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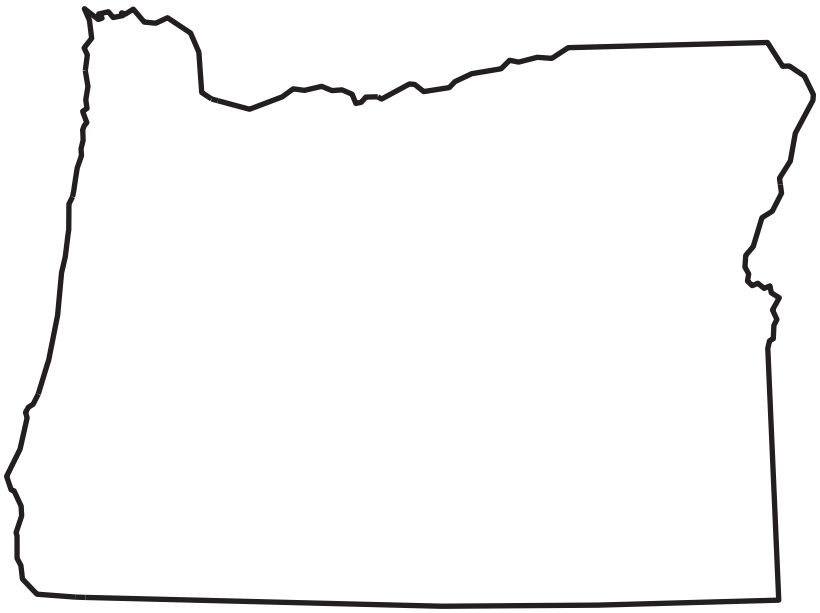
Water Resources Data
Oregon
Water Year 2003



Water-Data Report OR-03-1

U.S. Department of the Interior
U.S. Geological Survey

Conversion Factors

Multiply	By	To obtain
	Length	
inch (in.)	2.54×10^{1}	millimeter (mm)
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter (m)
mile (mi)	1.609×10^{0}	kilometer (km)
	Area	
acre	4.047×10^{3}	square meter (m^2)
	4.047×10^{-1}	square hectometer (hm^2)
	4.047×10^{-3}	square kilometer (km^2)
square mile (mi^2)	2.590×10^{0}	square kilometer (km^2)
	Volume	
gallon (gal)	3.785×10^{0}	liter (L)
	3.785×10^{-3}	cubic meter (m^3)
	3.785×10^{0}	cubic decimeter (dm^3)
million gallons (Mgal)	3.785×10^{3}	cubic meter (m^3)
	3.785×10^{-3}	cubic hectometer (hm^3)
cubic foot (ft^3)	2.832×10^{-2}	cubic meter (m^3)
	2.832×10^{1}	cubic decimeter (dm^3)
cubic-foot-per-second-per-day [(ft^3/s/d]	2.447×10^{3}	cubic meter (m^3)
	2.447×10^{-3}	cubic hectometer (hm^3)
acre-foot (acre-ft)	1.223×10^{3}	cubic meter (m^3)
	1.223×10^{-3}	cubic hectometer (hm^3)
	1.223×10^{-6}	cubic kilometer (km^3)
	Flow rate	
cubic foot per second (ft^3/s)	2.832×10^{1}	liter (L/s)
	2.832×10^{-2}	cubic meter per second (m^3/s)
	2.832×10^{1}	cubic decimeter per second (dm^3/s)
gallon per minute (gal/min)	6.309×10^{-2}	liter per second (L/s)
	6.309×10^{-5}	cubic meter per second (m^3/s)
	6.309×10^{-2}	cubic decimeter per second (dm^3/s)
million gallons per day (Mgal/d)	4.381×10^{-2}	cubic meter per second
	4.381×10^{1}	cubic decimeter per second (dm^3/s)
	Mass	
ton, short (2,000 lb)	9.072×10^{-1}	megagram (Mg) or metric ton

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$°F = (1.8 \times °C) + 32$$

Water Resources Data
Oregon
Water Year 2003

By T.A. Herrett, G.W. Hess, J.G. House, G.P. Ruppert, and M.L. Courts

Water-Data Report OR-03-1

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U.S. Department of the Interior
U.S. Geological Survey

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PREFACE

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.

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:

Rodger M. Adkins, Troy A. Blackledge, Amy M. Brooks, Anna A. Buckley, Douglas G. Call, Kurt D. Carpenter, Jeannette M. Center, Dwight D. Copeland, Douglas O. Cushman, Timothy L. Dalrymple, Scott M. Deweese, John E. Dick, Jack D. Doyle, , Michael A. Gentile, David L. George, Janice M. Gordon, Richard A. Hollway, Jon G. House, Matthew W. Johnston, Kory M. Kipfer, Richard L. Kittelson, Karl K. Lee, Dale A. Melton, Suzanne J. Miller, Melanie A. North, Gregory W. Olsen, Jacqueline C. Olson, Roderick L. Owre, P. Charles Palmer, James K. Parham, Donita J. Parker, Danial J. Polette, Alvin A. Sablan, Michael J. Sarantou, James L. Schaefer, Kenneth A. Skach, Daniel T. Snyder, Jay D. Spillum, Adam J. Stonewall, Mark A. Uhrich, Joanne V. Wallis, Roy E. Wellman, Frank W. Youngkin.

This report was prepared in cooperation with other agencies under the general supervision of Dennis D. Lynch, District Chief, and William T. Sexton, Regional Hydrologist, Western Region.

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13. ABSTRACT *(Maximum 200 words)*

Water resources data for the 2003water year for Oregon consist of records of stage, discharge, and water quality of streams; stage and contents of lakes and reservoirs and water levels of wells

•Water discharge for 199 gaging stations on streams, canals and drains.
•Discharge data for 33 partial-record or miscellaneous sites and water quality sampling sites.
•Stage and (or) contents for 26 lakes and reservoirs.
•Water quality data for 110 streams, canals, lakes and wells.
•Water-quality for 2 atmospheric disposition stations.
•12 Ground-water sites.

These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating States and Federal agencies in Oregon.

14. SUBJECT TERMS
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NOTE.--Data for chemical quality of precipitation and miscellaneous sites are published in separate sections of the data report. See references at the end of this list of page numbers for these sections.

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

GROUND-WATER WELLS, BY COUNTY, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

GROUND-WATER LEVELS

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

The following continuous-record surface-water discharge or stage-only stations (gaging stations) in Oregon have been discontinued. Daily streamflow or stage records were collected and published for the period of record,expressed in water years, shown for each station. Discontinued project stations with less than 3 years of record have not been included. Information regarding these stations may be obtained from the District Office at the address given on the back side of the title page of this report.

[Letters after station name designate type of data collected: (d) discharge, (e) elevation, (g) gage height]

Station name	Station number	Drainage area (mi^2)	Period of record
WARNER LAKES BASIN			
Twentymile Creek near Adel (d)	10366000	194	1910-16;1918-19;1921-22;1941-44;1945-91
Deep Creek above Dismal Creek, near Warner Lake (d)	10366500	13.0	1918-19
Dismal Creek above Big Valley, near Warner Lake (d)	10367000	12.5	1913
Dismal Creek near Warner Lake (d)	10367500	14.0	1919
Deep Creek below Dismal Creek, near Warner Lake (d)	10368000	27	1913;1918-19
Deep Creek at Big Valley, near Lakeview (d)	10368500	76	1912-15
Camas Creek near Plush (d)	10369000	32.0	1912
Mud Creek near Plush (d)	10369500	18.0	1912;1915;1928-30
Camas Creek near Lakeview (d)	10370000	63.0	1913-15;1951-73
Crane Creek near Lakeview (d)	10370500	7.00	1914
Drake Creek near Adel (d)	10371000	67.0	1915;1923;1951-64;1966-73
Deep Creek above Adel (d)	10371500	249	1923;1930-91
Givan Canal near Adel (d)	10373000	--	1915
Deep Creek at Adel (d)	10374500	274	1910-16;1918-19;1921-22
Mud Creek Ditch at Adel (d)	10375000	--	1915
Fish Creek near Plush (d)	10376500	38.0	1914
Honey Creek at Chalstrand's ranch, near Plush (d)	10377000	56.0	1911
Snyder Creek near Plush (d)	10377500	--	1911
Twelvemile Creek near Plush (d)	10378000	37.0	1911
Honey Creek near Plush (d)	10378500	170	1911-14;1915;1921;1922; 1930-91
ABERT LAKE BASIN			
Chewaucan River at damsite, near Paisley (d)	10382500	158	1913-16
Chewaucan River near Buck Mountain, near Paisley (d)	10382550	157	1983-86
Chewaucan River below Coffeepot Creek, near Paisley (d)	10382600	216	1983-86
Conn Ditch near Paisley (d)	10383500	--	1915-20
Chewaucan River near Paisley (d)	10384000	275	1912-21;1924-91
Chewaucan River at Paisley (d)	10384100	278	1905-07;1909-12
Smalls Canal at Paisley (d)	10384500	--	1914-21
Jones-Innis-ZX Ditch near Paisley (d)	10385500	--	1915-20
Chewaucan River at narrows, near Paisley (d)	10386000	380	1914-21
Chewaucan River at Hotchkiss Ford, near Paisley (d)	10386500	430	1914-20
Crooked Creek near Valley Falls (d)	10387000	--	1912-13
SUMMER LAKE BASIN			
Ana River plus Summer Lake Canal, near Summer Lake (d)	10388001	--	1930-39;1940-42;1951-91
West Fork Silver Creek near Silver Lake (d)	10389000	27	1919-23;1925-32
Silver Creek plus Silver Lake Ir Canal, near Silver Lake (d)	10390001	180	1905-07;1909-27;1928;1929-91
Bridge Creek near Silver Lake (d)	10390500	30	1922-23
Buck Creek above Timothy Creek, near Silver Lake (d)	10390800	250	1922-23
Buck Creek near Silver Lake (d)	10391000	290	1905-06;1909-10;1919-21
Duncan Creek near Silver Lake (d)	10392000	58	1922-23
MALHEUR AND HARNEY LAKES BASIN			
Silvies River near Silvies (d)	10392500	510	1904;1909-11;1916;1921-23
Emigrant Creek near Burns (d)	10393000	240	1921
Silvies River near Burns (d)	10393500	934	1903-06;1909-91
Poison Creek near Burns (d)	10394000	81	1921
Prater Creek near Burns (d)	10394500	20	1921-23
East Fork Silvies River near Lawen (d)	10395000	--	1916;1973-77
West Fork Silvies River near Lawen (d)	10395500	--	1916-17;1919;1922; 1973-77
Flood Bypass Silvies River near Burns (d)	10395505	--	1976
Rock Creek near Burns (d)	10395600	--	1976
Mud Creek near Diamond (d)	10396500	30	1911-16;1930
Bridge Creek near Frenchglen (d)	10397000	30.0	1911-16;1930;1938-70

