	69	54	72
7	211	99	39	415	41	42	44	218	242	54	59	72
8	367	91	39	288	41	42	43	197	236	54	61	72
9	343	88	41	185	40	43	43	194	261	54	62	105
10	354	92	44	57	42	42	43	174	259	54	62	95
11	362	103	42	38	41	41	43	164	272	54	62	104
12	187	85	44	38	41	41	44	142	285	55	63	104
13	150	75	45	38	40	41	44	142	290	73	62	104
14	149	81	44	38	40	41	45	143	294	76	61	104
15	149	99	171	39	40	41	44	142	123	68	57	104
16	264	90	254	39	40	41	44	159	37	69	57	104
17	367	83	280	39	40	41	44	182	37	68	58	104
18	354	105	284	146	40	41	43	181	36	68	57	104
19	354	106	298	253	40	41	43	181	36	68	52	94
20	202	106	301	256	40	42	43	184	35	69	51	105
21	157	106	292	276	40	42	44	197	36	69	51	108
22	344	97	300	289	40	42	43	198	36	69	51	108
23	349	81	320	268	40	43	43	203	36	67	51	108
24	345	73	326	288	40	43	43	224	36	64	57	107
25	344	86	333	285	40	43	63	231	36	64	60	70
26	222	112	337	289	40	47	91	242	36	64	69	41
27	114	104	335	270	40	46	87	248	36	64	60	67
28	111	104	336	239	40	45	47	175	37	64	60	106
29	89	104	347	208	41	44	200	202	37	64	59	107
30	99	77	338	194	---	43	316	238	37	60	60	113
31	105	---	347	192	---	43	---	232	---	53	60	---
TOTAL	6992	2855	5775	7116	1269	1312	1853	6611	4012	1971	1781	2684
MEAN	226	95.2	186	230	43.8	42.3	61.8	213	134	63.6	57.5	89.5
MAX	367	112	347	415	129	47	316	415	294	87	69	113
MIN	89	73	39	38	40	41	43	142	35	36	51	41
AC-FT	13870	5660	11450	14110	2520	2600	3680	13110	7960	3910	3530	5320
MEAN†	68.1	72.6	145	109	122	187	270	195	125	72.0	56.8	57.3
CFSM†	1.25	1.33	2.67	2.00	2.24	3.44	4.96	3.58	2.30	1.32	1.04	1.05
IN.†	1.44	1.49	3.07	2.32	2.42	3.95	5.54	4.14	2.55	1.53	1.20	1.18
AC-FT†	4190	4320	8900	6730	7010	11470	16060	12010	7410	4430	3490	3410

CAL YR 1987 TOTAL 32891 MEAN 90.1 MAX 367 MIN 32 AC-FT 65240 MEAN† 94.1 CFSM† 1.73 IN.† 23.48 AC-FT† 68120
WTR YR 1988 TOTAL 44231 MEAN 121 MAX 415 MIN 35 AC-FT 87730 MEAN† 123 CFSM† 2.26 IN.† 30.83 AC-FT† 89440

† Adjusted for change in contents in Timothy Lake.

LOCATION.--Lat 45°04'20", long 121°57'00", on line between secs.3 and 4, T.6 S., R.7 E., Clackamas County, Hydrologic Unit 17090011, Mount Hood National Forest, on right bank 0.2 mi upstream from Spring Creek, 0.7 mi upstream from Kink Creek, 1.0 mi upstream from Portland General Electric Co. diversion dam, 24 mi southeast of Estacada, and at mile 6.1.

PERIOD OF RECORD.--May 1909 to current year. Monthly discharge only for some periods, published in WSP 1318. Published as both Oak Grove Fork of Clackamas River at proposed intake, near Cazadero, and Oak Grove Fork of Clackamas River at intake, near Cazadero, May 1909 to September 1910, as Oak Grove Fork of Clackamas River at intake, near Cazadero, October 1910 to September 1921, and as Oak Grove Fork at Portland General Electric Power Co. intake, October 1921 to September 1929.

GAGE.--Water-stage recorder. Datum of gage is 2,052.31 ft above National Geodetic Vertical Datum of 1929. May 21, 1909, to Nov. 17, 1911, nonrecording gage and Mar. 26, 1912, to Sept. 30, 1923, water-stage recorder, at various sites 0.7 mi downstream, below Kink Creek, at different datum.

AVERAGE DISCHARGE.--79 years, 499 ft³/s, 361,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft³/s Jan. 7, 1923, gage height, 5.45 ft, site and datum then in use, from rating curve extended above 2,300 ft³/s on basis of peak discharge for other stations in Clackamas River basin; minimum discharge, 207 ft³/s Sept. 25, 26, 1988.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	361	294	349	556	448	450	493	781	570	274	254	232
2	363	290	322	562	303	441	572	788	577	274	253	231
3	363	303	584	562	298	462	722	862	570	314	253	231
4	363	286	392	558	288	476	640	790	567	333	252	231
5	360	289	327	552	283	493	586	659	570	317	253	233
6	351	286	365	545	281	472	624	648	572	314	253	245
7	388	286	331	542	282	441	626	631	573	286	256	245
8	575	278	303	519	311	439	572	610	563	284	256	244
9	556	273	545	383	480	473	548	613	579	281	255	270
10	560	274	923	411	625	432	546	589	567	281	256	268
11	567	304	547	306	554	410	560	603	570	281	256	276
12	413	280	432	287	503	395	587	619	572	282	257	276
13	350	306	376	287	483	383	627	633	570	301	256	275
14	346	285	347	481	449	375	657	627	569	309	255	276
15	345	292	415	544	455	368	640	607	436	295	249	276
16	434	287	516	442	424	359	649	627	321	294	245	276
17	568	268	524	390	407	351	635	625	316	291	244	278
18	557	289	517	445	395	350	612	608	311	289	244	276
19	555	292	525	565	380	356	600	591	306	289	239	311
20	439	292	529	560	375	376	627	579	300	289	236	282
21	303	297	525	561	373	407	723	585	297	287	236	281
22	547	305	522	572	370	405	646	583	295	287	234	281
23	552	272	527	554	362	505	594	574	290	281	234	281
24	556	281	525	570	353	466	570	577	287	276	234	281
25	550	277	523	562	348	517	561	574	285	274	239	252
26	451	303	523	567	348	693	578	574	281	273	243	208
27	302	293	522	555	354	701	581	580	280	274	239	233
28	297	291	522	528	369	597	627	588	278	273	239	280
29	276	291	527	543	428	563	743	567	279	273	237	278
30	281	270	520	529	---	519	843	578	276	270	238	282
31	296	---	517	514	---	495	---	575	---	256	237	---
TOTAL	13225	8634	14922	15552	11329	14170	18589	19445	12827	8902	7632	7889
MEAN	427	288	481	502	391	457	620	627	428	287	246	263
MAX	575	306	923	572	625	701	843	862	579	333	257	311
MIN	276	268	303	287	281	350	493	567	276	256	234	208
AC-FT	26230	17130	29600	30850	22470	28110	36870	38570	25440	17660	15140	15650
CAL YR 1987	TOTAL 134009		MEAN 367	MAX 923	MIN 240	AC-FT 265800						
WTR YR 1988	TOTAL 153116		MEAN 418	MAX 923	MIN 208	AC-FT 303700						

CLACKAMAS RIVER BASIN

169

14209500 CLACKAMAS RIVER ABOVE THREE LYNX CREEK, OR

LOCATION.--Lat 45°07'30", long 122°04'20", in NE1/4 sec.21, T.5 S., R.6 E., Clackamas County, Hydrologic Unit 17090011, Mount Hood National Forest, on right bank 0.1 mi upstream from Three Lynx Creek, 0.25 mi downstream from powerplant, 17 mi southeast of Estacada, and at mile 47.8.

DRAINAGE AREA.--479 mi².

PERIOD OF RECORD.--April 1909 to December 1913, October 1921 to current year. Prior to October 1911 (monthly discharge only), published in WSP 1318.

REVISED RECORDS.--WSP 1148: Drainage area. WSP 1248: 1910(M), 1912, 1948-50(M).

GAGE.--Water-stage recorder. Datum of gage is 1,091.69 ft above National Geodetic Vertical Datum of 1929 (levels by Portland General Electric Co.). Apr. 23, 1909, to Jan. 4, 1914, nonrecording gage at about same site and datum. Nov. 1, 1921, to Dec. 27, 1924, water-stage recorder at present site at datum 0.91 ft higher.

REMARKS.--No estimated daily discharges. Records excellent. Minor regulation since May 1956 by Timothy Lake (station 14208600).

AVERAGE DISCHARGE.--71 years, 1,987 ft³/s, 56.33 in/yr, 1,440,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 68,200 ft³/s Dec. 22, 1964, gage height, 21.7 ft, from floodmark, from rating curve extended above 34,100 ft³/s on basis of slope-area measurement at gage height 15.06 ft; minimum recorded discharge, 261 ft³/s Oct. 7, 1987; minimum daily, 410 ft³/s Sept. 4, 1986.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	0930	10,100	7.53	Jan. 14	2130	12,200	8.40
Dec. 10	0300	*21,300	*11.59				

Minimum discharge, 261 ft³/s Oct. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	605	582	2030	1180	2100	2730	2590	3040	2620	886	672	606
2	629	575	2920	1140	1780	2470	3180	2890	2810	889	671	612
3	617	570	7710	1110	1650	2490	6340	2950	3050	922	675	604
4	629	558	4080	1110	1510	2680	4820	2770	2840	930	660	600
5	625	555	2660	1100	1430	3170	3770	2500	2550	904	664	603
6	670	555	3390	1090	1340	2910	3790	2410	2320	931	665	606
7	593	555	3040	1080	1320	2520	4090	2320	2200	858	664	615
8	786	553	2270	1020	1530	2280	3420	2300	2110	845	667	610
9	795	555	7810	1370	3830	2840	3030	2520	2010	820	664	639
10	794	555	13800	4370	5350	2580	2820	2400	1960	810	662	643
11	788	574	5520	3510	4140	2170	2830	2620	1860	805	663	630
12	681	663	3440	2510	3360	2110	3050	2920	1770	810	661	628
13	622	796	2560	2150	3220	1880	3350	3140	1710	856	660	638
14	657	867	2130	7570	2810	1790	3480	3190	1660	846	664	631
15	532	696	1820	7980	2740	1750	3140	2860	1430	812	649	630
16	683	679	1800	4420	2460	1690	3090	2910	1270	797	650	633
17	787	685	1660	3160	2310	1560	2920	2800	1270	784	653	633
18	792	636	1560	2600	2270	1520	2710	2530	1230	774	643	635
19	821	624	1460	2350	2000	1520	2590	2340	1180	764	633	769
20	811	616	1410	2140	1910	1650	2820	2230	1130	756	632	723
21	592	647	1490	1970	1920	1980	3730	2180	1100	749	628	681
22	632	706	1420	1860	1960	2090	3350	2210	1070	738	625	653
23	783	851	1350	1810	1890	2890	2920	2110	1040	737	617	686
24	786	820	1290	1730	1790	2760	2650	1970	1010	729	617	699
25	789	907	1240	1670	1700	3510	2440	1890	993	714	625	678
26	710	774	1220	1650	1700	5090	2310	1810	962	713	622	660
27	556	722	1180	1690	1770	5620	2260	1810	994	703	620	698
28	560	680	1170	1880	1990	3950	2660	2300	910	702	619	702
29	560	656	1160	2780	2740	3390	3290	2410	918	702	616	665
30	560	755	1150	3090	---	2990	3350	2180	914	694	612	653
31	560	---	1200	2570	---	2680	---	2070	---	678	616	---
TOTAL	21005	19967	86940	75660	66520	81260	96790	76580	48891	24658	19989	19463
MEAN	678	666	2805	2441	2294	2621	3226	2470	1630	795	645	649
MAX	821	907	13800	7980	5350	5620	6340	3190	3050	931	675	769
MIN	532	553	1150	1020	1320	1520	2260	1810	910	678	612	600
AC-FT	41660	39600	172400	150100	131900	161200	192000	151900	96980	48910	39650	38600
CFSM	1.41	1.39	5.85	5.10	4.79	5.47	6.74	5.16	3.40	1.66	1.35	1.35
IN.	1.63	1.55	6.75	5.88	5.17	6.31	7.52	5.95	3.80	1.91	1.55	1.51

CAL YR 1987	TOTAL 532439	MEAN 1459	MAX 13800	MIN 532	AC-FT 1056000	CFSM 3.05	IN. 41.35
WTR YR 1988	TOTAL 637723	MEAN 1742	MAX 13800	MIN 532	AC-FT 1265000	CFSM 3.64	IN. 49.53

CLACKAMAS RIVER BASIN

14210000 CLACKAMAS RIVER AT ESTACADA, OR

LOCATION.--Lat 45°18'00", long 122°21'10", in NE 1/4 sec.19, T.3 S., R.4 E., Clackamas County, Hydrologic Unit 17090011, on left bank 0.2 mi downstream from River Mill Dam, 1.5 mi northwest of Estacada, and at mile 23.1.

DRAINAGE AREA.--671 mi².

PERIOD OF RECORD.--April 1908 to current year. Monthly discharge only April 1908, published in WSP 1318. Published as "near Cazadero" January 1909 to September 1957.

REVISED RECORDS.--WSP 1248: 1908-9, 1910(M), 1916, 1917(M), 1922(M), 1923. WSP 1288: Drainage area (former site). WSP 1638: 1919(M).

GAGE.--Water-stage recorder. Datum of gage is 296.93 ft above National Geodetic Vertical Datum of 1929 (levels by Portland General Electric Co.). See WSP 1738 for history of changes prior to Oct. 1, 1957. Oct. 1, 1957, to Feb. 16, 1965, water-stage recorder at same site at datum 2.00 ft higher.

REMARKS.--Records good. Large diurnal fluctuations and some regulation caused by powerplants at River Mill Dam and, since 1958, North Fork Dam. Minor regulation since 1956 by Timothy Lake (station 14208600). Two small diversions upstream from station for Oregon City and Estacada municipal water supply.

AVERAGE DISCHARGE.--80 years, 2,749 ft³/s, 55.64 in/yr, 1,992,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 86,900 ft³/s Dec. 22, 1964, gage height, 18.36 ft; minimum discharge, 50 ft³/s Mar. 10, 1961, from rating curve extended below 260 ft³/s; minimum daily, 285 ft³/s Oct. 4, 5, 1958, caused by filling of North Fork dam forebay.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 15,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	1200	16,000	7.60	Dec. 24	1000	26,600	9.99
Dec. 10	0500	*34,800	*11.46	Jan. 14	2230	20,500	8.71

Minimum discharge observed, 590 ft³/s Nov. 6, but may have been less Oct. 22 or during period Nov. 4-8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	683	625	2530	1550	2910	3840	3690	4270	3850	1190	797	690
2	668	646	5160	1460	2550	3160	4400	3990	4120	1190	793	674
3	692	664	11100	1430	2330	3320	9010	4130	4340	1240	784	658
4	684	e644	6720	1390	2180	3430	7480	3830	3940	1240	778	675
5	699	e615	4230	1370	2020	4200	5740	3390	3470	1170	786	672
6	714	e590	4730	1340	1910	3750	5480	3280	3150	1290	794	671
7	683	e590	4450	1330	1880	3300	6390	3130	3020	1130	767	681
8	723	e616	3080	1290	2260	3070	5440	3020	2930	1130	769	690
9	896	628	9260	1980	5750	4080	4480	3350	2860	1060	771	670
10	878	631	22300	7910	9480	3770	3990	3130	2760	1030	777	702
11	845	665	8620	6680	6860	2990	3890	3320	2640	1070	735	672
12	733	800	5280	4200	5170	2980	4060	3730	2460	1120	771	748
13	694	1010	3620	3640	4680	2680	4280	4010	2360	1040	758	702
14	690	1240	2960	11100	3810	2570	4770	4170	2270	1010	765	692
15	669	896	2580	13500	3840	2420	4150	3680	2070	1020	764	704
16	645	818	2400	7310	3580	2430	4010	3800	1820	1020	761	692
17	837	860	2240	5010	3510	2200	3810	3810	1800	1000	715	703
18	869	732	2090	3830	2940	2120	3490	3470	1760	945	751	701
19	896	753	1960	3180	2660	2130	3300	3150	1660	935	724	1150
20	868	741	1830	2970	2790	2190	3690	3030	1570	931	702	864
21	732	757	2150	2680	2750	2610	5950	2890	1470	913	720	783
22	e628	798	2010	2540	2740	3080	5650	2920	1470	897	727	740
23	779	1210	1880	2700	2680	4140	4790	2800	1450	919	677	737
24	852	1030	2250	2490	2450	4100	3890	2660	1380	878	703	772
25	851	1310	1680	2450	2340	5290	3450	2510	1390	861	679	781
26	847	1020	1650	2380	2330	7840	3200	2320	1410	843	725	755
27	641	886	1550	2480	2420	9400	3090	2360	1260	802	701	806
28	626	815	1580	2870	2600	6350	3460	3000	1210	817	691	817
29	639	806	1470	3990	3470	5520	4190	3240	1290	813	690	789
30	637	781	1500	4490	---	4430	4810	2920	1240	823	696	742
31	623	---	1550	3610	---	3890	---	2880	---	816	705	---
TOTAL	22921	24177	126410	115150	96890	117280	138030	102190	68420	31143	22976	22133
MEAN	739	806	4078	3715	3341	3783	4601	3296	2281	1005	741	738
MAX	896	1310	22300	13500	9480	9400	9010	4270	4340	1290	797	1150
MIN	623	590	1470	1290	1880	2120	3090	2320	1210	802	677	658
AC-FT	45460	47960	250700	228400	192200	232600	273800	202700	135700	61770	45570	43900
CFSM	1.10	1.20	6.08	5.54	4.98	5.64	6.86	4.91	3.40	1.50	1.10	1.10
IN.	1.27	1.34	7.01	6.38	5.37	6.50	7.65	5.67	3.79	1.73	1.27	1.23

CAL YR 1987 TOTAL 710552 MEAN 1947 MAX 22300 MIN 590 AC-FT 1409000 CFSM 2.90 IN. 39.39
WTR YR 1988 TOTAL 887720 MEAN 2425 MAX 22300 MIN 590 AC-FT 1761000 CFSM 3.61 IN. 49.21

e Estimated

CLACKAMAS RIVER BASIN

171

14211000 CLACKAMAS RIVER NEAR CLACKAMAS, OR

LOCATION.--Lat 45°23'36", long 122°31'54", in NE 1/4 SW 1/4 sec.14, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090011, on left bank 0.8 mi upstream from Johnson Creek, 2.1 mi southeast of Clackamas, and at mile 4.8.

DRAINAGE.--930 mi³ at gage, 936 mi³ at Gladstone Bridge 3.6 mi downstream, where high-flow discharge measurements are made.

PERIOD OF RECORD.--September 1911 to April 1912 published as "at Park Place" (daily discharge), October 1962 to September 1983 (daily discharge), May 1988 to September 1988 (gage height).

GAGE.--Water-stage recorder. Datum of gage is 50.68 ft National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Sept. 15, 1911, to Apr. 22, 1912, nonrecording gage at site 3.6 mi downstream at different datum. Oct. 1, 1962, to Sept. 10, 1969, water-stage recorder at site 300 ft downstream at present datum.

REMARKS.--Diurnal fluctuations and some regulation by powerplants and several storage dams upstream, operated by Portland General Electric Co. Small diversions above station for Estacada municipal water supply. All records given herein are for gage site.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 27.0 ft Dec. 22, 1964, from floodmarks.

EXTREMES FOR CURRENT PERIOD.--Maximum gage height recorded, 5.24 ft June 3, but may have been higher during period of no gage-height record July 19 to Aug. 2; minimum recorded, 1.61 ft Sept. 2, but may have been less during period of no gage-height record July 19 to Aug. 3.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	4.67	2.54	---	1.81
2	---	---	---	---	---	---	---	---	5.04	2.49	---	1.77
3	---	---	---	---	---	---	---	---	5.16	2.61	---	1.73
4	---	---	---	---	---	---	---	---	4.95	2.57	1.92	1.77
5	---	---	---	---	---	---	---	---	4.63	2.50	1.87	1.81
6	---	---	---	---	---	---	---	---	4.39	2.64	1.92	1.81
7	---	---	---	---	---	---	---	---	4.22	2.55	1.87	1.71
8	---	---	---	---	---	---	---	---	4.13	2.46	1.88	1.77
9	---	---	---	---	---	---	---	---	4.03	2.40	1.87	1.73
10	---	---	---	---	---	---	---	---	4.03	2.40	1.91	1.77
11	---	---	---	---	---	---	---	---	3.87	2.38	1.90	1.71
12	---	---	---	---	---	---	---	---	3.73	2.42	1.92	1.82
13	---	---	---	---	---	---	---	---	3.62	2.43	1.91	1.80
14	---	---	---	---	---	---	---	---	3.55	2.41	1.90	1.82
15	---	---	---	---	---	---	---	---	3.43	2.35	1.96	1.77
16	---	---	---	---	---	---	---	---	3.16	2.39	1.93	1.78
17	---	---	---	---	---	---	---	---	3.14	2.33	1.83	1.78
18	---	---	---	---	---	---	---	---	3.09	2.28	1.87	1.81
19	---	---	---	---	---	---	---	---	3.02	---	1.88	2.38
20	---	---	---	---	---	---	---	---	2.96	---	1.79	2.34
21	---	---	---	---	---	---	---	---	2.86	---	1.84	1.98
22	---	---	---	---	---	---	---	---	2.82	---	1.77	1.98
23	---	---	---	---	---	---	---	---	2.81	---	1.79	1.93
24	---	---	---	---	---	---	---	---	3.78	2.75	1.79	1.96
25	---	---	---	---	---	---	---	---	3.69	2.72	1.78	1.95
26	---	---	---	---	---	---	---	3.55	2.79	---	1.80	1.93
27	---	---	---	---	---	---	---	3.57	2.64	---	1.85	2.01
28	---	---	---	---	---	---	---	3.92	2.63	---	1.79	2.09
29	---	---	---	---	---	---	---	4.32	2.64	---	1.78	1.97
30	---	---	---	---	---	---	---	4.09	2.58	---	1.79	1.91
31	---	---	---	---	---	---	---	3.96	---	---	1.83	---
MEAN	---	---	---	---	---	---	---	---	3.54	---	---	1.88
MAX	---	---	---	---	---	---	---	---	5.16	---	---	2.38
MIN	---	---	---	---	---	---	---	---	2.58	---	---	1.71

LOWER WILLAMETTE RIVER BASIN

14211500 JOHNSON CREEK AT SYCAMORE, OR

LOCATION.--Lat 45°28'40", long 122°30'24", in lot 2, SW 1/4 sec.13, T.1 S., R.2 E., Multnomah County, Hydrologic Unit 17090012, on right bank 0.3 mi southwest of Sycamore station, 2.5 mi east of city limits of Portland, and at mile 10.2.

DRAINAGE AREA.--26.5 mi².

PERIOD OF RECORD.--July 1940 to current year.

REVISED RECORDS.--WSP 1318: 1941(M). WDR OR-75-1: 1974. WDR OR-77-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 228.47 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good except for those below 10 ft³/s, which are poor. Slight diurnal fluctuation at low flow caused by recreational ponds upstream. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--48 years, 54.1 ft³/s, 27.72 in/yr, 39,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,620 ft³/s Dec. 22, 1964, gage height, 14.68 ft; minimum discharge, 0.08 ft³/s Aug. 21, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 9	2300	748	9.65	Apr. 21	2130	558	8.14
Jan. 15	0130	*1,010	*10.92				

Minimum discharge, 0.40 ft³/s Sept. 5, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	13	56	24	82	16	60	108	53	2.8	1.5	.87
2	1.8	12	77	20	60	14	88	147	49	6.5	1.5	1.0
3	2.2	9.9	255	18	49	17	132	144	69	6.3	1.3	1.3
4	2.9	12	106	16	40	30	110	119	49	5.6	1.5	10
5	3.6	9.8	67	14	35	42	83	81	38	15	1.5	1.5
6	3.9	9.7	119	13	30	58	160	72	34	7.5	1.3	.55
7	3.7	9.1	62	13	29	41	170	60	31	4.0	6.4	.81
8	3.5	9.0	38	27	53	66	125	46	30	3.0	1.2	.90
9	2.8	8.6	285	109	186	98	85	39	32	2.6	1.4	.83
10	2.4	8.5	394	302	327	72	63	33	37	2.4	1.4	.66
11	2.3	8.9	121	331	160	57	49	27	26	8.1	1.0	.69
12	2.9	9.2	74	145	104	45	40	24	22	2.4	1.1	.63
13	3.6	12	53	174	74	37	33	31	16	3.5	1.1	.59
14	3.9	9.0	44	583	63	32	36	25	15	3.2	10	.56
15	3.9	3.9	37	623	56	27	27	20	10	2.5	2.5	1.0
16	5.2	8.2	33	234	59	23	26	41	8.5	2.7	1.6	.50
17	5.7	2.5	29	158	50	20	24	30	7.8	2.1	1.6	.51
18	5.8	2.1	24	131	50	18	21	27	8.6	1.9	1.4	.62
19	6.9	2.7	21	108	41	16	18	22	6.8	2.4	1.2	27
20	6.5	4.5	21	100	37	21	34	19	5.7	1.9	.92	6.4
21	6.1	4.6	25	78	33	22	411	16	5.5	1.7	7.3	2.4
22	6.1	7.6	34	79	30	21	325	16	4.6	1.7	.83	1.6
23	6.4	3.0	32	76	26	37	145	19	7.3	1.7	.86	1.6
24	5.0	6.0	28	61	27	82	104	12	4.0	1.8	.93	2.6
25	4.6	4.8	26	51	20	208	89	8.7	3.7	1.8	.77	1.5
26	5.8	3.2	23	44	18	230	62	7.9	8.6	1.6	.87	.96
27	6.8	3.4	19	39	16	178	49	7.7	14	1.7	.92	4.9
28	5.6	4.1	16	38	15	115	54	22	3.4	1.6	.92	1.7
29	6.0	5.5	15	84	21	148	104	25	10	1.5	.86	1.3
30	6.3	8.4	15	83	---	101	124	20	4.5	1.7	.98	.87
31	8.5	---	25	119	---	75	---	17	---	6.2	.93	---
TOTAL	142.2	215.2	2174	3895	1791	1967	2851	1286.3	614.0	109.4	57.59	76.35
MEAN	4.59	7.17	70.1	126	61.8	63.5	95.0	41.5	20.5	3.53	1.86	2.54
MAX	8.5	13	394	623	327	230	411	147	69	15	10	27
MIN	1.5	2.1	15	13	15	14	18	7.7	3.4	1.5	.77	.50
AC-FT	282	427	4310	7730	3550	3900	5650	2550	1220	217	114	151
CFSM	.17	.27	2.65	4.74	2.33	2.39	3.59	1.57	.77	.13	.07	.10
IN.	.20	.30	3.05	5.47	2.51	2.76	4.00	1.81	.86	.15	.08	.11

CAL YR 1987 TOTAL 13458.63 MEAN 36.9 MAX 931 MIN .85 AC-FT 26700 CFSM 1.39 IN. 18.89
WTR YR 1988 TOTAL 15179.04 MEAN 41.5 MAX 623 MIN .50 AC-FT 30110 CFSM 1.57 IN. 21.31

LOWER WILLAMETTE RIVER BASIN

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14211720 WILLAMETTE RIVER AT PORTLAND, OR
(National stream quality accounting network station)

LOCATION.--Lat 45°31'07", long 122°40'00", in NW 1/4 NE 1/4 sec.3, T.1 S., R.1 E., Multnomah County, Hydrologic Unit 17090012, in pier at east end of drawspan, on upstream side of Morrison Bridge, in Portland, and at mile 12.8.

DRAINAGE AREA.--11,100 mi², approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to current year. Gage-height records collected in this vicinity since 1879 are in reports of the National Weather Service.

GAGE.--Acoustic velocity meter (AVM) with water-stage and velocity-index recorder. Datum of gage is 1.55 ft above National Geodetic Vertical Datum of 1929 (levels by National Weather Service).

REMARKS.--Water-discharge records fair except for estimated daily discharges below 50,000 ft³/s, which are poor. Flow regulated by many reservoirs upstream. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--16 years, 32,910 ft³/s, 23,840,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 283,000 ft³/s Jan. 18, 1974; maximum gage height, 23.84 ft Jan. 18, 1974; minimum daily discharge, 4,200 ft³/s July 10, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of June 7, 1894, and June 1, 1948, reached stages of 33.0 ft and 30.0 ft, respectively, from information by National Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 170,000 ft³/s Jan. 16; maximum gage height, 11.27 ft Jan. 15; minimum daily discharge, 6,880 ft³/s Nov. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e9150	9890	11300	29000	40000	19700	e38000	33000	e33000	11100	6980	e8000
2	e9120	9080	21800	28800	35400	19200	e35000	33900	e43000	10600	7160	e7900
3	e9170	8140	44300	25200	33400	19900	e42000	34900	e56000	10300	e7500	e7900
4	e9220	7670	64700	23200	30000	19200	e50000	41500	54800	10500	e7700	e8000
5	e9220	8280	70400	22300	27300	22400	e52000	45000	50300	10400	7710	e8000
6	e9180	7500	63700	20900	25000	25100	e53000	42900	42800	9790	7770	e8100
7	e9080	8170	65000	e20600	23800	26900	e59000	40600	37800	e9860	e7600	e8300
8	e9100	8120	65700	e20000	23200	27000	e56000	39900	e39000	e9890	e7400	e8500
9	8600	6880	65200	e35000	29000	30300	e51000	39800	e40000	e9770	e7300	e8650
10	7690	7650	106000	e66000	46700	34900	e45000	38800	e37000	e9830	e7200	8770
11	9340	7430	e130000	e114000	56100	35300	e41000	36700	e33000	9650	7000	8910
12	9170	7280	e110000	e120000	52500	33300	e37500	35400	e30000	8860	7330	9580
13	8730	9370	94300	e110000	47100	28800	34400	35400	e26500	9040	7460	e9200
14	8920	12200	72000	e115000	41900	23900	32500	38100	e24500	9440	7890	e8800
15	8640	13400	60300	e145000	38200	22700	31300	40000	21700	9570	8130	8710
16	9350	12400	51600	e170000	35400	21200	31600	39800	19700	10200	8070	9720
17	10700	11500	46100	e142000	34000	19900	29500	40200	18200	e10000	8210	9320
18	10000	11200	e43800	e125000	31800	18000	28000	40100	17400	e9700	e8200	e10000
19	8570	10200	e40200	e112000	29100	17600	26200	37700	17300	e9300	e8200	10700
20	8360	9710	36500	92600	26300	16900	25000	33400	e17200	e9300	e8150	e11500
21	8630	9570	34000	78000	24400	16700	33600	29600	e16800	e8950	e8010	e12800
22	8990	9400	35400	63300	23100	17900	44900	27500	e16000	e8600	e8000	12600
23	8430	10900	37400	55100	22100	19400	49300	24900	e15300	e8600	e7900	11000
24	9500	11700	37600	49500	21600	23200	44600	23300	e14800	e8200	e7800	e10400
25	9240	13100	35600	44700	20900	34200	38400	21600	e14200	e8000	e7810	9910
26	8420	14200	32500	41800	19700	53400	33300	20900	13300	e8200	e7820	9800
27	8680	14400	29900	e40000	18800	61200	28300	19500	12200	e7850	e7900	10900
28	8730	13500	27200	e36000	18700	57000	26400	21000	11800	e7500	e7980	12300
29	8240	13300	26800	e37000	19100	49700	26900	23100	10800	e7500	e8000	11800
30	7450	13000	24200	39000	---	44500	30100	24900	e11000	7310	e8000	11400
31	8760	---	25000	42600	---	e41000	---	24200	---	8040	e8020	---
TOTAL	276380	309140	1608500	2063600	894600	900400	1153800	1027600	795400	285850	240200	291470
MEAN	8915	10300	51890	66570	30850	29050	38460	33150	26510	9221	7748	9716
MAX	10700	14400	130000	170000	56100	61200	59000	45000	56000	11100	8210	12800
MIN	7450	6880	11300	20000	18700	16700	25000	19500	10800	7310	6980	7900
AC-FT	548200	613200	3190000	4093000	1774000	1786000	2289000	2038000	1578000	567000	476400	578100

CAL YR 1987 TOTAL 8829930 MEAN 24190 MAX 164000 MIN 6700 AC-FT 17510000
WTR YR 1988 TOTAL 9846940 MEAN 26900 MAX 170000 MIN 6880 AC-FT 19530000

e Estimated

LOWER WILLAMETTE RIVER BASIN

14211720 WILLAMETTE RIVER AT PORTLAND, OR--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: December 1975 to September 1981.

WATER TEMPERATURE: November 1975 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	
NOV 05...	1140	8280	85	7.5	12.5	9.2	87	250	20	27	0	6.9	
JAN 27...	1025	40000	73	7.5	6.0	12.9	103	65	220	27	2	6.9	
MAR 30...	1130	44500	63	7.3	8.5	12.3	104	120	70	20	0	5.2	
MAY 24...	1205	23300	68	7.7	15.5	10.2	102	K18	K3	23	0	6.0	
JUL 13...	1135	9040	84	7.6	19.5	8.3	91	150	K8	27	0	6.9	
AUG 24...	1149	7800	90	7.3	20.0	7.7	85	K1100	K4	26	0	6.6	
DATE		MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WATER DIS IT FIELD (MG/L AS CACO3)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)
NOV 05...	2.3	7.7	1.2	30	36	0	6.0	6.3	0.1	0.10	0.2	0.3	
JAN 27...	2.3	4.0	0.8	24	29	0	6.1	6.7	0.1	0.05	1.0	0.2	
MAR 30...	1.8	4.2	0.7	19	23	0	6.7	3.2	0.1	0.04	0.6	<0.2	
MAY 24...	2.0	4.4	0.7	25	31	0	3.9	3.5	0.3	0.02	0.3	0.7	
JUL 13...	2.4	6.6	0.9	30	36	0	5.7	4.9	0.2	0.06	0.3	<0.2	
AUG 24...	2.3	7.6	1.0	30	36	0	6.4	5.3	<0.1	0.07	0.3	0.7	
DATE		PHOS-PHOROUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS TOTAL (MG/L AS P)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	TUR-BID-ITY (NTU)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	
NOV 05...	0.09	0.10	0.11	16	66	67	1480	3.6	9	201	97		
JAN 27...	0.03	0.05	0.08	17	57	63	6160	7.7	13	1400	100		
MAR 30...	0.02	0.04	0.07	14	55	51	6610	9.1	15	1800	99		
MAY 24...	0.03	0.04	0.05	16	51	54	3210	3.3	24	1510	80		
JUL 13...	0.04	0.06	0.08	17	63	65	1540	3.5	12	293	97		
AUG 24...	0.09	0.10	0.10	16	60	65	1260	4.5	10	211	97		

K - Results based on colony count outside acceptable range (non-ideal colony count).

LOWER WILLAMETTE RIVER BASIN

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14211720 WILLAMETTE RIVER AT PORTLAND, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
NOV 05...	30	<1	6	<0.5	<1	5	<3	6	55	<5
JAN 27...	--	--	--	--	--	--	--	--	--	--
MAR 30...	90	<1	6	<0.5	<1	<1	<3	4	110	<5
MAY 24...	20	<1	6	<0.5	<1	<1	<3	6	69	<5
JUL 13...	<10	<1	7	<0.5	<1	<1	<3	7	45	<5
AUG 24...	--	--	--	--	--	--	--	--	--	--

DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 05...	<4	8	0.1	<10	1	<1	1	42	<6	6
JAN 27...	--	--	--	--	--	--	--	--	--	--
MAR 30...	<4	9	<0.1	<10	3	<1	<1	33	<6	4
MAY 24...	<4	16	<0.1	<10	<1	<1	<1	38	<6	21
JUL 13...	<4	8	<0.1	<10	4	<1	<1	44	<6	7
AUG 24...	--	--	--	--	--	--	--	--	--	--

DATE	GROSS ALPHA, DIS- SOLVED (UG/L AS U-NAT)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT)	GROSS BETA, DIS- SOLVED (PCI/L AS CS-137)	GROSS BETA, DIS- SOLVED (PCI/L AS YT-90)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137)	GROSS BETA, SUSP. TOTAL (PCI/L AS YT-90)	RADIUM 226, DIS- SOLVED, RADON METHOD (PCI/L)	URANIUM NATURAL DIS- SOLVED (UG/L AS U)
NOV 05...	--	--	--	--	--	--	--	--
JAN 27...	--	--	--	--	--	--	--	--
MAR 30...	<0.4	<0.4	1.0	0.9	0.5	0.5	0.03	<0.01
MAY 24...	--	--	--	--	--	--	--	--
JUL 13...	<0.4	<0.4	1.0	0.9	0.5	0.5	<0.02	0.01
AUG 24...	--	--	--	--	--	--	--	--

COWLITZ RIVER BASIN

14245150 COWLITZ RIVER AT LONGVIEW, WA

LOCATION.--Lat 46°06'13", long 122°53'30", in NE 1/4 SE 1/4 sec.11, T.7 N., R.2 W., Cowlitz County, Hydrologic Unit 17080005, near left bank on downstream side of railroad bridge, 0.3 mi downstream from Cowman River, 3.2 mi southeast of Longview City Hall, and at mile 1.0.

DRAINAGE AREA.--2,480 mi², at mouth, 1.0 mi downstream.

PERIOD OF RECORD.--May 1984 to current year (gage heights only). Maximum and minimum gage heights only October 1985 to September 1986.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Reference to Columbia River Datum in WDR-OR-84-2, WDR-OR-85-2, WDR-WA-84-1, and WDR-WA-85-1 is incorrect.

REMARKS.--Flow regulated by many reservoirs upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height recorded, 11.53 ft Mar. 10, 1986; minimum recorded, 2.03 ft Aug. 31, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum gage height recorded, 10.38 ft Jan. 16; minimum recorded, 2.03 ft Aug. 31.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	5.85	2.68	5.51	2.64	7.96	3.65	6.77	4.81	7.24	5.05	6.17	3.85
2	5.52	2.65	5.45	2.68	8.29	4.53	6.53	4.81	7.23	5.03	6.37	3.86
3	5.55	2.55	5.58	2.63	8.57	5.24	6.66	4.82	7.02	4.95	6.46	3.84
4	5.48	2.55	5.99	2.61	8.93	5.54	7.26	4.90	6.62	4.84	6.70	3.86
5	5.38	2.55	6.25	2.62	8.74	5.27	7.19	4.97	6.53	4.77	6.58	3.93
6	6.38	2.71	6.57	2.65	9.32	5.27	6.92	4.94	6.30	4.73	6.96	4.07
7	7.13	3.01	6.46	2.63	8.70	5.82	6.93	4.90	6.40	4.70	6.55	4.11
8	7.11	3.16	6.02	2.58	8.70	6.01	6.87	4.91	6.30	4.74	6.75	4.08
9	6.85	3.09	5.84	2.52	9.64	5.79	6.53	4.87	6.73	4.89	6.88	4.50
10	6.48	3.01	5.46	2.58	9.99	8.18	6.69	4.76	6.99	5.48	6.43	4.85
11	6.02	2.67	5.14	2.60	8.73	7.42	7.83	5.12	7.12	5.69	6.10	4.52
12	5.57	2.60	4.94	2.66	7.67	6.74	7.33	5.62	6.89	5.37	5.83	4.24
13	5.16	2.57	5.56	2.72	6.85	6.02	7.84	5.72	6.84	5.22	5.57	4.01
14	4.78	2.62	4.80	2.94	7.12	5.75	9.34	6.32	7.03	5.20	5.90	3.86
15	4.46	2.65	4.84	2.95	7.02	5.48	10.32	8.23	7.70	5.46	6.38	3.77
16	4.42	2.58	5.17	2.83	7.30	5.24	10.38	7.74	7.61	5.37	6.43	3.73
17	4.47	2.55	5.34	2.80	7.49	5.14	9.69	7.01	8.12	5.27	6.56	3.65
18	4.32	2.59	5.86	2.76	7.75	5.05	9.49	6.85	7.72	5.15	6.46	3.58
19	4.57	2.62	6.18	2.79	7.89	4.95	9.33	6.52	7.19	4.95	6.58	3.56
20	5.77	2.69	7.04	2.96	7.92	4.88	9.26	6.42	7.05	4.76	7.04	3.57
21	6.14	2.83	7.12	2.89	8.10	4.86	8.31	6.13	6.98	4.65	6.88	3.64
22	6.52	3.03	7.52	2.87	8.29	4.92	7.71	5.94	6.74	4.54	6.96	3.69
23	6.72	2.90	7.36	3.28	7.61	4.93	7.59	5.70	6.64	4.23	7.46	4.31
24	6.44	2.97	7.29	3.14	7.13	5.18	7.04	5.42	6.39	4.02	7.09	5.55
25	5.98	2.71	6.31	3.26	6.40	5.06	6.96	5.22	5.80	3.91	7.21	6.20
26	6.00	2.63	5.83	3.25	6.18	4.88	6.90	5.12	5.49	3.84	7.28	6.44
27	6.11	2.68	5.50	3.10	6.25	4.65	6.76	5.01	5.45	3.78	7.15	5.90
28	5.93	2.74	5.38	2.97	6.50	4.56	7.02	5.02	5.73	3.76	6.46	5.55
29	5.50	2.69	5.37	2.90	6.79	4.63	7.19	5.36	5.95	3.84	7.04	5.79
30	5.33	2.57	5.68	2.88	7.14	4.75	7.00	5.12	---	---	7.02	5.70
31	5.40	2.63	---	---	6.98	4.71	7.23	5.07	---	---	6.71	5.26
MONTH	7.13	2.55	7.52	2.52	9.99	3.65	10.38	4.76	8.12	3.76	7.46	3.56

COWLITZ RIVER BASIN

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14245150 COWLITZ RIVER AT LONGVIEW, WA--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	6.62	5.31	7.25	4.37	---	---	6.77	3.47	5.65	2.94	6.51	2.19
2	7.00	5.47	7.30	4.37	---	---	6.68	3.39	5.71	2.94	---	---
3	8.00	5.86	7.67	4.74	---	---	6.26	3.46	5.55	2.93	---	---
4	8.33	6.09	7.99	4.90	---	---	6.06	3.38	5.75	2.94	---	---
5	8.05	6.13	8.02	4.91	---	---	5.70	3.34	5.55	2.97	---	---
6	8.62	6.50	7.71	4.66	---	---	5.78	3.36	5.20	2.89	---	---
7	8.29	6.83	7.03	4.53	---	---	6.01	3.31	5.16	2.87	---	---
8	7.53	6.48	6.59	4.41	---	---	6.00	3.31	5.27	2.89	---	---
9	6.92	5.87	6.35	4.27	7.56	5.10	6.01	3.09	5.46	2.89	---	---
10	6.48	5.49	6.65	4.31	7.75	5.20	5.91	2.94	5.61	2.86	---	---
11	6.44	5.37	6.92	4.63	7.70	4.82	6.17	2.93	5.78	2.86	---	---
12	6.65	5.19	7.75	5.09	7.27	4.67	6.22	2.93	6.00	2.88	---	---
13	6.81	5.09	8.28	5.25	7.02	4.60	6.75	3.10	6.06	2.89	---	---
14	7.07	5.13	8.62	5.24	7.06	4.51	6.69	3.10	5.65	2.85	---	---
15	7.56	5.05	8.86	5.28	6.92	4.35	6.58	3.10	5.26	2.83	---	---
16	7.86	4.67	9.07	5.28	6.99	4.10	6.21	2.95	5.44	2.95	---	---
17	7.94	4.58	8.88	5.91	6.81	4.05	5.31	2.89	5.49	2.97	---	---
18	7.77	4.42	9.02	6.80	6.62	4.38	4.82	2.77	4.96	2.87	---	---
19	7.71	4.34	8.52	6.54	5.95	4.50	4.76	2.74	4.96	2.85	---	---
20	7.58	4.33	7.81	6.16	5.65	4.42	5.04	2.74	4.83	2.79	---	---
21	7.20	4.29	7.20	5.87	5.66	4.78	4.89	2.69	4.74	2.75	---	---
22	6.67	4.30	6.76	5.71	5.75	4.74	5.02	2.68	4.98	2.76	---	---
23	5.96	4.22	6.62	5.82	5.89	4.69	4.82	2.64	5.61	2.73	---	---
24	5.44	4.19	6.87	5.96	6.30	4.64	4.93	2.60	5.83	2.71	---	---
25	5.39	4.12	7.10	5.95	6.33	4.62	5.34	2.60	6.35	2.67	---	---
26	5.55	4.06	7.18	5.46	6.40	4.60	5.68	2.61	6.54	2.67	---	---
27	6.01	4.08	7.26	5.36	6.47	4.58	6.26	2.59	6.56	2.61	---	---
28	6.54	4.07	7.78	5.43	6.76	3.86	6.15	2.56	6.29	2.41	---	---
29	6.95	4.18	7.86	5.58	6.81	3.74	6.17	2.56	6.30	2.32	---	---
30	7.14	4.37	---	---	7.11	3.67	6.21	2.70	6.60	2.17	---	---
31	---	---	---	---	---	---	6.08	2.94	6.45	2.03	---	---
MONTH	8.62	4.06	---	---	---	---	6.77	2.56	6.60	2.03	---	---

LOWER COLUMBIA RIVER BASIN

14245300 COLUMBIA RIVER AT LONGVIEW, WA

LOCATION.--Lat 46°06'22", long 122°57'14", in SE 1/4 NE 1/4 sec.8, T.7 N., R.2 W., Cowlitz County, Hydrologic Unit 17080003, on right bank, at the Port of Longview, 2,000 ft upstream from Longview Bridge, 2.1 mi downstream from Cowlitz River and at mile 66.2.

DRAINAGE AREA.--256,700 mi², approximately.

PERIOD OF RECORD.--November 1983 to current year (gage heights only). Gage-height records collected at site on opposite bank, at different datum, published as "at Rainier" (station 14245295) November 1971 to May 1981. Maximum and minimum gage heights only October 1985 to September 1987.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Reference to Columbia River Datum in WDR-OR-84-2, WDR-OR-85-2, WDR-WA-84-1, and WDR-WA-85-1 is incorrect.

REMARKS.--Flow regulated by many reservoirs upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 16.52 ft Jan. 19, 1974; minimum recorded, 0.15 ft Aug. 22, 1988.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 9.76 ft Jan. 16; minimum recorded, 0.15 ft Aug. 22.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	5.83	1.22	5.57	.94	7.96	2.97	---	---	6.92	2.46	6.07	1.30
2	5.57	1.17	5.49	.87	---	---	---	---	6.90	2.61	6.27	1.73
3	5.55	.81	5.67	.86	---	---	---	---	6.67	2.27	6.35	1.65
4	5.52	.67	6.06	1.07	---	---	---	---	6.18	2.16	6.61	1.83
5	5.41	.59	6.32	1.24	---	---	6.98	2.18	6.11	2.02	6.41	2.22
6	6.42	1.29	6.65	1.38	---	---	6.66	2.18	5.82	1.82	6.86	2.28
7	7.23	1.94	6.52	1.13	---	---	6.67	1.98	5.99	1.72	6.37	1.99
8	7.16	2.06	6.09	1.05	---	---	6.61	2.30	5.85	1.65	6.61	2.19
9	6.91	1.94	5.89	.94	---	---	6.15	2.47	6.28	2.06	6.61	2.22
10	6.54	1.79	5.47	1.05	---	---	6.40	2.27	6.24	2.46	5.85	1.68
11	6.09	1.23	5.10	.80	---	---	7.57	3.43	6.35	2.97	5.58	1.78
12	5.61	1.07	4.88	.79	---	---	6.89	3.90	6.25	2.42	5.41	1.29
13	5.11	1.02	---	---	---	---	7.49	4.48	6.22	1.62	5.21	.81
14	4.65	1.14	4.64	1.30	---	---	9.06	5.34	6.54	1.91	5.66	.99
15	4.23	1.23	4.73	.88	---	---	9.65	6.70	7.36	2.16	6.23	1.29
16	4.28	1.04	5.14	1.32	---	---	9.76	5.98	7.24	2.22	6.32	1.43
17	4.39	.92	5.26	1.07	---	---	9.14	4.97	7.91	2.62	6.46	1.56
18	4.20	.30	5.88	1.39	---	---	9.12	4.73	7.50	2.62	6.38	1.45
19	4.48	.26	6.22	1.41	---	---	8.91	4.27	6.93	2.43	6.52	1.52
20	5.78	1.15	7.10	1.92	---	---	9.04	4.17	6.73	2.09	7.04	1.68
21	6.16	1.60	7.21	1.68	---	---	7.94	4.06	6.75	1.77	6.89	1.89
22	6.57	1.59	7.59	1.85	---	---	7.26	3.60	6.52	1.75	6.93	1.98
23	6.76	1.56	7.39	1.98	---	---	7.18	3.14	6.41	2.07	7.45	2.87
24	6.52	1.67	7.33	1.83	---	---	6.57	2.48	6.22	1.94	6.52	2.48
25	6.07	1.17	6.29	1.72	---	---	6.54	2.17	5.54	1.46	6.09	3.42
26	6.05	.78	5.78	1.26	---	---	6.50	2.46	5.22	1.18	6.11	3.08
27	6.16	1.00	5.45	1.26	---	---	6.41	2.13	5.19	1.02	5.72	2.79
28	5.96	1.24	5.35	1.02	---	---	6.76	2.05	5.54	1.14	5.37	2.59
29	5.51	1.20	5.36	.76	---	---	6.79	1.98	5.78	1.20	6.25	2.93
30	5.32	.93	5.76	1.05	---	---	6.54	1.95	---	---	6.17	3.06
31	5.42	1.07	---	---	---	---	6.87	2.33	---	---	5.97	2.03
MONTH	7.23	.26	---	---	---	---	---	---	7.91	1.02	7.45	.81

LOWER COLUMBIA RIVER BASIN

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14245300 COLUMBIA RIVER AT LONGVIEW, WA--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	6.03	2.02	---	---	8.08	3.58	---	---	5.59	.45	6.28	1.59
2	6.43	2.03	---	---	8.34	4.13	---	---	5.68	.73	6.24	1.58
3	7.42	2.51	---	---	8.83	4.58	---	---	5.50	.63	5.48	1.77
4	7.84	3.25	---	---	8.38	4.49	---	---	5.69	.98	4.98	.87
5	7.53	3.17	---	---	7.58	3.92	---	---	5.49	1.35	4.92	.65
6	8.05	3.81	---	---	6.98	3.65	---	---	5.10	.82	5.00	.60
7	7.38	3.44	---	---	---	---	---	---	5.11	.41	5.44	1.12
8	---	---	---	---	---	---	---	---	5.16	.50	5.25	.58
9	---	---	---	---	---	---	---	---	5.37	.35	5.46	.95
10	---	---	---	---	---	---	---	---	5.54	.41	5.43	.80
11	---	---	6.79	3.34	---	---	---	---	5.69	.63	5.25	.84
12	---	---	7.54	3.97	---	---	---	---	5.93	.96	5.12	.63
13	---	---	8.07	4.10	---	---	---	---	5.99	1.17	5.33	.72
14	---	---	8.41	3.97	---	---	---	---	5.58	.62	5.78	1.05
15	---	---	8.70	4.09	---	---	---	---	5.17	.54	5.79	1.25
16	---	---	8.94	4.08	---	---	---	---	5.43	1.01	5.52	1.50
17	---	---	8.57	3.97	---	---	---	---	5.39	1.00	5.08	1.08
18	---	---	8.33	4.22	---	---	---	---	4.84	.68	4.93	.69
19	---	---	7.64	3.81	---	---	4.64	.28	4.79	.84	4.90	.92
20	---	---	6.90	3.37	---	---	4.96	.86	4.65	.81	5.01	.60
21	---	---	6.40	3.41	---	---	4.81	.78	4.57	.62	5.24	.57
22	---	---	6.01	3.00	---	---	4.93	1.00	4.85	.15	5.25	.59
23	---	---	5.30	2.12	---	---	4.74	.95	5.68	.20	5.60	.89
24	---	---	5.73	2.34	---	---	4.88	.36	5.77	.68	6.12	1.14
25	---	---	5.98	3.05	---	---	5.47	.17	6.33	1.09	6.43	1.40
26	---	---	6.25	3.25	---	---	5.63	.69	6.53	1.28	6.78	1.61
27	---	---	6.79	3.46	---	---	6.27	.84	6.55	1.17	7.06	1.89
28	---	---	7.48	3.55	---	---	6.16	.45	6.28	.95	6.43	1.39
29	---	---	7.53	2.87	---	---	6.19	.44	6.27	1.17	6.42	1.41
30	---	---	7.38	2.53	---	---	6.22	.63	6.58	1.34	5.83	1.40
31	---	---	7.59	2.71	---	---	6.06	.60	6.45	1.59	---	---
MONTH	---	---	---	---	---	---	---	---	6.58	.15	7.06	.57

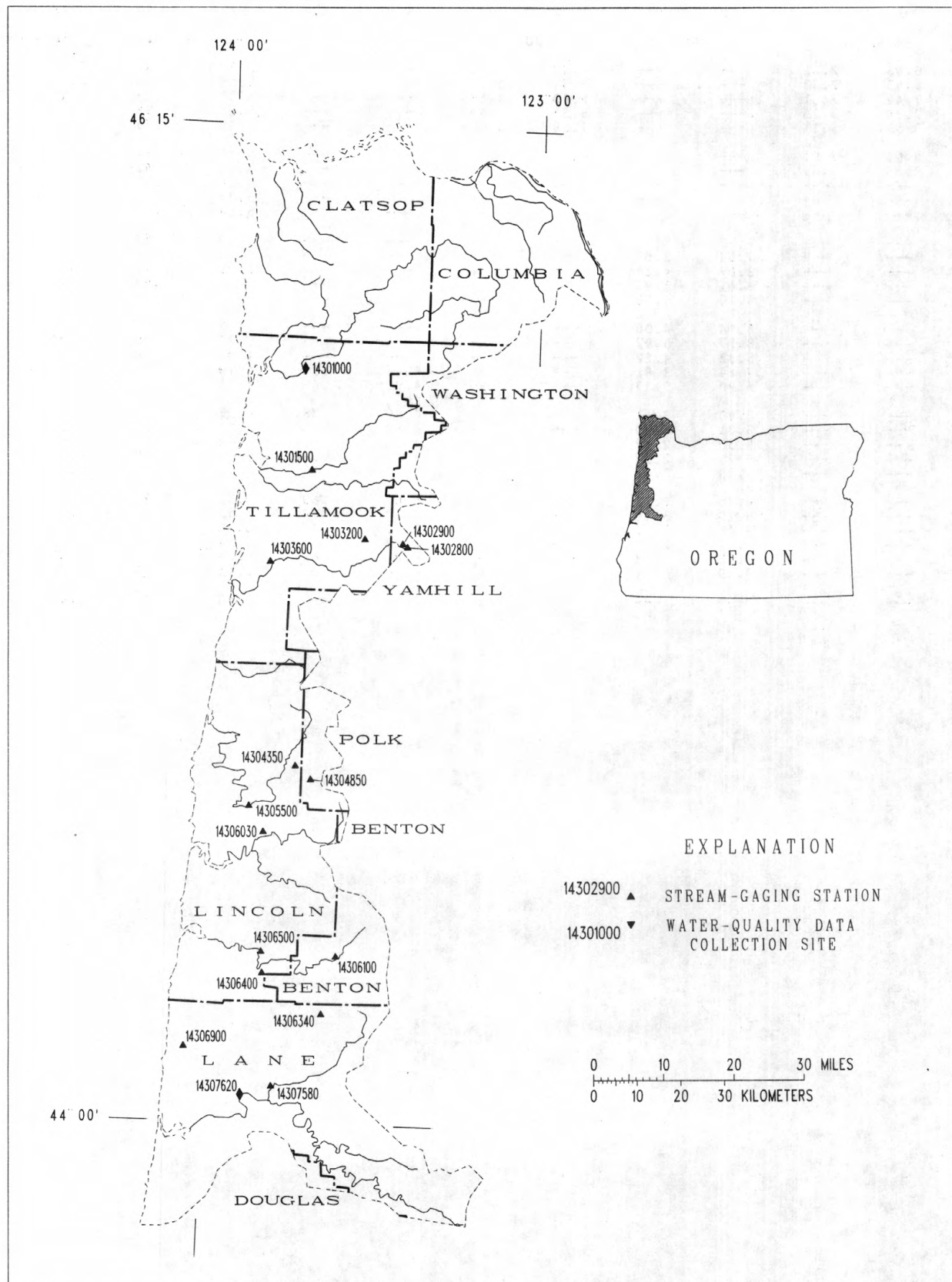


Figure 5.--Location of surface-water and water-quality stations in the Oregon Coastal Drainages north of the Siuslaw River basin.

PACIFIC SLOPE BASINS IN OREGON

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NEHALEM RIVER BASIN

14301000 NEHALEM RIVER NEAR FOSS, OR
(National stream quality accounting network station)

LOCATION.--Lat 45°42'15", long 123°45'15", in NW 1/4 sec.35, T.3 N., R.9 W., Tillamook County, Hydrologic Unit 17100202, on right bank 0.2 mi upstream from Cook Creek, 2.2 mi northeast of Foss, and at mile 13.5.

DRAINAGE AREA.--667 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 32.60 ft above National Geodetic Vertical Datum of 1929 (State Highway Department bench mark). Prior to Nov. 11, 1939, nonrecording gage.

REMARKS.--No estimated daily discharges. Water-discharge records good. No regulation. Several small diversions for irrigation and domestic use upstream from station.

AVERAGE DISCHARGE.--49 years, 2,684 ft³/s, 54.65 in/yr, 1,945,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 46,900 ft³/s Jan. 20, 1972, gage height, 23.11 ft; minimum discharge, 34 ft³/s Aug. 29-31, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 19,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 9	2330	*29,500	*17.53	Jan. 14	1800	25,900	16.25

Minimum discharge, 59 ft³/s Oct. 11-13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77	125	2980	1100	3480	1240	4680	1610	1100	543	216	102
2	76	151	3390	1050	3040	1190	4350	1660	1280	548	213	102
3	74	154	8040	999	2730	1170	5710	1810	1500	532	205	89
4	73	155	6540	956	2480	1200	6150	1930	1450	507	197	87
5	71	173	4540	935	2220	1310	6250	1930	1310	513	191	85
6	70	167	5940	902	2020	1800	8180	1860	1210	497	191	83
7	66	154	8200	874	1860	1760	8170	1860	1320	482	186	84
8	64	144	7980	888	1850	1660	6670	1970	1400	456	179	83
9	64	162	15300	1060	3090	2160	5350	1850	1380	427	179	81
10	62	173	22200	1470	5970	2620	4330	1810	1550	408	179	78
11	60	199	16500	3000	5570	2610	3570	1590	1560	402	179	75
12	59	221	10700	4790	4600	2370	2970	1450	1420	464	175	72
13	61	283	7070	4480	4370	2120	2550	1540	1300	528	171	69
14	62	487	5240	18700	4010	1900	2260	1600	1190	479	173	66
15	64	529	4070	22100	3860	1680	2010	1460	1080	451	204	66
16	65	510	3260	19500	4040	1500	1780	1390	995	413	233	68
17	67	430	2650	13100	4020	1380	1580	1400	927	380	226	69
18	70	350	2240	8890	3920	1280	1450	1350	890	357	215	71
19	72	299	1940	6620	3560	1200	1350	1300	844	337	204	166
20	73	280	1720	5330	3130	1170	1310	1220	792	318	190	200
21	73	342	1790	4550	2780	1200	1240	1140	747	300	171	196
22	74	640	1830	3940	2480	1520	1170	1070	713	290	155	182
23	77	1040	1880	3480	2220	4480	1110	1010	690	282	143	177
24	85	956	1810	3050	1990	6870	1070	955	661	270	134	155
25	88	1290	1670	2700	1780	10500	1010	898	633	259	129	176
26	88	1000	1550	2430	1590	10800	953	856	607	250	122	246
27	89	846	1450	2240	1460	10100	909	927	599	238	117	300
28	89	672	1370	2550	1360	8350	904	1200	586	229	112	292
29	90	568	1300	4190	1280	7270	1080	1220	578	225	107	231
30	95	584	1240	4350	---	6610	1420	1110	554	220	105	203
31	107	---	1160	3900	---	5620	---	1050	---	217	104	---
TOTAL	2305	13084	157550	154124	86760	106640	91536	44026	30866	11822	5305	3954
MEAN	74.4	436	5082	4972	2992	3440	3051	1420	1029	381	171	132
MAX	107	1290	22200	22100	5970	10800	8180	1970	1560	548	233	300
MIN	59	125	1160	874	1280	1170	904	856	554	217	104	66
AC-FT	4570	25950	312500	305700	172100	211500	181600	87330	61220	23450	10520	7840
CFSM	.11	.65	7.62	7.45	4.49	5.16	4.57	2.13	1.54	.57	.26	.20
IN.	.13	.73	8.79	8.60	4.84	5.95	5.11	2.46	1.72	.66	.30	.22

CAL YR 1987	TOTAL 775962	MEAN 2126	MAX 25000	MIN 59	AC-FT 1539000	CFSM 3.19	IN. 43.28
WTR YR 1988	TOTAL 707972	MEAN 1934	MAX 22200	MIN 59	AC-FT 1404000	CFSM 2.90	IN. 39.49

PACIFIC SLOPE BASINS IN OREGON

NEHALEM RIVER BASIN

14301000 NEHALEM RIVER NEAR FOSS, OR--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.-- Water years 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: August 1980 to September 1981.

WATER TEMPERATURE: December 1974 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	
NOV 19...	1310	296	97	7.7	8.0	12.1	102	56	37	30	0	8.2	
MAR 02...	1345	1170	60	6.9	9.0	12.0	104	26	K2	17	0	4.7	
MAY 20...	1340	1210	60	7.3	13.0	11.5	109	K5	K5	17	0	4.8	
SEP 06...	1507	81	84	7.8	19.0	9.5	103	K11	48	26	0	7.1	
DATE		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WATER DIS IT FIELD (MG/L AS CACO3)	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3)	CAR- BONATE WATER DIS IT FIELD (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
NOV 19...	2.2	7.7	1.3	29	36	0	10	7.8	0.1	0.06	<0.1	<0.2	
MAR 02...	1.2	5.2	0.7	20	24	0	5.2	4.8	0.1	0.01	1.1	<0.2	
MAY 20...	1.3	5.1	0.7	19	23	0	5.3	4.5	0.2	<0.01	0.3	0.7	
SEP 06...	2.1	7.3	1.3	27	33	0	4.6	7.2	<0.1	<0.01	0.1	0.3	
DATE		PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS TOTAL (MG/L AS P)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	TUR- BID- ITY (NTU)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	
NOV 19...	0.05	0.05	0.03	16	74	73	59.1	0.6	2	1.6	97		
MAR 02...	0.01	0.03	0.03	15	47	53	148	2.1	4	13	70		
MAY 20...	<0.01	0.01	0.01	14	50	50	163	1.7	4	13	84		
SEP 06...	<0.01	0.02	0.38	13	--	60	13.0	1.5	2	0.44	92		

PACIFIC SLOPE BASINS IN OREGON

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NEHALEM RIVER BASIN

14301000 NEHALEM RIVER NEAR FOSS, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
NOV 19...	<10	<1	7	<0.5	1	1	<3	5	--	<5
MAR 02...	20	<1	6	<0.5	3	<1	<3	8	120	<5
MAY 20...	30	<1	5	<0.5	2	1	<3	2	120	11
SEP 06...	<10	<1	5	<0.5	1	<1	<3	2	150	<5
DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
NOV 19...	<4	5	<0.1	<10	2	<1	<1	53	<6	16
MAR 02...	<4	3	<0.1	<10	<1	<1	<1	31	<6	12
MAY 20...	<4	3	<0.1	<10	2	<1	<1	33	<6	12
SEP 06...	<4	2	<0.1	<10	<1	<1	1	48	<6	51

WILSON RIVER BASIN

14301500 WILSON RIVER NEAR TILLAMOOK, OR

LOCATION.--Lat 45°29'05", long 123°41'20", in SW 1/4 SE 1/4 sec.8, T.1 S., R.8 W., Tillamook County, Hydrologic Unit 17100203, on right bank 0.2 mi upstream from Negro Jack Creek, 8.0 mi east of Tillamook, and at mile 11.4.

DRAINAGE AREA.--161 mi², at cableway, 2.0 mi downstream, where all discharge measurements are made.

PERIOD OF RECORD.--October 1914 to September 1915, August to November 1916, July 1931 to current year. Prior to January 1915 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1398: 1953. WSP 1738: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 71.89 ft above National Geodetic Vertical Datum of 1929. Dec. 18, 1914, to Nov. 4, 1916, nonrecording gage at site 2.8 mi downstream at different datum. July 30, 1931, to Sept. 30, 1938, nonrecording gage at site 2.82 mi downstream at datum 28.83 ft lower. Oct. 1, 1938, to Oct. 17, 1968, water-stage recorder at site 2.1 mi downstream at datum 29.76 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation. Small diversions for domestic use upstream from station.

AVERAGE DISCHARGE.--58 years (water years 1915, 1932-88), 1,180 ft³/s, 99.53 in/yr, 854,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,000 ft³/s Jan. 20, 1972, gage height, 16.91 ft; maximum gage height, 20.26 ft Dec. 22, 1964 (site and datum then in use); minimum discharge, 32 ft³/s Sept. 5, 1973, but may have been less for short period following a landslide Jan. 31, 1965.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in February 1916 reached a stage of 20.8 ft, from floodmark, site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 12,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 9	2100	*26,100	*a15.8	Jan. 14	1600	19,400	b14.4

Minimum daily discharge, 41 ft³/s Oct. 21-30.

a From National Weather Service telemetered data.
b From outside high-water mark.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	58	2030	401	e1300	502	1660	743	851	225	117	73
2	48	62	2410	378	e1100	482	1690	834	955	247	115	70
3	47	56	6290	368	e1000	486	2990	1170	1110	227	110	69
4	47	52	3570	351	e930	530	2730	1180	1010	212	108	69
5	47	49	e1790	338	825	573	2310	1000	879	225	105	69
6	47	48	e2230	331	776	973	3650	949	766	215	105	69
7	45	48	e3530	322	747	809	3470	935	734	201	106	70
8	45	47	e2700	366	864	762	2450	851	656	189	102	70
9	45	53	e11800	716	2020	1110	1860	776	612	181	99	68
10	44	59	e11800	1190	3220	1150	1530	699	606	173	96	67
11	43	92	e5150	1780	2270	1010	1280	631	545	172	96	66
12	43	100	e3210	1530	1770	887	1110	583	503	257	96	65
13	43	141	e2140	e1610	1720	783	966	777	468	388	95	64
14	43	249	e1710	e13300	1490	704	876	934	438	290	95	63
15	42	177	e1370	e8850	1480	639	773	895	405	243	95	63
16	42	139	e1180	e4550	1420	584	695	843	383	217	114	65
17	42	116	e958	e3200	1350	536	633	865	365	200	107	66
18	42	96	e813	e2600	1330	500	582	840	362	187	99	67
19	42	83	e683	e2100	1200	469	544	790	340	175	94	112
20	42	80	e725	e1800	1090	474	546	722	320	166	91	93
21	41	116	e768	e1500	986	544	498	657	306	157	89	81
22	41	261	e813	e1280	889	739	464	604	292	151	85	75
23	41	406	e725	e1240	804	3310	441	559	282	147	82	74
24	41	518	648	e1080	732	3610	431	512	272	142	81	76
25	41	734	605	e978	670	5710	404	475	260	137	80	115
26	41	402	567	e933	618	5680	385	446	253	130	79	151
27	41	277	533	e884	575	4860	368	571	248	127	78	175
28	41	212	507	e1190	538	3200	369	940	243	123	77	131
29	41	176	478	e2100	515	2650	527	965	240	121	74	105
30	41	187	449	e1900	---	2290	757	785	231	120	74	92
31	50	---	423	e1500	---	1910	---	759	---	118	74	---
TOTAL	1348	5094	72605	60666	34229	48466	36989	24290	14935	5863	2918	2493
MEAN	43.5	170	2342	1957	1180	1563	1233	784	498	189	94.1	83.1
MAX	50	734	11800	13300	3220	5710	3650	1180	1110	388	117	175
MIN	41	47	423	322	515	469	368	446	231	118	74	63
AC-FT	2670	10100	144000	120300	67890	96130	73370	48180	29620	11630	5790	4940
CFSM	.27	1.05	14.5	12.2	7.33	9.71	7.66	4.87	3.09	1.17	.58	.52
IN.	.31	1.18	16.78	14.02	7.91	11.20	8.55	5.61	3.45	1.35	.67	.58

CAL YR 1987 TOTAL 315471 MEAN 864 MAX 13800 MIN 41 AC-FT 625700 CFSM 5.37 IN. 72.89
WTR YR 1988 TOTAL 309896 MEAN 847 MAX 13300 MIN 41 AC-FT 614700 CFSM 5.26 IN. 71.60

e Estimated

NESTUCCA RIVER BASIN

185

14302800 MCGUIRE LAKE NEAR FAIRDALE, OR

LOCATION.--Lat 45°18'30", long 123°24'30", in NW 1/4 SE 1/4 sec.15, T.3 S., R.6 W., Yamhill County, Hydrologic Unit 17100203, on control tower in reservoir on Nestucca River, 0.3 mi upstream from Walker Creek, and 5.0 mi southwest of Fairdale.

DRAINAGE AREA.--2.85 mi².

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earthfill dam with ungated spillway. Capacity of reservoir is 3,840 acre-ft between elevations 1,810.0 ft and 1,865.5 ft. Dead storage negligible. Under normal operation, reservoir is filled in the spring (April or May) and drained when fall rains start. There is no planned storage during winter months; however, during periods of heavy runoff, inflow may be greater than capacity of outlet tunnel and there may be temporary storage. Water is used during summer months for municipal supply of city of McMinnville.

COOPERATION.--Elevation and capacity table furnished by city of McMinnville, Water and Light Department.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 3,890 acre-ft Mar. 12 1972, Feb. 19, Mar. 28, 1974, elevation, 1,865.8 ft; no contents most of time during winter months.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 3,840 acre-ft Jan. 16, elevation, 1,865.5 ft; minimum contents observed, 1,960 acre-ft, Nov. 21-23, elevation, 1849.5 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30.....	1,854.8	2,490	-
Oct. 31.....	1,851.4	2,150	-340
Nov. 30.....	1,850.1	2,020	-130
Dec. 31.....	1,864.4	3,690	+1,670
CAL YR 1987.....	-	-	+3,690
Jan. 31.....	1,865.0	3,770	+80
Feb. 29.....	1,865.0	3,770	0
Mar. 31.....	1,865.0	3,770	0
Apr. 30.....	1,865.0	3,770	0
May 31.....	1,865.0	3,770	0
June 30.....	1,864.9	3,760	-10
July 31.....	1,864.3	3,670	-90
Aug. 31.....	1,860.8	3,190	-480
Sept.30.....	1,857.6	2,800	-390
WTR YR 1988.....	-	-	+310

a - Interpolated.

NESTUCCA RIVER BASIN

14302900 NESTUCCA RIVER NEAR FAIRDALE, OR

LOCATION.--Lat 45°18'40", long 123°25'05", in SW 1/4 NW 1/4 sec.15, T.3 S., R.6 W., Yamhill County, Hydrologic Unit 17100203, on right bank 100 ft upstream from former Meadow Lake, 0.4 mi downstream from Walker Creek, 5.3 mi southwest of Fairdale, and at mile 49.3.

DRAINAGE AREA.--6.18 mi².

PERIOD OF RECORD.--June 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,778.99 ft above National Geodetic Vertical Datum of 1929 (levels by city of McMinnville).

REMARKS.--No estimated daily discharges. Records good. Flow regulated since March 1969 by McGuire Lake about 1 mi upstream from gage (station 14302800); during winter months lake is empty except when inflow exceeds capacity of outlet tunnel.

AVERAGE DISCHARGE.--28 years (water years 1961-88), 31.8 ft³/s, 69.88 in/yr, 23,040 acre-ft/yr, adjusted for storage and diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 876 ft³/s Dec. 22, 1964, gage height, 10.43 ft; minimum discharge, 0.41 ft³/s Sept. 11, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 591 ft³/s Jan. 14, gage height, 8.18 ft; minimum discharge, 0.57 ft³/s Oct. 10, 13, 14, Sept. 2, 3, 10-15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.82	3.0	52	6.4	44	14	36	19	23	5.2	1.4	.69
2	.79	3.0	51	6.2	34	13	39	21	25	5.5	1.3	2.0
3	.86	1.9	97	5.9	30	13	57	25	23	5.4	1.3	.66
4	.89	1.6	50	5.4	26	14	51	26	20	5.3	1.2	.70
5	.88	1.6	33	5.4	23	16	43	24	19	5.4	1.1	.70
6	.76	1.6	65	5.7	22	23	55	25	18	5.3	1.2	.68
7	.74	3.0	83	5.8	21	18	50	31	24	5.2	1.2	.72
8	.68	4.8	55	8.6	31	20	42	26	22	4.7	1.1	.69
9	.76	5.2	190	26	71	30	36	24	21	4.4	1.1	.68
10	.65	5.2	176	39	88	27	31	22	19	4.3	1.1	.64
11	.68	5.8	72	55	63	24	27	20	17	4.3	1.1	.65
12	.66	5.7	42	45	50	21	24	19	16	6.0	1.1	.60
13	.61	8.4	29	66	50	19	23	33	15	7.5	1.1	.57
14	.74	10	23	423	40	17	23	26	13	6.4	1.1	.57
15	1.0	10	19	364	41	16	20	22	12	5.7	1.1	.59
16	1.0	9.7	16	186	36	15	18	23	11	4.9	1.3	.68
17	1.0	8.6	13	106	34	14	17	22	12	4.6	1.2	.68
18	1.0	8.2	11	69	32	13	16	20	11	4.3	1.1	.69
19	.98	7.9	10	50	28	12	15	18	9.8	3.8	1.1	2.1
20	.97	7.9	11	46	25	12	21	17	9.0	3.6	1.0	1.3
21	.99	8.8	12	39	23	13	19	15	8.3	3.5	.94	1.0
22	1.0	11	11	34	21	22	18	14	7.8	3.4	.91	.88
23	1.0	8.7	9.5	31	19	55	18	13	7.5	3.3	.89	.90
24	1.0	12	8.6	28	18	79	18	13	7.1	3.2	.84	.87
25	1.0	8.4	8.1	26	17	126	12	12	6.7	3.1	.86	1.3
26	1.0	5.1	7.8	25	16	114	11	11	6.7	3.0	.86	1.3
27	1.0	4.1	7.6	24	15	99	11	14	6.5	2.7	.86	1.8
28	1.0	3.4	7.4	45	14	70	11	20	6.6	1.4	.80	1.2
29	1.0	3.1	7.0	84	14	66	15	17	6.3	1.4	.78	1.0
30	1.1	4.7	6.7	70	---	53	20	14	5.3	1.4	.81	---
31	1.8	---	6.6	55	---	43	---	14	---	1.3	.81	.93
TOTAL	28.36	182.4	1190.3	1985.4	946	1091	797	620	408.6	129.5	32.56	27.77
MEAN	.91	6.08	38.4	64.0	32.6	35.2	26.6	20.0	13.6	4.18	1.05	.93
MAX	1.8	12	190	423	88	126	57	33	25	7.5	1.4	2.1
MIN	.61	1.6	6.6	5.4	14	12	11	11	5.3	1.3	.78	.57
AC-FT	56	362	2360	3940	1880	2160	1580	1230	810	257	65	55
MEAN†	0.68	5.63	65.5	65.4	32.7	35.1	26.6	20.0	13.4	4.20	0.75	1.19
CFSM†	0.11	0.91	10.6	10.6	5.29	5.68	4.30	3.24	2.17	0.68	0.12	0.19
IN.†	0.13	1.02	12.23	12.20	5.71	6.56	4.79	3.73	2.43	0.78	0.14	0.22
AC-FT†	42	335	4030	4020	1880	2160	1580	1230	800	258	46	71

CAL YR 1987 TOTAL 7186.39 MEAN 19.7 MAX 331 MIN .61 AC-FT 14250 MEAN† 27.2 CFSM† 4.40 IN.† 59.66 AC-FT† 19660
WTR YR 1988 TOTAL 7438.89 MEAN 20.3 MAX 423 MIN .57 AC-FT 14760 MEAN† 22.7 CFSM† 3.67 IN.† 49.95 AC-FT† 16460

† Adjusted for storage and diversion by McGuire Lake.

NESTUCCA RIVER BASIN

187

14303200 TUCCA CREEK NEAR BLAINE, OR

LOCATION.--Lat 45°19'28", long 123°32'43", in SE 1/4 NW 1/4 sec.9, T.3 S., R.7 W., Tillamook County, Hydrologic Unit 17100203, on right bank at road bridge, 80 ft upstream from mouth, and 8 mi northeast of Blaine.

DRAINAGE AREA.--3.09 mi².

PERIOD OF RECORD.--July 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,400 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--5 years, 14.9 ft³/s, 65.66 in/yr, 10,820 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 266 ft³/s Dec. 9, 1987, gage height, 3.66 ft; minimum discharge, 0.46 ft³/s Sept. 30, Oct. 1, 2, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 180 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 9	2315	*266	*3.66	Jan. 14	1900	208	3.31

Minimum discharge, 0.46 ft³/s Oct. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.55	1.9	27	7.9	25	8.3	31	11	10	4.2	2.0	1.3
2	.63	1.8	31	7.5	21	8.1	29	13	11	4.2	2.0	1.3
3	.70	1.3	65	7.2	18	7.9	32	17	11	4.0	1.9	1.3
4	.70	1.2	52	6.9	16	8.8	32	20	11	3.8	1.8	1.3
5	.73	1.1	36	6.7	14	8.9	31	20	11	4.0	1.8	1.3
6	.74	1.1	43	6.7	13	11	34	20	11	3.7	1.8	1.3
7	.75	1.3	61	6.5	12	9.9	35	20	11	3.5	1.8	1.4
8	.80	1.4	53	e7.5	14	12	32	19	11	3.3	1.8	1.3
9	.86	2.3	159	e13	24	15	28	19	10	3.2	1.7	1.3
10	.87	1.7	191	e29	36	16	24	17	10	3.1	1.8	1.3
11	.90	3.0	94	e47	33	16	21	15	9.3	3.2	1.8	1.3
12	.93	2.2	55	e32	29	15	18	14	8.9	3.9	1.8	1.2
13	.98	4.3	37	34	27	14	16	15	8.5	3.9	1.7	1.2
14	.98	5.7	29	149	23	13	15	13	8.0	3.4	1.7	1.2
15	1.0	4.0	24	159	23	11	13	12	7.6	3.1	1.7	1.2
16	.98	3.7	21	86	21	10	12	13	7.3	2.9	1.9	1.2
17	.98	3.0	18	53	22	9.5	11	12	6.9	2.8	1.8	1.2
18	.99	2.6	16	36	21	8.8	10	12	6.7	2.7	1.7	1.3
19	.98	2.4	14	28	20	8.3	10	11	6.3	2.6	1.6	2.6
20	1.0	2.5	13	26	18	8.1	10	11	6.0	2.5	1.6	1.5
21	1.1	3.9	13	23	17	8.2	9.3	10	5.8	2.4	1.6	1.4
22	1.1	5.3	13	22	15	11	8.7	9.8	5.5	2.4	1.5	1.3
23	1.1	4.8	12	20	14	22	8.3	9.2	5.3	2.4	1.4	1.3
24	1.1	8.0	11	19	12	41	8.0	8.6	5.1	2.3	1.4	1.3
25	1.1	7.4	11	18	11	89	7.6	8.1	5.0	2.2	1.4	1.5
26	1.1	5.5	10	17	10	81	7.3	7.8	4.9	2.2	1.4	1.6
27	.89	4.7	9.9	17	9.4	76	7.1	8.5	4.7	2.1	1.4	2.3
28	.91	4.2	9.6	23	8.7	54	7.2	10	4.6	2.1	1.4	1.5
29	.97	3.8	9.2	33	8.6	45	9.3	8.4	4.4	2.1	1.4	1.4
30	1.1	4.6	8.6	33	---	40	10	7.8	4.2	2.0	1.4	1.3
31	2.0	---	8.2	29	---	35	---	8.2	---	2.0	1.4	---
TOTAL	29.52	100.7	1154.5	1002.9	535.7	721.8	526.8	400.4	232.0	92.2	51.4	41.9
MEAN	.95	3.36	37.2	32.4	18.5	23.3	17.6	12.9	7.73	2.97	1.66	1.40
MAX	2.0	8.0	191	159	36	89	35	20	11	4.2	2.0	2.6
MIN	.55	1.1	8.2	6.5	8.6	7.9	7.1	7.8	4.2	2.0	1.4	1.2
AC-FT	59	200	2290	1990	1060	1430	1040	794	460	183	102	83
CFSM	.31	1.09	12.1	10.5	5.98	7.54	5.68	4.18	2.50	.96	.54	.45
IN.	.36	1.21	13.90	12.07	6.45	8.69	6.34	4.82	2.79	1.11	.62	.50

CAL YR 1987 TOTAL 4881.69 MEAN 13.4 MAX 191 MIN .55 AC-FT 9680 CFSM 4.33 IN. 58.77
WTR YR 1988 TOTAL 4889.82 MEAN 13.4 MAX 191 MIN .55 AC-FT 9700 CFSM 4.32 IN. 58.87

e Estimated

NESTUCCA RIVER BASIN

14303600 NESTUCCA RIVER NEAR BEAVER, OR

LOCATION.--Lat 45°16'00", long 123°50'45", in SE 1/4 NE 1/4 sec.36, T.3 S., R.10 W., Tillamook County, Hydrologic Unit 17100203, on right bank 150 ft upstream from Saling Creek, 1.2 mi southwest of Beaver, and at mile 13.5.

DRAINAGE AREA.--180 mi².

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 43 ft, from river-profile map.

REMARKS.--Records good. No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--24 years, 1,054 ft³/s, 79.52 in/yr, 773,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,400 ft³/s Jan. 11, 1972, gage height, 22.0 ft, from floodmark; minimum discharge, 32 ft³/s Sept. 14, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 20, 1962, reached a stage of 23.4 ft, discharge, 32,500 ft³/s caused by failure of Meadow Lake Dam.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 8,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0030	*14,100	*14.73	Jan. 14	2230	10,700	12.52

Minimum discharge, 50 ft³/s several days in October.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	86	1120	589	1220	553	1420	698	776	234	123	70
2	53	96	1450	552	1100	529	1380	791	867	255	122	68
3	55	78	4140	536	1020	543	1690	987	916	244	116	65
4	55	65	2850	509	945	611	1600	1040	835	224	111	67
5	54	59	1670	489	874	635	1460	962	768	239	108	67
6	52	57	2080	484	815	899	1750	1020	712	232	108	67
7	51	56	2750	472	772	755	1800	1150	715	211	107	67
8	51	56	2210	537	848	764	1580	1050	651	203	105	66
9	52	72	6630	860	1600	1030	1390	969	613	193	102	64
10	51	79	9480	1330	2660	1010	1220	878	593	188	101	63
11	51	96	4660	2170	1950	940	1090	794	545	192	102	63
12	50	105	2940	1890	1600	867	986	741	506	277	103	60
13	51	200	2160	1860	1500	798	900	936	472	392	101	57
14	51	288	1750	7180	1300	739	866	838	441	294	101	56
15	51	225	1440	8240	1280	692	779	763	412	249	101	56
16	51	191	1250	5190	1200	644	716	762	393	225	114	59
17	51	157	1080	3590	1160	610	665	745	380	207	118	60
18	51	130	965	2750	1140	591	627	717	376	199	103	61
19	51	114	870	2140	1050	569	596	679	347	190	95	200
20	51	107	873	1880	988	564	622	637	327	183	90	141
21	50	167	1020	1630	922	587	568	604	316	168	86	89
22	51	231	1020	1480	851	668	531	581	303	166	84	77
23	51	317	987	1350	790	1240	503	554	295	165	80	73
24	51	377	926	1220	736	1980	500	522	284	161	78	77
25	51	502	870	1120	681	3740	464	493	273	149	77	93
26	51	339	819	1050	635	3390	445	472	272	144	75	113
27	51	260	773	984	599	3280	435	576	265	138	75	192
28	51	213	754	1130	574	2550	438	791	259	136	74	e136
29	50	189	704	1540	556	2250	562	698	263	133	72	e96
30	51	205	661	1460	---	1910	707	616	245	130	72	e80
31	65	---	625	1350	---	1650	---	631	---	127	71	---
TOTAL	1610	5117	61527	57562	31366	37588	28290	23695	14420	6248	2975	2503
MEAN	51.9	171	1985	1857	1082	1213	943	764	481	202	96.0	83.4
MAX	65	502	9480	8240	2660	3740	1800	1150	916	392	123	200
MIN	50	56	625	472	556	529	435	472	245	127	71	56
AC-FT	3190	10150	122000	114200	62210	74560	56110	47000	28600	12390	5900	4960
CFSM	.29	.95	11.0	10.3	6.01	6.74	5.24	4.25	2.67	1.12	.53	.46
IN.	.33	1.06	12.72	11.90	6.48	7.77	5.85	4.90	2.98	1.29	.61	.52

CAL YR 1987 TOTAL 280394 MEAN 768 MAX 9480 MIN 50 AC-FT 556200 CFSM 4.27 IN. 57.95
WTR YR 1988 TOTAL 272901 MEAN 746 MAX 9480 MIN 50 AC-FT 541300 CFSM 4.14 IN. 56.40

e Estimated

SILETZ RIVER BASIN

189

14304350 SUNSHINE CREEK NEAR VALSETZ, OR

LOCATION.--Lat 44°48'34", long 123°44'34", in NW 1/4 NW 1/4 sec.12, T.9 S., R.9 W., Lincoln County, Hydrologic Unit 17100204, on right bank about 50 ft upstream from Deer Creek, and about 5 mi southwest of Valseltz.