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
MALHEUR AND HARNEY LAKES BASIN-Continued			
Krumbo Creek near Diamond (d)	10397500	37	1911;1930
Donner und Blitzen River near Narrows (d)	10398500	420	1915-20
Kiger Creek near Diamond (d)	10399000	75	1911-13;1916-21;1930; 1941
Cucamonga Creek near Diamond (d)	10399500	15	1916;1930
McCoy Creek near Diamond (d)	10400000	45	1910-11;1914;1916-21; 1930;1941
Riddle Creek near Smith (d)	10400500	60	1911
Riddle Creek near Diamond (d)	10401000	120	1917-21
Donner Und Blitzen River near Voltage (d)	10401500	760	1938-46;1973-77
Malheur Lake near Voltage (e)	10401800	2,150	1976-80;1983-89
Malheur Lake on west side Cole Island dike, at Voltage (e)	10401810	--	1983-84
Malheur Lake at break in Cole Island dike, near Voltage (e)	10401830	2,150	1972-79
Malheur Lake Outlet at Narrows (d)	10402000	2,150	1916;1973-77
Mud Lake Outlet near Narrows (d)	10402500	2,160	1916-18;1921-22
Silver Creek near Riley (d)	10403000	228	1952-80
Silver Creek above Suntex (d)	10403500	260	1904-06;1909-12;1914-23; 1925-26
Chickahominy Creek near Suntex (d)	10404000	90	1917;1922
Rock Quarry Creek near Suntex (d)	10404500	--	1921;1922
Silver Creek below Suntex (d)	10405000	550	1912-13;1921-23
Silver Creek near Narrows (d)	10406000	630	1917;1919-23
CATLOW VALLEY BASIN			
Home Creek near Beckley (Narrows) (d)	10406300	38	1911-12;1915-17;1930
ALVORD LAKE BASIN			
Trout Creek near Denio, NV (d)	10406500	88	1911-12;1922-23;1925-31; 1932-91
Little Cottonwood Creek near Denio, NV (d)	10407000	8	1911-12
GOOSE LAKE (CLOSED BASIN)			
Dog Creek near Lakeview (d)	11338000	27	1912-13
North Drews Canal near Lakeview (d)	11339000	--	1976-81
Drews Creek near Lakeview (d)	11339500	212	1909-81
Cottonwood Creek near Lakeview (d)	11340500	32.9	1909-19;1924-81
Thomas Creek near Lakeview (d)	11341000	30	1912-17;1919;1927-31
LOST RIVER BASIN			
Miller Creek at Gerber Reservoir, near Lorella (d)	11483500	220	1905-08;1925-50
Miller Creek near Lorella (d)	11484000	270	1909-20
Lost River above Olene (d)	11484500	1,410	1915-17
Lost River at Olene (d)	11485000	1,590	1904;1907-12
Lost River Diversion Canal near Olene (d)	11486000	--	1961-68
Lost River at Wilson Bridge, near Olene (d)	11487000	1,620	1912-20
Lost River near Merrill (d)	11487500	1,670	1904-07
Lost River at Merrill (d)	11488000	1,680	1916
KLAMATH RIVER BASIN			
Williamson River below Sheep Creek, near Lenz (d)	11491400	205	1980-91
Williamson River near Silver Lake (d)	11491500	220	1917-18;1920-21
Miller Creek near Crescent (d)	11492000	23.7	1912;1914
Big Springs Creek blw Lenz Ranch, near Lenz (d)	11492400	--	1992-95
Sand Creek near Fort Klamath (d)	11492500	35	1917-22
Scott Creek near Fort Klamath (d)	11493000	10	1917-20
Williamson River near Klamath Agency (d)	11493500	1,290	1955-95
Williamson River above Spring Creek, near Klamath Agency (d)	11494000	1,330	1912-13;1918-25
Williamson River at Chiloquin (d)	11494500	1,400	1911-16;1917
South Fork Sprague River near Bly (d)	11495500	110	1925-26
North Fork Sprague River near Bly (d)	11496500	45	1917-18;1925-26
Fivemile Creek near Bly (d)	11497000	40	1917-20
Sprague River near Beatty (d)	11497500	513	1912-26;1953-91
Sycan River near Silver Lake (d)	11498000	100	1918-20
Sycan River at Sycan Marsh, near Silver Lake (d)	11498100	220	1905
Long Creek near Silver Lake (d)	11498500	40	1918-24;1927-29
Sycan River near Beatty (d)	11499000	540	1912-25
Sycan River below Snake Creek, near Beatty (d)	11499100	568	1980-91
Sprague River near Yainax (d)	11500000	1,270	1904

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
KLAMATH RIVER BASIN-Continued			
Sprague River at Chiloquin (d)	11502000	1,600	1911-19;1923;1925
Anna Creek near Fort Klamath (d)	11503500	40	1923-27
Wood River at Fort Klamath (d)	11504000	90.0	1911-36
Wood River near Fort Klamath (d)	11504100	87.7	1965-67
Crooked Creek near Fort Klamath (d)	11504200	5.68	1965-67
Fourmile Creek near Odessa (d)	11505500	10.6	1912-17
Fourmile Creek near Rocky Point (d)	11505600	105	1965-67
Varney Creek near Rocky Point (d)	11505700	7.43	1965-67
"A" Canal at Klamath Falls (d)	11507200	--	1911-50;1961-81
Keno Canal at Klamath Falls (d)	11507400	--	1967-83
Diversion from Klamath River to Lost River, near Olene (d)	11508500	--	1931-68
Spencer Creek near Keno (d)	11510000	90	1929-32
Klamath River at Spencer Bridge, near Keno (d)	11510500	4,050	1914-31
Howard Prairie Lake Outlet near Pinehurst (d)	11512920	--	1961-65
Keene Creek near Ashland (d)	11514500	12.1	1917-22;1949-65
Green Springs Powerplant Diversion near Ashland (d)	11516100	--	1961-65
OWYHEE RIVER BASIN			
Jordan Creek at DeLamar Mine, near Jordan Valley (d)	13177985	--	1994-96
Crooked Creek near Rome (d)	13181500	1,700	1950
Owyhee River above Owyhee Reservoir (d)	13182000	10,400	1929-51
Lake Owyhee near Nyssa (e)	13182500	11,160	1933-96
Owyhee River at Owyhee (d)	13184000	11,300	1890-96;1904-16; 1920-29;1980-86
MALHEUR RIVER BASIN			
Malheur River at Jones' Ranch, near Drewsey (d)	13213500	530	1914
Malheur River near Drewsey (d)	13214000	910	1920-23;1926-94
Warmsprings Reservoir near Riverside (e)	13214500	1,100	1920-91
South Fork Malheur River at Riverside (d)	13215500	630	1910-14;1919-20; 1927-29;1938
Malheur River at Riverside (d)	13216000	1,750	1909-15
North Fork Malheur River abv Beulah Reservoir, nr Beulah (d)	13216500	355	1914;1936-94
Beulah Reservoir at Beulah (e)	13217000	440	1936-96
North Fork Malheur River at Foley's Ranch, near Beulah (d)	13218000	470	1909-12;1914
North Fork Malheur River at Juntura (d)	13218500	530	1919-22;1926-32;1935-40
Malheur River near Namorf (d)	13219000	2,590	1913-23;1926-31
Malheur River near Westfall (d)	13219500	2,970	1904-05
Malheur River at Little Valley, near Hope (d)	13220000	3,010	1949-79
Malheur River near Hope (d)	13220500	3,030	1919-49
Malheur River near Little Valley (d)	13221500	3,030	1914
Malheur River at McLaughlin Bridge, near Vale (d)	13223500	3,060	1905-06
Bully Creek near Westfall (d)	13225500	160	1912-13;1923
Cottonwood Creek near Westfall (d)	13226000	82	1922-23
Bully Creek at Warmsprings, near Vale (d)	13226500	539	1903-07;1910-17; 1922-23;1964-86
Bully Creek Reservoir near Vale (e)	13226800	547	1964-96
Bully Creek near Vale (d)	13227000	570	1934-62
Bully Creek at Vale (d)	13227500	620	1904
Malheur River at Vale (d)	13228000	3,880	1890-91;1895-97; 1903-14;1919
Willow Creek near Malheur (d)	13229500	250	1912-15;1921-29
Willow Creek below reservoir, near Malheur (d)	13230500	290	1905-06;1911;1921-29
Cow Creek near Brogan (d)	13231000	75	1912-14
Willow Creek near Brogan (d)	13231500	420	1912-14
Willow Creek at Cole's Ranch, near Brogan (d)	13232000	455	1904-06
Pole Creek near Brogan (d)	13232500	14	1912
Pole Creek below Black Creek feed canal, near Brogan (d)	13233000	14	1913
Malheur River at Halliday Bridge, near Ontario (d)	13233500	4,620	1905
Malheur River near Ontario (d)	13234000	4,680	1904
BURNT RIVER BASIN			
North Fork Burnt River near Whitney (d)	13269300	110	1965-80
North Fork Burnt River at Audrey (d)	13269500	139	1915-16

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
BURNT RIVER BASIN-Continued			
Middle Fork Burnt River near Audrey (d)	13270000	9.54	1915-16
South Fork Burnt River near Unity (d)	13270500	30.9	1915-16
South Fork Burnt River above Barney Creek, near Unity (d)	13270800	38.5	1963-81
South Fork Burnt River at Hardman Ranch, near Unity (d)	13271000	44.4	1916-20;1938-41
Fleetwood Ditch near Unity (d)	13271500	--	1918-20
Sawmill Creek near Unity (d)	13272000	--	1915
Burnt River near Hereford (d)	13273000	309	1929-97
Burnt River at Bridgeport (d)	13274000	600	1915-16;1931-36
Burnt River near Bridgeport (d)	13274200	650	1957-80
Burnt River near Durkee (d)	13274500	700	1931-38
Burnt River at Huntington (d)	13275000	1,093	1929-32;1957-59;1962-80
POWDER RIVER BASIN			
Powder River near Sumpter (d)	13275300	168	1966-97
Powder River near Baker (d)	13275500	219	1904-14;1929-68
Old Settlers Slough at Baker (d)	13276000	--	1913-14
Baldock Slough at Baker (d)	13276500	--	1913-14
Powder River at Baker City (d)	13277000	352	1972-97
Pine Creek near Baker (d)	13277500	8.8	1913-14;1929-30
Goodrich Creek near Baker (d)	13278000	3.1	1913
Mill Creek near Baker (d)	13279000	3.9	1913-14;1929-30
Marble Creek near Baker (d)	13279500	3.9	1913-14;1929-30
Salmon Creek near Baker (d)	13280000	4.4	1913-14;1929
Willow Creek near Haines (d)	13280500	2.4	1913
Powder River at Haines (d)	13281000	539	1914
Powder River near Haines (d)	13281500	572	1947-53
North Powder River near North Powder (d)	13282000	47.7	1912
Anthony Fork near North Powder (d)	13282500	37	1912
North Powder River at North Powder (d)	13283000	129	1912-14
Wolf Creek at Bauer‘s Ranch, near North Powder (d)	13283500	30	1913-14
Wolf Creek near North Powder (d)	13284000	32.9	1947-53
Powder River near North Powder (d)	13284500	860	1913-16;1920-25
Thief Valley Reservoir near North Powder (e)	13285000	910	1980-96
Powder River below Thief Valley Reservoir (d)	13285500	910	1910-11;1979-97
Big Creek near Medical Springs (d)	13286000	35.5	1913-14
Goose Creek near Keating (d)	13286500	41.9	1913-14
Powder River near Richland (d)	13286700	1,310	1958-96
Eagle Creek above West Fork, near Baker (d)	13287000	18	1911
West Fork Eagle Creek near Baker (d)	13287500	15	1911
Eagle Creek near Baker (d)	13288000	42	1909-10
Eagle Creek above Skull Creek, near New Bridge (d)	13288200	156	1957-98
Eagle Creek near Newbridge (d)	13288500	170	1910-11;1914
Daly Creek near Richland (d)	13289000	40.5	1913
Powder River near Robinette (d)	13289500	1,660	1929-57
PINE CREEK BASIN			
Pine Creek near Oxbow (d)	13290190	230	1967-95
IMNAHA RIVER BASIN			
Imnaha River above Gumboot Creek (d)	13291000	99.6	1945-53
Big Sheep Creek near Joseph (d)	13291500	12.5	1920
GRANDE RONDE RIVER BASIN			
Meadow Creek near Starkey (d)	13318000	140	1932-35
Meadow Creek below Smith Creek, near Starkey (d)	13318050	33.2	1978-79
Meadow Creek above Bear Creek, near Starkey (d)	13318060	48.2	1978-79
Grande Ronde River near Hilgard (d)	13318500	505	1938-56
Grande Ronde River at Hilgard (d)	13318800	555	1967-81
Grande Ronde River at La Grande (d)	13319000	678	1904-15;1918-23;1926-89
Catherine Creek near Union (d)	13320000	105	1926-96
Little Creek near Union (d)	13321000	30.4	1918
Ladd Creek near Hot Lake (d)	13321500	40	1918
Mill Creek near Cove (d)	13322000	11.6	1918;1920-21
Mill Creek near Summerville (d)	13322500	--	1914-15
Grande Ronde River near Elgin (d)	13323500	1,250	1956-81
Indian Creek near Imbler (d)	13323600	22.0	1938-50
Grande Ronde River at Elgin (d)	13324000	1,400	1903-12;1918-19

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
GRANDE RONDE RIVER BASIN-Continued			
Wallowa Falls powerplant tailrace near Joseph (d)	13324500	--	1925-52;1967-83
East Fork Wallowa River near Joseph (d)	13325000	10.3	1925-52;1967-82
Wallowa River above Wallowa Lake, near Joseph (d)	13325500	43.0	1924-33;1937-38;1940-41
Wallowa Lake near Joseph (g)	13326000	50.8	1904-06;1912-15;1926-91
Joseph powerplant tailrace at Joseph (d)	13326500	--	1951-56
Wallowa River at Joseph (d)	13327500	50.9	1904-07;1908-14;1915; 1927-91
Hurricane Creek near Joseph (d)	13329500	29.6	1915;1924-78
Wallowa River at Wallowa (d)	13329900	--	1976-77
Wallowa River near Wallowa (d)	13331000	520	1904-07
Wallowa River at Minam (d)	13332000	880	1904-14
Grande Ronde River at Rondowa (d)	13332500	2,550	1927-91
Joseph Creek at Chico (d)	13333500	280	1931-33
WALLA WALLA RIVER BASIN			
South Fork Walla Walla River near Milton-Freewater (d)	14010000	63.0	1903;1906-17;1931-91
South Fork Walla Walla River blw PP&L plant, near Milton (d)	14010500	80.0	1904-06;1931-45
North Fork Walla Walla River near Milton-Freewater (d)	14010800	34.4	1970-91
North Fork Walla Walla River near Milton (d)	14011000	43.8	1930-69
Walla Walla River near Milton (d)	14011500	130	1905-06;1918-29
Walla Walla River at Milton (d)	14012000	155	1903-05
Walla Walla River below Freewater (d)	14012500	160	1941-48
COLUMBIA RIVER MAIN STEM			
Columbia River at McNary Dam, near Umatilla (d)	14019200	214,000	1951-81
UMATILLA RIVER BASIN			
North Fork Umatilla River near Gibbon (d)	14019500	31	1912-15;1940-43
Umatilla River at Gibbon (d)	14020500	310	1896-99;1900-01;1902-12
Umatilla River near Cayuse (d)	14020700	384	1969-75
Cottonwood Creek near Mission (d)	14020760	4.01	1992-97
Umatilla River at Pendleton (d)	14021000	637	1891-92;1904-05;1935-89
Umatilla River above McKay Creek, near Pendleton (d)	14022000	700	1921-34
McKay Creek near Pilot Rock (d)	14022500	180	1921;1927-89
McKay Reservoir near Pendleton (g)	14023000	186	1927-92
McKay Creek near Pendleton (d)	14023500	186	1919-23;1925-91
McKay Creek at mouth, near Pendleton (d)	14024000	190	1903-04;1922-24
East Birch Creek near Pilot Rock (d)	14024200	69.7	1968-73
Birch Creek near Pilot Rock (d)	14024500	240	1920-26
Birch Creek at Rieth (d)	14025000	291	1921-23;1927-76
Umatilla River near Yoakum (d)	14025500	1,260	1915-36
Umatilla River at Yoakum (d)	14026000	1,280	1903-91
Butter Creek near Pine City (d)	14032000	291	1928-88
WILLOW CREEK BASIN			
Rhea Creek near Heppner (d)	14034800	120	1960-91
Willow Creek near Morgan (d)	14035000	630	1921;1929-31
Willow Creek above Eightmile Canyon, near Arlington (d)	14035500	680	1905
Willow Creek near Arlington (d)	14036000	850	1906;1961-79
JOHN DAY RIVER BASIN			
John Day River at Blue Mountain Hot Springs, near Prairie City (d)	14036860	not determined	1997-2000
Strawberry Creek above Slide Creek, near Prairie City (d)	14037500	7.00	1931-91
Strawberry Creek near Prairie City (d)	14038000	15	1916-17;1925-30
John Day River at Prairie City (d)	14038500	231	1916-17;1925-68
John Day River near John Day (d)	14038530	386	1969-94
John Day River near Dayville (d)	14039000	960	1909-14;1920-21;1925-26
South Fork John Day River near Dayville (d)	14039500	590	1952-56
South Fork John Day at Dayville (d)	14040000	600	1909-14;1920-21;1925-26
John Day River at Picture Gorge, near Dayville (d)	14040500	1,680	1986-91
Mountain Creek near Mitchell (d)	14040600	20.0	1986-89
Desolation Creek near Dale (d)	14041000	108	1915-17;1949-58
North Fork John Day River near Dale (d)	14041500	525	1930-58
Camas Creek near Lehman (d)	14042000	60.7	1951-70
Camas Creek near Ukiah (d)	14042500	121	1914-17;1920-24;1932-91
Cable Creek near Ukiah (d)	14043000	39	1914-17;1919-24;1932-37; 1939
Snipe Creek near Ukiah (d)	14043560	37.0	1968-73
Fox Creek at gorge, near Fox (d)	14044500	90.2	1931-58

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
JOHN DAY RIVER BASIN-Continued			
Cottonwood Creek near Monument (d)	14045000	210	1926-31
Cottonwood Creek at Monument (d)	14045500	232	1925
John Day River at Clarno (d)	14047000	5,940	1914-15;1920-21
Lone Rock Creek near Lonerock (d)	14047380	69	1966-74;1976-91
Rock Creek above Whyte Park near Condon (d)	14047390	297	1976-89
Rock Creek at Rock Creek (d)	14047500	500	1905;1911
DESCHUTES RIVER BASIN			
Deschutes River above Snow Creek, near La Pine (d)	14049000	109	1922-25
Snow Creek above Crane Prairie, near La Pine (d)	14049500	23.0	1922-25
Deschutes River below Snow Creek, near La Pine (d)	14050000	32	1938-91
Cultus River above Cultus Creek, near La Pine (d)	14050500	16.5	1923-25;1938-91
Cultus Creek abv Crane Prairie Reservoir, nr La Pine(d)	14051000	33.2	1924;1938-91
Cultus River below Cultus Creek, near La Pine (d)	14051500	52.8	1922
Deer Creek above Crane Prairie Reservoir, near La Pine (d)	14052000	21.5	1924;1938-91
Quinn River near La Pine (d)	14052500	--	1922-25;1938-91
Charlton Creek above Crane Prairie Reservoir, nr La Pine(d)	14053000	15.6	1923-24;1938-79
Crane Prairie Reservoir near La Pine (e)	14053500	254	1923-91
Deschutes River blw Crane Prairie Reservoir, nr La Pine (d)	14054000	254	1907-08;1912-17;1922-91
Brown Creek near La Pine (d)	14054500	21.0	1922-25;1938-91
Deschutes River above Davis Creek, near La Pine (d)	14055000	290	1925-32
Odell Creek near Crescent (d)	14055500	39.0	1912-14;1924;1933-76
Deschutes River below Wickiup Reservoir, near La Pine (d)	14056500	483	1938-91
Deschutes River at Pringle Falls, near La Pine (d)	14057000	507	1916-17;1922-60
Fall River near La Pine (d)	14057500	45.1	1938-91
Deschutes River near La Pine (d)	14058000	600	1910-17;1920;1922
Deschutes River near Lava (d)	14058500	659	1905-07;1909-12
Little Deschutes River at Crescent (d)	14059000	109	1905-08;1911-14
Crescent Lake near Crescent (e)	14059500	60.7	1922-91
Crescent Creek at Crescent lake, near Crescent (d)	14060000	60.7	1911;1912-15;1927;1928-91
Crescent Creek below Cold Creek, near Crescent (d)	14060500	77.0	1922-26;1931-32
Big Marsh Creek at Hoey Ranch, near Crescent (d)	14061000	51.5	1912-14;1924;1928-58
Crescent Creek near Crescent (d)	14061500	137	1912-14
Little Deschutes R above Walker Basin intake, nr La Pine(d)	14062000	307	1914-17;1919-26;1931-22
Little Deschutes River near La Pine	14063000	859	1911;1913-20;1924-94
East Lake near La Pine (e)	14063200	7.08	1992-95
Paulina Lake near La Pine (e)	14063250	10.1	1991-95
Paulina Creek near La Pine (d)	14063300	10.1	1982-89;1991-95
Little Deschutes River at Allen's Ranch, near La Pine (d)	14063500	1,020	1905-12;1913-15;1931-32 1943-44
Deschutes River at Benham Falls, near Bend (d)	14064500	1,759	1906-14;1921;1924-91
Deschutes River above Lava Island, near Bend (d)	14065000	1,790	1915-16;1943-50
Arnold Canal near Bend (d)	14065500	--	1913-90
Deschutes River below Lava Island, near Bend (d)	14066000	1,829	1926-65
Central Oregon Canal above Pilot Butte Canal (d)	14066500	--	1933-90
Deschutes County Mncpl Improvement Dist Canal at Bend (d)	14068500	--	1923-90
North Unit Main Canal near Bend (d)	14069000	--	1946-90
North Canal near Bend (d)	14069500	--	1913-90
Swalley Canal near Bend (d)	14070000	--	1913-90
Deschutes River below Bend (d)	14070500	1,899	1915-91
Bridge Creek near Bend (d)	14070700	6.58	1981-85
Tumalo Creek near Tumalo (d)	14071500	30.9	1906-14
Tumalo Creek near Bend (d)	14073000	47.3	1913-21;1922;1923-87
Deschutes River at Tumalo (d)	14074000	1,983	1910-12;1914-15
Deschutes River at Cline Falls, near Redmond (d)	14074500	2,080	1910-13;1928-46
Deschutes River at Lower Bridge, near Terrebonne (d)	14074630	2,160	1995-97
Snow Creek near Sisters (d)	14074900	1.65	1986-91
Squaw Creek near Sisters (d)	14075000	45.2	1906-18;1919-94
South Fork Beaver Creek near Paulina (d)	14077000	95	1944-53
North Fork Beaver Creek near Paulina (d)	14077500	64.4	1942-54
Beaver Creek near Paulina (d)	14078000	450	1943-75
North Fork Crooked River above Deep Creek (d)	14078500	159	1942-54
North Fork Crooked River below Deep Creek (d)	14079000	264	1947-53
Crooked River atPost (d)	14079500	2,160	1909-11;1940-60;1969-73