DRAINAGE AREA.--6.7 mi².

PERIOD OF RECORD.--October 1972 to current year. Prior to October 1985, in reports of Oregon Water Resources Department.

GAGE.--Water-stage recorder. Elevation of gage is 600 ft, from topographic map.

REMARKS.--Records good except for those above 400 ft³/s, and those for October, November, August, and September, which are poor.

AVERAGE DISCHARGE.--16 years, 53.6 ft³/s, 108.64 in/yr, 38,830 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,760 ft³/s Nov. 25, 1977, gage height, 4.32 ft; minimum daily discharge, 0.45 ft³/s Oct. 26, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 560 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 9	2200	*992	*4.04	Jan. 14	1330	880	3.88

Minimum daily discharge, 0.45 ft³/s Oct. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	3.9	67	43	68	21	55	29	46	7.6	e3.6	e2.1
2	1.2	3.1	107	40	59	21	61	39	55	10	e3.6	e2.1
3	1.1	2.5	298	39	51	23	74	53	57	8.5	e3.5	e2.1
4	1.2	2.2	142	36	44	33	71	53	49	7.4	e3.4	e2.2
5	.97	2.2	73	33	38	35	63	44	42	7.6	e3.4	e2.2
6	.73	2.4	94	36	35	60	102	57	36	7.2	e3.3	e2.2
7	.69	2.2	119	35	33	47	103	68	33	6.6	e3.3	e2.1
8	.77	2.3	100	68	58	44	82	59	28	6.3	e3.2	e2.1
9	.73	4.1	668	163	130	55	65	50	26	5.9	e3.2	e2.1
10	.66	3.9	520	280	163	50	53	42	24	5.7	e3.1	e2.0
11	.62	12	190	286	105	44	45	36	21	5.8	e3.1	e2.0
12	.56	10	115	162	81	39	39	32	19	15	e3.1	e2.0
13	.58	22	82	158	72	34	34	43	18	21	e3.1	e1.9
14	.59	12	67	708	59	31	33	52	16	13	e3.1	e1.9
15	.55	10	55	526	60	28	29	45	15	10	e3.4	e2.0
16	.53	12	46	232	51	25	26	43	15	8.8	e4.5	e2.2
17	.59	9.3	39	149	52	23	24	38	14	7.6	e4.0	e2.2
18	.55	7.6	34	113	50	21	22	35	14	6.9	e3.1	e2.4
19	.52	6.7	31	91	45	20	21	31	13	6.3	e3.0	e4.5
20	.52	6.7	35	83	41	22	22	28	12	5.7	e2.9	e8.0
21	.52	8.3	48	69	37	29	19	26	11	5.4	e2.8	e5.6
22	.53	9.9	48	61	34	33	18	24	11	5.2	e2.7	e3.9
23	.54	12	45	53	31	64	17	22	10	e5.0	e2.6	e3.4
24	.52	26	41	46	28	184	17	20	9.4	e4.8	e2.6	e3.1
25	.46	28	37	41	26	310	16	18	9.1	e4.7	e2.5	e3.0
26	.45	20	34	37	24	228	16	18	8.8	e4.4	e2.4	e6.0
27	.47	16	32	33	22	191	15	28	8.3	e4.2	e2.4	e7.0
28	.46	14	32	43	21	123	17	44	8.8	e4.1	e2.3	e5.2
29	.47	13	29	72	20	102	24	38	9.4	e3.9	e2.3	e4.4
30	.52	14	31	74	---	79	29	31	8.1	e3.8	e2.2	e3.9
31	1.7	---	42	76	---	65	---	36	---	e3.7	e2.2	---
TOTAL	21.60	298.3	3301	3886	1538	2084	1212	1182	646.9	222.1	93.9	95.8
MEAN	.70	9.94	106	125	53.0	67.2	40.4	38.1	21.6	7.16	3.03	3.19
MAX	1.7	28	668	708	163	310	103	68	57	21	4.5	8.0
MIN	.45	2.2	29	33	20	20	15	18	8.1	3.7	2.2	1.9
AC-FT	43	592	6550	7710	3050	4130	2400	2340	1280	441	186	190
CFSM	.10	1.48	15.9	18.7	7.92	10.0	6.03	5.69	3.22	1.07	.45	.48
IN.	.12	1.66	18.33	21.58	8.54	11.57	6.73	6.56	3.59	1.23	.52	.53

CAL YR 1987 TOTAL 13809.55 MEAN 37.8 MAX 855 MIN .45 AC-FT 27390 CFSM 5.65 IN. 76.67
WTR YR 1988 TOTAL 14581.60 MEAN 39.8 MAX 708 MIN .45 AC-FT 28920 CFSM 5.95 IN. 80.96

e Estimated

SILETZ RIVER BASIN

14304850 BIG ROCK CREEK NEAR VALSETZ, OR

LOCATION.--Lat 44°46'41", long 123°41'34", in SE 1/4 NW 1/4 sec.20, T.9 S., R.8 W., Polk County, Hydrologic Unit 17100204, on left bank about 0.2 mi downstream from access cable, and 4.7 mi southwest of Valsetz.

DRAINAGE AREA.--6.9 mi².

PERIOD OF RECORD.--October 1972 to current year. Prior to October 1985, in reports of Oregon Water Resources Department.

GAGE.--Water-stage recorder. Elevation of gage is 710 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, and those for Dec. 4 to Jan. 14, and Aug. 5 to Sept. 30, which are poor. Water temperatures published February 1979 to September 1985.

AVERAGE DISCHARGE.--15 years (water years 1974-88), 45.2 ft³/s, 88.96 in/yr, 32,750 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,520 ft³/s Dec. 21, 1972, gage height, 5.55 ft; minimum daily discharge, 0.34 ft³/s Oct. 25-29, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 9	2100	814	4.24	Jan. 14	2230	*850	*4.30

Minimum daily discharge, 0.34 ft³/s Oct. 25-29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1.3	e2.8	36	34	62	23	e60	26	36	e9.0	e3.1	1.9
2	e.90	e2.3	69	31	56	22	e66	35	42	e11	e3.0	1.8
3	e.90	e1.8	157	30	50	23	71	43	43	e9.0	e3.0	1.8
4	e.90	e1.7	74	27	44	33	68	44	40	e8.6	e2.9	1.9
5	e.70	1.6	40	24	40	37	61	41	36	e8.6	e2.9	2.0
6	e.58	1.5	56	26	36	51	81	49	33	e8.0	2.8	2.0
7	e.52	1.6	83	24	35	41	82	56	31	e7.2	2.8	1.9
8	e.52	1.6	66	49	55	44	72	52	28	e6.4	2.8	1.8
9	e.52	2.6	510	134	121	52	61	47	26	e6.0	2.7	1.8
10	e.47	2.2	399	265	159	47	52	41	25	e5.6	2.7	1.8
11	e.44	8.8	164	272	106	43	44	36	22	e6.0	2.7	1.8
12	e.41	8.3	95	149	85	39	38	33	20	e12	2.7	1.8
13	e.41	16	66	148	77	35	34	40	18	e18	2.7	1.6
14	e.41	8.7	52	649	64	32	35	39	17	e12	2.7	1.7
15	e.41	8.3	41	484	64	29	30	34	16	e9.6	2.8	1.8
16	e.41	9.8	35	246	55	26	27	34	15	e8.2	3.8	2.2
17	e.41	6.8	29	156	55	24	25	32	14	e6.8	2.9	2.0
18	e.40	5.4	26	116	51	22	23	31	14	e6.2	2.7	2.0
19	e.39	4.5	22	94	46	21	22	28	13	e5.8	2.6	5.1
20	e.39	3.7	27	85	43	22	22	25	12	e5.2	2.5	6.9
21	e.39	4.4	32	73	39	25	20	23	12	e4.9	2.4	6.4
22	e.39	4.9	32	65	36	30	19	22	11	e4.7	2.3	3.0
23	e.39	5.4	30	57	33	50	17	20	11	e4.5	2.2	2.6
24	e.39	12	28	51	30	198	17	19	10	e4.3	2.3	2.4
25	e.34	12	26	45	28	269	16	17	9.8	e4.0	2.2	2.2
26	e.34	7.4	24	41	26	219	15	17	9.6	e3.8	2.1	2.2
27	e.34	5.8	23	38	24	174	14	23	9.2	e3.7	2.1	2.2
28	e.34	5.1	23	45	23	118	15	32	10	e3.5	2.1	2.4
29	e.34	4.6	20	62	22	98	22	26	e11	e3.4	2.0	2.3
30	e.40	5.1	24	63	---	77	26	23	e9.6	e3.3	2.0	2.3
31	e1.1	---	35	66	---	64	---	28	---	e3.2	2.0	---
TOTAL	16.15	166.7	2344	3649	1565	1988	1155	1016	604.2	212.5	80.5	73.6
MEAN	.52	5.56	75.6	118	54.0	64.1	38.5	32.8	20.1	6.85	2.60	2.45
MAX	1.3	16	510	649	159	269	82	56	43	18	3.8	6.9
MIN	.34	1.5	20	24	22	21	14	17	9.2	3.2	2.0	1.6
AC-FT	32	331	4650	7240	3100	3940	2290	2020	1200	421	160	146
CFSM	.08	.81	11.0	17.1	7.82	9.29	5.58	4.75	2.92	.99	.38	.36
IN.	.09	.90	12.64	19.67	8.44	10.72	6.23	5.48	3.26	1.15	.43	.40

CAL YR 1987 TOTAL 12085.75 MEAN 33.1 MAX 781 MIN .34 AC-FT 23970 CFSM 4.80 IN. 65.16
WTR YR 1988 TOTAL 12870.65 MEAN 35.2 MAX 649 MIN .34 AC-FT 25530 CFSM 5.10 IN. 69.39

e Estimated

SILETZ RIVER BASIN

191

14305500 SILETZ RIVER AT SILETZ, OR

LOCATION.--Lat 44°42'55", long 123°53'10", in NW 1/4 SW 1/4 sec.11, T.10 S., R.10 W., Lincoln County, Hydrologic Unit 17100204, on right bank, 1.8 mi downstream from Baker Creek, 1.5 mi east of Siletz, and at mile 42.6.

DRAINAGE AREA.--202 mi².

PERIOD OF RECORD.--October 1905 to November 1911, January to May 1912, January to June 1924, November 1924 to current year. Prior to December 1905 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1935: 1943, 1947-49(M), 1953-58(M).

GAGE.--Water-stage recorder. Datum of gage is 102.32 ft above National Geodetic Vertical Datum of 1929.

Oct. 1, 1905, to Sept 30, 1938, nonrecording gage at various sites within 2.5 mi downstream at different datums.

REMARKS.--Records good. Slight regulation from logponds. Small diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--69 years (water years 1906-11, 1926-88), 1,543 ft³/s, 103.73 in/yr, 1,118,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (1905-12, 1924-38).--Maximum discharge, 34,600 ft³/s Nov. 22, 1909, gage height, 24.6 ft, site and datum then in use; minimum observed discharge, 51 ft³/s Dec. 6, 7, 1929.

EXTREMES FOR PERIOD OF RECORD (1938-88).--Maximum discharge, 32,200 ft³/s Jan. 28, 1965, gage height, 27.32 ft, present site and datum; minimum discharge, 47 ft³/s Oct. 20, 21, 29, 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 20, 1921, reached a stage of 31.6 ft, at site 2.5 mi downstream at different datum, from floodmark, discharge, 40,800 ft³/s, from rating curve extended above 17,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 14,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0100	*19,200	*18.33	Jan. 14	1800	17,900	17.49

Minimum discharge, 47 ft³/s Oct. 20, 21, 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	112	1560	1270	1850	709	1800	825	1300	288	180	e76
2	53	120	2680	1160	1620	657	1790	974	1540	324	183	e74
3	54	90	6940	1110	1430	704	2620	1280	1730	309	175	e72
4	55	70	4550	1030	1280	807	2450	1430	1500	276	161	e74
5	54	63	2620	948	1160	885	2150	1280	1300	274	147	e75
6	52	60	3450	978	1070	1420	2730	1370	1140	273	134	e75
7	50	59	4190	952	1030	1250	2980	1650	1070	252	128	e75
8	50	59	3390	1330	1270	1160	2440	1540	949	242	123	e74
9	51	78	10800	2970	2580	1440	2020	1380	884	232	118	e72
10	51	114	12800	5860	4260	1380	1710	1220	842	222	113	e70
11	49	153	6110	6960	3020	1270	1470	1080	759	225	113	e68
12	48	315	3780	4640	2370	1140	1290	984	696	282	113	e66
13	48	435	2680	3960	2200	1040	1160	1150	650	574	114	e64
14	49	476	2140	13500	1840	947	1130	1270	608	399	140	e63
15	49	311	1740	12400	1780	872	1010	1200	565	375	142	e65
16	49	373	1490	7170	1610	807	914	1160	531	347	151	e67
17	49	299	1270	4780	1520	750	841	1090	504	327	164	e68
18	49	245	1120	3580	1470	704	783	1030	495	307	145	e95
19	48	206	1000	2810	1330	664	751	969	463	294	130	e300
20	47	183	975	2430	1230	669	775	890	433	281	127	e200
21	47	221	1330	2080	1130	763	713	825	409	263	115	e130
22	48	240	1280	1840	1040	778	674	767	389	256	103	e100
23	49	346	1220	1640	967	1750	637	721	374	242	119	e95
24	49	482	1130	1460	896	2730	613	675	355	225	100	e110
25	49	767	1050	1320	838	6500	578	634	340	229	91	e150
26	49	554	972	1200	787	5300	554	607	333	219	94	e240
27	49	425	915	1120	741	5060	529	812	319	206	101	316
28	48	344	963	1260	704	3650	538	1270	322	195	93	217
29	48	291	883	2460	679	3040	679	1240	351	190	84	159
30	48	280	988	2230	---	2500	792	1040	305	192	e80	135
31	59	---	1320	2100	---	2090	---	1080	---	193	e78	---
TOTAL	1552	7771	87336	98548	43702	53436	39121	33443	21456	8513	3859	3445
MEAN	50.1	259	2817	3179	1507	1724	1304	1079	715	275	124	115
MAX	59	767	12800	13500	4260	6500	2980	1650	1730	574	183	316
MIN	47	59	883	948	679	657	529	607	305	190	78	63
AC-FT	3080	15410	173200	195500	86680	106000	77600	66330	42560	16890	7650	6830
CFSM	.25	1.28	13.9	15.7	7.46	8.53	6.46	5.34	3.54	1.36	.62	.57
IN.	.29	1.43	16.08	18.15	8.05	9.84	7.20	6.16	3.95	1.57	.71	.63

CAL YR 1987 TOTAL 400622 MEAN 1098 MAX 17000 MIN 47 AC-FT 794600 CFSM 5.43 IN. 73.78
WTR YR 1988 TOTAL 402182 MEAN 1099 MAX 13500 MIN 47 AC-FT 797700 CFSM 5.44 IN. 74.07

e Estimated

YAUQUINA RIVER BASIN

14306030 YAUQUINA RIVER NEAR CHITWOOD, OR

LOCATION.--Lat 44°39'29", long 123°50'15", in NE 1/4 SW 1/4 sec.31, T.10 S., R.9 W., Lincoln County, Hydrologic Unit 17100204, on left bank 200 ft below Thornton Creek and 1.1 mi west of Chitwood, and at mile 29.3.

DRAINAGE AREA.--71.0 mi².

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 28.43 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good except those below 5.0 ft³/s, which are poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--16 years, 252 ft³/s, 48.20 in/yr, 182,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,150 ft³/s Nov. 16, 1973, gage height, 14.43 ft; minimum discharge, 2.8 ft³/s Sept. 27, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 3,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 11	0100	3,080	9.89	Jan. 15	0430	*3,460	*10.54
Minimum discharge, 3.7 ft ³ /s Sept. 12, 13.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.3	17	101	541	274	118	382	166	177	48	15	6.6
2	6.7	35	248	434	258	105	345	188	244	48	15	5.9
3	6.9	26	759	350	234	108	376	304	265	49	14	5.7
4	7.2	21	636	293	210	119	414	431	251	46	13	5.1
5	6.9	19	345	253	187	137	408	383	218	44	12	5.3
6	6.4	18	364	226	170	220	409	339	194	46	12	5.4
7	6.3	18	515	200	158	236	422	406	177	42	12	5.6
8	6.1	18	496	210	190	221	390	442	162	38	12	5.4
9	6.3	24	1190	417	291	268	353	408	147	37	12	5.2
10	6.3	31	2230	1600	684	308	315	355	143	34	12	5.1
11	5.3	40	1160	2400	600	293	279	308	133	35	12	5.1
12	5.1	65	724	1300	469	258	252	274	120	38	12	4.7
13	5.0	65	506	913	408	224	225	272	110	46	12	4.4
14	4.7	68	391	1990	346	196	216	254	104	45	12	4.5
15	5.2	58	316	3000	327	175	195	229	97	38	12	5.2
16	6.2	71	274	1640	293	158	172	220	92	34	12	5.3
17	6.7	57	233	1100	275	141	158	211	87	32	12	5.8
18	6.6	43	197	861	265	130	145	195	82	30	12	6.4
19	5.8	37	172	694	246	122	139	181	78	28	11	26
20	5.3	33	162	587	230	116	160	170	73	27	9.9	19
21	5.3	32	182	480	214	123	141	159	69	24	9.3	11
22	5.6	41	215	405	195	111	134	146	65	23	8.8	8.6
23	6.1	69	267	348	179	157	126	140	63	21	8.3	7.6
24	7.2	71	269	303	163	275	121	131	61	21	8.1	7.0
25	7.4	98	248	270	148	1230	114	124	58	21	8.5	7.7
26	7.1	72	221	243	137	981	109	117	58	19	7.8	10
27	6.3	55	198	218	128	1100	106	118	55	18	7.9	19
28	6.1	46	187	211	119	846	104	139	52	17	7.2	16
29	5.9	41	166	240	114	679	115	134	58	17	6.6	11
30	6.4	41	194	250	---	542	137	120	52	16	6.7	8.8
31	7.5	---	459	271	---	448	---	129	---	15	6.6	---
TOTAL	193.2	1330	13625	22248	7512	10145	6962	7193	3545	997	331.7	248.4
MEAN	6.23	44.3	440	718	259	327	232	232	118	32.2	10.7	8.28
MAX	7.5	98	2230	3000	684	1230	422	442	265	49	15	26
MIN	4.7	17	101	200	114	105	104	117	52	15	6.6	4.4
AC-FT	383	2640	27030	44130	14900	20120	13810	14270	7030	1980	658	493
CFSM	.09	.62	6.19	10.1	3.65	4.61	3.27	3.27	1.66	.45	.15	.12
IN.	.10	.70	7.14	11.66	3.94	5.32	3.65	3.77	1.86	.52	.17	.13

CAL YR 1987	TOTAL 70339.3	MEAN 193	MAX 2290	MIN 4.7	AC-FT 139500	CFSM 2.71	IN. 36.85
WTR YR 1988	TOTAL 74330.3	MEAN 203	MAX 3000	MIN 4.4	AC-FT 147400	CFSM 2.86	IN. 38.94

ALSEA RIVER BASIN

193

14306100 NORTH FORK ALSEA RIVER AT ALSEA, OR

LOCATION.--Lat 44°22'45", long 123°35'40", in SE 1/4 sec.1, T.14 S., R.8 W., Benton County, Hydrologic Unit 17100205, on left bank at Alsea, 0.2 mi upstream from bridge on Lobster Valley Road, 0.7 mi upstream from confluence with South Fork, and at mile 49.4.

DRAINAGE AREA.--63.0 mi².

PERIOD OF RECORD.--October 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 272.31 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No regulation. Some diversions by pumping upstream from station.

AVERAGE DISCHARGE.--31 years, 276 ft³/s, 59.49 in/yr, 200,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,100 ft³/s Dec. 22, 1964, gage height, 14.57 ft, from rating curve extended above 2,900 ft³/s on basis of slope-area measurement at gage height 11.80 ft; minimum discharge, 8.3 ft³/s June 8, Sept. 19, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	0230	2,320	5.59	Jan. 10	1800	3,340	6.77
Dec. 10	0230	*4,520	*7.96	Jan. 14	2400	4,470	7.91

Minimum discharge, 11 ft³/s Oct. 7, 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	33	260	380	241	127	301	214	227	66	32	22
2	15	35	476	308	224	114	306	256	272	67	32	21
3	16	30	1800	269	208	112	377	338	254	66	30	21
4	17	27	881	235	194	141	397	334	224	62	29	21
5	16	25	483	210	183	143	368	285	196	61	29	21
6	15	24	706	195	172	202	363	280	177	59	29	22
7	15	24	890	188	166	181	359	392	178	56	29	21
8	15	25	663	250	200	176	323	349	168	55	28	21
9	15	31	2400	668	252	257	291	304	161	53	27	21
10	15	33	2890	2020	345	266	264	267	161	52	27	20
11	15	33	1090	1950	301	232	239	239	151	53	28	20
12	15	63	654	1100	266	204	220	221	138	55	29	19
13	15	78	460	838	254	180	204	264	129	57	29	18
14	19	84	371	2700	228	164	206	237	120	55	29	18
15	17	74	304	2880	234	151	183	218	114	51	28	18
16	16	88	268	1460	226	138	169	221	110	47	29	20
17	16	55	229	984	223	128	158	199	105	45	30	21
18	16	40	203	747	215	121	149	185	101	43	28	21
19	16	34	181	584	203	115	162	172	96	42	27	36
20	16	31	170	507	191	111	202	160	91	41	26	30
21	16	36	206	442	179	113	190	149	87	41	26	25
22	17	53	242	390	168	110	181	139	84	40	24	23
23	18	66	258	354	159	197	168	133	81	39	23	23
24	18	76	230	315	150	439	160	126	77	39	23	23
25	18	107	206	285	141	1020	148	120	75	37	23	23
26	18	72	188	264	134	674	138	117	75	34	22	26
27	18	55	171	247	128	665	129	121	73	33	23	34
28	18	45	175	241	123	548	128	160	73	33	23	28
29	18	40	161	282	118	474	146	146	75	33	23	24
30	20	40	207	271	---	400	185	128	69	33	23	23
31	24	---	428	261	---	346	---	142	---	32	23	---
TOTAL	518	1457	17851	21825	5826	8249	6814	6616	3942	1480	831	684
MEAN	16.7	48.6	576	704	201	266	227	213	131	47.7	26.8	22.8
MAX	24	107	2890	2880	345	1020	397	392	272	67	32	36
MIN	15	24	161	188	118	110	128	117	69	32	22	18
AC-FT	1030	2890	35410	43290	11560	16360	13520	13120	7820	2940	1650	1360
CFSM	.27	.77	9.14	11.2	3.19	4.22	3.61	3.39	2.09	.76	.43	.36
IN.	.31	.86	10.54	12.89	3.44	4.87	4.02	3.91	2.33	.87	.49	.40
CAL YR 1987	TOTAL 83280	MEAN 228	MAX 3810	MIN 15	AC-FT 165200	CFSM 3.62	IN. 49.17					
WTR YR 1988	TOTAL 76093	MEAN 208	MAX 2890	MIN 15	AC-FT 150900	CFSM 3.30	IN. 44.93					

ALSEA RIVER BASIN

14306340 EAST FORK LOBSTER CREEK NEAR ALSEA, OR

LOCATION.--Lat 44°14'53", long 123°38'07", in NE 1/4 SE 1/4 sec.22, T.15 S., R.8 W., Benton County, Hydrologic Unit 17100205, on left bank 500 ft upstream from mouth, and 9 mi south of Alsea.

DRAINAGE AREA.--5.70 mi².

PERIOD OF RECORD.--July 1983 to current year.

REVISED RECORDS.--WDR OR-87-2: 1984(M,P), 1985(M,P), 1986(M,P).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 680 ft, from topographic map.

REMARKS.--No estimated daily discharges. Records good above 5 ft³/s, fair below.

AVERAGE DISCHARGE.--5 years, 23.2 ft³/s, 55.27 in/yr, 16,810 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 652 ft³/s (revised) Nov. 2, 1984, gage height, 3.81 ft, from rating curve extended above 260 ft³/s; maximum gage height, 3.86 ft, Dec. 9, 1987, from crest-stage gage; minimum discharge, 0.17 ft³/s Sept. 27, 28, Oct. 2, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 2	2400	457	3.50	Jan. 10	1530	404	3.40
Dec. 9	2300	*603	3.74	Jan. 14	1730	414	3.42
Dec. 9	2300	(a)	*3.86				

Minimum discharge, 0.17 ft³/s Oct. 2.

(a) From crest-stage gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.53	1.5	53	38	23	9.4	28	20	26	3.9	1.3	.70
2	.29	2.4	90	28	20	9.0	27	22	27	3.9	1.3	.70
3	.35	2.0	261	22	18	9.0	37	27	28	3.9	1.3	.70
4	.35	1.4	98	19	17	12	44	27	23	3.6	1.2	.70
5	.35	1.1	52	18	16	13	40	23	19	3.4	1.1	.70
6	.35	1.0	120	17	14	20	36	22	16	3.3	1.2	.70
7	.35	1.0	111	18	14	18	37	29	15	3.1	1.3	.70
8	.35	.93	68	30	16	15	35	33	14	2.9	1.3	.70
9	.35	1.4	300	91	20	23	31	32	14	2.8	1.3	.70
10	.35	1.5	285	246	34	26	27	26	14	2.6	1.3	.70
11	.35	3.8	94	180	29	21	23	22	13	2.6	1.3	.70
12	.35	12	57	88	25	17	20	19	12	2.6	1.3	.70
13	.35	17	42	69	24	15	18	21	11	3.2	1.3	.62
14	.35	14	34	285	23	14	17	20	9.6	3.4	1.3	.62
15	.52	13	28	218	22	13	16	18	8.9	3.1	1.3	.62
16	.35	16	25	108	22	11	14	19	8.5	2.8	1.3	.62
17	.41	10	20	72	20	11	13	19	7.9	2.4	1.4	.62
18	.41	7.2	18	54	20	9.8	12	18	7.5	2.2	1.4	.62
19	.41	5.6	16	45	19	9.5	13	16	7.0	2.0	1.2	1.9
20	.41	4.5	14	41	17	9.0	15	14	6.6	2.0	1.1	1.8
21	.41	5.6	15	37	16	9.0	16	13	6.1	1.9	1.0	1.3
22	.41	19	22	33	15	8.9	17	12	5.5	1.9	1.0	1.1
23	.41	20	25	30	14	24	15	11	5.5	1.8	.90	1.0
24	.41	17	20	27	13	41	14	11	5.1	1.5	.90	.90
25	.41	22	17	24	12	75	13	9.7	4.5	1.5	.80	.90
26	.41	15	16	22	11	55	12	9.0	4.5	1.5	.80	1.3
27	.41	11	14	20	10	59	12	9.0	4.4	1.3	.80	2.7
28	.41	8.3	14	19	9.9	49	11	13	4.2	1.3	.80	2.0
29	.41	6.9	14	23	9.5	42	13	12	4.2	1.3	.71	1.4
30	.41	6.3	20	26	---	37	17	11	4.1	1.3	.70	1.1
31	.56	---	54	24	---	32	---	12	---	1.3	.70	---
TOTAL	12.19	248.43	2017	1972	523.4	716.6	643	569.7	336.1	76.3	34.61	29.52
MEAN	.39	8.28	65.1	63.6	18.0	23.1	21.4	18.4	11.2	2.46	1.12	.98
MAX	.56	22	300	285	34	75	44	33	28	3.9	1.4	2.7
MIN	.29	.93	14	17	9.5	8.9	11	9.0	4.1	1.3	.70	.62
AC-FT	24	493	4000	3910	1040	1420	1280	1130	667	151	69	59
CFSM	.07	1.45	11.4	11.2	3.17	4.06	3.76	3.22	1.97	.43	.20	.17
IN.	.08	1.62	13.16	12.87	3.42	4.68	4.20	3.72	2.19	.50	.23	.19

CAL YR 1987 TOTAL 7791.23 MEAN 21.3 MAX 354 MIN .29 AC-FT 15450 CFSM 3.74 IN. 50.85
WTR YR 1988 TOTAL 7178.85 MEAN 19.6 MAX 300 MIN .29 AC-FT 14240 CFSM 3.44 IN. 46.85

ALSEA RIVER BASIN

195

14306400 FIVE RIVERS NEAR FISHER, OR

LOCATION.--Lat 44°20'15", long 123°49'35", W-1/2 sec.19, T.14 S., R.9 W., Lincoln County, Hydrologic Unit 17100205, in Siuslaw National Forest, on left bank at downstream side of abandoned highway bridge, 500 ft downstream from Lobster Creek, 3.2 mi north of Fisher, and at mile 3.3.

DRAINAGE AREA.--114 mi².

PERIOD OF RECORD.--August 1958 to September 1963, October 1967 to current year.

REVISED RECORDS.--WSP 1718: 1959.

GAGE.--Water-stage recorder. Elevation of gage is 130 ft from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--26 years, 543 ft³/s, 64.68 in/yr, 393,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,200 ft³/s Jan. 21, 1972, gage height, 21.08 ft; minimum discharge, 16 ft³/s Oct. 1, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 22.3 ft, from floodmarks, discharge, 19,000 ft³/s from rating curve extended above 10,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	0800	4,400	10.90	Jan. 10	1830	7,090	13.78
Dec. 10	0230	*9,280	*15.71	Jan. 14	2300	7,510	14.17

Minimum discharge, 19 ft³/s Oct. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	40	700	959	514	246	524	311	394	e114	e50	31
2	20	48	1040	745	469	218	527	329	492	e113	e49	31
3	21	41	3790	655	434	212	669	414	527	e112	e49	29
4	22	32	1890	570	404	267	727	429	454	e112	e49	29
5	22	29	1030	510	379	275	680	372	389	e102	e48	30
6	21	29	2290	467	356	409	667	371	345	e99	e47	29
7	20	29	2180	448	341	364	707	466	321	e94	e45	29
8	20	31	1540	606	385	334	664	516	292	e89	e45	28
9	21	52	4810	1350	415	442	598	516	281	e88	e44	27
10	22	51	6240	4400	525	456	533	448	274	e84	e44	27
11	20	44	2420	4050	483	401	479	387	249	e84	45	27
12	20	106	1470	2250	440	352	437	354	229	e88	46	26
13	20	173	1070	1700	443	318	403	481	215	e100	44	26
14	21	140	874	4970	403	293	390	429	202	e98	45	25
15	21	97	735	5420	408	274	354	385	190	e89	43	23
16	21	118	653	2930	387	257	328	413	183	e81	44	26
17	21	89	565	1990	377	242	307	381	176	e75	46	27
18	21	69	497	1530	368	230	289	356	170	e72	44	27
19	21	58	446	1230	347	220	296	329	163	e69	41	64
20	20	52	417	1050	331	215	309	304	153	e66	39	50
21	20	63	438	889	316	219	294	283	148	e64	38	38
22	21	79	504	780	300	222	281	264	142	e62	37	33
23	22	123	556	689	286	419	260	250	138	e60	35	31
24	23	140	505	618	272	589	247	235	132	e59	34	31
25	23	180	453	560	259	1360	233	221	128	e57	34	31
26	23	126	415	513	249	996	222	213	127	e56	34	38
27	22	95	390	474	239	1040	211	242	122	e54	33	56
28	23	79	403	497	229	916	223	352	121	e54	33	48
29	23	68	371	618	222	785	264	302	127	e53	31	38
30	23	75	489	598	---	672	303	258	116	e52	31	34
31	27	---	1190	565	---	586	---	277	---	e51	31	---
TOTAL	666	2356	40371	44631	10581	13829	12426	10888	7000	2451	1278	989
MEAN	21.5	78.5	1302	1440	365	446	414	351	233	79.1	41.2	33.0
MAX	27	180	6240	5420	525	1360	727	516	527	114	50	64
MIN	20	29	371	448	222	212	211	213	116	51	31	23
AC-FT	1320	4670	80080	88530	20990	27430	24650	21600	13880	4860	2530	1960
CFSM	.19	.69	11.4	12.6	3.20	3.91	3.63	3.08	2.05	.69	.36	.29
IN.	.22	.77	13.17	14.56	3.45	4.51	4.05	3.55	2.28	.80	.42	.32

CAL YR 1987 TOTAL 164084 MEAN 450 MAX 7120 MIN 20 AC-FT 325500 CFSM 3.94 IN. 53.54
WTR YR 1988 TOTAL 147466 MEAN 403 MAX 6240 MIN 20 AC-FT 292500 CFSM 3.53 IN. 48.12

e Estimated

ALSEA RIVER BASIN

14306500 ALSEA RIVER NEAR TIDEWATER, OR

LOCATION.--Lat 44°23'10", long 123°49'50", in NW 1/4 NW 1/4 sec.6, T.14 S., R.9 W., Lincoln County, Hydrologic Unit 17100205, on right bank 0.9 mi downstream from Grass Creek, 2.5 mi upstream from Scott Creek, 3.8 mi southeast of Tidewater, and at mile 21.0.

DRAINAGE AREA.--334 mi².

PERIOD OF RECORD.--October 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 48.16 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 16, 1939, nonrecording gage at present site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation. Diversion for irrigation upstream from station.

AVERAGE DISCHARGE.--49 years, 1,506 ft³/s, 61.23 in/yr, 1,091,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,800 ft³/s Dec. 22, 1964, gage height, 27.44 ft; minimum discharge, 45 ft³/s Sept. 26, 27, 1965.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood on or about Feb. 3, 1890, reached a stage of 29.5 ft, from floodmark (discharge not determined).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 13,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0600	19,000	a17.94	Jan. 15	0200	*19,300	*b18.08
Jan. 10	2130	16,600	16.63				

Minimum discharge, 59 ft³/s Oct. 7-9, 12-13, 20-22.

a Obtained from National Weather Service readings.

b Maximum recorded, but may have been higher during peak of Dec. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	84	983	2500	1430	758	1630	1050	1040	333	135	79
2	62	110	2300	1970	1320	696	1550	1100	1340	327	134	77
3	62	115	8600	1710	1230	677	1900	1450	1370	325	132	73
4	63	99	5090	1500	1150	765	2040	1510	1200	309	127	72
5	64	84	2610	1340	1090	855	1960	1310	1050	298	121	71
6	63	78	4540	1230	1030	1100	1880	1250	948	289	120	71
7	61	76	5600	1180	988	1060	2000	1610	909	276	119	72
8	59	77	3890	1410	1110	975	1850	1630	857	267	118	71
9	60	99	e10600	3140	1270	1270	1680	1520	818	257	116	68
10	61	121	e15000	10300	1710	1430	1520	1340	808	248	113	66
11	61	114	e6620	11800	1580	1250	1370	1190	756	249	114	66
12	60	210	e3960	6680	1400	1100	1260	1090	697	256	118	65
13	59	351	e2830	4790	1400	998	1170	1290	658	295	117	62
14	60	395	e2260	11600	1270	922	1150	1210	619	278	116	60
15	62	284	e1920	15600	1280	861	1070	1100	583	254	115	60
16	62	354	e1690	8770	1240	806	993	1130	554	236	115	61
17	62	269	e1460	5920	1200	755	937	1070	535	222	118	64
18	61	197	e1290	4490	1190	716	886	1010	517	213	117	66
19	60	161	1180	3560	1120	684	875	946	498	204	109	128
20	60	141	1100	3010	1070	666	1010	884	470	196	102	135
21	59	149	1200	2580	1020	668	947	828	450	187	98	102
22	59	185	1360	2260	969	652	926	775	429	180	95	86
23	61	290	1540	2020	924	1030	865	740	417	175	91	79
24	63	319	1400	1820	879	1410	816	701	398	171	88	76
25	65	462	1260	1650	834	4660	774	665	383	166	86	75
26	65	351	1150	1520	799	3210	733	639	379	159	86	81
27	65	259	1070	1410	764	3280	700	673	368	150	84	123
28	64	213	1090	1400	731	2830	693	887	363	147	83	125
29	63	183	1020	1660	709	2420	793	866	385	145	81	97
30	63	182	1160	1620	---	2100	925	740	354	143	80	84
31	68	---	2750	1550	---	1830	---	756	---	139	80	---
TOTAL	1922	6012	98523	121990	32707	42434	36903	32960	20153	7094	3328	2415
MEAN	62.0	200	3178	3935	1128	1369	1230	1063	672	229	107	80.5
MAX	68	462	15000	15600	1710	4660	2040	1630	1370	333	135	135
MIN	59	76	983	1180	709	652	693	639	354	139	80	60
AC-FT	3810	11920	195400	242000	64870	84170	73200	65380	39970	14070	6600	4790
CFSM	.19	.60	9.52	11.8	3.38	4.10	3.68	3.18	2.01	.69	.32	.24
IN.	.21	.67	10.97	13.59	3.64	4.73	4.11	3.67	2.24	.79	.37	.27

CAL YR 1987 TOTAL 435667 MEAN 1194 MAX 16800 MIN 59 AC-FT 864100 CFSM 3.57 IN. 48.52
WTR YR 1988 TOTAL 406441 MEAN 1110 MAX 15600 MIN 59 AC-FT 806200 CFSM 3.32 IN. 45.27

e Estimated

BIG CREEK BASIN

197

14306900 BIG CREEK NEAR ROOSEVELT BEACH, OR

LOCATION.--Lat 44°10'05", long 124°03'55", in SE 1/4 SE 1/4 sec.13, T.16 S., R.12 W., Lane County, Hydrologic Unit 17100205, on right bank 1.0 mi downstream from Frying Pan Creek, 2.5 mi east of Roosevelt Beach.

DRAINAGE AREA.--11.9 mi².

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 141 ft, by barometer.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--16 years, 90.9 ft³/s, 103.73 in/yr, 65,860 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,150 ft³/s Nov. 30, 1975, gage height, 6.90 ft; minimum discharge, 3.8 ft³/s Oct. 15, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 9	2000	*791	5.71	Dec. 9	2000	(a)	*6.22

Minimum discharge, 4.7 ft³/s Oct. 19-30.

(a) From crest-stage gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	23	99	121	101	51	117	45	142	27	11	6.7
2	5.0	38	139	112	92	47	127	54	163	29	11	6.7
3	5.1	11	319	108	85	47	146	71	169	26	10	6.7
4	5.2	8.6	197	96	78	65	139	67	153	24	10	6.7
5	5.0	7.6	216	e90	73	63	129	61	135	24	10	6.7
6	5.0	7.1	269	e84	68	93	151	94	120	23	9.8	6.7
7	5.0	7.0	195	e82	65	76	146	125	106	22	9.8	6.7
8	5.0	7.0	184	126	103	76	135	112	94	21	9.8	6.4
9	5.0	13	531	257	130	76	125	97	87	20	9.6	6.1
10	5.0	9.1	208	e220	153	70	112	87	83	19	9.4	6.1
11	5.0	30	168	e214	138	66	101	79	73	20	9.4	6.1
12	5.0	37	167	e171	129	63	92	81	66	29	9.4	6.1
13	5.0	95	180	217	124	60	84	122	61	34	9.4	5.8
14	5.0	49	167	493	109	57	77	111	57	25	9.4	5.8
15	5.0	36	128	602	109	54	71	103	53	22	9.0	5.8
16	5.0	36	114	438	98	51	66	117	49	20	10	6.0
17	5.0	33	102	308	96	49	61	104	46	19	9.9	6.1
18	5.0	28	93	256	91	47	57	99	45	17	9.3	6.9
19	4.8	25	85	211	83	45	58	92	42	16	8.6	28
20	4.7	23	102	178	78	48	53	86	40	16	8.5	9.9
21	4.7	24	126	147	73	53	53	79	38	14	8.2	7.8
22	4.7	32	122	130	67	50	50	74	37	14	7.8	7.1
23	4.7	29	112	114	64	58	46	69	35	13	7.4	6.7
24	4.7	44	109	102	59	97	43	64	34	13	7.4	6.7
25	4.7	43	98	91	56	278	42	60	32	13	7.4	15
26	4.7	39	90	83	53	275	40	61	31	12	7.4	23
27	4.7	35	85	77	51	279	37	81	31	12	7.4	29
28	4.7	31	84	96	48	234	48	136	30	12	7.4	13
29	4.7	29	78	122	46	188	48	113	30	12	7.4	10
30	4.9	30	97	114	---	154	47	100	28	12	7.1	9.0
31	11	---	128	109	---	133	---	116	---	11	7.0	---
TOTAL	158.0	859.4	4792	5569	2520	3003	2501	2760	2110	591	275.2	279.3
MEAN	5.10	28.6	155	180	86.9	96.9	83.4	89.0	70.3	19.1	8.88	9.31
MAX	11	95	531	602	153	279	151	136	169	34	11	29
MIN	4.7	7.0	78	77	46	45	37	45	28	11	7.0	5.8
AC-FT	313	1700	9500	11050	5000	5960	4960	5470	4190	1170	546	554
CFSM	.43	2.41	13.0	15.1	7.30	8.14	7.01	7.48	5.91	1.60	.75	.78
IN.	.49	2.69	14.98	17.41	7.88	9.39	7.82	8.63	6.60	1.85	.86	.87

CAL YR 1987 TOTAL 27113.0 MEAN 74.3 MAX 900 MIN 4.7 AC-FT 53780 CFSM 6.24 IN. 84.76
WTR YR 1988 TOTAL 25417.9 MEAN 69.4 MAX 602 MIN 4.7 AC-FT 50420 CFSM 5.84 IN. 79.46

e Estimated

SIUSLAW RIVER BASIN

14307580 LAKE CREEK NEAR DEADWOOD, OR

LOCATION.--Lat 44°04'58", long 123°47'05", in NW 1/4 NW 1/4 sec.21, T.17 S., R.9 W., Lane County, Hydrologic Unit 17100206, on right bank 0.2 mi upstream from Indian Creek, 1.5 mi southwest of Deadwood, and at mile 2.6.

DRAINAGE AREA.--174 mi².

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 178.86 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow slightly regulated by natural storage in Triangle Lake. Several diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--21 years, 709 ft³/s, 55.33 in/yr, 513,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,400 ft³/s Dec. 25, 1980, gage height, 15.86 ft; minimum discharge, 12 ft³/s Aug. 14, 15, 17, 18, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	0530	5,640	7.27	Jan. 10	1930	8,370	9.18
Dec. 10	0330	*10,000	*10.23	Jan. 15	0100	8,650	9.36

Minimum discharge, 18 ft³/s Sept. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	42	517	1430	669	347	706	449	409	142	56	31
2	23	62	1110	1080	613	322	686	473	487	145	55	31
3	22	49	4740	909	565	316	921	607	513	143	55	29
4	23	40	2920	771	525	357	1090	643	458	137	52	28
5	23	36	1660	668	493	393	1040	572	404	134	51	28
6	22	34	2430	600	465	560	937	558	364	128	50	28
7	21	33	2720	568	446	536	918	813	352	122	50	28
8	20	33	1990	695	528	487	832	877	325	118	49	26
9	21	42	5010	2090	705	610	742	856	315	113	49	26
10	22	46	7100	5820	804	660	661	726	306	108	48	25
11	22	49	3490	5740	764	594	593	605	289	107	49	23
12	21	117	2190	3780	693	521	541	530	271	111	50	21
13	21	154	1440	2740	693	462	499	577	256	124	49	20
14	22	152	1090	5500	636	420	484	537	241	117	48	20
15	21	126	904	6930	613	386	452	478	228	109	48	19
16	21	152	792	4570	583	358	424	486	216	102	48	19
17	20	128	683	3210	556	334	397	462	206	97	50	20
18	21	103	595	2420	537	316	376	430	201	93	48	19
19	20	85	526	1900	505	302	371	392	195	89	45	40
20	20	76	487	1600	477	294	394	361	185	85	43	51
21	20	75	533	1350	453	300	422	335	176	81	42	35
22	20	125	673	1170	431	295	420	309	168	79	41	30
23	21	191	812	1030	410	508	391	295	166	76	39	29
24	21	181	715	910	390	829	365	279	162	73	37	30
25	22	222	618	822	371	2020	346	263	159	72	37	29
26	21	172	546	754	357	1580	328	251	156	69	36	42
27	22	135	499	694	342	1550	312	261	149	65	35	57
28	22	111	488	661	329	1340	305	315	148	64	34	51
29	22	95	454	745	318	1130	347	311	159	61	33	39
30	22	94	637	747	---	949	406	280	146	59	32	34
31	27	---	1900	715	---	807	---	296	---	57	32	---
TOTAL	669	2960	50269	62619	15271	19883	16706	14627	7810	3080	1391	908
MEAN	21.6	98.7	1622	2020	527	641	557	472	260	99.4	44.9	30.3
MAX	27	222	7100	6930	804	2020	1090	877	513	145	56	57
MIN	20	33	454	568	318	294	305	251	146	57	32	19
AC-FT	1330	5870	99710	124200	30290	39440	33140	29010	15490	6110	2760	1800
CFSM	.12	.57	9.32	11.6	3.03	3.69	3.20	2.71	1.50	.57	.26	.17
IN.	.14	.63	10.75	13.39	3.26	4.25	3.57	3.13	1.67	.66	.30	.19

CAL YR 1987 TOTAL 208673 MEAN 572 MAX 7100 MIN 20 AC-FT 413900 CFSM 3.29 IN. 44.61
WTR YR 1988 TOTAL 196193 MEAN 536 MAX 7100 MIN 19 AC-FT 389100 CFSM 3.08 IN. 41.94

SIUSLAW RIVER BASIN

199

14307620 SIUSLAW RIVER NEAR MAPLETON, OR
(National stream quality accounting network station)

LOCATION.--Lat 44°03'45", long 123°52'55", in SW 1/4 NW 1/4 sec.27, T.17 S., R.10 W., Lane County, Hydrologic Unit 17100206, on right bank 250 ft above Shoemaker Creek, 2.5 mi northwest of Mapleton, and at mile 23.7.

DRAINAGE AREA.--588 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 41 ft, from topographic map.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversions upstream from station.

AVERAGE DISCHARGE.--21 years, 2,116 ft³/s, 48.87 in/yr, 1,533,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,400 ft³/s Jan. 21, 1972, gage height, 28.45 ft; minimum discharge, 45 ft³/s Aug. 18, 19, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of December 1964 reached a stage of about 28 ft, from information by local residents (discharge not determined).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 15,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	1030	16,100	15.12	Jan. 10	2130	23,900	18.91
Dec. 10	0430	*26,900	*20.19	Jan. 15	0330	23,700	18.86

Minimum discharge, 59 ft³/s Oct. 14-16, 18-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	107	1060	5760	2190	1080	2000	1620	1380	433	186	116
2	73	206	2890	3720	2030	1070	1920	1700	1630	428	181	112
3	70	193	13400	2960	1860	1070	2490	2060	1700	428	181	109
4	69	149	8900	2510	1720	1130	2900	2270	1510	413	181	106
5	69	124	4510	2200	1610	1290	2890	2060	1350	409	177	105
6	69	115	6320	1970	1520	1750	2660	1960	1230	396	172	104
7	65	113	7890	1830	1450	1820	2580	2750	1160	378	172	101
8	62	109	5560	2100	1640	1660	2390	2970	1080	365	170	93
9	62	121	12700	5300	2230	1870	2190	2650	1040	352	167	92
10	62	132	21200	16900	2560	2050	2010	2300	1020	341	165	89
11	63	143	9890	18500	2400	1920	1820	1980	955	337	165	86
12	62	301	5620	11600	2170	1700	1670	1760	886	345	170	83
13	63	481	3640	7640	2110	1510	1550	1930	829	415	173	80
14	61	562	2790	13400	1940	1370	1490	1870	762	382	173	86
15	59	422	2370	20700	1850	1270	1410	1690	734	350	173	85
16	59	444	2100	13300	1790	1190	1340	1690	701	324	172	78
17	62	413	1920	9190	1700	1110	1260	1610	666	302	177	77
18	61	347	1730	6850	1650	1040	1190	1510	649	290	178	78
19	59	292	1550	5280	1550	991	1170	1390	626	277	170	137
20	59	249	1440	4400	1470	963	1230	1280	596	268	164	181
21	59	240	1620	3770	1410	981	1350	1190	572	257	158	148
22	59	312	2120	3290	1340	960	1620	1110	542	243	156	128
23	59	518	2780	2930	1280	1420	1650	1060	515	236	150	116
24	62	528	2570	2640	1230	2110	1430	995	494	230	148	115
25	63	709	2180	2410	1180	5160	1280	943	484	227	145	116
26	66	592	1890	2230	1130	4130	1170	907	477	218	144	151
27	66	448	1680	2090	1070	3900	1100	943	463	208	133	207
28	66	363	1600	2010	1030	3370	1060	1140	455	204	125	207
29	66	306	1480	2200	1000	2930	1170	1130	476	199	123	168
30	67	285	1790	2260	---	2540	1360	1020	451	194	120	147
31	77	---	7400	2340	---	2230	---	1070	---	189	118	---
TOTAL	1993	9324	144590	184280	48110	57585	51350	50558	25433	9638	4987	3501
MEAN	64.3	311	4664	5945	1659	1858	1712	1631	848	311	161	117
MAX	77	709	21200	20700	2560	5160	2900	2970	1700	433	186	207
MIN	59	107	1060	1830	1000	960	1060	907	451	189	118	77
AC-FT	3950	18490	286800	365500	95430	114200	101900	100300	50450	19120	9890	6940
CFSM	.11	.53	7.93	10.1	2.82	3.16	2.91	2.77	1.44	.53	.27	.20
IN.	.13	.59	9.15	11.66	3.04	3.64	3.25	3.20	1.61	.61	.32	.22

CAL YR 1987 TOTAL 602819 MEAN 1652 MAX 21200 MIN 59 AC-FT 1196000 CFSM 2.81 IN. 38.14
WTR YR 1988 TOTAL 591349 MEAN 1616 MAX 21200 MIN 59 AC-FT 1173000 CFSM 2.75 IN. 37.41

SIUSLAW RIVER BASIN

14307620 SIUSLAW RIVER NEAR MAPLETON, OR--continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: June 1978 to September 1981.

WATER TEMPERATURE: November 1967 to September 1975. October 1977 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCARB (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)	
OCT 28...	1130	66	60	7.5	8.5	11.1	95	--	--	16	0	4.0	
MAR 03...	1230	1070	42	7.3	9.5	12.0	104	K6	K2	11	0	2.9	
MAY 19...	1430	1400	44	7.5	14.0	10.8	104	K12	K15	12	0	3.0	
SEP 07...	1348	102	49	7.8	21.5	8.6	97	32	140	14	0	3.3	
DATE		MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WATER DIS IT FIELD (MG/L AS CACO3)	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3)	CAR- BONATE WATER DIS IT FIELD (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)
OCT 28...	1.5	4.8	1.0	19	24	0	3.9	8.1	0.1	0.04	<0.1	<0.2	
MAR 03...	1.0	4.1	0.7	14	16	0	2.7	4.1	0.1	<0.01	0.2	<0.2	
MAY 19...	1.1	4.0	0.7	14	17	0	2.7	3.4	0.2	<0.01	0.2	0.6	
SEP 07...	1.3	5.1	0.8	17	20	0	2.0	5.0	0.1	<0.01	<0.1	0.3	
DATE		PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS TOTAL (MG/L AS P)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	TUR- BID- ITY (NTU)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	
OCT 28...	<0.01	0.01	0.02	11	41	47	7.3	0.9	2	0.36	90		
MAR 03...	<0.01	<0.01	0.01	11	37	36	107	1.7	2	5.8	87		
MAY 19...	<0.01	<0.01	0.01	12	35	37	132	1.4	4	15	85		
SEP 07...	<0.01	0.02	0.02	10	32	38	8.8	1.3	3	0.83	76		

K - Results based on colony count outside acceptable range (non-ideal colony count).

SIUSLAW RIVER BASIN

201

14307620 SIUSLAW RIVER NEAR MAPLETON, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
OCT 28...	<10	<1	12	<0.5	4	<1	<3	4	150	<5
MAR 03...	30	<1	11	<0.5	3	<1	<3	4	110	<5
MAY 19...	30	<1	10	<0.5	<1	<1	<3	5	110	<5
SEP 07...	20	<1	10	<0.5	<1	1	<3	4	110	<5
DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 28...	<4	5	<0.1	<10	2	<1	<1	50	<6	17
MAR 03...	<4	3	<0.1	<10	<1	<1	<1	34	<6	10
MAY 19...	<4	4	<0.1	<10	<1	<1	<1	37	<6	9
SEP 07...	<4	7	<0.1	<10	<1	<1	1	44	<6	10

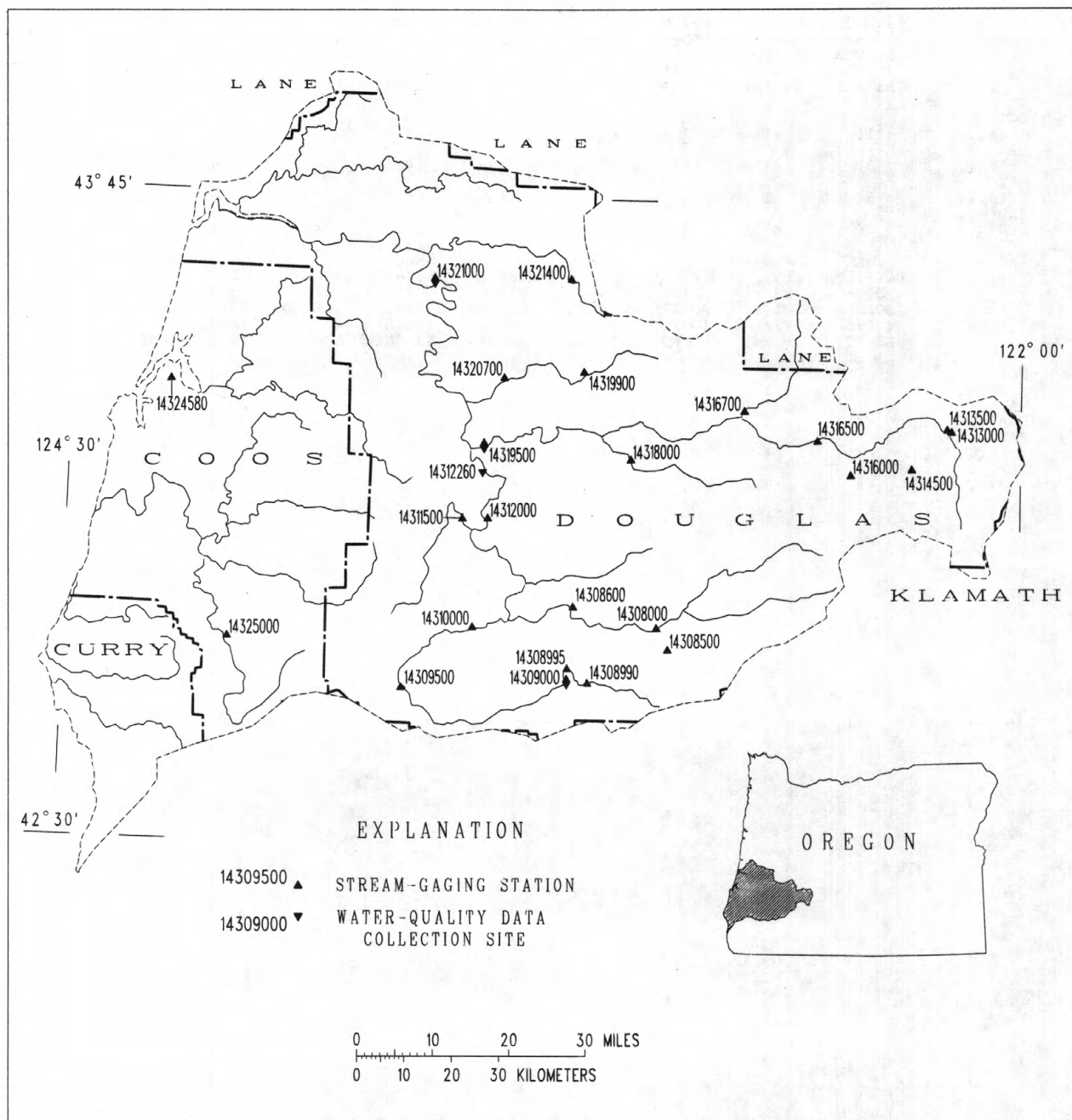


Figure 6.--Location of surface-water and water-quality stations in the Umpqua River, Coos River, and Coquille River basins.

SOUTH UMPQUA RIVER BASIN

203

14308000 SOUTH UMPQUA RIVER AT TILLER, OR

LOCATION.--Lat 42°55'50", long 122°56'50", in NE 1/4 sec.33, T.30 S., R.2 W., Douglas County, Hydrologic Unit 17100302, Umpqua National Forest, on left bank 0.3 mi upstream from bridge on State Highway 227 at Tiller, 0.3 mi upstream from Elk Creek, and at mile 187.31.

DRAINAGE AREA.--449 mi².

PERIOD OF RECORD.--October 1910 to December 1911, October 1939 to current year. Monthly discharge only for some periods, published in WSP 1318. Prior to December 1911, published as South Fork of Umpqua River at Tiller.

REVISED RECORDS.--WSP 1448: 1911(M), 1912, drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 991.8 ft above National Geodetic Vertical Datum of 1929 (river-profile survey). Prior to Oct. 1, 1939, nonrecording gage at site 0.2 mi downstream at different datum.

REMARKS.--Records good. No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--50 years, 1,034 ft³/s, 31.27 in/yr, 749,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 60,200 ft³/s Dec. 22, 1964, gage height, 25.72 ft; minimum discharge observed, 20 ft³/s Sept. 3, 4, 1911.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	1000	8,440	9.57	Jan. 10	0900	(a)	*10.83
Jan. 10	0900	*9,980	10.43	Jan. 15	0300	7,060	8.70

Minimum discharge, 33 ft³/s Oct. 13-15.

(a) From crest-stage gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	39	203	310	1180	590	687	1450	2450	207	79	50
2	35	47	1230	285	1020	584	665	1410	2580	199	77	50
3	34	56	1020	301	883	613	1070	2130	1990	190	76	48
4	34	48	825	430	783	825	1220	2150	1880	187	75	46
5	35	43	970	582	726	1440	1190	1760	1710	179	74	46
6	36	42	1220	563	684	1390	1080	1650	1610	169	73	45
7	36	41	1680	544	640	1280	1010	3030	2130	161	73	44
8	34	40	1090	612	668	1090	887	2980	1950	155	71	44
9	34	41	1820	2850	2210	1500	797	2950	1600	152	70	44
10	34	44	5700	8350	1940	1530	720	2310	1350	147	68	43
11	34	47	2610	5020	1580	1280	672	e2000	1130	141	67	43
12	34	83	1450	2820	1370	1130	642	e1900	959	141	67	43
13	33	202	994	1980	1240	1010	626	e2000	826	135	67	42
14	33	290	754	3050	1070	921	689	e1500	727	129	66	42
15	33	149	657	5510	986	820	660	e1300	643	128	66	41
16	34	183	646	3120	883	723	584	e1100	580	123	66	40
17	34	238	579	2170	782	635	550	1150	523	121	64	40
18	34	183	487	1620	717	574	520	1020	473	116	62	40
19	34	126	430	1270	647	530	497	902	430	114	61	47
20	34	101	384	1100	604	494	526	795	395	109	60	86
21	35	133	560	1090	577	491	1300	718	356	105	58	72
22	34	159	1100	1050	557	517	1720	655	326	100	57	57
23	34	161	939	1100	534	614	1350	597	304	96	56	53
24	34	178	719	1070	508	737	1090	546	282	96	55	52
25	34	355	587	1000	485	739	914	497	269	96	54	50
26	36	214	508	1020	475	861	783	449	258	92	53	50
27	36	161	455	1100	487	983	713	423	242	88	52	58
28	36	133	427	1180	499	915	656	444	229	86	52	92
29	35	114	413	1290	504	870	937	545	228	84	51	66
30	35	106	392	1720	---	817	1390	508	216	82	50	56
31	36	---	349	1390	---	738	---	493	---	82	50	---
TOTAL	1070	3757	31198	55497	25239	27241	26145	41362	28646	4010	1970	1530
MEAN	34.5	125	1006	1790	870	879	871	1334	955	129	63.5	51.0
MAX	36	355	5700	8350	2210	1530	1720	3030	2580	207	79	92
MIN	33	39	203	285	475	491	497	423	216	82	50	40
AC-FT	2120	7450	61880	110100	50060	54030	51860	82040	56820	7950	3910	3030
CFSM	.08	.28	2.24	3.99	1.94	1.96	1.94	2.97	2.13	.29	.14	.11
IN.	.09	.31	2.58	4.60	2.09	2.26	2.17	3.43	2.37	.33	.16	.13

CAL YR 1987 TOTAL 220849 MEAN 605 MAX 7460 MIN 33 AC-FT 438100 CFSM 1.35 IN. 18.30
WTR YR 1988 TOTAL 247665 MEAN 677 MAX 8350 MIN 33 AC-FT 491200 CFSM 1.51 IN. 20.52

e Estimated

SOUTH UMPQUA RIVER BASIN
14308500 ELK CREEK NEAR DREW, OR

LOCATION.--Lat 42°53'25", long 122°55'00", in SW 1/4 sec.11, T.31 S., R.2 W., Douglas County, Hydrologic Unit 17100302, on right bank 100 ft downstream from Dixon Creek, 0.1 mi upstream from Drew Creek, 1.3 mi northwest of Drew, 3.3 mi southeast of Tiller, and at mile 4.1.

DRAINAGE AREA.--54.4 mi².

PERIOD OF RECORD.--September 1954 to September 1982, October 1986 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,279.25 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No regulation. Several diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--30 years (1955-82, 1987-88), 81.7 ft³/s, 20.39 in/yr, 59,190 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,880 ft³/s Dec. 22, 1964, gage height, 10.61 ft, from rating curve extended above 2,900 ft³/s on basis of slope-area measurement at gage height 10.34 ft; maximum gage height, 10.80 ft Jan. 15, 1974; no flow at times during water years 1974, 1977, 1981, 1987, and 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 11.8 ft, from floodmarks, probably for flood in January or November 1953, discharge, about 11,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0830	*951	*5.76				
No flow Sept. 10.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.51	1.2	22	28	77	37	31	88	147	8.0	.53	.35
2	.51	1.6	65	25	68	38	29	83	151	7.5	.50	.35
3	.53	1.8	64	29	58	38	28	102	110	7.5	.48	.23
4	.56	2.1	55	49	51	43	25	114	89	7.3	.47	.18
5	.56	1.9	53	59	47	57	23	106	83	6.8	.54	.17
6	.56	1.9	189	55	44	56	21	109	163	6.2	.50	.15
7	.56	1.9	223	52	41	51	22	215	270	5.9	.51	.11
8	.56	1.9	139	64	42	46	21	209	183	5.4	.56	.07
9	.56	2.1	183	168	68	78	19	209	133	4.7	.52	.03
10	.56	2.4	644	312	71	82	18	143	102	4.2	.39	.00
11	.57	2.5	248	287	65	66	16	102	79	4.0	.30	.07
12	.58	4.3	133	189	59	56	15	82	66	4.2	.35	.16
13	.59	5.5	84	148	58	49	15	79	53	4.0	.57	.17
14	.60	8.6	62	238	51	44	17	64	45	3.6	.63	.21
15	.60	6.3	60	426	47	39	17	52	38	3.5	.65	.29
16	.63	6.2	73	247	44	34	18	50	32	3.1	.61	.20
17	.63	6.2	64	171	40	30	18	48	29	2.6	.58	.19
18	.63	5.1	48	125	37	26	18	41	25	2.3	.60	.23
19	.63	3.7	40	94	34	24	20	35	22	1.9	.57	.41
20	.63	3.2	35	80	32	22	22	30	19	1.4	.43	1.9
21	.63	4.3	42	80	30	22	110	26	17	1.6	.42	1.5
22	.63	5.2	78	76	29	22	148	23	15	1.1	.44	.75
23	.63	5.0	77	78	27	28	104	21	14	1.1	.32	.62
24	.63	5.4	61	76	26	34	73	20	13	.97	.29	.61
25	.67	8.7	49	72	24	28	57	18	12	.99	.24	.60
26	.67	6.4	45	72	24	26	46	16	11	.85	.19	.53
27	.67	4.9	42	79	24	36	39	15	11	.68	.18	.60
28	.67	4.0	42	84	25	38	36	18	9.8	.64	.26	.57
29	.69	3.3	44	87	25	38	53	24	9.3	.56	.20	.59
30	.78	3.4	39	96	---	38	63	22	8.7	.59	.20	.67
31	.93	---	33	84	---	34	---	23	---	.52	.27	---
TOTAL	19.16	121.0	3036	3730	1268	1260	1142	2187	1959.8	103.70	13.30	12.51
MEAN	.62	4.03	97.9	120	43.7	40.6	38.1	70.5	65.3	3.35	.43	.42
MAX	.93	8.7	644	426	77	82	148	215	270	8.0	.65	1.9
MIN	.51	1.2	22	25	24	22	15	15	8.7	.52	.18	.00
AC-FT	38	240	6020	7400	2520	2500	2270	4340	3890	206	26	25
CFSM	.01	.07	1.80	2.21	.80	.75	.70	1.30	1.20	.06	.01	.01
IN.	.01	.08	2.08	2.55	.87	.86	.78	1.50	1.34	.07	.01	.01

CAL YR 1987	TOTAL 18486.92	MEAN 50.6	MAX 1250	MIN .01	AC-FT 36670	CFSM .93	IN. 12.64
WTR YR 1988	TOTAL 14852.47	MEAN 40.6	MAX 644	MIN .00	AC-FT 29460	CFSM .75	IN. 10.16

SOUTH UMPQUA RIVER BASIN

205

14308600 SOUTH UMPQUA RIVER AT DAYS CREEK, OR

LOCATION.--Lat 42°58'05", long 123°09'60", in NW 1/4 sec.15, T.30 S., R.4 W., Douglas County, Hydrologic Unit 17100302, on left bank 0.3 mi upstream from Days Creek, 0.4 mi southeast of community of Days Creek, and at mile 170.2.

DRAINAGE AREA.--641 mi².

PERIOD OF RECORD.--March 1975 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 738.55 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good. No regulation. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--13 years, 1,152 ft³/s, 24.41 in/yr, 834,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,300 ft³/s Dec. 6, 1981, gage height, 22.39 ft; minimum discharge, 29 ft³/s Oct. 14, 15, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 12,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 10	1130	*10,800	*11.44				
Minimum discharge, 29 ft ³ /s Oct. 14, 15.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	34	202	433	1510	716	844	1730	2240	280	81	47
2	32	41	1310	399	1280	747	796	1670	3120	269	79	46
3	31	56	1230	394	1100	741	1140	2290	2310	262	76	45
4	30	63	956	499	976	897	1440	2480	2150	256	74	43
5	31	52	1210	694	901	1670	1420	2130	1970	247	72	39
6	31	47	1570	695	849	1650	1280	1990	1890	235	71	38
7	31	45	2480	658	792	1600	1210	3340	2440	227	71	37
8	31	43	1540	682	790	1350	1080	3530	2360	217	69	37
9	30	43	1930	2350	2210	1770	973	3580	1960	208	67	37
10	30	44	6570	9000	2250	1990	879	2790	1690	199	67	38
11	31	53	3430	6010	1870	1670	811	2350	1380	189	65	38
12	31	78	1930	3490	1630	1440	776	2080	1160	184	66	36
13	30	196	1300	2450	1480	1270	755	2160	982	178	66	36
14	29	386	950	3120	1290	1140	806	1800	849	171	66	35
15	29	255	799	6700	1160	1020	774	1540	743	166	66	34
16	31	226	885	3970	1050	906	716	1390	668	163	66	33
17	32	305	818	2810	925	796	683	1480	610	156	64	33
18	32	277	659	2130	855	724	648	1290	560	148	62	34
19	32	200	579	1680	771	676	619	1130	513	142	60	43
20	32	155	523	1420	721	638	654	995	479	135	60	84
21	33	156	592	1390	691	622	1440	889	446	127	59	120
22	33	227	1330	1310	670	672	2210	798	415	120	57	80
23	32	217	1290	1340	648	713	1830	730	391	117	55	63
24	32	238	958	1330	625	931	1420	676	369	115	53	57
25	32	405	752	1230	605	884	1160	621	348	110	51	54
26	32	322	652	1220	597	1010	968	575	337	106	49	52
27	33	244	589	1300	607	1160	862	540	322	98	49	57
28	34	203	553	1440	616	1120	790	525	306	92	48	109
29	34	174	539	1470	629	1060	982	661	299	89	47	103
30	33	160	521	2060	---	1010	1580	625	292	87	48	73
31	33	---	480	1720	---	910	---	582	---	85	47	---
TOTAL	980	4945	39127	65394	30098	33503	31546	48967	33599	5178	1931	1581
MEAN	31.6	165	1262	2109	1038	1081	1052	1580	1120	167	62.3	52.7
MAX	34	405	6570	9000	2250	1990	2210	3580	3120	280	81	120
MIN	29	34	202	394	597	622	619	525	292	85	47	33
AC-FT	1940	9810	77610	129700	59700	66450	62570	97130	66640	10270	3830	3140
CFSM	.05	.26	1.97	3.29	1.62	1.69	1.64	2.46	1.75	.26	.10	.08
IN.	.06	.29	2.27	3.80	1.75	1.94	1.83	2.84	1.95	.30	.11	.09

CAL YR 1987	TOTAL 264247	MEAN 724	MAX 10100	MIN 29	AC-FT 524100	CFSM 1.13	IN. 15.34
WTR YR 1988	TOTAL 296849	MEAN 811	MAX 9000	MIN 29	AC-FT 588800	CFSM 1.27	IN. 17.23

SOUTH UMPQUA RIVER BASIN

14308990 COW CREEK ABOVE GALESVILLE RESERVOIR, NEAR AZALEA, OR

LOCATION.--Lat 42°49'24", long 123°07'29", in SW 1/4 NW 1/4 sec.1, T.32 S., R.4 W., Douglas County, Hydrologic Unit 17100302, on left bank, about 600 ft upstream from bridge on Houck Ranch Road (BLM), 1.1 mi downstream from Sugar Creek, 3.2 mi south of Galesville Dam, 6.9 mi northeast of Azalea, and at mile 65.6

DRAINAGE AREA.--64.7 mi².

PERIOD OF RECORD.--October 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,900 ft, from topographic map.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 2,610 ft³/s Feb. 2, 1987, gage height 6.89 ft; minimum discharge, 5.1 ft³/s Sept. 4, 1987, Sept. 4-7, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1927 occurred Jan. 15, 1974. Stage and discharge not known at this site, but was 10,600 ft³/s at site 7.4 mi downstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0600	*1,280	*4.68	No other peak greater than base discharge.			
Minimum discharge, 5.1 ft ³ /s Sept. 4-7.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	7.0	63	e28	95	48	34	49	86	18	8.7	6.4
2	6.0	7.7	87	e27	81	43	33	47	79	18	8.8	6.0
3	5.9	7.9	86	e31	71	42	33	50	57	18	9.0	5.5
4	6.0	7.9	69	43	63	42	32	53	48	18	8.6	5.4
5	6.6	7.5	60	51	60	48	30	51	45	17	7.9	5.2
6	6.8	7.5	381	50	57	46	29	55	44	16	8.4	5.2
7	6.9	7.5	281	49	54	44	32	114	61	16	8.3	5.3
8	6.7	7.5	143	66	54	41	31	156	73	15	8.2	5.6
9	6.7	7.9	226	197	75	52	30	176	63	14	8.2	5.7
10	6.9	8.2	858	396	74	55	28	117	57	14	7.9	5.5
11	6.9	8.0	249	341	71	49	27	88	50	13	7.9	5.8
12	6.6	14	127	193	68	45	27	74	45	14	8.9	6.0
13	6.6	20	86	160	66	42	26	71	41	13	8.6	5.6
14	6.5	24	67	401	59	40	31	60	38	13	8.6	5.4
15	6.3	15	59	560	56	38	28	53	35	13	8.8	5.4
16	6.2	15	56	274	53	37	27	52	33	13	8.7	5.4
17	6.2	15	47	187	49	34	27	48	31	12	8.2	5.9
18	6.5	12	41	138	49	33	26	43	29	12	8.1	6.0
19	6.6	11	39	108	46	31	27	40	27	12	7.9	8.7
20	6.5	10	36	93	44	30	27	38	26	11	7.9	17
21	6.3	14	37	89	43	31	56	35	25	11	7.7	11
22	5.9	14	51	83	42	31	73	33	23	10	7.5	9.4
23	5.9	13	48	87	40	36	61	31	23	10	6.6	8.8
24	5.9	16	42	89	39	38	51	31	21	10	6.7	8.6
25	6.2	23	e34	83	38	34	45	29	21	10	6.5	8.3
26	6.5	15	e33	82	38	32	40	28	21	9.9	6.5	8.2
27	6.5	13	e35	91	38	37	38	27	20	9.4	6.3	8.7
28	6.3	12	35	99	38	36	38	32	19	9.3	6.4	9.4
29	6.2	11	35	118	38	37	42	35	19	9.4	6.0	8.9
30	6.3	15	34	136	---	37	50	31	19	9.2	6.2	8.2
31	6.6	---	32	111	---	35	---	30	---	9.1	6.4	---
TOTAL	198.7	366.6	3477	4461	1599	1224	1079	1777	1179	397.3	240.4	216.5
MEAN	6.41	12.2	112	144	55.1	39.5	36.0	57.3	39.3	12.8	7.75	7.22
MAX	6.9	24	858	560	95	55	73	176	86	18	9.0	17
MIN	5.9	7.0	32	27	38	30	26	27	19	9.1	6.0	5.2
AC-FT	394	727	6900	8850	3170	2430	2140	3520	2340	788	477	429
CFSM	.10	.19	1.73	2.22	.85	.61	.56	.89	.61	.20	.12	.11
IN.	.11	.21	2.00	2.56	.92	.70	.62	1.02	.68	.23	.14	.12

CAL YR 1987 TOTAL 23160.6 MEAN 63.5 MAX 1500 MIN 5.5 AC-FT 45940 CFSM .98 IN. 13.32
WTR YR 1988 TOTAL 16215.5 MEAN 44.3 MAX 858 MIN 5.2 AC-FT 32160 CFSM .68 IN. 9.32

e Estimated

SOUTH UMPQUA RIVER BASIN

207

14308995 GALESVILLE RESERVOIR NEAR AZALEA, OR

LOCATION.--Lat 42°50'56", long 123°10'40", in NE 1/4 sec.28, T.31 S., R.4 W., Douglas County, Hydrologic Unit 17100302, on the upstream face of Galesville dam to the right side of the spillway section, 1.2 mi downstream from McGinnis Creek, 5.6 mi northeast of Azalea, and at mile 60.2.

DRAINAGE AREA.--74.3 mi².

PERIOD OF RECORD.--October 1985 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Douglas County).

REMARKS.--Reservoir is formed by a roller compacted concrete dam; storage began Oct. 7, 1985. Capacity, 42,220 acre-ft between elevations 1,780.0 ft (bottom of evacuation outlet) and 1,881.5 ft (crest of spillway). Dead storage, 1,800 acre-ft below elevation 1,780.0 ft. Reservoir is used for irrigation, power generation, flood control, and recreation. Figures given herein represent total contents.

COOPERATION.--Elevations and capacity table furnished by Douglas County Water Resources Department.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents recorded, 37,870 acre-ft Apr. 5, 1987, elevation, 1,875.00 ft; minimum contents, 12,820 acre-ft Sept. 30, 1987, elevation, 1,822.46 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 23,730 acre-ft June 13, 14, elevation, 1,848.56 ft; minimum contents, 12,820 acre-ft Sept. 30, elevation, 1,822.46 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)

1,780	1,800	1,820	11,954	1,860	29,476
1,790	3,589	1,830	15,656	1,870	34,969
1,800	5,889	1,840	19,819	1,880	40,932
1,810	8,696	1,850	24,422	1,885	44,127

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1847.39	1842.29	---	1839.99	1842.97	1843.08	1843.53	1844.38	1847.46	1845.40	1837.92	1829.40
2	1847.22	1842.15	---	1839.93	1842.99	1843.09	1843.50	1844.44	1847.66	1845.17	1837.65	1829.12
3	1847.04	1842.02	---	1839.91	1843.01	1843.11	1843.51	1844.52	1847.77	1844.94	1837.38	1828.83
4	1846.86	1841.87	---	1839.93	1843.02	1843.14	1843.52	1844.60	1847.82	1844.71	1837.11	1828.54
5	1846.68	1841.73	---	1839.97	1843.02	1843.18	1843.52	1844.71	1847.86	1844.47	1836.83	1828.25
6	1846.50	1841.60	1841.25	1839.98	1843.02	1843.21	1843.54	1844.85	1847.93	1844.24	1836.55	1827.95
7	1846.34	1841.46	1841.67	1839.97	1843.00	1843.22	1843.59	1845.19	1848.04	1844.02	1836.28	1827.66
8	1846.16	1841.32	1841.54	1840.05	1843.02	1843.25	1843.60	1845.67	1848.21	1843.79	1836.00	1827.36
9	1845.99	1841.19	1841.73	1840.48	1843.11	1843.35	1843.61	1846.24	1848.34	1843.54	1835.73	1827.04
10	1845.83	1841.05	1844.28	1841.36	1843.22	1843.40	1843.61	1846.61	1848.43	1843.30	1835.45	1826.67
11	1845.66	1840.96	1844.49	1842.00	1843.31	1843.57	1843.60	1846.83	1848.49	1843.05	1835.18	1826.30
12	1845.48	1840.88	1844.21	1842.10	1843.40	1843.59	1843.58	1847.03	1848.53	1842.80	1834.91	1825.96
13	1845.30	1840.82	1843.76	1841.99	1843.47	1843.60	1843.59	1847.18	1848.55	1842.55	1834.64	1825.69
14	1845.14	1840.77	1843.22	1842.86	1843.50	1843.58	1843.61	1847.29	1848.54	1842.30	1834.36	1825.41
15	1844.97	1840.68	1842.71	1844.49	1843.53	1843.59	1843.62	1847.37	1848.47	1842.07	1834.10	1825.13
16	1844.79	1840.59	1842.63	1844.92	1843.53	1843.58	1843.62	1847.46	1848.34	1841.82	---	1824.84
17	1844.60	1840.50	1842.36	1844.97	1843.53	1843.58	1843.62	1847.51	1848.19	1841.56	---	1824.57
18	1844.40	1840.39	1841.81	1844.82	1843.51	1843.52	1843.61	1847.54	1848.02	1841.34	---	1824.30
19	1844.20	1840.27	1841.34	1844.52	1843.48	1843.48	1843.60	1847.54	1847.85	1841.17	---	1824.14
20	1844.04	1840.18	1840.96	1844.16	1843.44	1843.45	1843.63	1847.54	1847.66	1840.95	---	1824.03
21	1843.86	1840.08	1840.80	1843.77	1843.39	1843.41	1843.84	1847.53	1847.47	1840.66	---	1823.88
22	1843.71	1839.99	1840.77	1843.40	1843.34	1843.35	1844.01	1847.50	1847.28	1840.42	---	1823.72
23	1843.55	1839.89	1840.70	1843.10	1843.29	1843.42	1844.10	1847.47	1847.13	1840.18	1831.93	1823.55
24	1843.40	1839.85	1840.59	1842.89	1843.22	1843.44	1844.13	1847.44	1846.92	1839.94	1831.66	1823.40
25	1843.28	1839.79	1840.46	1842.73	1843.16	1843.44	1844.16	1847.38	1846.71	1839.70	1831.38	1823.23
26	1843.13	1839.69	1840.36	1842.65	1843.10	1843.43	1844.17	1847.28	1846.50	1839.46	1831.09	1823.09
27	1842.98	---	1840.31	1842.58	1843.07	1843.47	1844.16	1847.23	1846.27	1839.22	1830.82	1822.94
28	1842.84	---	1840.25	1842.56	1843.03	1843.49	1844.19	1847.23	1846.05	1838.98	1830.54	1822.78
29	1842.69	---	1840.19	1842.68	1843.01	1843.51	1844.25	1847.23	1845.82	1838.73	1830.25	1822.62
30	1842.56	---	1840.13	1842.85	---	1843.52	1844.31	1847.21	1845.61	1838.47	1829.97	1822.46
31	1842.42	---	1840.06	1842.94	---	1843.53	---	1847.21	---	1838.20	1829.71	---
MAX	1847.39	---	---	1844.97	1843.53	1843.60	1844.31	1847.54	1848.55	1845.40	---	1829.40
MIN	1842.42	---	---	1839.91	1842.97	1843.08	1843.50	1844.38	1845.61	1838.20	---	1822.46
(†)	20890	19950	19850	21130	21160	21390	21750	23090	22350	19040	15540	12820
(‡)	-2370	-940	-100	+1280	+30	+230	+360	+1340	-740	-3310	-3500	-2720

CAL YR 1987 AC-FT# -670
WTR YR 1988 AC-FT# -10440

† Contents, in acre-feet, at 2400, on last day of month.
‡ Change in contents, in acre-feet.

SOUTH UMPQUA RIVER BASIN

14309000 COW CREEK NEAR AZALEA, OR

LOCATION.--Lat 42°49'30", long 123°10'40", in N-1/2 sec.4, T.32 S., R.4 W., Douglas County, Hydrologic Unit 17100302, on right bank 0.8 mi upstream from Whitehorse Creek, 4.5 mi northeast of Azalea, and at mile 58.2.

DRAINAGE AREA.--78.0 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1926 to September 1928 (no winter records), April 1929 to December 1931, April 1932 to current year.

REVISED RECORDS.--WSP 984: 1933-36. WSP 1154: 1946(M), 1948(M). WSP 1448: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,694.32 ft above National Geodetic Vertical Datum of 1929 (Douglas County Road Department bench mark). Prior to July 19, 1949, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records excellent. Flow regulated since Oct. 7, 1985 by Galesville Reservoir (station 14308995). Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--58 years (water years 1930-31, 1933-88), 110 ft³/s, 19.15 in/yr, 79,700 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft³/s Jan. 15, 1974, gage height, 16.40 ft, from high-water mark in well; minimum discharge, 1.1 ft³/s Aug. 12, 1981, but may have been less during period of no gage-height record Sept. 4-30, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 243 ft³/s Jan. 14, gage height, 2.58 ft; minimum discharge, 6.4 ft³/s Oct. 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	42	47	43	105	47	39	43	41	70	66	62
2	43	43	62	43	92	49	45	41	40	70	66	62
3	43	42	63	43	80	48	36	41	40	70	66	62
4	46	42	66	41	74	48	36	40	39	70	66	61
5	46	42	61	43	73	48	34	41	40	70	65	61
6	43	42	129	50	70	51	32	42	41	70	65	61
7	42	41	209	53	70	51	32	47	41	70	65	61
8	42	42	206	56	70	49	33	73	41	70	65	61
9	42	42	185	106	65	52	34	56	41	70	64	65
10	42	42	217	163	61	58	34	44	40	69	64	75
11	42	42	210	204	61	52	33	48	40	69	64	75
12	43	43	206	185	61	51	33	43	40	69	64	70
13	43	44	205	200	60	54	33	42	42	70	65	56
14	42	41	204	211	60	54	32	42	43	70	64	56
15	40	41	194	223	60	49	31	42	54	66	64	55
16	44	41	98	213	60	44	31	42	67	69	64	56
17	48	40	110	209	61	43	31	42	71	70	64	56
18	48	39	176	206	61	44	31	42	71	62	63	55
19	54	39	154	203	60	44	34	41	71	48	63	50
20	42	40	127	201	61	44	32	40	71	56	64	36
21	41	40	79	200	61	45	50	40	71	75	64	35
22	42	40	71	194	61	45	59	40	71	61	63	35
23	43	40	71	180	61	44	59	40	59	61	62	35
24	43	41	70	160	62	39	54	40	71	61	63	35
25	36	40	68	138	62	41	49	44	71	61	63	35
26	41	39	63	120	57	40	46	49	71	61	62	35
27	41	38	51	123	50	40	46	44	70	61	62	35
28	42	39	51	120	52	40	40	39	71	60	62	35
29	42	39	51	113	48	39	39	39	70	60	62	34
30	42	40	51	112	---	39	43	39	70	62	61	35
31	42	---	48	112	---	39	---	39	---	66	57	---
TOTAL	1333	1226	3603	4268	1879	1431	1161	1345	1669	2037	1972	1545
MEAN	43.0	40.9	116	138	64.8	46.2	38.7	43.4	55.6	65.7	63.6	51.5
MAX	54	44	217	223	105	58	59	73	71	75	66	75
MIN	36	38	47	41	48	39	31	39	39	48	57	34
AC-FT	2640	2430	7150	8470	3730	2840	2300	2670	3310	4040	3910	3060
MEAN†	4.39	25.0	115	159	65.4	49.9	44.7	65.2	43.2	11.9	6.67	5.71
CFSM†	0.06	0.32	1.47	2.04	0.84	0.64	0.57	0.84	0.55	0.15	0.09	0.07
IN.†	0.06	0.36	1.69	2.34	0.90	0.74	0.64	0.96	0.62	0.18	0.10	0.08
AC-FT†	270	1490	7050	9750	3760	3070	2660	4010	2570	730	410	340

CAL YR 1987 TOTAL 24849 MEAN 68.1 MAX 373 MIN 34 MEAN† 67.2 CFSM† 0.86 IN.† 11.69 AC-FT† 48620
 WTR YR 1988 TOTAL 23469 MEAN 64.1 MAX 223 MIN 31 MEAN† 49.7 CFSM† 0.64 IN.† 8.68 AC-FT† 36110

† Adjusted for change in contents in Galesville Reservoir.

SOUTH UMPQUA RIVER BASIN
14309000 COW CREEK NEAR AZALEA, OR--Continued
WATER-QUALITY RECORDS

209

PERIOD OF DAILY RECORD.--

DISSOLVED OXYGEN: November 1985 to current year.

INSTRUMENTATION.--Water-quality monitor since November 1985.