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
DESCHUTES RIVER BASIN--Continued			
Crooked River above Prineville Reservoir, near Post (d)	14079800	2,400	1961-68
Bear Creek at Rickman Ranch, near Roberts (d)	14080000	44	1920-23
Bear Creek near Prineville (d)	14080250	205	1976-81
Prineville Reservoir near Prineville (e)	14080400	2,700	1961-91
Crooked River near Prineville (d)	14080500	2,700	1909-14;1941-91
Crooked River at Prineville (d)	14081500	2,820	1914
Marks Creek near Prineville (d)	14082500	61.0	1916
Ochoco Creek above Mill Creek, near Prineville (d)	14083000	200	1918-22;1924-33
Mill Creek near Prineville (d)	14083500	78.8	1916-18;1920-22;1924-33
Ochoco Creek at Elliott Ranch, near Prineville (d)	14085000	300	1909-10;1915-17
Ochoco Creek at Prineville (d)	14085500	358	1912;1914-15
McKay Creek near Prineville (d)	14086000	76.6	1925-32
McKay Creek above Old Dry Creek, near Prineville (d)	14086500	86.2	1918-19;1920
McKay Creek below Old Dry Creek, near Prineville (d)	14087000	103	1915
Crooked River near Terrebonne (d)	14087300	4,240	1968-73
Crooked River near Culver (d)	14087500	4,330	1918-63
Lake Creek near Sisters (d)	14088000	22.2	1912-13;1915-91
Metolius River at Allingham ranger station, near Sisters (d)	14088500	81.5	1911-13;1915-17
First Creek near Sisters (d)	14089000	12.2	1915-17;1924-28
Jack Creek near Sisters (d)	14089500	16.0	1915-16
Canyon Creek near Sisters (d)	14090000	32.5	1915-16
Whitewater River near Grandview (d)	14090500	30.6	1911-13
Metolius River at Riggs Ranch, near Sisters (d)	14092000	347	1909-12
Seekseequa Creek near Warm Springs (d)	14092150	47.3	1987-93
Shitike Creek below Wolford Canyon, near Warm Springs (d)	14092885	75.8	1975-96
Deschutes River at Mecca (d)	14093500	7,940	1911-27
Trout Creek near Antelope (d)	14094000	220	1915-17
Trout Creek near Gateway (d)	14094500	--	1915-16
Hay Creek near Hay Creek (d)	14095000	78	1915-16
Mill Creek at outlet of Olallie Lake (d)	14096000	5.6	1915-16
Mill Creek near Warm Springs (d)	14096500	28.8	1915
Warm Springs River near Warm Springs (d)	14097000	517	1911-19
White River near Government Camp (d)	14097200	40.7	1970-1980
Clear Creek below Clear Lake, near Govt Camp (d)	14097400	8.32	1969-73
Clear Creek near Government Camp (d)	14097500	9.94	1941-41;1947-53
Clear Creek above intake, near Wapinitia (d)	14098000	17.7	1918-21;1934-35
Clear Creek Ditch near Government Camp (d)	14098100	--	1969-73
Clear Creek near Pine Grove (d)	14098600	38.3	1968-73
Gate Creek at Purcell Ranch, near Wamic (d)	14099500	23.9	1921-23
Gate Creek near Wamic (d)	14100000	28.3	1918
White River near Tygh Valley (d)	14100500	221	1911-18
White River below Tygh Valley (d)	14101500	417	1918-90
Deschutes River at Sherars Bridge (d)	14102000	10,200	1923-32
FIFTEENMILE CREEK BASIN			
Fifteenmile Creek near Dufur (d)	14104000	19.6	1918-19
Fifteenmile Creek near Wrentham (d)	14104500	171	1947-53
Eightmile Creek near Boyd (d)	14105000	56	1947-53
Fivemile Creek near The Dalles (d)	14105500	32.4	1926;1928;1930-31;1949-50
MILL CREEK BASIN			
South Fork Mill Creek near The Dalles (d)	14105850	28.0	1961-75
MOSIER CREEK BASIN			
Mosier Creek near Mosier (d)	14113200	41.5	1964-81
HOOD RIVER BASIN			
Dog River near Parkdale (d)	14113400	4.50	1961-71
East Fork Hood River above intake, near Mount Hood (d)	14113500	77.2	1915-22
East Fork Hood River near Mount Hood (d)	14115000	78.8	1913-14
East Fork Hood River near Dee (d)	14115500	108	1917
Clear Branch below Laurance Lake, near Parkdale (d)	14115815	8.62	1987-95
Hood River at Dee (d)	14116000	155	1913-17
Green Point Creek near Dee (d)	14116500	10.0	1919-21

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
HOOD RIVER BASIN--Continued			
North Fork Green Point Creek near Dee (d)	14117500	7.6	1919;1921
Green Point below North Fork, near Dee (d)	14118000	20.0	1950-54
West Fork Hood River near Dee (d)	14118500	95.6	1914-16;1932-91
Hood River at Winans (d)	14119000	259	1906-07;1910-12;1913
Hood River near Hood River (d)	14121000	329	1913-64
COLUMBIA RIVER MAIN STEM			
Columbia River at Stevenson, WA(g)	14128600	239,800	1974-97
Columbia River at Bonneville Dam (g)	14128860	239,900	1981-87
Columbia River near Bonneville (g)	14128890	239,900	1973-81
Columbia River at Warrendale (g)	14128910	240,000	1972-87
Columbia River at Washougal, WA(g)	14129400	240,000	1972-81;1990-93
SANDY RIVER BASIN			
Lost Creek near Brightwood (d)	14130000	11.2	1913-18
Little Zigzag River at Twin Bridges, near Rhododendron (d)	14131000	3.70	1926-36
Zigzag River near Rhododendron (d)	14131400	14.8	1981-93
Zigzag River at Rhododendron (d)	14131500	31.0	1920-21;1926-30
Sandy River above Salmon River, at Brightwood (d)	14133500	117	1910-14;1926-31
Salmon River near Government Camp (d)	14134000	8.00	1910-12;1926-91
Salmon River below Linney Creek (d)	14134500	54.0	1928-50
Salmon River at Welches (d)	14135000	100	1913-14;1920-21;1925-36
Salmon River above Boulder Creek, near Brightwood (d)	14135500	106	1936-52
Bull Run River below Lake Ben Morrow (d)	14139500	74.0	1930-54
Little Sandy River near Marmot (d)	14140500	17.9	1913-19
WILLAMETTE RIVER BASIN			
Middle Fork Willamette River near Oakridge (d)	14144800	258	1959-97
Hills Creek above Hills Creek Reservoir, near Oakridge (d)	14144900	52.7	1959-81
Hills Creek near Oakridge (d)	14145000	59.0	1935-43
Salt Creek near Oakridge (d)	14146000	113	1913-14;1934-51
Salmon Creek near Oakridge (d)	14146500	117	1910;1913-19;1934-85; 1987-94
Gray Creek near Oakridge (d)	14146700	5.06	1979-86
Waldo Lake Outlet near Oakridge (d)	14147000	30.5	1937-53;1970-82;1984
N.Fork of Middle Fork Willamette River, nr Oakridge (d)	14147500	246	1910-16;1936-85;1987-94
Fall Creek near Lowell (d)	14150300	118	1964-1999
Fall Creek above Winberry Creek, near Lowell (d)	14150500	127	1936-43
Little Fall Creek near Fall Creek (d)	14151500	52.5	1936-48
Coast Fork Willamette River at London (d)	14152500	72.1	1936-87
Mosby Creek near Cottage Grove (d)	14156000	85.0	1936-46
Mosby Creek at mouth, near Cottage Grove (d)	14156500	95.3	1947-68;1970-81
Coast Fork Willamette River at Saginaw (d)	14157000	529	1924-26;1928-51
Willamette River at Springfield (d)	14158000	2,030	1912-13;1920-57
McKenzie River near Belknap Springs (d)	14158700	146	1958-62
Smith River near Belknap Springs (d)	14158800	23.7	1958-60
Budworm Creek near Belknap Springs (d)	14158930	3.00	1979-83;1984-86
McKenzie River above Boulder Creek, near Belknap Springs (d)	14158955	--	1983
McKenzie River at McKenzie Bridge (d)	14159000	348	1910-94
Horse Creek near McKenzie Bridge (d)	14159100	149	1963-69
Blue River above Quentin Creek (d)	14161000	11.5	1948-55
Blue River near Blue River (d)	14162000	75.0	1936-64
Gate Creek at Vida (d)	14163000	47.6	1952-57;1967-90
McKenzie River near Springfield (d)	14164000	1,066	1906-15
McKenzie River near Coburg (d)	14165500	1,337	1945-72
Coyote Creek near Crow (d)	14167000	95.1	1941-87
Amazon Creek at Eugene (d)	14169300	3.35	1963-75
Amazon Creek near Eugene (d)	14169500	21.3	1955-68;1980-82
Rock Creek near Philomath (d)	14170500	14.6	1946-52;1975-79
Muddy Creek near Corvallis (d)	14171500	107	1964-68
Calapooia River at Holley (d)	14172000	105	1936-90
Calapooia River at Albany (d)	14173500	372	1941-81
East Humbug Creek near Detroit (d)	14178700	7.32	1978-94
Breitenbush River above French Creek, near Detroit (d)	14179000	106	1933-87

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
WILLAMETTE RIVER BASIN--Continued			
Middle Santiam River near Upper Soda (d)	14185700	74.6	1981-94
Middle Santiam River near Cascadia (d)	14185800	104	1963-81
Packers Gulch near Cascadia (d)	14185880	7.45	1984-86;1988
Middle Santiam River near Foster (d)	14186000	271	1932-47
Middle Santiam River at mouth, near Foster (d)	14186500	287	1951-66
South Santiam River at Foster (d)	14186700	493	1967-73
Wiley Creek at Foster (d)	14187100	62.3	1974-88
Crabtree Creek near Crabtree (d)	14188700	111	1964-70
Thomas Creek near Scio (d)	14188800	109	1963-87
Luckiamute River near Hoskins (d)	14189500	34.3	1935-78
Luckiamute River at Pedee (d)	14190000	115	1940-70
Little Luckiamute River at Falls City (d)	14190100	22.7	1965-71
Rickreall Creek near Dallas (d)	14190700	27.4	1957-78
Mill Creek at Penitentiary Annex, near Salem (d)	14191500	104	1940-56
Mill Creek at Salem (d)	14192000	110	1940-78
South Yamhill River near Willamina (d)	14192500	133	1934-93
Willamina Creek near Willamina (d)	14193000	64.7	1934-91
Mill Creek near Willamina (d)	14193300	27.4	1958-73
South Yamhill River near Whiteson (d)	14194000	502	1940-91
North Yamhill River near Fairdale (d)	14194300	9.03	1959-66;1968-91
Haskins Creek near McMinnville (d)	14195000	6.48	1928-51
North Yamhill River near Pike (d)	14196500	47.8	1940-51
North Yamhill River at Pike (d)	14197000	66.8	1948-73
Willamette River at Wilsonville (d)	14198000	8,400	1948-73
Molalla River above Pine Creek, near Wilhoit (d)	14198500	97.0	1936-93
Molalla River near Molalla (d)	14199000	201	1906-09;1947-51
Silver Creek at Silverton (d)	14200300	47.9	1964-68;1971-79
Pudding River near Mount Angel (d)	14201000	204	1940-66
Butte Creek at Monitor (d)	14201500	58.7	1936;1941-52;1967-85
Pudding River at Aurora (d)	14202000	479	1929-64;1994-97
Tualatin River near Gaston (d)	14202500	48.5	1941-56;1973-76;1979-84
Scoggins Creek above Henry Hagg Lake, near Gaston (d)	14202850	15.9	1973-76
Sain Creek near Gaston (d)	14202920	10.3	1973-76
Henry Hagg Lake near Gaston (e)	14202965	38.7	1976-97
Scoggins Creek near Gaston (d)	14203000	43.3	1941-74
Gales Creek near Glenwood (d)	14203750	7.3	1994-95
Gales Creek near Gales Creek (d)	14204000	33.2	1936-45;1964-70
Gales Creek near Forest Grove (d)	14204500	66.1	1941-56;1971-81
East Fork Dairy Creek at Mountaindale (d)	14205500	43.0	1941-51
Dairy Creek near Cornelius (d)	14205800	147	1974-76
McKay Creek near North Plains (d)	14206000	27.6	1941-43;1949-56
McKay Creek near Hillsboro (d)	14206180	61.0	1973-76
Bronson Creek at 185th Ave, near Aloha (d)	14206298	4.15	1995-96
Tualatin River at Farmington (d)	14206500	568	1940-58;1973-76
Oswego Canal near Lake Oswego (d)	14207000	--	1929-91
Clackamas River at Big Bottom (d)	14208000	136	1920-70
Collawash River near Breitenbush (d)	14208300	142	1966-68
Oak Grove Fork at Timothy Meadows (d)	14208500	54.0	1913-14;1916-29
Roaring River near Estacada (d)	14209600	42.4	1966-68
Clackamas River near Clackamas (d,g)	14211000	930	(d)1963-83;(g)1988-89
Willamette River at Portland (d)	14211720	11,100	1973-94
COLUMBIA RIVER MAIN STEM			
Columbia River at Columbia City (g)	14222880	254,000	1971-81
Columbia River at Prescott (d)	14223780	254,200	1968
Columbia River at Longview, WA (g)	14245300	256,700	1984-90
Columbia River at Wauna (g)	14247295	256,900	1971-81
Bear Creek near Svensen (d)	14248700	3.33	1966-75
Youngs River near Astoria (d)	14251500	40.1	1928-58
NESTUCCA RIVER BASIN			
Trask River near Tillamook (d)	14302500	145	1932-55;1962-72
Nestucca River near McMinnville (d)	14303000	12.0	1929-44
Nestucca River near Beaver (d)	14303600	180	1965-91

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
SILETZ RIVER BASIN			
Sunshine Creek near Valsetz (d)	14304350	6.70	1973-91
Big Rock Creek near Valsetz (d)	14304850	6.90	1986-89
YAQUINA RIVER BASIN			
Yaquina River near Chitwood (d)	14306030	71.0	1973-91
Mill Creek near Toledo (d)	14306036	4.18	1961-73
ALSEA RIVER BASIN			
North Fork Beaver Creek near Seal Rock (d)	14306040	10.0	1966-67
North Fork Alsea River at Alsea (d)	14306100	63.0	1958-89
South Fork Alsea River near Alsea (d)	14306200	49.5	1961-63
Fall Creek near Alsea (d)	14306300	29.4	1961-63
Five Rivers near Fisher (d)	14306400	114	1961-63;1968-90
Drift Creek near Salado (d)	14306600	20.5	1959-63;1966-70
Needle Branch near Salado (d)	14306700	.27	1959-73
Flynn Creek near Salado (d)	14306800	.78	1959-73
Deer Creek near Salado (d)	14306810	1.17	1959-73
BIG CREEK BASIN			
Big Creek near Roosevelt Beach (d)	14306900	11.9	1973-91
SIUSLAW RIVER BASIN			
Siuslaw River above Wildcat Creek, at Austa (d)	14307000	267	1932-40
Lake Creek at Triangle Lake (d)	14307500	52.5	1932-55
Lake Creek near Deadwood (d)	14307580	174	1968-89
North Fork Siuslaw River near Minerva (d)	14307645	41.2	1968-85
UMPQUA RIVER BASIN			
Jackson Creek near Tiller (d)	14307700	152	1956-86
Elk Creek near Drew (d)	14308500	54.4	1955-82;1987-2000
South Umpqua River at Days Creek (d)	14308600	641	1975-90
Days Creek at Days Creek (d)	14308700	55.3	1956-72
South Myrtle Creek near Myrtle Creek (d)	14310700	43.9	1956-72
North Myrtle Creek near Myrtle Creek (d)	14311000	54.2	1956-86
Olalla Creek near Tenmile (d)	14311200	61.3	1957-73
Tenmile Creek at Tenmile (d)	14311300	29.6	1968-73
Lookingglass Creek at Brockway (d)	14311500	158	1956-2000
South Fork Deer Creek near Dixonville (d)	14312170	15.2	1990-2000
Deer Creek near Roseburg (d)	14312200	53.2	1956-73
Silent Creek near Diamond Lake (d)	14312400	8.24	1972-77
North Umpqua River at Toketee Falls (d)	14315500	339	1926-45;1947-48
North Umpqua River above Rock Creek, near Glide (d)	14317500	886	1925-45
North Umpqua River below Lemolo Lake, near Toketee Falls (d)	14313501	170	1928-83
Rock Creek near Glide (d)	14317600	97.4	1958-73
Little River at Peel (d)	14318000	177	1955-89
North Umpqua River near Glide (d)‘	14318500	1,210	1916-18;1928-38
Sutherlin Creek at Sutherlin (d)	14319200	16.4	1956-67
Gassy Creek near Nonpareil (d)	14319850	9.19	1989-2000
Calapooya Creek at Nonpareil (d)	14319900	88.6	1977-88
Elk Creek near Elkhead (d)	14321400	28.7	1969-72;1987-99
Elk Creek near Drain (d)	14322000	104	1956-73
Umpqua River near Scottsburg (d)	14322900	4,095	1967-69
Smith River near Gardiner (d)	14323100	206	1966-73
Tenmile Creek near Lakeside (d)	14323200	87.0	1958-76
Eel Lake Near Lakeside(e)	14323280	8.70	1971-78
COOS RIVER BASIN			
West Fork Millicoma River near Allegany (d)	14324500	46.9	1955-81

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
COQUILLE RIVER BASIN			
South Fork Coquille River above Panther Creek, nr Illahe (d)	14324600	31.2	1957-70
South Fork Coquille River near Illahe (d)	14324700	40.6	1957-74
South Fork Coquille River near Powers (d)	14324900	93.2	1957-70
Middle Fork Coquille River near Myrtle Point (d)	14326500	305	1931-46
North Fork Coquille River near Fairview (d)	14326800	73.9	1964-81
North Fork Coquille River near Myrtle Point (d)	14327000	282	1929-46;1964-68
SIXES RIVER BASIN			
Sixes River at Sixes (d)	14327150	116	1968-70
ELK CREEK BASIN			
Elk River near Sixes (d)	14327300	86.1	1968-70
ROGUE RIVER BASIN			
Rogue River above Bybee Creek, near Union Creek (d)	14327500	156	1930-52
Rogue River above Prospect (d)	14328000	312	1909-11;1923-98
Mill Creek near Prospect (d)	14329500	32.0	1926-35
South Fork Rogue River above Imnaha Creek, near Prospect (d)	14330500	52.0	1932-49
Imnaha Creek near Prospect (d)	14331000	26.0	1932-49
Middle Fork Rogue River near Prospect (d)	14333000	56.5	1926-55
Red Blanket Creek near Prospect (d)	14333500	45.5	1926-32;1934-81
South Fork Rogue River south of Prospect (d)	14334700	246	1969-92
Rogue River below South Fork Rogue River, near Prospect (d)	14335000	650	1929-65
Rogue River at McLeod (d)	14335075	697	1978-81
South Fk Big Butte Creek, abv Willow Cr, nr Butte Falls (d)	14335200	67.6	1986-91
South Fork Big Butte Creek near Butte Falls (d)	14335500	138	1911;1915;1918-22;1925-91
Elk Creek near Cascade Gorge	14337800	78.8	1974-2000
West Branch Elk Creek near Trail	14337870	14.2	1974-74;1978-2000
South Fork Little Butte Collect Canal near Pinehurst (d)	14339400	--	1961-65
South Fork Little Butte Creek at Big Elk Ranger Station (d)	14339500	16.6	1927-50
Dead Indian Collect Canal near Pinehurst (d)	14340400	--	1961-65
South Fork Little Butte Creek near Lakecreek (d)	14341500	138	1922-57;1961-82
North Fork Little Butte Creek at Fish Lake, nr Lakecreek(d)	14342500	20.8	1915;1917-89
North Fork Little Butte Creek near Lakecreek (d)	14343000	43.8	1912-13;1917;1923-27; 1929-64;1966-85
N F Little Butte Creek abv Intake Canal, near Lakecreek (d)	14344500	60.4	1918-19;1922-50
Little Butte Creek above Eagle Point (d)	14347000	269	1917-26;1929
Little Butte Creek below Eagle Point (d)	14348000	293	1908-16;1924-26;1946-50
Emigrant Creek near Ashland (d)	14350000	64.3	1920-86
West Fork Ashland Creek near Ashland (d)	14353000	10.5	1925-33;1975-82
East Fork Ashland Creek near Ashland (d)	14353500	8.14	1925-33;1975-82
Evans Creek near Bybee Springs, near Rogue River (d)	14359500	116	1925-27;1951-53
Middle Fork Applegate River near Copper (d)	14361590	50.7	1980-87
Elliott Creek near Copper (d)	14361600	51.8	1978-87
Carberry Creek near Copper (d)	14361700	68.9	1978-87
Applegate River near Ruch (d)	14363000	302	1912-14;1926-53
Powell Creek near Williams (d)	14368500	8.17	1947-58
Slate Creek at Wonder (d)	14370000	31.4	1944-57
Grave Creek at Pease Bridge, near Placer (d)	14371500	22.1	1941-89
Grave Creek near Placer (d)	14372000	45.6	1914;1941-50
East Fork Illinois River near Takilma (d)	14372500	42.3	1926;1927-32;1941-91
Althouse Creek near Holland (d)	14373500	24.3	1947-53
Sucker Creek near Holland (d)	14375000	76.2	1942-65
Sucker Creek below Little Grayback Creek, near Holland (d)	14375100	83.9	1966-91
Elk Creek near O'Brien (d)	14375400	26.6	1986-91
West Fork Illinois River below Rock Creek, near O'Brien (d)	14375500	42.4	1955-85
West Fork Illinois River near O'Brien (d)	14376500	49.7	1947-54
Illinois River at Kerby (d)	14377000	364	1926-61
Deer Creek near Dryden (d)	14377500	22.0	1942-56
Illinois River near Selma (d)	14378000	665	1957-68
Illinois River near Agness (d)	14378200	988	1961-81

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

The following continuous-record water-quality stations in Oregon have been discontinued. Continuous water-quality data were collected and published for the period of record shown for each station. For each station entry, a period of record, expressed in water years, is provided for each type of record listed. Discontinued project stations with less than 3 years of record have not been included. Information regarding these stations may be obtained from the District Office at the address given on the back side of the title page.

[Type of record: do (dissolved oxygen), ph (pH), sed (sediment), sc (specific conductance), t (temperature), tb (turbidity)]

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record
THE GREAT BASIN				
MALHEUR AND HARNEY LAKES BASIN				
Donner und Blitzen River near Frenchglen	10396000	200	t, sc	1976-81
OWYHEE RIVER BASIN				
Owyhee River near Rome	13181000	8,000	t	1973-77
Owyhee River at Owyhee	13184000	11,300	t, sc	1980-82
Bully Creek near Vale	13227000	570	t, sed	1959-62
POWDER RIVER BASIN				
Powder River at Baker City	13277000	351	sed	1961
Powder River near Richland	13286700	1,310	t	1960-61
Eagle Creek above Skull Creek near New Bridge	13288200	156	t	1960-61
GRANDE RONDE RIVER BASIN				
Imnaha River at Imnaha	13292000	622	t	1966-68;1977
Meadow Creek below Smith Creek near Starkey	13318050	33.2	t	1978-79
Meadow Creek above Bear Creek near Starkey	13318060	48.2	t	1978-79
Grande Ronde River at La Grande	13319000	678	t	1960-61
Wallowa River at Wallowa	13329900	--	t	1977
Lostine River near Lostine	13330000	70.9	t	1958
Lostine River at Lostine	13330200	--	t	1976-77
Minam River at Minam	13331500	240	t	1966-85
Grande Ronde River at Rondowa	13332500	2,555	t	1960-61
WALLA WALLA RIVER BASIN				
South Fork Walla Walla River near Milton-Freewater	14010000	63	t	1960-61
COLUMBIA RIVER MAIN STEM				
Columbia River at McNary Dam, near Umatilla	14019200	214,000	t	1962
			sed	1966
Columbia River at Umatilla	14019250	214,000	t	1975-79
UMATILLA RIVER BASIN				
Umatilla River above Meacham Creek near Gibbon	14020000	131	t	1960-80
Umatilla River near Umatilla	14033500	2,290	t	1963-69
WILLOW CREEK RIVER BASIN				
Willow Creek at Heppner	14034500	96.8	t	1963-68; 1972-73
			sed	1963-68
Willow Creek near Arlington	14036000	850	t	1963-68
			sed	1963-70
JOHN DAY RIVER BASIN				
South Fork John Day River near Dayville	14039500	590	t	1952-56
Desolation Creek near Dale	14041000	108	t	1958
Middle Fork John Day River at Ritter	14044000	515	t	1967-68
North Fork John Day River at Monument	14046000	2,520	t	1967-68
John Day River at McDonald Ferry	14048000	7,580	t	1963-68 1976-81
			sc	1976-81
			sed	1963-70
Columbia River at Biggs Junction	14048330	226,400	t	1975-76