EXTREMES FOR PERIOD OF DAILY RECORD.--

DISSOLVED OXYGEN: Maximum recorded, 13.6 mg/L Nov. 27, 1985; minimum, 0.9 mg/L July 30, 1988.

EXTREMES FOR CURRENT YEAR.--

DISSOLVED OXYGEN: Maximum recorded, 11.6 mg/L Dec. 16, Jan. 26, Feb. 5; minimum recorded, 0.9 mg/L July 30.

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	3.6	2.8	3.2	8.0	7.6	7.8	9.0	8.2	8.6	8.6	8.1	8.4
2	3.7	3.0	3.4	8.1	7.8	7.9	8.5	8.1	8.3	8.6	8.1	8.2
3	3.9	3.2	3.6	8.1	7.7	7.9	10.5	8.2	8.6	8.6	8.1	8.3
4	4.8	3.3	4.2	8.1	7.7	7.9	8.8	8.4	8.7	9.5	6.9	7.9
5	5.2	3.5	4.3	8.1	7.6	7.9	8.7	8.3	8.5	8.1	6.4	7.0
6	5.0	3.5	4.4	9.1	7.6	7.9	10.3	7.9	8.5	6.8	6.2	6.5
7	4.9	4.3	4.7	7.9	7.6	7.8	8.4	7.7	8.1	6.9	6.2	6.6
8	5.4	4.3	4.9	8.0	7.7	7.9	8.4	7.9	8.1	7.6	6.4	7.0
9	5.1	4.5	4.8	8.1	7.8	8.0	10.5	6.6	8.0	10.6	4.9	7.1
10	5.3	4.5	4.9	8.2	7.8	8.0	8.2	7.2	7.7	11.0	3.9	8.9
11	5.1	4.5	4.7	8.1	7.7	8.0	8.0	7.0	7.6	6.2	4.9	5.7
12	5.1	4.1	4.6	8.0	7.8	7.9	7.7	6.1	7.1	8.3	4.2	5.5
13	5.2	4.3	4.7	8.4	7.5	7.9	8.4	7.5	8.0	5.3	3.8	4.6
14	5.6	4.7	5.2	8.3	8.0	8.1	8.4	7.9	8.2	7.3	5.2	6.3
15	6.3	4.9	5.7	8.3	8.0	8.2	11.0	7.8	8.2	6.5	5.8	6.2
16	6.3	5.6	5.8	8.3	8.0	8.1	11.6	8.2	10.5	6.6	6.2	6.4
17	6.3	5.7	6.0	8.4	8.0	8.2	11.2	6.8	9.0	6.7	6.2	6.5
18	6.7	5.7	6.1	8.5	8.3	8.4	7.7	7.0	7.3	6.8	6.4	6.6
19	9.5	5.4	7.9	8.9	8.4	8.6	8.1	6.8	7.2	7.6	6.6	7.2
20	9.6	7.2	8.8	9.0	8.3	8.7	8.6	6.8	7.6	7.8	7.1	7.4
21	9.3	7.7	7.8	8.7	8.4	8.5	8.8	8.0	8.4	7.9	7.3	7.6
22	8.0	7.6	7.8	8.8	8.4	8.6	8.6	8.4	8.5	8.2	7.3	7.8
23	8.1	7.8	7.9	9.0	8.5	8.7	8.6	8.0	8.5	8.3	7.3	7.7
24	8.2	7.7	8.0	10.1	8.4	8.7	8.5	8.0	8.2	8.9	7.4	8.1
25	8.2	3.0	7.4	8.7	8.3	8.5	8.5	8.0	8.2	8.9	8.0	8.5
26	8.2	7.8	8.0	8.6	8.3	8.5	8.6	7.7	8.1	11.6	8.3	9.1
27	8.0	7.7	7.9	8.7	8.3	8.5	8.6	8.1	8.3	8.9	8.2	8.5
28	8.1	7.8	7.9	8.6	8.3	8.5	8.7	8.2	8.5	8.6	7.4	8.1
29	8.0	7.7	7.8	8.7	8.3	8.5	8.6	8.1	8.5	8.6	7.7	8.2
30	8.1	7.7	7.8	8.9	8.4	8.7	8.6	8.1	8.4	8.3	7.6	8.0
31	8.0	7.8	7.9	---	---	---	8.5	8.1	8.3	8.7	7.9	8.3
MONTH	9.6	2.8	6.1	10.1	7.5	8.2	11.6	6.1	8.2	11.6	3.8	7.4

14309000 COW CREEK NEAR AZALEA, OR--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

[illegible]

SOUTH UMPQUA RIVER BASIN

211

14309500 WEST FORK COW CREEK NEAR GLENDALE, OR

LOCATION.--Lat 42°48'15", long 123°36'35", in SW 1/4 NE 1/4 sec.11, T.32 S., R.8 W., Douglas County, Hydrologic Unit 17100302, on left bank 1.6 mi downstream from Bear Creek, 11 mi northwest of Glendale, and at mile 0.8.

DRAINAGE AREA.--86.9 mi².

PERIOD OF RECORD.--August 1955 to current year.

REVISED RECORDS.--WSP 1738: 1956, drainage area (former site). WSP 1935: 1956.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,018.48 ft above National Geodetic Vertical Datum of 1929. Prior to June 8, 1964, at site 0.6 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records excellent. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--33 years, 269 ft³/s, 42.04 in/yr, 194,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft³/s Dec. 22, 1964, gage height, 18.59 ft, from floodmark, from rating curve extended above 2,600 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 3.7 ft³/s Aug. 17, 19, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 6	0930	*5,450	*10.09	Jan. 10	1000	4,130	8.73
Dec. 10	0630	3,410	8.01	Jan. 14	2400	3,690	8.29

Minimum discharge, 4.5 ft³/s Oct. 2-4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	6.6	326	147	339	74	93	164	111	35	11	5.8
2	4.7	6.7	554	137	276	67	88	153	137	33	11	5.7
3	4.5	7.2	1520	139	231	65	87	147	115	33	11	5.5
4	4.6	7.3	881	178	202	68	90	146	102	32	11	5.2
5	4.7	7.2	481	224	183	84	89	138	98	31	13	5.0
6	5.0	7.0	3250	198	169	80	84	130	92	30	10	4.9
7	5.0	7.0	1630	192	158	78	99	131	147	28	9.7	4.7
8	5.0	7.0	1070	321	158	75	94	147	164	26	9.7	4.9
9	4.8	7.6	1270	868	184	121	90	148	185	25	9.6	5.0
10	5.0	8.6	2580	3300	174	152	85	135	193	23	9.2	5.0
11	5.0	8.5	1000	2160	162	131	79	121	163	22	8.6	5.0
12	5.0	13	546	1120	153	116	73	115	136	22	8.6	5.0
13	4.8	23	358	782	146	103	68	138	116	22	8.6	5.0
14	4.9	33	259	1900	133	93	68	122	101	21	9.4	4.9
15	5.0	28	222	2370	126	87	63	114	89	21	9.9	4.7
16	5.1	27	205	1220	120	81	60	109	80	21	9.9	4.7
17	5.3	22	174	849	112	73	56	100	72	20	9.4	4.8
18	5.3	19	145	592	108	68	54	91	65	19	9.1	5.2
19	5.3	16	129	448	100	65	57	83	60	18	8.2	6.6
20	5.3	14	119	382	96	62	84	77	57	17	7.9	11
21	5.3	17	135	386	92	61	133	72	52	15	7.8	10
22	5.3	21	252	377	89	60	152	65	48	15	7.4	8.3
23	5.4	19	262	385	86	109	119	63	45	14	6.9	7.6
24	5.5	22	201	378	81	136	96	60	43	14	6.7	6.9
25	5.5	49	169	326	78	115	84	57	41	13	6.6	6.7
26	5.5	33	153	295	75	103	77	54	39	13	6.3	6.7
27	5.8	24	136	285	72	109	72	52	39	12	6.1	8.0
28	5.8	19	128	279	70	119	67	58	38	12	6.1	10
29	5.8	17	134	335	68	116	76	68	38	12	6.0	9.2
30	5.8	42	134	474	---	109	116	64	36	11	5.8	8.1
31	6.1	---	156	402	---	99	---	59	---	11	5.8	---
TOTAL	161.0	538.7	18579	21449	4041	2879	2553	3181	2702	641	266.3	190.1
MEAN	5.19	18.0	599	692	139	92.9	85.1	103	90.1	20.7	8.59	6.34
MAX	6.1	49	3250	3300	339	152	152	164	193	35	13	11
MIN	4.5	6.6	119	137	68	60	54	52	36	11	5.8	4.7
AC-FT	319	1070	36850	42540	8020	5710	5060	6310	5360	1270	528	377
CFSM	.06	.21	6.90	7.96	1.60	1.07	.98	1.18	1.04	.24	.10	.07
IN.	.07	.23	7.95	9.18	1.73	1.23	1.09	1.36	1.16	.27	.11	.08

CAL YR 1987	TOTAL 77589.6	MEAN 213	MAX 3250	MIN 4.3	AC-FT 153900	CFSM 2.45	IN. 33.21
WTR YR 1988	TOTAL 57181.1	MEAN 156	MAX 3300	MIN 4.5	AC-FT 113400	CFSM 1.80	IN. 24.48

SOUTH UMPQUA RIVER BASIN

14310000 COW CREEK NEAR RIDDLE, OR

LOCATION.--Lat 42°55'25", long 123°25'40", in NE 1/4 sec.32, T.30 S., R.6 W., Douglas County, Hydrologic Unit 17100302, on left bank 0.4 mi upstream from Council Creek, 3.8 mi southwest of Riddle, and at mile 6.7.

DRAINAGE AREA.--456 mi².

PERIOD OF RECORD.--September 1954 to current year.

REVISED RECORDS.--WSP 1935: 1956(M).

GAGE.--Water-stage recorder. Datum of gage is 682.60 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records excellent. Regulated since Oct. 7, 1985 by Galesville Reservoir (station 14308995). Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--34 years, 873 ft³/s, 632,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,400 ft³/s Jan. 15, 1974, gage height, 28.17 ft; minimum discharge, 7.4 ft³/s Aug. 17-19, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 29, 1950, reached a stage of about 28.5 ft, present site and datum, from slope-area measurement, discharge, 41,100 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,200 ft³/s Dec. 6, gage height, 11.83 ft; minimum discharge, 50 ft³/s Oct. 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	64	362	408	974	259	252	396	237	134	74	66
2	55	65	1130	380	848	257	243	389	378	131	76	63
3	54	66	2430	373	734	239	246	374	321	130	78	63
4	54	66	1770	430	645	240	236	371	278	129	78	63
5	55	64	1220	532	592	270	233	361	265	126	77	63
6	59	64	6400	524	545	270	220	353	253	123	75	63
7	59	65	4940	499	506	273	236	378	337	119	76	63
8	55	65	3360	582	492	264	240	512	413	116	76	63
9	59	67	2940	1320	516	337	228	656	426	111	73	63
10	59	68	5410	4930	502	474	221	589	450	107	72	62
11	61	69	3140	5140	472	443	210	483	395	105	72	68
12	61	80	1810	3280	454	394	201	424	339	103	74	74
13	58	100	1220	2280	444	354	194	445	292	101	76	74
14	59	117	927	3350	414	325	201	391	258	99	76	68
15	64	115	820	6910	395	304	195	356	233	99	77	63
16	61	102	802	4090	379	285	184	340	214	99	78	61
17	60	103	640	3050	357	259	176	325	213	97	76	61
18	65	96	586	2220	344	240	169	289	205	96	73	62
19	68	87	582	1670	326	229	171	265	194	94	71	69
20	69	83	537	1400	316	222	309	246	185	84	70	78
21	70	87	539	1320	307	221	615	230	175	76	70	72
22	64	92	812	1290	299	219	936	214	167	80	70	60
23	60	90	950	1280	292	268	673	202	160	83	70	58
24	60	94	767	1260	284	356	496	195	151	78	70	55
25	60	150	631	1110	274	309	406	185	145	78	68	53
26	60	137	555	980	264	282	353	175	147	77	66	53
27	55	107	493	905	257	285	319	174	145	74	65	56
28	58	94	445	873	245	293	291	178	140	73	67	58
29	59	88	429	874	241	291	276	199	139	71	66	58
30	59	111	415	1120	---	282	321	193	137	70	65	56
31	62	---	431	1050	---	263	---	183	---	72	66	---
TOTAL	1858	2656	47493	55430	12718	9007	9051	10071	7392	3035	2241	1889
MEAN	59.9	88.5	1532	1788	439	291	302	325	246	97.9	72.3	63.0
MAX	70	150	6400	6910	974	474	936	656	450	134	78	78
MIN	54	64	362	373	241	219	169	174	137	70	65	53
AC-FT	3690	5270	94200	109900	25230	17870	17950	19980	14660	6020	4450	3750

CAL YR 1987 TOTAL 224581 MEAN 615 MAX 9330 MIN 54 AC-FT 445500
WTR YR 1988 TOTAL 162841 MEAN 445 MAX 6910 MIN 53 AC-FT 323000

SOUTH UMPQUA RIVER BASIN

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14311500 LOOKINGGLASS CREEK AT BROCKWAY, OR

LOCATION.--Lat 43°07'50", long 123°27'50", in SE 1/4 SE 1/4 sec.13, T.28 S., R.7 W., Douglas County, Hydrologic Unit 17100302, on left bank 1.7 mi northwest of Brockway and at mile 2.85.

DRAINAGE AREA.--158 mi².

PERIOD OF RECORD.--October 1955 to current year.

REVISED RECORDS.--WSP 2135: Drainage area (former site).

GAGE.--Water-stage recorder. Elevation of gage is 540 ft, from topographic map. Prior to Oct. 5, 1967, water-stage recorder at site 2.3 mi downstream at different datum. Oct. 5, 1967, to Oct. 5, 1976, water-stage recorder, at datum 1.00 ft lower.

REMARKS.--No estimated daily discharges. Records good. Some regulation by Ben Irving Reservoir 17 mi upstream on Berry Creek, capacity, 11,200 acre-ft since January 1980. Many diversions by pumping for irrigation upstream from station. Discharge not adjusted for storage or release from Ben Irving Reservoir as losses from reservoir at times exceed natural flow.

AVERAGE DISCHARGE.--24 years (water years 1956-79), 282 ft³/s, 204,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft³/s Dec. 26, 1955, gage height, 24.93 ft, site and datum then in use, from rating curve extended above 7,200 ft³/s on basis of slope-area measurement of peak flow; maximum gage height, 25.28 ft Dec. 23, 1964 (backwater from South Umpqua River, site and datum then in use); no flow at times each year prior to January 1980, Aug. 6, 7, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,940 ft³/s Jan. 10, gage height, 9.44 ft; maximum gage height, 9.78 ft Jan. 10, from crest-stage gage; minimum discharge, 2.7 ft³/s July 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	9.9	30	196	214	83	60	118	61	17	6.8	4.0
2	5.5	9.6	119	181	201	73	57	115	70	15	6.9	4.6
3	5.0	10	433	187	186	67	61	130	60	15	6.5	5.6
4	5.1	10	593	187	171	71	76	139	51	14	6.3	5.6
5	5.0	9.9	356	190	160	79	85	139	46	14	6.1	4.8
6	5.8	9.9	1670	194	150	84	75	139	46	14	6.9	4.3
7	5.4	9.8	1430	195	143	87	72	184	63	13	8.2	3.7
8	5.6	9.6	914	228	150	84	73	399	82	12	7.3	3.5
9	6.9	10	741	704	217	208	60	617	88	11	7.4	4.7
10	7.6	10	1200	3110	197	263	56	449	92	8.3	8.2	4.8
11	8.0	10	821	2290	183	210	51	319	83	8.4	7.3	4.4
12	7.8	13	486	1260	174	169	47	247	71	7.2	7.8	4.1
13	7.7	14	325	813	167	141	44	239	60	6.7	7.5	4.3
14	7.9	15	248	1310	155	121	47	188	51	7.3	8.4	3.8
15	8.0	18	300	2980	147	106	44	153	45	7.3	8.7	3.8
16	7.8	16	568	2290	138	93	41	139	39	6.4	8.1	4.9
17	8.6	15	464	1400	130	82	39	119	35	5.7	9.0	5.2
18	8.1	14	373	921	125	74	36	101	31	6.7	7.9	5.8
19	8.0	13	327	660	119	66	36	87	28	5.6	7.6	7.0
20	8.4	12	294	527	114	61	50	77	26	5.4	7.8	8.1
21	8.6	12	330	459	112	58	173	69	23	5.1	7.9	8.1
22	8.7	12	581	402	105	55	271	60	21	6.8	8.1	7.8
23	8.9	13	585	358	66	83	188	55	25	12	7.3	7.8
24	8.9	14	429	321	61	116	138	50	28	12	6.2	7.8
25	9.1	21	334	283	58	98	111	46	27	12	4.9	7.8
26	9.2	24	276	252	55	86	95	43	26	9.8	4.2	7.2
27	9.3	19	236	231	53	86	87	40	24	6.4	3.8	9.7
28	9.2	17	212	211	50	82	75	39	24	6.8	4.4	11
29	9.0	15	193	210	55	76	67	41	21	6.6	4.5	12
30	8.9	16	193	218	---	72	89	38	17	7.1	4.5	11
31	11	---	217	218	---	66	---	37	---	7.1	4.1	---
TOTAL	239.8	401.7	15278	22986	3856	3100	2404	4616	1364	291.7	210.6	187.2
MEAN	7.74	13.4	493	741	133	100	80.1	149	45.5	9.41	6.79	6.24
MAX	11	24	1670	3110	217	263	271	617	92	17	9.0	12
MIN	5.0	9.6	30	181	50	55	36	37	17	5.1	3.8	3.5
AC-FT	476	797	30300	45590	7650	6150	4770	9160	2710	579	418	371

CAL YR 1987 TOTAL 62360.78 MEAN 171 MAX 3400 MIN .19 AC-FT 123700
WTR YR 1988 TOTAL 54935.0 MEAN 150 MAX 3110 MIN 3.5 AC-FT 109000

SOUTH UMPQUA RIVER BASIN

14312000 SOUTH UMPQUA RIVER NEAR BROCKWAY, OR

LOCATION.--Lat 43°08'00", long 123°23'50", in SW 1/4 sec.15, T.28 S., R.6 W., Douglas County, Hydrologic Unit 17100302, on right bank 10 ft upstream from Winston Bridge on State Highway 99, 2.5 mi northeast of Brockway, 4.2 mi downstream from Lookingglass Creek, and at mile 132.8.

DRAINAGE AREA.--1,670 mi².

PERIOD OF RECORD.--December 1905 to June 1912, October 1923 to September 1926, January 1942 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1248: 1946(M), 1948(M), 1951. WSP 1448: Drainage area. WDR OR 72-1: 1965(M).

GAGE.--Water-stage recorder. Datum of gage is 462.52 ft above National Geodetic Vertical Datum of 1929 (State Highway Department bench mark). Prior to June 24, 1949, nonrecording gage at several sites within 400 ft of present site at various datums. June 24, 1949, to Oct. 1, 1970, at datum 461.84 ft National Geodetic Vertical Datum of 1929 (State Highway Department bench mark).

REMARKS.--No estimated daily discharges. Records excellent. Regulation from Ben Irving Reservoir, since January 1980, on Berry Creek during summer months. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--54 years (water years 1907-11, 1924-26, 1943-88), 2,853 ft³/s, 23.20 in/yr, 2,067,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 125,000 ft³/s Dec. 23, 1964, gage height, 34.28 ft; minimum discharge, 16 ft³/s Aug. 23, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 21, 1927, reached a stage of about 31.2 ft, present site and datum, discharge (revised), 89,500 ft³/s. Discharge for flood of February 1890, which reached a stage 1.9 ft higher, according to local resident who lived nearby at time of both floods, has been found to be in error and should not be used.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 10	1730	22,800	14.46	Jan. 15	1000	*24,600	*14.91

Minimum discharge, 77 ft³/s Sept. 7-9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	123	377	1210	3160	1100	1280	2370	1360	444	136	94
2	91	126	1800	1110	2810	1250	1220	2420	4490	426	131	95
3	86	130	3730	1070	2480	1150	1280	2710	3110	417	137	93
4	87	142	3570	1130	2190	1220	1740	3310	2770	413	132	95
5	87	151	3300	1430	1990	1800	1820	3000	2580	402	135	95
6	86	144	8990	1620	1870	2150	1700	2830	2390	381	131	88
7	88	140	12100	1530	1750	2170	1630	3880	2730	356	133	81
8	87	137	6980	1570	1670	1930	1580	5440	3230	339	133	80
9	87	140	5670	3040	2480	2240	1420	5950	2810	327	130	83
10	95	139	13000	17400	3460	3230	1310	4910	2550	309	128	85
11	101	142	9850	17400	2890	2840	1210	3870	2170	294	126	86
12	104	170	5140	10700	2560	2410	1130	3260	1860	286	129	88
13	105	209	3400	6830	2340	2090	1080	3180	1580	277	131	96
14	104	351	2530	7630	2140	1870	1100	2830	1380	270	140	97
15	102	495	2300	20100	1910	1700	1140	2390	1220	261	142	97
16	105	359	3140	14000	1810	1520	1050	2100	1080	256	137	86
17	110	346	2840	9520	1630	1360	994	2120	1000	248	140	87
18	107	402	2180	6620	1510	1220	940	1940	925	239	137	86
19	110	353	1930	4960	1420	1130	908	1710	845	229	126	102
20	117	286	1710	3990	1310	1060	1050	1520	779	217	122	130
21	116	254	1640	3620	1260	1020	1960	1370	726	197	125	163
22	123	260	2620	3420	1220	1040	4130	1250	670	176	123	195
23	111	323	3420	3290	1140	1080	3430	1150	625	180	118	153
24	108	323	2770	3260	1090	1470	2590	1070	601	186	107	130
25	109	389	2210	2990	1060	1440	2090	997	558	181	107	118
26	110	617	1870	2740	1020	1430	1770	919	538	166	103	115
27	112	433	1630	2660	1010	1550	1550	857	526	158	98	119
28	109	346	1460	2700	1000	1620	1420	824	501	148	98	125
29	108	303	1370	2680	1010	1540	1330	933	479	143	99	148
30	111	288	1320	3460	---	1480	1940	1000	467	139	93	171
31	116	---	1310	3430	---	1380	---	945	---	137	92	---
TOTAL	3184	8021	116157	167110	53190	50490	47792	73055	46550	8202	3819	3281
MEAN	103	267	3747	5391	1834	1629	1593	2357	1552	265	123	109
MAX	123	617	13000	20100	3460	3230	4130	5950	4490	444	142	195
MIN	86	123	377	1070	1000	1020	908	824	467	137	92	80
AC-FT	6320	15910	230400	331500	105500	100100	94800	144900	92330	16270	7570	6510
CFSM	.06	.16	2.24	3.23	1.10	.98	.95	1.41	.93	.16	.07	.07
IN.	.07	.18	2.59	3.72	1.18	1.12	1.06	1.63	1.04	.18	.09	.07

CAL YR 1987 TOTAL 631225 MEAN 1729 MAX 28900 MIN 78 AC-FT 1252000 CFSM 1.04 IN. 14.06
WTR YR 1988 TOTAL 580851 MEAN 1587 MAX 20100 MIN 80 AC-FT 1152000 CFSM .95 IN. 12.94

SOUTH UMPQUA RIVER BASIN

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14312260 SOUTH UMPQUA RIVER NEAR ROSEBURG, OR

LOCATION.--Lat 43°13'20", long 123°24'45", in NW 1/4 SE 1/4 sec.16, T.27 S., R.6 W., Douglas County, Hydrologic Unit 17100302, on left bank, 3.7 mi west of Roseburg, and at mile 117.7.

DRAINAGE AREA.--1,798 mi².

PERIOD OF RECORD.--Water years 1970 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1970 to current year.

pH: August 1971 to current year.

DISSOLVED OXYGEN: October 1970 to current year.

WATER TEMPERATURE: October 1970 to current year.

INSTRUMENTATION.--Water-quality monitor since October 1970.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 423 microsiemens Sept. 18, 1971; minimum, 37 microsiemens Feb. 18, 1983.

pH: Maximum, 10.0 units Sept. 8, 9, 1971; minimum, 5.0 units Sept. 29, 1971.

DISSOLVED OXYGEN: Maximum, 18.5 mg/L Aug. 24, 1986; minimum, 0.4 mg/L Aug. 10, 1978.

WATER TEMPERATURE: Maximum, 35.0°C July 16, 1976; minimum, 0.0°C Dec. 14, 16, 1972, Jan. 9, 1974.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 198 microsiemens Nov. 12, 15; minimum, 74 microsiemens June 3.

pH: Maximum, 9.6 units Sept. 18; minimum, 6.7 units Dec. 10-12.

DISSOLVED OXYGEN: Maximum, 14.0 mg/L Oct. 2; minimum, 4.5 mg/L Aug. 29.

WATER TEMPERATURE: Maximum, 29.0°C July 26-30; minimum, 2.5°C Jan. 2.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	DIS- CHARGE, IN CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT 28...	0900	111	190	7.5	12.0	8.7	82	K5	K16	72	16	16
NOV 20...	0915	289	175	7.4	11.0	9.9	91	55	72	63	11	15
DEC 16...	1300	3300	114	7.1	5.0	12.1	97	500	K640	55	18	11
JAN 20...	0900	4050	94	7.0	5.5	12.1	95	77	190	37	3	8.3
FEB 19...	1130	1420	100	7.3	6.0	12.7	102	K27	--	39	0	9.0
MAR 16...	0900	1540	104	7.4	8.0	12.2	103	59	K16	41	0	10
APR 13...	1200	1080	103	7.5	14.5	9.5	95	K14	K1	43	2	10
MAY 04...	1000	3360	89	7.6	9.5	11.1	99	130	58	36	0	9.0
JUN 02...	1315	4450	94	7.3	14.0	9.4	93	430	260	40	0	9.6
JUL 07...	1300	321	132	8.5	23.0	11.3	133	K8	85	49	0	11
AUG 03...	1130	142	154	8.4	24.0	9.0	107	K9	K2000	57	2	12
SEP 07...	1400	82	172	9.0	25.0	11.1	136	K43	500	60	3	12

K - Results based on colony count outside acceptable range (non-ideal colony count).

SOUTH UMPQUA RIVER BASIN

14312260 SOUTH UMPQUA RIVER NEAR ROSEBURG, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WATER DIS IT FIELD (MG/L AS CACO3)	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3)	CAR- BONATE WATER DIS IT FIELD (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
OCT 28...	7.7	11	1.4	55	67	0	10	14	0.1	0.22	0.3
NOV 20...	6.1	--	--	50	61	0	--	17	--	--	<0.1
DEC 16...	6.8	5.2	1.2	38	46	0	14	7.2	0.1	0.11	0.7
JAN 20...	4.0	--	--	33	40	0	--	4.1	--	--	0.3
FEB 19...	4.1	4.6	0.8	38	47	0	7.8	4.4	0.2	0.06	0.1
MAR 16...	4.0	--	--	44	54	0	--	4.2	--	--	<0.1
APR 13...	4.3	5.2	0.6	41	50	0	6.0	4.6	0.1	0.04	<0.1
MAY 04...	3.4	--	--	37	45	0	--	3.0	--	--	<0.1
JUN 02...	3.8	4.7	0.7	43	52	0	6.1	3.5	0.2	0.02	<0.1
JUL 07...	5.3	--	--	57	45	12	--	7.0	--	--	0.1
AUG 03...	6.5	9.5	1.1	56	63	2	8.2	10	0.3	0.06	0.2
SEP 07...	7.3	--	--	56	60	4	--	4.8	--	--	0.4
DATE	NITRO- GEN, AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS TOTAL (MG/L AS P)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	TUR- BID- ITY (NTU)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 28...	0.8	0.21	0.24	0.24	6.6	110	103	33.0	0.6	--	14
NOV 20...	0.5	0.05	--	0.08	--	104	--	--	--	--	39
DEC 16...	<0.2	0.08	0.06	0.09	23	216	95	1920	0.8	--	2070
JAN 20...	0.7	0.02	--	0.04	--	77	--	--	--	14	153
FEB 19...	0.2	0.04	0.05	0.04	15	68	70	261	2.8	28	107
MAR 16...	0.2	<0.01	--	0.03	--	70	--	--	--	5	21
APR 13...	0.2	0.03	0.04	0.06	15	68	71	198	2.1	6	17
MAY 04...	0.2	0.02	--	0.04	--	70	--	--	--	11	100
JUN 02...	<0.2	0.01	0.04	0.06	16	72	71	865	10	24	288
JUL 07...	0.2	0.07	--	0.10	--	84	--	--	--	1	0.87
AUG 03...	0.5	0.17	0.18	0.20	11	92	93	35.3	0.9	2	0.77
SEP 07...	0.6	0.27	--	0.31	--	104	--	--	--	1	0.22

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

[illegible]

14312260 SOUTH UMPQUA RIVER NEAR ROSEBURG, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

[illegible]

SOUTH UMPQUA RIVER BASIN

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14312260 SOUTH UMPQUA RIVER NEAR ROSEBURG, OR--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	184	178	182	192	186	189	158	148	153	118	116	117
2	186	178	182	192	186	189	162	---	---	118	116	116
3	186	176	181	192	186	190	---	---	---	120	114	117
4	184	176	181	192	186	190	---	---	---	120	118	119
5	184	176	181	194	188	191	---	---	---	122	120	120
6	184	176	181	196	188	192	---	79	---	118	114	116
7	184	176	181	196	190	193	93	75	83	114	108	110
8	186	180	183	194	190	193	95	89	92	110	108	108
9	186	178	183	196	190	194	97	93	94	116	108	111
10	188	178	184	196	190	194	---	81	90	---	---	---
11	186	178	183	196	190	194	---	76	81	---	---	---
12	186	180	183	198	190	194	---	84	97	---	---	---
13	188	182	185	192	188	190	---	96	98	---	---	---
14	---	---	---	196	192	193	---	96	100	---	---	---
15	---	---	---	198	190	193	---	102	107	---	---	---
16	188	184	186	190	184	187	---	114	115	---	---	---
17	188	182	186	---	---	---	118	114	115	82	80	81
18	190	182	186	---	---	---	120	116	118	88	82	85
19	190	182	186	---	---	---	122	120	120	92	86	89
20	190	182	185	180	174	176	124	120	122	96	92	94
21	188	182	185	---	---	---	---	122	124	---	---	---
22	188	182	186	---	---	---	---	118	121	---	---	---
23	190	182	186	---	---	---	---	102	108	---	---	---
24	190	182	186	162	152	160	---	102	102	---	---	---
25	190	182	187	---	---	---	---	102	104	---	---	---
26	192	184	188	---	---	---	110	106	108	96	94	94
27	192	186	190	---	---	---	112	110	111	96	94	96
28	192	186	189	---	---	---	116	112	114	96	94	95
29	194	184	190	---	---	---	118	116	117	94	92	93
30	194	186	190	---	---	---	120	116	117	94	88	91
31	194	186	189	---	---	---	120	116	118	88	84	85
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	88	84	87	121	113	118	100	98	100	107	93	101
2	92	88	90	117	111	113	104	100	102	93	91	93
3	94	92	93	113	111	112	104	104	104	94	90	92
4	98	94	96	115	111	113	104	104	104	90	80	86
5	100	98	99	115	107	112	100	90	95	84	80	82
6	102	100	101	107	97	103	90	88	90	90	84	86
7	102	100	101	97	95	96	94	90	92	94	90	90
8	106	102	103	95	93	95	94	94	94	90	84	86
9	108	102	106	112	98	106	98	94	96	88	84	87
10	102	82	92	108	100	103	100	98	99	88	84	85
11	84	80	82	100	98	98	104	100	102	90	88	89
12	86	84	85	102	98	99	104	100	103	94	90	90
13	90	86	88	100	100	100	104	104	104	94	94	94
14	90	90	90	102	100	102	108	104	107	94	90	90
15	94	90	91	106	100	103	110	104	108	94	90	92
16	100	92	95	106	104	104	110	108	109	100	94	96
17	98	94	96	106	104	105	109	105	108	100	98	100
18	100	96	98	108	106	107	111	109	110	100	98	98
19	106	98	101	112	108	109	111	109	110	100	94	98
20	106	102	103	116	112	113	121	111	116	100	98	100
21	106	102	104	116	112	114	125	115	120	104	100	102
22	110	104	106	122	116	120	121	101	112	104	104	104
23	112	108	110	122	116	119	99	95	96	108	104	106
24	110	108	109	120	116	118	96	92	94	110	108	109
25	111	107	109	116	110	113	102	96	98	110	110	110
26	---	---	---	110	108	108	106	102	102	114	110	112
27	---	---	---	108	104	104	106	106	106	114	114	114
28	---	---	---	104	100	101	112	106	108	118	114	116
29	---	---	---	100	98	98	112	112	112	120	118	119
30	---	---	---	98	98	98	113	111	112	120	118	119
31	---	---	---	100	98	99	---	---	---	120	118	118
MONTH	---	---	---	122	93	107	125	88	104	120	80	99

SOUTH UMPQUA RIVER BASIN

14312260 SOUTH UMPQUA RIVER NEAR ROSEBURG, OR--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	124	118	122	125	121	123	156	151	154	176	167	172
2	120	78	103	130	122	124	158	152	156	176	167	172
3	78	74	78	130	127	129	159	153	157	176	167	172
4	80	78	80	132	128	130	159	154	157	175	168	172
5	84	78	81	132	128	130	160	156	158	175	167	172
6	88	80	84	132	128	131	160	154	158	176	169	173
7	90	84	86	134	130	132	159	153	157	178	170	175
8	86	82	84	137	134	135	161	154	158	179	172	176
9	87	82	84	139	134	137	163	156	161	180	173	177
10	91	87	89	138	132	135	163	158	161	180	165	173
11	90	88	89	138	134	136	163	158	161	179	174	177
12	91	90	91	139	136	138	164	157	162	181	175	178
13	96	91	92	139	135	137	168	163	165	182	175	179
14	97	94	95	141	135	138	169	162	166	181	171	177
15	97	95	96	142	138	140	167	161	165	178	167	173
16	99	97	98	142	138	140	168	161	165	179	173	176
17	102	99	100	142	138	140	175	161	167	181	173	177
18	104	101	103	144	139	142	178	168	172	181	173	177
19	106	103	104	145	141	143	179	172	174	183	175	178
20	109	105	107	146	142	144	179	173	176	185	176	181
21	111	107	109	157	146	149	---	---	---	193	179	184
22	113	109	111	156	150	152	---	---	---	192	179	187
23	114	111	113	158	148	153	---	---	---	---	---	---
24	115	113	114	160	151	154	---	---	---	---	---	---
25	116	114	115	160	150	155	174	167	171	---	---	---
26	118	115	116	160	153	156	173	167	171	185	176	180
27	119	116	118	161	157	159	173	166	170	183	177	179
28	120	117	119	167	157	160	173	166	170	184	176	180
29	123	120	121	163	154	158	173	166	170	186	184	189
30	122	119	121	163	155	158	174	166	171	186	184	185
31	---	---	---	158	150	154	175	167	172	---	---	---
MONTH	124	74	101	167	121	142	---	---	---	---	---	---

SOUTH UMPQUA RIVER BASIN

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14312260 SOUTH UMPQUA RIVER NEAR ROSEBURG, OR--Continued

PH (STANDARD UNITS), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
OCTOBER			NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.9	7.1	8.2	7.2	7.5	7.3	7.4	7.3	7.1	7.0	8.0	7.4
2	8.9	7.1	7.9	7.1	7.4	---	7.4	7.3	7.2	7.1	8.0	7.4
3	8.7	7.1	7.8	7.1	---	---	7.4	7.4	7.2	7.1	7.9	7.4
4	8.8	7.1	8.0	7.1	---	---	7.5	7.4	7.2	7.2	7.7	7.4
5	8.9	7.1	8.0	7.2	---	---	7.4	7.4	7.2	7.2	7.9	7.4
6	8.9	7.1	7.5	7.2	---	---	7.4	7.4	7.3	7.2	7.9	7.3
7	8.7	7.1	8.1	7.2	---	---	7.4	7.3	7.3	7.2	7.7	7.2
8	8.4	7.1	7.7	7.2	7.0	6.9	7.4	7.3	7.4	7.2	7.6	7.3
9	8.7	7.1	8.0	7.2	7.1	7.0	7.3	---	7.4	7.2	7.4	7.2
10	8.6	7.1	8.1	7.2	7.1	6.7	---	---	7.3	7.1	7.4	7.2
11	8.7	7.1	7.7	7.2	6.9	6.7	---	---	7.2	7.0	7.5	7.2
12	8.7	7.1	7.8	7.2	6.9	6.7	---	---	7.2	7.1	7.6	7.2
13	8.5	7.1	7.6	7.2	7.0	6.8	---	---	7.3	7.1	7.8	7.2
14	---	---	7.6	7.3	7.1	7.0	---	---	7.3	7.2	8.0	7.3
15	---	---	7.5	7.3	7.1	7.0	---	---	7.3	7.2	8.1	7.3
16	8.7	7.2	7.6	7.3	7.1	7.0	---	---	7.4	7.2	8.1	7.3
17	8.7	7.3	---	---	7.2	7.1	6.9	6.8	7.4	7.2	8.2	7.4
18	8.7	7.3	---	---	7.2	7.1	7.0	6.9	7.4	7.2	8.2	7.4
19	8.7	7.3	7.9	---	7.3	7.2	7.0	7.0	7.5	7.2	8.2	7.5
20	8.8	7.3	7.6	7.3	7.3	7.2	7.0	7.0	7.5	7.3	8.1	7.6
21	8.8	7.4	---	---	7.3	7.2	---	---	7.6	7.3	8.2	7.4
22	8.8	7.4	---	---	7.3	7.3	---	---	7.6	7.3	8.1	7.6
23	8.8	7.4	---	---	7.3	7.2	---	---	7.7	7.3	7.9	7.5
24	8.7	7.4	7.7	7.3	7.2	7.1	---	---	7.8	7.4	7.8	7.5
25	8.7	7.4	---	---	7.2	7.2	7.2	---	7.8	---	7.9	7.3
26	8.7	7.3	---	---	7.3	7.2	7.1	7.1	---	---	7.8	7.4
27	8.5	7.3	---	---	7.3	7.2	7.1	7.1	---	---	7.7	7.3
28	8.7	7.3	---	---	7.4	7.3	7.2	7.1	---	---	7.8	7.3
29	8.6	7.3	---	---	7.4	7.3	7.2	7.1	8.0	---	7.8	7.3
30	8.5	7.2	7.9	---	7.4	7.4	7.2	7.1	---	---	7.8	7.4
31	8.0	7.2	---	---	7.4	7.4	7.1	7.0	---	---	7.8	7.4
MONTH	---	---	---	---	---	---	---	---	---	---	8.2	7.2
DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
APRIL			MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	7.7	7.4	7.8	7.4	7.7	7.4	8.5	7.3	8.8	7.0	9.0	6.9
2	7.5	7.3	7.6	7.3	7.7	7.2	8.4	7.2	8.8	7.0	8.9	6.8
3	7.6	7.3	7.6	7.3	7.5	7.2	8.4	7.2	8.9	7.0	9.0	6.8
4	7.6	7.3	7.6	7.3	7.8	7.2	8.5	7.2	8.9	7.1	9.0	6.9
5	7.7	7.3	7.4	7.2	7.8	7.3	8.5	7.2	8.9	7.1	9.0	6.9
6	7.6	7.2	7.6	7.2	7.8	7.3	8.6	7.2	8.9	7.2	8.9	6.9
7	7.5	7.2	7.6	7.3	7.8	7.3	8.6	7.2	8.9	7.2	8.8	6.9
8	7.6	7.3	7.3	7.2	7.8	7.3	8.6	7.2	9.0	7.2	9.4	6.9
9	7.7	7.3	7.3	7.2	7.7	7.3	8.6	7.2	9.0	7.3	9.4	7.3
10	7.7	7.3	7.4	7.2	8.0	7.3	8.6	7.2	8.8	7.3	9.5	7.3
11	7.7	7.3	7.5	7.2	8.1	7.3	8.5	7.1	8.5	7.3	9.5	7.4
12	7.8	7.3	7.5	7.2	8.2	7.3	8.6	7.1	8.8	7.2	9.5	7.4
13	7.6	7.3	7.5	7.3	8.2	7.4	8.5	7.1	8.7	7.1	9.5	7.4
14	7.5	7.2	7.7	7.3	8.2	7.4	8.5	7.1	8.8	7.1	9.5	7.5
15	7.6	7.3	7.7	7.3	8.0	7.6	8.5	7.1	8.8	7.1	9.5	7.5
16	7.6	7.3	7.7	7.3	8.0	7.6	8.5	7.1	8.8	7.1	9.5	7.5
17	7.7	7.3	7.8	7.3	8.0	7.4	8.5	7.1	8.9	7.1	9.5	7.5
18	7.8	7.4	7.8	7.3	8.0	7.4	8.5	7.1	8.9	7.1	9.6	7.5
19	7.7	7.4	7.8	7.3	8.1	7.4	8.5	7.1	8.9	7.0	9.0	7.6
20	7.7	7.4	7.9	7.3	8.1	7.4	8.5	7.1	9.0	7.0	9.3	7.4
21	7.5	7.3	8.0	7.4	8.2	7.4	8.5	7.0	9.0	7.0	9.2	7.5
22	7.4	7.3	7.9	7.3	8.2	7.3	8.6	7.0	9.0	7.0	9.0	7.5
23	7.4	7.3	8.1	7.3	8.2	7.3	8.6	7.0	9.0	7.0	---	---
24	7.5	7.3	8.1	7.5	8.2	7.3	8.6	7.0	9.1	7.0	---	---
25	7.6	7.3	8.2	7.5	8.3	7.3	8.6	7.0	9.1	7.0	8.8	---
26	7.6	7.3	8.1	7.6	8.3	7.3	8.7	7.0	9.1	6.9	8.8	7.3
27	7.7	7.3	8.2	7.6	8.4	7.3	8.7	7.0	9.1	6.9	8.6	7.3
28	7.6	7.3	8.0	7.5	8.3	7.4	8.7	7.0	9.1	6.9	8.8	7.3
29	7.8	7.3	8.1	7.6	8.5	7.3	8.7	7.0	9.0	6.9	8.8	7.3
30	7.8	7.4	8.1	7.7	8.5	7.3	8.8	7.0	9.0	6.9	8.7	7.3
31	---	---	7.9	7.4	---	---	8.8	6.9	9.0	6.9	---	---
MONTH	7.8	7.2	8.2	7.2	8.5	7.2	8.8	6.9	9.1	6.9	---	---

SOUTH UMPQUA RIVER BASIN

14312260 SOUTH UMPQUA RIVER NEAR ROSEBURG, OR--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	13.9	5.8	9.4	11.3	7.5	9.0	---	---	---	---	---	---
2	14.0	5.7	8.7	10.9	7.8	8.9	---	---	---	---	---	---
3	12.1	5.5	8.3	10.7	7.6	8.7	---	---	---	---	---	---
4	13.5	5.6	8.8	11.1	7.7	9.1	---	---	---	---	---	---
5	13.8	5.7	9.1	11.0	7.8	9.1	---	---	---	---	---	---
6	13.7	5.7	9.2	9.9	8.0	8.7	---	---	---	12.4	11.0	11.9
7	12.7	5.9	9.0	11.2	8.0	9.2	---	---	---	12.3	12.2	12.3
8	11.4	6.0	8.3	10.4	8.0	9.0	11.1	10.7	11.0	12.3	12.2	12.2
9	13.1	6.2	9.1	11.0	7.9	9.1	10.9	10.5	10.6	12.2	11.6	12.0
10	12.5	6.1	9.1	11.3	8.1	9.4	10.7	9.6	10.3	---	---	---
11	13.0	6.5	9.3	10.4	8.3	9.1	10.8	10.4	10.6	---	---	---
12	13.1	6.7	9.4	10.8	8.1	9.1	10.8	10.5	10.7	---	---	---
13	12.3	7.0	9.1	9.4	7.8	8.5	11.8	10.9	11.5	---	---	---
14	---	---	---	9.3	7.6	8.2	12.1	12.0	12.0	---	---	---
15	---	---	---	8.4	7.3	7.7	12.3	12.1	12.2	---	---	---
16	13.2	7.5	9.9	8.6	7.2	7.8	12.4	11.9	12.3	---	---	---
17	13.1	7.7	10.0	---	---	---	12.6	12.1	12.4	12.2	12.1	12.2
18	13.3	7.9	10.1	---	---	---	12.4	12.2	12.3	12.2	11.8	12.2
19	13.3	8.0	10.2	---	---	---	12.5	12.3	12.4	12.2	11.9	12.1
20	13.3	8.0	10.2	10.2	9.4	9.9	12.4	12.1	12.3	12.1	11.9	12.0
21	13.3	8.1	10.3	---	---	---	12.4	12.1	12.2	---	---	---
22	13.1	8.2	10.2	---	---	---	12.3	12.0	12.1	---	---	---
23	13.1	8.1	10.1	---	---	---	12.2	11.9	12.0	---	---	---
24	13.0	8.0	10.0	---	---	---	12.2	11.8	12.1	---	---	---
25	12.9	7.9	10.0	---	---	---	12.5	12.2	12.3	12.7	---	---
26	12.9	7.9	9.9	---	---	---	12.5	12.3	12.4	12.7	12.4	12.5
27	12.3	7.8	9.6	---	---	---	12.5	12.3	12.4	12.6	12.3	12.5
28	12.6	7.8	9.7	---	---	---	---	---	---	12.3	12.0	12.2
29	12.6	7.5	9.7	---	---	---	---	---	---	12.1	11.9	12.0
30	12.0	8.0	9.5	---	---	---	---	---	---	12.2	11.8	12.0
31	10.5	7.6	8.9	---	---	---	---	---	---	12.0	11.9	12.0
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	12.4	12.0	12.2	---	---	---	10.9	9.9	10.3	11.5	9.8	10.5
2	12.6	12.3	12.5	---	---	---	10.6	9.4	9.8	11.3	10.2	10.7
3	12.9	12.5	12.7	---	---	---	10.8	9.4	9.8	12.3	10.5	11.1
4	13.0	12.6	12.8	---	---	---	10.6	9.6	10.0	11.4	10.7	11.0
5	13.0	12.7	12.8	---	---	---	11.0	9.7	10.3	10.8	10.4	10.6
6	13.0	12.6	12.8	10.7	9.0	9.9	10.2	9.7	9.9	11.1	10.5	10.7
7	12.8	12.5	12.6	10.9	9.9	10.4	10.9	9.7	10.3	10.9	9.8	10.6
8	12.6	12.0	12.3	11.2	10.0	10.6	11.4	10.1	10.7	10.4	10.1	10.3
9	12.1	11.8	11.9	10.9	10.3	10.6	11.2	10.1	10.7	10.4	9.9	10.2
10	12.0	11.7	11.8	11.2	10.6	10.9	11.1	9.7	10.4	10.5	10.2	10.3
11	11.8	11.5	11.6	11.9	10.8	11.3	10.9	9.6	10.2	10.1	9.1	9.9
12	11.9	11.4	11.6	12.2	11.1	11.6	10.7	9.2	9.9	9.6	8.9	9.3
13	12.2	11.5	11.8	12.4	11.0	11.7	9.9	9.1	9.3	9.8	8.9	9.4
14	12.4	11.7	12.0	13.7	11.1	12.0	10.0	9.0	9.4	10.3	9.8	10.0
15	12.3	11.6	11.9	13.2	10.9	12.0	10.5	9.3	9.8	10.0	9.2	9.5
16	12.5	11.7	12.1	13.6	11.6	12.6	10.7	9.6	9.9	9.8	9.0	9.4
17	12.5	11.8	12.1	---	---	---	---	9.6	10.3	10.3	9.0	9.6
18	12.6	11.9	12.2	---	---	---	---	9.7	10.4	10.2	9.5	9.8
19	12.6	12.0	12.2	---	---	---	10.5	9.4	9.9	10.4	9.4	9.8
20	12.5	11.9	12.1	---	---	---	10.6	9.2	9.8	10.2	9.2	9.7
21	12.5	11.8	12.1	---	---	---	9.7	9.3	9.5	9.9	8.7	9.3
22	12.5	11.5	12.0	---	---	---	10.5	9.6	10.1	9.7	8.5	9.1
23	---	---	---	---	---	---	10.6	10.2	10.4	10.0	9.1	9.6
24	---	---	---	---	---	---	10.7	10.0	10.3	10.2	9.1	9.6
25	---	---	---	---	---	---	11.3	9.9	10.4	10.7	9.3	9.9
26	---	---	---	---	---	---	10.8	9.6	10.1	10.4	9.1	9.7
27	---	---	---	11.1	9.6	10.3	10.2	9.1	9.7	10.4	8.9	9.5
28	---	---	---	11.5	9.8	10.6	9.9	9.0	9.5	10.0	8.7	9.3
29	---	---	---	11.6	9.9	10.5	10.7	9.2	9.9	10.6	9.1	9.7
30	---	---	---	11.4	9.8	10.5	10.9	9.5	10.1	10.5	9.3	9.8
31	---	---	---	11.3	10.0	10.6	---	---	---	10.0	9.1	9.5
MONTH	---	---	---	---	---	---	---	9.0	10.0	12.3	8.5	9.9

SOUTH UMPQUA RIVER BASIN

223

14312260 SOUTH UMPQUA RIVER NEAR ROSEBURG, OR--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.2	9.4	9.7	10.7	8.0	9.1	10.4	5.2	7.7	11.4	4.7	8.0
2	9.8	9.0	9.4	10.1	7.5	8.6	10.6	5.3	7.8	10.9	4.8	7.7
3	10.0	9.6	9.7	10.5	7.4	8.7	10.8	5.1	7.8	10.8	4.8	7.7
4	10.3	9.3	9.7	10.8	7.8	9.1	10.9	5.0	7.7	10.7	4.7	7.5
5	10.7	9.2	9.9	10.8	7.8	9.1	10.5	4.7	7.4	10.9	4.7	7.5
6	11.2	10.2	10.7	11.2	7.9	9.4	10.4	5.0	7.6	10.9	4.9	7.8
7	11.1	10.4	10.7	11.0	7.7	9.3	10.6	5.0	7.7	10.6	4.9	7.5
8	11.2	10.4	10.8	11.0	7.4	9.0	10.7	5.0	7.7	11.1	4.9	8.0
9	11.3	10.7	10.9	10.7	6.9	8.5	10.5	5.0	7.6	10.7	5.1	7.9
10	11.5	10.6	11.0	10.4	6.6	8.3	9.4	4.7	6.7	12.0	5.4	8.8
11	11.4	10.1	10.7	9.9	6.4	8.0	8.3	5.0	6.5	11.7	6.0	8.8
12	11.6	10.1	10.7	10.2	6.4	8.1	10.2	5.0	7.3	11.8	5.8	8.7
13	11.0	9.8	10.3	10.0	6.2	7.8	10.4	5.1	7.6	11.4	5.6	8.5
14	10.4	9.2	9.9	10.0	6.1	7.9	10.9	5.8	8.0	11.4	5.3	8.2
15	10.2	8.9	9.5	10.5	6.8	8.4	10.6	5.8	7.8	12.3	6.0	9.1
16	10.0	8.5	9.3	10.4	6.7	8.4	10.6	5.8	8.0	12.3	6.7	9.3
17	9.7	8.1	8.8	10.2	6.6	8.1	11.2	5.6	8.2	12.3	6.4	9.2
18	9.4	7.8	8.5	10.3	6.3	8.2	11.0	5.8	8.2	12.7	6.7	9.5
19	9.0	7.4	8.1	10.0	6.4	8.0	11.4	5.5	8.1	10.3	6.4	8.1
20	8.8	7.1	7.9	9.9	6.1	7.8	11.7	5.4	8.2	11.8	6.5	8.7
21	9.5	6.9	8.1	9.6	5.7	7.5	11.7	5.3	8.3	11.3	6.9	8.8
22	9.7	8.0	8.7	9.5	5.6	7.4	11.7	5.5	8.3	10.2	6.9	8.4
23	8.9	7.2	8.0	9.9	5.6	7.6	11.7	5.0	7.8	---	7.1	---
24	8.7	7.3	7.9	9.7	5.7	7.7	12.0	4.9	8.1	---	---	---
25	8.6	6.9	7.7	10.0	5.8	7.7	11.9	5.0	8.2	12.5	---	---
26	9.8	7.0	8.3	10.0	5.5	7.5	11.8	5.2	8.2	11.0	7.2	8.9
27	10.0	7.6	8.7	10.1	5.1	7.5	11.4	4.9	7.9	10.0	6.5	8.1
28	10.1	7.7	8.9	10.1	5.4	7.5	10.8	4.8	7.6	---	---	---
29	10.8	8.0	9.2	10.3	5.1	7.5	10.4	4.5	7.4	---	---	---
30	10.7	8.0	9.2	10.3	5.0	7.4	11.2	5.0	7.9	---	---	---
31	---	---	---	10.2	4.9	7.5	11.3	4.9	8.0	---	---	---
MONTH	11.6	6.9	9.4	11.2	4.9	8.1	12.0	4.5	7.8	---	---	---

SOUTH UMPQUA RIVER BASIN

14312260 SOUTH UMPQUA RIVER NEAR ROSEBURG, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	20.5	17.5	19.0	15.0	14.0	14.5	8.0	7.0	7.5	3.5	3.0	3.0
2	20.5	18.0	19.0	14.5	13.5	14.0	---	8.0	---	3.0	2.5	3.0
3	19.5	18.0	19.0	14.0	13.5	14.0	---	---	---	3.0	3.0	3.0
4	20.0	17.5	19.0	14.5	13.0	13.5	---	---	---	3.5	3.0	3.0
5	20.5	17.5	19.0	14.0	12.5	13.0	---	---	---	4.0	3.5	3.5
6	20.0	17.5	19.0	13.0	12.5	13.0	---	---	---	5.0	4.0	4.5
7	19.5	17.5	18.5	14.0	12.5	13.0	9.0	8.5	8.5	5.5	5.0	5.0
8	18.5	17.5	18.0	12.5	12.0	12.0	8.5	8.0	8.0	6.0	5.5	5.5
9	19.0	16.5	17.5	13.5	12.0	12.5	9.0	8.0	8.5	7.0	5.5	6.0
10	18.0	16.5	17.5	12.5	11.5	12.0	10.0	9.0	9.5	---	---	---
11	18.5	15.5	17.0	12.0	11.5	11.5	10.5	10.0	10.0	---	---	---
12	18.0	16.0	17.0	13.0	12.0	12.5	10.0	9.0	9.5	---	---	---
13	17.0	15.5	16.0	13.0	12.0	12.5	8.5	5.5	6.5	---	---	---
14	---	---	---	12.5	11.5	12.0	5.5	5.0	5.0	---	---	---
15	---	---	---	11.5	10.5	11.0	5.0	4.5	5.0	---	---	---
16	16.0	13.5	14.5	11.0	10.5	10.5	5.5	4.5	5.0	---	---	---
17	15.5	13.0	14.5	---	---	---	5.5	5.0	5.0	6.0	5.5	5.5
18	15.0	12.5	14.0	---	---	---	5.0	5.0	5.0	6.0	5.0	5.5
19	15.0	12.5	13.5	12.0	---	---	5.0	5.0	5.0	5.5	5.0	5.5
20	15.0	12.5	13.5	11.5	11.0	11.0	5.5	5.0	5.0	5.5	5.0	5.5
21	14.5	12.0	13.5	---	10.5	---	6.0	5.5	6.0	---	5.5	---
22	14.5	12.5	13.5	11.0	---	---	6.0	6.0	6.0	---	---	---
23	14.5	12.5	13.5	11.0	10.0	---	6.0	5.0	5.5	---	---	---
24	14.5	12.5	13.5	10.5	9.5	10.0	5.0	4.5	5.0	---	---	---
25	14.5	12.5	13.5	---	---	---	4.5	4.0	4.0	6.0	---	---
26	14.5	12.5	13.5	---	---	---	4.0	3.5	4.0	5.5	5.0	5.0
27	14.5	12.0	13.0	---	---	---	3.5	3.5	3.5	5.5	5.0	5.0
28	14.5	12.0	13.5	---	---	---	3.5	3.0	3.5	6.0	5.0	5.5
29	15.0	13.0	14.0	---	---	---	3.5	3.0	3.5	6.5	6.0	6.5
30	15.0	14.0	14.5	7.0	---	---	4.0	3.0	3.5	7.0	6.5	6.5
31	15.0	14.5	14.5	---	---	---	4.0	3.5	4.0	6.5	6.0	6.0
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	6.0	5.0	5.5	11.0	10.5	11.0	12.0	10.0	11.0	13.0	11.5	12.0
2	5.0	4.5	5.0	11.0	10.0	10.5	12.0	11.0	11.5	11.5	10.5	11.0
3	4.5	4.0	4.5	10.0	9.5	10.0	12.0	11.0	11.5	11.0	10.0	10.5
4	4.5	4.0	4.5	10.0	9.5	9.5	12.0	11.0	11.5	11.5	9.5	10.5
5	4.5	4.0	4.5	9.5	9.0	9.0	12.0	10.5	11.0	10.5	10.0	10.0
6	5.0	4.0	4.5	9.0	8.5	9.0	12.0	10.5	11.5	10.0	9.5	9.5
7	5.0	4.5	5.0	9.0	8.0	8.5	10.5	10.0	10.5	12.0	9.5	10.5
8	6.5	5.0	6.0	8.5	8.0	8.0	11.0	9.5	10.0	11.0	10.5	10.5
9	7.5	6.5	7.0	8.0	7.5	8.0	12.0	9.5	11.0	11.0	10.5	10.5
10	8.0	7.5	7.5	8.0	7.5	7.5	13.5	11.0	12.5	12.5	10.5	11.0
11	8.0	7.5	7.5	7.5	6.5	7.0	15.0	12.5	14.0	15.0	12.0	13.5
12	8.0	7.5	7.5	8.0	6.5	7.0	16.0	14.0	15.0	16.0	14.0	15.0
13	7.5	7.0	7.0	8.0	7.0	7.5	16.0	14.5	15.0	15.0	14.0	14.5
14	7.0	6.5	7.0	8.5	7.5	8.0	14.5	13.5	14.0	15.0	13.0	14.0
15	7.0	6.5	7.0	8.5	7.5	8.0	13.5	12.5	13.0	16.0	13.5	14.5
16	6.5	6.5	6.5	9.0	7.5	8.5	12.5	12.0	12.5	16.0	15.0	15.5
17	6.5	6.0	6.0	9.5	8.0	9.0	13.5	12.0	12.5	15.5	14.5	15.0
18	6.5	6.0	6.5	10.0	8.0	9.0	13.5	12.5	13.0	16.0	14.5	15.5
19	6.5	5.5	6.5	10.5	9.0	10.0	13.5	13.0	13.5	16.0	14.5	15.5
20	6.5	6.0	6.5	11.0	10.0	10.5	13.5	13.0	13.5	17.5	15.0	16.0
21	7.5	6.0	7.0	11.0	10.0	10.5	13.5	11.5	12.5	19.0	16.0	17.5
22	7.5	6.5	7.0	11.0	10.5	11.0	11.5	10.5	11.0	18.5	17.5	18.0
23	7.5	7.0	7.5	11.0	10.0	10.5	12.0	10.0	11.0	17.5	16.5	17.0
24	8.0	7.0	7.5	10.5	10.0	10.0	12.0	10.5	11.0	17.5	16.0	17.0
25	---	7.5	---	11.5	9.5	10.5	13.5	11.0	12.0	18.0	16.5	17.5
26	---	---	---	11.0	10.0	11.0	14.5	12.5	13.5	18.5	17.0	17.5
27	---	---	---	10.5	9.5	10.0	15.5	14.0	15.0	18.5	17.5	18.0
28	---	---	---	10.5	9.0	10.0	15.0	14.5	15.0	18.0	16.5	17.5
29	---	---	---	10.5	9.5	10.0	14.5	13.5	14.0	17.0	16.0	16.5
30	---	---	---	10.5	9.5	10.0	13.5	12.5	13.0	17.0	15.5	16.5
31	---	---	---	11.0	9.0	10.0	---	---	---	17.0	15.5	16.0
MONTH	---	---	---	11.5	6.5	9.5	16.0	9.5	12.5	19.0	9.5	14.5

SOUTH UMPQUA RIVER BASIN

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14312260 SOUTH UMPQUA RIVER NEAR ROSEBURG, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	16.0	15.0	15.5	23.0	20.0	21.5	27.5	24.0	26.0	26.0	22.5	24.5
2	16.0	12.5	14.0	23.0	21.0	22.0	27.0	23.5	25.5	26.5	23.0	25.0
3	15.0	12.5	13.5	22.0	20.5	21.5	28.0	23.5	25.5	26.5	23.0	25.0
4	15.5	13.5	14.5	22.0	20.0	20.5	28.0	24.0	26.0	26.5	23.5	25.0
5	15.0	13.5	14.5	21.5	19.5	20.5	26.5	24.5	25.5	27.0	24.0	25.5
6	14.0	13.0	13.5	22.5	18.5	20.5	27.0	23.0	25.0	26.5	23.0	24.5
7	13.5	12.5	13.0	23.5	19.5	21.5	26.5	23.0	24.5	25.5	23.0	24.0
8	13.5	12.0	12.5	25.0	20.5	22.0	27.0	23.0	25.0	25.5	22.0	23.5
9	13.5	12.0	12.5	25.5	21.5	23.5	27.0	23.0	25.0	25.0	21.5	23.0
10	14.5	12.5	13.5	26.0	22.0	24.0	25.0	23.5	24.0	23.0	20.5	21.5
11	15.5	13.5	14.0	24.5	22.5	23.5	23.5	22.5	23.0	23.0	19.5	21.0
12	16.5	14.5	15.5	25.5	22.0	24.0	25.0	21.5	23.0	23.0	19.5	21.5
13	18.0	16.0	17.0	25.0	22.5	24.0	23.0	21.5	22.5	23.0	19.5	21.0
14	20.5	17.5	19.0	25.0	22.5	23.5	24.0	21.0	22.5	22.5	19.0	21.0
15	21.5	19.0	20.5	25.5	22.0	23.5	24.0	21.0	22.5	21.0	18.5	20.0
16	22.0	20.0	21.0	26.0	22.0	24.0	24.5	21.0	22.5	21.5	19.0	20.0
17	22.0	20.0	21.0	26.5	22.5	24.5	25.0	22.0	23.0	20.5	17.5	19.0
18	22.5	21.0	22.0	26.5	22.5	24.5	25.0	21.0	23.0	20.5	17.0	19.0
19	22.5	21.5	22.0	27.5	23.0	25.5	25.0	21.5	23.5	19.5	18.0	19.0
20	23.5	22.0	22.5	28.5	24.5	26.5	24.5	21.5	23.0	19.5	17.5	18.5
21	24.0	22.5	23.0	28.5	25.0	27.0	25.0	21.0	23.0	20.0	16.5	18.5
22	25.0	23.0	24.0	28.5	25.0	26.5	25.5	21.5	23.5	20.0	17.0	18.5
23	24.5	22.5	23.5	27.5	24.5	26.0	25.5	22.0	23.5	---	16.5	---
24	24.5	22.0	23.0	28.0	24.0	26.0	26.0	22.0	24.0	22.0	---	---
25	24.0	22.0	23.0	28.5	24.5	26.5	26.0	22.0	24.5	22.0	18.5	20.5
26	23.5	21.5	22.5	29.0	25.5	27.0	26.0	22.5	24.5	19.5	18.0	19.0
27	23.0	21.5	22.0	29.0	25.5	27.0	26.5	23.0	24.5	19.5	18.0	18.5
28	22.0	20.5	21.5	29.0	25.0	27.0	27.0	23.0	25.0	20.5	17.5	19.0
29	22.0	19.5	20.5	29.0	25.0	27.0	26.5	23.5	25.0	21.0	17.5	19.0
30	22.5	19.0	21.0	29.0	25.5	27.0	25.5	23.0	24.0	21.5	18.0	19.5
31	---	---	---	28.5	25.0	27.0	25.5	22.0	24.0	---	---	---
MONTH	25.0	12.0	18.5	29.0	18.5	24.5	28.0	21.0	24.0	---	---	---

NORTH UMPQUA RIVER BASIN

14313000 LEMOLO LAKE NEAR TOKETEE FALLS, OR

LOCATION.--Lat 43°19'10", long 122°11'20", in SE 1/4 NW 1/4 sec.11, T.26 S., R.5 E., Douglas County, Hydrologic Unit 17100301, at Lemolo No. 1 diversion dam on North Umpqua River, 0.8 mi downstream from Lake Creek, 13.0 mi east of town of Toketee Falls, and at mile 93.01.

DRAINAGE AREA.--170 mi².

PERIOD OF RECORD.--July 1954 to current year. Prior to October 1960, published as Lemolo Reservoir near Toketee Falls.

GAGE.--Nonrecording gage. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Pacific Power & Light Co.).

REMARKS.--Lake is formed by Lemolo No 1 diversion dam. Storage began July 15, 1954. Usable capacity for normal operation, 12,520 acre-ft between elevations 4,097.0 ft and 4,148.5 ft. Dead storage below 4,097.0 ft, 1,040 acre-ft. Water is used for power generation. Figures given herein represent total contents.

COOPERATION.--Gage readings furnished by Pacific Power & Light Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 14,000 acre-ft Dec. 24, 1964, elevation, 4,149.5 ft; minimum observed, 11 acre-ft Mar. 5, 1955, elevation, 4,055.4 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 13,430 acre-ft Aug. 16, 17, elevation, 4,148.18 ft; minimum observed, 2,200 acre-ft Dec. 22, elevation, 4,108.60 ft.

MONTHEND ELEVATION AND CONTENTS AT 0900, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30.....	4,131.2	7,350	--
Oct. 31.....	4,124.5	5,420	-1,930
Nov. 30.....	4,118.1	3,810	-1,610
Dec. 31.....	4,114.3	3,050	-760
CAL YR 1987.....	--	--	+100
Jan. 31.....	4,114.2	3,040	-10
Feb. 29.....	4,119.7	4,190	+1,150
Mar. 31.....	4,120.4	4,360	+170
Apr. 30.....	4,138.2	9,620	+5,260
May 31.....	4,146.2	12,600	+2,980
June 30.....	4,146.7	12,810	+210
July 31.....	4,148.0	13,350	+540
Aug. 31.....	4,148.0	13,350	0
Sept.30.....	4,138.3	9,650	-3,700
WTR YR 1988.....	--	--	+2,300

NORTH UMPQUA RIVER BASIN

227

14313500 NORTH UMPQUA RIVER BELOW LEMOLO LAKE, NEAR TOKETEE FALLS, OR

LOCATION.--Lat 43°19'20", long 122°11'40", in NW 1/4 NW 1/4 sec.11, T.26 S., R.5 E., Douglas County, Hydrologic Unit 17100301, Umpqua National Forest, on right bank 0.4 mi downstream from Lemolo Lake, 13 mi east of town of Toketee Falls, and at mile 92.6.

DRAINAGE AREA.--170 mi² (see REMARKS).

PERIOD OF RECORD.--October 1927 to December 1945, March 1946 to current year. Records since October 1983 are equivalent to earlier records if diversion to Lemolo No. 1 power canal is added to flow past station. Published as "below Lake Creek" prior to October 1952, as "below Lake Creek, near Toketee Falls" October 1952 to September 1953, and as "below Lemolo Reservoir near Toketee Falls" October 1953 to September 1960.

REVISED RECORDS.--WSP 1448: Drainage area. WRD OR-75-1: 1964(M).

GAGE.--Water-stage recorder. Elevation of gage is 4,025 ft, from river-profile map. Prior to July 15, 1954, at site 1 mi upstream at datum about 65 ft higher. July 15, 1954, to Sept. 25, 1955, at site 400 ft upstream at datum 14.11 ft higher.

REMARKS.--No estimated daily discharges. Records excellent. Flow regulated since 1954 by Lemolo Lake (station 14313000); also slightly regulated by Diamond Lake. Records given herein do not include flow in Lemolo No. 1 power canal which, beginning July 1955, diverts 0.4 mi upstream from station for power generation with return flow 4.3 mi downstream.

AVERAGE DISCHARGE.--55 years (1928-83), 423 ft³/s, 33.79 in/yr, 306,500 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 4,600 ft³/s Dec. 25, 1964, from rating curve extended above 450 ft³/s on basis of slope-area measurement of peak flow, gage height, 9.20 ft, from floodmark; minimum discharge, 6.4 ft³/s July 17, 1954.

Combined flow, maximum discharge, 4,680 ft³/s Dec. 25, 1964, from river rating curve extended above 450 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 9.7 ft³/s May 13, 1955.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 320 ft³/s July 25 to Aug. 2, 5.90 ft; minimum discharge, 25 ft³/s Oct. 1, Sept. 11-14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	31	30	28	28	30	30	37	36	26	316	27
2	34	31	30	27	28	30	30	37	37	26	317	27
3	34	31	29	27	27	30	31	37	32	26	316	27
4	34	31	29	27	27	30	32	37	27	26	316	27
5	53	31	29	27	27	31	32	37	27	155	316	27
6	33	30	29	27	27	30	32	37	27	229	181	27
7	33	30	29	27	27	30	32	38	27	230	28	27
8	33	30	29	27	27	31	32	38	26	258	27	26
9	33	30	30	27	28	31	32	38	26	277	27	26
10	33	30	31	29	28	31	33	38	26	278	27	26
11	33	30	31	29	28	30	33	39	26	279	28	26
12	33	30	31	29	28	30	33	39	26	280	28	25
13	32	30	30	29	29	30	34	40	26	281	28	25
14	32	30	30	30	29	30	34	40	26	301	28	33
15	32	30	29	30	30	30	35	40	26	314	29	38
16	32	30	29	30	30	29	35	40	26	314	29	38
17	32	30	28	30	30	29	35	40	26	313	29	38
18	32	30	28	30	30	29	35	40	26	311	29	38
19	31	30	28	29	30	29	35	40	26	311	29	38
20	31	30	27	29	30	29	35	36	26	312	29	38
21	31	30	27	29	30	29	36	33	26	312	29	38
22	31	30	27	29	30	29	36	33	26	311	28	38
23	31	30	27	29	30	30	36	33	26	311	28	37
24	31	31	27	29	30	29	36	34	26	311	28	37
25	31	31	27	29	30	29	36	34	26	313	28	37
26	31	30	27	28	30	30	36	34	26	316	27	36
27	31	30	27	28	30	30	36	34	27	317	27	37
28	31	30	27	28	30	30	36	34	28	316	27	36
29	31	29	27	28	30	30	37	35	28	317	27	36
30	31	29	27	28	---	30	37	35	27	317	27	36
31	31	---	28	28	---	30	---	35	---	316	27	---
TOTAL	1011	905	884	881	838	925	1022	1142	817	8004	2460	972
MEAN	32.6	30.2	28.5	28.4	28.9	29.8	34.1	36.8	27.2	258	79.4	32.4
MAX	53	31	31	30	30	31	37	40	37	317	317	38
MIN	30	29	27	27	27	29	30	33	26	26	27	25
AC-FT	2010	1800	1750	1750	1660	1830	2030	2270	1620	15880	4880	1930

CAL YR 1987 TOTAL 21434 MEAN 58.7 MAX 437 MIN 26 AC-FT 42510
WTR YR 1988 TOTAL 19861 MEAN 54.3 MAX 317 MIN 25 AC-FT 39390

NORTH UMPQUA RIVER BASIN

14314500 CLEARWATER RIVER ABOVE TRAP CREEK, NEAR TOKETEE FALLS, OR

LOCATION.--Lat 43°14'40", long 122°17'10", in SW 1/4 sec.1, T.27 S., R.4 E., Douglas County, Hydrologic Unit 17100301, Umpqua National Forest, on right bank 900 ft downstream from Clearwater No. 1 diversion dam, 0.4 mi upstream from Trap Creek, 8.7 mi east of town of Toketee Falls, and at mile 7.8.

DRAINAGE AREA.--41.6 mi². (See REMARKS.)

PERIOD OF RECORD.--October 1927 to December 1945, March 1946 to current year. Records since October 1983 are equivalent to earlier records if diversion to Clearwater No. 1 power canal is added to flow past station. Monthly discharge only December 1927 to March 1928, published in WSP 1318. Prior to October 1952, published as "above Trap Creek."

REVISED RECORDS.--WSP 1124: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,862.84 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Power & Light Co.). Prior to Dec. 1, 1953, at two sites about 0.4 mi downstream at different datums.

REMARKS.--No estimated daily discharges. Records good. Records after September 1983 do not include flow in Clearwater No. 1 power canal, completed in June 1953, which diverts 900 ft upstream from station for generation of power and returns water to Clearwater River 2.5 mi downstream from station.

AVERAGE DISCHARGE.--55 years (1928-83), 173 ft³/s, 125,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 848 ft³/s Dec. 23, 1964, gage height, 7.19 ft; maximum gage height, 7.87 ft Dec. 23, 1964, log jam; minimum discharge, 0.08 ft³/s Sept. 21, 1977, result of beavers plugging release gate at diversion dam 900 ft upstream.

Combined flow, maximum discharge, 1,020 ft³/s Dec. 23, 1964; minimum daily, 91 ft³/s Nov. 4-6, 1931.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 184 ft³/s May 16, gage height, 4.36 ft; minimum discharge, 4.4 ft³/s Oct. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	4.8	5.5	5.5	5.8	5.1	5.7	6.2	7.4	5.9	5.5	5.1
2	5.0	4.7	6.0	5.5	5.7	5.1	5.8	6.2	6.9	5.9	5.5	5.1
3	5.1	4.7	5.8	5.5	5.7	5.1	6.2	6.3	7.1	5.7	5.5	5.2
4	5.0	4.9	5.7	5.5	5.7	5.2	6.1	6.3	6.8	5.7	5.5	5.2
5	65	5.1	5.5	5.5	5.7	5.3	6.1	6.3	6.5	5.7	5.5	5.2
6	129	5.1	5.5	5.5	5.7	5.2	6.1	6.2	6.5	5.7	5.5	5.1
7	128	4.9	5.3	5.5	5.7	5.0	6.1	6.3	6.5	5.6	5.5	5.1
8	128	4.9	5.2	5.5	5.8	5.0	6.1	6.3	6.5	5.6	5.5	5.1
9	129	5.0	5.5	5.8	6.1	5.1	5.9	6.3	6.3	5.5	5.5	5.1
10	128	4.9	8.4	6.8	5.9	4.9	5.9	6.3	6.3	5.5	5.4	5.1
11	128	5.0	5.9	6.3	5.8	5.4	6.1	6.3	6.3	5.5	5.4	5.1
12	128	5.2	5.7	5.9	5.7	5.9	6.1	6.3	6.3	5.5	5.3	5.1
13	129	5.5	5.7	5.8	5.8	6.0	6.1	6.7	6.3	5.5	5.4	5.1
14	128	5.2	5.6	6.1	5.7	5.9	6.3	6.5	6.3	5.5	5.4	5.1
15	128	5.1	5.5	6.1	5.7	5.9	6.3	6.5	6.3	5.5	5.3	5.1
16	127	5.1	5.3	5.9	5.7	5.8	6.3	91	6.4	5.5	5.3	5.1
17	127	5.1	5.2	5.9	5.7	5.7	6.3	170	6.4	5.5	5.3	5.1
18	127	5.1	5.1	5.9	5.7	5.7	6.1	173	6.3	5.5	5.3	5.1
19	127	5.1	5.1	5.9	5.7	5.7	6.1	169	6.3	5.4	5.3	5.3
20	127	5.1	5.2	5.8	5.4	5.7	6.2	169	6.3	5.5	5.3	5.3
21	127	5.1	5.6	5.7	4.9	5.8	6.3	173	6.2	5.5	5.3	5.1
22	127	5.1	5.6	5.7	4.9	5.7	6.2	178	6.2	5.5	5.3	5.1
23	85	5.1	5.5	5.7	4.9	5.9	6.1	175	6.2	5.5	5.3	5.1
24	5.4	5.0	5.5	5.7	4.9	5.7	6.1	171	6.1	5.5	5.3	5.1
25	5.2	5.1	5.5	5.7	5.0	5.7	6.1	158	6.1	5.5	5.2	5.1
26	4.9	5.1	5.5	5.7	5.1	5.9	6.1	155	6.1	5.5	5.2	5.1
27	4.9	5.0	5.5	5.7	5.1	5.9	6.1	90	6.0	5.5	5.3	5.3
28	4.7	5.1	5.5	5.7	5.1	5.9	6.1	7.1	5.9	5.5	5.3	5.1
29	4.7	5.1	5.5	5.7	5.1	5.9	6.4	6.7	5.9	5.5	5.2	5.1
30	4.7	5.1	5.5	5.7	---	5.7	6.3	6.4	5.9	5.5	5.2	5.1
31	4.7	---	5.5	5.7	---	5.7	---	6.4	---	5.5	5.1	---
TOTAL	2381.2	151.3	173.4	178.9	159.7	172.5	183.7	1993.6	190.6	172.2	165.9	153.9
MEAN	76.8	5.04	5.59	5.77	5.51	5.56	6.12	64.3	6.35	5.55	5.35	5.13
MAX	129	5.5	8.4	6.8	6.1	6.0	6.4	178	7.4	5.9	5.5	5.3
MIN	4.7	4.7	5.1	5.5	4.9	4.9	5.7	6.2	5.9	5.4	5.1	5.1
AC-FT	4720	300	344	355	317	342	364	3950	378	342	329	305
CAL YR 1987	TOTAL 4324.9		MEAN 11.8	MAX 129	MIN 4.4	AC-FT 8580						
WTR YR 1988	TOTAL 6076.9		MEAN 16.6	MAX 178	MIN 4.7	AC-FT 12050						

14316000 FISH CREEK AT BIG CAMAS RANGER STATION, NEAR TOKETEE FALLS, OR

LOCATION.--Lat 43°13'50", long 122°26'45", in SE 1/4 sec.10, T.27 S., R.3 E., Douglas County, Hydrologic Unit 17100301, Umpqua National Forest, 0.2 mi upstream from Camas Creek, 0.7 mi east of Big Camas ranger station, 3.2 mi south of town of Toketee Falls, and at mile 4.7.

DRAINAGE AREA.--68.8 mi² (see REMARKS).

PERIOD OF RECORD.--October 1947 to current year. Records since October 1983 are equivalent to earlier records if diversion to Fish Creek power canal is added to flow past station. Prior to October 1952, published as "at Big Camas ranger station."

REVISED RECORDS.--WSP 1448: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,858.52 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Power & Light Co.). Prior to July 10, 1951, water-stage recorder and July 10 to Aug. 10, 1951, nonrecording gage at site 1,000 ft upstream at datum 13.72 ft higher. Aug. 11 to Nov. 3, 1951, nonrecording gage at site 200 ft downstream at different datum. Nov. 4, 1951, to Sept. 30, 1956, water-stage recorder at present site at datum 1.92 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. Several measurements of water temperature were made during the year. Records given herein do not include flow in Fish Creek power canal (diversion began June 18, 1952), which diverts water 2 mi upstream from station for power generation at Fish Creek powerplant; diversion discharged to North Umpqua River 600 ft downstream from Toketee powerplant.

AVERAGE DISCHARGE.--36 years (1947-83), 237 ft³/s, 46.78 in/yr, 171,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 12,100 ft³/s Dec. 22, 1964, gage height, 13.9 ft, from floodmark; minimum discharge, 2.3 ft³/s Sept. 25, 1957.

Combined flow, maximum discharge, 12,100 ft³/s Dec. 22, 1964; minimum daily, 19 ft³/s July 30, 1979, result of diversion dam manipulation.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 1,930 ft³/s Dec. 10, gage height, 6.69 ft; minimum discharge, 6.3 ft³/s Nov. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	21	115	e21	99	119	101	168	458	46	24	40
2	32	25	227	e18	94	106	144	160	386	44	24	28
3	32	24	165	e19	78	115	292	173	379	43	24	22
4	32	30	86	23	72	161	302	168	349	42	24	22
5	32	29	68	23	66	200	207	170	310	41	25	19
6	31	29	124	21	62	178	209	171	284	40	25	15
7	31	29	63	20	58	147	203	200	265	38	24	13
8	31	29	28	23	81	147	170	220	232	37	23	13
9	31	35	276	186	275	172	153	219	212	36	22	13
10	31	19	1070	1040	216	140	147	232	185	34	23	13
11	30	14	375	567	185	124	156	292	162	34	25	12
12	30	40	220	321	165	112	166	336	144	33	24	12
13	30	115	146	222	151	104	179	359	131	32	24	13
14	30	31	111	429	134	97	218	273	121	32	24	14
15	30	12	91	456	127	90	180	238	113	31	25	14
16	30	22	75	315	113	82	181	267	108	30	26	14
17	30	31	61	232	103	77	168	237	100	29	25	14
18	30	19	53	174	94	75	149	197	92	28	24	14
19	30	13	46	134	86	75	145	174	85	27	24	22
20	30	12	42	115	80	74	154	162	79	26	23	19
21	29	19	46	101	78	82	178	158	74	26	24	13
22	29	9.8	45	90	76	76	174	155	69	25	38	14
23	29	12	38	82	74	112	161	143	64	24	49	13
24	29	21	e34	75	73	94	144	128	61	24	49	12
25	29	16	e32	70	75	104	133	117	58	23	48	12
26	29	11	e30	71	78	134	127	110	55	22	47	12
27	29	11	e28	83	90	146	127	105	52	22	47	32
28	29	13	27	101	104	128	137	156	51	22	46	16
29	29	12	26	126	108	120	225	139	50	26	46	13
30	24	15	25	126	---	109	193	125	48	28	46	12
31	19	---	23	112	---	101	---	137	---	24	45	---
TOTAL	919	718.8	3796	5396	3095	3601	5223	5889	4777	969	967	495
MEAN	29.6	24.0	122	174	107	116	174	190	159	31.3	31.2	16.5
MAX	32	115	1070	1040	275	200	302	359	458	46	49	40
MIN	19	9.8	23	18	58	74	101	105	48	22	22	12
AC-FT	1820	1430	7530	10700	6140	7140	10360	11680	9480	1920	1920	982
CFSM	.43	.35	1.78	2.53	1.55	1.69	2.53	2.76	2.31	.45	.45	.24
IN.	.50	.39	2.05	2.92	1.67	1.95	2.82	3.18	2.58	.52	.52	.27

CAL YR 1987 TOTAL 25930.8 MEAN 71.0 MAX 1070 MIN 9.8 AC-FT 51430 CFSM 1.03 IN. 14.02
WTR YR 1988 TOTAL 35845.8 MEAN 97.9 MAX 1070 MIN 9.8 AC-FT 71100 CFSM 1.42 IN. 19.38

e Estimated

NORTH UMPOUA RIVER BASIN

14316500 NORTH UMPOUA RIVER ABOVE COPELAND CREEK, NEAR TOKETEE FALLS, OR

LOCATION.--Lat 43°17'45", long 122°32'10", in NW 1/4 sec.24, T.26 S., R.2 E., Douglas County, Hydrologic Unit 17100301, Umpqua National Forest, on left bank 0.6 mi upstream from Copeland Creek, 4.7 mi west of town of Toketee Falls, and at mile 67.2.

DRAINAGE AREA.--475 mi².

PERIOD OF RECORD.--September 1949 to current year. Monthly discharge only September 1949, published in WSP 1318. Prior to October 1952, published as "above Copeland Creek."

REVISED RECORDS.--WSP 1448: 1953 (M), 1954, drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,580 ft, from river-profile map. Prior to Aug. 1, 1976, on right bank at same datum.

REMARKS.--No estimated daily discharges. Records excellent. Considerable fluctuation caused by powerplants upstream; flow slightly regulated by Diamond Lake and by Lemolo Lake (station 14313000). No diversion upstream from station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--39 years, 1,501 ft³/s, 1,087,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,700 ft³/s Dec. 22, 1964, gage height, 19.1 ft, from floodmark, from rating curve extended above 7,200 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 370 ft³/s Sept. 30, 1981; minimum daily, 565 ft³/s Sept. 13, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,300 ft³/s Dec. 10, gage height, 9.32 ft; minimum discharge, 633 ft³/s Oct. 20-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	817	701	1370	889	1330	1340	1200	1680	2350	1140	761	721
2	817	702	1450	844	1280	1240	1200	1590	2340	973	747	738
3	790	700	1390	876	1160	1180	1660	1710	2270	908	787	698
4	738	703	1140	850	1120	1410	1630	1720	2200	952	785	661
5	712	690	1170	860	1160	1650	1530	1640	2060	878	771	664
6	697	674	1240	768	1130	1610	1480	1650	1980	836	723	706
7	710	656	1210	816	1070	1460	1540	1780	1940	880	775	750
8	753	672	1040	887	1170	1370	1490	1830	1800	831	720	776
9	723	719	1600	1520	2300	1610	1270	1800	1780	808	726	762
10	706	726	3650	4370	1980	1550	1200	1750	1720	830	732	761
11	704	706	1940	3080	1680	1390	1310	1870	1570	851	791	761
12	705	767	1640	1970	1520	1470	1450	1950	1540	827	768	747
13	706	967	1410	1890	1380	1310	1460	2090	1560	791	766	747
14	705	819	1300	2080	1300	1290	1530	1910	1370	792	714	763
15	705	677	1310	2680	1210	1280	1530	1860	1210	866	714	813
16	705	702	1300	1990	1260	1230	1370	1900	1270	844	714	788
17	709	780	1140	1800	1320	1170	1390	1910	1220	831	716	783
18	710	784	1100	1630	1180	1160	1470	1800	1130	834	748	781
19	687	754	1040	1400	1170	961	1420	1600	1230	835	758	786
20	650	789	1070	1330	1240	967	1380	1540	1170	832	719	818
21	637	792	1090	1320	1140	1120	1580	1450	1120	827	715	826
22	633	713	1080	1250	1170	1100	1630	1540	1060	771	711	820
23	633	745	931	1160	1260	1270	1580	1430	1060	775	717	757
24	636	985	829	1210	1290	1230	1380	1390	1090	829	743	792
25	633	899	795	1230	1170	1230	1450	1390	1050	827	717	792
26	633	814	833	1230	1150	1280	1270	1330	1030	784	718	779
27	633	780	774	1300	1180	1260	1340	1260	972	782	718	787
28	633	742	892	1360	1220	1270	1350	1390	1050	784	688	784
29	633	729	866	1430	1240	1400	1640	1400	1010	785	663	781
30	655	745	764	1580	---	1340	1830	1340	999	796	671	778
31	687	---	869	1370	---	1330	---	1270	---	785	700	---
TOTAL	21495	22632	38233	46970	37780	40478	43560	50770	44151	26084	22696	22920
MEAN	693	754	1233	1515	1303	1306	1452	1638	1472	841	732	764
MAX	817	985	3650	4370	2300	1650	1830	2090	2350	1140	791	826
MIN	633	656	764	768	1070	961	1200	1260	972	771	663	661
AC-FT	42640	44890	75840	93160	74940	80290	86400	100700	87570	51740	45020	45460

CAL YR 1987	TOTAL 406318	MEAN 1113	MAX 3650	MIN 633	AC-FT 805900
WTR YR 1988	TOTAL 417769	MEAN 1141	MAX 4370	MIN 633	AC-FT 828600

NORTH UMPQUA RIVER BASIN

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14316700 STEAMBOAT CREEK NEAR GLIDE, OR

LOCATION.--Lat 43°21'00", long 122°43'40", in N 1/2 sec.32, T.25-1/2 S., R.1 E., Douglas County, Hydrologic Unit 17100301, in Umpqua National Forest, on right bank in Canton Creek Forest Service Park, 200 ft downstream from Canton Creek, 19 mi northeast of Glide, and at mile 0.5.