DISCONTINUED SURFACE-WATER QUALITY STATIONS

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record
DESCHUTES RIVER BASIN				
Paulina Creek near La Pine	14063300	10.1	sc	1992-95
Deschutes River at Benham Falls, near Bend	14064500	1,759	t	1968-80
Deschutes River near Culver	14076500	2,705	t	1955-57;1959-74
Crooked River at Post	14079500	2,160	t, sed	1960-62
Bear Creek near Prineville	14080250	205	t	1976
			sed	1976-80
Crooked River near Prineville	14080500	2,700	t, sed	1959
Crooked River below Opal Springs, near Culver	14087400	4,300	t	1964-74
Crooked River near Culver	14087500	4,330	t	1955-63
Metolius River near Grandview	14091500	316	t	1955-74
Deschutes River near Madras	14092500	7,820	t	1953-56
				1958;1972-88
White River below Tygh Valley	14101500	417	t, sed	1982
			tb	1982-83
Deschutes River at Moody	14103000	10,500	t	1955-58;1962-81
COLUMBIA RIVER MAIN STEM				
Columbia River at The Dalles	14105700	237,000	t	1956-70;1974-76
			sc	1965-85
Columbia River at Warrendale	14128910	240,000	t, sc	1976-92
SANDY RIVER BASIN				
Bear Creek near Rhododendron	14133400	0.36	sc,ph,t,do	1999
COLUMBIA RIVER MAIN STEM--Continued				
Columbia River at Vancouver	14144700	241,000	t	1968-70;1973-79
			sed	1964-69
WILLAMETTE RIVER BASIN				
Middle Fork Willamette River near Oakridge	14144800	258	t	1957-87
Hills Creek above Hills Creek Reservoir, near Oakridge	14144900	52.7	t	1959-81
Middle Fork Willamette River above Salt Creek, near Oakridge	14145500	392	t	1961-97
Middle Fork Willamette River below North Fork, near Oakridge	14148000	924	t	1951-87
Fall Creek near Lowell	14150300	118	t	1964-87
Winberry Creek near Lowell	14150800	43.9	t	1964-81
Coast Fork Willamette River at London	14152500	72.1	t	1961-65;1968-87
Coast Fork Willamette River near Goshen	14157500	642	t	1962-75;2001-03
McKenzie River below Trail Bridge Dam, near Belknap Springs	14158850	184	t, sc	1977-85;1992-96
McKenzie River at McKenzie Bridge	14159000	348	t, sc	1977-85;1992-93
Horse Creek near McKenzie Bridge	14159100	149	t	1963-69;1983-84
				1992-93
Blue River below Tidbits Creek, near Blue River	14161100	45.8	t	1964-87
Lookout Creek near Blue River	14161500	24.1	t	1952-55;1964-81
Blue River near Blue River	14162000	75	t	1962-64
McKenzie River at Finn Rock	14162400	--	t	1984
Gate Creek at Vida	14163000	47.6	t	1984
McKenzie River at Leaburg Dam	14163100	--	t	1984
McKenzie River below Leaburg Dam, Near Leaburg	14163150	1,030	t	1992-95
McKenzie River near Springfield	14164000	1,066	t	1984
Walterville Canal near Walterville	14164200	--	t	1984
McKenzie River above Hayden Bridge, at Springfield	14164900	--	t	1984
Mohawk River near Springfield	14165000	177	t	1964-69;1983-84
McKenzie River near Coburg	14165500	1,337	t	1964-75;1983-84
Willamette River at Harrisburg	14166000	3,420	sc, do	1970-76
			ph	1970-75
Willamette River above Calapooia River at Albany	14171750	4,460	t	1964-87
North Santiam River at Fisherman‘s Bend, near Mill City	14181800	--	t	1986
North Santiam River near Jefferson	14184100	736	t	1985-86
South Santiam River below Cascadia	14185000	174	t	1963-67;1971-87

DISCONTINUED SURFACE-WATER QUALITY STATIONS

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record
WILLAMETTE RIVER BASIN--Continued				
Middle Santiam River near Cascadia	14185800	104	t	1964-79;1981-82
Quartzville Creek near Cascadia	14185900	99.2	t	1964-87
Middle Santiam River at mouth, near Foster	14186500	287	t	1954-64;1966
South Santiam River at Foster	14186700	493	t	1968;1970-73; 1985
Crabtree Creek near Scio	14188750	--	t	1985
Thomas Creek near Scio	14188800	109	t	1963-75
Thomas Creek near Crabtree	14188850	--	t	1986
South Santiam River below Thomas Creek, near Jefferson	14188900	--	t	1986
Santiam River at Jefferson	14189000	1,790	t	1964-65;1967-87
Luckiamute River at Pedee	14190000	115	t	1965-70
Willamette River at Salem	14191000	7,280	t	1964-87;2001
			sc	1952-60;1965-72 1976-84
Willamina Creek near Willamina	14193000	64.7	t	1964-68
South Yamhill River near Whiteson	14194000	502	t	1964-68
North Yamhill River at Pike	14197000	66.8	t	1964-69
Molalla River above Pine Creek, near Wilhoit	14198500	97	t	1964-69
Molalla River near Canby	14200000	323	t	1964-69
Silver Creek at Silverton	14200300	47.9	t	1964-68
Zollner Creek near Mount Angel	14201300	15.0	sc	1994-97
Pudding River at Aurora	14202000	479	sc,t	1994-97
Tualatin River near Gaston	14202500	48.5	t	1979-84
Tualatin River near Dilley	14203500	125	t	1964-68
Gales Creek near Glenwood	14203750	7.3	t	1994-95
Gales Creek near Gales Creek	14204000	33.2	t	1964-69
Tualatin River at West Linn	14207500	706	t	1964-68;1976-81
			sc	1976-81
Willamette River at Oregon City	14207700	10,000	t	1963-67
Clackamas River near Clackamas	14211000	930	t	1964-74;1976
Crystal Springs at Bybee Street, Portland	14211542	not det.	t	1999,2000
Crystal Springs at mouth, Portland	14211546	not det.	t	1999,2000
Willamette River above St. Johns Bridge, at Portland	14211805	11,450	t	1972-75
COLUMBIA RIVER MAIN STEM				
Columbia River at Columbia City	14222880	254,000	t	1971
Columbia River near Columbia City	14222890	253,900	t	1969-72
Columbia River at Kalama	14222910	254,000	t	1969-79
Columbia River at Prescott	14223780	254,200	t	1968-69
Columbia River at Rainier	14245295	256,700	t	1972-79
Columbia River at Longview, WA	14245300	256,700	t	1968-72
Columbia River at Wauna	14247295	256,900	t	1972-76
Columbia River at Bradwood	14247400	257,100	t	1977-81
Columbia River at Altoona, WA	14248600	258,000	t	1972-79
Bear Creek near Svenson	14248700	3.33	t	1966-75
PACIFIC SLOPE BASINS IN OREGON				
NEHALEM RIVER BASIN				
Nehalem River near Foss	14301000	667	t	1975-81
			sc	1981
NESTUCCA RIVER BASIN				
Trask River near Tillamook	14302500	145	t	1962-71
Nestucca River near Beaver	14303600	180	t	1965-87
SILETZ RIVER BASIN				
Big Rock Creek near Valsetz	14304850	6.90	t	1979-85
Siletz River at Siletz	14305500	202	t	1979-85
YAQUINA RIVER BASIN				
Yaquina River near Chitwood	14306030	71	sed	1973-74

DISCONTINUED SURFACE-WATER QUALITY STATIONS

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record
ALSEA RIVER BASIN				
North Fork Beaver Creek near Seal Rock	14306040	10	t	1966-67
North Fork Alsea River at Alsea	14306100	63	t	1958-66
South Fork Alsea River near Alsea	14306200	49.5	t	1958-63
Fall Creek near Alsea	14306300	29.4	t	1959
Five Rivers near Fisher	14306400	114	t	1959
Alsea River near Tidewater	14306500	334	t, sc	1980-81
			sed	1973-74
Drift Creek near Salado	14306600	20.5	t	1959-63;1969-70
Needle branch near Salado	14306700	0.27	t, sed	1959-73
Flynn Creek near Salado	14306800	0.78	t, sed	1959-73
Deer Creek near Salado	14306810	1.17	t, sed	1959-73
SIUSLAW RIVER BASIN				
Siuslaw River near Mapleton	14307620	588	t	1968-75;1978-81
			sc	1978-81
			sed	1968-75
UMPQUA RIVER BASIN				
South Umpqua River at Days Creek	14308600	641	t	1971-82;1991-92
			tb	1973-82
			sc, ph, do	1991-92
South Umpqua River near Roseburg	14312260	1,798	sc	1971-95
			ph	1972-95
			do	1971-95
North Umpqua River above Rock Creek, near Glide	14317500	886	sc,ph,t,do	1992-98
North Umpqua River at Winchester	14319500	1,344	t	1971-91
Umpqua River near Elkton	14321000	3,683	t	1971-92
COOS RIVER BASIN				
West Fork Millicoma River near Allegany	14324500	46.9	t	1973-76
COQUILLE RIVER BASIN				
South Fork Coquille River near Illahe	14324700	40.6	t	1971-74
Rock Creek near Illahe	14324800	--	t	1958
South Fork Coquille River near Powers	14324900	93.2	t	1957-70
SIXES RIVER BASIN				
Sixes River at Sixes	14327150	116	t	1968
			sed	1968-70
ROGUE RIVER BASIN				
South Fork Rogue River south of Prospect	14334700	246	t	1969-92
			sed	1977-81
Rogue River at McLeod	14335075	697	sc,ph,t,do.	1977-81
			sed,tb	1977-2000
Big Butte Creek near McLeod	14337500	245	t	1971-2000
			tb	2000
Elk Creek near Cascade Gorge	14337800	78.8	t	1974-2000
			tb	2000
West Branch Elk Creek near Trail	14337870	14.2	temp	1977-2000
Rogue River at Trail	14338100	ND	temp	1989-2000
			tb	2000
Rogue River at Grants Pass	14361500	2,459	t	1956-58;1974-87
Middle Fork Applegate River near Copper	14361590	50.7	t	1980-87
Elliott Creek near Copper	14361600	51.8	t	1978-87
			sed	1978-80
Carberry Creek near Copper	14361700	68.9	t	1978-87
			sed	1981
Rogue River near Merlin	14370400	3,268	t	1975-87
Rogue River at Marial	14372250	3,812	t	1975-87
llinois River near Selma	14378000	665	t	1962-68

INTRODUCTION

The Water Resources discipline 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 both surface and ground water in the State and contains discharge records for 199 stream-gaging stations, 25 partial-record or miscellaneous streamflow stations, and 8 crest-stage partial-record streamflow stations; stage only records for 6 gaging stations; stage and content records for 26 lakes and reservoirs; and water-quality records for 110 streamflow-gaging stations, 2 atmospheric-deposition stations, and 12 ground-water sites.

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 Eastern Oregon, while Volume 2 described the activities for Western Oregon. In 1991, the annual report returned to a single volume report.

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, or if not out of print, may be purchased from the U.S. Geological Survey, Books and Open-File Reports, Federal Center, Building 41, Box 25425, Denver, CO 80225. For further ordering information, telephone (303) 236-7476.

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-03-1". 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. For further ordering information, the Customer Inquiries telephone number is (703) 487-4650.

Additional information, including current prices, for ordering specific reports may be obtained from the Oregon District Chief at the address given on back of title page or by telephoning (503) 251-3201.

The USGS is continually updating the availability of its information on the internet. Current streamflow conditions (via satellite) for Oregon and other water resource information can be found at the

following Universal Resource Locator (URL): http://or.water.usgs.gov/. Nationwide information on water resources, including real-time and historic streamflow data, water-use data, publications, and USGS program activities, can be found at http://water.usgs.gov/.

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

Clackamas County

Coos Bay-North Bend Water Board

Coos County, Board of Commissioners

Douglas County, Natural Resources

Eugene Water and Electric Board

City of Albany

City of Ashland, Department of Public Works

City of Brookings

City of Gresham

City of Lake Oswego

City of McMinnville

City of Milwaukie

City of Newberg

City of Portland, Bureau of Environmental Services

City of Portland, Bureau of Water Works

City of Salem

City of Troutdale, Public Works

City of West Linn

City of Woodburn

Clean Water Services

Nez Perce Tribe

Siuslaw Soil and Water Conservation District

The Confederated Tribes of the Umatilla Indian Reservation

The Confederated Tribes of the Warm Springs Indian Reservation

Wallowa Soil and Water Conservation District

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, and 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, Grayco Resources, Inc., Idaho Power, PacifiCorp, and Portland General Electric Co.