DRAINAGE AREA.--227 mi².

PERIOD OF RECORD.--Annual maximum, water year 1956, June 1956 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,128.55 ft above National Geodetic Vertical Datum of 1929 (levels by Federal Highway Administration). October 1955 to June 1956, nonrecording gage at site 100 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records excellent. No regulation or diversion upstream from station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--32 years, 737 ft³/s, 44.09 in/yr, 534,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,000 ft³/s Dec. 22, 1964, gage height, 25.6 ft, from floodmark, from rating curve extended above 13,000 ft³/s on basis of slope-area measurement at 17.96 ft; minimum discharge, 30 ft³/s Sept. 15-17, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0530	10,100	10.36	Jan. 10	1030	*11,400	*11.03

Minimum discharge, 31 ft³/s Oct. 7-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	36	1370	209	967	364	651	1340	2570	140	63	41
2	32	41	2020	201	760	330	676	1370	2110	135	62	40
3	32	41	1670	220	628	361	1660	1950	1490	134	61	39
4	32	38	1430	298	549	492	1780	1580	1340	130	60	38
5	32	36	1250	370	510	953	1510	1290	1210	124	59	38
6	32	35	1110	366	483	1110	1190	1130	999	119	59	38
7	32	34	1470	363	452	970	1190	1940	879	115	58	38
8	31	34	880	526	613	766	970	1800	837	110	57	38
9	32	36	3450	3830	2660	1260	814	1520	749	106	56	37
10	32	36	6560	10100	1740	1180	686	1240	653	102	55	37
11	31	37	2350	4770	1270	902	602	1140	560	102	55	37
12	31	104	1180	2230	1010	756	553	1000	487	102	55	37
13	31	214	760	1510	884	659	520	1070	426	98	55	36
14	31	266	564	3730	733	607	629	862	378	96	55	36
15	31	141	470	4640	656	545	582	729	338	95	55	36
16	31	170	416	2320	579	473	544	733	306	93	54	36
17	31	225	354	1500	517	408	524	838	280	91	53	36
18	31	158	309	1080	478	366	490	727	256	87	52	36
19	31	105	279	806	435	343	458	610	236	85	51	36
20	31	84	252	683	411	323	455	535	221	82	50	76
21	31	114	413	644	404	351	1110	479	206	78	49	56
22	31	126	751	624	392	338	1420	435	196	76	48	48
23	31	178	580	686	367	561	1030	387	185	75	46	44
24	31	234	441	739	348	711	777	347	175	74	45	42
25	31	358	360	725	337	882	631	316	168	73	44	41
26	31	190	317	883	332	1020	541	290	163	70	43	42
27	32	140	285	991	340	1050	500	275	157	68	43	86
28	31	112	268	1100	344	889	501	328	151	68	42	77
29	31	93	259	1640	341	800	916	440	158	66	42	56
30	32	89	250	2200	---	754	1390	473	147	65	41	49
31	34	---	227	1350	---	671	---	460	---	64	41	---
TOTAL	976	3505	32295	51334	19540	21195	25300	27634	18031	2923	1609	1347
MEAN	31.5	117	1042	1656	674	684	843	891	601	94.3	51.9	44.9
MAX	34	358	6560	10100	2660	1260	1780	1950	2570	140	63	86
MIN	31	34	227	201	332	323	455	275	147	64	41	36
AC-FT	1940	6950	64060	101800	38760	42040	50180	54810	35760	5800	3190	2670
CFSM	.14	.51	4.59	7.29	2.97	3.01	3.72	3.93	2.65	.42	.23	.20
IN.	.16	.57	5.29	8.41	3.20	3.47	4.15	4.53	2.95	.48	.26	.22

CAL YR 1987	TOTAL 170219	MEAN 466	MAX 6560	MIN 31	AC-FT 337600	CFSM 2.05	IN. 27.89
WTR YR 1988	TOTAL 205689	MEAN 562	MAX 10100	MIN 31	AC-FT 408000	CFSM 2.48	IN. 33.71

NORTH UMPQUA RIVER BASIN

14318000 LITTLE RIVER AT PEEL, OR

LOCATION.--Lat 43°15'10", long 123°01'30", in NW 1/4 sec.2, T.27 S., R.3 W., Douglas County, Hydrologic Unit 17100301, on left bank 0.6 mi southeast of Peel, 0.9 mi downstream from Cavitt Creek, and at mile 6.3.

DRAINAGE AREA.--177 mi².

PERIOD OF RECORD.--August 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is 828.33 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records excellent except for estimated daily discharges, which are fair. No regulation. Small diversions for rural domestic use and irrigation upstream from station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--34 years, 468 ft³/s, 35.91 in/yr, 339,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,100 ft³/s Dec. 11, 1956, gage height, 19.63 ft, from rating curve extended above 5,900 ft³/s on basis of slope-area measurement at gage height 16.55 ft; minimum discharge, 13 ft³/s Oct. 1, 7, Sept. 14, 15, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 22, 23, 1953, reached a stage of 20.6 ft, from floodmark, discharge, 22,700 ft³/s, from rating curve extended above 5,900 ft³/s on basis of slope-area measurement at gage height 16.55 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 10	0800	*5,780	*9.93				
Minimum discharge, 13 ft ³ /s Oct. 1, 7, Sept. 14, 15.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	17	400	194	607	266	378	907	1470	92	32	18
2	14	21	835	176	497	248	362	928	1220	89	32	17
3	14	23	629	223	424	278	479	1270	853	90	31	16
4	15	20	883	308	383	390	558	1100	662	89	30	15
5	15	19	748	323	360	642	558	924	560	83	29	15
6	15	18	1120	295	337	604	521	867	511	78	29	14
7	14	17	1170	283	316	538	587	1620	543	75	30	15
8	14	17	698	325	363	484	509	e1400	545	72	28	15
9	14	18	859	1380	1340	947	444	e1150	523	68	27	15
10	15	18	2980	4630	969	839	383	e1000	482	65	26	15
11	14	20	1370	2780	734	641	336	e900	409	64	27	15
12	14	72	767	1480	595	543	305	e750	351	64	30	15
13	14	125	514	1010	542	484	285	e780	306	61	29	14
14	14	166	390	1850	461	446	314	e650	272	61	29	13
15	15	84	348	2960	424	396	280	e560	241	61	28	13
16	15	132	450	1570	386	344	268	e540	217	58	27	14
17	15	137	356	1030	346	302	260	e580	198	55	26	14
18	15	97	284	756	320	273	250	e520	179	52	25	14
19	15	70	245	574	293	252	243	e450	166	51	24	37
20	14	58	216	504	273	235	250	e400	156	48	23	70
21	14	115	340	503	259	238	873	e350	144	45	22	36
22	14	115	541	468	248	230	1040	e310	134	43	21	28
23	14	128	465	481	235	327	751	e270	126	42	20	23
24	14	184	367	445	224	381	552	e240	118	41	20	21
25	14	261	306	406	216	394	444	e220	113	39	19	20
26	15	155	275	397	214	460	372	200	110	38	18	21
27	15	112	257	427	219	554	324	188	107	36	18	45
28	15	88	251	456	220	519	300	216	103	35	18	46
29	14	75	257	653	219	490	438	257	111	34	17	30
30	14	77	241	954	---	465	759	260	98	34	17	25
31	15	---	219	736	---	415	---	267	---	33	18	---
TOTAL	447	2459	18781	28577	12024	13625	13423	20074	11028	1796	770	669
MEAN	14.4	82.0	606	922	415	440	447	648	368	57.9	24.8	22.3
MAX	15	261	2980	4630	1340	947	1040	1620	1470	92	32	70
MIN	14	17	216	176	214	230	243	188	98	33	17	13
AC-FT	887	4880	37250	56680	23850	27030	26620	39820	21870	3560	1530	1330
CFSM	.08	.46	3.42	5.21	2.34	2.48	2.53	3.66	2.08	.33	.14	.13
IN.	.09	.52	3.95	6.01	2.53	2.86	2.82	4.22	2.32	.38	.16	.14

CAL YR 1987 TOTAL 103731 MEAN 284 MAX 3630 MIN 14 AC-FT 205800 CFSM 1.61 IN. 21.80
WTR YR 1988 TOTAL 123673 MEAN 338 MAX 4630 MIN 13 AC-FT 245300 CFSM 1.91 IN. 25.99

e Estimated

14319500 NORTH UMPQUA RIVER AT WINCHESTER, OR

LOCATION.--Lat 43°16'20", long 123°24'40", in NW 1/4 NE 1/4 sec.33, T.26 S., R.6 W., Douglas County, Hydrologic Unit 17100301, on left bank 400 ft downstream from county bridge, 3.0 mi west of Winchester, and at mile 1.8.

DRAINAGE AREA.--1,344 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1908 to December 1913, October 1923 to September 1929, August 1954 to current year. Prior to December 1908, monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1448: 1909-12, drainage area. WDR OR-72-1: 1965(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 372.97 ft above National Geodetic Vertical Datum of 1929 (Douglas County Road Department bench mark). Oct. 1, 1908, to Dec. 31, 1913, and Oct. 1, 1923, to Sept. 30, 1929, nonrecording gage at site 4.8 mi upstream at different datums. Aug. 27, 1954, to Aug. 12, 1965, water-stage recorder on right bank at same datum.

REMARKS.--No estimated daily discharges. Water-discharge records excellent. Diurnal fluctuation caused by upstream powerplants; slight regulation by Lemolo Lake and Diamond Lake. Several small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--45 years, 3,756 ft³/s, 37.95 in/yr, 2,721,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 150,000 ft³/s Dec. 22, 1964, gage height, 34.2 ft, from floodmark; minimum discharge, 235 ft³/s Aug. 27, 1987, result of regulation at Winchester Dam 5.2 mi upstream; minimum daily, 578 ft³/s Sept. 14, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 29, 1950, reached a stage of 23.2 ft, from floodmark, at site 4.8 mi upstream at different datum, discharge, 88,000 ft³/s. Flood of Nov. 23, 1953, reached a stage of 28.4 ft, from floodmarks, present site and datum, discharge, 93,300 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	1230	28,000	12.28	Jan. 10	1400	(a)	*14.79
Jan. 10	1400	*36,800	14.65	Jan. 15	0630	24,300	11.26

Minimum discharge, 593 ft³/s Oct. 24.

(a) From crest-stage gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	813	696	1170	1820	4750	2530	3250	6000	6140	1500	936	744
2	814	748	7480	1750	4100	2570	3010	5580	9900	1600	906	763
3	831	750	5580	1740	3560	2390	4160	6970	6800	1430	883	783
4	805	738	5530	1980	3220	2600	5840	6920	5960	1380	927	745
5	732	727	5670	2140	3000	4220	5600	5990	5430	1410	923	687
6	709	713	4770	2180	2860	4580	4810	5540	4880	1300	904	687
7	676	688	7430	2030	2730	4690	4930	7700	4700	1250	847	728
8	686	682	4720	2160	2650	3960	4560	8390	4530	1270	905	799
9	733	668	6300	6160	7450	5690	4030	7680	4310	1200	830	829
10	724	727	19300	32000	7480	6340	3460	6340	4250	1150	829	811
11	692	780	11100	22400	5680	5050	3200	5570	3770	1160	832	807
12	683	858	6170	11500	4830	4260	3120	5160	3400	1190	925	806
13	692	1250	4440	7690	4260	3890	3090	5470	3120	1160	890	784
14	693	1780	3470	9780	3850	3500	3180	4970	2910	1100	905	783
15	693	1510	3330	19800	3430	3280	3300	4320	2530	1090	831	797
16	693	1190	4480	12500	3270	3040	3070	4160	2290	1180	825	866
17	693	1370	3560	8350	3110	2730	2800	4650	2280	1130	820	837
18	695	1430	2780	6190	2940	2530	2810	4330	2090	1100	810	832
19	699	1220	2430	4990	2660	2360	2780	3870	1960	1100	847	895
20	687	1110	2210	4150	2590	2120	2710	3480	2040	1080	854	1050
21	631	1060	2400	4010	2560	2110	4120	3150	1870	1060	807	1050
22	614	1350	3690	3700	2410	2340	6060	3000	1790	1050	794	968
23	609	1240	3810	3620	2390	2470	5230	2820	1710	976	788	936
24	604	1340	2970	3580	2460	3520	4230	2650	1680	977	786	859
25	607	2180	2470	3570	2360	3350	3640	2470	1670	1040	811	895
26	607	1760	2210	3500	2230	3770	3300	2420	1630	1020	782	902
27	607	1410	2050	3690	2200	4170	2910	2240	1580	964	776	955
28	607	1260	1910	4040	2280	4010	2910	2230	1520	950	777	1070
29	607	1140	2020	4280	2310	3830	3170	2710	1590	945	741	982
30	607	1070	1900	7110	---	3710	5350	2700	1530	944	698	924
31	628	---	1830	5790	---	3480	---	2590	---	952	703	---
TOTAL	21171	33445	139180	208200	99620	109090	114630	142070	99860	35658	25892	25574
MEAN	683	1115	4490	6716	3435	3519	3821	4583	3329	1150	835	852
MAX	831	2180	19300	32000	7480	6340	6060	8390	9900	1600	936	1070
MIN	604	668	1170	1740	2200	2110	2710	2230	1520	944	698	687
AC-FT	41990	66340	276100	413000	197600	216400	227400	281800	198100	70730	51360	50730
CFSM	.51	.83	3.34	5.00	2.56	2.62	2.84	3.41	2.48	.86	.62	.63
IN.	.59	.93	3.85	5.76	2.76	3.02	3.17	3.93	2.76	.99	.72	.71

CAL YR 1987	TOTAL	944240	MEAN	2587	MAX	22800	MIN	580	AC-FT	1873000	CFSM	1.92	IN.	26.14
WTR YR 1988	TOTAL	1054390	MEAN	2881	MAX	32000	MIN	604	AC-FT	2091000	CFSM	2.14	IN.	29.18

NORTH UMPQUA RIVER BASIN

14319500 NORTH UMPQUA RIVER AT WINCHESTER, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967-69, 1971 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: January 1971 to current year.

INSTRUMENTATION.--Temperature recorder since 1971.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 26.5°C Aug. 10, 1972, Aug. 8, 9, 1978, Aug. 9, 10, 1981; minimum, 0.0°C at times in 1971-72, 1974, 1977, 1980, 1984.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 25.5°C July 26; minimum, 2.0°C Dec. 26-28, Jan. 2, 3.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	11.5	11.5	11.5	6.5	5.5	6.0	3.5	2.5	3.0
2	---	---	---	11.5	11.5	11.5	8.0	6.0	7.0	2.5	2.0	2.5
3	---	---	---	11.5	11.0	11.0	8.5	8.0	8.0	2.5	2.0	2.0
4	---	---	---	12.0	11.0	11.5	8.5	8.5	8.5	3.5	2.5	3.0
5	---	---	---	11.5	11.0	11.0	8.5	8.0	8.5	4.0	3.5	3.5
6	---	---	---	11.0	10.0	10.5	8.5	8.5	8.5	4.5	4.0	4.5
7	---	---	---	10.5	9.5	10.0	8.5	7.5	8.0	5.0	4.5	5.0
8	---	---	---	9.0	9.0	9.0	7.5	7.0	7.0	5.0	5.0	5.0
9	---	---	---	10.0	9.0	9.5	7.5	7.0	7.5	6.5	5.0	5.5
10	---	---	---	9.5	9.0	9.5	8.5	7.5	8.5	7.5	6.5	7.0
11	---	---	---	9.0	9.0	9.0	7.5	6.5	7.5	7.5	6.0	6.5
12	---	---	---	10.0	9.0	9.5	6.5	5.5	6.0	6.0	5.5	5.5
13	---	---	---	10.0	9.5	10.0	5.5	4.5	5.0	6.0	5.5	6.0
14	---	---	---	10.0	9.0	9.5	4.5	4.0	4.0	7.0	6.0	6.5
15	---	---	---	9.0	8.0	9.0	4.0	3.5	4.0	7.0	6.5	6.5
16	12.5	11.5	12.0	8.5	8.0	8.0	4.5	4.0	4.0	6.5	5.5	6.0
17	12.0	10.5	11.0	8.5	8.0	8.5	4.5	4.5	4.5	5.5	5.0	5.0
18	11.5	10.5	11.0	9.0	8.5	8.5	4.5	4.5	4.5	5.0	4.5	4.5
19	11.5	10.0	10.5	9.0	8.5	9.0	4.5	4.5	4.5	4.5	4.0	4.5
20	11.5	9.5	10.5	8.5	8.5	8.5	4.5	4.5	4.5	4.5	4.0	4.5
21	11.5	9.5	10.5	8.5	8.0	8.0	4.5	4.5	4.5	5.0	4.5	4.5
22	11.5	10.0	10.5	8.0	7.5	8.0	5.0	4.5	5.0	5.0	4.5	5.0
23	11.5	10.0	10.5	8.5	8.0	8.0	5.0	4.5	4.5	5.5	5.0	5.0
24	11.5	10.0	10.5	8.0	7.5	8.0	4.0	3.5	4.0	5.5	5.0	5.5
25	11.5	10.0	10.5	7.5	6.5	7.0	3.5	2.5	3.0	5.0	4.0	4.5
26	11.5	10.0	10.5	6.5	6.0	6.5	2.5	2.0	2.5	4.5	4.0	4.0
27	11.5	10.0	10.5	6.0	5.0	5.5	2.0	2.0	2.0	5.5	4.5	5.0
28	11.5	9.5	10.5	5.0	4.5	5.0	3.0	2.0	2.5	6.0	5.5	5.5
29	11.5	10.5	11.0	4.5	4.5	4.5	3.5	3.0	3.0	6.5	6.0	6.5
30	12.0	11.0	11.5	5.5	4.5	5.0	4.0	3.5	3.5	6.5	6.0	6.0
31	12.0	11.5	11.5	---	---	---	4.0	3.5	3.5	6.0	5.0	5.5
MONTH	---	---	---	12.0	4.5	8.5	8.5	2.0	5.5	7.5	2.0	5.0

NORTH UMPQUA RIVER BASIN

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14319500 NORTH UMPQUA RIVER AT WINCHESTER, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR.OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5.0	4.5	5.0	9.5	8.5	9.0	10.0	7.5	8.5	8.5	7.5	8.0
2	5.0	4.0	4.5	8.5	7.5	8.0	10.0	9.0	9.5	8.5	8.0	8.5
3	4.0	3.5	3.5	8.0	7.5	8.0	9.5	9.0	9.5	9.0	8.0	8.5
4	3.5	3.0	3.0	8.0	8.0	8.0	9.5	8.0	8.5	9.5	8.0	8.5
5	3.5	3.0	3.5	8.0	7.5	8.0	9.0	7.5	8.0	9.0	8.0	8.5
6	4.5	3.5	4.0	8.0	7.5	7.5	9.0	8.0	8.5	9.0	7.5	8.5
7	5.0	4.5	4.5	7.5	6.5	7.0	9.0	8.0	8.5	10.0	8.5	9.0
8	6.0	5.0	5.5	7.0	6.0	6.5	8.5	7.0	8.0	10.0	9.5	9.5
9	7.0	6.0	6.5	7.0	6.5	6.5	9.5	7.0	8.5	9.5	9.0	9.5
10	7.5	7.0	7.0	6.5	6.0	6.5	11.5	8.5	10.0	12.0	9.5	10.5
11	7.0	6.5	7.0	6.5	5.5	6.0	12.5	10.0	11.5	13.5	11.0	12.0
12	7.0	6.0	6.5	6.5	5.0	6.0	13.5	11.5	12.5	14.0	12.5	13.0
13	6.5	6.0	6.5	7.0	5.0	6.0	13.5	11.5	12.5	13.0	11.5	12.5
14	6.5	6.0	6.5	7.5	5.5	6.5	11.5	10.5	11.0	13.0	10.5	11.5
15	6.5	6.0	6.0	7.5	6.0	7.0	10.5	10.0	10.0	14.0	11.5	12.5
16	6.5	6.0	6.0	7.5	6.0	7.0	10.5	10.0	10.0	14.0	12.5	13.5
17	6.5	5.5	6.0	7.5	6.5	7.5	12.0	10.5	11.0	13.0	11.0	12.5
18	5.5	5.0	5.5	8.5	7.0	8.0	12.0	11.0	11.5	13.0	11.5	12.0
19	6.0	5.5	5.5	9.0	8.0	8.5	11.5	11.0	11.0	13.0	11.5	12.5
20	6.0	5.0	5.5	10.0	9.0	9.5	11.0	10.5	10.5	15.0	12.0	13.5
21	6.0	5.0	5.5	10.0	9.0	9.5	10.5	9.0	10.0	16.5	13.5	14.5
22	6.0	5.5	6.0	9.5	9.0	9.5	10.0	8.0	9.0	16.5	15.0	15.5
23	6.0	5.5	6.0	9.5	9.0	9.0	10.5	8.5	9.5	15.5	14.0	14.5
24	6.5	5.5	6.0	9.0	8.0	8.0	10.5	9.5	10.0	15.0	13.5	14.5
25	7.0	6.5	6.5	9.5	7.5	8.0	11.5	9.5	10.5	15.0	13.5	14.0
26	7.5	7.0	7.5	9.5	8.5	9.0	13.0	11.0	12.0	15.0	14.5	14.5
27	8.5	7.5	8.0	8.5	7.5	8.0	13.5	12.5	13.0	15.5	15.0	15.0
28	8.5	8.0	8.5	8.0	6.5	7.5	13.5	13.0	13.0	15.0	14.0	15.0
29	9.5	8.5	9.0	8.0	7.5	8.0	13.0	11.5	12.0	14.0	13.0	13.5
30	---	---	---	8.5	6.5	7.5	11.5	8.5	9.5	13.5	12.0	12.5
31	---	---	---	9.0	6.5	8.0	---	---	---	13.0	12.0	12.5
MONTH	9.5	3.0	6.0	10.0	5.0	7.5	13.5	7.0	10.5	16.5	7.5	12.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	12.5	11.0	12.0	20.0	17.5	18.5	23.5	21.5	22.5	21.5	19.5	20.0
2	11.0	10.0	10.5	19.5	18.5	19.0	23.0	21.0	21.5	22.0	20.0	20.5
3	12.5	11.0	11.5	18.5	17.5	18.0	23.5	21.0	22.0	22.5	20.5	21.0
4	13.5	11.0	12.0	18.0	17.0	17.5	24.0	21.5	22.5	22.0	20.5	21.0
5	12.0	11.0	11.5	18.5	17.0	17.5	23.0	21.0	22.0	22.5	20.5	21.0
6	11.5	10.0	10.5	19.0	16.5	17.5	22.0	20.0	21.0	22.0	20.0	20.5
7	11.0	10.0	10.5	20.5	18.0	19.0	22.0	20.0	20.5	21.0	19.5	20.5
8	12.0	9.5	11.0	21.5	19.0	20.0	22.0	20.0	20.5	20.5	18.5	19.5
9	12.0	10.5	11.0	22.5	20.0	21.0	22.5	20.0	21.0	19.5	18.0	18.5
10	13.0	10.5	11.5	22.5	20.5	21.0	21.0	20.5	21.0	18.5	16.5	17.5
11	14.0	12.0	13.0	21.0	20.5	21.0	20.0	19.0	19.5	17.5	16.0	16.5
12	15.5	12.5	14.0	21.5	19.5	20.5	21.0	18.5	19.5	18.0	16.0	16.5
13	16.5	14.0	15.0	21.5	20.0	20.5	19.5	19.0	19.5	18.0	16.0	16.5
14	17.5	15.0	16.5	21.5	19.5	20.0	20.5	18.5	19.0	18.0	16.0	16.5
15	18.5	16.5	17.5	22.0	19.5	20.5	20.5	19.0	19.5	17.0	15.5	16.0
16	18.5	18.0	18.5	22.0	20.0	21.0	20.5	18.5	19.5	16.5	15.5	15.5
17	19.0	18.0	18.5	22.5	20.0	21.0	21.0	19.0	19.5	16.0	14.5	15.0
18	20.0	19.0	19.5	22.5	20.0	21.0	21.0	19.0	19.5	15.5	14.0	14.5
19	20.5	19.5	20.0	24.0	21.0	22.0	21.0	19.0	20.0	15.0	14.5	14.5
20	20.0	19.0	19.5	25.0	22.0	23.0	20.5	19.0	19.5	14.5	13.5	14.0
21	21.0	19.5	20.0	24.5	22.5	23.5	21.0	19.0	19.5	15.0	13.5	14.0
22	22.0	20.0	21.0	24.0	22.0	23.0	21.5	19.0	20.0	15.5	13.0	14.0
23	21.0	20.0	20.5	23.5	21.5	22.5	21.5	20.0	20.5	15.0	13.5	14.0
24	21.0	19.0	20.0	24.5	22.0	22.5	22.0	19.5	20.5	15.5	13.5	14.0
25	20.5	19.0	20.0	25.0	22.5	23.0	22.0	19.5	20.5	15.0	14.0	14.5
26	20.0	18.5	19.0	25.5	23.0	24.0	22.0	20.0	20.5	15.0	14.5	14.5
27	19.0	17.5	18.5	25.0	23.0	24.0	22.0	20.0	20.5	14.5	14.0	14.5
28	18.0	17.0	17.5	25.0	22.5	23.5	22.5	20.0	21.0	15.5	14.0	14.5
29	18.5	16.5	17.5	24.5	22.5	23.5	22.5	20.5	21.0	16.0	14.5	15.0
30	19.0	16.5	18.0	24.5	22.5	23.5	21.5	20.0	20.5	16.5	14.5	15.5
31	---	---	---	24.5	22.5	23.0	21.5	19.5	20.0	---	---	---
MONTH	22.0	9.5	16.0	25.5	16.5	21.0	24.0	18.5	20.5	22.5	13.0	16.5

NORTH UMPQUA RIVER BASIN

14319900 CALAPOOYA CREEK AT NONPAREIL, OR

LOCATION.--Lat 43°25'04", long 123°09'13", in SW 1/4 SE 1/4 sec.3, T.25 S., R.4 W., Douglas County, Hydrologic Unit 17100303, on left bank 0.3 mi upstream from county road bridge, 0.9 mi northeast of Nonpareil, and at mile 26.7.

DRAINAGE AREA.--88.6 mi².

PERIOD OF RECORD.--July 1976 to September 1988 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 699.22 ft above National Geodetic Vertical Datum of 1929 (Douglas County Survey bench mark).

REMARKS.--Records good except those for estimated daily discharges and periods of backwater Oct. 1 to Dec. 3 and July 19 to Sept. 30, which are fair. Only minor diversions by pumping for irrigation upstream from station. Several measurements of water temperature were made during the year.

AVERAGE DISCHARGE.--12 years, 201 ft³/s, 30.81 in/yr, 145,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,640 ft³/s Dec. 6, 1981, gage height, 11.16 ft; minimum discharge, 3.7 ft³/s Sept. 23-25, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 10	0730	*3,040	*7.49	No other peak greater than base discharge.			
Minimum discharge, 4.1 ft ³ /s Oct. 2.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	11	112	142	e300	111	159	276	538	46	17	9.6
2	4.5	17	194	128	e250	100	164	281	472	44	18	9.0
3	4.5	18	460	126	e210	113	313	374	404	46	16	7.7
4	5.2	13	534	129	e190	132	406	397	320	47	14	7.2
5	6.5	12	362	128	e170	195	377	356	266	43	13	7.0
6	6.8	12	427	123	e160	238	321	340	221	42	13	7.2
7	6.5	12	482	120	e150	242	341	570	200	38	13	7.9
8	5.9	12	345	141	e140	231	299	528	178	36	12	8.2
9	6.8	14	313	480	e200	513	259	476	183	34	10	8.3
10	7.5	15	1020	2340	e550	493	220	385	259	32	9.9	7.5
11	7.7	14	634	1410	e400	345	186	304	225	31	11	7.4
12	7.1	37	362	833	e330	262	162	274	187	32	13	7.5
13	6.1	46	253	553	e280	213	146	315	160	30	12	6.9
14	5.4	51	199	717	e230	181	156	268	141	30	13	6.3
15	6.8	31	185	e1450	e200	159	140	234	124	30	13	5.5
16	7.3	32	283	976	e190	142	130	252	111	28	13	5.9
17	7.7	28	234	665	e170	126	128	245	101	26	13	6.7
18	7.4	22	180	478	e140	115	123	221	93	25	13	7.4
19	7.4	17	151	358	128	107	122	195	87	24	12	17
20	7.6	14	131	e280	123	100	125	174	81	23	11	21
21	7.3	16	159	e240	118	97	432	158	73	22	10	12
22	7.0	18	211	e220	113	93	538	144	68	21	9.9	9.3
23	6.8	29	226	e210	108	133	387	133	65	21	9.1	8.2
24	6.8	42	200	e220	103	142	283	124	62	20	8.0	7.7
25	6.8	68	172	e200	97	148	227	117	59	20	8.9	7.9
26	6.5	38	152	e190	94	161	190	110	58	20	9.0	12
27	6.6	27	137	e180	90	225	164	104	56	19	9.2	26
28	6.8	21	133	e190	87	231	150	122	54	18	9.5	17
29	6.4	17	145	e220	84	217	178	138	56	17	9.6	12
30	6.8	19	142	e340	---	199	215	137	50	16	9.7	9.9
31	8.7	---	155	e400	---	174	---	142	---	17	9.5	---
TOTAL	206.0	723	8693	14187	5405	5938	7041	7894	4952	898	362.3	293.2
MEAN	6.65	24.1	280	458	186	192	235	255	165	29.0	11.7	9.77
MAX	8.7	68	1020	2340	550	513	538	570	538	47	18	26
MIN	4.5	11	112	120	84	93	122	104	50	16	8.0	5.5
AC-FT	409	1430	17240	28140	10720	11780	13970	15660	9820	1780	719	582
CFSM	.08	.27	3.17	5.17	2.10	2.16	2.65	2.87	1.86	.33	.13	.11
IN.	.09	.30	3.65	5.96	2.27	2.49	2.96	3.31	2.08	.38	.15	.12

CAL YR 1987 TOTAL 46310.5 MEAN 127 MAX 1580 MIN 3.7 AC-FT 91860 CFSM 1.43 IN. 19.44
WTR YR 1988 TOTAL 56592.5 MEAN 155 MAX 2340 MIN 4.5 AC-FT 112300 CFSM 1.75 IN. 23.76

e Estimated

UMPQUA RIVER BASIN

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14320700 CALAPOOYA CREEK NEAR OAKLAND, OR

LOCATION.--Lat 43°24'10", long 123°21'45", in NW 1/4 sec.13, T.25 S., R.6 W., Douglas County, Hydrologic Unit 17100303, near center of span on downstream side of highway bridge, 0.9 mi downstream from Williams Creek, 2.5 mi northwest of Sutherlin, 3.5 mi southwest of Oakland, and at mile 10.1

DRAINAGE AREA.--210 mi².

PERIOD OF RECORD.--October 1955 to September 1973, October 1986 to September 1987. Records for the years 1974-86 are available at the Douglas County Water Resources Dept. in Roseburg.

GAGE.--Water-stage recorder. Datum of gage is 371.26 ft above National Geodetic Vertical Datum of 1929. Prior to June 22, 1968, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good for flows above 50 ft³/s; fair below. Diversion upstream from station for municipal supply of cities of Sutherlin and Oakland. Small diversions by pumping for irrigation upstream from station.

AVERAGE DISCHARGE.--20 years (water years 1956-73, 1987-88), 478 ft³/s, 30.91 in/yr, 346,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,600 ft³/s Nov. 23, 1961, gage height, 21.55 ft; no flow Sept. 9-11, 1966, Sept. 8, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 10	1230	*8,460	*16.11	No other peak greater than base discharge.			
No flow Sept. 8.							

 DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	8.1	61	386	678	197	268	492	670	67	9.5	3.6
2	2.8	20	398	335	580	179	257	469	733	64	8.9	4.8
3	3.0	29	871	336	489	176	533	639	598	61	8.8	6.1
4	3.3	28	1180	322	423	201	690	728	469	60	8.4	6.0
5	3.6	21	828	297	377	328	669	643	392	59	8.3	4.2
6	4.2	19	1420	279	332	414	551	662	330	57	8.3	3.3
7	4.8	20	1700	274	298	448	616	1250	352	54	8.8	.57
8	4.1	21	1050	331	298	403	524	1140	316	51	8.4	.05
9	3.8	22	913	1500	621	1200	446	985	324	48	8.3	.52
10	5.3	23	2250	6570	584	1210	376	799	426	46	8.7	.21
11	6.5	28	1550	3770	496	847	312	623	377	44	8.3	.73
12	6.7	50	914	2150	429	626	267	530	308	42	8.3	1.9
13	6.7	80	616	1400	386	486	237	727	255	40	9.0	2.4
14	6.6	108	459	1750	328	396	264	599	216	36	11	2.9
15	6.4	89	499	3780	295	331	239	492	185	33	11	3.1
16	6.7	68	1010	3240	266	281	212	508	164	31	12	3.5
17	7.3	69	813	1920	239	242	203	485	148	29	12	3.3
18	7.9	60	566	1340	223	211	189	412	131	27	11	3.7
19	8.2	48	438	996	203	194	187	354	118	25	11	6.7
20	8.8	40	360	833	190	177	201	307	109	22	9.5	22
21	9.8	37	407	712	179	167	780	266	99	20	8.2	23
22	11	46	591	606	166	160	1090	228	90	19	6.9	12
23	8.9	57	766	555	158	237	785	206	85	18	5.2	8.0
24	9.8	75	606	493	150	283	560	187	84	17	4.4	6.0
25	7.8	131	485	433	139	280	448	169	82	16	4.0	5.3
26	8.0	87	401	390	133	270	360	154	79	14	4.3	7.2
27	8.3	59	337	358	124	388	300	146	76	12	2.5	14
28	11	47	312	333	119	425	258	148	73	12	2.6	36
29	7.1	40	305	461	114	388	276	185	73	10	3.2	19
30	4.9	38	341	674	---	352	345	185	71	10	2.4	12
31	4.3	---	456	688	---	302	---	174	---	9.6	2.0	---
TOTAL	200.8	1468.1	22903	37512	9017	11799	12443	14892	7433	1053.6	235.2	222.08
MEAN	6.48	48.9	739	1210	311	381	415	480	248	34.0	7.59	7.40
MAX	11	131	2250	6570	678	1210	1090	1250	733	67	12	36
MIN	2.8	8.1	61	274	114	160	187	146	71	9.6	2.0	.05
AC-FT	398	2910	45430	74410	17890	23400	24680	29540	14740	2090	467	440
CFSM	.03	.23	3.52	5.76	1.48	1.81	1.98	2.29	1.18	.16	.04	.04
IN.	.04	.26	4.06	6.64	1.60	2.09	2.20	2.64	1.32	.19	.04	.04

CAL YR 1987	TOTAL 108048.53	MEAN 296	MAX 5160	MIN .55	AC-FT 214300	CFSM 1.41	IN. 19.14
WTR YR 1988	TOTAL 119178.78	MEAN 326	MAX 6570	MIN .05	AC-FT 236400	CFSM 1.55	IN. 21.11

UMPQUA RIVER BASIN

14321000 UMPQUA RIVER NEAR ELKTON, OR

LOCATION.--Lat 43°35'10", long 123°33'15", in NW1/4 sec.8, T.23 S., R.7 W., Douglas County, Hydrologic Unit 17100303, on left bank 3.5 mi south of Elkton, 8.3 mi upstream from Elk Creek, and at mile 56.9.

DRAINAGE AREA.--3,683 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1905 to current year.

REVISED RECORDS.--WSP 1184: 1927(M), 1938(M), 1943(M), 1946(M). WSP 1448: 1911-13, drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 90.42 ft above National Geodetic Vertical Datum of 1929. Prior to June 29, 1972, at site 2,400 ft downstream at same datum. See WSP 1931 or 2135 for history of changes prior to June 29, 1972.

REMARKS.--Water-discharge records excellent except those for October, November, August and September, which are fair. Regulation by powerplants on North Umpqua River ordinarily does not affect discharge at this station. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--83 years, 7,483 ft³/s, 27.59 in/yr, 5,421,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 265,000 ft³/s Dec. 23, 1964, gage height, 51.95 ft, from floodmarks; minimum discharge observed, 640 ft³/s July 18, 1926.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least December 1861, that of Dec. 23, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 52,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 10	1800	*77,500	*24.38	Jan. 15	1330	54,900	19.98

Minimum discharge, 762 ft³/s Sept. 6-8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1100	876	1490	4270	9870	3770	5220	8650	3940	1890	966	778
2	1030	941	4110	4000	8700	4190	4870	8920	12900	1840	960	789
3	1020	978	10100	3760	7630	4130	4860	9150	11900	1900	951	798
4	1020	978	12600	3810	6690	4000	7490	11100	9770	1750	929	816
5	1020	978	11400	4060	6070	4760	8680	10500	8830	1690	944	811
6	971	978	11000	4480	5680	7120	7970	9580	7930	1690	946	773
7	928	978	25900	4540	5310	7760	7320	10400	7620	1600	945	763
8	913	967	17400	4460	5040	7190	7300	15000	7930	1500	927	765
9	908	958	13700	7390	6300	7430	6600	15300	7840	1500	926	814
10	922	950	28100	58000	12500	11800	5830	13900	7360	1430	914	822
11	944	968	33700	56100	10400	10500	5120	11400	6900	1370	887	833
12	919	1060	16800	31000	8750	8520	4790	9870	5930	1350	891	830
13	918	1130	11100	19500	7760	7430	4600	9560	5250	1350	931	837
14	918	1420	8270	18200	7050	6540	4540	9500	4740	1340	928	825
15	918	2000	6850	47700	6350	5930	4730	8210	4230	1280	950	817
16	918	2010	9160	38900	5760	5440	4670	7320	3660	1260	911	821
17	918	1640	10300	24900	5430	4960	4320	7250	3330	1270	912	852
18	918	1670	7610	17700	5150	4440	4020	7350	3200	1280	905	864
19	918	1740	6140	13600	4780	4100	4020	6650	2900	1240	898	864
20	927	1580	5340	10800	4410	3750	3960	5840	2720	1210	904	891
21	923	1450	4950	9560	4280	3460	4390	5310	2720	1190	913	990
22	911	1340	6040	8900	4100	3460	9940	4750	2480	1150	887	1090
23	890	1520	9040	8350	3940	3840	11000	4540	2330	1120	868	1040
24	881	1530	8080	8090	3820	4660	8830	4140	2200	1060	867	1030
25	878	1690	6550	7790	3820	5470	7070	3910	2150	1030	852	e1000
26	869	2630	5560	7300	3610	5490	6170	3620	2110	1070	848	e960
27	869	2340	4960	7150	3460	5930	5380	3490	2030	1060	853	e1000
28	869	1880	4480	7310	3390	6510	4850	3240	1980	1010	829	e1030
29	869	1640	4210	7700	3480	6180	4710	3310	1910	980	824	e1050
30	869	1490	4270	9860	---	5980	5800	3840	1950	967	823	e1030
31	869	---	4470	11400	---	5590	---	3900	---	964	782	---
TOTAL	28745	42310	313680	470580	173530	180330	179050	239500	150740	41341	27871	26583
MEAN	927	1410	10120	15180	5984	5817	5968	7726	5025	1334	899	886
MAX	1100	2630	33700	58000	12500	11800	11000	15300	12900	1900	966	1090
MIN	869	876	1490	3760	3390	3460	3960	3240	1910	964	782	763
AC-FT	57020	83920	622200	933400	344200	357700	355100	475000	299000	82000	55280	52730
CFSM	.25	.38	2.75	4.12	1.62	1.58	1.62	2.10	1.36	.36	.24	.24
IN.	.29	.43	3.17	4.75	1.75	1.82	1.81	2.42	1.52	.42	.28	.27
CAL YR 1987	TOTAL 1842432	MEAN 5048	MAX 65000	MIN 799	AC-FT 3654000	CFSM 1.37	IN. 18.61					
WTR YR 1988	TOTAL 1874260	MEAN 5121	MAX 58000	MIN 763	AC-FT 3718000	CFSM 1.39	IN. 18.93					

e Estimated

UMPQUA RIVER BASIN

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14321000 UMPQUA RIVER NEAR ELKTON, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April 1971 to current year.

INSTRUMENTATION.--Temperature recorder since April 1971.

REMARKS.--Chemical analyses available October 1965 to September 1986.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 30.0°C July 14, 1971; minimum, 0.0°C Jan. 7, 8, 11, 12, and probably Jan. 9, 10, 1974.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 27.5°C July 26; minimum, 3.0°C Dec. 29, 30, Jan. 3-5.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	18.0	17.0	18.0	13.5	13.5	13.5	7.0	6.5	7.0	4.0	3.5	4.0
2	18.5	17.5	18.0	13.5	13.0	13.0	7.0	7.0	7.0	3.5	3.5	3.5
3	18.5	18.0	18.0	13.0	13.0	13.0	8.5	7.0	7.5	3.5	3.0	3.5
4	18.5	17.5	18.0	13.0	12.5	12.5	8.5	8.5	8.5	3.0	3.0	3.0
5	18.0	17.0	18.0	12.5	12.5	12.5	9.0	8.5	8.5	3.5	3.0	3.0
6	18.0	17.0	17.5	12.5	12.5	12.5	9.0	9.0	9.0	4.0	3.5	3.5
7	18.0	17.5	17.5	12.5	12.0	12.0	9.0	8.5	9.0	4.5	4.0	4.5
8	17.5	17.0	17.5	12.0	11.5	12.0	8.5	8.0	8.0	5.0	4.5	5.0
9	17.0	17.0	17.0	12.0	11.5	11.5	8.5	8.0	8.0	6.0	5.0	5.5
10	17.0	17.0	17.0	12.0	11.5	11.5	8.5	8.5	8.5	7.5	6.0	7.0
11	17.0	16.5	17.0	11.5	11.5	11.5	8.5	8.0	8.5	7.5	7.0	7.5
12	17.0	16.5	16.5	11.5	11.5	11.5	8.0	7.0	7.5	7.0	6.0	6.5
13	16.5	16.0	16.5	11.5	11.5	11.5	7.0	6.0	6.5	6.0	6.0	6.0
14	16.0	15.5	15.5	11.5	10.5	11.0	6.0	5.0	5.5	6.5	6.5	6.5
15	15.5	14.5	15.0	10.5	9.5	10.0	5.5	4.5	5.0	7.0	6.5	7.0
16	14.5	14.0	14.0	10.0	9.5	10.0	4.5	4.0	4.5	6.5	6.5	6.5
17	14.0	13.0	13.5	10.0	10.0	10.0	4.5	4.0	4.0	6.5	6.0	6.0
18	13.5	12.5	13.0	10.0	10.0	10.0	4.5	4.5	4.5	5.5	5.5	5.5
19	13.0	12.5	13.0	10.5	10.0	10.5	4.5	4.5	4.5	5.5	5.5	5.5
20	13.0	12.5	12.5	10.5	10.0	10.0	4.5	4.5	4.5	5.5	5.0	5.0
21	12.5	12.0	12.5	10.0	9.5	10.0	5.0	5.0	5.0	5.5	5.0	5.5
22	12.5	12.0	12.5	10.0	9.5	10.0	5.5	5.0	5.5	5.5	5.0	5.5
23	12.5	12.0	12.5	10.0	9.5	10.0	5.5	5.0	5.0	6.0	5.5	6.0
24	12.5	12.0	12.0	9.5	9.0	9.5	5.0	4.5	5.0	6.0	6.0	6.0
25	12.5	12.0	12.0	8.5	8.0	8.5	4.5	4.0	4.5	6.0	6.0	6.0
26	12.5	12.0	12.0	8.0	7.5	8.0	4.0	3.5	3.5	6.0	5.5	5.5
27	12.5	12.0	12.0	7.5	7.0	7.0	3.5	3.5	3.5	5.5	5.0	5.5
28	12.5	12.0	12.5	7.0	6.5	6.5	3.5	3.5	3.5	5.5	5.0	5.5
29	12.5	12.5	12.5	6.5	6.0	6.5	3.5	3.0	3.0	6.0	5.5	6.0
30	13.0	12.5	12.5	6.5	6.0	6.5	3.5	3.0	3.5	6.5	6.0	6.5
31	13.5	13.0	13.0	---	---	---	4.0	3.5	3.5	6.5	6.0	6.5
MONTH	18.5	12.0	15.0	13.5	6.0	10.5	9.0	3.0	6.0	7.5	3.0	5.5

UMPQUA RIVER BASIN

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14321400 ELK CREEK NEAR ELKHEAD, OR

LOCATION.--Lat 43°35'45", long 123°11'35", in NW 1/4 SE 1/4 sec.5, T.23 S., R.4 W., Douglas County, Hydrologic Unit 17100303, on right bank downstream side of Milltown Hill Bridge, 1.5 mi upstream from Adams Creek, 4.0 mi north of Elkhead, and at mile 37.7.

DRAINAGE AREA.--28.7 mi².

PERIOD OF RECORD.--January to August 1968 (gage heights and discharge measurements only), September 1968 to June 1972, October 1986 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 463.99 ft above National Geodetic Vertical Datum of 1929 (Douglas County Highway Department bench mark). Prior to Sept. 1, 1968, nonrecording gage at site 20 ft upstream at datum 1.70 ft lower.

REMARKS.--No estimated daily discharges. Records for flows greater than 10 ft³/s good; those below fair.

AVERAGE DISCHARGE.--5 years (water years 1969-71, 1987-88), 55.7 ft³/s, 26.36 in/yr, 40,350 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,320 ft³/s Jan. 10, 1988, gage height, 6.77 ft, from crest-stage gage; maximum gage height, 7.74 ft Dec 21, 1969; minimum discharge, 0.36 ft³/s Sept. 9, 1971.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 820 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 10	0800	*2,320	5.86	Jan. 11	0730	1,050	4.82
Jan. 10	0800	(a)	*6.77	Jan. 15	0130	958	4.72

Minimum discharge, 0.57 ft³/s Sept. 7-10, 17-19.

(a) From crest-stage gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	2.3	26	52	75	30	31	59	57	5.9	1.3	.70
2	1.5	4.0	44	46	66	25	34	51	57	5.8	1.2	.69
3	1.5	4.1	240	44	56	24	62	52	52	6.2	1.2	.69
4	1.5	4.1	214	38	49	27	66	58	41	6.4	1.2	.68
5	1.5	3.5	95	33	43	36	62	56	34	5.9	1.2	.63
6	1.5	3.1	274	31	39	52	54	55	31	5.6	1.1	.63
7	1.5	3.1	258	30	34	53	55	124	33	5.2	1.1	.61
8	1.5	3.2	146	42	34	52	49	126	34	4.7	1.1	.57
9	1.5	3.9	130	254	43	118	45	96	33	4.2	1.1	.57
10	1.5	3.9	284	1400	40	112	39	73	32	4.0	1.0	.59
11	1.5	4.6	174	763	37	75	34	59	28	3.9	.98	.64
12	1.5	8.8	94	296	35	60	29	56	24	4.2	1.2	.70
13	1.5	9.8	64	171	34	49	27	79	21	4.0	1.2	.74
14	1.5	12	51	266	30	41	34	63	18	4.0	1.2	.69
15	1.5	7.9	49	651	28	35	30	54	16	3.9	1.2	.69
16	1.5	7.2	59	564	26	30	27	57	15	3.5	1.1	.67
17	1.5	6.4	54	247	24	26	24	51	13	3.4	1.1	.57
18	1.5	5.1	49	149	23	23	22	44	12	3.1	1.0	.57
19	1.5	4.1	46	98	21	21	24	37	11	2.9	.95	1.1
20	1.5	3.3	41	80	20	20	29	32	10	2.6	.94	1.7
21	1.5	3.3	57	70	20	19	107	28	9.2	2.3	.88	1.2
22	1.5	3.8	81	63	18	18	112	24	8.4	2.2	.85	.98
23	1.5	4.1	89	57	18	48	74	21	7.9	2.1	.89	.96
24	1.5	7.6	72	51	17	53	59	19	7.7	2.0	.80	.89
25	1.5	14	58	45	16	58	49	17	7.0	1.9	.76	.92
26	1.5	9.0	51	41	15	50	41	16	7.1	1.8	.76	1.5
27	1.5	6.1	43	37	15	50	35	15	6.9	1.7	.76	3.1
28	1.5	4.9	38	34	14	50	30	18	6.6	1.5	.74	2.8
29	1.5	4.1	37	56	13	46	32	19	7.2	1.4	.76	2.0
30	1.6	5.3	43	78	---	41	49	17	6.5	1.4	.76	1.5
31	1.8	---	59	78	---	35	---	18	---	1.3	.76	---
TOTAL	46.9	166.6	3020	5865	903	1377	1365	1494	646.5	109.0	31.09	30.28
MEAN	1.51	5.55	97.4	189	31.1	44.4	45.5	48.2	21.5	3.52	1.00	1.01
MAX	1.8	14	284	1400	75	118	112	126	57	6.4	1.3	3.1
MIN	1.5	2.3	26	30	13	18	22	15	6.5	1.3	.74	.57
AC-FT	93	330	5990	11630	1790	2730	2710	2960	1280	216	62	60
CFSM	.05	.19	3.39	6.59	1.08	1.55	1.59	1.68	.75	.12	.03	.04
IN.	.06	.22	3.91	7.60	1.17	1.78	1.77	1.94	.84	.14	.04	.04

CAL YR 1987	TOTAL 13914.09	MEAN 38.1	MAX 833	MIN .61	AC-FT 27600	CFSM 1.33	IN. 18.03
WTR YR 1988	TOTAL 15054.37	MEAN 41.1	MAX 1400	MIN .57	AC-FT 29860	CFSM 1.43	IN. 19.51

COOS RIVER BASIN

14324580 PONY CREEK AT COOS BAY, OR

LOCATION.--Lat 43°22'50", long 124°14'25", in NE 1/4 NE 1/4 sec.28, T.25 S., R.13 W., Coos County, Hydrologic Unit 17100304, at the downstream end of culvert under Ocean Boulevard, in Coos Bay, and at mile 2.2.

DRAINAGE AREA.--3.90 mi².

PERIOD OF RECORD.--July 1975 to current year.

GAGE.--Water-stage recorder. Datum of gage is at 12.23 ft above National Geodetic Vertical Datum of 1929 (Coos Bay-North Bend Water Board bench mark). Oct. 1, 1982, to September 30, 1987, gage at site 260 ft upstream set at National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records good October to April; poor thereafter. Flow regulated by Upper and Lower Pony Creek Reservoirs (stations 14324550 and 14324560), diversion upstream from station from Lower Pony Creek Reservoir to municipal water supply of Coos Bay-North Bend (station 14323570) and diversion into the basin from Joe Ney Creek (station 14324590). Approximately 4.6 ft³/s is diverted to the Coos Bay-North Bend water treatment plant, maximum capacity, 10.8 ft³/s.

AVERAGE DISCHARGE.--13 years, 10.5 ft³/s, 36.56 in/yr, 7,610 acre-ft/yr, adjusted for Joe Ney diversion into Pony Creek, Coos Bay-North Bend diversion, and change in contents in Upper and Lower Pony Creek Reservoirs.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 181 ft³/s Dec. 6, 1981, gage height, 6.19 ft; no flow July 28, Sept. 15, 29, 1988, during construction of new dam for Lower Pony Creek Reservoir.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 124 ft³/s Jan. 15, gage height, 5.09 ft; no flow July 28, Sept. 15, 29.

MONTHLY DISCHARGE OF PONY CREEK, JOE NEY CREEK DIVERSION, PONY CREEK DIVERSION AND MONTHLY CHANGE IN CONTENTS OF RESERVOIRS NEAR COOS BAY, OR, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

	14324590 Diversion from Joe Ney Creek into Pony Creek (acre-feet)	14324580 Pony Creek at Coos Bay (acre-feet)	14324570 Diversion from Lower Pony Cr. Reservoir to City of Coos Bay (acre-feet)	14324560 Lower Pony Creek Reservoir Change in Contents (acre-feet)	14324550 Upper Pony Creek Reservoir Change in Contents (acre-feet)	Pony Creek adjusted for diversion and change in contents (acre-feet)	(inches)
October.....	0	1.4	330	-33	-236	62	0.30
November.....	0	2.9	190	-32	+78	239	1.15
December.....	-102	98	197	+129	+1,247	1,568	7.54
CAL YR 1987...	-102	3,314	4,234	+18	-18	7,446	35.81
January.....	-28	1,227	254	-0.2	+325	1,778	8.55
February.....	0	239	320	+3.6	+15	578	2.78
March.....	0	203	335	-17	0	521	2.50
April.....	-7.7	387	237	-179	-61	377	1.81
May.....	-55	223	271	0	+23	463	2.22
June.....	-41	114	318	0	-97	294	1.41
July.....	-92	52	366	0	-225	101	0.48
August.....	-123	17	400	0	-237	56	0.27
September.....	-118	3.0	304	+74	-181	81	0.40
WTR YR 1988...	-566	2,566	3,521	-55	+651	6,118	29.42

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.04	.04	.60	.79	5.3	.68	4.4	3.2	1.3	.50	.12
2	.02	.05	.04	1.1	2.4	3.5	.14	4.4	3.3	1.3	.51	.11
3	.03	.06	.19	.61	4.5	3.3	.14	4.7	3.6	1.3	.42	.11
4	.01	.04	.09	.08	5.9	5.0	5.8	5.2	3.0	1.0	.34	.10
5	.01	.03	.05	.08	3.9	4.8	1.2	4.9	2.4	1.1	.49	.10
6	.02	.04	3.3	.07	4.2	9.4	32	4.9	2.1	.91	.38	.12
7	.02	.03	4.1	.06	4.5	6.5	26	5.4	2.0	1.2	.35	.09
8	.02	.03	.16	.14	5.5	6.3	36	7.0	2.1	1.1	.36	.08
9	.02	.07	5.9	5.5	7.2	4.3	2.9	5.6	2.8	1.1	.31	.08
10	.02	.05	10	31	6.6	4.1	3.1	5.2	2.2	.99	.38	.07
11	.03	.06	5.1	32	5.5	3.8	14	5.3	1.8	1.1	.27	.07
12	.03	.05	2.7	35	5.9	1.9	3.7	4.2	1.7	.95	.34	.06
13	.01	.06	1.1	25	7.6	3.2	3.4	4.4	1.7	1.0	.23	.06
14	.01	.06	1.8	52	7.1	3.0	3.5	5.5	1.7	.65	.22	.06
15	.01	.05	3.3	107	6.4	3.5	3.4	2.5	1.6	.82	.35	.05
16	.02	.07	5.4	86	6.7	5.1	3.4	3.6	1.7	1.1	.24	.03
17	.01	.05	2.4	44	4.7	3.1	3.4	2.7	1.4	.80	.27	.01
18	.01	.05	.45	32	2.4	1.2	3.2	2.5	1.2	.79	.22	.01
19	.02	.05	.91	24	1.0	1.5	3.5	2.2	2.0	.70	.20	.01
20	.02	.05	.09	20	2.1	2.4	3.6	2.2	1.5	.71	.19	.02
21	.03	.04	.08	18	3.9	2.2	4.3	2.2	1.4	.69	.18	.02
22	.04	.04	.08	16	3.8	1.4	4.5	2.2	1.5	.62	.17	.01
23	.05	.03	.09	16	3.0	.44	4.4	2.3	1.6	.56	.18	.01
24	.05	.05	.08	16	1.9	.06	4.5	2.0	1.5	.45	.19	.01
25	.05	.04	.08	16	1.2	.06	4.5	2.1	1.4	.71	.17	.01
26	.02	.03	.07	14	2.4	.10	4.6	2.0	1.3	.51	.20	.01
27	.02	.05	.07	15	3.5	3.4	4.0	2.0	1.5	.64	.16	.01
28	.01	.16	.07	9.5	3.3	3.3	3.6	2.8	1.4	.46	.15	.01
29	.01	.01	.06	1.6	2.8	2.0	3.7	3.0	1.3	.51	.15	.02
30	.02	.02	.28	.15	---	7.8	4.1	2.2	1.3	.54	.12	.02
31	.03	---	1.3	.16	---	.16	---	2.8	---	.38	.13	---
TOTAL	0.69	1.46	49.38	618.65	120.69	102.12	195.26	112.4	57.2	25.99	8.37	1.49
MEAN	.022	.049	1.59	20.0	4.16	3.29	6.51	3.63	1.91	.84	.27	.050
MAX	.05	.16	10	107	7.6	9.4	36	7.0	3.6	1.3	.51	.12
MIN	.01	.01	.04	.06	.79	.06	.14	2.0	1.2	.38	.12	.01
AC-FT	1.4	2.9	98	1230	239	203	387	223	113	52	17	3.0
CAL YR 1987	TOTAL 1670.98		MEAN 4.58	MAX 82	MIN .01	AC-FT 3310						
WTR YR 1988	TOTAL 1293.70		MEAN 3.53	MAX 107	MIN .01	AC-FT 2570						

COQUILLE RIVER BASIN

14325000 SOUTH FORK COQUILLE RIVER AT POWERS, OR

LOCATION.--Lat 42°53'30", long 124°04'10", in SE 1/4 sec.12, T.31 S., R.12 W., Coos County, Hydrologic Unit 17100305, on left bank 0.6 mi downstream from highway bridge at Powers, 0.9 mi upstream from Woodward Creek, and at mile 64.5.

DRAINAGE AREA.--169 mi².

PERIOD OF RECORD.--September 1916 to September 1926, October 1928 to current year.

REVISED RECORDS.--WSP 1184: 1946(M). WSP 1448: 1917-18(M), 1919, 1920(M), 1925.

GAGE.--Water-stage recorder. Datum of gage is 197.42 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 17, 1938, nonrecording gage at various sites within 1 mi of present site at different datums.

REMARKS.--No estimated daily discharges. Records good. No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--69 years (water years 1917-26, 1930-88), 791 ft³/s, 63.56 in/yr, 573,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,900 ft³/s Dec. 22, 1964, gage height, 26.51 ft, from floodmarks, from rating curve extended above 19,000 ft³/s on basis of contracted-opening measurement at gage height 18.14 ft and slope-area measurement of peak flow; minimum discharge, 8.8 ft³/s Sept. 28, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	0900	*17,300	*13.58	Jan. 10	1630	14,000	11.96
Dec. 6	1200	14,100	12.00	Jan. 14	2300	11,500	10.65
Dec. 10	0400	12,800	11.34				

Minimum discharge, 9.4 ft³/s Oct. 1, 2, 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	12	2340	693	1170	243	349	629	796	122	33	28
2	10	16	3130	578	942	218	321	565	872	117	33	27
3	11	19	11500	599	781	208	473	614	1060	120	34	25
4	11	17	5800	670	679	238	542	623	834	115	34	25
5	11	15	3160	696	605	346	509	592	789	106	35	24
6	11	14	10800	658	544	401	477	561	824	98	38	23
7	10	13	5370	729	502	405	605	748	841	91	39	23
8	11	13	3680	1610	500	353	536	892	762	88	41	22
9	11	26	6240	3460	693	562	473	764	968	82	44	21
10	11	35	9380	11800	636	582	415	631	970	75	45	20
11	11	28	3760	6280	562	492	366	520	792	73	50	20
12	11	47	2190	3220	507	428	326	460	644	71	56	19
13	12	177	1500	2480	488	381	298	560	534	68	54	18
14	12	241	1150	6870	447	345	295	504	453	68	57	17
15	12	133	1160	6820	421	318	264	433	391	64	57	17
16	12	93	1410	3790	397	293	244	445	348	62	56	16
17	12	81	1090	2480	368	268	228	431	313	58	55	17
18	11	75	857	1770	356	248	214	376	280	54	54	17
19	11	62	718	1340	330	232	211	334	256	52	51	23
20	11	56	614	1110	312	218	216	301	236	50	48	41
21	11	92	598	1020	295	211	279	272	214	47	46	33
22	11	97	791	905	281	204	363	248	197	44	44	26
23	11	112	789	852	268	468	329	235	185	43	42	23
24	11	137	675	805	252	482	288	218	173	40	39	21
25	11	253	594	749	239	394	259	202	162	39	36	20
26	12	158	535	716	228	364	241	189	157	37	34	20
27	11	115	490	713	219	424	222	180	149	35	33	30
28	11	92	475	736	211	448	210	275	140	34	32	40
29	11	77	583	1350	203	432	363	375	136	33	30	27
30	11	179	714	1670	---	419	598	344	129	33	29	23
31	11	---	873	1370	---	384	---	303	---	33	28	---
TOTAL	345	2485	82966	68539	13436	11009	10514	13824	14605	2052	1307	706
MEAN	11.1	82.8	2676	2211	463	355	350	446	487	66.2	42.2	23.5
MAX	12	253	11500	11800	1170	582	605	892	1060	122	57	41
MIN	10	12	475	578	203	204	210	180	129	33	28	16
AC-FT	684	4930	164600	135900	26650	21840	20850	27420	28970	4070	2590	1400
CFSM	.07	.49	15.8	13.1	2.74	2.10	2.07	2.64	2.88	.39	.25	.14
IN.	.08	.55	18.26	15.09	2.96	2.42	2.31	3.04	3.21	.45	.29	.16

CAL YR 1987 TOTAL 268652 MEAN 736 MAX 11500 MIN 10 AC-FT 532900 CFSM 4.36 IN. 59.14
WTR YR 1988 TOTAL 221788 MEAN 606 MAX 11800 MIN 10 AC-FT 439900 CFSM 3.59 IN. 48.82

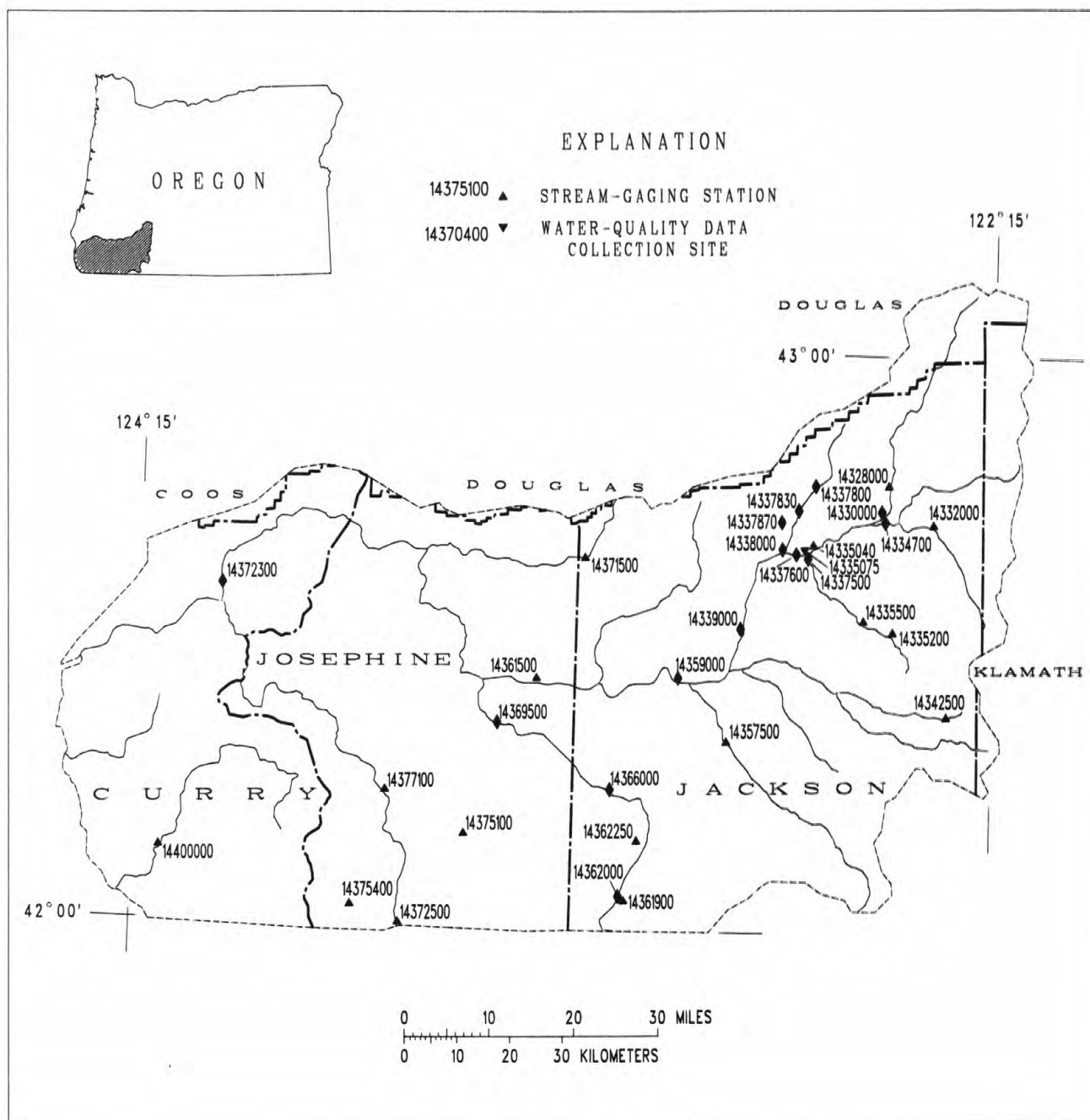


Figure 7.--Location of surface-water and water-quality stations in the Rogue River, Applegate River, Illinois River, and Chetco River basins.

UPPER ROGUE RIVER BASIN

14328000 ROGUE RIVER ABOVE PROSPECT, OR

LOCATION.--Lat 42°46'30", long 122°29'55", in SE 1/4 NE 1/4 sec.19, T.32 S., R.3 E., Jackson County, Hydrologic Unit 17100307, Rogue River National Forest, on left bank 1.4 mi upstream from Pacific Power and Light Co. diversion dam, 1.8 mi northwest of Prospect, and at mile 173.4.

DRAINAGE AREA.--312 mi².

PERIOD OF RECORD.--January 1908 to February 1912, October 1923 to current year. Monthly discharge only for some periods, published in WSP 1318. Prior to October 1925, published as "near Prospect."

REVISED RECORDS.--WSP 1248: 1925, 1927(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,620 ft, from river-profile map. Prior to Feb. 17, 1912, nonrecording gage at several sites within a few hundred feet upstream at various datums.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--68 years (water years 1909-11, 1924-88), 825 ft³/s, 35.91 in/yr, 597,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,400 ft³/s Dec. 22, 1964, gage height, 11.55 ft, from floodmark, from rating curve extended above 9,000 ft³/s on basis of slope-area measurement at 16,600 ft³/s; minimum observed discharge, 200 ft³/s Nov. 20, 1931.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 15	0400	*1,900	*3.26				
Minimum discharge, 287 ft ³ /s Sept. 13, 16.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	330	318	e500	e360	695	934	726	759	1250	485	336	303
2	326	336	e600	e350	621	873	782	726	1190	478	334	302
3	325	326	e620	e420	605	913	1210	771	1090	472	334	299
4	325	320	e520	e400	604	1060	1040	747	1040	465	333	299
5	325	320	e520	e380	584	1280	926	731	958	454	332	299
6	325	319	e540	e370	569	1190	908	725	934	447	334	298
7	325	315	e580	e390	560	1010	964	832	940	441	330	298
8	325	315	e520	e410	585	952	860	922	907	435	329	298
9	325	342	e800	e425	1060	1060	815	941	877	429	328	296
10	322	338	e1000	e600	1010	935	808	889	869	424	326	294
11	320	325	e800	e1550	971	862	835	918	809	420	325	293
12	320	322	e620	1150	934	820	880	954	780	417	325	292
13	320	e400	e560	960	916	782	902	1080	742	412	325	291
14	320	e370	e540	1090	850	757	997	941	715	409	325	e292
15	320	e330	e500	1560	831	729	903	883	695	405	328	e292
16	320	e360	e480	1120	794	701	892	933	681	400	324	291
17	320	e390	e450	922	754	683	857	933	667	395	322	292
18	320	e360	e440	833	714	680	815	842	645	389	320	292
19	320	e340	e420	751	686	691	791	804	626	384	320	310
20	320	e350	e410	705	682	697	810	779	603	378	317	344
21	320	e360	e450	681	695	732	879	770	586	374	316	308
22	320	e350	e450	646	707	729	865	772	569	369	313	301
23	320	e350	e440	631	710	826	817	747	559	365	311	297
24	320	e350	e390	605	717	768	775	710	545	363	312	296
25	320	e340	e380	591	730	739	742	687	536	359	310	294
26	320	e330	e410	594	754	813	721	670	533	354	308	293
27	317	e320	e420	636	813	902	725	654	519	353	307	331
28	315	e320	e410	697	874	817	726	723	509	347	307	314
29	315	e310	e390	760	899	789	844	754	512	341	307	301
30	315	e360	e390	810	---	750	822	690	498	340	306	296
31	315	---	e380	753	---	718	---	679	---	338	305	---
TOTAL	9950	10186	15930	22150	21924	26192	25637	24966	22384	12442	9949	9006
MEAN	321	340	514	715	756	845	855	805	746	401	321	300
MAX	330	400	1000	1560	1060	1280	1210	1080	1250	485	336	344
MIN	315	310	380	350	560	680	721	654	498	338	305	291
AC-FT	19740	20200	31600	43930	43490	51950	50850	49520	44400	24680	19730	17860
CFSM	1.03	1.09	1.65	2.29	2.42	2.71	2.74	2.58	2.39	1.29	1.03	.96
IN.	1.19	1.21	1.90	2.64	2.61	3.12	3.06	2.98	2.67	1.48	1.19	1.07

CAL YR 1987 TOTAL 230072 MEAN 630 MAX 1850 MIN 310 AC-FT 456300 CFSM 2.02 IN. 27.43
WTR YR 1988 TOTAL 210716 MEAN 576 MAX 1560 MIN 291 AC-FT 418000 CFSM 1.85 IN. 25.12

e Estimated

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LOCATION.--Lat 42°43'50", long 122°30'55", in SE 1/4 NW 1/4 sec.6, T.33 S., R.3 E., Jackson County, Hydrologic Unit 17100307, on right bank 600 ft downstream from Prospect No. 1 powerplant, 1.4 mi downstream from Mill Creek, 2.0 mi southwest of Prospect, 2.1 mi upstream from South Fork Rogue River, and at mile 169.4.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WSP 1518: 1914-23, 1924 (M), 1925, 1928.

REMARKS.--Water-discharge records good. Fluctuations caused by powerplant 600 ft upstream from station. Small diversions for irrigation upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,900 ft³/s Jan. 18, 1971, gage height, 7.62 ft, from high-water mark; minimum discharge, 205 ft³/s Sept. 17, 22, 24, 1980, caused by regulation of diversion gates upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,080 ft³/s Dec. 10, gage height 4.51 ft, caused by regulation of diversion gates upstream, 5.09 ft, from crest-stage gage; minimum discharge, 349 ft³/s May 4, caused by regulation of diversion gates upstream.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	784	751	979	874	1340	1630	1390	1460	1950	1110	855	815
2	790	777	1440	845	1250	1530	1460	1420	1880	1100	854	804
3	788	778	1480	988	1220	1620	1890	1470	1820	1100	845	805
4	786	771	1280	961	1220	1770	1750	1440	1780	1080	881	801
5	783	764	1280	938	1210	1970	1620	1430	1700	1070	896	804
6	779	759	1290	906	1180	1870	1600	1430	1630	1060	910	798
7	779	764	1330	913	1160	1700	1670	1550	1590	1040	899	798
8	772	750	1150	943	1190	1650	1550	1640	1600	1030	891	802
9	772	771	1300	1150	1700	1780	1500	1620	1600	1020	883	797
10	763	783	2970	2790	1700	1650	1490	1540	1590	1010	887	792
11	763	757	1930	2420	1650	1580	1520	1600	1530	1000	878	795
12	764	869	1530	1740	1600	1520	1590	1640	1480	1000	871	791
13	761	1010	1310	1520	1590	1480	1600	1810	1440	981	880	786
14	761	936	1250	1670	1510	1450	1720	1650	1400	985	876	784
15	763	800	1250	2210	1480	1420	1620	1580	1400	973	886	785
16	761	824	1180	1790	1420	1380	1610	1600	1400	961	875	786
17	765	926	1110	1580	1390	1360	1570	1610	1360	956	873	795
18	766	869	1070	1470	1340	1340	1410	1540	1340	951	865	798
19	762	814	1020	1360	1310	1350	1270	1490	1310	940	856	835
20	763	838	1010	1300	1330	1360	1340	1490	1290	930	858	897
21	762	878	1080	1290	1350	1410	1550	1490	1260	923	851	825
22	761	846	1100	1270	1360	1410	1590	1480	1240	915	843	827
23	762	856	1050	1250	1350	1510	1530	1400	1220	902	845	802
24	761	846	921	1220	1360	1450	1480	1360	1200	899	830	814
25	761	827	905	1210	1380	1410	1440	1370	1180	892	834	804
26	759	808	982	1200	1410	1490	1420	1380	1170	886	833	809
27	754	794	1000	1250	1480	1590	1420	1340	1160	885	829	844
28	759	790	1010	1330	1550	1490	1420	1420	1140	878	822	852
29	760	765	940	1410	1590	1460	1550	1470	1150	873	821	804
30	758	794	940	1480	---	1410	1530	1390	1140	869	823	800
31	761	---	932	1410	---	1370	---	1340	---	866	819	---
TOTAL	23783	24515	38019	42688	40620	47410	46100	46450	42930	30085	26669	24249
MEAN	767	817	1226	1377	1401	1529	1537	1498	1431	970	860	808
MAX	790	1010	2970	2790	1700	1970	1890	1810	1950	1110	910	897
MIN	754	750	905	845	1160	1340	1270	1340	1140	866	819	784
AC-FT	47170	48630	75410	84670	80570	94040	91440	92130	85150	59670	52900	48100
CAL YR 1987	TOTAL 447414		MEAN 1226	MAX 2970	MIN 750	AC-FT 887400						
WTR YR 1988	TOTAL 433518		MEAN 1184	MAX 2970	MIN 750	AC-FT 859900						

UPPER ROGUE RIVER BASIN

14330000 ROGUE RIVER BELOW PROSPECT, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1976 to September 1981.

pH: November 1976 to September 1981.

WATER TEMPERATURE: October 1968 to current year.

DISSOLVED OXYGEN: October 1979 to September 1981.

SUSPENDED SEDIMENT DISCHARGE: November 1976 to September 1981 (October to April only, 1980 water year, November to April only, 1981 water year).

INSTRUMENTATION.--Water-quality monitor since November 1976. Automatic pumping sediment sampler November 1976 to April 1981.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 73 microsiemens Sept. 22, 1980; minimum recorded, 28 microsiemens Jan. 13, 1980, may have been lower during period of missing record Jan. 14-17, 1980.

pH: Maximum recorded, 8.3 units Aug. 10, 1981, may have been higher during period of no record in July and August 1981; minimum, 7.0 units Nov. 30, 1976.

WATER TEMPERATURE: Maximum, 20.5°C July 20, 1979 (result of regulation); minimum, 0.0°C many years.

DISSOLVED OXYGEN: Maximum, 13.6 mg/L Dec. 8, 1980, Feb. 21, 1981; minimum, 7.2 mg/L June 21, 1980, result of regulation.

SEDIMENT CONCENTRATION: Maximum daily mean (water years 1977-79), 1,270 mg/L (estimated) Jan. 11, 1979; minimum, 0 mg/L on many days each year. Maximum daily mean (period October 1979 to April 1981), 716 mg/L Oct. 25, 1979; minimum daily mean, 0 mg/L on several days in October and December 1979, Nov. 15-21, 28, Dec. 1, 1980, Jan. 19, 1981.

SEDIMENT DISCHARGE: Maximum daily (water years 1977-79), 17,790 tons Dec. 15, 1977; minimum daily, 0 tons on many days each year. Maximum daily (period October 1979 to April 1981), 5,570 tons Jan. 13, 1980; minimum daily, 0 tons on several days in October and December 1979, Nov. 15-21, 28, Dec. 1, 1980, Jan. 19, 1981.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum undetermined; minimum, 0.0°C Dec. 23, 24.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	9.5	7.5	8.5	7.5	7.0	7.5	4.5	4.0	4.0	1.0	.5	.5
2	9.5	8.0	8.5	7.0	6.5	7.0	5.0	4.5	4.5	1.5	1.0	1.0
3	9.5	8.0	8.5	6.5	6.0	6.5	5.5	5.0	5.0	---	1.0	---
4	9.5	8.0	8.5	6.0	5.0	5.5	5.0	4.5	5.0	---	---	---
5	9.0	7.5	8.5	6.0	5.0	5.5	5.0	5.0	5.0	3.0	2.5	2.5
6	9.0	7.5	8.5	6.5	5.5	6.0	5.0	3.0	4.0	3.5	2.5	3.0
7	9.0	7.5	8.5	6.5	6.0	6.5	3.5	2.5	3.0	3.0	2.5	2.5
8	9.0	7.5	8.0	6.5	5.5	6.0	3.0	2.5	3.0	2.5	2.0	2.5
9	9.0	7.5	8.5	6.5	6.0	6.5	4.5	2.5	3.5	2.5	2.0	2.0
10	8.5	7.5	8.0	6.0	5.5	6.0	4.0	3.5	3.5	3.0	2.0	2.5
11	9.0	7.5	8.0	6.0	5.0	5.5	3.5	2.5	3.0	3.0	2.0	2.5
12	8.5	7.0	8.0	6.5	6.0	6.0	2.5	1.0	1.5	2.5	2.0	2.0
13	8.0	6.5	7.5	7.0	6.5	7.0	1.5	1.0	1.0	3.0	2.5	2.5
14	7.5	6.0	7.0	6.5	5.0	6.0	2.0	.5	1.5	3.5	3.0	3.0
15	7.0	5.5	6.5	5.0	3.5	4.0	1.0	.5	1.0	3.0	2.5	2.5
16	7.0	5.5	6.0	4.5	3.5	4.0	2.5	1.0	1.5	3.0	2.0	2.5
17	7.0	5.5	6.0	5.5	4.5	5.0	2.5	2.0	2.0	2.0	1.5	2.0
18	7.0	5.5	6.0	7.5	4.5	5.0	2.5	2.0	2.5	1.5	1.0	1.5
19	7.0	5.5	6.5	8.5	4.5	5.5	2.0	1.0	1.5	1.5	1.0	1.5
20	7.0	5.5	6.5	5.5	5.0	5.0	2.5	1.5	1.5	2.0	1.0	1.5
21	7.0	5.5	6.5	5.5	4.5	5.0	3.0	2.5	2.5	2.5	2.0	2.5
22	7.0	6.0	6.5	5.0	4.5	5.0	3.0	2.0	2.0	2.5	1.5	2.0
23	7.5	6.5	7.0	5.0	4.0	4.5	2.0	.0	1.0	3.0	2.0	2.5
24	7.0	6.0	6.5	4.0	3.5	3.5	1.0	.0	.5	2.5	2.0	2.0
25	7.0	6.0	6.5	3.5	2.5	3.0	1.5	.5	.5	2.5	1.5	2.0
26	7.0	6.0	7.0	3.0	2.0	2.5	1.0	.5	1.0	2.5	1.5	2.0
27	7.0	6.0	6.5	3.0	2.0	2.5	1.5	1.0	1.0	3.0	2.5	3.0
28	7.0	5.5	6.5	2.5	2.0	2.5	1.5	1.0	1.5	3.5	3.0	3.0
29	7.5	6.5	7.0	3.0	2.5	2.5	1.5	1.0	1.5	3.5	3.0	3.5
30	8.0	7.0	7.5	4.0	3.0	3.5	1.5	1.0	1.0	---	---	---
31	8.0	7.5	7.5	---	---	---	1.0	.5	1.0	---	---	---
MONTH	9.5	5.5	7.5	8.5	2.0	5.0	5.5	.0	2.5	---	---	---

UPPER ROGUE RIVER BASIN

249

14330000 ROGUE RIVER BELOW PROSPECT, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	---	---	---	4.5	4.0	4.0	---	---	---	5.5	4.0	4.5
2	---	---	---	---	---	---	---	---	---	5.5	4.5	5.0
3	---	---	---	---	---	---	---	---	---	6.5	5.0	5.5
4	---	---	---	---	---	---	---	---	---	9.0	4.5	5.5
5	---	---	---	---	---	---	---	---	---	6.0	4.0	5.0
6	---	---	---	---	---	---	7.0	---	---	6.0	5.0	5.5
7	---	---	---	---	---	---	6.5	5.0	6.0	6.0	5.0	5.5
8	---	---	---	---	---	---	5.5	3.5	4.5	6.5	6.0	6.0
9	---	---	---	---	---	---	6.5	4.0	5.0	7.0	5.5	6.0
10	---	---	---	---	---	---	7.5	5.5	6.5	9.0	6.0	7.5
11	---	---	---	---	---	---	8.5	6.5	7.5	10.5	8.0	9.0
12	---	---	---	---	---	---	8.0	7.0	7.5	10.0	8.5	9.5
13	---	---	---	---	---	---	7.5	7.0	7.5	8.5	7.5	8.0
14	---	---	---	---	---	---	7.0	6.0	6.5	9.0	6.5	8.0
15	---	---	---	---	---	---	8.0	6.0	7.0	10.0	8.0	9.0
16	---	---	---	---	---	---	7.5	7.0	7.5	9.5	7.5	9.0
17	---	---	---	---	---	---	7.5	6.5	7.0	8.5	6.0	7.5
18	---	---	---	---	---	---	6.5	6.0	6.5	9.0	7.5	8.0
19	---	---	---	---	---	---	6.5	6.0	6.5	9.5	7.0	8.5
20	---	---	---	---	---	---	6.0	5.5	6.0	10.5	8.0	9.0
21	---	---	---	---	---	---	6.0	5.0	5.5	12.0	9.0	10.5
22	---	---	---	---	---	---	6.5	5.0	6.0	11.5	10.0	10.5
23	4.0	---	---	---	---	---	7.0	5.5	6.5	10.5	9.0	10.0
24	4.5	3.0	3.5	---	---	---	8.0	5.5	7.0	10.5	8.0	9.0
25	4.5	3.0	4.0	---	---	---	---	---	---	11.5	9.0	10.0
26	5.0	4.0	4.5	---	---	---	9.0	---	---	11.0	9.0	10.0
27	5.0	4.0	4.5	---	---	---	9.0	7.5	8.0	11.5	9.5	10.0
28	5.5	4.5	5.0	---	---	---	8.5	7.5	8.0	10.0	8.0	9.5
29	5.0	4.0	4.5	---	---	---	7.5	6.0	7.0	8.0	7.0	7.5
30	---	---	---	---	---	---	6.0	4.0	5.0	8.5	6.0	7.5
31	---	---	---	---	---	---	---	---	---	8.0	7.5	8.0
MONTH	---	---	---	---	---	---	---	---	---	12.0	4.0	8.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	7.5	7.0	7.5	13.5	9.5	11.5						
2	9.0	7.5	8.0	13.5	10.5	12.0						
3	9.5	8.5	9.0	13.0	11.0	12.0						
4	9.5	8.0	9.0	12.0	9.5	11.0						
5	8.5	7.0	8.0	11.5	9.5	10.5						
6	7.0	6.5	7.0	11.5	8.0	10.0						
7	7.5	6.5	7.0	13.0	9.0	10.5						
8	7.5	6.0	6.5	14.0	10.0	11.5						
9	7.0	6.5	7.0	14.0	10.5	12.5						
10	9.0	6.5	7.5	14.0	11.0	12.5						
11	10.5	8.0	9.0	12.5	11.0	11.5						
12	11.0	8.5	9.5	13.5	10.0	11.5						
13	12.0	9.0	10.5	13.5	10.5	12.0						
14	13.0	10.0	11.5	14.0	11.0	12.5						
15	14.0	11.0	12.5	14.0	11.0	12.0						
16	14.5	11.5	13.0	14.0	10.5	12.0						
17	14.0	11.5	12.5	14.0	10.5	12.0						
18	14.0	11.0	12.5	14.5	10.5	12.5						
19	15.0	11.5	13.0	---	---	---						
20	15.0	12.0	13.5	---	---	---						
21	15.0	12.0	13.0	---	---	---						
22	14.5	12.0	13.0	---	---	---						
23	15.0	12.0	13.0	---	---	---						
24	15.0	11.5	13.0	---	---	---						
25	13.0	11.5	12.5	---	---	---						
26	13.0	10.0	11.5	---	---	---						
27	13.0	10.5	11.5	---	---	---						
28	11.5	10.0	11.0	---	---	---						
29	11.5	8.0	10.0	---	---	---						
30	12.5	9.0	10.5	---	---	---						
31	---	---	---	---	---	---						
MONTH	15.0	6.0	10.5	---	---	---						

UPPER ROGUE RIVER BASIN

14332000 SOUTH FORK ROGUE RIVER NEAR PROSPECT, OR

LOCATION.--Lat 42°42'30", long 122°23'30", in SE 1/4 SW 1/4 sec.7, T.33 S., R.4 E., Jackson County, Hydrologic Unit 17100307, in Rogue River National Forest, on left bank 0.3 mi downstream from South Fork dam and intake of South Fork power canal, 0.31 mi downstream from Imnaha Creek, 5.6 mi southeast of Prospect, and at mile 10.2.

DRAINAGE AREA.--83.8 mi². Drainage area at site upstream from Imnaha Creek was used October 1931 to September 1949, 61.3 mi²; and Imnaha Creek near Prospect, 22.2 mi².

PERIOD OF RECORD.--April 1924 to September 1931, October 1949 to current year. Equivalent records for period October 1931 to September 1949 may be obtained by combining flow of South Fork Rogue River above Imnaha Creek, near Prospect and Imnaha Creek near Prospect. Records for period October 1949 to September 1983 included flow of South Fork power canal.

REVISED RECORDS.--WSP 1318: 1925(M), 1927(M), 1930(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,300 ft, from topographic map. Prior to Sept. 10, 1965, at site 1,000 ft upstream at different datum.

REMARKS.--Records good except those below 6.0 ft³/s, which are fair. All records given herein do not include flow in South Fork power canal (completed in March 1932) which diverts 1,500 ft upstream from station and returns water to Rogue River upstream from South Fork Rogue River; practically no storage upstream from diversion dam.

AVERAGE DISCHARGE.--59 years (water years 1925-83), 178 ft³/s, 129,000 acre-ft/yr (includes flow of South Fork power canal).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 7,010 ft³/s Dec. 22, 1964, gage height, 11.1 ft, from floodmark, from rating curve extended above 410 ft³/s on basis of measurement of flow over dam of 3,180 ft³/s; no flow Jan. 31, 1950, Sept. 29, 30, 1967 (entire flow diverted to canal).

Combined flow, maximum discharge, 7,010 ft³/s Dec. 22, 1964 (no flow in canal); minimum daily, about 38 ft³/s Aug. 1-31, 1931.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 521 ft³/s Dec. 10, gage height, 3.70 ft; minimum discharge, 2.8 ft³/s Jan. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	4.4	9.5	3.4	4.0	9.3	4.0	16	198	5.6	5.0	4.9
2	3.9	4.8	92	3.4	4.0	41	4.2	12	169	5.6	5.1	4.8
3	3.9	4.4	32	3.3	4.0	23	41	21	138	5.6	5.1	4.8
4	3.9	4.3	4.1	3.2	3.9	73	25	16	148	5.5	5.1	4.8
5	3.8	4.2	3.7	3.1	3.8	115	9.4	14	155	5.3	5.1	4.8
6	3.8	4.2	3.7	3.0	3.8	91	8.7	15	159	5.3	5.1	4.8
7	3.8	4.2	3.7	3.0	3.6	72	28	41	154	5.3	5.1	4.8
8	3.8	4.2	3.3	3.0	3.8	62	12	59	138	5.4	5.1	4.8
9	3.8	4.6	22	4.8	16	86	5.0	61	159	5.4	5.1	4.8
10	3.7	4.3	281	30	16	60	4.7	59	131	5.3	5.1	4.8
11	4.0	4.2	97	27	13	42	11	74	109	5.3	5.1	4.8
12	4.4	6.1	28	9.3	8.8	28	21	97	96	5.4	5.0	4.8
13	3.9	15	7.9	5.4	5.9	21	29	151	85	5.6	5.0	4.8
14	4.0	12	5.7	14	5.1	17	53	101	75	5.4	5.0	e4.8
15	5.7	6.1	6.5	27	5.0	13	36	88	65	5.3	5.0	e4.8
16	4.4	9.6	5.0	12	4.8	8.2	36	107	55	5.3	4.8	e4.8
17	4.4	14	4.6	6.6	4.6	4.8	32	103	46	5.3	4.8	e4.6
18	4.4	8.1	4.4	5.2	4.5	4.6	21	78	36	5.1	4.8	e4.5
19	4.4	5.1	4.2	5.1	4.4	4.6	15	67	29	5.1	4.8	e4.8
20	4.3	4.7	4.1	4.7	4.3	4.6	14	61	22	5.1	4.7	e5.4
21	4.2	4.8	4.3	4.4	4.2	5.6	26	62	16	5.1	4.6	e5.0
22	4.2	4.1	4.5	4.3	4.2	4.5	28	63	12	5.2	4.4	e4.4
23	4.2	3.9	4.3	4.2	4.2	12	18	57	8.5	5.4	4.6	e4.3
24	4.2	4.2	4.2	4.1	4.2	5.2	12	45	6.5	5.3	5.1	e4.2
25	4.2	3.9	4.2	4.0	4.2	5.4	6.2	35	5.6	5.3	5.1	e4.2
26	4.2	3.8	4.4	4.0	4.2	9.5	4.9	28	5.6	5.3	5.0	e4.2
27	4.1	3.7	4.4	4.0	4.4	8.9	8.9	21	5.8	5.2	5.0	e4.5
28	4.1	3.6	3.6	4.0	4.7	4.5	11	78	6.4	5.1	4.9	e4.8
29	4.1	3.5	3.0	4.1	5.2	4.3	41	90	5.6	5.1	4.8	e4.4
30	4.1	3.6	3.1	4.1	---	4.1	32	58	5.5	5.1	4.8	e4.3
31	4.2	---	3.4	4.0	---	4.0	---	57	---	5.0	4.8	---
TOTAL	128.1	167.6	665.8	221.7	162.8	848.1	598.0	1835	2244.5	164.3	153.0	140.5
MEAN	4.13	5.59	21.5	7.15	5.61	27.4	19.9	59.2	74.8	5.30	4.94	4.68
MAX	5.7	15	281	30	16	115	53	151	198	5.6	5.1	5.4
MIN	3.7	3.5	3.0	3.0	3.6	4.0	4.0	12	5.5	5.0	4.4	4.2
AC-FT	254	332	1320	440	323	1680	1190	3640	4450	326	303	279

CAL YR 1987 TOTAL 6742.3 MEAN 18.5 MAX 281 MIN 2.2 AC-FT 13370
WTR YR 1988 TOTAL 7329.4 MEAN 20.0 MAX 281 MIN 3.0 AC-FT 14540

e Estimated

UPPER ROGUE RIVER BASIN

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14334700 SOUTH FORK ROGUE RIVER, SOUTH OF PROSPECT, OR

LOCATION.--Lat 42°42'45", long 122°30'20", in NW 1/4 SE 1/4 sec.7, T.33 S., R.3 E., Jackson County, Hydrologic Unit 17100307, on right bank 200 ft upstream from unnamed tributary, 0.6 mi upstream from Smith Creek, 1.2 mi downstream from Beaver Creek, 2.8 mi southwest of Prospect, and at mile 2.4.

DRAINAGE AREA.--246 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,030 ft, from topographic map.

REMARKS.--Water-discharge records good except for estimated daily discharges, which are poor. Some regulation by South Fork canal dam upstream. Power diversions upstream from station from South Fork Rogue River, Middle Fork Rogue River, and Red Blanket Creek divert water to Rogue River via Main Canal. During summer months, most of base flow is diverted for power except that required for fish life. Base flow at station is principally from springs downstream from power diversions.

AVERAGE DISCHARGE.--20 years, 386 ft³/s, 279,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,880 ft³/s Mar. 3, 1972, gage height, 12.71 ft, from floodmark; minimum discharge, 54 ft³/s Sept. 24-30, 1970, but may have been lower during period of no record Sept. 24-30, 1970, Aug. 16-19, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 20.1 ft, Dec. 22, 1964, from floodmarks at gage, discharge, 28,500 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,190 ft³/s Dec. 10, gage height, 7.67 ft; maximum gage height, 7.92 ft Dec. 10, from crest-stage gage; minimum discharge, 74 ft³/s Oct. 2-4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	83	110	130	95	201	215	164	257	e800	134	86	90
2	75	114	451	96	183	244	159	249	e750	125	90	91
3	75	85	301	104	174	242	260	269	e700	122	90	93
4	75	86	159	105	165	360	244	256	e660	119	90	94
5	78	89	142	105	157	505	217	264	e700	117	90	94
6	79	85	142	103	151	443	208	252	e680	114	92	94
7	79	86	149	104	147	382	263	326	e700	113	90	92
8	83	94	135	114	162	337	222	358	e650	108	91	92
9	83	109	233	250	342	389	201	e450	e700	107	92	93
10	84	86	e1240	601	357	317	198	e440	e590	106	92	93
11	85	83	584	554	336	281	212	e470	e530	104	92	93
12	84	115	338	370	316	254	243	e500	e470	105	92	94
13	88	136	259	294	304	239	264	e600	e430	103	92	93
14	83	136	215	380	282	226	332	e500	e400	101	92	92
15	88	133	173	590	273	220	296	e470	345	100	93	92
16	86	141	161	460	256	203	293	e480	312	98	91	89
17	82	122	138	374	244	192	284	e480	298	96	91	86
18	83	101	127	329	234	186	310	e440	277	94	92	86
19	84	86	119	288	212	184	369	e410	258	92	92	114
20	82	84	116	266	174	184	366	361	244	90	92	107
21	81	90	139	225	170	195	351	366	228	89	92	89
22	82	84	142	182	166	188	306	373	211	89	91	85
23	82	83	127	176	162	216	275	377	197	93	91	84
24	80	90	117	167	159	200	249	367	188	92	97	83
25	81	89	120	161	156	192	233	326	183	91	94	82
26	84	83	113	160	158	208	228	288	177	90	91	82
27	88	83	112	167	170	213	239	268	162	89	92	96
28	82	85	113	182	174	192	244	e400	154	88	91	87
29	82	86	114	209	184	187	260	e450	140	88	92	84
30	85	89	110	225	---	180	261	344	136	87	93	83
31	86	---	99	215	---	174	---	352	---	86	91	---
TOTAL	2552	2943	6618	7651	6169	7748	7751	11743	12270	3130	2837	2727
MEAN	82.3	98.1	213	247	213	250	258	379	409	101	91.5	90.9
MAX	88	141	1240	601	357	505	369	600	800	134	97	114
MIN	75	83	99	95	147	174	159	249	136	86	86	82
AC-FT	5060	5840	13130	15180	12240	15370	15370	23290	24340	6210	5630	5410

CAL YR 1987 TOTAL 77326 MEAN 212 MAX 1240 MIN 75 AC-FT 153400
WTR YR 1988 TOTAL 74139 MEAN 203 MAX 1240 MIN 75 AC-FT 147100

e Estimated

UPPER ROGUE RIVER BASIN

14334700 SOUTH FORK ROGUE RIVER SOUTH OF PROSPECT, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1968 to current year.

SEDIMENT RECORDS: October 1976 to April 1981 (October to April only 1980 water year, November to April only 1981 water year).

INSTRUMENTATION.--Water temperature recorder since October 1968.

EXTREMES OR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 20.0°C July 18, 19, 1979; minimum, 0.0°C on several days during winter periods.

SEDIMENT CONCENTRATION: Maximum daily, 654 mg/L Nov. 26, 1977; minimum daily, 0 mg/L on several days each year.

SEDIMENT DISCHARGE: Maximum daily, 6,180 tons Nov. 26, 1977; minimum daily, 0 tons on several days each year.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 17.5°C several days in July; minimum, 0.0°C Dec. 25.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	10.5	8.5	9.5	9.0	8.0	8.0	6.0	5.0	5.5	1.5	.5	1.0
2	10.5	9.0	10.0	8.0	7.5	7.5	5.5	5.5	5.5	2.0	.5	1.0
3	10.5	9.0	10.0	8.0	7.0	7.5	6.5	5.5	6.0	3.0	2.0	2.5
4	10.5	9.0	10.0	7.0	5.5	6.0	6.5	6.5	6.5	4.0	3.0	3.5
5	10.5	8.5	9.5	7.0	5.5	6.5	7.0	6.0	6.5	4.0	3.5	3.5
6	10.5	8.5	9.5	8.0	6.5	7.0	7.0	6.0	6.5	4.0	3.5	4.0
7	10.0	8.5	9.5	8.0	7.0	7.5	5.5	4.5	5.0	3.5	3.5	3.5
8	10.0	8.0	9.0	7.0	6.0	6.5	5.0	4.5	4.5	4.0	3.5	3.5
9	10.0	8.5	9.5	7.5	7.0	7.5	6.5	4.5	5.5	4.0	4.0	4.0
10	10.0	8.5	9.0	7.0	5.5	6.0	6.0	4.0	5.0	4.0	3.5	4.0
11	10.0	8.0	9.0	7.5	6.0	6.5	4.0	3.5	4.0	3.5	2.5	3.0
12	9.5	8.0	9.0	8.0	7.5	7.5	3.5	2.5	3.0	3.5	2.5	3.0
13	9.0	7.0	8.0	8.0	7.0	8.0	2.5	1.0	1.5	4.0	3.5	3.5
14	8.0	6.5	7.5	7.0	5.5	6.5	3.5	2.0	2.5	5.0	3.5	4.5
15	8.0	6.0	7.0	5.5	4.0	4.5	3.5	1.0	2.0	3.5	3.0	3.5
16	7.5	5.5	6.5	6.5	4.0	5.0	3.0	2.0	2.5	3.5	3.0	3.0
17	7.5	6.0	7.0	7.0	6.5	6.5	4.0	3.0	3.5	3.0	1.5	2.5
18	7.5	6.0	7.0	6.5	5.5	6.0	3.5	3.0	3.5	3.0	1.0	2.0
19	8.0	6.0	7.0	6.5	5.5	6.0	3.5	2.5	3.5	3.0	1.5	2.0
20	7.5	6.0	7.0	7.0	6.5	6.5	3.0	2.0	2.5	3.5	2.0	2.5
21	7.5	6.0	7.0	7.0	6.5	6.5	4.0	3.0	4.0	3.5	3.0	3.5
22	8.0	6.5	7.5	6.0	5.0	5.5	4.0	3.5	4.0	4.0	2.5	3.0
23	8.5	7.0	8.0	6.0	5.5	6.0	3.5	2.5	3.0	4.0	3.5	4.0
24	8.5	7.0	7.5	5.5	5.0	5.0	2.5	.5	1.0	3.5	2.5	3.0
25	8.0	6.5	7.5	5.5	4.5	5.0	1.0	.0	.5	3.0	2.0	2.5
26	8.0	7.0	7.5	4.0	3.5	3.5	1.0	.5	1.0	4.0	2.5	3.0
27	7.5	6.0	7.0	4.0	3.0	3.5	2.5	1.0	2.0	4.5	4.0	4.0
28	8.0	6.0	7.0	4.0	3.0	3.5	3.5	2.5	3.0	5.0	3.5	4.0
29	9.0	7.5	8.0	3.5	2.5	3.0	3.0	2.5	3.0	4.5	4.0	4.5
30	9.5	8.5	9.0	5.0	3.5	4.0	2.5	2.0	2.5	4.0	3.5	4.0
31	9.5	8.5	9.0	---	---	---	2.5	1.5	2.0	3.5	2.5	3.5
MONTH	10.5	5.5	8.0	9.0	2.5	6.0	7.0	.0	3.5	5.0	.5	3.0

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	3.5	3.0	3.0	6.0	5.0	5.5	9.5	4.5	7.0	7.5	4.5	5.5
2	2.5	1.0	1.5	6.5	4.5	5.5	8.5	6.5	7.5	7.0	4.5	6.0
3	2.5	1.0	1.5	7.0	6.0	6.5	8.0	6.0	7.0	8.0	5.5	6.5
4	2.5	1.5	2.0	6.5	6.0	6.0	7.5	5.5	6.5	7.5	5.0	6.5
5	3.0	1.5	2.0	6.0	5.0	5.5	9.0	4.5	6.0	7.5	5.0	6.0
6	4.0	2.5	3.0	5.5	4.5	5.5	9.5	6.0	8.0	7.0	5.5	6.0
7	4.5	3.0	3.5	5.5	3.0	4.5	7.5	5.5	6.5	8.0	5.5	7.0
8	5.0	4.5	4.5	6.0	3.5	5.0	7.5	3.5	5.5	7.5	6.5	7.0
9	5.5	4.5	5.0	5.5	4.0	4.5	9.5	4.0	6.5	8.0	5.5	6.5
10	5.5	4.5	5.0	5.0	3.0	4.0	10.0	5.5	7.5	10.5	6.0	8.0
11	5.0	3.5	4.0	5.0	2.5	3.5	11.0	6.5	8.5	12.0	7.0	9.5
12	5.0	3.0	4.0	5.5	2.5	4.0	9.5	7.0	8.5	11.0	7.5	9.0
13	5.0	4.0	4.5	6.0	3.0	4.5	9.0	7.5	8.0	9.0	7.0	8.0
14	4.5	3.0	4.0	6.5	3.5	5.0	7.5	7.0	7.0	11.0	6.0	8.5
15	5.5	4.5	4.5	6.0	3.0	4.5	10.0	6.0	8.0	12.0	7.0	9.5
16	4.5	3.0	4.0	6.5	3.0	5.0	8.5	7.5	8.0	10.0	7.0	8.5
17	4.0	2.5	3.5	7.0	3.5	5.0	9.0	7.0	8.0	9.5	6.0	7.5
18	4.5	3.5	4.0	7.5	4.0	5.5	7.5	6.0	7.0	10.5	7.0	8.5
19	4.5	3.0	4.0	7.5	4.5	6.0	7.0	6.0	6.5	11.0	6.5	9.0
20	5.5	3.0	4.0	7.5	4.5	6.0	6.5	5.5	6.0	12.5	7.0	10.0
21	5.5	3.5	4.5	7.0	5.5	6.5	6.5	5.5	6.0	13.5	8.5	11.0
22	5.0	3.5	4.5	7.0	5.0	6.0	8.0	5.5	6.5	12.0	9.0	10.5
23	5.5	3.5	4.5	7.0	5.0	6.5	9.0	5.0	7.0	11.0	9.0	10.0
24	6.0	4.0	5.0	5.0	4.0	4.5	8.0	6.0	7.0	12.0	7.0	9.5
25	6.0	4.0	5.0	9.0	5.0	6.5	10.0	6.0	8.0	12.5	8.5	10.5
26	7.0	5.0	6.0	7.5	5.5	6.5	11.0	7.0	9.0	11.5	8.5	10.0
27	7.0	5.0	6.0	6.5	4.5	5.5	10.5	7.5	9.0	12.0	9.0	10.5
28	7.5	6.0	7.0	7.0	3.0	5.0	9.5	8.0	8.5	10.5	7.5	9.5
29	6.5	4.5	5.5	7.0	5.0	6.0	8.5	6.0	7.5	9.0	6.5	7.5
30	---	---	---	7.5	4.0	5.5	6.5	5.0	5.5	10.5	6.0	8.0
31	---	---	---	8.0	4.0	6.0	---	---	---	9.0	8.0	8.0
MONTH	7.5	1.0	4.0	9.0	2.5	5.5	11.0	3.5	7.5	13.5	4.5	8.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	7.5	7.5	7.5	15.5	11.0	13.5	16.0	13.0	15.0	14.5	11.5	13.0
2	10.0	7.0	8.5	16.0	12.0	14.0	15.0	12.0	14.0	14.5	12.0	13.5
3	10.0	8.5	9.0	16.0	12.5	14.5	16.0	12.0	14.5	15.0	12.0	13.5
4	10.5	7.5	9.0	14.5	11.0	13.0	16.0	12.5	14.5	14.5	12.5	13.5
5	8.5	7.0	7.5	14.5	10.5	12.5	15.5	13.0	14.0	14.5	12.0	13.5
6	8.0	6.5	7.0	14.5	9.5	12.0	15.5	12.5	14.0	13.5	11.0	12.5
7	7.5	6.5	7.0	15.5	10.5	13.0	14.5	11.5	13.5	13.5	10.5	12.5
8	8.0	6.0	7.0	16.5	12.0	14.0	15.5	11.5	13.5	13.0	10.5	12.0
9	8.0	7.0	7.5	17.0	12.5	15.0	16.0	12.5	14.5	13.0	10.0	12.0
10	11.0	6.0	8.5	16.5	12.5	14.5	16.0	12.5	14.5	12.5	9.5	11.0
11	12.0	7.5	9.5	15.5	12.5	14.0	16.0	12.5	14.5	11.5	8.5	10.0
12	12.5	7.5	10.0	16.0	12.0	14.0	15.5	12.5	14.0	12.0	9.0	10.5
13	13.5	8.5	11.0	16.0	12.0	14.5	15.0	12.0	14.0	11.5	8.5	10.5
14	14.0	9.5	12.0	16.5	13.5	15.0	14.5	11.5	13.0	11.5	8.5	10.5
15	15.5	10.5	13.0	16.5	13.0	14.5	14.5	11.5	13.0	11.5	9.0	10.5
16	15.5	11.5	13.5	16.5	12.0	14.5	14.0	10.5	12.5	11.0	9.0	10.5
17	15.0	11.0	13.0	16.5	12.5	14.5	14.5	11.5	13.0	10.0	7.5	9.0
18	16.0	11.5	13.5	17.0	13.0	15.0	14.0	10.0	12.0	9.5	6.5	8.0
19	16.5	11.5	13.5	17.0	13.0	15.5	14.5	11.0	13.0	10.0	8.5	9.0
20	16.5	12.0	14.0	17.0	13.5	15.5	14.5	11.0	13.0	10.0	8.5	9.0
21	16.0	12.0	14.0	17.5	14.0	16.0	14.0	11.0	13.0	10.0	7.0	8.5
22	15.5	12.0	13.5	17.5	14.0	16.0	14.5	11.0	13.0	10.0	8.0	9.0
23	16.5	12.0	14.0	17.0	13.5	15.5	14.5	11.5	13.5	10.0	8.0	9.5
24	16.5	11.0	14.0	17.0	13.5	15.5	15.0	12.0	14.0	10.0	8.0	9.0
25	14.5	12.0	13.0	17.5	14.0	16.0	14.0	11.5	13.0	10.0	8.5	9.5
26	15.5	10.5	13.0	17.5	14.5	16.0	14.0	11.0	12.5	11.0	8.5	10.0
27	14.5	11.0	12.5	17.5	14.5	16.0	14.5	11.5	13.0	11.0	10.0	10.5
28	14.0	10.5	12.0	16.5	13.5	15.5	14.5	12.0	13.5	10.0	7.5	9.0
29	13.5	9.0	11.5	17.0	13.5	15.5	15.0	12.0	13.5	11.0	8.5	9.5
30	15.0	10.0	12.5	17.5	14.0	16.0	14.5	11.5	13.5	11.0	9.0	10.0
31	---	---	---	17.5	14.5	16.5	14.0	11.5	13.0	---	---	---
MONTH	16.5	6.0	11.0	17.5	9.5	15.0	16.0	10.0	13.5	15.0	6.5	10.5
YEAR	17.5	.0	8.0									

UPPER ROGUE RIVER BASIN

14335040 LOST CREEK LAKE NEAR MCLEOD, OR

LOCATION.--Lat 42°40'16", long 122°40'25", in SW 1/4 sec.26, T.33 S., R. 1 E., Jackson County, Hydrologic Unit 17100307, in outlet structure of Lost Creek Dam on Rogue River, 1.0 mi northeast of McLeod and at mile 157.2.

DRAINAGE AREA.--686 mi².

PERIOD OF RECORD.--February 1977 to current year.

REVISED RECORDS.--WDR OR-85-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Nov. 28, 1977, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam completed in October 1976. Storage began in February 1977. Total capacity, 465,000 acre-ft between elevations 1,551.0 ft and 1,872.0 ft, maximum pool elevation. Elevation of gated spillway crest, 1,823.0 ft. Usable storage, 315,000 acre-ft between elevation 1,751.0 ft and 1,872.0 ft. Water is used for flood control, recreation, power generation, pollution abatement, domestic use and other purposes.

COOPERATION.--Record is provided by Corps of Engineers, Lost Creek Control Center, and supplemented by Geological Survey. Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 465,800 acre-ft June 1, 2, 1988, elevation, 1,872.24 ft; minimum contents since first filling, 100,800 acre-ft Oct. 29, 1977, elevation, 1,720.50 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 465,800 acre-ft June 1, 2, elevation, 1,872.24 ft; minimum contents, 236,900 acre-ft Nov. 3-7, elevation, 1,792.70 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)

1,720	100,100	1,850	393,100
1,750	148,200	1,872	465,000
1,800	254,600	1,899	562,900

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1798.51	1792.90	1794.87	1810.47	1827.33	1845.25	1865.07	1871.78	1872.24	1865.61	1850.79	1827.81
2	1798.17	1792.77	1795.78	1810.53	1827.86	1845.93	1865.48	1871.96	1872.06	1865.17	1850.31	1826.87
3	1797.82	1792.70	1796.55	1810.72	1828.35	1846.65	1866.16	1871.97	1872.01	1864.72	1849.81	1825.90
4	1797.50	1792.70	1797.07	1810.88	1828.84	1847.58	1866.77	1871.95	1872.06	1864.24	1849.31	1824.93
5	1797.33	1792.70	1797.51	1811.03	1829.30	1848.71	1867.21	1871.99	1872.04	1863.76	1849.12	1823.96
6	1797.16	1792.70	1798.05	1811.17	1829.72	1849.74	1867.48	1872.01	1872.03	1863.27	1848.63	1822.98
7	1797.00	1792.70	1798.61	1811.34	1830.18	1850.60	1867.70	1872.00	1872.00	1862.79	1847.81	1822.11
8	1796.83	1792.72	1799.07	1811.61	1830.65	1851.44	1867.83	1872.00	1871.98	1862.31	1847.31	1821.42
9	1796.66	1792.76	1799.78	1812.44	1831.60	1852.39	1867.92	1871.99	1871.95	1861.83	1846.80	1820.80
10	1796.49	1792.79	1803.01	1814.82	1832.55	1853.17	1868.00	1871.98	1871.93	1861.34	1846.29	1820.18
11	1796.32	1792.83	1804.40	1816.80	1833.44	1853.87	1868.10	1872.00	1871.96	1860.84	1845.77	1819.50
12	1796.14	1792.97	1805.22	1817.99	1834.26	1854.52	1868.26	1872.01	1871.96	1860.33	1845.47	1818.95
13	1795.96	1793.19	1805.78	1818.87	1835.08	1855.13	1868.46	1872.09	1871.89	1859.81	1844.82	1818.44
14	1795.78	1793.37	1806.24	1819.85	1835.71	1855.70	1868.76	1872.00	1871.74	1859.28	1843.88	1817.94
15	1795.61	1793.47	1806.74	1820.69	1836.52	1856.23	1868.99	1871.97	1871.56	1858.74	1843.10	1817.55
16	1795.42	1793.57	1807.13	1820.60	1837.17	1856.74	1869.19	1872.03	1871.36	1858.25	1842.24	1817.24
17	1795.25	1793.72	1807.45	1820.41	1837.78	1857.22	1869.37	1872.00	1871.14	1857.75	1841.39	1816.90
18	1795.11	1793.83	1807.73	1820.38	1838.34	1857.67	1869.51	1871.97	1870.87	1857.25	1840.51	1816.58
19	1794.95	1793.88	1807.96	1820.65	1838.88	1858.17	1869.64	1872.00	1870.58	1856.75	1839.62	1816.34
20	1794.79	1793.96	1808.18	1821.11	1839.39	1858.63	1869.79	1872.00	1870.28	1856.29	1838.76	1816.11
21	1794.63	1794.05	1808.48	1821.54	1839.90	1859.19	1869.97	1872.01	1869.93	1855.87	1837.89	1815.81
22	1794.48	1794.11	1808.84	1821.90	1840.42	1859.69	1869.93	1872.01	1869.57	1855.44	1837.01	1815.51
23	1794.33	1794.18	1809.09	1822.23	1840.95	1860.30	1869.97	1871.99	1869.19	1854.99	1836.11	1815.19
24	1794.17	1794.29	1809.24	1822.54	1841.47	1860.85	1869.90	1871.98	1868.75	1854.55	1835.22	1814.89
25	1793.99	1794.36	1809.39	1822.92	1841.99	1861.37	1869.88	1871.96	1868.35	1854.10	1834.31	1814.58
26	1793.82	1794.40	1809.55	1823.41	1842.53	1861.95	1870.06	1871.96	1867.93	1853.65	1833.42	1814.27
27	1793.65	1794.44	1809.75	1823.95	1843.13	1862.59	1870.30	1871.95	1867.49	1853.19	1832.47	1814.00
28	1793.49	1794.46	1809.94	1824.56	1843.78	1863.15	1870.59	1871.99	1867.02	1852.72	1831.56	1813.73
29	1793.33	1794.47	1810.10	1825.27	1844.46	1863.68	1871.09	1871.96	1866.54	1852.29	1830.62	1813.44
30	1793.18	1794.56	1810.26	1826.01	---	1864.17	1871.51	1871.93	1866.06	1851.81	1829.69	1813.15
31	1793.02	---	1810.38	1826.72	---	1864.63	---	1871.97	---	1851.28	1828.75	---
MAX	1798.51	1794.56	1810.38	1826.72	1844.46	1864.63	1871.51	1872.09	1872.24	1865.61	1850.79	1827.81
MIN	1793.02	1792.70	1794.87	1810.47	1827.33	1845.25	1865.07	1871.78	1866.06	1851.28	1828.75	1813.15
(†)	237700	241400	280800	324600	376100	440100	463300	464900	444900	397100	330300	288000
(‡)	-14000	+3700	+39400	+43800	+51500	+64000	+23200	+1600	-20000	-47800	-66800	-42300

CAL YR 1987 MAX 1872.00 MIN 1792.70 AC-FT† -6700
WTR YR 1988 MAX 1872.24 MIN 1792.70 AC-FT‡ +36300

† Contents, in acre-feet, at 2400, on last day of month.

‡ Change in contents, in acre-feet.

UPPER ROGUE RIVER BASIN

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14335075 ROGUE RIVER AT MCLEOD, OR

LOCATION.--Lat 42°39'35", long 122°41'30", in SW 1/4 NW 1/4 sec.34, T.33 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on right bank 0.3 mi upstream from Big Butte Creek, 0.1 southwest of McLeod, and at mile 155.6.

DRAINAGE AREA.--689 mi².

PERIOD OF RECORD.--May 1973 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1976 to September 1981.

pH: November 1976 to September 1981.

WATER TEMPERATURE: November 1976 to current year.

DISSOLVED OXYGEN: November 1976 to September 1981.

SUSPENDED SEDIMENT DISCHARGE: October 1976 to September 1981 (October to April only, 1980 water year, November to April only, 1981 water year).

INSTRUMENTATION.--Water-quality monitor since November 1976. Automatic pumping sediment sampler November 1976 to April 1981.

REMARKS.--Water-discharge records, obtained by subtracting Big Butte Creek near McLeod (station 14337500) from Rogue River near McLeod (station 14337600), are used for computation of daily sediment loads.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 76 microsiemens Nov. 11, 1977; minimum, 45 microsiemens Dec. 24, 25, 1977.

pH: Maximum, 9.2 units May 8, 9, 11, 12, 1981; minimum, 6.7 units Nov. 8-13, 1978.

WATER TEMPERATURE: Maximum, 15.5°C June 23, 1985; minimum, 0.5°C Jan. 9, 1977; minimum since full operation of Lost Creek Lake, 3.5°C Feb. 1-9, 15, 1979, Feb. 26, 27, 1985, but may have been lower during period of missing record Feb. 1-20, 1985.

DISSOLVED OXYGEN: Maximum, 15.7 mg/L Jan. 8, 1977; minimum, 6.8 mg/L Aug. 20, 1977.

SEDIMENT CONCENTRATION: Maximum recorded daily mean, 75 mg/L Dec. 14, 1977; minimum daily, 0 mg/L many days.

SEDIMENT DISCHARGE: Maximum recorded daily, 1,570 tons Dec. 14, 1977; minimum daily, 0 tons many days.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 13.5°C Aug. 9-16; minimum recorded, 4.0°C on several days in February and March.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.0	6.0	6.5	8.0	7.5	7.5	7.5	7.5	7.5	---	---	---
2	6.5	6.0	6.0	8.0	7.5	8.0	7.5	7.5	7.5	---	---	---
3	6.0	5.5	6.0	8.5	8.0	8.0	7.5	7.5	7.5	---	---	---
4	6.5	5.5	6.0	8.5	8.0	8.0	7.5	7.5	7.5	---	---	---
5	6.5	5.5	6.0	9.0	8.0	8.5	7.5	7.5	7.5	---	---	---
6	6.0	5.5	5.5	9.0	8.0	8.5	7.5	7.0	7.5	5.5	5.0	5.0
7	6.0	5.5	5.5	9.0	8.5	8.5	7.5	7.0	7.0	5.0	5.0	5.0
8	6.0	5.5	5.5	9.0	8.5	8.5	7.5	7.0	7.0	5.0	5.0	5.0
9	6.0	5.5	5.5	9.0	8.5	9.0	7.5	7.0	7.0	5.0	5.0	5.0
10	6.0	5.5	5.5	9.0	8.5	8.5	7.5	7.0	7.0	5.5	5.0	5.0
11	6.0	5.5	5.5	9.0	8.5	9.0	7.0	7.0	7.0	5.5	4.5	5.0
12	6.5	5.5	6.0	9.0	9.0	9.0	7.0	6.5	6.5	5.5	5.0	5.0
13	6.0	5.5	5.5	9.0	8.5	9.0	6.5	6.0	6.5	5.5	5.0	5.0
14	6.5	5.5	6.0	9.0	8.5	8.5	6.5	6.5	6.5	5.5	5.0	5.0
15	6.0	5.5	6.0	8.5	8.5	8.5	6.5	6.0	6.5	5.5	5.0	5.0
16	6.0	5.5	6.0	9.0	8.5	8.5	---	---	---	5.0	5.0	5.0
17	6.5	5.5	6.0	9.0	8.5	8.5	---	---	---	5.5	5.0	5.0
18	6.5	5.5	6.0	9.0	8.0	8.5	---	---	---	5.5	5.0	5.0
19	6.5	5.5	6.0	9.0	8.0	8.5	---	---	---	5.0	5.0	5.0
20	6.5	5.5	6.0	8.5	8.0	8.5	---	---	---	5.0	5.0	5.0
21	6.5	6.0	6.0	8.5	8.0	8.5	---	---	---	5.5	5.0	5.0
22	6.5	6.0	6.0	8.5	8.0	8.0	---	---	---	5.0	5.0	5.0
23	6.5	6.0	6.5	8.5	8.0	8.0	---	---	---	5.5	5.0	5.0
24	7.0	6.0	6.5	8.5	8.0	8.0	---	---	---	5.5	5.0	5.0
25	7.0	6.0	6.5	8.5	8.0	8.0	---	---	---	5.5	4.5	5.0
26	7.0	6.5	6.5	8.5	8.0	8.0	---	---	---	5.5	4.5	5.0
27	7.0	6.5	6.5	8.0	8.0	8.0	---	---	---	5.5	5.0	5.0
28	7.0	6.5	7.0	8.0	7.5	8.0	---	---	---	5.0	5.0	5.0
29	7.5	7.0	7.0	8.0	7.5	7.5	---	---	---	5.0	5.0	5.0
30	7.5	7.0	7.5	8.0	6.5	7.5	---	---	---	5.5	5.0	5.0
31	8.0	7.0	7.5	---	---	---	---	---	---	5.0	4.5	4.5
MONTH	8.0	5.5	6.0	9.0	6.5	8.5	---	---	---	---	---	---

UPPER ROGUE RIVER BASIN

14335075 ROGUE RIVER AT MCLEOD, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5.0	4.5	5.0	5.0	4.5	4.5	6.5	5.0	5.5	8.0	7.0	7.5
2	5.5	4.5	4.5	5.0	4.5	4.5	5.5	5.0	5.0	7.5	7.0	7.5
3	5.5	4.5	4.5	5.0	4.5	4.5	5.5	4.5	5.0	8.5	7.0	7.5
4	5.5	4.5	4.5	5.0	4.5	4.5	5.5	4.5	5.0	8.5	7.5	8.5
5	5.0	4.5	4.5	5.0	4.5	4.5	5.5	4.5	5.0	8.5	8.0	8.0
6	5.5	4.5	4.5	5.5	4.5	4.5	5.5	5.0	5.0	8.5	7.5	8.0
7	5.0	4.5	4.5	5.5	4.5	4.5	6.0	5.0	5.5	8.5	8.0	8.5
8	5.0	4.5	5.0	5.5	4.5	5.0	6.5	5.5	6.0	8.5	8.0	8.0
9	5.0	5.0	5.0	5.0	4.5	4.5	5.5	5.0	5.5	8.5	8.5	8.5
10	5.5	4.5	5.0	5.5	4.5	4.5	6.0	5.0	5.5	9.0	8.5	8.5
11	5.5	4.5	4.5	5.5	4.0	4.5	6.0	5.0	5.5	9.0	8.5	8.5
12	5.0	4.5	4.5	5.5	4.0	4.5	6.0	5.0	5.5	9.0	7.5	8.5
13	5.0	4.5	4.5	6.0	4.5	5.0	6.0	5.5	5.5	8.5	8.5	8.5
14	5.5	4.0	4.5	5.5	4.5	5.0	5.5	5.5	5.5	9.0	8.0	8.5
15	5.0	4.5	4.5	5.5	4.0	5.0	6.5	5.5	6.0	9.5	8.5	9.0
16	5.5	4.0	4.5	6.0	4.5	5.0	6.0	5.5	5.5	9.0	8.0	8.5
17	4.5	4.0	4.5	6.0	4.5	5.0	6.0	5.5	6.0	9.0	8.0	8.5
18	5.5	4.5	4.5	6.0	4.5	5.0	6.0	5.5	5.5	9.0	7.5	8.5
19	5.5	4.0	4.5	6.0	4.5	5.0	6.0	5.5	5.5	9.0	8.0	8.5
20	5.5	4.0	4.5	5.5	4.5	5.0	6.0	6.0	6.0	9.0	7.5	8.0
21	5.5	4.5	4.5	5.5	4.5	5.0	7.0	6.0	6.5	9.0	8.0	8.5
22	5.5	4.0	4.5	5.5	4.5	5.0	7.5	7.0	7.0	---	---	---
23	5.5	4.0	4.5	5.5	4.5	5.0	7.5	7.0	7.0	---	---	---
24	5.0	4.5	4.5	5.0	4.5	5.0	7.5	6.5	7.0	---	---	---
25	5.0	4.5	4.5	6.0	5.0	5.5	8.0	6.5	7.5	---	---	---
26	5.5	4.5	4.5	5.5	4.5	5.0	8.5	7.0	7.5	---	---	---
27	5.0	4.5	4.5	6.0	4.5	5.0	8.5	7.5	8.0	9.0	8.0	8.5
28	5.5	4.5	5.0	6.0	4.5	5.0	8.0	7.5	7.5	9.0	8.0	8.5
29	5.0	4.5	4.5	5.5	5.0	5.0	8.0	6.5	7.5	9.0	8.0	8.5
30	---	---	---	6.0	4.5	5.0	7.5	7.0	7.5	9.0	8.0	8.5
31	---	---	---	6.0	4.5	5.0	---	---	---	9.0	8.0	8.5
MONTH	5.5	4.0	4.5	6.0	4.0	5.0	8.5	4.5	6.0	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	8.5	8.5	8.5	9.0	7.5	8.5	12.5	11.5	12.0	11.5	10.5	11.0
2	9.0	8.0	8.5	9.0	7.5	8.5	13.0	11.0	12.0	11.5	11.0	11.0
3	9.0	8.0	8.5	9.0	7.5	8.5	13.0	11.0	12.5	11.5	11.0	11.5
4	9.0	8.0	8.5	9.0	8.0	8.5	13.0	11.5	12.5	11.5	11.0	11.5
5	9.0	8.0	8.5	9.0	8.0	8.5	12.5	11.5	12.5	11.5	11.0	11.5
6	9.0	8.5	8.5	9.0	8.0	8.5	13.0	12.0	12.5	11.5	11.0	11.5
7	8.5	8.5	8.5	9.5	8.0	9.0	13.0	11.5	12.5	11.5	10.0	11.0
8	9.0	8.5	8.5	9.5	8.0	9.0	13.0	11.5	12.5	10.5	10.0	10.5
9	8.5	8.5	8.5	9.5	8.5	9.0	13.5	12.0	12.5	10.5	10.0	10.5
10	9.5	8.5	9.0	9.5	8.5	9.0	13.5	12.0	13.0	10.5	10.0	10.5
11	9.5	8.0	9.0	9.5	8.5	9.5	13.5	12.0	13.0	11.0	10.0	10.5
12	9.5	8.0	9.0	9.5	8.5	9.5	13.5	12.0	13.0	11.0	7.0	9.0
13	9.5	8.0	9.0	10.0	9.0	9.5	13.5	12.0	13.0	7.5	6.5	7.0
14	9.5	8.5	9.0	11.0	8.5	10.0	13.5	12.5	13.0	7.5	6.5	7.0
15	9.5	8.0	9.0	11.0	9.5	10.5	13.5	12.0	13.0	7.5	6.5	7.0
16	9.0	8.0	9.0	11.0	10.0	11.0	13.5	11.0	12.5	7.5	6.5	7.0
17	9.5	8.0	9.0	11.5	10.0	11.0	12.0	11.0	11.5	7.5	6.5	7.0
18	9.5	8.5	9.0	11.5	10.0	11.0	12.0	11.0	11.5	7.0	6.5	7.0
19	9.5	8.5	9.0	11.5	10.5	11.0	12.0	11.0	11.5	7.0	6.0	6.5
20	9.5	8.5	9.0	12.0	10.5	11.0	12.0	11.5	12.0	6.5	6.0	6.5
21	9.5	8.5	9.0	11.5	10.5	11.0	12.5	11.5	12.0	7.0	6.0	6.5
22	9.5	8.5	9.5	12.0	10.5	11.5	12.5	11.5	12.0	7.0	6.0	6.5
23	10.0	8.5	9.5	12.0	10.5	11.5	12.5	12.0	12.0	7.0	6.0	6.5
24	9.5	9.0	9.5	12.0	11.0	11.5	12.5	12.0	12.0	7.0	6.0	6.5
25	9.5	9.0	9.5	12.0	11.0	11.5	12.5	12.0	12.5	6.5	6.0	6.5
26	10.0	9.0	9.5	12.0	11.0	11.5	13.0	12.0	12.5	7.0	6.0	6.5
27	10.0	8.5	9.0	12.5	11.0	12.0	13.0	12.0	12.5	6.5	6.0	6.5
28	9.0	8.5	9.0	12.5	11.0	12.0	13.0	12.0	12.5	6.5	6.0	6.5
29	9.5	8.0	9.0	12.5	11.0	12.0	13.0	12.0	12.5	7.0	6.0	6.5
30	9.0	7.5	8.5	12.5	11.5	12.0	12.5	10.5	12.0	7.0	6.0	6.5
31	---	---	---	12.5	11.5	12.0	11.0	10.5	11.0	---	---	---
MONTH	10.0	7.5	9.0	12.5	7.5	10.5	13.5	10.5	12.5	11.5	6.0	8.5

UPPER ROGUE RIVER BASIN

257

14335200 SOUTH FORK BIG BUTTE CREEK ABOVE WILLOW CREEK, NEAR BUTTE FALLS, OR

LOCATION.--Lat 42°31'15", long 122°29'05", in SE 1/4 sec.17, T.35 S., R.3 E., Jackson County, Hydrologic Unit 17100307, on right bank about 200 ft upstream from Willow Creek, 4.0 mi east of town of Butte Falls, and at mile 18.4.

DRAINAGE AREA.--67.6 mi².

PERIOD OF RECORD.--October 1985 to current year. Records prior to October 1978 published by the Oregon State Water Resources Department. Records for October 1978 to September 1985 available at the Oregon Water Resources Department, Salem, OR.

GAGE.--Water-stage recorder. May 1935 to October 1949, nonrecording gage and October 1949 to December 1964, water-stage recorder at different datum.

AVERAGE DISCHARGE.--51 years (1936-50, 1952-64, 1966-88), 79.7 ft³/s, 57,740 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,560 ft³/s Mar. 3, 1972, gage height, 7.03 ft; minimum discharge, 20 ft³/s Jan. 1, Aug. 24, 25, 29, Sept. 2-4, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 6	2400	*154	*3.20				

Minimum discharge, 20 ft³/s Jan. 1, Aug. 24, 25, 29, Sept. 2-4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	27	43	24	50	48	38	58	91	43	25	23
2	25	30	75	26	45	44	38	57	92	42	25	22
3	25	29	47	32	43	49	45	64	94	41	25	22
4	23	29	44	35	43	55	43	63	109	41	25	21
5	24	29	38	32	40	63	39	64	132	41	24	23
6	25	29	45	30	40	64	39	65	149	39	24	24
7	25	29	47	30	39	58	43	81	148	36	24	24
8	26	29	46	33	47	56	40	90	136	35	25	24
9	26	31	58	54	59	68	39	92	131	35	24	24
10	26	29	93	58	58	60	38	86	130	35	23	24
11	26	29	55	64	56	57	38	84	114	34	23	24
12	27	35	43	51	55	55	38	89	105	33	24	24
13	27	36	37	49	53	53	39	106	96	33	25	24
14	28	35	35	62	50	52	44	91	88	33	26	23
15	28	34	35	87	48	50	44	85	80	33	26	22
16	28	38	35	71	46	48	42	92	77	33	26	22
17	27	39	33	59	44	46	41	94	72	32	26	22
18	27	32	32	50	43	44	41	83	68	31	25	23
19	27	30	32	45	41	44	41	78	66	30	26	31
20	27	34	30	45	40	43	41	74	62	28	25	30
21	27	38	37	45	39	44	59	70	59	29	25	27
22	27	33	39	43	39	43	63	67	56	29	25	27
23	27	33	35	45	38	48	56	65	54	29	25	27
24	27	37	28	42	38	45	52	64	52	28	24	26
25	27	35	28	40	37	43	49	61	49	28	21	26
26	27	31	30	39	37	44	48	58	49	28	23	26
27	27	31	30	41	37	43	48	57	47	28	23	27
28	27	30	30	44	38	41	48	70	46	28	22	26
29	27	29	29	51	39	41	60	75	46	28	22	25
30	28	30	28	56	---	39	64	65	44	28	23	25
31	26	---	27	52	---	38	---	66	---	27	23	---
TOTAL	819	960	1244	1435	1282	1526	1358	2314	2542	1018	752	738
MEAN	26.4	32.0	40.1	46.3	44.2	49.2	45.3	74.6	84.7	32.8	24.3	24.6
MAX	28	39	93	87	59	68	64	106	149	43	26	31
MIN	23	27	27	24	37	38	38	57	44	27	21	21
AC-FT	1620	1900	2470	2850	2540	3030	2690	4590	5040	2020	1490	1460

CAL YR 1987	TOTAL 16275	MEAN 44.6	MAX 111	MIN 23	AC-FT 32280
WTR YR 1988	TOTAL 15988	MEAN 43.7	MAX 149	MIN 21	AC-FT 31710

UPPER ROGUE RIVER BASIN

14335500 SOUTH FORK BIG BUTTE CREEK NEAR BUTTE FALLS, OR

LOCATION.--Lat 42°32'25", long 122°33'15", in NE 1/4 SW 1/4 sec.11, T.35 S., R.2 E., Jackson County, Hydrologic Unit 17100307, on right bank 10 ft downstream from Ginger Creek, 0.6 mi east of town of Butte Falls, and at mile 14.0.

DRAINAGE AREA.--138 mi².

PERIOD OF RECORD.--September 1910 to October 1911 (published as "at Butte Falls"), August to October 1915, October 1917 to September 1922, March 1925 to current year. Monthly discharge only August, September 1915, published in WSP 1318.

REVISED RECORDS.--WSP 1288: 1911, 1918-19, 1921-22, 1929. WSP 1318: 1918-19. WSP 1738: Drainage area. WDR OR-86-2: 1984(P,M), 1985(P,M).

GAGE.--Water-stage recorder. Concrete control since Oct. 1, 1968. Elevation of gage is 2,360 ft, from river-profile map. Sept. 21, 1910, to Sept. 30, 1922, nonrecording gage at site 300 ft upstream at different datum.

REMARKS.--Records fair. Flow slightly regulated since 1952 by Willow Creek Reservoir, capacity, 7,320 acre-ft. Diversions for irrigation upstream from station and for municipal water supply for Medford (since 1927) and Butte Falls.

AVERAGE DISCHARGE.--69 years (water years 1911, 1918-22, 1926-88), 153 ft³/s, 110,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,600 ft³/s Dec. 22, 1964, gage height, 7.65 ft, from rating curve extended above 1,600 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 29 ft³/s Sept. 26, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 450 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 7	1600	*272	*1.64				
Minimum discharge, 31 ft ³ /s Oct. 13.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	39	64	53	111	83	62	88	144	65	63	71
2	39	41	111	53	105	77	60	86	152	64	65	58
3	39	40	79	61	100	79	64	97	151	63	64	59
4	38	39	79	67	92	85	61	99	174	62	64	59
5	39	39	81	70	87	95	57	92	204	66	63	59
6	39	39	84	69	85	96	56	94	244	76	63	58
7	39	39	83	70	85	89	67	115	261	72	63	57
8	39	40	81	71	91	88	59	127	244	70	64	58
9	40	41	98	103	111	105	59	130	227	69	62	57
10	39	40	167	120	108	96	54	122	214	68	62	58
11	40	40	108	136	105	92	54	118	187	70	63	58
12	40	46	94	113	103	88	54	124	169	73	64	59
13	39	46	91	107	102	87	54	143	154	72	64	60
14	40	45	86	131	99	86	65	123	142	72	64	59
15	38	43	82	210	97	84	68	116	129	72	66	59
16	40	51	80	161	87	81	67	124	122	71	66	57
17	39	58	79	e130	85	80	66	126	114	70	67	58
18	39	51	78	e110	85	77	66	112	106	70	69	59
19	39	49	65	e95	85	75	65	105	100	70	74	68
20	39	51	61	e95	85	74	64	100	95	69	73	65
21	40	57	69	e92	83	74	87	97	89	69	72	61
22	40	53	76	e90	78	73	91	97	85	69	74	61
23	40	52	69	e90	73	81	84	97	82	68	81	61
24	40	56	61	e88	73	77	79	97	78	68	81	60
25	40	55	59	e85	70	74	77	93	75	67	78	60
26	40	50	59	e80	71	74	75	91	75	67	79	61
27	40	50	59	e85	74	73	75	88	72	67	79	62
28	38	49	60	e90	71	75	74	107	69	66	78	61
29	39	48	59	e105	70	72	87	119	68	65	77	60
30	39	49	57	120	---	67	94	106	67	65	77	55
31	39	---	56	117	---	66	---	105	---	64	77	---
TOTAL	1218	1396	2435	3067	2571	2523	2045	3338	4093	2119	2156	1798
MEAN	39.3	46.5	78.5	98.9	88.7	81.4	68.2	108	136	68.4	69.5	59.9
MAX	40	58	167	210	111	105	94	143	261	76	81	71
MIN	38	39	56	53	70	66	54	86	67	62	62	55
AC-FT	2420	2770	4830	6080	5100	5000	4060	6620	8120	4200	4280	3570

CAL YR 1987 TOTAL 31166 MEAN 85.4 MAX 223 MIN 38 AC-FT 61820
WTR YR 1988 TOTAL 28759 MEAN 78.6 MAX 261 MIN 38 AC-FT 57040

e Estimated

UPPER ROGUE RIVER BASIN

259

14337500 BIG BUTTE CREEK NEAR MCLEOD, OR

LOCATION.--Lat 42°39'05", long 122°41'25", in NE 1/4 NW 1/4 sec.3, T.34 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on right bank 225 ft upstream from county road bridge, 0.9 mi south of McLeod, and at mile 0.64.

DRAINAGE AREA.--245 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to September 1957. October 1967 to current year.

REVISED RECORDS.--WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,525.95 ft above National Geodetic Vertical Datum of 1929. Oct. 9, 1945, to Sept. 30, 1957, nonrecording gage at site 260 ft downstream at datum 0.53 ft higher.

REMARKS.--No estimated daily discharges. Water-discharge records good. Slight regulation by fish hatchery 600 ft upstream from station. Several diversions in the vicinity of Butte Falls, the two largest being the city of Medford diversion and Eagle Point Irrigation District Canal.

AVERAGE DISCHARGE.--33 years, 273 ft³/s, 197,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,950 ft³/s Dec. 22, 1955, gage height, 12.75 ft, site and datum then in use, from rating curve extended above 3,300 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 6.4 ft³/s June 23, 24, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 18.6 ft, present site, from floodmark by local resident, discharge, 16,800 ft³/s, from rating curve, at former site, extended above 9,000 ft³/s and field estimate of overflow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 14	2400	*1,880	*6.72	No other peak greater than base discharge.			
Minimum discharge, 37 ft ³ /s many days in August and September.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	122	53	94	76	229	128	84	116	180	55	42	51
2	122	53	268	75	187	114	86	103	184	53	45	42
3	122	52	151	87	160	109	97	107	171	51	45	44
4	118	52	129	108	146	118	92	113	197	63	42	38
5	116	52	108	108	136	142	87	113	217	52	43	39
6	116	52	147	98	132	145	79	116	284	58	43	39
7	116	52	241	99	126	134	77	231	331	53	42	39
8	117	52	230	143	147	125	75	208	310	52	40	38
9	119	55	295	460	225	209	70	200	284	51	39	39
10	120	53	608	431	215	178	79	171	276	51	40	37
11	119	53	301	516	201	146	65	151	224	51	39	42
12	119	62	182	359	190	137	65	150	194	50	42	40
13	120	68	137	297	176	129	64	217	162	50	42	41
14	118	64	115	619	157	123	69	159	155	57	40	42
15	118	63	121	1030	150	118	69	140	135	51	42	39
16	95	66	153	578	142	113	67	142	121	50	42	39
17	49	70	158	398	132	106	66	157	113	56	43	41
18	49	63	147	301	125	142	63	130	103	54	43	41
19	49	61	132	243	116	184	67	119	96	47	46	51
20	48	62	113	208	110	179	68	111	88	48	47	50
21	48	69	137	209	106	182	134	102	80	47	45	45
22	50	65	169	186	103	179	157	99	75	46	46	45
23	60	63	148	174	100	187	127	98	71	47	52	47
24	52	71	115	170	98	189	111	97	68	46	54	47
25	52	73	95	150	96	176	102	93	67	45	52	48
26	51	63	90	141	102	172	98	87	68	43	51	48
27	50	61	86	144	94	175	96	82	66	43	52	54
28	51	61	87	160	93	137	92	96	64	43	52	53
29	51	60	86	196	94	91	107	124	63	43	52	47
30	51	63	83	266	---	90	113	107	54	42	53	47
31	51	---	80	243	---	87	---	100	---	42	54	---
TOTAL	2639	1807	5006	8273	4088	4444	2626	4039	4501	1540	1410	1313
MEAN	85.1	60.2	161	267	141	143	87.5	130	150	49.7	45.5	43.8
MAX	122	73	608	1030	229	209	157	231	331	63	54	54
MIN	48	52	80	75	93	87	63	82	54	42	39	37
AC-FT	5230	3580	9930	16410	8110	8810	5210	8010	8930	3050	2800	2600
CAL YR 1987	TOTAL 49231	MEAN 135	MAX 932	MIN 42	AC-FT 97650							
WTR YR 1988	TOTAL 41686	MEAN 114	MAX 1030	MIN 37	AC-FT 82680							

UPPER ROGUE RIVER BASIN

14337500 BIG BUTTE CREEK NEAR MCLEOD, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1970 to current year.

INSTRUMENTATION.--Temperature recorder since August 1970.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 24.0°C at times in 1973, 1977, 1979-81; minimum, 0.0°C at times in 1971, 1972, 1977-80, 1987.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 23.0°C July 21, 25, 26, 30; minimum, 1.5°C Feb. 3.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	13.5	9.5	11.5	10.5	10.0	10.0	8.0	7.0	7.5	4.0	3.0	3.5
2	13.5	10.0	11.5	10.0	9.0	9.5	8.0	7.5	8.0	3.5	2.0	2.5
3	13.5	10.0	11.5	10.0	8.0	9.0	9.0	7.5	8.5	5.0	3.5	4.5
4	13.5	9.5	11.5	9.0	6.5	8.0	8.5	8.0	8.5	6.0	5.0	5.5
5	13.0	9.0	11.0	9.5	6.5	8.0	9.0	8.0	8.5	5.5	5.0	5.5
6	13.0	9.0	11.0	9.5	7.5	8.5	9.0	7.5	8.5	6.0	5.0	5.5
7	12.5	9.5	11.0	11.0	8.5	9.5	7.5	6.0	6.5	5.5	4.5	5.0
8	12.5	9.0	10.5	8.5	7.0	8.0	6.5	6.0	6.5	5.5	5.0	5.0
9	12.5	9.0	10.5	10.5	8.5	9.5	8.5	6.0	7.0	6.0	5.5	5.5
10	11.5	9.0	10.5	9.0	7.0	8.0	9.0	7.5	8.5	6.5	6.0	6.5
11	12.0	9.0	10.5	9.0	7.5	8.0	7.5	6.5	7.0	6.0	5.0	5.0
12	12.0	9.0	10.5	10.0	9.0	9.5	6.0	5.0	6.0	5.0	4.0	4.5
13	11.5	8.5	10.0	10.5	9.5	10.0	5.0	4.0	4.0	5.5	4.5	5.0
14	11.0	7.5	9.0	9.5	7.0	8.5	4.5	4.0	4.0	6.5	5.5	6.0
15	10.5	7.0	8.5	6.5	5.5	5.5	5.0	4.0	4.5	5.5	4.5	5.0
16	10.0	6.5	8.5	8.0	6.0	7.0	4.0	4.0	4.0	5.0	3.5	4.5
17	10.5	7.0	8.5	10.0	8.0	9.0	5.0	4.5	4.5	4.0	2.5	3.5
18	10.5	7.0	8.5	8.5	7.0	8.0	5.5	5.0	5.0	4.0	2.5	3.0
19	10.5	7.0	9.0	8.5	6.5	7.5	5.5	4.5	5.0	4.0	2.5	3.5
20	10.5	7.0	9.0	9.0	8.0	8.5	4.5	4.0	4.5	4.5	3.0	4.0
21	10.5	7.0	9.0	9.0	8.0	8.5	6.0	4.5	5.0	5.5	4.5	5.0
22	11.0	8.0	9.5	7.5	6.5	7.0	6.0	5.0	5.5	5.5	4.0	5.0
23	11.0	9.0	10.0	8.5	7.0	7.5	5.0	4.5	4.5	6.0	5.0	5.5
24	11.0	8.0	9.5	7.0	6.0	6.5	4.5	3.0	3.5	5.0	3.5	4.5
25	11.0	8.0	9.5	7.0	6.0	6.5	3.0	2.0	2.5	5.0	3.0	4.0
26	11.5	8.5	10.0	6.5	4.5	5.5	3.0	2.0	2.5	5.0	3.0	4.0
27	10.5	7.5	9.0	5.5	4.0	4.5	4.0	2.5	3.0	6.5	5.0	5.5
28	9.5	7.5	8.5	5.5	3.5	4.5	5.0	4.0	4.5	6.5	5.0	5.5
29	11.5	8.5	10.0	4.5	3.0	4.0	5.0	4.0	4.5	7.0	6.0	6.5
30	11.5	10.0	10.5	7.0	4.5	6.0	4.0	3.5	4.0	6.0	5.0	5.5
31	11.5	9.5	10.5	---	---	---	4.5	4.0	4.0	5.0	4.0	4.5
MONTH	13.5	6.5	10.0	11.0	3.0	7.5	9.0	2.0	5.5	7.0	2.0	5.0

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN			
	FEBRUARY				MARCH				APRIL				MAY		
1	5.5	4.0	4.5	8.5	7.0	8.0	13.0	7.0	10.0	10.5	7.0	9.0			
2	4.0	2.0	3.0	9.0	6.5	7.5	10.5	9.0	10.0	10.0	7.5	9.0			
3	4.0	1.5	3.0	9.0	8.0	8.5	12.0	9.0	10.0	12.5	8.5	10.0			
4	4.5	2.0	3.0	9.5	8.0	9.0	11.5	7.5	9.0	12.0	7.5	9.5			
5	4.5	2.0	3.5	9.5	8.0	8.5	12.0	6.5	9.0	9.5	8.0	9.0			
6	5.5	3.0	4.5	9.0	6.5	8.0	13.0	9.0	11.0	10.0	8.0	9.0			
7	6.0	3.5	5.0	8.5	4.5	6.5	11.5	8.5	10.0	12.5	8.5	10.5			
8	7.5	5.5	6.5	9.0	5.5	7.5	11.5	5.5	8.5	12.0	9.5	10.5			
9	8.5	7.0	7.5	8.0	6.0	7.0	13.5	6.5	10.0	11.5	8.0	10.0			
10	9.0	7.0	8.0	7.5	4.0	5.5	14.5	8.0	11.0	14.5	8.5	11.5			
11	7.5	5.5	6.5	7.5	3.0	5.5	16.0	10.0	13.0	17.0	10.5	13.5			
12	7.0	4.5	6.0	8.5	3.5	6.0	14.5	10.5	13.0	15.5	11.5	13.5			
13	7.0	5.0	6.0	9.0	4.0	6.5	13.0	11.5	12.0	13.5	11.0	12.0			
14	6.5	4.0	5.5	9.5	5.0	7.0	11.5	10.0	10.5	15.0	9.5	12.0			
15	7.5	5.0	6.0	9.0	4.0	6.5	14.5	9.0	11.5	16.5	10.5	13.5			
16	6.5	4.0	5.0	9.5	4.5	7.0	12.5	11.0	12.0	14.5	11.5	12.5			
17	5.5	3.5	4.5	10.0	4.5	7.0	13.5	10.0	11.5	14.5	9.0	11.5			
18	7.0	4.5	5.5	10.0	5.5	7.5	12.5	9.5	11.0	15.0	10.5	12.5			
19	7.0	3.5	5.5	10.5	6.5	8.5	12.0	10.0	10.5	16.0	9.5	12.5			
20	7.5	4.0	6.0	9.5	6.5	8.0	10.5	9.0	9.5	17.0	10.0	13.5			
21	8.0	4.5	6.0	9.0	7.5	8.0	9.5	8.5	9.0	18.0	11.5	15.0			
22	8.0	4.5	6.0	9.0	6.5	8.0	11.0	8.0	9.5	17.0	13.0	15.0			
23	8.0	4.0	6.0	10.0	7.5	8.5	12.0	7.5	10.0	15.0	12.0	13.0			
24	8.5	5.0	7.0	7.5	6.0	7.0	12.0	8.5	10.5	16.0	10.0	13.0			
25	8.5	5.0	7.0	11.5	6.5	9.0	14.0	8.5	11.5	17.0	11.5	14.0			
26	10.0	7.0	8.5	9.5	8.0	8.5	15.5	10.5	13.0	16.0	12.0	14.0			
27	10.0	7.0	8.5	9.0	6.5	7.5	14.5	11.5	13.0	17.5	12.5	14.5			
28	10.5	7.5	9.0	9.5	5.0	7.0	13.0	11.0	12.5	14.5	11.0	13.0			
29	8.5	6.0	7.5	10.0	7.0	8.0	12.0	10.0	11.0	12.5	9.5	11.0			
30	---	---	---	11.0	5.5	8.0	10.5	8.0	9.0	14.5	9.0	11.5			
31	---	---	---	11.5	5.5	8.5	---	---	---	12.5	11.0	11.5			
MONTH	10.5	1.5	6.0	11.5	3.0	7.5	16.0	5.5	10.5	18.0	7.0	12.0			
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN			
	JUNE				JULY				AUGUST				SEPTEMBER		
1	12.5	10.5	11.5	19.5	13.5	16.5	21.0	15.0	18.0	18.5	13.0	16.0			
2	14.0	10.5	12.5	21.0	14.5	17.5	20.0	13.5	17.0	19.5	13.5	16.5			
3	14.5	12.0	13.0	19.5	15.5	17.5	21.0	14.0	17.5	19.5	14.0	17.0			
4	14.0	11.0	12.5	17.5	13.0	15.0	21.5	14.5	18.0	19.5	14.0	17.0			
5	12.0	10.5	11.5	18.0	12.5	15.0	18.5	15.5	17.0	19.0	14.0	16.5			
6	11.5	9.5	10.5	18.5	11.5	15.0	20.0	14.0	17.0	18.0	13.0	15.5			
7	11.0	9.5	10.5	20.0	13.0	16.5	19.5	13.0	16.5	18.0	12.5	15.5			
8	12.0	8.5	10.5	21.0	14.0	17.5	20.0	13.0	16.5	18.0	12.5	15.0			
9	11.5	10.0	11.0	21.5	15.0	18.0	21.0	14.5	17.5	17.5	12.0	14.5			
10	14.0	9.0	11.0	21.0	14.5	17.5	21.0	15.0	18.0	15.5	11.0	13.5			
11	15.0	11.0	13.0	18.5	14.5	16.5	21.0	15.0	18.0	15.0	9.5	12.5			
12	16.0	11.0	13.5	20.5	14.0	17.0	20.0	14.5	17.0	15.5	10.5	13.0			
13	17.0	11.5	14.5	20.5	14.5	17.5	19.5	14.5	17.0	15.5	10.5	13.0			
14	18.5	13.0	15.5	20.5	15.5	18.0	17.0	13.5	15.5	15.5	10.5	13.0			
15	20.0	14.5	17.0	21.0	14.5	17.5	18.5	12.5	15.5	15.0	10.5	13.0			
16	20.0	15.0	17.5	20.5	14.0	17.5	19.0	12.5	15.5	15.5	11.0	13.0			
17	20.0	15.0	17.0	20.5	14.0	17.0	19.0	14.0	16.5	13.5	9.0	11.5			
18	20.5	14.5	17.5	21.5	14.5	17.5	18.5	12.5	15.5	13.0	7.5	10.5			
19	21.0	14.5	17.5	22.5	15.0	18.5	19.0	13.0	16.0	12.0	10.0	11.0			
20	21.5	15.5	18.0	22.5	15.5	19.0	19.0	13.0	16.0	13.0	9.5	11.0			
21	20.0	15.0	17.5	23.0	16.5	19.5	19.0	12.5	15.5	13.5	8.5	11.0			
22	20.0	15.0	17.5	22.5	16.0	19.0	19.5	13.0	16.0	14.0	9.5	11.5			
23	20.5	15.5	18.0	22.0	15.5	18.5	18.0	13.5	16.0	14.0	9.5	12.0			
24	20.5	14.0	17.0	22.0	15.0	18.5	19.0	13.5	16.0	14.0	9.5	11.5			
25	17.5	15.0	16.5	23.0	16.0	19.5	18.5	13.0	15.5	13.0	9.5	11.5			
26	19.0	13.0	15.5	23.0	17.0	20.0	18.0	12.5	15.0	14.0	10.0	12.0			
27	18.5	13.5	15.5	22.5	16.5	19.5	18.5	13.0	15.5	14.5	11.5	12.5			
28	16.5	13.5	14.5	22.0	15.5	18.5	19.0	13.5	16.0	14.0	9.5	12.0			
29	17.0	11.0	14.0	22.0	15.5	18.5	18.5	13.5	16.0	14.5	10.0	12.0			
30	19.0	12.0	15.0	23.0	16.0	19.5	18.5	13.5	16.0	15.0	10.5	12.5			
31	---	---	---	22.5	16.5	19.5	18.5	13.0	15.5	---	---	---			
MONTH	21.5	8.5	14.5	23.0	11.5	18.0	21.5	12.5	16.5	19.5	7.5	13.0			
YEAR	23.0	1.5	10.5												

UPPER ROGUE RIVER BASIN

14337600 ROGUE RIVER NEAR MCLEOD, OR

LOCATION.--Lat 42°39'20", long 122°42'50", in SW 1/4 sec.33, T.33 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on left bank at Obstinate J Ranch, 1.3 mi downstream from Big Butte Creek, 1.6 mi southwest of McLeod, and at mile 154.0.

DRAINAGE AREA.--938 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,489.08 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Water-discharge records excellent. Flow regulated since February 1977 by Lost Creek Lake (station 14335040). Diversions for irrigation upstream from station; most of low flow of Big Butte Creek is diverted near Butte Falls.

AVERAGE DISCHARGE.--23 years, 2,134 ft³/s, 1,546,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s Mar. 3, 1972, gage height, 12.24 ft; minimum discharge, 468 ft³/s Feb. 18, 1977, result of closure of Lost Creek Dam, minimum prior to that time, 604 ft³/s Sept. 5, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1928, 20.35 ft Dec. 22, 1964, from floodmarks, discharge, 74,300 ft³/s, from slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,600 ft³/s Jan. 15, gage height, 3.76 ft; maximum gage height, 3.80 ft Jan. 15, from crest-stage gage; minimum discharge, 694 ft³/s Mar. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1370	1060	917	939	929	836	814	1300	2450	2010	1740	2280
2	1370	1060	1080	939	892	824	950	1410	3180	1980	1760	2270
3	1370	978	964	939	864	795	1040	1710	2720	1980	1770	2280
4	1320	880	950	947	850	803	1040	1830	2480	1990	1760	2270
5	1130	880	934	957	838	854	1100	1740	2490	1980	1750	2280
6	1100	883	960	955	836	856	1370	1750	2500	1980	1760	2270
7	1100	882	1050	946	830	829	1600	2200	2580	1960	1760	2120
8	1120	874	1040	956	838	823	1560	2260	2460	1950	1760	1860
9	1120	874	1110	1200	907	899	1560	2270	2420	1940	1750	1750
10	1120	871	1480	1150	908	887	1560	2160	2390	1940	1750	1750
11	1120	862	1140	1230	904	862	1550	2110	2110	1940	1750	1750
12	1120	905	1020	1040	902	850	1560	2320	2020	1950	1850	1650
13	1130	921	979	1100	890	835	1550	2510	2080	1950	1960	1560
14	1130	921	953	1790	868	824	1550	2450	2140	1960	1980	1580
15	1130	912	966	3290	858	820	1560	2180	2110	1950	2150	1430
16	1110	904	999	3340	862	817	1560	2170	2100	1910	2270	1300
17	1070	906	1000	2830	851	808	1560	2350	2100	1890	2280	1300
18	1060	909	988	2290	841	841	1560	2090	2110	1890	2270	1300
19	1060	905	978	1650	821	885	1560	1900	2090	1890	2270	1320
20	1060	898	965	1200	812	880	1560	1870	2080	1810	2270	1330
21	1060	898	962	1190	808	888	1790	1860	2080	1760	2270	1310
22	1060	898	992	1200	806	870	1960	1860	2080	1770	2280	1310
23	1060	898	998	1180	798	871	1930	1850	2070	1770	2280	1310
24	1050	899	974	1180	794	873	1920	1790	2080	1770	2280	1310
25	1060	904	965	1050	802	852	1730	1710	2080	1760	2290	1310
26	1060	904	962	855	802	846	1360	1660	2070	1760	2280	1310
27	1060	904	954	838	790	871	1280	1650	2070	1750	2280	1320
28	1060	904	951	839	788	845	1200	1760	2080	1760	2300	1320
29	1060	904	951	876	792	796	1100	2020	2080	1760	2290	1300
30	1060	879	951	945	---	795	1200	1790	2060	1760	2290	1300
31	1060	---	949	929	---	796	---	1710	---	1750	2270	---
TOTAL	34760	27277	31082	40770	24481	26131	43634	60240	67360	58220	63720	48750
MEAN	1121	909	1003	1315	844	843	1454	1943	2245	1878	2055	1625
MAX	1370	1060	1480	3340	929	899	1960	2510	3180	2010	2300	2280
MIN	1050	862	917	838	788	795	814	1300	2020	1750	1740	1300
AC-FT	68950	54100	61650	80870	48560	51830	86550	119500	133600	115500	126400	96700

CAL YR 1987 TOTAL 580544 MEAN 1591 MAX 3130 MIN 797 AC-FT 1152000
WTR YR 1988 TOTAL 526425 MEAN 1438 MAX 3340 MIN 788 AC-FT 1044000

UPPER ROGUE RIVER BASIN

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14337600 ROGUE RIVER NEAR MCLEOD, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1970 to current year.

INSTRUMENTATION.--Temperature recorder since August 1970.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 18.0°C July 17, 18, Aug. 7, 1973; minimum, 0.5°C Jan. 3-5, 14, 15, 1971. Maximum since full operation of Lost Creek Lake, 15.0°C July 1, 1980; minimum, 3.0°C Feb. 2, 1979.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 14.5°C Aug. 10-15; minimum, 4.0°C Feb. 3.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.5	7.5	7.5	8.0	8.0	8.0	7.5	7.5	7.5	5.5	5.0	5.0
2	7.5	7.5	7.5	8.5	8.0	8.0	8.0	7.5	7.5	5.0	5.0	5.0
3	7.5	7.0	7.0	8.5	8.0	8.5	8.0	7.5	8.0	5.5	5.0	5.0
4	7.5	7.0	7.0	8.5	8.0	8.5	8.0	8.0	8.0	5.5	5.5	5.5
5	7.5	7.0	7.0	8.5	8.0	8.5	8.0	8.0	8.0	5.5	5.5	5.5
6	7.5	7.0	7.0	8.5	8.5	8.5	8.0	8.0	8.0	5.5	5.5	5.5
7	7.0	7.0	7.0	9.0	8.5	8.5	8.0	7.5	7.5	5.5	5.0	5.5
8	7.0	7.0	7.0	9.0	8.5	8.5	7.5	7.5	7.5	5.5	5.0	5.0
9	7.0	7.0	7.0	9.0	8.5	9.0	7.5	7.0	7.5	5.5	5.5	5.5
10	7.0	6.5	7.0	9.0	8.5	9.0	8.0	7.5	7.5	5.5	5.5	5.5
11	7.0	7.0	7.0	9.0	8.5	9.0	7.5	7.0	7.5	5.5	5.0	5.5
12	7.0	6.5	7.0	9.0	9.0	9.0	7.0	6.5	7.0	5.0	5.0	5.0
13	7.0	6.5	7.0	9.0	9.0	9.0	6.5	6.0	6.5	5.5	5.0	5.0
14	7.0	6.5	7.0	9.0	9.0	9.0	6.5	6.0	6.0	5.5	5.5	5.5
15	7.0	6.5	7.0	9.0	8.5	8.5	6.5	6.0	6.0	5.5	5.0	5.5
16	7.0	6.5	6.5	9.0	8.5	8.5	6.0	6.0	6.0	5.5	5.0	5.0
17	7.0	6.5	6.5	9.0	9.0	9.0	6.5	6.0	6.0	5.0	5.0	5.0
18	7.0	6.5	6.5	9.0	8.5	8.5	6.5	6.0	6.0	5.0	5.0	5.0
19	7.0	6.5	6.5	8.5	8.5	8.5	6.0	6.0	6.0	5.0	5.0	5.0
20	7.0	6.5	6.5	8.5	8.5	8.5	6.0	6.0	6.0	5.0	5.0	5.0
21	7.0	6.5	7.0	8.5	8.5	8.5	6.0	6.0	6.0	5.5	5.0	5.0
22	7.0	6.5	7.0	8.5	8.0	8.5	6.0	6.0	6.0	5.5	5.0	5.0
23	7.0	7.0	7.0	8.5	8.5	8.5	6.0	5.5	6.0	5.5	5.0	5.5
24	7.0	7.0	7.0	8.5	8.0	8.0	5.5	5.5	5.5	5.5	5.0	5.0
25	7.5	7.0	7.0	8.0	8.0	8.0	5.5	5.0	5.0	5.0	4.5	5.0
26	7.5	7.0	7.0	8.0	8.0	8.0	5.5	5.0	5.0	5.0	4.5	5.0
27	7.5	7.0	7.0	8.0	7.5	7.5	5.5	5.0	5.5	5.5	5.0	5.0
28	7.5	7.0	7.5	7.5	7.5	7.5	5.5	5.5	5.5	5.5	5.0	5.0
29	8.0	7.5	7.5	7.5	7.0	7.5	5.5	5.5	5.5	5.5	5.0	5.5
30	8.0	7.5	8.0	7.5	7.0	7.5	5.5	5.0	5.5	5.5	5.5	5.5
31	8.0	8.0	8.0	---	---	---	5.5	5.5	5.5	5.5	5.0	5.0
MONTH	8.0	6.5	7.0	9.0	7.0	8.5	8.0	5.0	6.5	5.5	4.5	5.0

14337600 ROGUE RIVER NEAR MCLEOD, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	5.0	5.0	5.0	6.0	6.0	6.0	6.5	6.0	6.0	8.5	8.0	8.0
2	5.0	4.5	4.5	6.0	6.0	6.0	6.5	6.0	6.0	8.5	8.0	8.0
3	4.5	4.0	4.5	6.5	6.0	6.0	6.5	6.0	6.0	8.5	8.0	8.0
4	4.5	4.5	4.5	6.0	6.0	6.0	6.0	5.5	6.0	9.0	8.5	8.5
5	4.5	4.5	4.5	6.5	6.0	6.0	6.0	5.5	6.0	9.0	8.5	9.0
6	5.0	4.5	4.5	6.5	6.0	6.0	6.0	6.0	6.0	9.0	8.5	8.5
7	5.0	4.5	5.0	6.0	5.5	6.0	6.0	5.5	6.0	9.0	8.5	9.0
8	5.5	5.0	5.0	6.0	5.5	6.0	6.5	6.0	6.0	9.0	9.0	9.0
9	6.0	5.5	5.5	6.0	6.0	6.0	6.5	6.0	6.0	9.0	9.0	9.0
10	6.0	5.5	6.0	6.0	5.5	5.5	6.0	6.0	6.0	9.5	9.0	9.0
11	6.0	5.5	5.5	5.5	5.0	5.5	6.5	6.0	6.0	9.5	9.0	9.5
12	5.5	5.0	5.5	5.5	5.0	5.5	6.5	6.0	6.0	9.5	9.5	9.5
13	5.5	5.5	5.5	6.0	5.0	5.5	6.5	6.0	6.5	9.5	9.0	9.5
14	5.5	5.0	5.0	6.0	5.5	5.5	6.5	6.0	6.0	9.5	9.0	9.5
15	5.5	5.0	5.5	6.0	5.0	5.5	6.5	6.0	6.5	10.0	9.5	9.5
16	5.5	5.0	5.5	6.0	5.0	5.5	6.5	6.0	6.5	10.0	9.5	9.5
17	5.5	5.0	5.0	6.0	5.0	5.5	6.5	6.0	6.5	9.5	9.0	9.5
18	5.5	5.0	5.5	6.0	5.5	5.5	6.5	6.5	6.5	10.0	9.0	9.5
19	5.5	5.0	5.5	6.5	5.5	6.0	6.5	6.5	6.5	9.5	9.5	9.5
20	5.5	5.0	5.5	6.5	6.0	6.0	6.5	6.5	6.5	9.5	9.0	9.5
21	5.5	5.0	5.5	6.5	6.0	6.0	7.0	6.5	6.5	9.5	9.0	9.5
22	5.5	5.0	5.5	6.5	6.0	6.0	7.5	7.0	7.5	10.0	9.5	9.5
23	5.5	5.0	5.5	6.5	6.0	6.0	8.0	7.5	7.5	10.0	9.0	9.5
24	6.0	5.5	5.5	6.0	6.0	6.0	7.5	7.5	7.5	10.0	9.0	9.5
25	6.0	5.5	5.5	6.5	6.0	6.0	8.0	7.5	8.0	10.0	9.5	9.5
26	6.0	5.5	6.0	6.5	6.0	6.5	8.5	8.0	8.5	10.0	9.5	9.5
27	6.0	6.0	6.0	6.5	6.0	6.0	9.0	8.5	8.5	10.0	9.5	9.5
28	6.5	6.0	6.0	6.0	5.5	6.0	8.5	8.5	8.5	10.0	9.5	9.5
29	6.5	6.0	6.0	6.5	6.0	6.0	8.5	8.5	8.5	9.5	9.5	9.5
30	---	---	---	6.0	5.5	6.0	8.5	8.0	8.0	10.0	9.0	9.5
31	---	---	---	6.5	5.5	6.0	---	---	---	10.0	9.5	9.5
MONTH	6.5	4.0	5.5	6.5	5.0	6.0	9.0	5.5	7.0	10.0	8.0	9.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	9.5	9.5	9.5	10.5	10.0	10.0	14.0	13.5	13.5	12.0	12.0	12.0
2	9.5	9.5	9.5	10.5	10.0	10.0	14.0	13.5	13.5	12.0	12.0	12.0
3	9.5	9.5	9.5	10.5	10.0	10.0	14.0	13.5	13.5	12.5	12.0	12.0
4	10.0	9.5	10.0	10.5	10.0	10.0	14.0	13.5	13.5	12.5	12.0	12.5
5	10.0	9.5	10.0	10.5	10.0	10.0	14.0	13.5	13.5	12.5	12.0	12.5
6	10.0	9.5	9.5	10.5	10.0	10.0	14.0	13.5	13.5	12.5	12.5	12.5
7	10.0	9.5	10.0	10.5	10.0	10.5	14.0	13.5	13.5	12.5	12.0	12.5
8	10.0	9.5	10.0	11.0	10.5	10.5	14.0	13.5	14.0	12.0	11.5	11.5
9	10.0	10.0	10.0	11.0	10.5	10.5	14.0	13.5	14.0	11.5	11.5	11.5
10	10.0	9.5	10.0	11.0	10.5	10.5	14.5	14.0	14.0	11.5	11.5	11.5
11	10.5	10.0	10.0	11.0	10.5	10.5	14.5	14.0	14.0	11.5	11.5	11.5
12	10.5	10.0	10.5	11.0	10.5	11.0	14.5	14.0	14.0	11.5	10.5	11.5
13	10.5	10.0	10.5	11.0	10.5	11.0	14.5	14.0	14.0	10.5	9.0	9.5
14	11.0	10.5	10.5	11.5	10.5	11.0	14.5	14.0	14.0	9.0	8.5	9.0
15	11.0	10.5	10.5	12.0	11.5	11.5	14.5	14.0	14.0	9.0	8.5	8.5
16	10.5	10.0	10.5	12.5	12.0	12.0	14.0	13.5	14.0	9.0	8.5	8.5
17	10.5	10.0	10.5	12.5	12.0	12.0	13.5	13.0	13.0	8.5	8.5	8.5
18	10.5	10.0	10.5	12.5	12.0	12.5	13.0	13.0	13.0	8.5	8.0	8.5
19	11.0	10.5	10.5	12.5	12.0	12.5	13.0	12.5	13.0	8.5	8.0	8.5
20	11.0	10.5	10.5	13.0	12.5	12.5	13.0	12.5	13.0	8.0	8.0	8.0
21	11.0	10.5	10.5	13.0	12.5	12.5	13.0	13.0	13.0	8.0	7.5	8.0
22	11.0	10.5	10.5	13.0	12.5	12.5	13.5	13.0	13.0	8.0	7.5	8.0
23	11.0	10.5	11.0	13.0	12.5	13.0	13.0	13.0	13.0	8.0	7.5	8.0
24	11.0	10.5	11.0	13.0	12.5	13.0	13.5	13.0	13.5	8.0	7.5	8.0
25	11.0	11.0	11.0	13.5	13.0	13.0	13.5	13.0	13.5	8.0	7.5	8.0
26	11.0	10.5	11.0	13.5	13.0	13.0	13.5	13.0	13.5	8.0	7.5	8.0
27	11.0	10.5	11.0	13.5	13.0	13.0	13.5	13.0	13.5	8.0	7.5	8.0
28	10.5	10.5	10.5	13.5	13.0	13.5	13.5	13.5	13.5	8.0	7.5	7.5
29	10.5	10.0	10.5	13.5	13.0	13.5	14.0	13.5	13.5	8.0	7.5	8.0
30	10.5	10.0	10.5	13.5	13.0	13.5	13.5	13.0	13.5	8.0	7.5	8.0
31	---	---	---	14.0	13.5	13.5	12.5	12.0	12.5	---	---	---
MONTH	11.0	9.5	10.5	14.0	10.0	11.5	14.5	12.0	13.5	12.5	7.5	9.5
YEAR	14.5	4.0	8.5									

UPPER ROGUE RIVER BASIN

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14337800 ELK CREEK NEAR CASCADE GORGE, OR

LOCATION.--Lat 42°46'25", long 122°40'15", in NW 1/4 sec.23, T.32 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on right bank 0.1 mi downstream from Sugarpine Creek, 6.5 mi northwest of town of Cascade Gorge, and at mile 10.7.