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 throughout the region, 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 basins 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. Monthly and annual mean discharges for four representative gages are compared with the 30-year median in figures 3 and 4.

Surface-Water Conditions

Total precipitation and streamflow for western Oregon remained again near the normal range for the 2003 water year after a fairly normal year in 2002. Central and eastern Oregon continued with below normal precipitation and streamflow for the fourth consecutive year, with portions of southeastern Oregon in severe or extreme drought conditions as reported by the U.S. Drought Monitor. By the end of March, as reported by the Natural Resources Conservation Service, the snow-water equivalent of the snowpack ranged from a high of 74 percent of average for the Grand Ronde, Powder, and Burnt River Basins in northeastern Oregon to a low of 36 percent of average for the Harney Basin in south-central Oregon. Precipitation across Oregon for the water year, as reported by the State Climatologist, ranged from a high of 101 percent of normal in the Rogue and Umpqua Basins of southwestern Oregon to a low of 75 percent of normal in the Owyhee Basin of southeastern Oregon.

The 2003 water year started out dryer than normal throughout Oregon. Streamflows were below normal for October through early December for most of the State. On December 9, 2002, 51% of the reporting gaging stations in Oregon recorded a record low flow for that day. The weather quickly turned wet, and the rest of December and January were wetter than normal. However, mild temperatures in January eroded the snowpack bringing the statewide average down to about 50% of normal. After a dry February, wetter than normal conditions returned for most of Oregon in March and April. Precipitation in April for basins in Oregon ranged from 127% to 207% of normal. Streamflows during April were above normal for western and northeastern Oregon, but below normal for the rest of the State.

May through September were much dryer than normal for most of Oregon. With much of the snowpack melting in January, the streamflows for the late spring and summer had little to sustain them and remained below normal for most of central and eastern Oregon.

Table 1

Table 1. Maximum stage, discharge, and recurrence interval for the 2003 water year at selected gaging stations.
[mi^2, square miles; ft, feet; ft^3/s, cubic feet per second; ND, not determined; >, greater than; <, less than.

Station Number	Stream and Location	Drainage Area (mi^2)	Period of Record	Maximum for Period of Record			Maximum during Water Year			
				Date	Stage (ft)	Discharge (ft^3/s)	Date	Stage (ft)	Discharge (ft^3/s)	Estimate of Recurrence interval (years)
10396000	Donner und Blitzen River near Frenchglenn	200	1911-2003	04/26/78	7.15	4,270	05/09/03	4.96	1,600	2
11502500	Williamson River below Sprague River, near Chiloquin	3,000	1917-2003	01/05/97	10.27	17,100	03/30/03	5.17	1,940	2
13181000	Owyhee River near Rome	8,000	1950-2003	03/18/93	20.11	55,700	05/11/03	6.08	4,780	regulated
13292000	Imnaha River at Imnaha	622	1928-2002	01/01/97	11.44	20,200	05/10/03	5.17	3,110	2
13333000	Grande Ronde River at Troy	3,275	1944-2002	02/09/96	13.76	51,800	05/31/03	8.25	13,300	<2
14033500	Umatilla River near Umatilla	2,290	1904-2002	01/30/65	10.75	19,800	01/31/03	6.18	5,800	regulated
14046500	John Day River at Service Creek	5,090	1925-2002	12/23/64	17.85	40,200	01/31/03	8.37	8,630	<2
14120000	Hood River at Tucker Bridge, near Hood River	279	1898-2002	02/07/96	17.11	23,300	01/31/03	9.66	6,780	<2
14137000	Sandy River near Marmot	263	1911-2002	12/22/64	--	61,400	01/30/03	---	13,200	<2
14301000	Nehalem River near Foss	667	1940-2002	02/08/96	29.56	70,300	01/31/03	16.51	27,8000	2
14305500	Siletz River at Siletz	202	1906-2002	11/26/99	28.62	53,800	01/31/03	15.25	17,400	<2
14316700	Steamboat Creek near Glide	227	1956-2002	12/22/64	25.60	51,000	01/30/03	9.62	8,660	<2
14321000	Umpqua River near Elkton	3,683	1906-2002	12/23/64	51.95	265,000	12/31/02	24.88	80,100	<2
14357500	Bear Creek at Medford	289	1915-2003	01/01/97	14.69	17,600	12/28/02	7.09	2,870	regulated
14361500	Rogue River at Grants Pass	2,459	1939-2002	12/23/64	35.15	152,000	12/28/02	14.20	34,800	regulated
14372300	Rogue River near Agness	3,939	1961-2002	12/23/64	68.03	290,000	12/31/02	19.66	69,300	regulated

NOTE.--The recurrence interval, or return period, of a flood of a given magnitude is the average interval of time within which the given flood will be exceeded by the annual maximum discharge. The recurrence interval is inversely related to the chance of a specific flood discharge being exceeded in any one year. Thus, a flood with a 50-year recurrence interval would have 1 chance in 50 of being exceeded in any one year. Recurrence intervals are average figures based on historical data; because the occurrence of floods is erratic, the 50-year flood may not necessarily occur in any given 50-year period, or floods of this magnitude may occur several times during that period. A similar relation is true for a flood of any given recurrence interval.

Ground Water

Summary of hydrologic conditions, ground-water-levels

The seasonal level of the water table reflects natural recharge and discharge, and indirectly reflects long-term climatic trends. Changes in the water table are represented by seasonal averages of measurements made in shallow-aquifer wells.

The relation of seasonal water-table levels during 2003 to the long-term means, or normals, was evaluated for the six wells that comprise the Oregon District portion of the U.S. Geological Survey's Office of Ground Water's ground-water climate response network of wells. These are wells that show a high correlation to climatic variability.

The normal water level is defined as being within one-half the standard deviation of the seasonal mean for the period of record and the seasons are defined as: fall, October to December; winter, January to March; spring, April to June; and summer, July to September.

Trends in ground-water levels in the Oregon ground-water climate response network were mixed throughout the 2003 water year.

Note: Lacking a significant portion of continuous record for both spring and summer at the northern Deschutes County recorder well due to instrument malfunction, site visit observations made during those seasons were used to interpret waterlevel trends for this water year. This method is standard for sites where site visit observations are the only observations made.

The water level in the Clackamas County well was normal in fall, declined to below normal winter through spring, and then returned to normal in summer. The water level in the northern Deschutes County well was normal in fall and then declined to below normal for the remainder of the water year. The water level in the southern Deschutes County well was below normal throughout the water year. The water level in the Jackson County well was normal in fall, increased to above normal in winter and spring, and declined to normal in summer. The water level in the Linn County well was below normal fall through winter, increased to normal in spring, and declined to below normal in summer. The water level in the Marion County well was normal fall through winter, increased to above normal in spring, and declined to normal in summer.

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, hydrologic-station records in USGS reports have been listed in order of downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary entering between two main-stream stations is listed between those stations. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is located with respect to the stream to which it is immediately tributary is indicated by an indention in that list of stations in the front of this report. Each indentation represents one rank. This downstream order and system of indentation indicates which stations are on tributaries between any two stations and the rank of the tributary on which each station is located.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These station numbers are in the same downstream order used in this report. In

assigning a station number, 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 composed of both types of stations. Gaps are consecutive. The complete 8-digit (or 10-digit) number for each station such as 09004100, which appears just to the left of the station name, includes a 2-digit part number "09" plus the 6-digit (or 8-digit) downstream order number "004100." In areas of high station density, an additional two digits may be added to the station identification number to yield a 10-digit number. The stations are numbered in downstream order as described above between stations of consecutive 8-digit numbers.

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The USGS well and miscellaneous site-numbering system is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, and the next 7 digits denote degrees, minutes, and seconds of longitude; the last 2 digits are a sequential number for wells within a 1-second grid. In the event that the latitude-longitude coordinates for a well and miscellaneous site are the same, a sequential number such as "01," "02," and so forth, would be assigned as one would for wells (see fig. 1). The 8-digit, downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

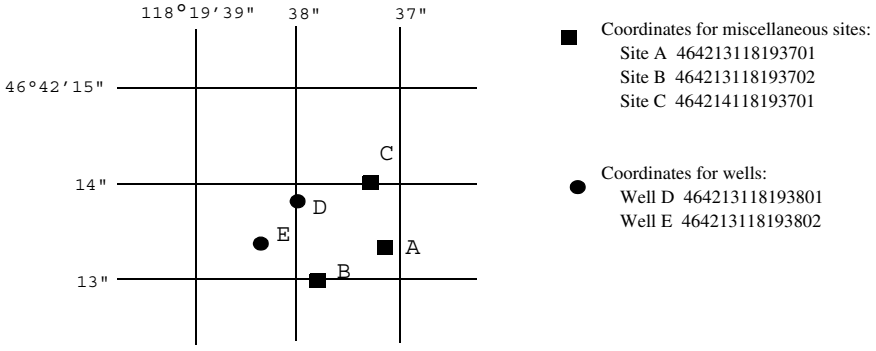


Figure 1. System for numbering wells and miscellaneous sites (latitude and longitude).

In addition to the well number that is based on latitude and longitude given for each well, another well number is given that is based on the U.S. Bureau of Land Management's system of land subdivision. This well number is familiar to the water users of Oregon and shows the location of the well by quadrant, township, range section, and position within the section (see fig. 2). The capital letter at the beginning of the location number indicates the quadrant in which the well is located. Four quadrants are formed by the intersection of the base line and the principal meridian—A indicates the northeast quadrant, B the northwest, C the southwest, and D the southeast. The first numeral indicates the township, the second the range, and the third the section in which the well is located. Lowercase letters following the section number locate the well within the section. The first letter denotes the quarter section, the second the quarter-quarter section, and the third the quarter-quarter-quarter section. The letters are assigned within the section in a counter-clockwise direction beginning with (a) in the northeast quarter of the section. Letters are assigned within each quarter section and quarter-quarter section in the same manner. Where two or more wells are located within the smallest subdivision, consecutive numbers beginning with 1 are added to

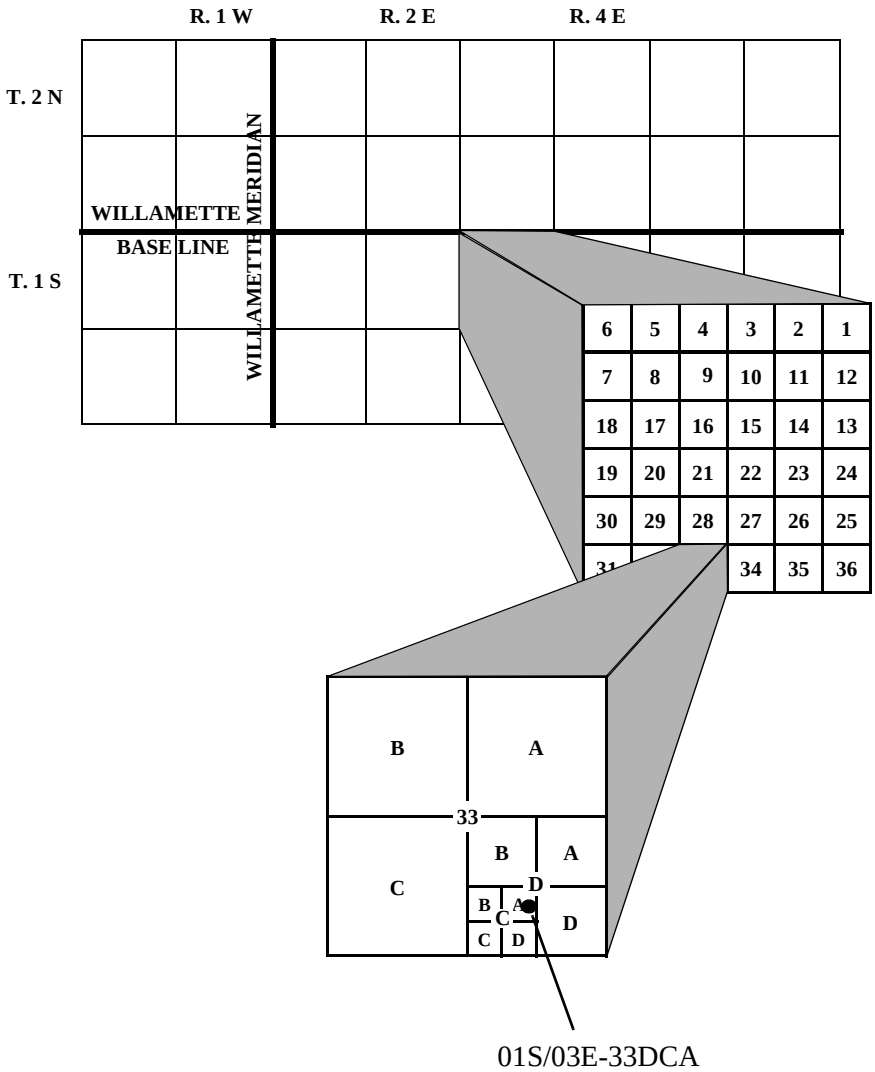


Figure 2. Local identifier well-numbering system.