DRAINAGE AREA.--78.8 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1973 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,813.83 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--No estimated daily discharges. Water-discharge records good. No regulation. Many diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--15 years, 146 ft³/s, 25.16 in/yr, 105,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,780 ft³/s Jan. 15, 1974, gage height, 8.9 ft, from floodmark; minimum daily discharge, 0.72 ft³/s Aug. 24, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0400	*1,400	*5.47				
Minimum discharge, 1.6 ft ³ /s Sept. 7-10, 12.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	4.2	65	40	169	95	64	80	279	20	4.6	2.2
2	2.0	5.9	144	41	139	86	62	84	280	16	4.0	2.1
3	2.2	5.3	128	44	118	89	71	96	204	16	4.2	2.1
4	2.5	5.0	87	72	107	110	67	99	176	15	4.3	2.0
5	2.6	4.8	83	99	97	128	61	104	152	15	4.1	2.0
6	2.3	4.6	128	97	91	137	59	118	135	14	4.1	2.0
7	2.4	4.5	192	95	89	127	58	302	168	13	4.1	1.9
8	2.4	4.5	155	137	101	120	55	286	169	12	3.9	1.9
9	2.3	5.8	323	506	228	156	52	253	157	11	3.7	1.9
10	2.5	6.3	968	1020	232	153	49	203	144	11	3.8	1.9
11	2.5	5.6	320	612	212	135	49	167	122	11	3.5	2.0
12	2.4	15	172	334	190	120	48	149	104	11	3.6	2.0
13	2.4	20	109	250	175	108	45	160	89	10	3.6	2.0
14	2.6	23	87	504	150	98	50	133	79	9.2	3.8	2.0
15	2.8	15	77	763	137	90	46	116	70	8.7	4.0	1.9
16	2.8	24	69	417	120	80	45	115	62	9.0	3.7	2.1
17	2.6	26	59	329	107	74	41	113	56	8.1	3.8	2.2
18	2.9	19	53	212	98	68	39	99	49	7.5	3.8	2.0
19	3.1	14	49	158	89	64	40	90	45	7.3	3.7	2.8
20	3.1	12	47	132	86	61	48	82	40	6.4	3.3	4.6
21	2.7	17	87	134	86	64	130	75	37	6.0	3.2	3.3
22	3.0	16	133	129	85	62	158	67	34	5.4	3.0	3.1
23	2.9	15	110	137	84	69	129	62	31	5.7	2.7	3.0
24	3.0	16	80	144	82	72	103	59	29	5.2	2.6	3.0
25	3.1	21	74	152	81	69	88	55	28	5.4	2.5	2.6
26	3.2	17	60	169	80	71	78	51	28	5.2	2.4	2.5
27	3.4	14	56	212	82	76	71	47	25	5.1	2.1	2.9
28	3.2	12	52	250	84	75	66	53	24	5.2	2.4	3.4
29	3.2	11	51	249	83	74	68	59	23	4.9	2.2	3.0
30	3.4	14	48	261	---	72	73	56	22	4.9	2.3	2.8
31	3.7	---	44	209	---	68	---	57	---	4.9	2.3	---
TOTAL	85.5	377.5	4110	7908	3482	2871	2013	3490	2861	289.1	105.3	73.2
MEAN	2.76	12.6	133	255	120	92.6	67.1	113	95.4	9.33	3.40	2.44
MAX	3.7	26	968	1020	232	156	158	302	280	20	4.6	4.6
MIN	2.0	4.2	44	40	80	61	39	47	22	4.9	2.1	1.9
AC-FT	170	749	8150	15690	6910	5690	3990	6920	5670	573	209	145
CFSM	.04	.16	1.68	3.24	1.52	1.18	.85	1.43	1.21	.12	.04	.03
IN.	.04	.18	1.94	3.73	1.64	1.36	.95	1.65	1.35	.14	.05	.03

CAL YR 1987	TOTAL 32372.8	MEAN 88.7	MAX 1340	MIN 2.0	AC-FT 64210	CFSM 1.13	IN. 15.28
WTR YR 1988	TOTAL 27665.6	MEAN 75.6	MAX 1020	MIN 1.9	AC-FT 54870	CFSM .96	IN. 13.06

UPPER ROGUE RIVER BASIN
14337800 ELK CREEK NEAR CASCADE GORGE, OR--Continued
WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1973 to October 1976, August 1977 to current year.

INSTRUMENTATION.--Temperature recorder August 1973 to October 1976 and since August 1977.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 28.5°C July 29, 30, 1973, Aug. 9-11, 1981; minimum, 0.0°C at times during most winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 25.5°C July 21, 25-27, 30; minimum, 0.5°C Nov. 29, Dec. 15, 25-27, Dec. 30 to Jan 3.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	16.5	10.5	13.5	11.0	9.5	10.5	6.5	4.0	5.0	.5	.5	.5
2	16.5	11.5	14.0	10.5	8.5	9.5	7.5	6.5	7.0	.5	.5	.5
3	16.5	11.0	13.5	10.5	7.5	8.5	8.0	7.5	7.5	2.5	.5	2.0
4	16.0	11.0	13.5	9.0	5.5	7.0	7.5	7.0	7.5	4.0	2.0	3.0
5	16.0	10.5	13.0	8.5	5.0	6.5	8.0	7.0	7.5	4.5	3.0	3.5
6	16.0	10.0	13.0	9.0	6.0	7.5	7.5	6.5	7.0	5.0	3.5	4.0
7	15.5	10.5	13.0	10.0	7.5	8.5	6.5	5.5	6.0	4.0	3.0	3.5
8	15.5	10.0	12.5	9.0	6.0	7.5	6.0	5.5	6.0	4.5	3.5	4.0
9	15.5	10.5	12.5	10.5	7.5	8.5	7.5	5.5	6.5	5.0	4.0	4.5
10	14.5	9.5	12.0	8.5	5.5	7.0	7.5	6.5	7.0	6.0	5.0	5.5
11	14.5	9.5	12.0	8.5	6.0	7.5	6.5	5.0	6.0	5.0	4.0	4.5
12	14.5	9.5	12.0	10.0	8.0	9.0	5.0	3.5	4.5	4.5	4.0	4.5
13	13.0	8.0	10.5	10.5	8.0	9.5	3.5	2.5	3.0	5.0	4.0	4.5
14	12.5	7.5	9.5	8.5	5.0	7.0	3.5	2.5	3.0	5.5	4.0	5.0
15	11.5	7.0	9.0	4.5	3.5	4.0	3.5	.5	1.5	5.5	4.0	4.5
16	11.0	6.0	8.5	7.0	4.0	5.5	2.5	1.5	2.0	5.0	4.0	4.5
17	11.5	6.0	8.5	9.5	6.5	7.5	4.0	2.5	3.0	4.0	3.0	3.5
18	11.5	6.5	8.5	7.5	5.0	6.5	4.0	2.5	3.5	3.5	2.0	3.0
19	11.5	6.5	8.5	7.5	5.0	6.0	4.0	1.5	3.0	3.5	2.5	3.0
20	11.0	6.5	8.5	7.5	6.0	7.0	3.0	1.0	2.0	4.0	2.5	3.5
21	11.0	6.0	8.5	7.0	7.0	7.0	4.0	2.5	3.5	4.5	3.5	3.5
22	11.5	7.5	9.5	6.5	5.0	6.0	4.5	3.0	3.5	4.5	3.0	3.5
23	11.5	7.5	9.5	7.0	5.0	6.0	4.0	2.5	3.5	5.0	3.5	4.0
24	11.5	7.5	9.5	6.0	4.5	5.0	2.5	1.0	1.5	5.0	3.0	3.5
25	11.5	7.0	9.5	6.0	4.0	5.0	1.5	.5	.5	4.5	3.0	3.5
26	12.0	8.0	9.5	4.5	2.5	3.5	1.5	.5	.5	5.0	3.0	4.0
27	11.0	6.5	8.5	3.5	1.5	2.5	2.5	.5	1.5	5.5	4.5	4.5
28	10.5	6.5	8.5	3.0	1.0	2.0	3.5	2.0	2.5	5.0	4.0	4.5
29	12.0	8.0	10.0	3.0	.5	1.5	3.0	1.0	2.0	5.5	5.0	5.0
30	12.5	9.5	11.0	4.5	2.0	3.5	1.5	.5	1.0	5.0	4.0	4.5
31	12.5	9.5	11.0	---	---	---	2.0	.5	1.0	4.5	3.0	3.5
MONTH	16.5	6.0	10.5	11.0	.5	6.5	8.0	.5	4.0	6.0	.5	3.5

UPPER ROGUE RIVER BASIN

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14337800 ELK CREEK NEAR CASCADE GORGE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR-OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4.5	2.5	3.5	7.5	5.5	6.5	13.0	4.5	8.0	9.0	5.0	7.0
2	3.5	1.5	2.5	8.5	5.0	6.5	8.5	7.0	8.0	8.5	5.0	6.5
3	4.0	1.0	2.0	8.5	6.5	7.5	12.0	7.5	9.0	10.0	6.0	7.5
4	4.0	1.5	2.5	8.0	6.5	7.0	9.5	6.0	7.5	10.0	5.0	7.0
5	4.5	1.0	2.5	8.0	6.0	7.0	12.0	4.0	7.5	8.0	6.0	6.5
6	5.0	2.5	3.5	8.0	4.5	6.5	13.0	7.0	9.0	8.0	6.0	7.0
7	5.0	2.0	3.5	8.0	3.0	5.0	9.5	5.5	7.5	9.0	6.5	7.5
8	5.5	4.0	4.5	8.5	4.0	6.0	12.0	3.0	6.5	8.5	7.0	7.5
9	6.0	4.5	5.5	6.5	4.0	5.5	13.5	4.0	8.5	9.0	6.0	7.5
10	7.0	5.0	6.0	7.0	3.5	4.5	14.5	5.5	10.0	12.5	7.0	9.5
11	6.5	4.0	5.0	7.5	2.5	4.0	16.5	7.5	11.5	15.0	8.5	11.0
12	6.5	4.0	5.0	8.0	2.5	4.5	15.0	8.5	11.5	12.5	9.0	10.5
13	6.5	4.0	5.0	8.5	2.5	5.0	12.5	10.0	11.5	10.5	8.5	9.5
14	6.0	3.5	4.5	9.5	3.5	5.5	10.5	9.5	10.0	13.5	7.0	10.0
15	6.5	4.5	5.0	9.0	2.5	5.0	15.5	8.5	11.5	15.5	8.0	11.0
16	6.5	3.5	4.5	9.0	2.5	5.0	12.5	9.5	10.5	11.5	9.0	10.5
17	5.0	2.5	4.0	10.0	3.0	6.0	14.0	9.0	11.0	13.0	6.5	9.5
18	6.5	3.5	4.5	11.0	3.5	6.5	12.0	7.5	10.0	13.5	8.5	10.5
19	7.0	2.5	4.0	11.0	4.5	7.0	11.5	8.5	10.0	15.0	7.0	10.5
20	7.5	3.0	4.5	9.5	4.5	7.0	9.5	8.0	8.5	16.5	8.0	11.5
21	8.0	3.0	5.0	8.5	6.0	7.0	8.5	7.0	8.0	18.0	9.5	13.5
22	7.5	3.0	5.0	8.5	5.0	7.0	10.0	6.5	8.0	17.0	11.0	13.5
23	7.5	3.0	5.0	9.0	5.0	7.0	11.0	5.5	8.0	14.0	10.5	12.0
24	8.5	4.0	5.5	6.0	4.0	5.0	10.0	6.0	8.0	15.5	7.5	11.5
25	8.5	3.5	5.5	12.5	5.0	8.0	13.5	6.0	9.0	16.5	9.5	12.5
26	9.5	5.5	7.0	8.5	5.5	7.0	15.0	8.0	11.0	15.5	9.5	12.5
27	9.0	5.5	7.0	9.0	4.5	6.0	14.5	9.0	11.5	16.5	11.0	13.0
28	10.0	6.5	7.5	9.5	3.0	5.5	12.5	9.5	11.0	13.0	9.5	11.5
29	7.5	5.0	6.0	8.5	5.0	6.0	11.0	8.0	9.5	12.0	8.0	9.5
30	---	---	---	10.0	3.5	6.0	9.5	6.0	7.0	14.0	6.5	10.0
31	---	---	---	11.0	3.0	6.5	---	---	---	10.5	8.5	9.5
MONTH	10.0	1.0	4.5	12.5	2.5	6.0	16.5	3.0	9.5	18.0	5.0	10.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	9.5	8.5	9.0	20.5	12.5	16.0	23.5	15.5	19.0	23.5	14.5	18.5
2	11.0	8.5	9.5	20.5	14.0	17.0	22.5	13.5	18.0	---	15.5	---
3	11.0	9.0	9.5	20.5	15.0	17.0	23.5	14.5	18.5	---	---	---
4	11.0	8.5	9.5	19.5	12.5	15.5	24.0	15.0	19.5	---	---	---
5	9.5	8.0	8.5	18.0	12.5	15.0	20.5	16.5	18.5	---	---	---
6	9.0	6.5	8.0	18.5	10.5	14.5	23.0	15.5	18.5	---	---	---
7	9.0	7.0	8.0	20.5	12.0	16.0	22.0	13.5	17.5	---	---	---
8	9.5	6.5	8.0	21.5	13.5	17.5	23.0	14.0	18.0	---	---	---
9	9.0	8.0	8.5	22.0	14.5	18.0	24.0	15.0	19.0	---	---	---
10	12.0	7.0	9.0	22.0	14.5	18.0	24.5	15.5	19.5	---	---	---
11	13.5	8.0	10.5	20.0	14.5	17.0	24.0	15.5	19.0	---	---	---
12	15.0	8.0	11.0	21.5	14.0	17.5	23.0	14.5	18.0	---	---	---
13	16.0	8.5	12.0	21.5	14.5	18.0	22.5	15.0	18.0	---	---	---
14	17.5	10.5	13.5	22.5	16.0	18.5	19.0	14.0	16.5	---	---	---
15	19.0	12.0	15.0	21.5	14.5	18.0	21.5	14.0	17.0	---	---	---
16	19.5	12.5	15.5	21.5	14.0	17.5	21.0	13.0	16.5	---	---	---
17	19.5	13.0	15.5	22.0	14.0	18.0	21.5	14.5	17.0	---	---	---
18	20.0	13.0	16.0	23.0	14.5	18.5	21.0	12.5	16.5	---	---	---
19	21.0	13.0	16.5	24.0	15.0	19.5	22.0	13.5	17.5	---	---	---
20	21.5	14.0	17.0	24.5	16.0	20.0	22.0	13.5	17.5	---	---	---
21	21.0	13.5	17.0	25.5	17.0	20.5	22.0	13.5	17.0	---	---	---
22	20.5	14.0	17.0	24.5	16.0	20.0	23.0	14.0	18.0	---	---	---
23	21.5	14.5	17.5	24.0	15.5	19.5	23.0	14.5	18.5	---	---	---
24	21.5	13.0	17.0	24.5	15.5	19.5	23.0	15.5	19.0	---	---	---
25	17.5	15.0	16.0	25.5	16.5	20.5	23.0	14.5	18.5	---	---	---
26	20.0	13.0	16.0	25.5	18.0	21.5	22.5	14.0	18.0	---	---	---
27	19.0	12.5	15.5	25.5	17.5	21.0	23.0	15.0	18.5	---	---	---
28	18.0	12.5	14.5	24.5	16.0	20.0	23.5	15.5	19.0	---	---	---
29	17.5	10.0	13.5	25.0	16.0	20.0	23.0	15.5	19.0	---	---	---
30	18.5	11.0	14.5	25.5	17.0	21.0	23.0	15.0	18.5	---	---	---
31	---	---	---	25.0	18.0	21.0	22.5	14.0	18.0	---	---	---
MONTH	21.5	6.5	13.0	25.5	10.5	18.5	24.5	12.5	18.0	---	---	---

UPPER ROGUE RIVER BASIN

14337830 ELK CREEK BELOW ALCO CREEK, NEAR TRAIL, OR

LOCATION.--Lat 42°40'46", long 122°42'37", in NW 1/4 sec.4, T.33 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on Corps of Engineers' Land, on right bank 500 ft downstream from Alco Creek, and 7.5 mi northeast of Trail.

DRAINAGE AREA.--111 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1986 to current year (operated as a low-flow station only).

GAGE.--Water-stage recorder. Elevation of gage is 1,680 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good. No regulation. Some diversions upstream from station for irrigation. Operated as a low-flow station only. Discharges above 600 ft³/s not estimated.

EXTREMES FOR PERIOD OF RECORD.--Minimum discharge recorded, 0.60 ft³/s Aug. 16, 17, 1986.

EXTREMES FOR CURRENT YEAR.--Minimum discharge, 0.86 ft³/s Sept. 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	4.8	74	52	215	99	77	95	---	28	4.2	2.0
2	2.1	6.5	225	50	179	92	76	102	385	25	3.8	1.4
3	1.9	6.5	184	58	165	94	81	116	253	23	3.4	1.1
4	2.0	5.8	115	97	139	116	78	119	209	24	3.6	1.0
5	2.0	5.3	114	154	128	141	73	124	175	23	4.4	1.1
6	2.2	5.0	190	146	117	153	70	140	162	22	4.5	.97
7	2.0	4.5	334	139	111	142	70	e380	222	21	4.0	.97
8	2.0	4.5	256	184	128	130	67	e390	220	19	3.8	.97
9	2.1	5.7	---	---	286	180	63	e300	189	18	3.4	.98
10	2.3	6.9	---	---	301	184	61	e250	166	17	3.1	1.2
11	2.3	6.3	---	---	272	163	59	e210	139	16	3.2	1.2
12	2.3	14	247	---	224	143	58	168	118	15	3.6	1.2
13	2.3	22	161	394	198	126	57	184	102	13	4.4	1.2
14	2.3	28	117	---	169	113	61	149	89	14	3.5	1.2
15	2.3	17	105	---	151	103	60	129	78	14	4.2	1.2
16	2.3	27	e105	---	133	94	58	127	71	14	3.7	1.2
17	2.3	35	e95	480	118	85	55	122	64	12	3.5	1.3
18	2.3	28	e84	325	108	80	53	106	59	11	3.8	1.3
19	2.3	20	e76	225	98	76	55	95	55	10	3.9	2.1
20	2.4	16	e72	192	93	71	61	85	51	9.9	4.1	4.5
21	2.5	21	e90	184	92	74	148	77	47	9.1	4.1	5.6
22	2.4	23	e180	178	92	72	207	70	44	7.8	3.6	4.5
23	2.6	20	e170	200	89	78	170	65	41	8.0	3.0	4.2
24	2.8	21	e130	216	86	83	128	62	38	6.8	3.2	4.2
25	2.9	30	e110	219	84	78	105	58	37	6.7	1.7	4.0
26	3.1	24	e90	241	83	81	90	54	36	6.0	2.1	3.7
27	3.2	19	e80	284	87	88	83	52	33	3.1	2.3	4.0
28	3.4	16	e70	323	87	88	75	58	33	3.9	2.3	4.3
29	3.5	14	66	308	85	87	77	63	31	4.2	2.3	5.3
30	5.9	16	64	337	---	84	83	60	29	4.7	2.3	4.7
31	4.8	---	58	274	---	81	---	61	---	4.7	2.3	---
TOTAL	81.3	472.8	---	---	4118	3279	2459	4071	---	413.9	105.3	72.59
MEAN	2.62	15.8	---	---	142	106	82.0	131	---	13.4	3.40	2.42
MAX	5.9	35	---	---	301	184	207	390	---	28	4.5	5.6
MIN	1.9	4.5	---	---	83	71	53	52	---	3.1	1.7	.97
AC-FT	161	938	---	---	8170	6500	4880	8070	---	821	209	144
CFSM	.02	.14	---	---	1.28	.95	.74	1.18	---	.12	.03	.02
IN.	.03	.16	---	---	1.38	1.10	.82	1.36	---	.14	.04	.02

e Estimated

UPPER ROGUE RIVER BASIN

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14337830 ELK CREEK BELOW ALCO CREEK, NEAR TRAIL, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April 1986 to current year.

INSTRUMENTATION.--Temperature recorder since April 1986.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 31.0°C July 13, 1987, July 26, 1988; minimum, 0.0°C Jan. 15-21, Dec. 25, 26, 1987, Jan. 1, 2, 1988.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 31.0°C July 26; minimum, 0.0°C Dec. 25, 26, Jan. 1, 2.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	17.0	14.0	15.5	13.0	12.0	12.5	6.0	5.0	5.5	1.5	.0	.5
2	17.0	15.0	16.0	12.0	11.0	11.5	7.5	6.0	7.0	.5	.0	.0
3	17.0	14.5	15.5	11.5	10.5	11.0	8.0	7.0	7.5	2.5	.5	1.5
4	17.0	14.5	16.0	11.0	9.0	10.0	8.0	7.5	7.5	4.0	2.0	3.0
5	16.5	14.0	15.5	10.5	8.5	9.5	8.0	7.0	7.5	4.5	3.0	3.5
6	16.5	14.0	15.5	10.5	9.0	10.0	8.0	7.0	7.5	5.0	3.5	4.0
7	16.5	14.0	15.0	11.0	10.0	10.5	6.5	5.5	6.0	3.5	3.0	3.5
8	16.0	13.5	15.0	11.0	9.5	10.0	6.0	5.5	6.0	4.5	3.5	4.0
9	16.0	14.0	15.0	11.0	10.0	10.5	7.5	5.5	6.5	5.5	4.0	5.0
10	16.0	13.5	14.5	10.5	9.0	9.5	8.0	6.5	7.5	6.5	5.5	6.0
11	15.5	13.0	14.5	10.0	9.0	9.5	6.5	5.5	6.0	5.5	4.0	5.0
12	15.0	13.0	14.0	11.0	10.0	10.0	5.5	3.5	4.5	5.0	4.5	4.5
13	14.5	12.0	13.5	11.0	10.0	10.5	3.5	2.0	2.5	5.0	4.5	5.0
14	14.0	11.5	12.5	10.5	7.5	9.0	3.5	2.5	3.0	6.0	5.0	5.5
15	13.5	11.0	12.0	7.0	5.5	6.0	3.5	1.0	2.0	5.5	4.5	5.0
16	13.0	10.5	11.5	7.5	5.5	6.5	2.5	1.5	2.0	5.0	4.5	5.0
17	12.5	10.5	11.5	10.0	7.5	8.5	4.0	2.5	3.5	4.5	3.5	4.0
18	12.5	10.0	11.5	9.0	7.0	8.0	4.0	3.5	4.0	4.0	2.5	3.5
19	12.5	10.0	11.5	9.0	6.5	7.5	4.0	2.5	3.5	3.5	3.0	3.5
20	12.5	10.5	11.5	8.0	7.5	8.0	3.0	2.0	2.5	4.0	2.5	3.5
21	12.5	10.0	11.0	9.0	8.0	8.5	4.0	3.0	3.5	5.0	3.5	4.0
22	12.5	11.0	11.5	7.5	6.5	7.0	4.0	3.0	3.5	4.5	3.0	4.0
23	13.0	11.5	12.0	8.5	7.0	7.5	3.5	2.5	3.0	5.0	3.5	4.0
24	13.0	11.0	12.0	7.0	6.0	6.5	2.5	1.0	1.5	4.5	2.5	3.5
25	12.5	11.0	12.0	6.5	5.5	6.0	1.0	.0	.5	4.0	2.5	3.0
26	12.5	11.5	12.5	6.0	4.5	5.0	1.0	.0	.5	5.0	2.5	3.5
27	13.0	10.5	11.5	5.0	3.5	4.0	2.5	.5	1.5	5.5	4.5	5.0
28	12.0	10.0	11.0	5.0	2.5	3.5	3.5	2.0	2.5	5.5	4.0	4.5
29	12.0	11.0	11.5	4.0	2.0	3.0	3.0	1.5	2.0	5.5	5.0	5.0
30	13.0	12.0	12.5	5.5	3.5	4.5	1.5	.5	1.0	5.0	4.0	4.5
31	13.0	12.0	12.5	---	---	---	2.5	1.5	1.5	4.0	3.0	3.5
MONTH	17.0	10.0	13.0	13.0	2.0	8.0	8.0	.0	4.0	6.5	.0	4.0

14337830 ELK CREEK BELOW ALCO CREEK, NEAR TRAIL, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN			
	FEBRUARY				MARCH				APRIL				MAY		
1	4.5	2.5	3.5	7.5	5.5	6.5	12.5	5.5	9.0	9.5	6.0	7.5			
2	3.0	1.0	2.0	8.0	5.5	7.0	10.5	8.0	9.0	9.0	6.0	7.5			
3	3.0	1.0	2.0	8.0	6.5	7.5	12.5	8.0	9.5	11.0	7.0	8.5			
4	3.0	1.0	2.0	8.0	7.0	7.5	10.0	7.0	8.5	10.5	6.0	8.0			
5	3.0	1.0	2.0	8.0	6.5	7.0	11.5	5.0	8.0	9.5	6.5	7.5			
6	4.5	2.0	3.0	8.0	5.0	6.5	12.0	8.0	10.0	8.5	6.5	7.5			
7	4.5	2.0	3.5	7.5	3.0	5.5	11.0	7.5	9.0	9.5	7.0	8.0			
8	5.5	4.0	5.0	7.5	4.0	6.0	11.0	4.0	7.5	9.5	7.5	8.5			
9	6.0	5.0	5.5	6.5	4.5	5.5	13.0	5.5	9.0	10.0	6.5	8.0			
10	7.0	5.5	6.0	6.5	3.5	5.0	14.0	7.0	10.5	14.0	7.5	10.5			
11	6.5	4.0	5.0	6.5	2.0	4.5	16.0	9.0	12.5	16.0	9.0	12.0			
12	6.0	3.5	5.0	7.0	2.5	5.0	14.5	10.0	12.5	13.5	10.0	11.5			
13	6.5	4.0	5.5	8.0	3.0	5.5	13.0	11.5	12.0	11.5	9.0	10.5			
14	5.5	2.5	4.0	8.5	3.5	6.0	11.5	10.0	10.5	14.5	8.0	11.0			
15	6.5	4.5	5.0	8.0	3.0	5.5	15.5	9.0	12.0	15.5	9.0	12.0			
16	5.5	3.0	4.5	8.5	3.0	6.0	12.5	10.5	11.5	13.5	10.5	12.0			
17	4.5	2.5	3.5	9.0	3.5	6.5	14.0	10.0	12.0	13.5	7.5	10.5			
18	6.0	3.5	4.5	10.0	4.0	7.5	12.5	9.0	11.0	14.5	9.5	11.5			
19	5.5	2.5	4.0	10.5	5.0	8.0	12.0	9.5	10.5	15.5	8.5	12.0			
20	6.5	2.5	4.5	9.0	5.0	7.5	10.5	9.0	9.5	16.5	9.0	13.0			
21	6.5	3.0	5.0	9.0	7.0	7.5	9.0	8.0	8.5	18.5	11.0	15.0			
22	6.5	3.0	5.0	8.5	6.0	7.5	10.5	7.0	8.5	17.5	13.0	15.0			
23	6.5	3.0	5.0	9.0	6.5	8.0	11.0	6.0	8.5	15.5	11.5	13.5			
24	7.0	4.0	5.5	6.5	4.5	5.5	10.0	6.5	8.5	16.5	9.5	13.0			
25	7.0	3.5	5.5	11.5	5.5	8.5	13.0	6.5	10.0	17.5	11.0	14.5			
26	9.0	5.5	7.0	9.0	6.5	7.5	15.0	9.0	12.0	16.5	11.5	14.0			
27	8.5	5.5	7.0	8.5	5.0	6.5	14.5	10.0	12.5	18.0	12.5	15.0			
28	9.5	6.5	8.0	9.0	3.5	6.5	13.5	10.5	12.5	15.5	11.5	13.5			
29	7.5	5.0	6.0	9.5	5.5	7.5	11.5	9.5	10.5	14.0	9.5	11.5			
30	---	---	---	9.5	4.0	7.0	9.5	7.0	8.5	15.0	8.0	11.5			
31	---	---	---	10.5	4.0	7.5	---	---	---	12.5	10.5	11.0			
MONTH	9.5	1.0	4.5	11.5	2.0	6.5	16.0	4.0	10.0	18.5	6.0	11.0			
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN			
	JUNE				JULY				AUGUST				SEPTEMBER		
1	10.5	9.5	10.0	22.5	15.0	18.5	28.5	19.5	23.5	27.5	18.5	22.5			
2	12.0	9.0	10.5	23.5	16.5	20.0	27.5	18.0	22.5	28.0	19.5	23.5			
3	13.0	10.0	11.0	23.0	17.5	20.0	29.0	18.5	23.5	28.5	20.5	24.0			
4	13.0	9.5	11.0	21.0	15.0	18.0	29.5	19.5	24.0	27.5	20.5	24.0			
5	11.0	8.5	9.5	21.0	14.5	17.5	25.0	20.5	22.5	27.0	20.0	23.0			
6	10.0	7.5	8.5	21.5	13.0	17.5	27.5	18.5	22.5	25.5	18.5	22.0			
7	9.5	7.5	9.0	23.5	15.0	19.0	27.0	17.5	21.5	25.0	18.5	21.5			
8	10.5	7.0	9.0	24.5	16.5	20.5	27.5	17.5	22.0	24.5	17.5	21.0			
9	10.0	8.5	9.5	25.5	17.5	21.5	28.0	19.0	23.0	23.5	17.0	20.0			
10	13.5	7.5	10.5	25.0	17.5	21.0	28.5	19.5	23.5	21.5	16.0	19.0			
11	15.0	9.0	12.0	23.5	17.0	20.0	27.5	19.5	23.0	21.5	14.0	17.5			
12	16.0	9.0	12.5	25.0	17.0	21.0	27.0	18.5	22.0	22.0	15.0	18.5			
13	17.0	10.0	13.5	25.0	17.5	21.5	26.0	18.5	22.0	22.5	14.5	18.5			
14	18.5	12.0	15.5	25.0	18.0	21.5	23.0	17.5	20.5	22.5	15.0	18.5			
15	20.0	13.5	17.0	25.0	17.5	21.5	25.5	17.5	21.0	21.0	15.0	18.0			
16	21.0	14.5	17.5	25.5	17.0	21.0	25.5	17.0	21.0	21.0	15.0	17.5			
17	20.5	14.5	17.5	26.0	17.5	21.5	25.0	18.0	21.0	19.0	13.0	16.0			
18	21.5	14.5	18.0	27.0	18.0	22.5	25.5	16.5	20.5	19.0	11.5	15.0			
19	22.5	15.0	19.0	28.0	19.0	23.5	26.0	17.5	21.0	17.0	14.5	15.5			
20	23.0	16.0	19.5	29.0	20.0	24.5	26.0	17.5	21.5	17.0	12.5	14.5			
21	22.5	16.0	19.0	29.0	21.0	25.0	26.0	17.0	21.0	19.0	11.5	15.0			
22	22.0	16.0	19.0	28.5	20.0	24.0	27.5	17.5	22.0	19.5	12.5	15.5			
23	22.5	17.0	19.5	28.0	19.5	23.5	26.5	18.5	22.5	19.5	12.5	16.0			
24	23.0	15.5	19.0	29.5	19.5	24.0	27.0	19.0	23.0	20.0	12.5	16.0			
25	20.0	17.0	18.5	30.5	21.0	25.0	27.0	19.0	22.5	18.0	13.5	16.0			
26	21.5	15.0	18.0	31.0	22.5	26.0	26.5	18.0	22.0	19.5	13.5	16.5			
27	21.0	15.0	18.0	30.5	22.0	25.5	27.0	18.5	22.5	19.5	15.5	17.0			
28	19.5	14.5	16.5	30.0	20.5	25.0	27.5	19.5	23.0	20.5	13.0	16.5			
29	20.0	12.5	16.0	30.0	20.5	25.0	26.5	20.0	23.0	21.5	13.5	17.0			
30	21.0	13.0	17.0	30.5	21.0	25.5	26.0	19.0	22.5	22.0	14.5	18.0			
31	---	---	---	30.0	22.0	25.5	26.5	18.0	22.0	---	---	---			
MONTH	23.0	7.0	14.5	31.0	13.0	22.0	29.5	16.5	22.0	28.5	11.5	18.5			
YEAR	31.0	.0	11.5												

UPPER ROGUE RIVER BASIN

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14337870 WEST BRANCH ELK CREEK NEAR TRAIL, OR

LOCATION.--Lat 42°42'40", long 122°44'55", in SW 1/4 sec.7, T.33 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on Bureau of Land Management land, on left bank 300 ft upstream from Spot Creek and 5.3 mi northeast of Trail.

DRAINAGE AREA.--14.2 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1973 to September 1976, October 1977 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,773.24 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--No estimated daily discharges. Records good. No regulation or diversions upstream from station.

AVERAGE DISCHARGE.--14 years, 21.9 ft³/s, 20.94 in/yr, 15,870 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,410 ft³/s Jan. 15, 1974, gage height, 5.30 ft, from rating curve extended above 600 ft³/s on basis of slope-area measurement of peak flow; minimum, 0.26 ft³/s Sept. 16, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0330	*208	*2.42				

Minimum discharge, 0.44 ft³/s Sept. 5, 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.88	1.6	7.8	6.6	17	7.5	6.0	9.2	26	1.9	.76	.72
2	.87	1.9	16	6.4	14	6.8	5.8	11	29	1.8	.78	.60
3	.87	1.9	14	6.5	12	6.6	5.7	12	19	2.0	.76	.55
4	.91	1.9	9.3	9.8	10	6.7	5.4	11	14	2.0	.66	.52
5	.95	1.8	9.3	18	9.7	7.0	4.9	10	12	2.0	.63	.50
6	.95	1.7	24	18	9.2	7.9	4.7	11	13	1.8	.76	.51
7	.95	1.7	32	18	8.9	8.2	4.6	34	15	1.7	.67	.60
8	.95	1.7	23	26	9.0	8.2	4.3	34	13	1.6	.62	.67
9	.98	1.9	59	107	16	8.4	4.0	26	11	1.5	.63	.67
10	.96	2.0	137	151	19	8.9	3.9	19	9.8	1.5	.63	.65
11	.95	1.9	38	83	18	8.9	3.7	14	8.2	1.4	.70	.67
12	.90	3.2	18	42	15	8.9	3.6	11	6.8	1.5	.80	.71
13	.98	3.8	12	30	14	8.4	3.4	11	5.5	1.5	.80	.65
14	1.0	3.7	8.8	75	12	7.5	3.4	8.9	4.7	1.4	.83	.63
15	1.1	3.1	8.8	126	10	6.8	3.4	7.6	4.0	1.5	.89	.61
16	1.1	4.1	7.9	60	8.9	6.2	3.7	7.2	3.8	1.4	.85	.60
17	1.1	3.6	7.8	40	8.0	5.7	3.8	6.5	3.6	1.2	.84	.66
18	1.2	3.1	7.5	26	7.3	5.2	3.8	5.8	3.3	1.2	.85	.72
19	1.2	2.5	7.5	17	6.4	4.9	3.8	5.3	3.0	1.1	.81	1.4
20	.95	2.5	7.3	14	6.1	4.7	4.5	4.8	2.8	1.1	.80	1.5
21	.95	3.0	8.1	12	6.0	4.8	14	4.3	2.6	.95	.79	1.1
22	.88	3.0	13	13	5.8	4.7	23	3.8	2.4	.90	.73	.87
23	.87	3.0	14	18	5.4	5.1	17	3.8	2.2	.92	.70	.90
24	.82	3.2	11	23	5.0	5.4	12	3.7	2.1	.85	.80	.87
25	.86	3.8	9.5	23	4.7	5.0	9.2	3.5	2.1	.88	.74	.83
26	1.0	3.4	9.2	23	4.5	4.8	7.7	3.3	2.0	.89	.68	.86
27	.95	3.0	8.9	29	4.4	4.9	6.6	3.2	2.1	.86	.70	1.0
28	.87	2.7	8.4	33	4.2	5.4	6.1	4.2	2.1	.85	.65	1.1
29	.87	2.6	8.0	28	4.0	5.8	6.3	5.1	2.0	.80	.61	.94
30	1.1	3.2	7.8	29	---	6.3	6.8	4.8	2.0	.82	.69	.83
31	1.2	---	6.9	23	---	6.3	---	5.1	---	.76	.77	---
TOTAL	30.12	80.5	559.8	1134.3	274.5	201.9	195.1	304.1	229.1	40.58	22.93	23.44
MEAN	.97	2.68	18.1	36.6	9.47	6.51	6.50	9.81	7.64	1.31	.74	.78
MAX	1.2	4.1	137	151	19	8.9	23	34	29	2.0	.89	1.5
MIN	.82	1.6	6.9	6.4	4.0	4.7	3.4	3.2	2.0	.76	.61	.50
AC-FT	60	160	1110	2250	544	400	387	603	454	80	45	46
CFSM	.07	.19	1.27	2.58	.67	.46	.46	.69	.54	.09	.05	.06
IN.	.08	.21	1.47	2.97	.72	.53	.51	.80	.60	.11	.06	.06

CAL YR 1987	TOTAL 4480.97	MEAN 12.3	MAX 260	MIN .66	AC-FT 8890	CFSM .86	IN. 11.74
WTR YR 1988	TOTAL 3096.37	MEAN 8.46	MAX 151	MIN .50	AC-FT 6140	CFSM .60	IN. 8.11

UPPER ROGUE RIVER BASIN

14337870 WEST BRANCH ELK CREEK NEAR TRAIL, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1977 to current year.

INSTRUMENTATION.--Temperature recorder since August 1977.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 25.5°C Aug. 8, 1978; minimum, 0.0°C at times during most winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 22.5°C July 21, 26, 27, 30, 31, Sept. 3; minimum, 0.0°C Dec. 25, 26, Jan. 1, 2.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	15.5	10.5	13.0	11.0	10.0	10.5	6.5	5.0	5.5	.0	.0	.0
2	15.5	12.0	13.5	10.5	9.0	9.5	7.5	6.5	7.0	1.0	.0	.5
3	15.5	11.5	13.0	10.0	8.0	9.0	8.5	7.0	7.5	2.5	1.0	1.5
4	15.5	11.0	13.0	8.5	6.5	7.5	8.0	7.0	7.5	3.5	2.5	3.0
5	15.5	11.0	13.0	8.5	6.5	8.0	8.0	7.0	7.5	4.0	3.0	3.5
6	15.0	11.0	12.5	9.5	7.5	8.5	7.5	6.5	7.5	4.5	3.5	4.0
7	14.5	11.0	12.5	10.5	8.5	9.5	6.0	5.5	6.0	3.5	3.0	3.5
8	14.5	11.0	12.5	9.0	7.0	8.0	6.0	5.5	5.5	4.5	3.5	4.0
9	15.0	11.0	12.5	10.0	8.5	9.0	8.0	5.5	6.5	5.5	4.5	5.0
10	14.0	10.5	12.5	9.0	7.0	8.0	8.0	6.5	7.5	6.5	5.5	6.0
11	14.5	10.5	12.5	9.0	7.5	8.0	6.0	5.0	5.5	5.5	4.5	5.0
12	14.0	10.5	12.0	10.0	9.0	9.5	5.0	3.5	4.0	5.0	4.0	4.5
13	13.0	9.5	11.0	10.5	8.5	10.0	3.5	2.0	2.5	5.0	4.5	4.5
14	12.0	8.5	10.5	8.5	6.0	7.5	3.5	2.5	3.0	6.0	5.0	5.5
15	12.0	8.5	10.0	6.0	5.0	5.0	3.5	.5	1.5	6.0	4.5	5.5
16	11.0	7.5	9.5	7.5	5.5	6.5	2.5	1.0	2.0	5.5	4.5	5.0
17	11.5	8.0	9.5	9.0	7.5	8.0	4.0	2.5	3.0	4.5	3.5	4.0
18	11.0	7.5	9.0	8.0	6.0	7.0	4.0	3.0	3.5	4.0	2.5	3.5
19	11.5	8.0	9.5	7.5	6.0	7.0	3.5	2.5	3.0	3.5	2.5	3.5
20	11.0	8.0	9.5	8.0	7.0	7.5	3.5	2.0	2.5	4.0	2.5	3.5
21	11.0	7.5	9.5	8.0	6.5	7.5	4.0	3.0	3.5	4.5	3.5	4.0
22	11.5	8.5	10.0	7.0	5.0	6.0	3.5	3.0	3.5	4.5	3.0	3.5
23	12.0	9.0	10.5	6.5	5.5	6.5	3.0	2.5	3.0	5.0	3.5	4.0
24	11.5	8.5	10.0	6.0	5.0	5.5	2.0	1.0	1.5	4.5	3.0	3.5
25	11.5	8.5	10.0	5.5	4.0	5.0	1.0	.0	.5	4.0	3.0	3.5
26	11.5	9.0	10.0	4.0	3.0	3.5	1.0	.0	.5	5.0	3.5	4.0
27	11.0	8.0	9.5	3.5	2.5	3.0	2.0	.5	1.5	6.0	4.5	5.0
28	10.5	8.0	9.5	3.0	2.5	3.0	3.0	2.0	2.5	6.0	4.5	5.5
29	11.5	9.0	10.5	3.0	1.5	2.5	2.5	1.5	2.0	6.0	5.0	5.5
30	12.0	10.5	11.0	5.0	3.0	4.0	2.0	.5	1.5	5.0	4.0	4.5
31	12.0	10.0	11.0	---	---	---	1.5	.5	1.0	4.0	3.5	3.5
MONTH	15.5	7.5	11.0	11.0	1.5	7.0	8.5	.0	4.0	6.5	.0	4.0

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4.0	2.5	3.5	7.5	5.5	6.5	12.5	5.5	8.5	8.0	5.0	6.5
2	3.0	1.5	2.5	8.5	5.5	7.0	9.5	7.5	8.5	8.0	5.5	7.0
3	3.0	1.5	2.0	8.0	7.0	7.5	11.0	7.5	9.0	9.0	6.5	7.5
4	3.0	1.5	2.0	8.5	7.0	7.5	9.0	6.5	7.5	10.0	5.0	7.0
5	3.5	1.5	2.5	8.5	6.5	7.5	12.0	4.5	8.0	8.0	6.5	7.0
6	4.5	2.5	3.5	8.0	5.0	6.5	12.0	7.5	9.5	8.0	6.5	7.0
7	5.0	2.5	3.5	8.0	3.5	5.5	10.5	6.0	8.0	9.0	6.5	8.0
8	5.5	4.0	5.0	8.5	4.0	6.5	11.0	3.5	7.0	9.0	7.5	8.0
9	6.5	5.0	6.0	7.0	4.5	5.5	13.0	5.0	8.5	9.5	6.5	8.0
10	7.0	5.5	6.0	6.5	3.5	4.5	14.0	6.5	10.0	13.0	7.5	10.0
11	6.5	4.0	5.5	6.5	2.5	4.0	16.0	8.5	12.0	15.0	9.0	11.5
12	6.5	4.0	5.0	7.0	2.5	4.5	14.0	9.0	11.5	13.5	10.0	11.5
13	6.0	4.0	5.0	8.0	3.0	5.5	12.5	10.5	11.5	11.0	8.5	10.0
14	5.5	3.0	4.5	8.5	3.5	5.5	11.0	9.5	10.0	13.5	7.5	10.5
15	6.5	4.5	5.0	8.0	3.0	5.0	15.0	8.5	11.0	15.0	8.5	11.5
16	5.5	3.5	4.5	8.5	3.0	5.5	11.5	9.5	10.5	12.0	9.5	11.0
17	4.5	2.5	4.0	9.0	3.0	6.0	13.0	9.0	10.5	12.5	7.0	9.5
18	5.5	3.5	4.5	10.0	4.0	6.5	12.0	8.0	10.0	13.0	9.0	10.5
19	6.0	3.0	4.0	10.5	5.0	7.5	11.0	9.0	9.5	14.5	7.5	10.5
20	6.5	3.0	4.5	9.5	5.0	7.5	9.5	8.0	9.0	16.0	8.5	11.5
21	6.5	3.5	5.0	8.5	6.0	7.0	8.5	7.5	8.0	17.5	10.0	13.5
22	6.5	3.5	5.0	8.5	5.5	7.0	9.5	6.5	8.0	15.5	11.5	13.5
23	7.0	3.0	5.0	9.0	5.5	7.5	10.0	6.0	8.0	13.5	10.0	11.5
24	7.5	4.0	5.5	6.5	4.5	5.5	9.5	6.0	8.0	15.0	8.0	11.5
25	8.0	4.0	6.0	11.5	5.0	8.0	12.5	6.0	9.0	15.5	9.5	12.5
26	9.5	5.5	7.5	9.0	6.0	7.5	14.0	8.5	11.0	14.5	10.0	12.0
27	9.0	6.0	7.5	7.5	4.5	6.0	13.5	9.0	11.0	16.0	11.0	13.0
28	10.5	7.0	8.5	9.5	3.5	6.0	12.5	9.5	11.0	12.5	9.5	11.5
29	7.5	5.0	6.5	9.0	5.5	6.5	10.0	8.0	9.5	11.5	8.0	9.5
30	---	---	---	9.5	4.0	6.5	8.5	6.0	7.5	12.5	7.0	9.5
31	---	---	---	10.5	3.5	7.0	---	---	---	10.0	9.0	10.0
MONTH	10.5	1.5	5.0	11.5	2.5	6.5	16.0	3.5	9.5	17.5	5.0	10.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	10.0	9.5	9.5	18.0	11.5	15.0	20.5	14.0	17.0	21.0	14.0	17.0
2	11.5	9.0	10.5	18.5	13.0	15.5	19.5	12.5	16.0	21.5	14.5	17.5
3	11.0	9.5	10.5	18.0	13.5	15.5	20.5	13.0	16.5	22.5	15.5	18.5
4	11.5	9.0	10.0	16.0	11.5	13.5	21.0	14.0	17.5	22.0	15.5	18.5
5	10.0	8.5	9.0	15.0	11.0	13.0	18.0	15.0	16.5	21.5	15.0	18.0
6	10.0	7.0	8.5	16.5	9.0	13.0	20.0	14.0	16.5	20.5	14.0	17.0
7	9.5	8.0	8.5	18.0	11.0	14.5	19.0	12.0	15.0	20.5	14.0	16.5
8	11.5	7.0	9.0	19.0	12.5	16.0	19.5	12.5	15.5	20.0	13.5	16.0
9	10.0	8.5	9.5	19.5	13.5	16.5	20.5	13.5	16.5	19.0	13.0	15.5
10	12.5	7.5	9.5	19.0	13.0	16.5	21.0	14.0	17.0	17.5	12.0	14.5
11	14.0	8.5	11.0	17.5	13.0	15.5	20.5	14.0	17.0	17.0	10.5	13.5
12	15.0	8.5	11.5	19.0	12.5	16.0	19.5	13.0	16.0	17.5	11.5	14.0
13	16.0	9.5	12.5	19.0	13.0	16.0	19.5	13.5	16.0	17.5	11.0	14.0
14	17.5	11.0	14.0	19.0	14.0	16.5	18.0	12.5	15.0	17.5	11.5	14.0
15	19.0	12.5	15.5	18.5	13.0	16.0	18.5	12.5	15.0	17.0	11.5	14.0
16	19.0	13.5	16.0	18.5	12.5	15.5	18.5	12.0	15.0	16.5	12.0	13.5
17	19.0	13.5	15.5	19.5	12.5	16.0	18.5	13.0	15.5	15.0	9.5	12.0
18	19.0	13.0	16.0	20.0	13.0	16.5	18.0	11.0	14.5	14.5	8.5	11.0
19	20.0	13.5	16.5	20.5	13.5	17.5	19.0	12.5	15.5	13.0	11.0	12.0
20	20.5	14.0	17.0	21.5	14.5	18.0	19.5	12.5	15.5	12.0	9.5	11.0
21	19.5	13.5	16.5	22.5	15.5	19.0	19.0	12.0	15.5	13.5	8.5	11.0
22	19.5	14.0	16.5	21.5	15.0	18.0	20.0	12.5	16.0	14.5	9.5	11.5
23	19.5	14.5	17.0	21.0	14.5	17.5	20.0	13.5	16.5	14.5	9.5	11.5
24	20.0	12.5	16.0	21.5	14.0	17.5	20.5	14.0	16.5	14.5	9.5	12.0
25	17.0	15.0	15.5	22.0	15.0	18.5	20.0	13.5	16.5	13.0	10.0	12.0
26	18.5	13.0	15.5	22.5	16.5	19.5	20.0	13.0	16.0	15.0	11.0	12.5
27	17.5	12.0	14.5	22.5	16.5	19.5	20.5	13.5	16.5	14.0	12.0	13.0
28	15.0	12.0	13.0	22.0	15.0	18.0	21.0	14.5	17.5	14.0	9.5	12.0
29	16.0	9.5	12.5	22.0	14.5	18.0	21.0	14.5	17.5	15.5	10.5	12.5
30	17.0	10.0	13.5	22.5	15.5	19.0	21.0	14.5	17.0	16.5	11.0	13.5
31	---	---	---	22.5	16.5	19.0	20.5	13.5	16.5	---	---	---
MONTH	20.5	7.0	13.0	22.5	9.0	16.5	21.0	11.0	16.0	22.5	8.5	14.0
YEAR	22.5	.0	9.5									

UPPER ROGUE RIVER BASIN

14338000 ELK CREEK NEAR TRAIL, OR

LOCATION.--Lat 42°39'50", long 122°44'50", in SW 1/4 sec.30, T.33 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on right bank 3.3 mi northeast of Trail and at mile 0.4.

DRAINAGE AREA.--133 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year. Prior to March 1946 monthly discharge only, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 1,456.56 ft above National Geodetic Vertical Datum of 1929. Prior to July 5, 1946, nonrecording gage at various sites within 1.0 mi of present site at different datums. July 5, 1946, to June 22, 1950, nonrecording gage, and June 23, 1950, to May 23, 1954, water-stage recorder, at site 0.3 mi upstream at datum 12.14 ft higher.

REMARKS.--No estimated daily discharges. Water-discharge records good. Low flow regulation resulting from construction of Elk Creek Dam 1.3 mi upstream. Diversions for irrigation and dam construction upstream from station.

AVERAGE DISCHARGE.--43 years, 227 ft³/s, 164,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,200 ft³/s Dec. 22, 1964, gage height, 18.84 ft, from rating curve extended above 4,700 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 0.01 ft³/s Oct. 8, 1987, result of dam construction 1.3 mi upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0730	*2,080	*6.48				

Minimum discharge, 0.01 ft³/s Oct. 8, result of dam construction 1.3 mi upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	8.0	47	57	250	126	85	110	311	26	4.6	2.1
2	2.2	7.8	205	52	218	117	82	118	388	23	3.5	2.9
3	.37	7.5	199	60	190	116	92	131	262	20	3.5	2.5
4	.33	6.1	125	105	170	140	85	136	225	21	3.6	2.1
5	.26	5.2	129	178	154	173	78	138	194	20	4.3	1.9
6	.36	5.0	170	173	145	185	73	154	174	18	6.1	1.6
7	.17	4.0	323	166	138	178	71	384	222	15	6.1	1.0
8	.28	5.7	251	204	143	161	67	399	223	15	4.9	1.2
9	2.2	5.4	459	837	282	211	62	339	200	14	3.1	1.1
10	1.3	6.4	1480	1620	314	224	61	264	180	14	3.6	1.2
11	1.2	6.2	534	1030	282	202	57	218	153	13	4.4	1.1
12	1.7	9.7	265	551	255	180	55	187	130	13	4.8	1.1
13	1.5	23	174	397	236	160	54	209	111	12	5.2	1.1
14	2.0	32	127	679	211	144	56	173	96	12	4.9	1.2
15	4.5	25	112	1310	187	131	54	149	83	11	5.0	1.1
16	4.0	28	114	748	170	117	54	142	74	13	5.3	1.1
17	3.7	33	104	496	152	104	51	141	66	12	5.1	1.1
18	4.7	28	91	361	141	93	47	123	60	10	4.8	1.2
19	4.4	21	84	269	127	86	51	108	54	9.2	4.8	1.7
20	2.7	17	78	229	117	80	57	96	48	9.0	4.7	2.8
21	5.5	19	109	219	116	80	155	85	44	9.4	3.8	3.6
22	3.7	23	202	215	115	82	230	76	41	8.7	3.6	3.3
23	5.6	20	185	229	112	85	193	68	37	8.3	3.3	3.0
24	4.4	22	144	249	108	97	150	65	34	7.7	3.5	2.7
25	7.6	28	114	248	105	87	122	60	33	6.8	3.1	2.3
26	7.3	26	96	259	102	88	102	55	33	6.1	3.0	2.2
27	4.1	21	84	307	106	103	90	51	30	5.3	2.7	2.3
28	5.9	18	78	354	106	103	80	58	29	3.4	2.3	2.7
29	6.1	17	75	331	104	103	85	68	28	4.4	2.1	3.1
30	5.0	17	73	366	---	100	93	64	26	5.4	1.5	3.2
31	9.3	---	64	300	---	92	---	61	---	5.7	1.9	---
TOTAL	105.27	495.0	6295	12599	4856	3948	2592	4430	3589	371.4	123.1	59.5
MEAN	3.40	16.5	203	406	167	127	86.4	143	120	12.0	3.97	1.98
MAX	9.3	33	1480	1620	314	224	230	399	388	26	6.1	3.6
MIN	.17	4.0	47	52	102	80	47	51	26	3.4	1.5	1.0
AC-FT	209	982	12490	24990	9630	7830	5140	8790	7120	737	244	118

CAL YR 1987 TOTAL 47573.23 MEAN 130 MAX 2240 MIN .17 AC-FT 94360
WTR YR 1988 TOTAL 39463.27 MEAN 108 MAX 1620 MIN .17 AC-FT 78280

UPPER ROGUE RIVER BASIN
14338000 ELK CREEK NEAR TRAIL, OR--Continued
WATER-QUALITY RECORDS

275

PERIOD OF RECORD.--Water years 1973 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: June 1973 to current year.

INSTRUMENTATION.--Temperature recorder since June 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 31.5°C July 17, 1979; minimum, 0.0°C at times during most winter periods.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 27.5°C July 20, 21, 25, 26, 29-31; minimum, 0.0°C Dec. 25, 26, Jan. 2.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	17.5	13.5	15.5	13.0	12.0	12.5	6.0	4.5	5.0	2.5	1.0	1.5
2	17.5	14.5	16.0	12.5	10.5	11.5	7.0	6.0	6.5	1.0	.0	.5
3	18.5	14.0	16.0	12.5	10.0	11.0	8.0	7.0	7.5	2.5	.5	1.5
4	19.0	13.0	15.0	12.0	8.5	10.0	8.0	7.5	8.0	4.0	2.5	3.0
5	18.5	12.0	14.5	12.0	8.5	10.0	8.0	7.5	7.5	4.5	3.0	4.0
6	17.0	11.5	14.0	11.5	9.0	10.5	8.0	7.0	7.5	5.0	3.5	4.5
7	16.5	11.5	13.5	12.0	10.0	11.0	7.0	5.5	6.5	4.5	3.0	3.5
8	18.5	11.0	14.0	11.0	8.5	10.0	6.0	6.0	6.0	4.5	3.5	4.0
9	16.5	13.0	14.5	11.5	10.0	10.5	8.0	6.0	6.5	5.5	4.5	5.0
10	15.5	13.0	14.0	10.5	8.5	9.5	8.0	6.5	7.5	6.5	5.5	6.0
11	15.0	12.5	13.5	10.5	8.5	9.5	6.5	5.5	6.0	6.0	4.5	5.0
12	14.5	12.0	13.5	11.0	10.0	10.5	5.5	4.0	5.0	5.0	4.5	5.0
13	14.0	11.5	12.5	11.5	10.0	10.5	4.0	2.5	3.0	5.5	4.5	5.0
14	13.0	10.0	11.5	10.5	8.0	9.5	3.5	2.5	3.0	6.5	5.0	5.5
15	13.0	10.0	12.0	8.0	6.5	7.5	3.5	1.5	2.5	6.0	4.5	5.5
16	13.0	9.5	11.5	7.0	6.0	7.0	3.0	1.5	2.0	5.5	4.5	5.0
17	13.5	10.0	11.5	9.5	7.0	8.0	4.0	3.0	3.5	4.5	3.5	4.0
18	12.5	9.5	11.5	9.5	7.5	8.0	4.5	4.0	4.0	4.0	3.0	3.5
19	13.0	9.5	11.0	10.0	7.0	8.0	4.5	3.5	4.0	4.5	3.5	4.0
20	12.5	10.0	11.0	8.5	7.5	8.0	3.5	2.5	3.0	4.5	3.0	3.5
21	13.0	9.5	11.5	9.0	7.5	8.0	4.5	3.5	4.0	5.0	4.0	4.5
22	13.5	10.5	12.0	8.5	7.5	8.0	4.5	3.5	4.0	4.5	4.0	4.5
23	14.0	10.5	12.5	9.0	7.0	7.5	4.0	3.0	3.5	5.0	4.0	4.5
24	13.5	10.5	12.0	7.5	6.5	7.0	3.0	1.5	2.0	4.5	3.0	3.5
25	14.0	10.0	12.0	7.0	6.0	6.5	1.5	.0	.5	4.0	2.5	3.5
26	14.5	11.0	12.5	7.0	4.5	5.5	1.0	.0	.5	5.0	3.0	3.5
27	13.0	10.0	11.5	6.0	4.0	4.5	2.0	.5	1.0	5.5	4.5	5.0
28	12.0	9.5	11.0	5.5	3.0	4.0	3.5	2.0	2.5	5.5	4.0	5.0
29	13.5	10.5	12.0	4.0	2.5	3.0	3.5	2.0	2.5	6.0	5.0	5.5
30	14.0	12.0	13.0	5.0	3.0	4.0	2.5	1.5	1.5	5.5	4.5	5.0
31	14.0	11.5	13.0	---	---	---	2.5	1.5	2.0	4.5	3.5	4.0
MONTH	19.0	9.5	13.0	13.0	2.5	8.5	8.0	.0	4.0	6.5	.0	4.0

UPPER ROGUE RIVER BASIN

14338000 ELK CREEK NEAR TRAIL, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4.5	3.5	4.0	7.5	6.5	7.0	11.5	8.0	10.0	9.5	7.5	8.5
2	3.5	1.5	2.5	8.0	6.0	7.0	11.5	9.5	10.5	9.5	7.0	8.5
3	3.0	1.0	2.0	8.0	7.5	8.0	11.0	9.0	10.0	10.5	8.0	9.0
4	3.0	1.0	2.0	8.0	7.5	8.0	11.0	9.0	10.0	10.5	7.5	9.0
5	3.0	1.0	2.0	8.0	7.0	7.5	11.0	7.5	9.5	9.0	7.5	8.5
6	4.5	2.0	3.0	8.0	6.5	7.5	12.0	10.0	11.0	9.0	7.0	8.0
7	4.5	2.5	3.5	7.5	4.0	6.0	11.0	9.5	10.5	10.0	7.0	8.5
8	5.5	4.5	5.0	7.5	4.5	6.0	10.0	7.0	9.0	10.0	8.0	9.0
9	6.5	5.5	6.0	7.0	5.5	6.5	12.0	8.0	10.0	10.0	7.0	8.5
10	7.5	5.5	6.5	6.5	4.0	5.0	13.0	9.5	11.5	13.5	8.0	10.5
11	6.5	4.5	5.5	6.5	3.0	4.5	15.0	11.5	13.5	15.5	10.0	12.5
12	6.0	3.5	5.0	7.0	3.0	5.0	15.0	13.0	14.0	14.5	11.5	12.5
13	6.5	5.0	5.5	7.5	4.0	6.0	14.5	13.0	13.5	12.0	10.0	11.0
14	5.5	3.0	4.5	8.0	4.5	6.5	13.0	11.0	12.0	14.5	9.0	11.5
15	6.5	4.5	5.5	7.5	4.5	6.0	14.5	10.5	12.5	15.5	10.5	13.0
16	5.5	4.0	5.0	7.5	4.5	6.5	14.0	12.0	12.5	15.0	12.0	13.0
17	5.0	3.0	3.5	8.5	5.0	7.0	13.5	11.0	12.5	13.5	9.0	11.5
18	6.0	3.5	4.5	9.5	6.0	8.0	13.0	11.5	12.5	14.5	11.0	12.5
19	5.5	3.5	4.5	9.5	7.0	8.5	12.5	11.0	11.5	15.0	10.5	13.0
20	6.0	3.5	5.0	9.5	7.0	8.5	11.5	10.0	10.5	16.5	11.5	14.0
21	6.5	4.0	5.5	9.0	8.0	8.5	10.0	8.5	9.0	18.5	13.5	16.0
22	6.5	4.0	5.5	8.5	7.0	8.0	11.0	7.0	9.0	18.0	15.5	16.5
23	6.5	4.0	5.5	9.5	8.0	8.5	10.5	7.0	9.0	16.0	14.0	15.0
24	7.0	4.5	6.0	8.5	6.5	7.0	10.0	8.0	9.5	16.5	12.0	14.0
25	7.0	5.0	6.0	10.5	6.0	8.0	12.5	8.0	10.0	17.5	14.0	15.5
26	8.5	6.0	7.5	10.5	8.0	9.0	15.0	10.5	12.5	16.5	14.0	15.5
27	8.5	7.0	8.0	8.0	6.5	7.5	14.5	12.0	13.5	17.5	14.5	16.0
28	9.5	7.5	8.5	8.5	5.5	7.0	14.0	12.0	13.0	17.0	13.5	15.5
29	8.5	6.5	7.0	9.0	7.5	8.0	13.0	10.5	11.5	13.5	11.5	12.5
30	---	---	---	9.0	6.5	8.0	10.5	9.0	9.5	14.5	11.0	13.0
31	---	---	---	10.0	6.0	8.0	---	---	---	14.5	12.0	13.0
MONTH	9.5	1.0	5.0	10.5	3.0	7.0	15.0	7.0	11.0	18.5	7.0	12.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	12.0	---	---	22.0	18.5	20.0	26.0	22.5	24.0	25.5	20.5	23.0
2	---	---	---	24.0	20.0	22.0	25.5	21.0	23.5	25.5	21.0	23.5
3	---	---	---	23.0	21.0	22.0	26.0	21.5	23.5	26.0	21.5	23.5
4	---	---	---	21.5	20.0	20.5	26.5	21.5	24.0	26.0	21.5	23.5
5	---	---	---	21.5	18.5	20.0	24.0	21.5	23.0	26.0	21.0	23.0
6	---	---	---	21.5	18.0	19.5	25.0	21.0	22.5	25.5	20.5	22.5
7	---	---	---	23.5	18.5	20.5	24.5	20.5	22.5	25.5	20.0	22.5
8	---	---	---	24.0	20.0	22.0	24.5	20.0	22.5	25.0	19.5	22.0
9	---	---	---	25.0	21.0	23.0	25.0	20.5	23.0	24.5	19.0	21.0
10	---	---	---	25.0	21.0	23.0	25.5	21.0	23.0	23.0	18.0	20.0
11	---	---	---	23.5	21.0	22.0	25.0	21.5	23.0	22.5	17.0	19.5
12	---	---	---	24.0	20.5	22.0	24.5	21.0	22.5	23.0	17.5	20.0
13	---	---	---	24.5	21.0	22.5	24.0	21.0	22.0	22.0	17.0	19.5
14	19.0	---	---	25.0	21.0	23.0	23.0	20.0	21.5	22.0	17.0	19.0
15	20.5	16.5	18.5	24.5	21.0	22.5	23.5	19.5	21.5	21.5	17.0	18.5
16	21.5	17.5	19.0	24.5	21.0	22.5	23.0	19.5	21.5	22.0	17.0	18.5
17	21.0	17.5	19.5	25.0	21.0	23.0	23.0	20.0	21.5	20.5	16.0	17.5
18	22.0	18.0	20.0	26.0	21.5	23.5	23.5	19.0	21.0	20.0	15.0	17.0
19	23.0	18.5	20.5	26.5	22.0	24.5	24.0	19.5	21.5	18.0	16.5	17.0
20	23.5	20.0	21.5	27.5	23.0	25.0	24.0	19.5	21.5	18.5	15.5	16.5
21	22.5	19.5	21.0	27.5	23.0	25.0	24.0	19.0	21.5	18.5	15.0	16.5
22	23.0	19.5	21.0	27.0	23.0	25.0	24.0	19.5	22.0	18.0	15.0	16.5
23	23.0	20.5	21.5	26.5	22.5	24.5	24.0	20.0	22.0	18.0	14.5	16.5
24	23.0	20.0	21.5	27.0	22.5	24.5	24.0	20.0	22.0	17.5	14.5	16.5
25	22.0	19.5	20.5	27.5	22.5	25.0	24.5	20.5	22.5	18.0	15.0	16.5
26	21.0	18.5	19.5	27.5	23.5	25.5	24.5	20.0	22.0	17.5	15.0	16.5
27	20.5	18.5	19.5	27.0	23.5	25.5	24.5	20.0	22.5	18.5	16.0	17.0
28	19.5	17.5	18.5	27.0	22.5	25.0	24.5	20.5	22.5	19.0	15.0	17.0
29	19.0	16.5	17.5	27.5	22.5	25.0	25.5	21.0	23.0	19.5	15.0	17.5
30	20.5	17.0	18.5	27.5	23.0	25.0	25.0	20.5	22.5	19.5	16.0	18.0
31	---	---	---	27.5	23.5	25.0	24.5	20.0	22.5	---	---	---
MONTH	---	---	---	27.5	18.0	23.0	26.5	19.0	22.5	26.0	14.5	19.0

ROGUE RIVER BASIN

277

14338100 ROGUE RIVER AT TRAIL, OR

LOCATION.--Lat 42°38'51", long 122°48'18", in NW 1/4 NE 1/4 sec.3, T.34 S., R.1 W., Jackson County, Hydrologic Unit 17100307, on right bank 0.2 mi upstream from Trail Creek, and at mile 148.9.

DRAINAGE AREA.--Not determined.

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: March to September 1988.

INSTRUMENTATION.--Water-quality monitor since March 1988.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum recorded, 16.0°C Aug. 9-12.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1				---	---	---	10.0	5.0	7.0	10.0	7.0	8.0
2				---	---	---	7.0	6.0	6.0	9.5	7.5	8.0
3				---	---	---	8.5	5.5	6.5	9.5	7.5	8.5
4				---	---	---	8.0	5.5	6.0	10.5	8.0	---
5				---	---	---	8.5	5.0	6.5	---	---	---
6				---	---	---	8.5	5.5	6.0	---	---	---
7				---	---	---	7.0	5.0	6.0	---	---	---
8				---	---	---	9.0	5.5	7.0	---	---	---
9				---	---	---	8.5	5.0	6.5	---	---	---
10				---	---	---	8.5	5.5	6.5	---	---	---
11				---	---	---	9.0	5.5	7.0	11.5	---	---
12				---	---	---	8.5	5.5	6.5	10.5	8.5	9.5
13				---	---	---	7.0	6.0	6.5	10.0	9.0	9.5
14				---	---	---	7.0	6.0	6.5	11.0	8.5	9.5
15				7.5	---	---	9.0	6.0	7.0	12.0	9.0	10.0
16				8.0	4.0	5.5	7.0	6.0	6.5	10.0	8.5	9.5
17				8.0	4.0	6.0	8.0	6.0	7.0	11.0	8.0	9.5
18				8.5	4.5	6.0	8.0	5.5	6.5	11.0	8.5	9.5
19				8.5	5.0	6.5	7.5	6.0	6.5	11.5	8.5	9.5
20				8.0	5.0	6.0	7.0	6.5	6.5	11.5	8.0	9.5
21				7.0	5.5	6.0	8.0	6.5	7.0	12.0	8.5	10.0
22				7.0	5.5	6.0	9.5	7.0	8.0	11.5	8.5	9.5
23				7.5	5.5	6.5	9.5	7.5	8.0	10.5	8.0	9.5
24				6.5	5.0	5.5	9.0	7.0	8.0	11.5	7.5	9.5
25				9.5	5.0	7.0	10.0	7.0	8.5	11.5	8.0	9.5
26				7.5	5.5	6.5	11.5	8.0	9.5	11.5	8.0	9.5
27				8.0	5.0	6.0	11.0	8.5	9.5	11.5	8.5	10.0
28				8.5	4.5	6.0	10.0	8.0	9.0	10.0	8.5	9.0
29				8.0	5.5	6.5	9.5	7.5	8.5	10.0	8.5	9.0
30				8.5	4.5	6.5	9.5	7.0	8.0	11.5	8.0	9.5
31				9.5	4.5	6.5	---	---	---	9.5	8.5	9.0
MONTH				---	---	---	11.5	5.0	7.0	---	---	---

ROGUE RIVER BASIN

14338100 ROGUE RIVER AT TRAIL, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.0	9.0	9.0	11.0	8.0	9.5	15.0	11.5	13.0	13.0	10.5	11.5
2	10.5	8.5	9.5	11.5	8.5	9.5	15.0	11.5	13.0	13.0	11.0	12.0
3	10.5	8.5	9.5	11.5	8.0	9.5	15.5	11.5	13.5	13.5	11.0	12.0
4	11.0	8.5	9.5	11.0	8.0	9.5	15.5	12.0	13.5	13.5	11.0	12.0
5	10.0	8.5	9.0	11.0	8.0	9.5	14.0	12.0	13.0	13.5	11.0	12.0
6	10.0	8.5	9.0	11.5	8.0	9.5	15.5	12.0	13.5	13.5	11.0	12.0
7	9.5	8.5	9.0	12.0	8.5	10.0	15.5	12.0	13.5	13.0	10.5	11.5
8	10.5	8.5	9.0	12.0	8.5	10.0	15.5	12.0	13.5	13.0	10.0	11.0
9	9.5	8.5	9.0	12.0	8.5	10.0	16.0	12.0	14.0	13.0	10.0	11.0
10	11.0	8.5	9.5	12.0	8.5	10.5	16.0	12.5	14.0	12.5	10.0	11.0
11	12.0	8.5	10.0	11.5	8.5	10.0	16.0	12.5	14.0	13.0	9.5	11.0
12	12.0	8.5	10.0	12.0	9.0	10.5	16.0	12.5	14.0	13.0	7.5	10.5
13	12.0	8.5	10.5	12.5	9.0	10.5	15.5	12.5	14.0	9.5	6.5	8.0
14	12.5	9.0	10.5	12.5	9.0	11.0	15.5	12.5	14.0	9.5	6.5	7.5
15	11.5	9.5	10.5	13.5	9.5	11.5	15.5	13.0	14.0	9.5	6.5	7.5
16	12.0	9.0	10.0	13.5	10.0	12.0	15.5	12.0	13.5	10.0	6.5	8.0
17	12.0	9.0	10.0	14.0	10.0	12.0	14.0	11.0	12.5	9.5	6.5	7.5
18	12.0	9.0	10.5	14.0	10.5	12.0	14.0	11.5	12.5	9.5	6.5	7.5
19	12.5	9.0	10.5	14.0	10.5	12.0	14.5	11.5	12.5	7.5	6.5	7.0
20	12.5	9.0	10.5	14.5	11.0	12.5	14.5	11.5	12.5	9.0	6.0	7.0
21	12.0	9.0	10.5	14.5	10.5	12.5	14.5	11.5	13.0	9.5	6.0	7.0
22	12.0	9.0	10.5	14.5	10.5	12.5	14.5	11.5	13.0	9.5	6.0	7.0
23	12.5	9.0	10.5	14.5	11.0	12.5	14.5	12.0	13.0	9.5	6.0	7.0
24	12.5	9.0	10.5	15.0	11.0	12.5	14.5	12.0	13.0	9.5	6.0	7.5
25	11.0	9.5	10.0	14.5	11.0	13.0	14.5	12.5	13.0	8.5	6.0	7.0
26	12.5	9.5	10.5	14.5	11.0	13.0	14.5	12.0	13.0	9.0	6.5	7.5
27	11.5	9.0	10.0	15.0	11.0	13.0	14.5	12.0	13.0	8.5	6.5	7.5
28	10.5	8.5	9.5	15.0	11.0	13.0	15.0	12.5	13.5	9.0	6.5	7.5
29	11.5	8.0	9.5	15.0	11.0	13.0	15.0	12.5	13.5	9.5	6.5	7.5
30	11.0	8.5	9.5	15.5	11.5	13.5	14.5	11.0	13.0	9.5	6.5	7.5
31	---	---	---	15.5	11.5	13.5	13.0	10.5	11.5	---	---	---
MONTH	12.5	8.0	10.0	15.5	8.0	11.5	16.0	10.5	13.0	13.5	6.0	9.0

UPPER ROGUE RIVER BASIN

279

14339000 ROGUE RIVER AT DODGE BRIDGE, NEAR EAGLE POINT, OR

LOCATION.--Lat 42°31'30", long 122°50'30", in SE 1/4 sec.17, T.35 S., R.1 W., Jackson County, Hydrologic Unit 17100307, on right bank 50 ft upstream from Dodge Bridge, 0.7 mi downstream from Reese Creek, 4.3 mi northwest of Eagle Point, and at mile 138.61.

DRAINAGE AREA.--1,215 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year.

REVISED RECORDS.--WSP 1094: 1942(M), 1943, 1945(M), 1946. WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,271.39 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 21, 1938, nonrecording gage, Dec. 21, 1938, to Aug. 15, 1968, water-stage recorder, at datum 2.27 ft higher, Aug. 16, 1968, to Sept. 30, 1976, water-stage recorder, at datum 1.00 ft higher.

REMARKS.--Water-discharge records excellent. Flow regulated since February 1977 by Lost Creek Lake (station 14335040). Diversions for irrigation upstream from station; most of low flow of Big Butte Creek (station 14337500) is diverted near Butte Falls.

AVERAGE DISCHARGE.--50 years, 2,595 ft³/s, 1,880,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 87,600 ft³/s Dec. 22, 1964, gage height, 12.78 ft, datum then in use, from rating curve extended above 23,000 ft³/s; minimum discharge, 567 ft³/s Feb. 18, 1977, result of closure of Lost Creek dam, minimum prior to that time, 611 ft³/s Aug. 6, 14, 29, Sept. 9, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,520 ft³/s Jan. 15, gage height, 5.79 ft; minimum discharge, 842 ft³/s Apr. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1370	1070	912	1020	1400	974	886	1440	2560	2050	1720	2270
2	1370	1080	1250	1000	1300	1000	1020	1490	3720	1980	1730	2260
3	1370	1060	1330	1010	1200	961	1170	1830	3120	1980	1740	2280
4	1360	945	1210	1060	1130	960	1150	1990	2790	2000	1730	2270
5	1270	898	1160	1170	1090	1020	1170	1910	2750	1980	1720	2280
6	1160	885	1170	1210	1050	1070	1390	1920	2730	1990	1730	2260
7	1130	889	1630	1190	1030	1050	1670	2630	2850	1940	e1730	2140
8	1130	877	1520	1240	1030	1040	1630	2810	2770	1930	e1730	1880
9	1130	875	1810	2870	1180	1080	1620	2760	2670	1930	e1710	1720
10	1130	872	3930	3730	1340	1180	1630	2540	2660	1930	e1700	1730
11	1130	867	2210	3060	1310	1160	1610	2400	2340	1930	e1700	1730
12	1130	893	1550	2110	1270	1120	1600	2510	2200	1940	e1790	1660
13	1130	927	1350	1790	1230	1090	1610	2780	2200	1940	1930	1530
14	1130	930	1220	2980	1170	1060	1620	2690	2260	1950	1950	1540
15	1140	933	1180	6470	1110	1030	1620	2410	2220	1950	2080	1440
16	1130	946	1360	5020	1080	1010	1620	2340	2190	1910	2250	1280
17	1100	948	1440	3890	1060	981	1610	2510	2190	1870	2250	1280
18	1070	942	1300	2980	1020	959	1610	2300	2170	1870	2250	1290
19	1060	924	1220	2300	998	975	1610	2040	2150	1860	2250	1320
20	1060	917	1160	1590	976	990	1630	1980	2140	1790	2260	1320
21	1050	922	1150	1560	960	993	1940	1950	2120	1710	2260	1300
22	1050	922	1280	1540	949	964	2300	1950	2120	1720	2250	1300
23	1050	917	1340	1520	937	966	2210	1920	2100	1720	2260	1300
24	1060	919	1250	1540	927	973	2130	1860	2110	1730	2270	1300
25	1070	930	1170	1490	922	946	1960	1780	2120	1720	2270	1300
26	1070	927	1110	1290	918	941	1520	1710	2110	1710	2270	1300
27	1070	917	1080	1260	915	970	1400	1700	2100	1710	2270	1300
28	1060	907	1060	1320	911	961	1340	1780	2110	1710	2270	1300
29	1060	906	1050	1300	907	898	1230	2130	2110	1720	2280	1290
30	1060	900	1050	1480	---	898	1300	1890	2100	1720	2280	1280
31	1070	---	1040	1450	---	890	---	1790	---	1710	2270	---
TOTAL	35170	27845	42492	63440	31320	31110	46806	65740	71780	57600	62900	48450
MEAN	1135	928	1371	2046	1080	1004	1560	2121	2393	1858	2029	1615
MAX	1370	1080	3930	6470	1400	1180	2300	2810	3720	2050	2280	2280
MIN	1050	867	912	1000	907	890	886	1440	2100	1710	1700	1280
AC-FT	69760	55230	84280	125800	62120	61710	92840	130400	142400	114200	124800	96100

CAL YR 1987 TOTAL 660957 MEAN 1811 MAX 7830 MIN 867 AC-FT 1311000
WTR YR 1988 TOTAL 584653 MEAN 1597 MAX 6470 MIN 867 AC-FT 1160000

e Estimated

UPPER ROGUE RIVER BASIN

14339000 ROGUE RIVER AT DODGE BRIDGE, NEAR EAGLE POINT, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1973 to current year.

INSTRUMENTATION.--Temperature recorder since August 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 20.0°C July 27, 28, 1975; minimum, 0.0°C Jan. 6-8, 10, 11, 1974, Jan. 6-9, 1977.
Maximum since full operation of Lost Creek Lake, 19.5°C July 3, 1981; minimum, 1.0°C Feb. 4, 1985.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 18.0°C July 30, Aug. 8-12; minimum, 2.0°C Feb. 3-5.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	10.0	6.0	8.0	9.0	8.0	8.5	7.5	7.0	7.5	4.5	3.5	4.0
2	9.5	6.5	8.0	9.0	7.5	8.5	7.5	7.0	7.5	4.0	3.0	3.5
3	9.5	6.0	7.5	9.5	7.5	8.5	8.0	7.0	7.5	5.5	4.0	4.5
4	9.5	6.0	8.0	9.5	7.0	8.0	8.0	7.5	8.0	6.0	4.5	5.5
5	9.5	6.0	8.0	9.5	6.5	8.5	8.0	7.5	8.0	5.5	4.5	5.0
6	9.5	6.0	7.5	9.5	7.5	8.5	8.0	7.5	7.5	5.5	4.5	5.0
7	9.0	6.0	7.5	10.5	8.5	9.5	7.5	6.0	6.5	4.5	4.0	4.5
8	9.0	5.5	7.5	9.0	7.5	8.5	7.0	6.0	6.5	5.0	4.5	4.5
9	9.0	6.0	7.5	10.5	8.5	9.5	7.5	6.5	7.0	5.5	4.5	5.0
10	8.0	5.5	7.0	9.0	7.5	8.5	8.0	7.0	8.0	6.0	5.5	6.0
11	9.0	6.0	7.5	9.5	8.0	8.5	7.0	6.0	6.5	5.5	4.5	5.0
12	9.0	6.0	7.5	10.0	9.0	9.5	6.0	5.0	5.5	4.5	4.0	4.5
13	9.0	5.5	7.5	10.5	9.0	9.5	5.0	4.0	4.5	5.0	4.5	5.0
14	8.5	5.0	7.0	9.0	8.0	8.5	5.5	4.5	5.0	6.0	5.0	5.5
15	8.5	5.5	7.0	7.5	6.5	7.0	5.5	4.5	5.0	5.5	4.5	5.0
16	8.0	5.0	6.5	9.0	7.5	8.0	5.0	4.5	5.0	5.0	4.5	4.5
17	8.5	5.0	7.0	10.0	8.5	9.5	5.5	4.5	5.0	4.5	4.0	4.5
18	8.5	5.0	7.0	9.5	7.5	8.5	5.5	5.0	5.5	4.5	3.5	4.0
19	8.5	5.0	7.0	9.0	7.5	8.0	6.0	5.0	5.5	5.0	4.0	4.5
20	8.5	5.0	7.0	8.5	8.0	8.5	5.5	4.0	4.5	4.5	3.5	4.0
21	8.5	5.5	7.0	9.5	7.5	8.5	6.0	5.0	5.5	5.5	4.5	5.0
22	8.5	6.0	7.0	8.5	7.0	7.5	6.0	5.0	5.5	5.0	4.5	4.5
23	8.0	6.0	7.0	9.0	7.5	8.0	5.5	4.5	5.0	5.5	4.5	5.0
24	8.5	6.0	7.5	8.0	7.0	7.5	4.5	3.0	4.0	5.0	3.5	4.5
25	9.0	6.0	7.5	8.0	7.0	7.5	4.0	2.5	3.5	5.0	3.0	4.0
26	9.0	6.5	7.5	8.0	6.5	7.5	4.5	3.0	3.5	4.5	3.0	4.0
27	8.5	6.0	7.5	7.5	5.5	6.5	4.5	3.5	4.0	5.5	4.5	5.0
28	8.5	6.0	7.0	7.5	5.5	6.5	5.5	4.5	5.0	5.0	4.0	4.5
29	9.5	7.0	8.0	7.0	5.0	6.0	5.0	4.0	4.5	5.5	5.0	5.0
30	8.5	7.5	8.0	8.0	6.5	7.0	4.5	3.5	4.0	5.5	4.5	5.0
31	9.0	7.5	8.5	---	---	---	4.5	4.0	4.5	4.5	3.5	4.0
MONTH	10.0	5.0	7.5	10.5	5.0	8.0	8.0	2.5	5.5	6.0	3.0	4.5

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	5.0	4.0	4.5	7.0	5.5	6.5	11.0	5.5	8.5	10.5	7.0	8.5
2	4.0	2.5	3.5	7.5	5.0	6.5	9.0	6.5	7.5	10.0	7.0	8.5
3	4.0	2.0	3.0	7.0	6.0	6.5	10.0	6.0	7.5	10.5	7.5	9.0
4	4.5	2.0	3.5	7.0	6.0	6.5	9.0	5.5	7.5	11.5	7.5	9.5
5	4.5	2.0	3.5	7.5	6.0	7.0	10.0	5.0	7.5	10.0	8.0	9.0
6	5.0	3.0	4.0	7.5	6.0	6.5	9.5	6.0	7.5	10.0	8.0	9.0
7	5.0	3.0	4.5	8.0	4.0	6.0	8.0	5.5	6.5	11.5	8.0	9.5
8	6.0	4.5	5.5	7.5	4.5	6.5	10.0	5.0	7.5	10.5	8.5	9.5
9	7.0	5.5	6.0	7.5	5.5	6.5	10.5	5.5	7.5	10.5	8.0	9.5
10	7.5	5.5	6.5	7.0	4.0	5.5	10.5	5.5	7.5	12.5	8.5	10.5
11	6.5	4.5	5.5	7.0	3.5	5.5	11.0	6.0	8.0	14.0	9.0	11.0
12	6.0	4.0	5.0	7.5	3.5	6.0	9.5	6.0	8.0	12.0	9.5	10.5
13	6.0	4.0	5.0	8.5	4.0	6.5	8.0	6.5	7.0	11.0	8.5	9.5
14	6.0	3.5	5.0	8.5	4.5	6.5	7.5	6.5	7.0	12.5	8.5	10.5
15	6.5	4.5	5.5	8.0	4.0	6.5	10.5	6.0	8.0	14.0	9.0	11.0
16	6.0	3.5	5.0	8.5	4.0	6.5	8.0	6.5	7.5	10.5	9.5	10.0
17	4.5	3.0	4.0	9.0	4.5	6.5	9.5	6.5	7.5	12.5	8.0	10.0
18	6.5	3.5	5.0	9.5	4.5	7.0	9.0	6.5	7.5	12.5	9.0	10.5
19	6.5	3.5	5.0	9.5	5.5	7.5	8.5	6.5	7.5	14.0	8.5	11.0
20	7.0	3.5	5.5	8.5	5.0	7.0	8.0	6.5	7.0	14.0	8.5	11.0
21	7.0	4.0	5.5	8.0	6.0	7.0	8.0	6.5	7.5	14.5	9.0	11.5
22	7.0	4.0	5.5	8.0	5.5	7.0	10.0	7.0	8.5	13.5	9.0	11.0
23	7.0	3.5	5.5	8.5	6.0	7.5	10.5	7.0	8.5	12.5	8.5	10.5
24	7.5	4.5	6.0	7.5	5.0	6.5	10.0	7.5	8.5	14.0	8.0	10.5
25	7.0	4.5	6.0	10.0	5.0	7.5	11.5	7.5	9.0	14.0	8.5	11.0
26	8.0	5.0	6.5	9.0	6.0	7.5	12.5	8.0	10.5	13.5	9.0	11.0
27	8.0	5.5	6.5	8.0	5.0	6.5	12.0	8.5	10.5	13.5	9.0	11.0
28	8.5	5.5	7.0	9.0	4.0	7.0	11.0	8.5	10.0	11.5	9.5	10.0
29	6.5	5.0	6.0	9.0	6.0	7.5	10.5	8.5	9.5	12.0	8.5	10.0
30	---	---	---	9.5	5.0	7.0	10.5	7.0	8.5	13.5	8.0	10.5
31	---	---	---	10.0	4.5	7.5	---	---	---	10.5	9.0	9.5
MONTH	8.5	2.0	5.0	10.0	3.5	6.5	12.5	5.0	8.0	14.5	7.0	10.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	10.5	9.0	10.0	14.0	8.5	11.0	17.0	11.5	14.5	15.0	10.5	12.5
2	11.5	9.0	10.0	14.5	9.0	11.5	17.0	11.0	14.0	15.0	11.0	12.5
3	12.0	9.5	10.0	13.5	8.5	11.5	17.5	11.5	14.5	15.5	11.5	13.0
4	12.0	9.5	10.5	13.5	8.0	10.5	17.5	12.0	14.5	15.5	11.0	13.0
5	11.0	9.0	10.0	13.5	8.5	11.0	15.0	12.0	14.0	15.5	11.0	13.0
6	11.5	9.0	10.0	14.0	8.0	11.0	17.5	12.0	14.5	15.5	11.0	13.0
7	10.5	9.0	9.5	14.5	9.0	11.5	17.0	11.5	14.0	15.5	11.5	13.0
8	12.0	8.5	10.0	15.0	9.0	12.0	18.0	11.5	14.5	15.0	10.0	12.0
9	10.5	9.0	10.0	15.0	9.0	12.0	18.0	12.0	15.0	15.0	10.0	12.0
10	13.0	9.0	10.5	15.0	9.0	12.0	18.0	12.5	15.0	14.0	10.0	12.0
11	14.0	9.5	11.5	14.0	9.0	11.5	18.0	12.0	15.0	14.5	9.5	12.0
12	14.5	9.0	11.5	15.0	9.5	12.0	18.0	12.0	15.0	14.5	10.0	12.0
13	14.5	9.5	12.0	15.0	9.5	12.0	17.5	12.0	15.0	11.5	7.0	9.5
14	15.0	10.0	12.0	15.0	10.0	12.0	17.0	12.0	14.5	11.5	7.0	9.0
15	15.0	10.5	12.0	16.0	10.0	13.0	17.0	12.5	14.5	11.0	7.0	9.0
16	14.5	9.5	12.0	16.5	10.0	13.0	17.5	12.0	14.5	11.5	7.5	9.5
17	14.5	9.5	12.0	16.5	10.5	13.5	15.5	11.5	13.0	11.0	6.5	9.0
18	15.0	9.5	12.0	16.5	10.5	13.5	16.0	11.0	13.0	11.0	6.0	8.5
19	15.5	10.0	12.5	16.5	10.5	13.5	16.0	11.0	13.5	9.5	7.5	8.5
20	15.5	10.0	12.5	17.0	11.0	14.0	16.0	11.0	13.5	10.5	6.5	8.5
21	15.0	9.5	12.0	17.0	11.5	14.0	16.0	11.0	13.5	10.5	6.0	8.5
22	14.5	10.0	12.0	17.0	11.0	14.0	16.5	11.5	13.5	11.0	6.5	8.5
23	15.0	10.0	12.5	17.0	11.0	14.0	15.5	12.0	13.5	11.0	6.5	8.5
24	15.0	9.5	12.0	17.0	11.0	14.0	16.5	12.0	14.0	11.0	6.5	8.5
25	12.5	10.0	11.5	17.5	11.5	14.5	16.0	12.0	14.0	10.0	6.5	8.5
26	14.5	10.0	12.0	17.0	12.0	14.5	16.5	11.5	14.0	10.5	7.0	8.5
27	14.0	9.5	12.0	17.5	11.5	14.5	16.5	12.0	14.0	10.5	7.5	8.5
28	13.0	9.0	11.0	17.5	11.0	14.5	16.5	12.5	14.5	10.5	6.5	8.5
29	14.0	8.5	11.0	17.5	11.5	14.5	17.0	12.5	14.5	11.0	7.0	9.0
30	14.5	8.5	11.0	18.0	11.5	15.0	16.5	12.5	14.0	11.0	7.0	9.0
31	---	---	---	17.5	12.0	15.0	15.0	10.5	12.5	---	---	---
MONTH	15.5	8.5	11.5	18.0	8.0	13.0	18.0	10.5	14.0	15.5	6.0	10.5
YEAR	18.0	2.0	8.5									

UPPER ROGUE RIVER BASIN

14342500 NORTH FORK LITTLE BUTTE CREEK AT FISH LAKE, NEAR LAKECREEK, OR

LOCATION.--Lat 42°22'35", long 122°21'20", in SE 1/4 SW 1/4 sec.4, T.37 S., R.4 E., Jackson County, Hydrologic Unit 17100307, on right bank 0.5 mi downstream from Fish Lake dam, 14 mi east of Lakecreek, and at mile 15.2.

DRAINAGE AREA.--20.8 mi².

PERIOD OF RECORD.--October 1914 to July 1915, June 1916 to current year. Monthly discharge only November 1916 to May 1917, published in WSP 1318.

REVISED RECORDS.--WSP 654: Drainage area (former site). WSP 1218: 1917(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,571.41 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1914, to July 31, 1915, nonrecording gage at site 0.5 mi upstream at different datum. June 1, 1916, to July 9, 1918, nonrecording gage and July 10, 1918, to Oct. 28, 1932, water-stage recorder at site 0.25 mi upstream at different datums.

REMARKS.--Records fair. Since 1915, Fish Lake (see below) has stored water for irrigation by Medford Irrigation District. Cascade Canal diverts from Fourmile Lake in Klamath River basin and discharges into lava bed 1.0 mi upstream from Fish Lake; diversion began August 1923. No diversion from creek upstream from station.

AVERAGE DISCHARGE.--72 years (water years 1917-88), 35.9 ft³/s, 26,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 940 ft³/s June 5, 1917, computed from rate of change in contents of reservoir after break in dam occurred; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 74 ft³/s Aug. 5-7, gage height, 1.50 ft; minimum discharge, 1.3 ft³/s Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	5.5	8.4	9.6	11	12	13	16	17	19	65	68
2	1.9	5.6	9.0	9.6	11	12	13	16	17	19	65	67
3	2.0	5.5	8.7	e9.6	11	12	13	16	18	35	65	67
4	2.0	5.5	8.8	e9.7	11	12	13	16	18	49	64	65
5	2.1	5.7	8.8	e9.8	11	12	13	16	19	49	70	64
6	2.2	5.7	9.2	e9.9	11	12	13	16	19	48	74	63
7	2.3	5.7	8.8	e10	11	12	13	16	19	48	73	63
8	2.3	6.0	8.9	10	11	13	13	16	19	55	72	62
9	2.4	6.0	9.2	10	11	13	13	16	19	60	71	61
10	2.5	6.0	10	10	11	13	13	16	19	60	64	61
11	2.6	6.1	9.3	10	11	13	13	16	19	60	54	60
12	2.7	6.4	9.2	10	11	13	14	17	19	60	54	60
13	2.7	6.9	9.2	10	11	13	14	17	19	60	57	58
14	2.8	6.8	9.5	10	11	13	15	17	19	60	58	58
15	3.0	6.9	e9.5	11	11	13	15	17	19	60	54	57
16	3.0	7.4	9.6	11	11	13	15	17	19	60	53	56
17	3.2	7.4	9.6	11	11	13	15	17	19	60	56	56
18	3.2	7.2	9.6	11	11	13	15	17	19	60	60	56
19	3.3	7.2	9.6	11	11	13	15	17	19	58	60	56
20	3.4	7.5	9.6	11	11	13	15	17	19	58	60	49
21	3.5	7.8	9.6	11	11	13	15	17	19	58	59	43
22	3.5	7.7	9.6	11	11	13	15	17	19	63	58	43
23	3.7	7.9	9.6	11	11	13	15	17	19	69	58	45
24	4.0	8.0	9.6	11	11	13	15	17	19	69	58	45
25	4.1	8.0	9.6	11	11	13	15	17	19	68	62	45
26	4.3	7.9	9.6	11	11	13	15	17	19	67	65	44
27	4.5	8.0	9.6	11	11	13	15	17	19	67	65	44
28	4.7	7.9	9.6	11	11	13	15	18	19	67	68	43
29	4.9	8.0	9.6	11	11	13	16	18	19	67	71	43
30	5.0	7.9	9.6	11	---	13	16	17	19	67	70	23
31	5.1	---	9.6	11	---	13	---	17	---	66	69	---
TOTAL	98.8	206.1	290.1	325.2	319	396	428	518	564	1766	1952	1625
MEAN	3.19	6.87	9.36	10.5	11.0	12.8	14.3	16.7	18.8	57.0	63.0	54.2
MAX	5.1	8.0	10	11	11	13	16	18	19	69	74	68
MIN	1.9	5.5	8.4	9.6	11	12	13	16	17	19	53	23
AC-FT	196	409	575	645	633	785	849	1030	1120	3500	3870	3220
(†)	a2840	a3280	a3830	a3850	a3940	a4150	a4320	a4550	a4840	a4280	a3000	1930

CAL YR 1987 TOTAL 11437.1 MEAN 31.3 MAX 104 MIN 1.7 AC-FT 22690
WTR YR 1988 TOTAL 8488.2 MEAN 23.2 MAX 74 MIN 1.9 AC-FT 16840

e Estimated

† Monthend contents, in acre-feet, in Fish Lake, computed from elevations provided by Medford Irrigation District.

a Interpolated.

MIDDLE ROGUE RIVER BASIN

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14357500 BEAR CREEK AT MEDFORD, OR

LOCATION.--Lat 42°19'40", long 122°52'10", in NW 1/4 sec.30, T.37 S., R.1 W., Jackson County, Hydrologic Unit 17100308, on left bank 40 ft upstream from Main street Bridge, in Medford, and at mile 9.91.

DRAINAGE AREA.--289 mi².

PERIOD OF RECORD.--March 1915 to June 1920 (no low-flow records), October 1920 to September 1981, December 1983 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1044: 1944. WSP 1448: 1916, 1917(M), 1918-20, 1922, 1924, 1927(M), 1928, 1930. WSP 1568: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,341.98 ft above National Geodetic Vertical Datum of 1929. Dec. 31, 1947, to Sept. 23, 1985, at datum 2.00 ft higher. See WSP 1738 for history of changes prior to Dec. 31, 1947.

REMARKS.--Records good except for estimated daily discharges, which are poor. Flow partly regulated since 1924 by Emigrant Lake. Water is diverted into basin from the Klamath River basin. Many diversions for irrigation and municipal use upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,500 ft³/s Dec. 2, 1962, gage height, 10.04 ft, present datum; maximum gage height, about 13.0 ft Feb. 20, 1927, from floodmarks, present datum, site then in use; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 256 ft³/s June 5, gage height, 3.12 ft; minimum daily discharge, 13 ft³/s Oct. 16, 18-22, 26, Nov. 2, 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e37	e16	e20	26	60	59	18	52	90	30	30	14
2	e33	e13	e25	26	53	56	18	47	86	31	33	14
3	e27	e13	e24	27	49	52	20	49	65	37	32	16
4	e22	e15	e23	28	48	52	18	39	83	42	29	20
5	e22	e16	e22	28	43	49	17	38	174	48	32	20
6	e22	e16	e27	27	43	50	18	48	183	42	38	17
7	e21	e15	40	30	42	47	24	66	181	42	36	15
8	e21	e16	88	29	51	45	19	78	137	51	37	17
9	e21	e16	64	40	72	48	22	91	101	37	39	18
10	e20	e15	99	47	69	48	39	67	91	44	32	18
11	e20	e15	92	68	63	46	31	50	70	50	29	16
12	e20	e16	64	52	57	40	20	40	58	42	25	14
13	e20	e16	56	44	54	37	25	49	43	36	28	16
14	e19	e16	52	66	50	37	22	41	29	37	30	15
15	e15	e17	43	166	48	33	22	36	25	34	32	14
16	e13	e17	47	129	46	29	24	37	34	31	29	14
17	e14	e17	38	87	43	20	25	60	26	32	30	16
18	e13	e18	34	65	41	21	27	49	23	34	28	19
19	e13	e20	32	56	39	21	35	38	24	30	27	26
20	e13	e19	33	53	39	21	48	35	28	30	25	34
21	e13	e18	36	57	38	22	80	29	23	35	23	28
22	e13	e17	43	58	38	18	70	25	22	32	20	26
23	e14	e17	41	60	38	17	51	33	22	34	19	26
24	e14	e18	37	62	37	18	43	26	24	35	17	20
25	e14	e18	28	56	35	21	37	20	33	35	16	22
26	e13	e18	31	55	34	18	34	22	37	34	18	23
27	e14	e19	31	56	39	18	35	23	39	40	18	23
28	e14	e20	32	61	50	17	31	37	31	40	19	24
29	e15	e18	29	61	48	17	37	62	33	34	19	22
30	e15	e18	28	66	---	17	45	59	30	28	20	17
31	e15	---	27	64	---	17	---	53	---	28	16	---
TOTAL	560	503	1286	1750	1367	1011	955	1399	1845	1135	826	584
MEAN	18.1	16.8	41.5	56.5	47.1	32.6	31.8	45.1	61.5	36.6	26.6	19.5
MAX	37	20	99	166	72	59	80	91	183	51	39	34
MIN	13	13	20	26	34	17	17	20	22	28	16	14
AC-FT	1110	998	2550	3470	2710	2010	1890	2770	3660	2250	1640	1160

CAL YR 1987 TOTAL 19134 MEAN 52.4 MAX 265 MIN 13 AC-FT 37950
WTR YR 1988 TOTAL 13221 MEAN 36.1 MAX 183 MIN 13 AC-FT 26220

e Estimated

MIDDLE ROGUE RIVER BASIN

14359000 ROGUE RIVER AT RAYGOLD, NEAR CENTRAL POINT, OR

LOCATION.--Lat 42°26'15", long 122°59'10", in SW 1/4 sec.18, T.36 S., R.2 W., Jackson County, Hydrologic Unit 17100308, on right bank at Raygold, 0.1 mi downstream from Gold Ray Dam, 1.0 mi downstream from Bear Creek, 5.6 mi northwest of Central Point, and at mile 125.8.

DRAINAGE AREA.--2,053 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1905 to current year. Prior to October 1921, published as "near Tolo."

REVISED RECORDS.--WSP 1248: 1906, 1914(M), 1915. WSP 1398: 1910(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,121.78 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 19, 1914, nonrecording gage and Sept. 19, 1914, to Sept. 30, 1956, water-stage recorder, at site 300 ft upstream at same datum.

REMARKS.--Water-discharge records good. Flow regulated since February 1977 by Lost Creek Lake (station 14335040). Slight regulation by Fish Lake (published with station 14342500) and Emigrant Lake. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--83 years, 2,973 ft³/s, 2,154,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 131,000 ft³/s Dec. 23, 1964, gage height, 23.43 ft, from rating curve extended above 63,000 ft³/s on basis of slope-area measurement of 113,000 ft³/s; minimum discharge not determined; minimum daily, 616 ft³/s Sept. 6, 1931.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,500 ft³/s Jan. 15, gage height, 6.63 ft; minimum discharge, 995 ft³/s Nov. 11, Apr. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1420	1200	1110	1240	1950	1340	1020	1760	2690	e2100	1710	2200
2	1410	1210	1680	1220	1710	1370	1100	1760	4160	e2020	1710	2190
3	1400	1200	1640	1230	1530	1290	1320	2080	3530	e2000	1730	2190
4	1400	1020	1500	1310	1450	1320	1310	2270	3260	e2010	1720	2190
5	1250	1020	1460	1430	1380	1460	1270	2230	3460	e2040	1710	2220
6	1170	1020	1610	1440	1340	1500	1450	2310	3820	e2050	1750	2210
7	1170	1030	2470	1420	1320	1480	1810	3080	4060	e2050	1770	2130
8	1170	1010	2210	1490	1360	1400	1760	3530	3750	1940	1750	1910
9	1180	1020	2390	3180	1670	1580	1720	3540	3370	1930	1700	1720
10	1170	1010	4610	4330	1840	1690	1740	3060	3370	1920	1720	1730
11	1180	1010	2950	3980	1760	1530	1730	2780	2870	1950	1710	1740
12	1170	1070	1990	2830	1690	1440	1690	2800	2620	1940	1740	1700
13	1170	1110	1660	2230	1610	1390	1700	3380	2560	1940	1910	1540
14	1180	1130	1500	3070	1520	1350	1750	3110	2540	1960	1940	1560
15	1180	1130	1500	9130	1450	1310	1740	2760	2460	1940	2040	1500
16	1180	1130	1930	6650	1390	1270	1740	2600	2400	1920	2220	1280
17	1150	1130	1830	5150	1360	1230	1740	2890	2370	1890	2210	1290
18	1140	1100	1570	3750	1320	1210	1740	2660	2310	1890	2220	1310
19	1140	1080	1480	3020	1270	1190	1760	2310	2240	1850	2230	1390
20	1130	1080	1410	2110	1240	1160	1790	2190	2210	1800	2230	1490
21	1150	1120	1420	2060	1220	1160	2200	2120	2170	1670	2230	1450
22	1150	1100	1640	2020	1210	1160	2660	2090	2150	1700	2220	1430
23	1150	1080	1680	1940	1200	1150	2490	2070	2120	1700	2220	1410
24	1160	1110	1520	1960	1180	1170	2360	1990	2110	1720	2240	1410
25	1170	1140	1400	1880	1160	1140	2220	1910	2140	1710	2200	1390
26	1180	1110	1350	1610	1150	1110	1750	1790	2170	1690	2200	1400
27	1160	1090	1320	1590	1160	1140	1580	1770	2150	1680	2200	1410
28	1160	1080	1300	1690	1190	1140	1550	1860	2140	1680	2200	1420
29	1160	1060	1290	1700	1210	1080	1430	2310	2110	1690	2210	1380
30	1180	1060	1280	1960	---	1070	1540	2180	2090	1700	2210	1360
31	1190	---	1270	1890	---	1030	---	2030	---	1680	2210	---
TOTAL	37170	32660	53970	80510	40840	39860	51660	75220	81400	57760	62060	49550
MEAN	1199	1089	1741	2597	1408	1286	1722	2426	2713	1863	2002	1652
MAX	1420	1210	4610	9130	1950	1690	2660	3540	4160	2100	2240	2220
MIN	1130	1010	1110	1220	1150	1030	1020	1760	2090	1670	1700	1280
AC-FT	73730	64780	107000	159700	81010	79060	102500	149200	161500	114600	123100	98280

CAL YR 1987 TOTAL 758440 MEAN 2078 MAX 10500 MIN 1010 AC-FT 1504000
WTR YR 1988 TOTAL 662660 MEAN 1811 MAX 9130 MIN 1010 AC-FT 1314000

e Estimated

MIDDLE ROGUE RIVER BASIN

285

14359000 ROGUE RIVER AT RAYGOLD, NEAR CENTRAL POINT, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1973 to current year.

INSTRUMENTATION.--Temperature recorder since August 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 22.0°C July 25, 26, 1976; minimum, 0.0°C Jan. 7, 1974. Maximum since full operation of Lost Creek Lake, 20.5°C July 3, 4, 1981; minimum, 1.0°C Dec. 30, 1978, Jan. 30, 1980.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 19.0°C July 30, 31, Aug. 10, 11; minimum, 2.5°C Dec. 25, 26, Jan. 2.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	11.0	9.0	10.0	10.5	10.0	10.0	8.5	8.0	8.0	4.5	4.0	4.0
2	10.5	9.5	10.0	10.0	9.5	9.5	8.5	8.0	8.5	4.0	2.5	3.0
3	10.5	9.0	9.5	10.0	9.5	9.5	9.0	8.0	8.5	5.0	3.5	4.0
4	10.5	9.0	9.5	10.0	8.5	9.0	9.0	8.5	9.0	6.5	5.0	5.5
5	10.5	9.5	10.0	9.5	8.5	9.0	9.0	8.5	8.5	6.5	5.0	5.5
6	10.5	9.5	10.0	10.0	9.5	9.5	9.0	8.5	8.5	5.5	5.0	5.5
7	10.5	9.0	9.5	11.0	10.0	10.5	8.5	7.0	7.5	5.5	4.0	4.5
8	10.0	9.0	9.5	11.0	9.0	10.0	7.0	7.0	7.0	5.0	4.5	4.5
9	10.0	9.0	9.5	11.0	9.5	10.0	8.0	7.0	7.0	5.5	5.0	5.5
10	9.5	8.5	9.0	11.0	9.0	9.5	8.5	8.0	8.5	6.5	5.5	6.0
11	9.5	8.5	9.0	9.5	9.0	9.0	8.0	6.5	7.0	6.0	4.5	5.5
12	9.5	9.0	9.5	10.5	9.5	10.0	6.5	5.5	6.0	4.5	4.0	4.5
13	9.5	8.5	9.0	11.0	10.5	10.5	5.5	4.0	4.5	5.0	4.5	4.5
14	9.5	8.0	9.0	11.0	9.5	10.0	5.0	4.0	4.5	6.0	5.0	5.5
15	9.0	7.5	8.5	9.5	7.0	8.0	5.0	5.0	5.0	6.0	5.0	5.5
16	9.0	7.5	8.5	9.0	7.5	8.0	5.0	4.5	4.5	5.0	4.5	4.5
17	9.0	7.5	8.0	10.5	9.0	9.5	5.5	4.5	5.0	4.5	4.0	4.5
18	9.0	7.5	8.5	10.5	9.0	9.5	5.5	5.5	5.5	4.5	3.5	4.0
19	9.0	7.5	8.5	9.5	8.5	9.0	6.0	5.5	5.5	5.0	4.0	4.5
20	9.0	8.0	8.5	9.0	9.0	9.0	6.0	4.5	5.0	4.5	3.5	4.0
21	9.0	8.0	8.5	9.5	9.0	9.0	6.0	5.0	5.5	5.0	4.5	4.5
22	9.0	8.5	9.0	9.5	7.5	8.5	6.0	5.5	6.0	5.0	5.0	5.0
23	9.0	8.5	9.0	9.0	8.0	8.5	5.5	4.5	5.0	5.5	5.0	5.0
24	9.5	8.5	9.0	9.0	7.5	8.0	5.0	3.0	4.0	5.5	4.5	5.0
25	10.0	8.5	9.0	8.0	7.0	7.5	4.0	2.5	3.0	5.0	4.0	4.5
26	10.0	9.0	9.5	7.5	7.0	7.5	3.5	2.5	3.0	5.0	3.5	4.0
27	10.0	8.0	9.0	7.5	6.0	6.5	4.0	3.0	3.5	5.5	4.5	5.0
28	9.5	8.0	8.5	7.0	6.0	6.5	5.5	4.0	4.5	5.5	5.0	5.5
29	10.0	8.5	9.5	6.5	5.5	6.0	5.5	4.0	4.5	6.0	5.5	5.5
30	10.5	10.0	10.0	8.0	6.0	6.5	4.5	3.5	4.0	6.0	5.0	5.5
31	10.5	10.0	10.0	---	---	---	4.5	4.0	4.0	6.0	4.0	5.0
MONTH	11.0	7.5	9.0	11.0	5.5	9.0	9.0	2.5	6.0	6.5	2.5	5.0

14359000 ROGUE RIVER AT RAYGOLD, NEAR CENTRAL POINT, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	5.5	4.5	5.0	8.0	7.5	8.0	11.5	10.0	10.5	11.0	8.5	10.0
2	5.0	3.5	4.0	8.5	6.5	7.5	11.5	9.0	10.5	11.5	9.0	10.0
3	4.5	3.0	3.5	8.5	8.0	8.5	11.0	8.5	9.5	12.0	9.0	10.5
4	4.5	3.0	3.5	8.5	8.0	8.5	10.5	9.0	10.0	12.0	8.5	10.5
5	4.5	3.0	4.0	9.0	8.0	8.5	10.5	8.0	9.5	11.5	9.0	10.0
6	5.0	4.0	4.5	9.0	8.0	8.5	10.5	9.5	10.0	10.5	9.0	10.0
7	5.5	4.0	4.5	8.5	7.0	7.5	10.5	7.5	9.0	12.5	9.0	10.5
8	7.0	5.5	6.0	8.5	7.5	8.0	10.0	6.5	8.0	11.5	9.5	10.5
9	7.5	6.5	7.0	8.5	7.5	8.0	11.0	7.5	9.5	11.5	9.0	10.5
10	8.5	7.0	7.5	8.0	6.0	7.0	11.0	8.0	9.5	13.5	9.5	11.5
11	8.0	6.5	7.0	7.5	5.5	6.5	12.0	8.5	10.5	15.0	10.5	13.0
12	7.0	5.5	6.5	8.0	6.0	7.0	11.5	8.5	10.0	14.5	11.0	12.5
13	7.0	5.5	6.0	9.0	6.5	7.5	10.5	8.5	9.0	12.5	10.0	11.5
14	7.0	5.0	6.0	9.0	7.5	8.5	9.0	8.0	8.5	14.0	9.5	11.5
15	7.0	5.5	6.5	9.0	7.0	8.0	11.0	7.5	9.0	15.0	10.5	12.5
16	6.5	5.5	6.0	9.0	7.5	8.0	11.0	8.5	9.5	14.5	11.0	12.0
17	6.5	4.5	5.5	9.5	7.5	8.0	10.5	8.0	9.0	13.5	9.5	11.5
18	6.5	4.5	5.5	10.0	8.0	9.0	10.5	8.0	9.0	14.0	10.5	12.5
19	7.0	5.5	6.0	10.0	9.0	9.5	9.5	8.0	9.0	14.5	10.5	12.5
20	7.5	5.5	6.5	10.0	8.5	9.5	9.0	8.0	8.5	15.0	10.5	13.0
21	7.5	6.5	7.0	10.0	9.0	9.5	9.0	8.0	8.5	15.5	11.5	13.5
22	7.5	6.5	7.0	9.5	8.0	9.0	11.0	8.0	9.0	15.0	11.5	13.5
23	7.5	6.0	7.0	9.5	9.0	9.0	12.0	8.0	10.0	14.5	11.5	12.5
24	8.0	6.5	7.0	9.5	8.0	8.5	11.0	8.5	10.0	14.5	10.0	12.0
25	8.0	7.0	7.5	11.0	8.0	9.0	12.0	8.5	10.0	14.5	11.0	13.0
26	9.0	7.5	8.0	11.0	10.0	10.5	13.5	10.0	11.5	14.5	11.5	13.0
27	9.0	8.0	8.5	10.0	8.0	9.0	13.0	11.0	12.0	14.5	11.5	13.0
28	9.5	8.0	9.0	9.5	7.5	8.5	12.5	11.0	12.0	14.5	11.5	12.5
29	9.5	7.5	8.0	10.0	9.0	9.5	12.0	11.0	11.5	12.5	10.0	11.5
30	---	---	---	10.0	8.5	9.0	11.5	9.5	10.5	14.0	9.5	11.5
31	---	---	---	10.5	8.5	9.5	---	---	---	14.0	10.5	11.5
MONTH	9.5	3.0	6.0	11.0	5.5	8.5	13.5	6.5	10.0	15.5	8.5	11.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	12.0	10.5	11.5	15.5	11.0	13.5	18.5	14.5	16.5	16.0	12.5	14.5
2	13.0	10.0	11.5	16.0	11.5	14.0	18.0	14.5	16.0	16.5	13.0	14.5
3	13.0	10.5	11.5	16.0	12.0	14.0	18.5	14.5	16.5	16.5	13.0	15.0
4	13.0	10.5	12.0	15.0	11.0	13.0	18.5	15.0	17.0	16.5	13.0	15.0
5	12.5	10.5	11.0	15.0	11.5	13.0	18.5	15.0	16.0	16.5	13.0	15.0
6	13.0	10.0	11.0	15.5	10.5	13.0	18.0	14.5	16.0	16.5	13.0	14.5
7	11.5	10.0	11.0	16.0	11.5	13.5	18.0	14.0	16.0	16.5	13.0	15.0
8	12.5	9.5	11.0	16.5	12.0	14.5	18.5	14.5	16.5	16.5	12.0	14.0
9	12.0	10.5	11.0	16.5	12.5	14.5	18.5	15.0	17.0	15.5	12.5	14.0
10	14.0	9.5	11.5	16.5	12.5	14.5	19.0	15.5	17.0	15.5	12.0	14.0
11	15.0	11.0	13.0	16.5	12.5	14.5	19.0	15.5	17.5	15.0	11.5	13.0
12	15.5	11.5	13.5	16.5	12.0	14.0	18.5	15.0	16.5	15.0	12.0	13.5
13	16.0	12.0	14.0	16.5	12.5	14.5	18.0	15.0	16.5	15.0	11.0	13.0
14	16.5	12.5	14.5	16.5	12.5	14.5	18.0	14.5	16.0	12.5	10.0	11.5
15	16.5	13.0	15.0	17.0	13.0	15.0	18.0	14.5	16.0	12.5	10.0	11.0
16	16.5	12.5	14.5	17.5	13.0	15.0	18.0	14.0	16.0	12.5	11.0	11.5
17	16.5	12.5	14.5	18.0	13.5	15.5	18.0	13.5	15.5	12.5	10.0	11.0
18	17.0	12.5	15.0	18.0	13.5	16.0	16.5	12.5	14.5	11.5	9.5	10.5
19	17.0	12.5	15.0	18.0	14.0	16.0	17.0	13.0	15.0	11.5	10.5	11.0
20	17.0	13.0	15.0	18.5	14.0	16.0	17.0	13.0	15.0	11.5	9.5	10.5
21	17.0	12.5	15.0	18.5	15.0	17.0	17.0	13.0	15.0	11.5	9.5	10.5
22	16.5	12.5	14.5	18.5	14.5	16.5	17.0	13.5	15.5	12.0	10.0	11.0
23	16.5	12.5	15.0	18.5	14.5	16.5	17.0	13.5	15.5	12.0	10.0	11.0
24	16.5	12.0	14.5	18.5	14.5	16.5	17.5	13.5	15.5	12.0	10.0	11.0
25	16.5	12.5	14.0	18.5	15.0	17.0	17.0	13.5	15.5	12.0	10.5	11.0
26	16.0	12.0	13.5	18.5	15.0	17.0	17.5	13.0	15.5	12.0	10.5	11.0
27	16.0	12.0	14.0	18.5	15.5	17.0	17.5	13.5	15.5	12.0	11.0	11.5
28	15.5	11.5	13.5	18.5	14.5	16.5	17.5	14.0	16.0	12.0	10.0	11.0
29	15.0	10.0	12.5	18.5	14.5	16.5	17.5	14.0	16.0	12.5	10.5	11.0
30	15.5	11.0	13.5	19.0	15.5	17.0	17.5	14.5	16.0	12.5	11.0	11.5
31	---	---	---	19.0	15.5	17.5	17.5	12.5	14.5	---	---	---
MONTH	17.0	9.5	13.0	19.0	10.5	15.5	19.0	12.5	16.0	16.5	9.5	12.5
YEAR	19.0	2.5	10.0									

LOCATION.--Lat 42°25'50", long 123°19'00", in NW 1/4 sec.20, T.36 S., R.5 W., Josephine County, Hydrologic Unit 17100308, on right bank at city of Grants Pass filter plant, 0.6 mi upstream from bridge on State Highway 99 at Grants Pass, and at mile 101.8. Prior to Sept. 3, 1983, at site 300 ft upstream.

PERIOD OF RECORD.--October 1938 to current year. Prior to January 1939 monthly discharge only, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 884.28 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 8, 1957, at site 300 ft upstream at datum 4.00 ft higher and Aug. 8, 1957, to Sept. 2, 1983, at site 300 ft upstream at datum 1.00 ft higher.

AVERAGE DISCHARGE.--50 years, 3,486 ft³/s, 2,526,000 acre-ft/vr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 152,000 ft³/s Dec. 23, 1964, gage height, 35.15 ft, present datum, from rating curve extended above 93,000 ft³/s; minimum discharge, 195 ft³/s Jan. 30, 1961; minimum daily, 606 ft³/s Sept. 10, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1861 reached a stage of about 43 ft, present datum (information furnished by Corps of Engineers). Flood in February 1890 reached a stage of about 36 ft, present datum, and that of Feb. 21, 1927, about 32 ft, present datum, according to local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16,400 ft³/s Jan. 15, gage height, 8.83 ft; minimum discharge, 788 ft³/s Sept. 19.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1310	1270	1160	1300	2440	1400	906	1760	2730	1970	1400	2020
2	1320	1300	1860	1270	2190	1500	956	1810	4630	1880	1410	1990
3	1320	1290	2030	1290	1890	1400	1200	2130	3940	1860	1420	2000
4	1310	1120	1770	1360	1770	1400	1320	2410	3590	1870	1450	1990
5	1240	1070	1720	1510	1700	1530	1170	2410	3580	1890	1410	2010
6	1080	1060	1960	1570	1600	1600	1180	2500	4160	1870	1460	2020
7	1060	1090	3490	1560	1540	1590	1360	3140	4370	1840	1490	2000
8	1070	1060	2920	1640	1610	1390	1750	4030	4150	1790	1490	1750
9	1070	1060	3120	3360	1880	1460	1760	4100	3680	1760	1440	1510
10	1100	1070	6310	5740	2190	1710	1770	3480	3650	1740	1440	1530
11	1160	1070	4330	5710	2060	1540	1740	3070	3160	1760	1430	1530
12	1380	1120	2580	4160	1970	1420	1570	2930	2690	1770	1450	1535
13	1660	1180	2010	3070	1870	1350	1630	3500	2620	1750	1690	1330
14	1330	1200	1760	4410	1780	1300	1680	3380	2550	1760	1740	1320
15	1260	1190	1730	12500	1670	1250	1690	3080	2470	1740	1770	1310
16	1240	1210	2120	9030	1590	1200	1690	2740	2390	1760	2000	1100
17	1230	1220	2310	7140	1580	1150	1680	3080	2360	1710	2020	1020
18	1230	1190	1850	4960	1560	1130	1700	3010	2310	1740	2020	1040
19	1160	1150	1700	4050	1490	1110	1700	2490	2240	1700	2040	1010
20	1140	1150	1610	2760	1450	1060	1760	2330	2180	1530	2060	1240
21	1200	1210	1600	2540	1420	1060	2090	2230	2060	1410	2040	1200
22	1200	1190	1810	2470	1410	1090	2830	2190	2060	1390	2040	1160
23	1190	1160	1950	2390	1380	1080	2650	2200	2060	1400	2030	1140
24	1210	1170	1770	2380	1330	1090	2470	2150	2030	1420	2060	1150
25	1220	1230	1590	2340	1250	1060	2340	1990	2050	1430	2030	1120
26	1240	1200	1500	2030	1240	1030	1880	1930	2090	1400	2010	1150
27	1230	1160	1480	2000	1250	1040	1530	1900	2080	1390	2010	1230
28	1220	1150	1440	2060	1250	1050	1550	1950	2080	1380	2010	1230
29	1220	1130	1380	2100	1270	1000	1460	2470	2040	1380	2020	1220
30	1250	1130	1360	2450	---	971	1510	2520	2000	1410	2030	1180
31	1270	---	1320	2380	---	931	---	2290	---	1390	2040	---
TOTAL	38120	34800	65540	103530	47630	38892	50522	81200	84000	51090	54950	43030
MEAN	1230	1160	2114	3340	1642	1255	1684	2619	2800	1648	1773	1434
MAX	1660	1300	6310	12500	2440	1710	2830	4100	4630	1970	2060	

CAL YR 1987	TOTAL 873080	MEAN 2392	MAX 18400	MIN 1060	AC-FT 1732000
WTR YR 1988	TOTAL 693304	MEAN 1894	MAX 12500	MIN 906	AC-FT 1375000

APPLEGATE RIVER BASIN

14361900 APPLGATE LAKE NEAR COPPER, OR

LOCATION.--Lat 42°03'25", long 123°06'30", in SE 1/4 sec.25, T.40 S., R.4 W., Jackson County, Hydrologic Unit 17100309, in outlet structure of Applegate Dam on Applegate River, 2.5 mi northeast of former town of Copper, 13 mi south of Ruch and at mile 46.3.

DRAINAGE AREA.--223 mi².

PERIOD OF RECORD.--December 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam completed in October 1980. Storage began Dec. 2, 1980. Total capacity, 82,200 acre-ft between elevations 1,763.0 ft and 1,987.0 ft, maximum pool elevation. Elevation of gated spillway crest, 1,943.7 ft. Usable contents, 75,200 acre-ft between elevations 1,854.0 ft and 1,987.0 ft. Water is used for flood control, recreation, pollution abatement, irrigation, and other purposes.

COOPERATION.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 82,210 acre-ft May 6, 1982, elevation, 1,987.01 ft; minimum contents since first filling, 11,770 acre-ft Nov. 11, 1981, elevation, 1,873.12 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 58,370 acre-ft June 19, 20, elevation, 1,960.42 ft; minimum contents, 15,690 acre-ft Dec. 1, elevation, 1,885.35 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)

1,860.0	8,330	1,920.0	30,960	1,987.0	82,200
1,880.0	13,890	1,940.0	43,090		
1,900.0	21,380	1,960.0	58,020		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1937.08	1904.87	1886.85	1893.18	1906.43	1925.36	1937.84	1948.92	1954.43	1958.66	1953.34	1943.71
2	1935.95	1903.93	1890.14	1892.81	1907.05	1926.00	1938.09	1949.18	1955.06	1958.59	1953.09	1943.34
3	1934.84	1903.08	1892.10	1892.54	1907.55	1926.69	1938.52	1949.43	1955.50	1958.50	1952.84	1942.97
4	1933.72	1902.31	1893.25	1892.26	1907.93	1927.54	1938.88	1949.63	1955.82	1958.41	1952.59	1942.61
5	1932.60	1901.53	1893.78	1891.96	1908.24	1928.52	1939.16	1949.80	1956.20	1958.30	1952.34	1942.23
6	1931.45	1900.75	1897.22	1891.63	1908.49	1929.34	1939.47	1949.97	1956.63	1958.19	1952.10	1941.85
7	1930.29	1899.95	1898.64	1891.32	1908.68	1929.98	1939.89	1950.22	1957.13	1958.06	1951.84	1941.48
8	1929.13	1899.16	1899.48	1891.10	1908.96	1930.57	1940.23	1950.55	1957.58	1957.93	1951.58	1941.09
9	1927.93	1898.43	1903.19	1891.94	1909.76	1931.22	1940.48	1950.81	1958.15	1957.80	1951.28	1940.71
10	1926.71	1897.67	1912.33	1896.75	1910.79	1931.71	1940.73	1951.06	1958.72	1957.65	1950.99	1940.31
11	1925.47	1896.86	1910.76	1899.69	1911.94	1932.13	1941.04	1951.31	1959.18	1957.49	1950.71	1939.92
12	1924.22	1896.10	1908.26	1899.38	1913.05	1932.47	1941.41	1951.68	1959.53	1957.32	1950.42	1939.53
13	1922.91	1895.63	1905.96	1898.60	1914.11	1932.76	1941.89	1952.17	1959.79	1957.15	1950.12	1939.14
14	1921.55	1894.94	1905.00	1901.03	1915.04	1933.03	1942.44	1952.48	1960.00	1956.97	1949.90	1938.75
15	1920.33	1894.15	1905.01	1904.05	1915.92	1933.24	1942.91	1952.76	1960.17	1956.80	1949.62	1938.36
16	1919.38	1893.50	1904.12	1903.80	1916.71	1933.49	1943.42	1953.16	1960.29	1956.65	1949.29	1937.98
17	1918.55	1892.93	1902.82	1902.42	1917.41	1933.74	1943.89	1953.51	1960.37	1956.52	1948.95	1937.59
18	1917.72	1892.35	1901.59	1900.46	1918.03	1933.99	1944.29	1953.79	1960.41	1956.39	1948.62	1937.21
19	1916.88	1891.74	1900.79	1899.30	1918.59	1934.25	1944.81	1954.02	1960.42	1956.24	1948.28	1936.84
20	1916.04	1891.16	1899.91	1899.08	1919.11	1934.53	1945.33	1954.14	1960.39	1956.06	1947.93	1936.48
21	1915.15	1890.61	1899.08	1898.94	1919.64	1934.84	1945.83	1954.01	1960.32	1955.84	1947.59	1936.10
22	1914.25	1890.01	1898.26	1898.84	1920.13	1935.09	1946.26	1953.84	1960.23	1955.63	1947.25	1935.71
23	1913.33	1889.40	1897.34	1898.95	1920.58	1935.50	1946.59	1953.68	1960.11	1955.40	1946.90	1935.32
24	1912.41	1888.81	1896.57	1898.99	1921.04	1935.79	1946.88	1953.55	1959.96	1955.18	1946.55	1934.91
25	1911.50	1888.24	1896.03	1899.24	1921.52	1936.06	1947.12	1953.51	1959.81	1954.95	1946.19	1934.52
26	1910.56	1887.62	1895.47	1899.81	1922.06	1936.37	1947.35	1953.44	1959.64	1954.75	1945.84	1934.11
27	1909.62	1886.99	1894.90	1900.67	1922.79	1936.74	1947.58	1953.36	1959.44	1954.53	1945.48	1933.72
28	1908.67	1886.34	1894.45	1901.74	1923.68	1937.03	1947.85	1953.45	1959.23	1954.30	1945.12	1933.32
29	1907.73	1885.68	1894.16	1903.23	1924.53	1937.26	1948.29	1953.47	1959.02	1954.06	1944.78	1932.92
30	1906.77	1885.38	1893.89	1904.57	---	1937.47	1948.65	1953.44	1958.79	1953.83	1944.42	1932.52
31	1905.82	---	1893.55	1905.61	---	1937.66	---	1953.40	---	1953.59	1944.06	---
MAX	1937.08	1904.87	1912.33	1905.61	1924.53	1937.66	1948.65	1954.14	1960.42	1958.66	1953.34	1943.71
MIN	1905.82	1885.38	1886.85	1891.10	1906.43	1925.36	1937.84	1948.92	1954.43	1953.59	1944.06	1932.52
(†)	23950	15700	18730	23850	33450	41510	49230	52820	57050	52960	45910	38200
(‡)	-17940	-8250	+3030	+5120	+9600	+8060	+7720	+3590	+4230	-4090	-7050	-7710

CAL YR 1987 MAX 1986.96 MIN 1885.24 AC-FT+ +3760
WTR YR 1988 MAX 1960.42 MIN 1885.38 AC-FT+ -3690

† Contents, in acre-feet, at 2400, on last day of month.

‡ Change in contents, in acre-feet.

APPLEGATE RIVER BASIN

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14362000 APPLEGATE RIVER NEAR COPPER, OR

LOCATION.--Lat 42°03'50", long 123°06'37", in SW 1/4 NW 1/4 sec.30, T.40 S., R.3 W., Jackson County, Hydrologic Unit 17100309, U.S. Corps of Engineers land, on left bank 0.1 mi downstream from Brushy Gulch, 0.6 mi downstream from Applegate Dam, 3.1 mi northeast of former town of Copper, and at mile 45.7.

DRAINAGE AREA.--225 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year. Prior to January 1939 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WDR OR-78-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,747.51 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1977, at site 0.6 mi upstream at datum 12.15 ft higher.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated since December 1980 by Applegate Lake (station 14361900). Some storage during winter in Squaw Lakes Reservoir, capacity, 1,100 acre-ft on Squaw Creek upstream from station. Diversions upstream from station from Carberry Creek for irrigation in Thompson Creek basin.

AVERAGE DISCHARGE.--50 years, 447 ft³/s, 323,900 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,800 ft³/s Jan. 15, 1974, gage height, 25.38 ft, site and datum then in use, from high-water mark in well, from rating curve extended above 12,000 ft³/s on basis of four slope-area measurements of peak flows made in 1950, 1955, 1964, and 1974; minimum discharge, 1.5 ft³/s Dec. 20, 1980, result of regulation at Applegate dam, 0.6 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,380 ft³/s Dec. 10, gage height, 4.92 ft; minimum discharge, 87 ft³/s Nov. 30; minimum daily, 113 ft³/s Dec. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	413	264	113	191	237	184	163	161	201	171	148	167
2	410	262	132	191	238	182	163	161	201	148	149	167
3	402	237	130	189	238	184	163	161	203	148	148	167
4	400	213	160	191	238	185	164	167	203	148	147	167
5	399	211	207	190	239	185	163	180	203	148	148	167
6	401	211	211	189	241	187	163	180	203	148	148	167
7	402	210	210	190	240	188	162	180	203	148	148	166
8	401	209	211	189	238	188	153	180	203	148	153	167
9	406	209	238	189	240	188	161	180	203	148	159	170
10	408	208	781	190	193	188	161	180	203	148	158	170
11	407	206	1350	349	149	188	161	180	203	148	157	170
12	405	207	1170	653	148	189	158	180	204	148	159	170
13	415	206	943	650	149	190	154	180	206	148	158	169
14	423	207	533	650	150	190	154	180	206	148	155	170
15	382	205	291	872	150	190	152	180	206	148	164	170
16	300	177	461	1000	152	172	152	180	206	132	168	167
17	264	160	513	1000	152	159	152	178	206	122	170	167
18	264	160	462	1010	152	159	152	175	206	122	170	167
19	264	159	358	748	152	159	154	175	206	122	170	170
20	264	158	356	486	153	160	159	208	206	138	170	170
21	268	158	355	429	154	161	161	296	206	146	170	170
22	273	156	356	386	168	161	161	296	206	146	170	170
23	272	156	356	334	177	161	161	288	206	146	169	170
24	270	157	310	334	177	163	161	256	206	146	168	170
25	268	158	256	286	177	162	161	209	206	146	167	171
26	268	157	255	230	180	163	160	205	206	147	167	171
27	266	156	254	230	182	163	159	201	206	148	167	170
28	267	154	225	231	182	163	159	201	207	148	167	168
29	265	154	191	233	181	163	159	201	206	149	167	167
30	265	115	191	234	---	163	160	201	209	150	167	167
31	262	---	191	235	---	163	---	201	---	149	168	---
TOTAL	10374	5600	11770	12479	5427	5401	4766	6101	6145	4500	4994	5059
MEAN	335	187	380	403	187	174	159	197	205	145	161	169
MAX	423	264	1350	1010	241	190	164	296	209	171	170	171
MIN	262	115	113	189	148	159	152	161	201	122	147	166
AC-FT	20580	11110	23350	24750	10760	10710	9450	12100	12190	8930	9910	10030
MEAN†	42.9	48.1	429	486	367	305	289	255	276	78.7	46.5	39.0
AC-FT†	2640	2860	26380	29870	20360	18770	17170	15690	16420	4840	2860	2320

CAL YR 1987 TOTAL 99789 MEAN 273 MAX 1350 MIN 97 AC-FT 197900 MEAN† 278 AC-FT† 201660
WTR YR 1988 TOTAL 82616 MEAN 226 MAX 1350 MIN 113 AC-FT 163900 MEAN† 221 AC-FT† 160210

† Adjusted for change in contents of Applegate Lake.

APPLEGATE RIVER BASIN

14362000 APPLEGATE RIVER NEAR COPPER, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 188 microsiemens Sept. 13, 1980; minimum, 61 microsiemens Dec. 3, 1980,

pH: September 1980 to September 1987.

WATER TEMPERATURE: January 1977 to current year.

DISSOLVED OXYGEN: September 1980 to September 1987.

INSTRUMENTATION.--Water-quality monitor since September 1980.

REMARKS.--Temperatures are controlled by releases from Applegate Lake.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 188 microsiemens Sept. 13, 1980; minimum, 61 microsiemens Dec. 3, 1980, Dec. 20, 1981, June 19, 20, 1983.

pH: Maximum, 9.0 units Sept. 4, 1980; minimum recorded, 7.1 units Oct. 8-10, 13, 16, 17, 1986.

WATER TEMPERATURE: Maximum, 26.5°C Aug. 7, 1978; minimum, 0.0°C on many days during winter periods prior to filling of Applegate Lake.

DISSOLVED OXYGEN: Maximum, 15.2 mg/L Feb. 17, 18, 1986; minimum, 4.9 mg/L Sept. 28-30, 1981.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 17.5°C July 6, 7, 25; minimum, 4.0°C Jan. 25-28.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	11.5	11.0	11.0	9.5	9.5	9.5	14.5	12.5	13.5	5.0	4.5	4.5
2	12.0	11.0	11.5	10.0	9.5	10.0	13.5	12.5	13.0	4.5	4.5	4.5
3	12.0	11.5	12.0	10.5	6.5	8.0	14.5	12.5	13.5	5.0	4.5	4.5
4	12.5	11.5	12.0	7.0	6.5	6.5	13.0	8.5	10.5	5.0	4.5	4.5
5	13.0	12.0	12.5	7.0	6.5	7.0	8.5	8.5	8.5	5.0	4.5	4.5
6	13.0	12.5	12.5	7.0	7.0	7.0	8.5	8.5	8.5	5.0	4.5	4.5
7	13.0	10.0	11.5	7.5	7.0	7.0	8.5	7.5	8.0	4.5	4.5	4.5
8	11.0	10.5	10.5	7.5	7.0	7.5	7.5	7.0	7.5	4.5	4.5	4.5
9	11.0	10.5	11.0	8.0	7.5	8.0	8.0	7.0	7.5	4.5	4.5	4.5
10	11.5	11.0	11.0	9.0	8.0	8.5	8.0	7.0	7.5	5.5	4.5	5.0
11	11.5	11.0	11.0	10.0	9.0	9.5	7.0	7.0	7.0	5.5	5.0	5.0
12	11.5	11.0	11.0	11.5	10.5	11.0	7.0	6.5	6.5	5.0	5.0	5.0
13	11.0	11.0	11.0	12.0	11.5	11.5	6.5	6.5	6.5	5.0	5.0	5.0
14	11.0	11.0	11.0	12.0	11.5	12.0	6.5	6.0	6.5	5.0	5.0	5.0
15	11.0	8.5	10.0	12.0	12.0	12.0	6.0	6.0	6.0	5.0	5.0	5.0
16	9.0	8.5	9.0	12.0	11.5	12.0	6.0	6.0	6.0	5.0	5.0	5.0
17	9.5	9.0	9.0	12.0	11.5	11.5	6.0	6.0	6.0	5.0	5.0	5.0
18	9.5	9.0	9.0	12.0	11.5	11.5	6.0	6.0	6.0	5.0	4.5	5.0
19	9.5	9.0	9.0	12.0	11.5	11.5	6.0	5.5	5.5	5.0	4.5	4.5
20	9.5	9.0	9.0	11.5	11.5	11.5	6.0	5.5	6.0	5.0	4.5	4.5
21	9.5	7.0	8.0	12.0	11.5	11.5	6.0	6.0	6.0	5.0	4.5	4.5
22	7.5	7.0	7.0	11.5	11.0	11.5	6.0	5.5	5.5	5.0	4.5	4.5
23	7.5	7.0	7.0	11.5	11.0	11.5	5.5	5.5	5.5	5.0	4.5	4.5
24	7.5	7.0	7.0	11.5	11.0	11.0	6.0	5.5	5.5	5.0	4.5	4.5
25	7.5	7.0	7.5	11.5	11.0	11.0	6.0	5.5	5.5	4.5	4.0	4.5
26	8.0	7.5	7.5	11.0	10.5	11.0	6.0	5.5	5.5	4.5	4.0	4.0
27	8.0	7.5	7.5	11.0	10.0	10.5	5.5	5.0	5.5	4.5	4.0	4.0
28	8.0	7.5	8.0	10.5	10.0	10.0	5.5	5.0	5.0	5.0	4.0	4.5
29	8.5	8.0	8.5	10.5	9.5	10.0	5.0	5.0	5.0	4.5	4.5	4.5
30	9.0	8.5	8.5	15.0	10.0	12.5	5.0	5.0	5.0	4.5	4.5	4.5
31	9.5	9.0	9.0	---	---	---	5.0	4.5	5.0	4.5	4.5	4.5
MONTH	13.0	7.0	9.5	15.0	6.5	10.0	14.5	4.5	7.0	5.5	4.0	4.5

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4.5	4.5	4.5	5.0	5.0	5.0	7.0	5.5	6.0	9.0	8.0	8.5
2	4.5	4.5	4.5	5.5	4.5	5.0	6.5	5.5	6.0	9.5	8.5	8.5
3	5.0	4.5	4.5	5.0	5.0	5.0	7.0	5.5	6.0	9.5	8.0	8.5
4	5.0	4.5	4.5	5.0	5.0	5.0	6.5	5.5	6.0	9.0	8.0	8.5
5	5.0	4.5	4.5	5.5	5.0	5.0	6.5	5.5	6.0	9.0	8.0	8.5
6	5.0	4.5	4.5	5.0	5.0	5.0	7.0	5.5	6.0	9.0	8.0	8.5
7	5.0	4.5	4.5	5.5	5.0	5.0	8.0	5.5	6.5	8.5	8.0	8.5
8	5.0	4.5	4.5	5.5	4.5	5.0	8.5	6.5	7.5	9.0	8.0	8.5
9	5.0	4.5	4.5	5.5	4.5	5.0	7.5	6.0	6.5	9.0	8.0	8.5
10	5.5	4.5	5.0	5.5	4.5	5.0	7.5	6.0	6.5	9.0	8.0	8.5
11	5.5	4.5	5.0	5.5	4.5	5.0	7.5	6.0	7.0	9.5	8.0	8.5
12	5.5	4.5	5.0	5.5	4.5	5.0	8.0	6.5	7.0	9.0	8.0	8.5
13	5.5	4.5	5.0	5.5	4.5	5.0	7.5	7.0	7.0	9.0	8.0	8.5
14	5.5	4.5	5.0	5.5	5.0	5.0	7.5	6.5	7.0	9.5	8.0	8.5
15	5.5	4.5	5.0	5.5	4.5	5.0	8.0	6.5	7.0	9.5	8.5	9.0
16	5.5	4.5	5.0	6.0	4.5	5.0	7.5	7.0	7.0	9.0	8.0	8.5
17	5.5	4.5	5.0	6.0	5.0	5.5	7.5	7.0	7.0	10.5	8.5	9.5
18	5.5	5.0	5.0	6.5	5.0	5.5	7.5	6.5	7.0	11.0	10.0	10.5
19	6.0	5.0	5.0	6.5	5.5	5.5	8.0	7.0	7.5	11.0	10.0	10.5
20	6.0	5.0	5.0	6.5	5.0	5.5	8.0	7.5	7.5	11.0	9.5	10.5
21	6.0	5.0	5.5	6.0	5.5	5.5	8.5	7.0	8.0	11.0	10.5	10.5
22	5.5	4.5	5.0	6.5	5.5	5.5	9.0	7.5	8.5	11.0	10.0	10.5
23	5.5	4.5	5.0	6.0	5.5	5.5	9.5	8.0	8.5	11.0	10.0	10.5
24	5.5	4.5	5.0	6.0	5.5	5.5	9.0	8.0	8.5	11.5	10.5	11.0
25	5.5	5.0	5.0	6.5	5.5	6.0	9.5	8.0	8.5	11.5	10.5	11.0
26	5.5	5.0	5.0	7.0	5.5	6.0	9.5	8.0	9.0	12.0	10.5	11.5
27	5.5	5.0	5.0	6.5	5.5	5.5	9.5	8.0	8.5	12.5	11.5	12.0
28	5.5	5.0	5.0	6.5	5.5	6.0	9.0	8.0	8.5	12.0	11.5	11.5
29	5.0	5.0	5.0	6.5	5.5	6.0	9.0	8.0	8.5	11.5	11.0	11.5
30	---	---	---	6.5	5.5	5.5	9.0	8.0	8.5	12.0	11.0	11.5
31	---	---	---	6.5	5.5	6.0	---	---	---	12.0	11.0	11.5
MONTH	6.0	4.5	5.0	7.0	4.5	5.5	9.5	5.5	7.5	12.5	8.0	9.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	12.0	11.0	11.5	16.5	14.5	15.5	16.0	15.0	15.5	15.5	14.5	15.0
2	14.5	11.0	13.0	17.0	15.5	16.5	16.5	15.0	15.5	15.5	14.5	15.0
3	13.5	11.5	12.5	16.5	16.0	16.0	16.5	15.0	15.5	15.5	15.0	15.0
4	13.0	12.0	12.5	17.0	15.5	16.5	16.5	15.5	16.0	15.5	14.5	15.0
5	12.5	12.0	12.5	17.0	15.5	16.5	15.5	15.0	15.5	15.5	14.5	15.0
6	12.5	12.0	12.0	17.5	16.0	16.5	16.0	15.0	15.5	15.5	14.5	15.0
7	12.5	11.5	12.0	17.5	14.5	16.0	16.0	15.0	15.5	15.5	14.5	15.0
8	12.5	12.0	12.0	15.0	14.0	14.5	16.0	14.0	15.0	15.5	14.5	15.0
9	12.0	11.5	12.0	15.0	14.0	14.5	15.0	14.0	14.5	15.0	14.5	15.0
10	12.5	11.0	12.0	15.5	14.5	15.0	15.0	14.0	14.5	15.0	14.5	14.5
11	12.0	11.0	11.5	15.5	14.5	14.5	15.0	14.0	14.5	15.0	14.0	14.5
12	12.5	11.5	12.0	16.0	14.5	15.5	15.0	14.0	14.5	15.0	14.0	14.5
13	12.5	11.5	12.0	15.5	14.0	15.0	15.0	14.0	14.5	15.0	14.0	14.5
14	12.5	11.5	12.0	15.5	14.0	15.0	15.0	14.0	14.5	14.5	14.0	14.0
15	12.5	12.0	12.0	16.0	14.5	15.0	15.0	14.0	14.5	14.5	14.0	14.0
16	12.5	12.0	12.5	16.0	14.5	15.5	15.0	14.0	14.5	14.0	13.5	14.0
17	12.5	12.0	12.5	16.5	14.5	15.5	15.0	14.0	14.5	14.0	13.5	13.5
18	13.0	12.0	12.5	16.5	15.0	15.5	15.0	14.0	14.5	14.0	13.0	13.5
19	13.0	12.0	12.5	16.5	15.0	16.0	15.0	14.0	14.5	15.0	13.0	14.0
20	13.0	12.5	13.0	16.5	15.5	16.0	15.0	14.0	14.5	14.5	13.5	14.0
21	13.0	12.5	13.0	16.5	15.5	16.0	15.0	14.0	14.5	15.0	14.0	14.5
22	13.5	12.5	13.0	17.0	15.5	16.0	15.0	14.0	14.5	15.0	14.0	14.5
23	13.5	13.0	13.0	17.0	15.5	16.0	15.0	14.5	14.5	15.5	14.5	14.5
24	14.0	13.0	13.5	17.0	16.0	16.5	15.0	14.0	14.5	15.5	14.5	15.0
25	13.5	13.0	13.5	17.5	16.0	16.5	15.0	14.5	14.5	15.5	14.5	15.0
26	14.0	13.0	13.5	17.0	14.5	16.0	15.0	14.0	14.5	16.0	14.5	15.5
27	14.5	13.0	13.5	16.0	14.5	15.0	15.0	14.0	14.5	15.5	14.5	15.0
28	14.5	13.0	13.5	16.0	14.5	15.0	15.0	14.5	14.5	15.5	15.0	15.0
29	14.5	13.5	14.0	16.0	14.5	15.0	15.0	14.5	14.5	15.5	15.0	15.5
30	14.5	14.0	14.5	16.0	15.0	15.5	15.0	14.5	14.5	15.5	15.0	15.5
31	---	---	---	16.5	15.0	15.5	15.0	14.5	14.5	---	---	---
MONTH	14.5	11.0	12.5	17.5	14.0	15.5	16.5	14.0	15.0	16.0	13.0	14.5
YEAR	17.5	4.0	9.5									

APPLEGATE RIVER BASIN

14362250 STAR GULCH NEAR RUCH, OR

LOCATION.--Lat 42°09'15", long 123°04'27", in NE 1/4 NE 1/4 sec.29, T.39 S., R.3 W., Jackson County, Hydrologic Unit 17100309, Bureau of Land Management land, on left bank 1.0 mi downstream from Benson Gulch, 6.0 mi southwest of Ruch, and at mile 1.1.

DRAINAGE AREA.--16.0 mi².

PERIOD OF RECORD.--July 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,667.04 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for Feb. 25 to June 1, which are poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--5 years, 4.32 ft³/s, 3,130 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 153 ft³/s Dec. 14, 1983, Nov. 28, 1985, gage height, 3.11 ft; no flow July 16, Aug. 10-15, Aug. 20 to Sept. 3, 1987, July 23 to Sept. 21, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 15	0430	*37	*2.22				
No flow July 23 to Sept. 21.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.07	.45	.90	1.0	3.3	e1.5	e.95	e3.3	e1.5	.28	.00	.00
2	.06	.49	1.5	1.0	3.0	e1.4	e.95	e2.6	1.2	.25	.00	.00
3	.05	.49	3.5	1.1	2.8	e1.2	e1.0	e2.4	1.0	.23	.00	.00
4	.06	.52	3.1	1.2	2.5	e1.2	e1.0	e2.0	.99	.24	.00	.00
5	.06	.51	2.5	1.3	2.3	e1.3	e1.0	e1.8	1.2	.25	.00	.00
6	.06	.47	2.6	1.3	2.2	e1.3	e1.0	e1.7	1.5	.24	.00	.00
7	.06	.43	8.0	1.4	2.0	e1.3	e1.0	e1.9	2.3	.21	.00	.00
8	.05	.43	9.0	1.6	2.0	e1.3	e.94	e1.8	2.8	.17	.00	.00
9	.05	.47	7.2	2.0	1.9	e1.7	e.92	e1.7	2.7	.14	.00	.00
10	.05	.55	7.2	3.8	1.8	e1.5	e.90	e2.3	2.5	.13	.00	.00
11	.07	.51	16	6.2	1.8	e1.4	e.88	e1.8	2.0	.12	.00	.00
12	.09	.49	10	4.8	1.8	e1.4	e.88	e1.5	1.7	.12	.00	.00
13	.09	.66	5.0	3.9	1.7	e1.3	e.88	e1.6	1.5	.12	.00	.00
14	.11	.84	3.2	7.1	1.6	e1.3	e.90	e2.2	1.3	.12	.00	.00
15	.12	.77	2.4	29	1.5	e1.2	e.90	e1.9	1.2	.12	.00	.00
16	.14	.59	1.9	15	1.5	e1.2	e.84	e1.7	1.1	.11	.00	.00
17	.14	.58	1.8	8.9	1.4	e1.2	e.80	e1.9	1.0	.10	.00	.00
18	.17	.58	1.7	6.1	1.4	e1.1	e.80	e1.8	.91	.08	.00	.00
19	.19	.58	1.6	4.4	1.3	e1.1	e.90	e1.9	.81	.07	.00	.00
20	.18	.51	1.5	3.6	1.3	e1.1	e1.1	e1.6	.70	.05	.00	.00
21	.17	.62	1.4	3.2	1.3	e1.1	e1.8	e1.4	.62	.03	.00	.00
22	.17	.86	1.4	3.1	1.2	e1.1	e1.9	e1.3	.51	.01	.00	.03
23	.18	.67	1.5	3.3	1.2	e1.3	e1.6	e1.2	.44	.00	.00	.10
24	.23	.62	1.9	3.7	1.2	e1.9	e1.4	e1.2	.39	.00	.00	.10
25	.27	.71	1.8	3.7	e1.1	e1.5	e1.3	e1.1	.37	.00	.00	.09
26	.32	.86	1.6	3.5	e1.1	e1.3	e1.2	e.95	.37	.00	.00	.10
27	.33	.69	1.5	3.6	e1.3	e1.2	e1.1	e.95	.35	.00	.00	.12
28	.31	.67	1.3	3.9	e1.2	e1.1	e1.0	e1.2	.33	.00	.00	.12
29	.33	.62	1.3	3.8	e1.2	e1.1	e1.3	e1.4	.32	.00	.00	.12
30	.36	.62	1.2	3.9	---	e1.0	e2.5	e1.3	.32	.00	.00	.12
31	.40	---	1.1	3.5	---	e1.0	---	e1.2	---	.00	.00	---
TOTAL	4.94	17.86	106.60	143.9	49.9	39.6	33.64	52.60	33.93	3.19	0.00	0.90
MEAN	.16	.60	3.44	4.64	1.72	1.28	1.12	1.70	1.13	.10	.00	.030
MAX	.40	.86	16	29	3.3	1.9	2.5	3.3	2.8	.28	.00	.12
MIN	.05	.43	.90	1.0	1.1	1.0	.80	.95	.32	.00	.00	.00
AC-FT	9.8	35	211	285	99	79	67	104	67	6.3	.0	1.8

CAL YR 1987 TOTAL 775.53 MEAN 2.12 MAX 61 MIN .00 AC-FT 1540
WTR YR 1988 TOTAL 487.06 MEAN 1.33 MAX 29 MIN .00 AC-FT 966

e Estimated

APPLEGATE RIVER BASIN

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14366000 APPLEGATE RIVER NEAR APPLEGATE, OR

LOCATION.--Lat 42°14'30", long 123°08'20", in NE 1/4 sec.26, T.38 S., R.4 W., Jackson County, Hydrologic Unit 17100309, on left bank 0.9 mi downstream from Keeler Creek, 1.8 mi southeast of Applegate, and at mile 26.7.

DRAINAGE AREA.--483 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year.

RECORDS.--WSP 1738: Drainage area. WSP 1935: 1953(M). WDR OR-76-1: 1956(M), 1965(M).

GAGE.--Water-stage recorder. Datum of gage is 1,285.33 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 23, 1938, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated since December 1980 by Applegate Lake (station 14361900). Many diversions for irrigation upstream from station. McDonald Creek Canal diverts from McDonald Creek upstream from station for irrigation in Bear Creek basin. Thompson Creek Irrigation Association ditch diverts upstream from station for irrigation in Thompson Creek basin. Fowler-Keeler and Berryman ditches divert upstream from station for irrigation downstream.

AVERAGE DISCHARGE.--50 years, 550 ft³/s, 398,500 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,200 ft³/s Jan. 15, 1974, gage height, 20.41 ft, from rating curve extended above 18,000 ft³/s on basis of slope-area measurements of flow at gage heights 18.00 ft and 19.57 ft; minimum discharge, 4.6 ft³/s Sept. 22-25, 1979. Minimum since first filling of Applegate Lake, 84 ft³/s July 19, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 20, 1927, reached a stage of 18.7 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,590 ft³/s Dec. 10, gage height, 4.12 ft; minimum discharge, 84 ft³/s July 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	352	250	124	210	279	216	174	197	244	182	104	129
2	363	249	198	215	272	213	175	192	243	136	101	131
3	359	241	179	218	272	215	176	187	238	130	101	128
4	361	212	189	215	271	219	172	179	240	134	101	125
5	356	211	255	215	267	219	167	203	274	133	104	123
6	352	212	355	212	266	218	166	204	300	132	107	122
7	349	209	343	214	264	216	161	211	304	131	110	121
8	351	209	323	215	266	215	148	239	309	128	110	120
9	358	212	319	218	271	221	147	240	305	122	114	120
10	366	213	816	235	253	216	146	233	300	122	113	123
11	366	210	1540	318	195	214	144	226	290	117	110	125
12	367	212	1340	742	193	214	145	221	284	119	111	126
13	372	215	1110	747	192	212	147	228	274	118	113	126
14	383	215	742	776	190	212	156	219	262	120	113	126
15	368	211	313	1150	189	211	154	215	252	120	119	123
16	288	197	488	1230	188	203	155	224	245	113	126	123
17	243	170	559	1170	187	184	159	228	236	98	125	126
18	241	170	538	1130	187	181	157	209	229	96	125	131
19	236	169	394	911	185	179	162	197	229	90	128	139
20	235	172	389	570	185	178	173	197	217	93	122	145
21	239	177	390	462	185	179	182	301	214	104	127	149
22	250	172	391	435	190	180	185	301	214	114	123	146
23	250	170	390	367	202	181	180	310	212	112	122	145
24	250	171	363	366	202	180	178	290	208	107	126	145
25	251	172	285	343	203	177	176	226	206	107	122	144
26	251	170	288	270	203	178	180	222	208	106	123	143
27	249	168	288	272	206	179	177	221	206	104	129	141
28	249	166	274	278	208	177	175	233	198	104	131	135
29	249	165	220	280	211	178	189	242	196	106	128	135
30	251	152	219	283	---	178	197	234	201	106	128	133
31	250	---	216	281	---	176	---	231	---	105	129	---
TOTAL	9405	5842	13838	14548	6382	6119	5003	7060	7338	3609	3645	3948
MEAN	303	195	446	469	220	197	167	228	245	116	118	132
MAX	383	250	1540	1230	279	221	197	310	309	182	131	149
MIN	235	152	124	210	185	176	144	179	196	90	101	120
AC-FT	18650	11590	27450	28860	12660	12140	9920	14000	14550	7160	7230	7830

CAL YR 1987 TOTAL 112282 MEAN 308 MAX 1800 MIN 116 AC-FT 222700
WTR YR 1988 TOTAL 86737 MEAN 237 MAX 1540 MIN 90 AC-FT 172000

APPLEGATE RIVER BASIN

14366000 APPLEGATE RIVER NEAR APPLEGATE, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1973 to current year.

INSTRUMENTATION.--Temperature recorder since August 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 28.0°C July 29, 30, Aug. 3, 4, 1974; minimum, 0.0°C on several days 1975-80.
Maximum since full operation of Applegate Lake, 25.5°C July 5, 1984; minimum, 0.5°C Jan. 27, 30, 1985.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 25.0°C July 20; minimum, 2.0°C Jan. 1, Feb. 3-5.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	15.0	12.0	13.5	10.5	9.5	10.0	9.0	8.5	8.5	3.5	2.0	2.5
2	14.0	11.0	13.0	10.5	9.0	10.0	9.0	8.5	8.5	3.5	2.0	3.0
3	14.5	11.0	13.0	11.0	9.5	10.0	10.0	8.5	9.5	5.0	4.0	4.5
4	15.0	11.0	13.0	9.5	7.0	8.5	9.0	8.5	9.0	6.0	4.5	5.5
5	15.0	11.0	13.0	9.5	6.5	8.0	9.5	8.0	8.5	5.5	4.5	5.0
6	15.0	11.0	13.5	9.5	7.5	8.5	9.0	7.5	8.5	5.5	4.5	5.0
7	14.5	11.5	13.0	9.5	7.5	8.5	7.5	6.0	7.0	4.5	3.5	4.0
8	13.5	10.0	12.0	9.0	7.0	8.0	7.0	6.5	7.0	5.5	4.0	4.5
9	13.5	10.0	12.0	10.0	8.5	9.0	9.0	7.0	8.0	6.5	5.0	6.0
10	13.5	10.5	12.0	9.0	7.0	8.0	9.0	7.0	8.0	7.5	5.5	6.5
11	12.5	10.5	11.5	9.5	8.0	8.5	7.0	6.5	7.0	5.5	4.5	5.0
12	13.5	10.5	12.0	11.0	9.5	10.5	7.0	6.0	6.5	5.0	4.0	5.0
13	13.0	9.5	11.5	12.0	10.5	11.0	6.5	5.5	6.0	6.0	4.5	5.5
14	12.5	9.0	11.0	10.5	9.0	10.0	6.5	5.5	6.0	6.5	5.5	6.0
15	12.5	9.0	11.0	8.5	7.5	8.0	6.0	5.0	5.5	5.5	4.5	5.5
16	11.0	8.0	10.0	10.5	8.5	9.5	5.5	4.5	5.0	5.5	4.0	5.0
17	11.5	8.0	10.0	12.0	10.0	11.0	6.0	5.5	5.5	5.5	4.0	4.5
18	11.5	8.0	10.0	10.5	9.0	9.5	6.0	5.5	6.0	5.0	4.0	4.5
19	11.5	8.0	10.0	10.5	9.0	9.5	6.0	5.0	5.5	5.0	4.0	4.5
20	11.5	8.0	10.0	10.0	9.5	10.0	6.0	5.0	5.5	5.5	3.5	4.5
21	11.5	8.5	10.0	11.0	9.5	10.0	6.5	5.5	6.0	5.5	4.5	5.0
22	10.5	8.5	9.5	9.5	8.0	9.0	6.0	5.5	6.0	5.5	4.0	5.0
23	10.0	8.5	9.5	10.0	8.5	9.0	5.5	4.5	5.0	6.0	4.5	5.0
24	11.0	8.0	9.5	9.0	8.0	8.5	5.0	4.0	4.5	5.5	3.5	4.5
25	10.5	7.5	9.0	8.5	7.5	8.5	4.5	2.5	3.5	5.5	3.0	4.0
26	10.0	8.0	9.0	8.0	6.5	7.0	4.5	2.5	3.5	4.5	3.0	4.0
27	10.5	7.5	9.0	7.0	5.5	6.5	4.5	3.5	4.0	6.0	4.5	5.0
28	9.5	7.5	9.0	7.0	5.5	6.0	5.0	3.5	4.5	5.5	4.0	5.0
29	11.0	9.0	10.0	6.5	5.0	5.5	4.5	3.0	4.0	6.0	5.0	5.5
30	10.5	9.0	10.0	8.5	6.0	7.5	5.0	3.5	4.0	6.0	4.5	5.5
31	11.0	9.5	10.5	---	---	---	4.5	3.0	4.0	5.5	4.0	4.5
MONTH	15.0	7.5	11.0	12.0	5.0	9.0	10.0	2.5	6.0	7.5	2.0	5.0

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	5.5	4.0	4.5	8.5	6.0	7.0	12.5	7.0	9.5	13.5	8.0	10.5
2	5.0	3.0	4.0	8.0	5.0	6.5	10.0	8.5	9.5	12.0	9.0	10.5
3	5.0	2.0	3.5	7.5	6.5	7.0	12.0	8.5	10.0	13.5	9.0	11.0
4	5.0	2.0	3.5	7.5	6.5	7.0	11.5	8.0	9.5	13.5	8.5	10.5
5	5.0	2.0	3.5	9.0	7.0	7.5	12.0	7.0	9.5	11.0	8.5	9.5
6	5.5	3.0	4.5	8.0	6.0	7.0	12.5	9.0	10.5	11.0	8.5	9.5
7	5.5	3.0	4.5	9.0	4.5	6.5	11.0	8.5	10.0	13.0	9.0	10.5
8	7.0	5.0	6.0	9.0	5.5	7.0	11.5	5.5	8.5	11.5	9.5	10.5
9	7.5	6.0	6.5	8.0	6.0	7.0	13.5	7.5	10.5	12.0	9.0	10.5
10	8.0	5.5	7.0	7.5	4.5	6.0	14.5	9.0	11.5	15.0	9.5	12.0
11	7.5	4.5	6.0	8.0	3.5	5.5	15.5	10.0	12.5	17.0	11.0	14.0
12	7.0	4.5	5.5	8.5	4.0	6.0	13.0	10.5	11.5	14.5	11.5	13.5
13	7.5	5.0	6.0	9.0	4.5	6.5	11.5	10.0	11.0	13.5	10.0	11.5
14	7.0	4.0	5.0	9.5	5.0	7.0	10.5	9.0	9.5	15.5	9.5	12.5
15	7.5	4.5	6.0	8.5	4.5	6.5	13.5	9.0	10.5	16.5	11.0	13.5
16	6.5	4.0	5.5	9.0	4.5	6.5	12.0	10.5	11.0	14.0	11.0	12.5
17	5.0	3.5	4.0	10.0	5.0	7.5	13.0	9.0	11.0	15.0	9.5	12.0
18	7.0	3.5	5.0	10.5	6.0	8.0	11.5	9.0	10.5	16.5	11.0	13.5
19	7.0	3.5	5.0	10.5	6.5	8.5	11.5	9.0	10.0	16.5	11.0	14.0
20	7.5	4.0	5.5	10.0	6.5	8.5	11.0	9.0	10.0	17.5	11.5	14.5
21	8.0	4.5	6.0	10.0	7.5	8.5	10.0	8.5	9.5	17.5	11.0	14.5
22	8.0	4.5	6.0	9.5	7.0	8.0	11.0	8.0	9.5	17.0	11.5	14.5
23	8.0	4.5	6.0	11.0	8.0	9.0	13.5	8.5	11.0	14.5	11.0	13.0
24	8.5	5.0	6.5	8.5	6.0	7.5	12.0	9.0	10.5	16.0	10.0	13.0
25	8.0	5.0	6.5	12.0	7.0	9.0	13.5	9.0	11.0	16.5	11.5	14.0
26	9.5	6.5	8.0	10.0	8.0	9.0	14.5	10.5	12.5	15.0	11.5	13.5
27	9.0	6.5	8.0	10.0	6.5	8.0	13.5	11.0	12.5	16.5	12.5	14.5
28	9.5	7.0	8.0	10.5	6.0	8.0	13.5	11.5	12.5	15.0	12.5	13.5
29	7.5	5.5	6.5	11.5	7.5	9.0	12.0	10.0	11.0	14.5	10.5	12.5
30	---	---	---	10.5	6.0	8.5	11.0	9.0	10.0	15.5	10.0	12.5
31	---	---	---	11.0	6.0	8.5	---	---	---	13.5	11.5	12.0
MONTH	9.5	2.0	5.5	12.0	3.5	7.5	15.5	5.5	10.5	17.5	8.0	12.5
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	13.5	11.5	12.5	20.5	15.0	17.5	21.5	17.0	19.5	21.0	16.0	18.0
2	17.0	11.5	14.0	22.5	17.0	19.5	21.0	15.5	18.5	20.5	16.5	18.5
3	16.0	13.0	14.0	21.5	17.5	19.5	22.5	16.5	19.0	21.5	17.0	19.0
4	15.0	12.0	13.5	20.0	16.0	18.0	22.5	17.0	20.0	21.5	17.5	19.5
5	13.5	11.0	12.5	20.5	15.0	17.5	21.0	18.0	19.5	21.0	17.0	19.0
6	13.0	10.0	11.5	20.5	15.0	17.5	21.5	16.0	18.5	19.5	15.5	17.5
7	12.5	10.5	11.5	22.0	15.5	19.0	21.0	16.0	18.5	20.0	16.0	18.0
8	13.0	10.0	11.5	22.5	17.5	20.0	21.5	16.0	18.5	19.0	15.0	17.0
9	12.5	11.0	11.5	22.5	17.5	20.0	21.5	17.0	19.5	18.5	14.5	17.0
10	16.0	10.0	12.5	22.5	17.0	19.5	22.0	17.0	19.5	17.5	14.5	16.0
11	16.0	11.5	14.0	21.0	16.5	18.5	22.0	17.5	19.5	17.0	12.5	15.0
12	17.0	11.0	14.0	21.5	16.0	18.5	20.5	16.5	18.5	17.5	13.5	15.5
13	18.0	12.0	15.0	22.0	16.5	19.5	21.0	16.5	18.5	18.0	13.5	15.5
14	19.0	13.0	16.0	22.0	17.0	19.0	18.5	16.0	17.5	18.0	13.5	15.5
15	19.0	14.5	17.0	21.5	16.5	19.0	20.0	15.0	17.5	17.0	13.5	15.5
16	19.0	14.0	16.5	22.0	16.5	19.5	20.0	15.5	17.5	17.0	14.5	15.5
17	19.5	14.5	17.0	22.5	16.5	19.5	20.0	16.0	18.0	15.5	12.0	14.0
18	20.5	15.0	17.5	23.5	17.0	20.0	19.5	15.0	17.5	15.5	11.0	13.5
19	21.0	15.0	18.0	24.5	17.5	21.0	20.0	15.5	17.5	15.5	13.5	14.0
20	20.5	15.5	18.0	25.0	18.5	21.5	20.0	15.5	17.5	15.5	13.5	14.5
21	19.5	15.0	17.5	24.0	19.0	21.5	20.0	15.0	17.5	16.0	12.0	14.0
22	20.0	15.5	17.5	23.0	17.5	20.5	20.5	15.5	18.0	16.5	13.0	14.5
23	20.0	15.0	17.5	23.0	17.5	20.0	19.5	16.5	18.0	16.5	12.5	14.5
24	20.5	15.0	17.5	23.5	17.0	20.0	20.5	16.0	18.0	16.5	13.0	14.5
25	18.5	15.5	17.0	24.0	18.0	21.0	20.5	15.5	18.0	16.5	13.0	15.0
26	20.0	14.5	16.5	24.0	19.5	21.5	20.0	15.5	18.0	16.5	13.5	14.5
27	18.5	14.5	16.5	24.0	19.0	21.5	20.0	15.5	18.0	17.5	14.5	15.5
28	18.5	14.0	16.0	23.0	17.5	20.5	20.5	16.0	18.5	16.5	13.0	15.0
29	18.5	13.0	15.5	23.0	17.5	20.5	20.5	16.5	18.5	17.5	13.5	15.0
30	19.5	13.5	16.0	23.5	18.0	20.5	20.5	16.5	18.5	18.0	14.0	16.0
31	---	---	---	23.0	18.5	21.0	20.0	15.0	17.5	---	---	---
MONTH	21.0	10.0	15.0	25.0	15.0	20.0	22.5	15.0	18.5	21.5	11.0	16.0
YEAR	25.0	2.0	11.5									

APPLEGATE RIVER BASIN

14369500 APPLEGATE RIVER NEAR WILDERVILLE, OR

LOCATION.--Lat 42°21'15", long 123°24'20", in SE 1/4 NE 1/4 sec.16, T.37 S., R.6 W., Josephine County, Hydrologic Unit 17100309, on left bank 0.3 mi downstream from Jackson Creek, 3.6 mi southeast of Wilderville, and at mile 7.6.

DRAINAGE AREA.--698 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to September 1955, September 1978 to current year.

REVISED RECORDS.--WSP 1318: 1943. WSP 1738: 1951, 1953, drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 947.18 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Sept. 1, 1978, nonrecording gage at site 1,100 ft upstream at datum 2.36 ft higher.

REMARKS.--No estimated daily discharges. Water-discharge records good. Flow regulated since December 1980 by Applegate Lake (station 14361900). Many diversions for irrigation upstream from station. Wilderville ditch diverts up to 16 ft³/s 0.3 mi upstream and at the mouth of Jackson Creek.

AVERAGE DISCHARGE.--27 years, 741 ft³/s, 536,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,500 ft³/s Jan. 18, 1953, gage height, 18.3 ft, from floodmark, site and datum then in use, from rating curve extended above 12,000 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 0.78 ft³/s Aug. 22-24, 1979. Minimum since first filling of Applegate Lake, 63 ft³/s July 19-21, 1988.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1955, reached a stage of 20.3 ft, from floodmark, former site and datum, discharge, 66,500 ft³/s, from rating curve extended above 12,000 ft³/s on basis of slope-area measurement of peak flow.

Flood of February 1927 reached a stage of 22 ft at former site, from local resident. Floods of Dec. 22, 1964, and Jan. 15, 1974, are known to have exceeded the December 1955 flood.

No flow was observed at present site during the late summer of 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,730 ft³/s Jan. 15, gage height, 6.52 ft; maximum gage height, 6.89 ft Jan. 15, from crest-stage gage; minimum discharge, 63 ft³/s July 19-21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	272	270	191	352	559	297	236	237	298	200	70	107
2	326	274	337	350	530	295	231	237	343	158	72	107
3	327	275	378	350	501	295	228	237	333	135	72	107
4	327	263	309	325	481	295	228	237	336	124	72	107
5	327	262	338	304	464	295	217	235	334	120	72	107
6	327	257	836	304	453	295	212	246	362	120	72	107
7	332	255	1050	304	441	295	212	256	377	119	72	103
8	336	255	776	309	434	295	206	320	390	117	72	102
9	338	255	956	430	434	295	185	336	396	107	76	102
10	349	255	2020	679	434	295	184	334	400	96	78	102
11	357	255	2060	1040	385	295	168	320	401	91	78	102
12	363	255	1690	1070	367	295	146	301	390	88	79	102
13	365	255	1360	1080	359	295	131	299	372	90	80	102
14	369	255	1050	1730	347	295	131	299	354	88	80	102
15	370	255	597	3620	342	292	133	293	323	88	80	102
16	334	255	623	2400	332	287	132	280	307	88	83	102
17	293	230	714	1980	322	263	137	280	286	81	89	102
18	274	218	721	1670	317	256	144	276	265	70	94	102
19	266	216	632	1410	313	247	154	250	250	64	97	106
20	264	216	587	981	308	243	178	233	237	63	100	118
21	259	216	582	799	304	242	220	278	220	66	102	131
22	258	216	582	752	301	241	246	308	220	71	102	131
23	258	216	588	662	299	240	246	311	220	77	102	131
24	264	216	584	647	299	251	239	314	219	77	106	131
25	267	216	482	631	299	251	233	274	203	76	102	131
26	270	216	457	549	299	250	233	242	205	76	96	131
27	270	215	450	537	299	243	229	242	207	74	100	136
28	270	212	449	540	299	240	224	246	205	70	100	140
29	270	212	391	543	299	237	220	271	203	70	102	140
30	270	212	370	562	---	237	231	275	200	70	102	140
31	270	---	362	563	---	237	---	275	---	70	105	---
TOTAL	9442	7178	22522	27473	10821	8389	5914	8542	8856	2904	2707	3433
MEAN	305	239	727	886	373	271	197	276	295	93.7	87.3	114
MAX	370	275	2060	3620	559	297	246	336	401	200	106	140
MIN	258	212	191	304	299	237	131	233	200	63	70	102
AC-FT	18730	14240	44670	54490	21460	16640	11730	16940	17570	5760	5370	6810

CAL YR 1987 TOTAL 155638 MEAN 426 MAX 4210 MIN 94 AC-FT 308700
WTR YR 1988 TOTAL 118181 MEAN 323 MAX 3620 MIN 63 AC-FT 234400

APPLEGATE RIVER BASIN

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14369500 APPLEGATE RIVER NEAR WILDERVILLE, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: September 1978 to current year.

INSTRUMENTATION.--Temperature recorder since September 1978.

REMARKS.--Water-temperature recorder ran fast during period Oct. 17 to Jan. 5 (range in temperature 2.0°C to 12.5°C).

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 28.0°C July 20, 1979, July 20, 26, 1988; minimum recorded, 0.5°C Dec. 30, 31, 1978, Jan. 29, 30, 1980.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 28.0°C July 20, 26; minimum, 2.0°C sometime during period of no record Oct. 18 to Jan. 5.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	17.0	15.0	16.0							---	---	---
2	16.0	14.0	15.5							---	---	---
3	16.0	13.5	15.0							---	---	---
4	16.5	13.5	15.0							---	---	---
5	16.5	13.0	15.0							---	---	---
6	16.0	13.0	15.0							6.5	6.0	6.5
7	16.0	13.5	15.0							6.5	5.0	5.5
8	15.5	13.0	14.5							6.0	5.0	5.5
9	15.0	12.5	14.0							7.5	6.0	7.0
10	14.5	12.5	13.5							8.0	7.0	7.5
11	14.0	12.0	13.0							6.5	6.0	6.5
12	14.0	11.5	13.0							5.5	5.0	5.5
13	14.0	11.5	13.0							6.5	5.5	6.0
14	13.5	11.0	12.5							7.5	6.5	7.0
15	13.0	10.5	12.0							7.0	6.0	6.5
16	13.0	10.0	12.0							6.0	4.5	5.5
17	12.5	10.0	11.5							5.5	4.5	5.0
18	---	---	---							5.5	4.5	5.0
19	---	---	---							5.5	5.0	5.0
20	---	---	---							5.5	4.5	5.0
21	---	---	---							6.5	5.5	6.0
22	---	---	---							6.0	5.0	5.5
23	---	---	---							7.0	5.5	6.0
24	---	---	---							6.0	4.5	5.5
25	---	---	---							5.0	4.5	5.0
26	---	---	---							5.0	4.5	5.0
27	---	---	---							6.5	5.0	5.5
28	---	---	---							6.5	5.0	6.0
29	---	---	---							7.5	6.0	6.5
30	---	---	---							7.0	6.0	6.5
31	---	---	---							6.5	5.0	5.5
MONTH	---	---	---							---	---	---

APPLEGATE RIVER BASIN

14369500 APPLEGATE RIVER NEAR WILDERVILLE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	6.0	5.0	5.5	9.5	7.5	9.0	14.5	10.0	12.0	14.0	10.0	12.0
2	5.5	4.0	5.0	9.0	7.0	8.5	13.0	11.5	12.0	13.5	11.5	12.5
3	5.0	3.5	4.5	9.0	8.0	8.5	13.5	10.5	11.5	14.5	11.5	13.0
4	5.0	3.5	4.0	9.0	8.0	9.0	13.5	10.5	11.5	15.0	11.0	13.0
5	5.5	3.0	4.5	10.0	8.0	9.0	14.0	10.0	12.0	13.0	11.5	12.0
6	6.0	4.0	5.0	10.0	8.0	9.0	15.0	12.0	13.5	12.5	11.0	11.5
7	6.0	4.0	5.0	10.0	6.5	8.0	13.5	11.0	12.0	14.0	11.0	12.5
8	8.0	5.5	6.5	11.0	7.0	9.0	13.5	9.0	11.0	13.5	12.0	13.0
9	9.0	7.0	8.0	9.5	8.0	9.0	15.0	10.0	12.5	14.0	11.0	12.5
10	9.0	7.0	8.0	9.0	6.0	7.5	16.5	12.0	14.0	16.5	11.5	14.0
11	8.0	6.5	7.5	9.0	5.5	7.5	18.0	13.0	15.5	19.0	13.5	16.5
12	7.5	6.0	7.0	9.5	5.5	8.0	17.5	14.0	15.5	17.5	14.0	16.0
13	8.5	6.0	7.5	10.0	6.0	8.5	15.0	13.0	14.0	15.0	13.0	14.0
14	7.5	5.0	6.5	11.0	7.0	9.0	12.5	11.5	12.5	17.5	11.5	14.5
15	8.0	5.5	7.0	10.0	6.5	8.5	15.5	9.0	13.0	18.5	14.0	16.5
16	7.5	5.0	6.5	10.5	6.5	8.5	14.5	13.0	14.0	17.0	14.5	15.5
17	6.5	4.5	5.5	11.0	7.0	9.0	15.5	12.5	14.0	17.0	12.5	15.0
18	7.0	4.5	6.0	12.0	8.0	10.0	14.5	12.5	13.5	18.5	13.5	16.0
19	7.5	5.0	6.5	12.0	8.5	10.5	13.5	12.5	13.0	19.0	14.0	16.5
20	8.0	5.0	7.0	12.0	9.0	10.5	13.0	11.5	12.5	20.0	15.0	17.5
21	8.5	5.5	7.5	11.5	9.0	10.5	11.5	10.5	11.5	20.5	16.0	18.0
22	8.5	5.5	7.5	11.5	9.5	10.5	13.0	9.5	11.0	19.0	15.5	17.5
23	8.5	5.5	7.5	12.0	9.0	10.5	14.5	11.0	12.5	17.5	14.5	16.0
24	9.0	6.0	7.5	10.5	8.5	10.0	13.5	11.5	12.5	18.0	13.0	15.5
25	9.0	6.5	8.0	13.5	9.0	11.0	15.0	11.0	13.0	19.0	14.0	16.5
26	10.5	8.0	9.5	13.0	10.5	12.0	16.5	12.5	14.5	17.5	14.5	16.5
27	11.0	8.5	10.0	11.5	8.5	10.5	16.0	13.5	14.5	17.0	15.0	16.0
28	11.0	9.0	10.0	12.0	8.0	10.0	16.0	13.5	14.5	16.0	14.5	15.5
29	10.0	8.0	9.0	12.5	9.5	11.0	14.5	12.0	13.5	16.0	13.0	14.5
30	---	---	---	12.5	9.0	11.0	13.5	11.0	12.5	17.0	12.5	15.0
31	---	---	---	13.0	8.5	11.0	---	---	---	15.5	13.5	14.5
MONTH	11.0	3.0	7.0	13.5	5.5	9.5	18.0	9.0	13.0	20.5	10.0	15.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	14.5	13.0	14.0	23.5	18.0	20.5	25.5	20.5	23.0	24.0	18.5	21.0
2	18.0	13.0	15.5	24.5	19.5	22.0	24.5	18.5	22.0	24.5	20.0	22.0
3	17.5	14.0	16.0	24.0	21.0	22.0	26.0	19.0	22.5	25.0	20.0	22.5
4	15.5	12.5	14.5	23.0	19.0	20.5	26.0	20.0	23.5	25.0	20.0	22.5
5	15.5	13.5	14.5	22.5	18.0	20.0	24.0	21.0	22.5	25.0	20.0	22.5
6	14.5	12.5	13.5	23.5	17.0	20.0	24.5	19.0	22.0	23.5	18.5	21.0
7	14.0	12.0	13.0	25.0	18.0	21.5	24.5	18.5	21.5	23.5	19.0	21.0
8	14.5	11.5	13.0	26.0	19.5	22.5	25.0	18.5	22.0	22.5	18.0	20.5
9	13.5	12.5	13.0	26.5	18.5	23.0	25.5	19.5	22.5	22.0	17.5	19.5
10	16.5	11.0	14.0	26.0	20.0	23.0	26.0	20.5	23.0	21.0	17.0	19.0
11	18.0	13.5	16.0	24.5	19.5	22.0	24.5	21.0	22.5	20.0	15.5	17.5
12	19.5	14.0	17.0	24.5	19.0	22.0	24.5	19.0	21.5	20.5	16.0	18.0
13	20.0	15.0	17.5	24.5	19.5	22.0	23.0	19.0	21.0	21.0	16.0	18.5
14	21.5	16.0	19.0	25.5	19.5	22.0	22.5	18.5	20.5	21.0	16.0	18.5
15	22.5	17.5	20.5	25.0	19.0	22.0	23.5	18.0	21.0	20.0	16.0	18.0
16	21.5	18.5	19.5	25.5	19.5	22.5	23.5	18.0	21.0	20.0	17.0	18.0
17	22.5	18.0	20.0	26.0	19.5	22.5	24.0	19.0	21.5	18.5	15.0	16.5
18	24.0	18.5	21.0	26.5	19.5	23.0	23.5	18.0	20.5	18.0	13.5	15.5
19	24.0	19.5	22.0	27.5	20.0	24.0	23.5	18.0	20.5	17.5	14.5	16.5
20	24.5	19.5	22.0	28.0	21.0	25.0	23.5	18.5	21.0	17.0	14.0	15.5
21	24.0	19.5	22.0	27.5	22.0	25.0	23.5	17.5	20.5	18.0	14.0	16.0
22	23.0	19.5	21.0	26.5	21.0	24.0	24.5	18.5	21.5	18.5	14.5	16.5
23	23.5	19.0	21.0	26.0	20.0	23.5	24.0	19.5	21.5	18.5	14.5	16.5
24	24.0	19.0	21.5	26.5	20.0	23.5	24.0	19.0	21.5	18.5	14.5	16.5
25	22.0	19.0	20.5	27.5	20.5	24.0	24.0	18.5	21.0	17.5	15.0	16.0
26	23.0	18.0	20.5	28.0	22.0	25.0	24.0	19.0	21.5	18.0	15.0	16.5
27	22.0	18.5	20.0	27.5	21.5	24.5	24.0	18.5	21.0	19.0	16.0	17.0
28	20.5	17.5	19.0	27.0	21.0	24.5	24.5	19.0	21.5	19.0	15.0	17.0
29	21.0	15.5	18.0	27.0	21.0	24.0	24.5	19.5	22.0	19.0	15.5	17.0
30	22.0	16.5	19.0	27.0	21.0	24.5	24.0	20.0	22.0	20.0	16.0	17.5
31	---	---	---	26.5	21.5	24.5	23.5	18.5	21.0	---	---	---
MONTH	24.5	11.0	18.0	28.0	17.0	23.0	26.0	17.5	21.5	25.0	13.5	18.5

14371500 GRAVE CREEK AT PEASE BRIDGE, NEAR PLACER, OR

LOCATION.--Lat 42°38'30", long 123°12'40", in SE 1/4 sec.6, T.34 S., R.4 W., Jackson County, Hydrologic Unit 17100310, on right bank 0.5 mi downstream from Pease Bridge, 0.5 mi upstream from Boulder Creek, 5.4 mi east of Placer, and at mile 27.1.

DRAINAGE AREA.--22.1 mi² at measuring site 0.5 mi upstream.

PERIOD OF RECORD.--October 1940 to current year. Prior to October 1945 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,354.2 ft above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Aug. 4, 1955, at sites 0.5 mi upstream at datum 29.9 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor. No regulation. One small diversion upstream from station. Prior to 1945, Columbia upper ditch diverted water about 2 mi upstream from station, bypassing station. Records herein are for measuring site.

AVERAGE DISCHARGE.--43 years (water years 1946-88), 58.5 ft³/s, 35.95 in/yr, 42,380 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,240 ft³/s Dec. 22, 1964, gage height, 11.20 ft, from rating curve extended above 1,200 ft³/s on basis of slope-area measurement at gage height 9.66 ft; minimum discharge, 0.12 ft³/s July 15, 1970.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 850 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 10	1830	*694	*4.23				

Minimum discharge, 0.78 ft³/s Sept. 8-13, 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.96	e1.3	e20	16	90	32	22	25	56	7.9	1.6	1.0
2	.93	e1.4	e100	17	73	27	21	25	62	7.6	1.7	.98
3	.90	e1.5	e270	18	60	25	21	26	43	7.5	1.7	.96
4	.89	e1.5	e170	23	52	26	21	28	34	7.3	1.6	.92
5	.89	e1.5	e120	29	46	31	19	29	30	7.5	1.6	.90
6	.95	e1.4	e500	30	42	31	18	34	27	7.0	1.6	.87
7	.97	e1.4	e300	33	40	28	19	89	27	5.4	1.7	.86
8	.97	e1.4	e190	43	45	27	19	110	28	5.4	1.6	.86
9	.96	e1.5	e210	207	91	37	18	98	28	5.1	1.5	.84
10	.97	e1.5	e450	507	98	38	17	75	27	5.1	1.4	.85
11	.97	e1.7	e220	320	93	35	16	58	24	4.8	1.5	.84
12	.93	e2.0	e110	164	83	33	15	48	22	5.1	1.6	.83
13	.93	e3.0	e70	119	75	31	15	44	20	4.7	1.7	.85
14	.95	e6.0	e45	284	62	29	16	36	18	4.6	1.6	.86
15	.95	e5.0	e40	302	53	27	15	31	16	4.3	1.7	.85
16	.95	e4.7	e35	175	47	24	14	32	15	4.2	1.7	.86
17	1.0	e4.2	e30	120	40	22	14	28	14	4.0	1.6	.86
18	1.1	e3.5	25	90	36	20	13	25	13	3.8	1.6	.91
19	1.1	e3.0	22	70	32	19	13	23	13	3.5	1.5	1.2
20	1.1	e2.9	21	59	31	18	17	21	12	3.1	1.4	2.3
21	1.1	e2.8	21	54	32	19	33	19	11	2.7	1.3	2.0
22	1.1	e3.4	25	50	32	18	45	17	10	2.3	1.3	1.7
23	1.1	e3.7	24	54	31	24	39	16	9.6	2.2	1.2	1.6
24	e1.1	e3.2	22	61	30	23	32	15	8.8	2.2	1.2	1.5
25	e1.2	e6.0	22	62	30	22	27	14	8.5	2.1	1.2	1.4
26	e1.2	e8.0	21	68	30	22	24	13	8.3	2.0	1.1	1.4
27	e1.2	e5.0	20	83	32	25	22	13	8.2	1.8	1.1	1.6
28	e1.2	e4.0	19	106	32	25	20	15	7.8	1.9	1.1	1.7
29	e1.2	e3.0	19	154	30	26	22	16	8.0	1.7	1.1	1.6
30	e1.2	e6.0	18	161	---	25	24	16	7.2	1.8	1.0	1.5
31	e1.2	---	16	119	---	24	---	17	---	1.7	1.0	---
TOTAL	32.17	95.5	3175	3598	1468	813	631	1056	616.4	130.3	44.5	35.40
MEAN	1.04	3.18	102	116	50.6	26.2	21.0	34.1	20.5	4.20	1.44	1.18
MAX	1.2	8.0	500	507	98	38	45	110	62	7.9	1.7	2.3
MIN	.89	1.3	16	16	30	18	13	13	7.2	1.7	1.0	.83
AC-FT	64	189	6300	7140	2910	1610	1250	2090	1220	258	88	70
CFSM	.05	.14	4.63	5.25	2.29	1.19	.95	1.54	.93	.19	.06	.05
IN.	.05	.16	5.34	6.06	2.47	1.37	1.06	1.78	1.04	.22	.07	.06

CAL YR 1987 TOTAL 14535.99 MEAN 39.8 MAX 764 MIN .88 AC-FT 28830 CFSM 1.80 IN. 24.47
WTR YR 1988 TOTAL 11695.27 MEAN 32.0 MAX 507 MIN .83 AC-FT 23200 CFSM 1.45 IN. 19.69

e Estimated

LOWER ROGUE RIVER BASIN

14372300 ROGUE RIVER NEAR AGNESS, OR
(National stream quality accounting network station)

LOCATION.--Lat 42°34'50", long 124°03'30", in NE 1/4 NW 1/4 sec.6, T.35 S., R.11 W., Curry County, Hydrologic Unit 17100310, on left bank 0.8 mi upstream from Shasta Costa Creek, 1.5 mi north of Agness, 2.6 mi upstream from Illinois River, and at mile 29.7.

DRAINAGE AREA.--3,939 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1960 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 113.81 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Public Roads).

REMARKS.--Water-discharge records good. Flow regulated since February 1977 by Lost Creek Lake (station 14335040), since December 1980 by Applegate Lake (station 14361900), slight regulation by Fish Lake and Emigrant Lake. Many diversions for irrigation and mining.

AVERAGE DISCHARGE.--28 years, 6,111 ft³/s, 4,427,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 290,000 ft³/s Dec. 23, 1964, from slope-area measurement; maximum gage height, 68.03 ft Dec. 23, 1964, from floodmark (backwater from Illinois River); minimum discharge, 608 ft³/s July 9, 10, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31,500 ft³/s Jan. 15, gage height, 12.44 ft; maximum gage height, 12.81 ft, from crest-stage gage Jan. 15; minimum discharge, 1,110 ft³/s Sept. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1430	1460	2310	2590	5010	2150	1740	2700	2950	2240	e1520	2150
2	1620	1460	3480	2490	4640	2260	1730	2870	4080	2220	e1520	2150
3	1660	1470	7410	2520	4190	2250	1920	2910	5250	2090	e1550	2110
4	1670	1470	5120	2690	3820	2230	2230	3270	4350	2070	e1560	2110
5	1690	1270	4200	2890	3590	2300	2260	3350	4030	2090	e1540	2110
6	1600	1250	11400	3060	3390	2480	2060	3320	4380	2100	e1560	2110
7	1490	1240	11900	3050	3230	2510	2130	3550	4860	2100	e1610	2110
8	1450	1270	9240	3670	3190	2460	2310	4790	5090	2040	e1630	2070
9	1460	1270	11100	6040	3420	2620	2490	5170	4750	1990	e1600	1800
10	1480	1260	18300	16300	3810	2870	2450	4830	4430	1960	e1550	1620
11	1480	1260	14000	16500	3860	2880	2450	4120	4260	1930	e1540	1660
12	1570	1340	8250	11800	3640	2640	2340	3800	3690	1950	e1560	1680
13	1730	1500	6050	8830	3450	2490	2180	3860	3360	1940	e1650	1660
14	1990	1520	4930	11700	3250	2390	2250	4220	3240	1900	1790	1490
15	1610	1490	4360	26700	3060	2310	2250	3810	3120	1920	1820	1470
16	1590	1470	4230	20500	2910	2210	2240	3490	2950	1900	1870	1460
17	1520	1450	4710	15300	2770	2120	2230	3350	2850	1880	2070	1260
18	1430	1400	4270	11200	2660	2010	2260	3540	2770	1840	2080	1210
19	1400	1360	3820	8830	2570	1960	2300	3220	2680	1820	2100	1260
20	1330	1330	3420	7050	2460	1910	2390	2800	2570	1780	2110	1270
21	1310	1350	3260	5790	2400	1870	2720	2650	2510	1620	2120	1480
22	1380	1410	3520	5390	2350	1860	3580	2590	2380	1520	2120	1450
23	1390	1390	3860	5150	2310	2090	3820	2550	2370	1520	2130	1400
24	1380	1420	3680	4980	2280	2100	3460	2540	2330	1550	2120	1380
25	1410	1510	3320	4890	2230	2040	3240	2460	2280	1580	2150	1380
26	1430	1460	2980	4660	2190	1960	3010	2250	2290	1560	2120	1370
27	1440	1390	2810	4320	2160	1940	2490	2180	2320	1530	2120	1410
28	1410	1340	2740	4400	2140	1940	2230	2200	2290	1510	2120	1440
29	1400	1300	2730	4850	2080	1920	2360	2330	2280	1490	2130	1430
30	1410	1460	2690	5300	---	1850	2520	2770	2260	1520	2120	1400
31	1440	---	2720	5320	---	1810	---	2630	---	e1550	2130	---
TOTAL	46600	41570	176810	238760	89060	68430	73640	100120	98970	56710	57610	48900
MEAN	1503	1386	5704	7702	3071	2207	2455	3230	3299	1829	1858	1630
MAX	1990	1520	18300	26700	5010	2880	3820	5170	5250	2240	2150	2150
MIN	1310	1240	2310	2490	2080	1810	1730	2180	2260	1490	1520	1210
AC-FT	92430	82450	350700	473600	176700	135700	146100	198600	196300	112500	114300	96990

CAL YR 1987 TOTAL 1433600 MEAN 3928 MAX 44700 MIN 1240 AC-FT 2844000
WTR YR 1988 TOTAL 1097180 MEAN 2998 MAX 26700 MIN 1210 AC-FT 2176000

e Estimated

LOWER ROGUE RIVER BASIN

301

14372300 ROGUE RIVER NEAR AGNESS, OR--Continued
(National stream quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1960 to September 1987.

INSTRUMENTATION.--Temperature recorder since October 1960.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 26.5°C on several days in 1962, Aug. 3, 6, 9-11, 1977; minimum, 1.0°C Jan. 22-25, 1962, Dec. 9-16, 1972, Jan. 9, 10, 1977, Jan. 1-3, 1979.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM- FLOW, INSTAN- TANEOUS (CFS)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED SATUR- ATION	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS (MG/L AS CACO3)	HARD- NESS NONCARB (MG/L AS CACO3)	CALCIUM DIS- SOLVED (MG/L AS CA)
OCT 20...	1230	1320	99	7.6	11.0	11.2	101	K6	K20	39	0	9.1
DEC 17...	1330	4940	110	7.1	5.0	12.7	100	65	130	45	1	10
FEB 17...	1400	2760	114	7.4	6.5	12.3	99	K6	K1	44	0	10
APR 12...	1130	2310	96	7.6	13.5	10.2	99	K4	K4	40	0	9.2
JUL 01...	1000	2250	96	7.3	18.0	9.4	100	K2	K1	35	0	8.3
AUG 02...	1200	1560	87	7.1	21.5	8.3	94	K12	410	33	0	7.9

DATE	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY WATER DIS IT FIELD (MG/L AS CACO3)	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3)	CAR- BONATE WATER DIS IT FIELD (MG/L AS CO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)
OCT 20...	3.9	5.0	1.2	47	57	0	4.3	2.9	0.1	0.02	0.1
DEC 17...	4.9	4.7	0.9	43	52	0	7.9	4.9	0.2	0.09	0.3
FEB 17...	4.7	4.8	1.1	45	55	0	5.5	3.1	0.1	0.01	0.2
APR 12...	4.0	4.9	1.0	51	62	0	4.5	2.6	0.1	<0.01	<0.1
JUL 01...	3.5	4.9	1.0	41	50	0	2.9	1.9	0.2	<0.01	0.1
AUG 02...	3.2	4.9	1.1	40	49	0	3.2	2.1	0.3	0.03	0.1

DATE	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS- PHOROUS ORTHO, DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS DIS- SOLVED (MG/L AS P)	PHOS- PHOROUS TOTAL (MG/L AS P)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER DAY)	TUR- BID- ITY (NTU)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
OCT 20...	<0.2	0.06	0.07	0.08	22	70	78	249	0.9	--	175
DEC 17...	1.0	0.05	0.06	0.07	19	89	81	1190	3.8	48	640
FEB 17...	0.3	0.04	0.04	0.05	20	76	78	566	1.8	25	186
APR 12...	0.4	0.05	0.07	0.09	20	67	78	418	2.2	7	44
JUL 01...	0.7	0.04	0.07	0.07	22	68	70	413	1.4	7	43
AUG 02...	0.2	0.08	0.09	0.09	24	69	72	291	2.4	7	29

K - Results based on colony count outside acceptable range (non-ideal colony count).

LOWER ROGUE RIVER BASIN

14372300 ROGUE RIVER NEAR AGNESS, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	ALUM- INUM, DIS- SOLVED (UG/L AS AL)	ARSENIC DIS- SOLVED (UG/L AS AS)	BARIUM, DIS- SOLVED (UG/L AS BA)	BERYL- LIUM, DIS- SOLVED (UG/L AS BE)	CADMIUM DIS- SOLVED (UG/L AS CD)	CHRO- MIUM, DIS- SOLVED (UG/L AS CR)	COBALT, DIS- SOLVED (UG/L AS CO)	COPPER, DIS- SOLVED (UG/L AS CU)	IRON, DIS- SOLVED (UG/L AS FE)	LEAD, DIS- SOLVED (UG/L AS PB)
OCT 20...	30	<1	8	<0.5	<1	7	<3	3	51	<5
DEC 17...	--	--	--	--	--	--	--	--	--	--
FEB 17...	20	<1	9	<0.5	<1	2	<3	<1	33	<5
APR 12...	<10	<1	9	<0.5	<1	<1	<3	2	19	<5
JUL 01...	--	--	--	--	--	--	--	--	--	--
AUG 02...	10	<1	7	<0.5	<1	<1	<3	3	24	<5
DATE	LITHIUM DIS- SOLVED (UG/L AS LI)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	MERCURY DIS- SOLVED (UG/L AS HG)	MOLYB- DENUM, DIS- SOLVED (UG/L AS MO)	NICKEL, DIS- SOLVED (UG/L AS NI)	SELE- NIUM, DIS- SOLVED (UG/L AS SE)	SILVER, DIS- SOLVED (UG/L AS AG)	STRON- TIUM, DIS- SOLVED (UG/L AS SR)	VANA- DIUM, DIS- SOLVED (UG/L AS V)	ZINC, DIS- SOLVED (UG/L AS ZN)
OCT 20...	<4	4	0.3	<10	2	<1	<1	68	<6	6
DEC 17...	--	--	--	--	--	--	--	--	--	--
FEB 17...	<4	2	0.2	<10	<1	<1	<1	72	<6	8
APR 12...	<4	4	0.2	<10	1	<1	1	70	<6	<3
JUL 01...	--	--	--	--	--	--	--	--	--	--
AUG 02...	<4	3	<0.1	<10	1	<1	<1	66	<6	7

14372500 EAST FORK ILLINOIS RIVER NEAR TAKILMA, OR

LOCATION.--Lat 42°00'10", long 123°37'30", in SE 1/4 NE 1/4 sec.15, T.41 S., R.8 W., Josephine County, Hydrologic Unit 17100311, Siskiyou National Forest, on right bank 0.3 mi downstream from Dunn Creek (California-Oregon State line), 3.4 mi south of Takilma, and at mile 71.2.

DRAINAGE AREA.--42.3 mi².

PERIOD OF RECORD.--April to September 1926, April 1927 to April 1932, October 1940 to current year. Monthly discharge only for some periods, published in WSP 1318. Records prior to 1942 water year not equivalent owing to large diversions.

REVISED RECORDS.--WSP 1184: 1948. WSP 1288: 1951(P). WSP 1398: 1946, 1947(M), 1949. WSP 1738: Drainage area (former site).

GAGE.--Water-stage recorder. Elevation of gage is 1,780 ft, from topographic map. Prior to Oct. 31, 1946, nonrecording gage at sites 0.6 mi downstream at different datums. Oct. 31, 1946, to May 13, 1949, nonrecording gage and May 14, 1949, to Aug. 23, 1965, water-stage recorder at site 0.6 mi downstream at datum 1,746.6 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records excellent. No regulation. Two small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--47 years (water years 1942-88), 178 ft³/s, 57.15 in/yr, 129,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft³/s Dec. 22, 1964, gage height, 14.90 ft, present site and datum, from floodmark, from rating curve extended above 4,400 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 4.6 ft³/s Nov. 3, 1960.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0330	*4,260	*8.65	No other peak greater than base discharge.			
Minimum discharge, 6.2 ft ³ /s Oct. 1-3, 7, 8.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	9.6	288	55	179	118	74	147	438	38	14	9.4
2	6.4	12	797	53	152	102	74	142	330	37	14	9.0
3	6.4	9.9	495	82	132	101	94	152	226	36	14	8.7
4	6.7	8.9	374	94	117	115	90	141	174	35	13	8.6
5	6.8	8.4	260	94	108	130	82	125	170	34	13	8.4
6	6.7	8.1	1360	84	100	117	80	116	172	32	14	8.4
7	6.3	8.3	597	86	94	105	86	127	187	31	14	8.6
8	6.4	8.6	408	130	109	100	80	150	177	29	13	8.7
9	6.7	21	1140	494	229	111	73	148	204	28	13	8.6
10	6.5	12	2480	1040	208	100	70	149	232	27	12	8.6
11	6.5	9.9	720	764	189	93	72	158	193	26	12	8.7
12	6.5	16	357	407	176	86	75	166	161	26	13	8.4
13	6.5	41	232	329	161	81	80	210	134	25	13	8.2
14	6.5	28	175	997	144	76	81	167	116	25	13	8.1
15	6.5	16	146	1120	134	73	74	142	102	24	15	8.1
16	6.7	15	123	573	122	69	73	147	92	23	13	8.3
17	6.6	15	105	371	112	66	70	132	83	22	12	8.7
18	6.6	14	92	256	102	64	64	115	76	21	12	8.8
19	6.8	13	83	195	95	65	80	103	71	21	12	11
20	6.6	14	77	166	94	64	102	93	66	19	12	15
21	6.5	21	90	151	97	68	163	86	62	19	11	11
22	6.5	18	100	140	99	65	169	82	58	18	11	10
23	6.7	20	91	144	98	107	146	76	55	18	11	9.9
24	7.1	27	82	145	99	98	126	69	52	18	10	9.5
25	7.1	28	77	149	99	101	111	64	49	17	10	9.4
26	7.1	20	72	165	105	111	100	61	47	17	9.9	9.4
27	6.9	17	68	213	119	117	92	58	44	16	9.9	9.8
28	6.7	15	65	238	130	104	87	72	42	15	9.7	9.7
29	7.2	14	61	273	126	93	134	70	41	15	9.5	9.3
30	7.7	26	64	271	---	85	165	67	39	15	9.7	8.8
31	8.2	---	59	216	---	78	---	74	---	15	9.7	---
TOTAL	208.7	494.7	11138	9495	3729	2863	2867	3609	3893	742	372.4	277.1
MEAN	6.73	16.5	359	306	129	92.4	95.6	116	130	23.9	12.0	9.24
MAX	8.2	41	2480	1120	229	130	169	210	438	38	15	15
MIN	6.3	8.1	59	53	94	64	64	58	39	15	9.5	8.1
AC-FT	414	981	22090	18830	7400	5680	5690	7160	7720	1470	739	550
CFSM	.16	.39	8.49	7.24	3.04	2.18	2.26	2.75	3.07	.57	.28	.22
IN.	.18	.44	9.80	8.35	3.28	2.52	2.52	3.17	3.42	.65	.33	.24

CAL YR 1987	TOTAL 50104.2	MEAN 137	MAX 2480	MIN 6.3	AC-FT 99380	CFSM 3.25	IN. 44.06
WTR YR 1988	TOTAL 39688.9	MEAN 108	MAX 2480	MIN 6.3	AC-FT 78720	CFSM 2.56	IN. 34.90

ILLINOIS RIVER BASIN

14375100 SUCKER CREEK BELOW LITTLE GRAYBACK CREEK, NEAR HOLLAND, OR

LOCATION.--Lat 42°09'35", long 123°28'40", in NE 1/4 SW 1/4 sec.24, T.39 S., R.7 W., Josephine County, Hydrologic Unit 17100311, on right bank 500 ft downstream from Little Grayback Creek, 2.0 mi downstream from Grayback Creek, 3.7 mi northeast of Holland, and at mile 9.3.

DRAINAGE AREA.--83.9 mi².

PERIOD OF RECORD.--October 1965 to current year.

REVISED RECORDS.--WDR OR-86-2: 1985.

GAGE.--Water-stage recorder. Datum of gage is 1,713.92 ft above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark).

REMARKS.--No estimated daily discharges. Records good. Grayback Canal and 3 small diversions from Grayback and Cave Creeks divert water for domestic use and irrigation upstream from station. Return flow from these diversions enters creek upstream from station.

AVERAGE DISCHARGE.--23 years, 236 ft³/s, 38.20 in/yr, 171,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,550 ft³/s Jan. 15, 1974, gage height, 8.20 ft; minimum discharge, 12 ft³/s Oct. 20, 1974.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1940, 10.8 ft on Dec. 22, 1964, from floodmark, discharge, 19,300 ft³/s, from estimate based on slope-area measurement of peak flow at site 0.7 mi upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0600	*1,910	4.72	Dec. 10	0600	(a)	*4.79

Minimum discharge, 13 ft³/s Oct. 2, 23, 27.

(a) From outside high-water mark.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	22	102	63	258	151	103	164	310	82	38	23
2	15	24	218	62	226	139	105	167	277	80	37	21
3	16	22	187	72	202	145	119	173	271	79	37	21
4	16	20	161	73	183	157	111	168	238	77	36	20
5	16	19	128	74	170	168	106	164	229	76	36	20
6	18	19	616	73	159	155	108	164	236	74	37	20
7	15	20	307	76	151	144	118	190	246	71	35	20
8	15	20	217	84	153	141	109	208	241	68	34	20
9	16	33	441	181	188	154	105	209	255	65	33	20
10	17	24	1230	421	185	141	106	206	262	64	32	20
11	17	20	479	469	185	133	111	205	238	62	32	20
12	17	41	281	313	186	127	115	227	219	63	33	20
13	16	63	200	265	184	121	122	254	200	63	33	19
14	17	43	158	657	175	117	130	220	183	62	34	19
15	16	28	137	841	170	114	123	206	170	60	37	19
16	17	28	121	524	160	110	129	230	161	59	33	20
17	16	28	105	385	152	107	123	211	150	57	31	21
18	17	26	96	299	142	105	116	191	140	55	30	21
19	17	24	89	238	135	105	132	178	132	53	29	32
20	17	30	84	205	132	105	139	168	126	50	28	34
21	16	29	91	186	131	107	172	161	119	48	27	26
22	17	42	100	177	131	102	170	156	113	47	27	24
23	16	31	93	178	129	130	153	149	107	46	26	23
24	17	41	86	178	130	115	143	142	103	45	26	22
25	17	37	82	184	130	114	137	135	100	43	25	22
26	17	28	79	202	135	118	133	130	96	42	25	23
27	17	25	76	250	146	122	129	126	93	41	24	24
28	16	24	73	292	153	112	129	145	90	41	24	23
29	18	23	71	338	150	108	165	140	88	40	23	22
30	20	33	71	349	---	104	168	134	84	39	24	21
31	21	---	65	301	---	102	---	139	---	38	24	---
TOTAL	520	867	6244	8010	4731	3873	3829	5460	5277	1790	950	660
MEAN	16.8	28.9	201	258	163	125	128	176	176	57.7	30.6	22.0
MAX	21	63	1230	841	258	168	172	254	310	82	38	34
MIN	15	19	65	62	129	102	103	126	84	38	23	19
AC-FT	1030	1720	12380	15890	9380	7680	7590	10830	10470	3550	1880	1310
CFSM	.20	.34	2.40	3.08	1.94	1.49	1.52	2.10	2.10	.69	.37	.26
IN.	.23	.38	2.77	3.55	2.10	1.72	1.70	2.42	2.34	.79	.42	.29
CAL YR 1987	TOTAL 55338	MEAN 152	MAX 2060	MIN 15	AC-FT 109800	CFSM 1.81	IN. 24.54					
WTR YR 1988	TOTAL 42211	MEAN 115	MAX 1230	MIN 15	AC-FT 83730	CFSM 1.37	IN. 18.72					

ILLINOIS RIVER BASIN

305

14375400 ELK CREEK NEAR O'BRIEN, OR

LOCATION.--Lat 42°02'00", long 123°44'32", in SE 1/4 NE 1/4 sec:3, T.41 S., R.9 W., Josephine County, Hydrologic Unit 17100311, on right bank 0.7 mi downstream from Gilligan Creek, 0.8 mi west of U.S. Highway 199, about 3.1 mi southwest of O'Brien, and at mile 0.6.

DRAINAGE AREA.--26.6 mi².

PERIOD OF RECORD.--October 1985 to current year. Records November 1969 to September 1985 in files of the Oregon Water Resources Department, Salem, Oregon.

REVISED RECORDS.--WDR OR-87-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,560 ft, from topographic map. Prior to November 1978, at site 1,100 ft upstream at different datum.

REMARKS.--Records good. No regulation. Minor diversion for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,610 ft³/s Jan. 16, 1971; minimum, 0.33 ft³/s Aug. 11, 12, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 10	0500	*1,800	*6.72	Jan. 14	2400	1,740	6.59
Minimum discharge, 0.94 ft ³ /s Oct. 21.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	5.1	88	55	82	36	26	94	e170	18	5.4	2.4
2	1.7	7.8	237	50	74	32	25	74	e130	16	4.9	2.3
3	1.7	5.9	160	64	68	31	29	66	e90	16	5.0	2.3
4	1.9	5.3	132	86	64	32	29	59	e62	16	4.7	2.2
5	1.9	5.2	91	102	61	33	27	54	e60	16	4.8	2.1
6	1.9	5.2	522	93	58	33	27	51	e66	15	5.0	2.0
7	1.9	5.7	410	116	56	33	27	55	e70	14	5.2	2.0
8	1.9	5.0	349	332	55	33	27	54	e66	13	5.1	2.0
9	2.1	12	673	653	58	39	26	52	e75	12	4.8	2.0
10	2.3	7.2	1220	934	55	38	25	48	e95	12	4.5	2.0
11	2.5	5.1	399	739	53	36	24	44	e85	12	4.1	2.1
12	2.6	8.5	210	415	52	35	24	46	e75	12	4.1	2.0
13	2.6	27	138	355	50	33	24	60	e65	12	4.6	2.0
14	2.8	11	98	857	48	32	24	55	e58	12	4.8	2.0
15	2.9	6.9	81	1090	47	31	23	50	e52	11	5.3	1.9
16	3.0	7.0	67	565	45	30	23	54	e47	11	5.2	2.0
17	3.3	6.8	57	389	43	29	22	53	e43	10	4.8	2.2
18	3.2	6.3	50	261	42	28	22	49	e39	9.8	4.8	2.3
19	3.3	5.4	44	191	40	27	24	45	e36	9.4	4.2	2.5
20	3.3	6.0	41	152	39	27	29	42	e34	9.0	3.9	2.9
21	2.8	8.7	53	127	38	27	49	39	e31	8.6	3.8	2.6
22	2.1	7.3	88	111	37	26	52	37	e29	8.2	3.7	2.6
23	2.2	8.7	83	102	36	40	45	35	e27	8.2	3.5	2.5
24	2.4	11	69	95	35	37	40	33	e26	7.7	3.5	2.3
25	2.6	14	60	87	34	33	36	32	e25	7.5	3.3	2.3
26	2.8	9.2	53	81	34	32	33	31	e24	7.1	2.7	2.6
27	2.8	7.2	47	79	33	30	31	30	e23	6.4	2.7	2.8
28	2.9	6.4	43	76	32	29	30	36	e22	5.2	2.7	3.1
29	3.0	5.8	40	90	32	28	58	34	21	5.3	2.5	3.0
30	3.7	13	51	105	---	27	103	29	19	5.3	2.5	2.7
31	4.8	---	61	93	---	26	---	e33	---	5.4	2.5	---
TOTAL	80.8	245.7	5715	8545	1401	983	984	1474	1665	331.1	128.6	69.7
MEAN	2.61	8.19	184	276	48.3	31.7	32.8	47.5	55.5	10.7	4.15	2.32
MAX	4.8	27	1220	1090	82	40	103	94	170	18	5.4	3.1
MIN	1.7	5.0	40	50	32	26	22	29	19	5.2	2.5	1.9
AC-FT	160	487	11340	16950	2780	1950	1950	2920	3300	657	255	138
CFSM	.10	.31	6.93	10.4	1.82	1.19	1.23	1.79	2.09	.40	.16	.09
IN.	.11	.34	7.99	11.95	1.96	1.37	1.38	2.06	2.33	.46	.18	.10

CAL YR 1987	TOTAL 29270.25	MEAN 80.2	MAX 1220	MIN .69	AC-FT 58060	CFSM 3.01	IN. 40.93
WTR YR 1988	TOTAL 21622.9	MEAN 59.1	MAX 1220	MIN 1.7	AC-FT 42890	CFSM 2.22	IN. 30.24

e Estimated

ILLINOIS RIVER BASIN

14377100 ILLINOIS RIVER NEAR KERBY, OR

LOCATION.--Lat 42°13'55", long 123°39'45", in SE 1/4 SE 1/4 sec.29, T.38 S., R.8 W., Josephine County, Hydrologic Unit 17100311, Siskiyou National Forest, on right bank 1.6 mi upstream from Josephine Creek, 2.5 mi northwest of Kerby, and at mile 50.3.

DRAINAGE AREA.--380 mi².

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,198.8 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 28, 1965, water-stage recorder, and Jan. 28 to Sept. 30, 1965, nonrecording gage 700 ft downstream at datum 2.99 ft lower.

REMARKS.--No estimated daily discharges. Records good. No regulation. Diversions for irrigation upstream from station. Several observations of water temperature were obtained during the year.

AVERAGE DISCHARGE.--27 years, 1,309 ft³/s, 46.78 in/yr, 948,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92,200 ft³/s Dec. 22, 1964, gage height, 45.28 ft, from floodmark, site and datum then in use, from rating curve extended above 30,000 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 14 ft³/s Aug. 11, 13, 14, 1977, Sept. 10, 11, 1986.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 6	1300	11,600	17.00	Jan. 10	2030	11,100	16.59
Dec. 10	0700	*17,100	20.67	Jan. 15	0130	15,500	19.65
Dec. 10	0700	(a)	*21.05				

Minimum discharge, 15 ft³/s Sept. 17.

(a) From outside high-water mark.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	29	943	631	1470	584	381	1180	1660	198	35	30
2	23	29	3910	591	1240	535	373	1010	1890	187	33	31
3	25	32	3790	760	1090	512	426	960	1530	180	32	29
4	23	39	2220	1120	979	529	466	878	1210	166	35	28
5	24	39	1910	1190	895	622	468	793	1020	148	34	26
6	23	48	6650	1040	827	612	441	748	966	147	36	23
7	22	45	5180	1080	773	634	457	861	991	141	38	20
8	21	40	3830	2380	752	581	442	946	948	127	40	21
9	22	57	7470	5330	1040	656	410	898	991	123	38	20
10	25	53	12900	9240	1080	639	389	822	1190	107	37	19
11	26	52	4860	6940	1000	595	372	775	1060	94	34	18
12	25	61	2680	3790	943	551	367	746	918	90	37	18
13	25	109	1880	3360	890	512	370	1040	797	88	38	20
14	26	141	1430	7950	822	482	396	949	707	86	46	19
15	26	112	1330	10400	773	456	367	839	628	82	46	19
16	26	98	1240	5670	726	432	358	845	564	79	44	17
17	26	101	1050	3850	681	407	350	898	521	75	42	17
18	26	98	938	2740	641	387	327	790	467	71	40	20
19	26	94	854	2110	605	374	341	703	429	69	35	21
20	26	94	786	1730	578	363	420	636	394	64	32	20
21	23	103	842	1530	562	368	618	575	365	62	34	24
22	22	108	1200	1370	555	365	795	525	341	57	29	27
23	22	100	1100	1280	544	517	705	485	313	57	28	28
24	25	105	936	1240	535	652	624	442	290	60	26	32
25	26	127	823	1190	525	568	561	400	275	59	27	35
26	28	133	745	1180	523	533	512	375	260	48	27	29
27	28	115	683	1260	544	529	473	356	233	39	29	31
28	27	105	647	1420	564	488	449	383	223	39	30	28
29	27	99	633	1890	567	455	620	456	211	38	29	27
30	30	107	662	2300	---	423	1290	425	200	35	28	27
31	30	---	694	1760	---	396	---	408	---	34	30	---
TOTAL	776	2473	74816	88322	22724	15757	14568	22147	21592	2850	1069	724
MEAN	25.0	82.4	2413	2849	784	508	486	714	720	91.9	34.5	24.1
MAX	30	141	12900	10400	1470	656	1290	1180	1890	198	46	35
MIN	21	29	633	591	523	363	327	356	200	34	26	17
AC-FT	1540	4910	148400	175200	45070	31250	28900	43930	42830	5650	2120	1440
CFSM	.07	.22	6.35	7.50	2.06	1.34	1.28	1.88	1.89	.24	.09	.06
IN.	.08	.24	7.32	8.65	2.22	1.54	1.43	2.17	2.11	.28	.10	.07

CAL YR 1987 TOTAL 361474 MEAN 990 MAX 13500 MIN 18 AC-FT 717000 CFSM 2.61 IN. 35.39
WTR YR 1988 TOTAL 267818 MEAN 732 MAX 12900 MIN 17 AC-FT 531200 CFSM 1.93 IN. 26.22

CHETCO RIVER BASIN

307

14400000 CHETCO RIVER NEAR BROOKINGS, OR

LOCATION.--Lat 42°07'25", long 124°11'10", in SE 1/4 sec.12, T.40 S., R.13 W., Curry County, Hydrologic Unit 17100312, on right bank 16 ft upstream from bridge, 0.5 mi upstream from Elk Creek, 6.8 mi northeast of Brookings, and at mile 10.7.

DRAINAGE AREA.--271 mi².

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 50 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station. Several measurements of water temperature made during the year.

AVERAGE DISCHARGE.--19 years, 2,322 ft³/s, 116.36 in/yr, 1,682,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,800 ft³/s Jan. 16, 1971, gage height, 27.45 ft; minimum discharge, 42 ft³/s Oct. 14, 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 32.25 ft, from high-water mark on bridge pier, discharge, 85,400 ft³/s, from rating curve extended above 45,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 3	0030	26,400	15.67	Dec. 10	0330	(a)	*19.73
Dec. 6	1300	21,900	14.04	Jan. 10	unknown	unknown	unknown
Dec. 10	0330	*36,600	18.86				

Minimum discharge, 42 ft³/s Oct. 14.

(a) From crest-stage gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	61	5630	e1500	2490	782	694	1920	4140	435	148	85
2	50	76	10900	e1400	2100	692	683	1650	4220	419	141	83
3	51	74	16600	e1700	1840	671	897	1610	5320	407	139	83
4	52	65	8710	e2500	1650	804	1020	1500	3820	393	139	83
5	51	59	7710	e2800	1490	998	994	1340	2930	379	137	80
6	47	56	17200	e2200	1360	1070	937	1310	2550	363	135	77
7	46	56	13500	e2400	1260	1110	959	2010	2400	345	134	77
8	46	59	10100	e4500	1290	969	904	2010	2120	334	133	75
9	47	123	20700	e11000	1710	1040	859	1730	2110	324	130	74
10	48	127	27800	e19000	1590	1010	814	1520	2030	307	128	73
11	49	94	12900	e14000	1420	961	775	1350	1790	298	124	71
12	50	142	7610	e9000	1310	908	737	1380	1570	293	123	71
13	50	736	5290	e8000	1230	861	713	1930	1400	291	124	69
14	49	439	4050	e14900	1140	822	701	1860	1250	288	124	70
15	48	257	4080	15700	1070	787	672	1630	1130	277	123	70
16	46	249	4120	10300	1000	753	647	1830	1030	269	122	71
17	46	344	3540	e6000	944	722	628	1960	956	256	119	70
18	47	345	3050	e4500	908	695	610	1690	885	245	116	70
19	46	257	2690	e3600	873	673	641	1490	822	234	111	75
20	46	238	2410	e3200	842	652	660	1330	771	227	106	84
21	46	297	2430	2760	816	651	743	1190	724	218	101	85
22	47	299	2820	2410	793	650	868	1080	685	210	99	79
23	47	319	2580	2230	770	1240	833	996	648	201	99	76
24	48	366	2300	2090	748	1260	773	934	615	191	99	74
25	50	487	2110	1900	728	998	728	883	581	186	97	73
26	50	368	1930	1800	710	902	697	841	559	183	94	75
27	49	294	e1700	1770	696	875	669	844	536	177	93	87
28	48	248	e1600	e1900	682	826	712	1250	510	173	92	92
29	47	217	e1500	e2300	671	788	1690	1370	478	172	92	86
30	48	348	e1500	e3000	---	750	2510	1110	449	166	90	79
31	52	---	e1600	e2700	---	721	---	1060	---	157	87	---
TOTAL	1496	7100	210660	163060	34131	26641	25768	44608	49029	8418	3599	2317
MEAN	48.3	237	6795	5260	1177	859	859	1439	1634	272	116	77.2
MAX	52	736	27800	19000	2490	1260	2510	2010	5320	435	148	92
MIN	46	56	1500	1400	671	650	610	841	449	157	87	69
AC-FT	2970	14080	417800	323400	67700	52840	51110	88480	97250	16700	7140	4600
CFSM	.18	.87	25.1	19.4	4.34	3.17	3.17	5.31	6.03	1.00	.43	.28
IN.	.21	.97	28.92	22.38	4.69	3.66	3.54	6.12	6.73	1.16	.49	.32

CAL YR 1987 TOTAL 711308 MEAN 1949 MAX 27800 MIN 46 AC-FT 1411000 CFSM 7.19 IN. 97.64
WTR YR 1988 TOTAL 576827 MEAN 1576 MAX 27800 MIN 46 AC-FT 1144000 CFSM 5.82 IN. 79.18

e Estimated

CHEMICAL QUALITY OF PRECIPITATION

SANDY RIVER BASIN

452650122091801 BULL RUN RESERVOIR NUMBER TWO, OR

LOCATION.--Lat 45°26'55", long 122°08'45", in SE 1/4 SE 1/2 sec.26, T.1 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on headworks dam on Bull Run River, 4.4 mi northeast of town of Bull Run, and approximately 20 mi east of Portland.

PERIOD OF RECORD.--June 1980 to September 1981 (event sampling), September 1981 to November 1981 (weekly composite), July 1982 to current year (weekly composite).

INSTRUMENTATION.--A bulk-type plastic double cylinder with receiving funnel directing deposition to inner cylinder was used for the period of record June 1980 to September 1981. The wet-deposition sample collector is an Aerochem Model 301* wet/dry deposition collector. The sensing circuit is activated by wet deposition, causing the motor to move the cover from the wet bucket and cover the dry bucket. When the heater in the sensor evaporates the precipitation, the cycle is reversed. The sample buckets are polyethylene and have a capacity of 13 liters (28.6 cm inside diameter, 23.2 cm deep). The opening of the collector is approximately 5 ft above ground level and has been used for the weekly composite sampling period of record September 1981 to current year.

REMARKS.---Inches of precipitation obtained from an on-site recording weighing-bucket gage. The sample collector is located in the restricted access area of the city of Portland's Bull Run River Watershed.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	TOTAL PRECIP- ITATION FOR DEFINED PERIOD (IN)	COL- LECTOR EFFI- CIENCY WET DEPOS. PERCENT	SPEC. CONDUCT- TANCE CK.SOL.* ATM DEP WET TOT (US/CM)	SPEC. CONDUCT- TANCE FIELD ATM DEP WET TOT (US/CM)	SPEC. CONDUCT- TANCE LAB ATM DEP WET TOT (US/CM)	PH CK.SOL.* ATM DEP WET T (UNITS)	PH FIELD ATM DEP WET T (UNITS)	PH LAB ATM DEP WET T (UNITS)
OCT 27- NOV 03	1740	0.68	92	21.0	8.4	5.2	4.24	4.72	5.04
NOV 03-10	1830	0.12	95	21.7	11.7	7.8	4.24	4.84	5.71
NOV 10-17	1735	3.48	96	21.8	6.8	5.6	4.28	5.02	5.31
NOV 17-24	1800	1.02	101	21.3	8.0	7.0	4.23	5.14	5.42
NOV 24- DEC 01	1725	1.77	100	22.0	8.1	7.4	4.29	5.11	5.47
DEC 01-08	1800	5.47	98	21.0	3.7	2.6	4.22	5.38	5.41
DEC 08-15	1745	3.83	103	22.7	7.6	6.7	4.24	5.24	5.47
DEC 15-22	1750	1.11	103	22.0	9.4	8.3	4.25	5.00	5.16
DEC 22-29	1730	0.65	99	22.7	12.4	11.2	4.20	4.72	4.87
DEC 29 1987- JAN 05 1988	1910	0.49	--	--	--	2.2	--	--	5.49
JAN 05-12	1710	3.14	100	22.8	6.6	5.5	4.23	5.35	5.38
JAN 12-19	1700	4.10	104	22.8	3.9	2.8	4.21	5.17	5.46
JAN 19-26	1700	0.66	108	22.2	4.3	3.1	4.20	5.03	5.37
JAN 26- FEB 02	1700	1.64	100	22.0	6.4	5.6	4.23	4.90	5.22
FEB 02-09	1720	1.90	87	22.5	6.3	5.0	4.28	5.69	5.31
FEB 09-16	1745	3.42	101	21.4	6.6	5.6	4.24	5.28	5.53

* Measurements of a low ionic strength standard solution, with theoretical values of conductance 21.8 us/cm +/- 3 us/cm, pH 4.30 +/- 0.1, made prior to the corresponding sample measurement.

CHEMICAL QUALITY OF PRECIPITATION

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SANDY RIVER BASIN

452650122091801 BULL RUN RESERVOIR NUMBER TWO, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	CALCIUM ATM DEP WET DIS (MG/L)	MAG- NESIUM ATM DEP WET DIS (MG/L)	SODIUM ATM DEP WET DIS (MG/L)	POTAS- SIUM ATM DEP WET DIS (MG/L)	SULFATE ATM DEP WET DIS AS SO4 (MG/L)	CHLO- RIDE ATM DEP WET DIS (MG/L)	NI- TROGEN AMMON. ATM DEP WET DIS AS NH4 (MG/L)	NI- TROGEN NITRATE ATM DEP WET DIS AS NO3 (MG/L)	PHOS- PHOROUS ORTHO ATM DEP WET DIS AS PO4 (MG/L)
OCT 27-									
NOV 03	0.04	0.008	0.035	0.014	0.25	0.07	0.03	0.51	<0.02
NOV 03-10	0.10	0.080	0.655	0.044	0.48	1.15	0.03	0.59	<0.02
NOV 10-17	0.03	0.043	0.359	0.022	0.29	0.66	0.04	0.20	<0.02
NOV 17-24	0.04	0.077	0.648	0.025	0.37	1.17	<0.02	0.14	<0.02
NOV 24-									
DEC 01	0.05	0.086	0.724	0.026	0.32	1.31	<0.02	0.17	<0.02
DEC 01-08	0.02	0.016	0.133	0.005	0.08	0.23	<0.02	0.09	<0.02
DEC 08-15	0.03	0.077	0.681	0.026	0.28	1.26	<0.02	0.11	<0.02
DEC 15-22	0.04	0.082	0.696	0.031	0.37	1.27	<0.02	0.30	<0.02
DEC 22-29	0.04	0.072	0.601	0.027	0.57	1.10	0.10	0.89	<0.02
DEC 29 1987-									
JAN 05 1988	0.02	0.003	0.041	0.009	0.05	<0.03	<0.02	0.22	<0.02
JAN 05-12	0.05	0.058	0.504	0.015	0.26	0.92	<0.02	0.13	<0.02
JAN 12-19	0.02	0.014	0.139	0.004	0.10	0.24	<0.02	0.09	<0.02
JAN 19-26	0.03	0.015	0.123	0.011	0.16	0.20	<0.02	0.16	<0.02
JAN 26-									
FEB 02	0.03	0.027	0.268	<0.003	0.29	0.43	<0.02	0.34	0.05
FEB 02-09	0.07	0.035	0.271	0.010	0.41	0.45	<0.02	0.29	<0.02
FEB 09-16	0.06	0.055	0.495	<0.003	0.31	0.85	0.04	0.21	<0.02

DATE	TIME	TOTAL PRECIP- ITATION FOR DEFINED PERIOD (IN)	COL- LECTOR EFFI- CIENCY WET DEPOS. PERCENT	SPEC. CONDUCT- TANCE CK.SOL.* ATM DEP WET TOT (US/CM)	SPEC. CONDUCT- TANCE FIELD ATM DEP WET TOT (US/CM)	SPEC. CONDUCT- TANCE LAB ATM DEP WET TOT (US/CM)	PH CK.SOL.* ATM DEP WET T (UNITS)	PH FIELD ATM DEP WET T (UNITS)	PH LAB ATM DEP WET T (UNITS)
FEB 16-23	1740	0.53	99	21.8	18.0	16.2	4.26	4.84	5.10
FEB 23-									
MAR 01	1745	0.52	100	22.1	10.3	6.6	4.22	4.65	5.16
MAR 01-08	1725	1.85	100	22.5	8.1	6.9	4.24	5.03	5.22
MAR 08-15	1715	1.51	100	21.0	16.0	14.5	4.20	4.85	5.19
MAR 15-22	1735	0.40	97	22.6	5.9	4.9	4.32	5.39	5.95
MAR 22-29	1715	4.93	101	21.8	8.2	7.1	4.21	5.11	5.42
MAR 29-									
APR 05	1745	2.73	99	22.8	9.9	8.9	4.29	5.05	5.35
APR 05-12	1630	1.95	101	21.5	5.7	5.1	4.32	5.19	5.10
APR 19-26	1600	3.48	104	21.5	11.8	9.9	4.30	4.71	4.79
APR 26-									
MAY 03	1610	3.12	99	21.3	6.7	5.5	4.29	5.20	5.29
MAY 03-10	1615	0.44	97	21.9	11.3	10.0	4.31	4.87	4.98
MAY 10-17	1645	1.46	99	21.8	7.2	5.4	4.34	5.12	5.31
MAY 17-24	1640	0.40	103	21.2	8.9	8.2	4.31	4.94	4.94
MAY 24-31	1420	1.57	102	21.5	6.7	5.6	4.32	5.06	5.04
MAY 31-									
JUN 07	1415	2.44	104	21.9	7.3	6.6	4.31	4.97	5.00
JUN 07-14	1410	0.58	107	22.3	7.8	5.2	4.28	4.86	5.81
JUN 14-21	1615	0.26	98	21.5	8.8	7.1	4.31	4.85	4.98

* Measurements of a low ionic strength standard solution, with theoretical values of conductance 21.8 us/cm +/- 3 us/cm, pH 4.30 +/- 0.1, made prior to the corresponding sample measurement.

CHEMICAL QUALITY OF PRECIPITATION

SANDY RIVER BASIN

452650122091801 BULL RUN RESERVOIR NUMBER TWO, OR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	CALCIUM ATM DEP WET DIS (MG/L)	MAG- NESIUM ATM DEP WET DIS (MG/L)	SODIUM ATM DEP WET DIS (MG/L)	POTAS- SIUM ATM DEP WET DIS (MG/L)	SULFATE ATM DEP AS SO4 (MG/L)	CHLO- RIDE ATM DEP WET DIS (MG/L)	NI- TROGEN AMMON. ATM DEP WET DIS AS NH4 (MG/L)	NI- TROGEN NITRATE ATM DEP WET DIS AS NO3 (MG/L)	PHOS- PHOROUS ORTHO ATM DEP WET DIS AS PO4 (MG/L)
FEB 16-23	0.16	0.177	1.42	0.050	1.03	2.64	0.10	0.83	<0.02
FEB 23- MAR 01	0.04	0.009	0.083	0.009	0.58	0.10	0.17	0.90	<0.02
MAR 01-08	0.05	0.057	0.475	0.022	0.48	0.83	0.05	0.25	<0.02
MAR 08-15	0.13	0.166	1.32	0.063	0.85	2.48	<0.02	0.34	<0.02
MAR 15-22	0.12	0.041	0.281	0.025	0.44	0.47	0.16	0.30	<0.02
MAR 22-29	0.05	0.077	0.647	0.026	0.38	1.16	0.08	0.19	<0.02
MAR 29- APR 05	0.06	0.099	0.816	0.036	0.52	1.46	0.12	0.28	<0.02
APR 05-12	0.03	0.017	0.173	0.003	0.31	0.35	0.13	0.31	<0.02
APR 19-26	0.03	0.017	0.151	0.008	0.71	0.24	0.03	0.78	<0.02
APR 26- MAY 03	0.05	0.030	0.259	<0.003	0.40	0.45	<0.02	0.15	<0.02
MAY 03-10	0.07	0.045	0.349	0.023	0.85	0.58	<0.02	0.77	<0.02
MAY 10-17	0.08	0.032	0.228	0.016	0.42	0.41	0.04	0.47	<0.02
MAY 17-24	0.06	0.032	0.230	0.021	0.73	0.37	0.05	0.59	0.02
MAY 24-31	0.03	0.022	0.139	0.011	0.36	0.25	<0.02	0.32	<0.02
MAY 31- JUN 07	0.04	0.020	0.206	0.007	0.45	0.27	<0.02	0.23	0.04
JUN 07-14	0.15	0.014	0.152	0.038	0.53	0.15	<0.02	0.17	<0.02
JUN 14-21	0.05	0.010	0.117	0.003	0.50	0.06	<0.02	0.76	0.04
DATE	TIME	TOTAL PRECIP- ITATION FOR DEFINED PERIOD (IN)	COL- LECTOR EFFI- CIENCY WET DEPOS. PERCENT	SPEC. CONDUCT- TANCE CK.SOL.* ATM DEP WET TOT (US/CM)	SPEC. CONDUCT- TANCE FIELD ATM DEP WET TOT (US/CM)	SPEC. CONDUCT- TANCE LAB ATM DEP WET TOT (US/CM)	PH CK.SOL.* ATM DEP WET T (UNITS)	PH FIELD ATM DEP WET T (UNITS)	PH LAB ATM DEP WET T (UNITS)
JUN 28- JUL 05	1615	0.83	98	21.7	6.0	5.4	4.31	5.10	5.12
JUL 05-12	1520	0.66	108	21.5	4.7	4.1	4.25	5.31	5.47
JUL 12-20	1610	0.51	103	21.2	4.2	4.0	4.26	5.68	5.84
AUG 09-16	1625	0.05	147	21.2	13.9	8.4	4.31	4.76	6.38
AUG 16-23	1600	0.25	84	21.1	5.1	4.2	4.29	4.98	5.15
SEP 13-20	1550	1.87	105	21.3	11.7	9.4	4.29	4.93	5.30
SEP 20-27	1630	0.65	99	21.4	7.7	5.9	4.32	4.92	5.09
DATE	CALCIUM ATM DEP WET DIS (MG/L)	MAG- NESIUM ATM DEP WET DIS (MG/L)	SODIUM ATM DEP WET DIS (MG/L)	POTAS- SIUM ATM DEP WET DIS (MG/L)	SULFATE ATM DEP AS SO4 (MG/L)	CHLO- RIDE ATM DEP WET DIS (MG/L)	NI- TROGEN AMMON. ATM DEP WET DIS AS NH4 (MG/L)	NI- TROGEN NITRATE ATM DEP WET DIS AS NO3 (MG/L)	PHOS- PHOROUS ORTHO ATM DEP WET DIS AS PO4 (MG/L)
JUN 28- JUL 05	0.03	0.008	0.073	<0.003	0.51	0.13	<0.02	0.37	<0.02
JUL 05-12	0.04	0.011	0.089	<0.003	0.39	0.14	<0.02	0.34	0.04
JUL 12-20	0.12	0.010	0.223	<0.003	0.44	0.11	<0.02	0.27	<0.02
AUG 09-16	0.14	0.051	0.386	0.075	0.86	0.39	<0.02	0.94	<0.02
AUG 16-23	0.03	0.008	0.095	0.028	0.28	0.07	<0.02	<0.03	<0.02
SEP 13-20	0.04	0.077	0.660	0.127	0.68	1.28	0.11	0.35	<0.02
SEP 20-27	0.06	0.017	0.075	0.083	0.48	0.13	0.15	0.63	<0.02

* Measurements of a low ionic strength standard solution, with theoretical values of conductance 21.8 us/cm +/- 3 us/cm, pH 4.30 +/- 0.1, made prior to the corresponding sample measurement.

Crest-stage partial-record stations

The following table contains annual maximum discharge for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1988

Station no.	Station name	Location	Drainage area (mi ²)	Period of record	Date	Annual maximum Gage height (ft)	Dis- charge (ft ³ /s)
Sandy River basin							
14138950	Deer Creek near Bull Run, OR	Lat 45°29'31", long 122°03'27", in SE 1/4 SW 1/4 sec.10, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, at culvert on Forest Service road S10, 300 ft upstream from Bull Run Reservoir Number One, and 9.6 mi northeast of Bull Run.	1.62	1978-88	12- 9-87	4.01	209
14138960	Cougar Creek near Bull Run, OR	Lat 45°29'28", long 122°03'40", in SW 1/4 SW 1/4 sec.10, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, at culvert on Forest Service road S10, 300 ft upstream from Bull Run Reservoir Number One, and 9.4 mi northeast of Bull Run.	3.06	1978-88	12- 9-87	3.16	277
14138990	Bear Creek near Bull Run, OR	Lat 45°29'18", long 122°04'58", in NW 1/4 NW 1/4 sec.16, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, at culvert on Forest Service road S10, 400 ft upstream from Bull Run Reservoir Number One, and 8.3 mi northeast of Bull Run.	1.68	1978-88	No peak recorded.		
14139510	Fivemile Creek near Bull Run, OR	Lat 45°28'57", long 122°05'25", in SW 1/4 NE 1/4 sec.17, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, at culvert on Forest Service road S10, 800 ft upstream from Bull Run Reservoir Number Two, and 7.9 mi northeast of Bull Run.	0.79	1978-88	12- 9-87	1.36	33
14139600	Camp Creek near Bull Run, OR	Lat 45°27'41", long 122°06'13", in SW 1/4 SW 1/4 sec.20, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, 15 ft downstream from falls at confluence with West Branch of Camp Creek, 0.3 mi upstream from Bull Run Reservoir Number Two, and 6.6 mi northeast of Bull Run.	3.27	1978-88	12-10-87	3.23	224

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table.

Discharge measurements at miscellaneous sites during water year 1988

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
SANDY RIVER BASIN						
14138950 Deer Creek	Bull Run River	Lat 45°29'31", long 122°03'27", in SE 1/4 SW 1/4 sec.10, T.1 S., Multnomah County, Hydrologic Unit 17080001, at culvert on Forest Service road S10, 300 ft upstream from Bull Run Reservoir Number One, and 9.6 mi northeast of Bull Run.	1.62	1978-87	10-19-87 2- 4-88 4-20-88 6-16-88 8-18-88	*0.36 6.4 3.9 3.7 *0.69
14138960 Cougar Creek	.....do.....	Lat 45°29'28", long 122°03'40", in SW 1/4 SW 1/4 sec.10, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, at culvert on Forest Service Road S10, 300 ft upstream from Bull Run Reservoir Number One, and 9.4 mi northeast of Bull Run.	3.06	1978-87	10-19-87 2- 4-88 4-20-88 6-16-88 8-18-88	*0.43 16 15 10 *1.7
14138990 Bear Creek	.....do.....	Lat 45°29'18", long 122°04'58", in NW 1/4 NW 1/4 sec.16, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, at culvert on Forest Service Road S10, 400 ft upstream from Bull Run Reservoir Number One, and 8.3 mi northeast of Bull Run.	1.68	1978-87	10-19-87 2- 4-88 4-20-88 6-16-88 8-17-88	*0.15 6.1 4.7 3.2 *0.50
14139510 Fivemile Creek	.....do.....	Lat 45°28'57", long 122°05'25", in SW 1/4 NE 1/4 sec.17, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, at culvert on Forest Service Road S10, 800 ft from Bull Run Reservoir Number Two, and 7.9 mi northeast of Bull Run.	0.79	1977-87	10-19-87 2- 4-88 4-20-88 6-15-88 8-18-88	*0.02 2.8 1.1 1.5 *0.15
14139600 Camp Creek	.....do.....	Lat 45°27'41", long 122°06'13", in SW 1/4 SW 1/4 sec.20, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, 15 ft downstream from falls at confluence with West Branch of Camp Creek, 0.3 mi upstream from Bull Run Reservoir Number Two, and 6.6 mi northeast of Bull Run.	3.27	1978-87	10- 7-87 3- 1-88 6-15-88 8-15-88	*0.38 8.6 10 *1.6
Sandy River	Columbia River	Lat 45°24'14", long 122°13'48", in SE 1/4 SE 1/4 sec.7, T.1 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, near Sandy.	---	1987	9-22-88	*219
Cedar Creek	Sandy River	Lat 45°24'22", long 122°15'14", in SW 1/4 SE 1/4 sec.12, T.2 S., R.4 E., Clackamas County, Hydrologic Unit 17080001, at fish hatchery northeast of Sandy, near confluence with Sandy River.	---	---	9-22-88	*3.6
Walker Creek	.....do.....	Lat 45°27'07", long 122°14'28", in NW 1/4 SW 1/4 sec.30, T.1 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, at confluence with Sandy River.	---	1987	9-22-88	*3.0
Unnamed right bank tributary	.....do.....	Lat 45°27'18", long 122°14'46", in SW 1/4 NE 1/4 sec.30, T.1 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, near confluence with Sandy River, downstream from Walker Creek.	---	1987	9-22-88	*0.12

* Base flow.

Discharge measurements at miscellaneous sites during water year 1988--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
SANDY RIVER BASIN--Continued						
Unnamed right bank tributary and springs	Sandy River	Lat 45°27'22", long 122°15'07", in SE 1/4 NE 1/4 sec.25, T.1 S., R.4 E., Multnomah County, Hydrologic Unit 17080001, near confluence with Sandy River.	---	1987	9-22-88	*1.0
Unnamed right bank tributary off cliff	.....do.....	Lat 45°27'47", long 122°15'50", in SE 1/4 SW 1/4 sec.24, T.1 S., R.4 E., Multnomah County, Hydrologic Unit 17080001, near confluence with Sandy River.	---	1987	9-22-88	*0.35
Unnamed right bank tributary	.....do.....	Lat 45°28'01", long 122°16'23", in NW 1/4 SE 1/4 sec.23, T.1 S., R.4 E., Multnomah County, Hydrologic Unit 17080001, near confluence with Sandy River.	---	1987	9-22-88	*0.29
Sandy River	Columbia River	Lat 45°29'20", long 122°17'06", in NE 1/4 NW 1/4 sec.14, T.1 S., R.4 E., Multnomah County, Hydrologic Unit 17080001, at Oxbow Park.	---	1987	9-23-88	294
Trout Creek	Sandy River	Lat 45°28'55", long 122°16'37", in NW 1/4 SE 1/4 sec.14, T.1 S., R.4 E., Multnomah County, Hydrologic Unit 17080001, at Gordon Creek Road, near confluence with Sandy River.	---	1987	9-23-88	*4.4
Gordon Creek	.....do.....	Lat 45°29'35", long 122°16'30", in SW 1/4 SE 1/4 sec.11, T.1 S., R.4 E., Multnomah County, Hydrologic Unit 17080001, at Gordon Creek Road, near confluence with Sandy River.	---	1987	9-23-88	*12
Sandy River	Columbia River	Lat 45°30'58", long 122°21'36", in NW 1/4 NE 1/4 sec.6, T.1 S., R.4 E., Multnomah County, Hydrologic Unit 17080001, at Stark Street.	---	1987	9-23-88	317
Sandy River	.....do.....	Lat 45°32'17", long 122°22'30", in NE 1/4 SE 1/4 sec.25, T.1 N., R.3 E., Multnomah County, Hydrologic Unit 17080001, near confluence with Columbia River.	---	1987	9-23-88	318
Beaver Creek	Sandy River	Lat 45°30'36", long 122°23'20", in NE 1/4 SW 1/4 sec.1, T.1 S., R.3 E., Multnomah County, Hydrologic Unit 17080001, at Cochran Road.	---	1987	9-15-88	no flow
Kelly Creek	Beaver Creek	Lat 45°30'50", long 122°23'38", in SE 1/4 NE 1/4 sec.2, T.1 S., R.3 E., Multnomah County, Hydrologic Unit 17080001, near confluence with Beaver Creek, at Mt. Hood Community College.	---	1987	9-12-88	*0.64
Beaver Creek	Sandy River	Lat 45°31'23", long 122°23'06", in SE 1/4 SW 1/4 sec.36, T.1 N., R.3 E., Multnomah County, Hydrologic Unit 17080001, at Troutdale Road.	---	1987	9-12-88	*1.4
Beaver Creek	.....do.....	Lat 45°32'13", long 122°22'41", in NE 1/4 SW 1/4 sec.25, T.1 N., R.3 E., Multnomah County, Hydrologic Unit 17080001, at Columbia River Highway, near Troutdale.	---	1987	9-12-88	*0.91

* Base flow.

DISCHARGE AT MISCELLANEOUS SITES

Discharge measurements at miscellaneous sites during water year 1988--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
WILLAMETTE RIVER BASIN						
Tickle Creek	Deep Creek	Lat 45°23'20", long 122°15'47", in NW 1/4 SE 1/4 sec.13, T.2 S., R.4 E., Clackamas County, Hydrologic Unit 17090011, at State Highway 211.	---	---	10-21-87 9-14-88	*0.11 *0.03
Unnamed tributary	Tickle Creek	Lat 45°23'42", long 122°15'29", in NW 1/4 SE 1/4 sec.13, T.2 S., R.4 E., Clackamas County, Hydrologic Unit 17090011, at Meing Park.	---	---	10-21-87 9-14-88	*0.02 *0.03
Tickle Creek	Deep Creek	Lat 45°23'56", long 122°17'24", in SE 1/4 NE 1/4 sec.15, T.2 S., R.4 E., Clackamas County, Hydrologic Unit 17090011, at 362nd Avenue.	---	---	10-21-87 9-14-88	*0.19 *0.40
Tickle Creek	.....do.....	Lat 45°24'18", long 122°19'44", in SW 1/4 SE 1/4 sec.9, T.2 S., R.4 E., Clackamas County, Hydrologic Unit 17090011, at Colorado Road.	---	---	10-21-87 9-14-88	*0.93 *1.2
Unnamed tributary	Tickle Creek	Lat 45°24'40", long 122°19'48", in SW 1/4 SW 1/4 sec.9, T.2 S., R.4 E., Clackamas County, Hydrologic Unit 17090011, at Colorado Road.	---	---	10-21-87 9-14-88	*0.05 *0.15
Unnamed tributary	.....do.....	Lat 45°24'22", long 122°21'25", in SW 1/4 SE 1/4 sec.7, T.2 S., R.4 E., Clackamas County, Hydrologic Unit 17090011, at Tickle Creek Road.	---	---	10-21-87 9-14-88	*0.08 *0.05
Tickle Creek	Deep Creek	Lat 45°24'14", long 122°21'32", in SW 1/4 SE 1/4 sec.7, T.2 S., R.4 E., Clackamas County, Hydrologic Unit 17090011, at Tickle Creek Road.	---	---	10-21-87 9-14-88	*2.5 *2.4
Deep Creek	Clackamas River	Lat 45°21'04", long 122°17'49", in NW 1/4 SE 1/4 sec.34, T.2 S., R.4 E., Clackamas County, Hydrologic Unit 17090011, at Crane Road.	---	---	10-22-87 9-14-88	*0.41 *0.39
Unnamed tributary	Deep Creek	Lat 45°20'56", long 122°17'49", in SW 1/4 SE 1/4 sec.34, T.2 S., R.4 E., Clackamas County, Hydrologic Unit 17090011, at Crane Road.	---	---	10-22-87 9-14-88	*0.03 *0.02
Unnamed tributary	.....do.....	Lat 45°22'23", long 122°19'12", in NW 1/4 NE 1/4 sec.28, T.2 S., R.4 E., Clackamas County, Hydrologic Unit 17090011, near State Highway 211.	---	---	10-22-87 9-14-88	*0.25 *0.01
Deep Creek	Clackamas River	Lat 45°22'23", long 122°19'19", in NE 1/4 SE 1/4 sec.28, T.2 S., R.4 E., Clackamas County, Hydrologic Unit 17090011, at State Highway 211.	---	---	10-21-87 9-14-88	*1.2 *1.0
Deep Creek	.....do.....	Lat 45°23'31", long 122°22'12", in SE 1/4 SE 1/4 sec.18, T.2 S., R.4 E., Clackamas County, Hydrologic Unit 17090011, at Hoist Road.	---	---	10-21-87 9-14-88	*1.2 *1.2
Deep Creek	.....do.....	Lat 45°23'28", long 122°23'20", in SE 1/4 SE 1/4 sec.13, T.2 S., R.3 E., Clackamas County, Hydrologic Unit 17090011, at Aemisegger Road.	---	---	10-21-87 9-14-88	*4.4 *4.1

* Base flow.

Discharge measurements at miscellaneous sites during water year 1988--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
WILLAMETTE RIVER BASIN--Continued						
Unnamed tributary	Deep Creek	Lat 45°23'13", long 122°23'42", in NE 1/4 NE 1/4 sec.13, T.2 S., R.3 E., Clackamas County, Hydrologic Unit 17090011, at Aemisegger Road.	---	---	10-21-87 9-14-88	*0.05 *0.05
North Fork Deep Creek	.....do.....	Lat 45°23'38", long 122°24'36", in NW 1/4 SE 1/4 sec.14, T.2 S., R.3 E., Clackamas County, Hydrologic Unit 17090011, at confluence with Deep Creek.	---	---	10-21-87 9-15-88	*1.4 *0.78
Noyer Creek	.....do.....	Lat 45°23'46", long 122°25'01", in NE 1/4 SE 1/4 sec.15, T.2 S., R.3 E., Clackamas County, Hydrologic Unit 17090011, at Deep Creek Road, near Deep Creek.	---	---	10-22-87 9-15-88	*0.02 *0.03
Deep Creek	Clackamas River	Lat 45°23'38", long 122°25'12", in NW 1/4 SE 1/4 sec.15, T.2 S., R.3 E., Clackamas County, Hydrologic Unit 17090011, at State Highway 224.	---	---	10-21-87 9-15-88	*5.8 *5.3
Richardson Creek	.....do.....	Lat 45°24'47", long 122°26'31", in SW 1/4 NE 1/4 sec.9, T.2 S., R.3 E., Clackamas County, Hydrologic Unit 17090011, at Royer Road.	---	---	10-20-87 9-15-88	no flow no flow
Richardson Creek	.....do.....	Lat 45°23'53", long 122°28'16", in SE 1/4 NW 1/4 sec.17, T.2 S., R.3 E., Clackamas County, Hydrologic Unit 17090011, at State Highway 224.	---	---	10-21-87 9-15-88	*0.27 *0.25
Rock Creek	.....do.....	Lat 45°26'09", long 122°28'30", in NE 1/4 SE 1/4 sec.31, T.1 S., R.3 E., Clackamas County, Hydrologic Unit 17090011, at Troge Road.	---	---	10-20-87 9-13-88	no flow *0.05
Rock Creek	.....do.....	Lat 45°25'37", long 122°29'28", in SW 1/4 NW 1/4 sec.6, T.2 S., R.3 E., Clackamas County, Hydrologic Unit 17090011, at Sunnyside Road.	---	---	10-20-87 9-13-88	*0.10 *0.02
Rock Creek	.....do.....	Lat 45°24'36", long 122°30'18", in NW 1/4 SE 1/4 sec.12, T.2 S., R.3 E., Clackamas County, Hydrologic Unit 17090011, at State Highway 224.	---	---	10-20-87 9-13-88	*0.53 *0.06
Mt. Scott Creek	Kellogg Creek	Lat 45°26'35", long 122°31'48", in SE 1/4 NW 1/4 sec.35, T.1 S. R.2 E., Clackamas County, Hydrologic Unit 17090011, at Mt. Scott Creek Road.	---	---	10-20-87 9-13-88	*0.04 no flow
Mt. Scott Creek	.....do.....	Lat 45°25'52", long 122°32'31", in NE 1/4 NE 1/4 sec.3, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090011, at Sunnyside.	---	---	10-20-87 9-13-88	*0.07 *0.02
Mt. Scott Creek	.....do.....	Lat 45°25'44", long 122°33'47", in SE 1/4 NE 1/4 sec.4, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090011, at Southeast 97th Avenue.	---	---	10-20-87 9-13-88	*0.06 *0.04
Mt. Scott Creek	.....do.....	Lat 45°25'41", long 122°34'41", in SW 1/4 NW 1/4 sec.4, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090011, near Southeast 82nd Avenue.	---	---	10-20-87 9-13-88	*0.23 *0.15

* Base flow.

DISCHARGE AT MISCELLANEOUS SITES

Discharge measurements at miscellaneous sites during water year 1988--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
WILLAMETTE RIVER BASIN--Continued						
Phillips Creek	Mt. Scott Creek	Lat 45°25'41", long 122°34'41", in SW 1/4 NW 1/4 sec.4, T.2 S., R.3 E., Clackamas County, Hydrologic Unit 17090011, near Mt. Scott Creek.	---	---	10-20-87 9-13-88	*0.27 *0.10
Unnamed tributary	.....do.....	Lat 45°25'55", long 122°35'53", in NW 1/4 NW 1/4 sec.5, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090011, at railroad and Harmony Road crossing.	---	---	10-20-87	*0.70
Mt. Scott Creek	Kellogg Creek	Lat 45°25'44", long 122°36'00", in NW 1/4 NE 1/4 sec.6, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090011, at Rusk Road.	---	---	10-20-87 9-13-88	*1.4 *0.21
Mt. Scott Creek	.....do.....	Lat 45°25'30", long 122°36'43", in NE 1/4 SE 1/4 sec.6, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090011, near Kellogg Creek.	---	---	10-20-87 9-13-88	*2.0 *1.9
Kellogg Creek	Willamette River	Lat 45°24'18", long 122°35'10", in SW 1/4 SE 1/4 sec.8, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090011, at Webster Road.	---	---	10-19-87 9-15-88	*0.04 no flow
Kellogg Creek	.....do.....	Lat 45°25'01", long 122°35'53", in NW 1/4 NW 1/4 sec.8, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090011, at Theisen Road.	---	---	10-19-87 9-15-88	*0.22 *0.13
Kellogg Creek	.....do.....	Lat 45°25'23", long 122°36'11", in NE 1/4 SE 1/4 sec.6, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090011, at Rusk Road.	---	---	10-19-87 9-15-88	*1.8 *1.9
Kellogg Creek	.....do.....	Lat 45°25'59", long 122°37'44", in SE 1/4 SW 1/4 sec.36, T.2 S. R.1 E., Clackamas County, Hydrologic Unit 17090011, at Oatfield Road.	---	---	10-19-87 9-14-88	*3.5 *3.7
Unnamed tributary	Kellogg Creek	Lat 45°25'55", long 122°37'59", in NE 1/4 NW 1/4 sec.1, T.2 S., R.1 E., Clackamas County, Hydrologic Unit 17090011, near confluence with Kellogg Creek.	---	---	10-19-87 9-16-88	*2.0 *0.15
Unnamed tributary	.....do.....	Lat 45°25'52", long 122°37'59", in NE 1/4 NW 1/4 sec.1, T.2 S., R.1 E., Clackamas County, Hydrologic Unit 17090011, at McLoughlin Boulevard, near Park Avenue.	---	---	10-19-87	*0.15
Johnson Creek	Willamette River	Lat 45°28'23", long 122°24'07", in NW 1/4 NE 1/4 sec.23, T.1 S., R.3 E., Multnomah County, Hydrologic Unit 17090012, at Palmbiad Road.	---	1987	9-12-88	*0.08
Johnson Creek	.....do.....	Lat 45°29'42", long 122°26'02", in NE 1/4 SE 1/4 sec.9, T.1 S., R.3 E., Multnomah County, Hydrologic Unit 17090012, at Walters Road.	---	1987	9-12-88	*0.42
Johnson Creekdo.....	Lat 45°29'17", long 122°28'01", in NE 1/4 NW 1/4 sec.17, T.1 S., R.3 E., Multnomah County, Hydrologic Unit 17090012, at Southeast 190th Avenue.	---	1987	9-12-88	*0.47

* Base flow.

DISCHARGE AT MISCELLANEOUS SITES

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Discharge measurements at miscellaneous sites during water year 1988--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements Date	Discharge (ft ³ /s)
WILLAMETTE RIVER BASIN--Continued						
Johnson Creek	Willamette River	Lat 45°28'26", long 122°32'49", in NE 1/4 NW 1/4 sec.22, T.1 S., R.2 E., Multnomah County, Hydrologic Unit 17090012, at Southeast 112th and Brookside.	---	1987	9-12-88	*0.74
Johnson Creek	.....do.....	Lat 45°27'50", long 122°34'37", in SW 1/4 SW 1/4 sec.21, T.1 S., R.2 E., Multnomah County, Hydrologic Unit 17090012, at 82nd Avenue.	---	1987	9-12-88	*0.92
Johnson Creek	.....do.....	Lat 45°27'43", long 122°36'55", in SW 1/4 SW 1/4 sec.19, T.1 S., R.2 E., Multnomah County, Hydrologic Unit 17090012, at Southeast 45th Avenue.	---	---	9-13-88	*1.4
Errol Heights Spring	Johnson Creek	Lat 45°27'40", long 122°36'54", in SW 1/4 SW 1/4 sec.19, T.1 S., R.2 E., Multnomah County, Hydrologic Unit 17090012, at Southeast 45th Avenue.	---	---	8-11-88 9- 9-88	*0.56 *0.39
Storm Sewer	.....do.....	Lat 45°26'49", long 122°36'56", in SW 1/4 SW 1/4 sec.19, T.1 S., R.2 E., Multnomah County, Hydrologic Unit 17090012, at Southeast 45th Avenue.	---	---	9- 9-88	*0.90
Johnson Creek	Willamette River	Lat 45°27'45", long 122°37'23", in SE 1/4 SE 1/4 sec.24, T.1 S., R.2 E., Multnomah County, Hydrologic Unit 17090012, at Tidemar Johnson Park.	---	1987	9-13-88	*3.4
Johnson Creek	.....do.....	Lat 45°27'39", long 122°38'27", in NE 1/4 NE 1/4 sec.26, T.1 S., R.1 E., Clackamas County, Hydrologic Unit 17090012, upstream from Crystal Springs Creek.	---	---	9-13-88	*2.9
Crystal Springs Creek	Johnson Creek	Lat 45°27'40", long 122°38'28", in NE 1/4 NE 1/4 sec.26, T.1 S., R.1 E., Clackamas County, Hydrologic Unit 17090012, near confluence with Johnson Creek, at Sherrett Street.	---	1987	9-13-88	*11
Spring Creek	Crystal Creek	Lat 45°26'46", long 122°38'15", in NW 1/4 NW 1/4 sec.36, T.1 S., R.1 E., Clackamas County, Hydrologic Unit 17090012, at Milwaukie Junior High School.	---	---	9- 9-88	*1.2
Johnson Creek	Willamette River	Lat 45°26'49", long 122°38'31", in NE 1/4 NE 1/4 sec.35, T.1 S., R.1 E., Clackamas County, Hydrologic Unit 17090012, at Southeast River Road.	---	1987	9-13-88	*18

* Base flow.

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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

Multiply inch-pound units	By	To obtain SI units
<i>Length</i>		
inches (in)	2.54×10^1	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^0	kilometers (km)
<i>Area</i>		
acres	4.047×10^3	square meters (m ²)
	4.047×10^{-1}	square hectometers (hm ²)
	4.047×10^{-3}	square kilometers (km ²)
square miles (mi ²)	2.590×10^0	square kilometers (km ²)
<i>Volume</i>		
gallons (gal)	3.785×10^0	liters (L)
	3.785×10^0	cubic decimeters (dm ³)
	3.785×10^{-3}	cubic meters (m ³)
million gallons	3.785×10^3	cubic meters (m ³)
	3.785×10^{-3}	cubic hectometers (hm ³)
cubic feet (ft ³)	2.832×10^1	cubic decimeters (dm ³)
	2.832×10^{-2}	cubic meters (m ³)
cfs-days	2.447×10^3	cubic meters (m ³)
	2.447×10^{-3}	cubic hectometers (hm ³)
acre-feet (acre-ft)	1.233×10^3	cubic meters (m ³)
	1.233×10^{-3}	cubic hectometers (hm ³)
	1.233×10^{-6}	cubic kilometers (km ³)
<i>Flow</i>		
cubic feet per second (ft ³ /s)	2.832×10^1	liters per second (L/s)
	2.832×10^1	cubic decimeters per second (dm ³ /s)
	2.832×10^{-2}	cubic meters per second (m ³ /s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm ³ /s)
	6.309×10^{-5}	cubic meters per second (m ³ /s)
million gallons per day	4.381×10^1	cubic decimeters per second (dm ³ /s)
	4.381×10^{-2}	cubic meters per second (m ³ /s)
<i>Mass</i>		
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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