the letters in the order in which the wells are inventoried. or example, a well designated as 01S/03E-33DCA is located in Township 1 south, Range 3 east, section 33. The letters following the section number correspond to the location within the section; the first letter (D) identifies the quarter section (160 acres); the second letter (C) identifies the quarter-quarter section (40 acres); and the third letter (A) identifies the quarter-quarter-quarter section (10-acres). Thus, well 33DCA is located in the NE quarter of the SW quarter of the SE quarter of section 33 (figure 2). When more than one designated well occurs in the quarter-quarter-quarter section, a serial number is included.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 61 sites in small drainage basins in 39 States that was established in 1963 to provide consistent streamflow data representative of undeveloped watersheds nationwide, and from which data could be analyzed on a continuing basis for use in comparison and contrast with conditions observed in basins more obviously affected by human activities. At selected sites, water-quality information is being gathered on major ions and nutrients, primarily to assess the effects of acid deposition on stream chemistry. Additional information on the Hydrologic Benchmark Program may be accessed from *http://water.usgs.gov/hbn/*.

National Stream-Quality Accounting Network (NASQAN) is a network of sites used to monitor the water quality of large rivers within the Nation's largest river basins. From 1995 through 1999, a network of approximately 40 stations was operated in the Mississippi, Columbia, Colorado, and Rio Grande River basins. For the period 2000 through 2004, sampling was reduced to a few index stations on the Colorado and Columbia Rivers so that a network of 5 stations could be implemented on the Yukon River. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment (NAWQA) Program; (3) to characterize processes unique to large-river systems such as storage and re-mobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals. Additional information about the NASQAN Program may be accessed from *http://water.usgs.gov/nasqan/*.

The National Atmospheric Deposition Program/National Trends Network (NADP/NTN) is a network of monitoring sites that provide continuous measurement and assessment of the chemical constituents in precipitation throughout the United States. As the lead Federal agency, the USGS works together with over 100 organizations to provide a long-term, spatial and temporal record of atmospheric deposition generated from this network of 250 precipitation-chemistry monitoring sites. The USGS supports 74 of these 250 sites. This long-term, nationally consistent monitoring program, coupled with ecosystem research, provides critical information toward a national scorecard to evaluate the effectiveness of ongoing and future regulations intended to reduce atmospheric emissions and subsequent impacts to the Nation's land and water resources. Reports and other information on the NADP/NTN Program, as well as data from the individual sites, may be accessed from *http://bqs.usgs.gov/acidrain/*.

The USGS National Water-Quality Assessment (NAWQA) Program is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation's ground- and surface-water resources; to provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and to provide information that

supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 42 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents is measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for water-resources managers to use in making decisions and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Communication and coordination between USGS personnel and other local, State, and Federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key Federal, State, and local water-resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies. Additional information about the NAWQA Program may be accessed from *http://water.usgs.gov/nawqa/*.

The USGS National Streamflow Information Program (NSIP) is a long-term program with goals to provide framework streamflow data across the Nation. Included in the program are creation of a permanent Federally funded streamflow network, research on the nature of streamflow, regional assessments of streamflow data and databases, and upgrades in the streamflow information delivery systems. Additional information about NSIP may be accessed from *http://water.usgs.gov/nsip/*.

EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS

Data Collection and Computation

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and volume of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from a water-stage recorder that is either downloaded electronically in the field to a laptop computer or similar device or is transmitted using telemetry such as GOES satellite, land-line or cellular-phone modems, or by radio transmission. Measurements of discharge are made with a current meter or acoustic Doppler current profiler, using the general methods adopted by the USGS. These methods are described in standard textbooks, USGS Water-Supply Paper 2175, and the Techniques of Water-Resources Investigations of the United States Geological Survey (TWRIs), Book 3, Chapters A1 through A19 and Book 8, Chapters A2 and B2. The methods are consistent with the American Society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standards (ISO).

For stream-gaging stations, discharge-rating tables for any stage are prepared from stage-discharge curves. If extensions to the rating curves are necessary to express discharge greater than measured, the extensions are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, or computation of flow over dams and weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharges are computed from the daily

values. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features of the stream channel, the daily mean discharge is computed by the shifting-control method in which correction factors based on individual discharge measurements and notes by engineers and observers are used when applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the controlling section, the daily mean discharge is computed by the shifting-control method.

The stage-discharge relation at some stream-gaging stations is affected by backwater from reservoirs, tributary streams, or other sources. Such an occurrence 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 at some distance from the base gage.

An index velocity is measured using ultrasonic or acoustic instruments at some stream-gaging stations and this index velocity is used to calculate an average velocity for the flow in the stream. This average velocity along with a stage-area relation is then used to calculate average discharge.

At some stations, stage-discharge relation is affected by changing stage. At these stations, the rate of change in stage is used as a factor in computing discharge.

At some stream-gaging stations in the northern United States, the stage-discharge relation is affected by ice in the winter; therefore, computation of the discharge in the usual manner is impossible. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter-discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge from other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the volume or contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly changes are computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys, the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some stream-gaging stations, periods of time occur when no gage-height record is obtained or the recorded gage height is faulty and cannot be used to compute daily discharge or contents. Such a situation can happen when the recorder stops or otherwise fails to operate properly, the intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records from other stations in the same or nearby basins. Likewise, lake or reservoir volumes may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

Data Presentation

The records published for each continuous-record surface-water discharge station (stream-gaging station) consist of five parts: (1) the station manuscript or description; (2) the data table of daily mean values of discharge for the current water year with summary data; (3) a tabular statistical summary of

monthly mean flow data for a designated period, by water year; (4) a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration; and (5) a hydrograph of discharge.

Station Manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; 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 follow that clarify information presented under the various headings of the station description.

LOCATION.—Location information is obtained from the most accurate maps available. The location of the gaging station 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, given for only a few stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

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 term indicates the time period for which records have been published 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 its flow reasonably can be considered equivalent to flow at the present station.

REVISED RECORDS.—If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

GAGE.—The type of gage in current use, the datum of the current gage referred to a standard datum, 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 either will be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily discharge table. (See section titled Identifying Estimated Daily Discharge.) Information is presented relative to the accuracy of the records, to special methods of computation, and to conditions that affect natural flow at the station. In addition, information may be presented pertaining to average discharge data for the period of record; to extremes data for the period of record and the current year; and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, the outlet works and spillway, and the purpose and use of the reservoir.

COOPERATION.—Records provided by a cooperating organization or obtained for the USGS by a cooperating organization are identified here.

EXTREMES OUTSIDE PERIOD OF RECORD.—Information here documents 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 USGS.

REVISIONS.—Records are revised if errors in published records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based National data system, NWISWeb (*http://water.usgs.gov/nwis/nwis*). Users are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent data updates. Updates to NWISWeb are made on an annual basis.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because no current or, possibly, future station manuscript would be published for these stations 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 District Office (address given on the back of the title page of this report) to determine if the published records were revised after the station was discontinued. If, however, the data for a discontinued station were obtained by computer retrieval, the data would be current. 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 stage-capacity table when daily volumes are given.

Peak Discharge Greater than Base Discharge

Tables of peak discharge above base discharge are included for some stations where secondary instantaneous peak discharge data are used in flood-frequency studies of highway and bridge design, flood-control structures, and other flood-related projects. The base discharge value is selected so an average of three peaks a year will be reported. This base discharge value has a recurrence interval of approximately 1.1 years or a 91-percent chance of exceedence in any 1 year.

Data Table of Daily Mean Values

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed TOTAL gives the sum of the daily figures for each month; the line headed MEAN gives the arithmetic average flow in cubic feet per second for the month; and the lines headed MAX and MIN give the maximum and minimum daily mean discharges, respectively, for each month. Discharge for the month is 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). Values for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if extensive regulation or diversion is in effect or if the drainage area includes large noncontributing areas. At some stations, monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversion data or reservoir volumes are given. These values are identified by a symbol and a corresponding footnote.

Statistics of Monthly Mean Data

A tabular summary of the mean (line headed MEAN), maximum (MAX), and minimum (MIN) of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those values. The designated period will be expressed as FOR WATER YEARS __-__, BY WATER YEAR (WY), and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. The designated period will consist of all of the station record within the specified water years, including complete months of record for partial water years, and

may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript.

Summary Statistics

A table titled SUMMARY STATISTICS follows the statistics of monthly mean data tabulation. This table consists of four columns with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, WATER YEARS __-__, will consist of all of the station records within the specified water years, including complete months of record for partial water years, and may coincide with the period of record for the station. The water years for which the statistics are computed are consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (see line headings below), except for the ANNUAL 7-DAY MINIMUM statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When the dates of occurrence do not fall within the selected water years listed in the heading, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration-curve statistics and runoff data also are given. Runoff data may be omitted if extensive regulation or diversion of flow is in effect in the drainage basin.

The following summary statistics data are provided with each continuous record of discharge. Comments that follow clarify information presented under the various line headings of the SUMMARY STATISTICS table.

ANNUAL TOTAL.—The sum of the daily mean values of discharge for the year.

ANNUAL MEAN.—The arithmetic mean for the individual daily mean discharges for the year noted or for the designated period.

HIGHEST ANNUAL MEAN.—The maximum annual mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.—The minimum annual mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.—The maximum daily mean discharge for the year or for the designated period.

LOWEST DAILY MEAN.—The minimum daily mean discharge for the year or for the designated period.

ANNUAL 7-DAY MINIMUM.—The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. This value should not be confused with the 7-day 10-year low-flow statistic.

MAXIMUM PEAK FLOW.—The maximum instantaneous peak discharge occurring for the water year or designated period. Occasionally the maximum flow for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak flow is given in the table and the maximum flow may be reported in a footnote or in the REMARKS paragraph in the manuscript.

MAXIMUM PEAK STAGE.—The maximum instantaneous peak stage occurring for the water year or designated period. Occasionally the maximum stage for a year may occur at midnight at the beginning or end of the year, on a recession from or rise toward a higher peak in the adjoining year. In this case, the maximum peak stage is given in the table and the maximum stage may be reported in the REMARKS paragraph in the manuscript or in a footnote. If the dates of occurrence of the maximum peak stage and maximum peak flow are different, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

INSTANTANEOUS LOW FLOW.—The minimum instantaneous discharge occurring for the water year or for the designated period.

ANNUAL RUNOFF.—Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

> Acre-foot (AC-FT) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.
>
> Cubic feet per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area.
>
> Inches (INCHES) indicate the depth to which the drainage area would be covered if all of the runoff for a given time period were uniformly distributed on it.

10 PERCENT EXCEEDS.—The discharge that has been exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.—The discharge that has been exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.—The discharge that has been exceeded 90 percent of the time for the designated period.

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 table lists annual maximum stage and discharge at crest-stage stations, and the second table lists 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 often made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for a 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. This identification is shown either by flagging individual daily values with the letter "e" and noting in a table footnote, "e–Estimated," or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

Accuracy of Field Data and Computed Results

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

The degree of accuracy of the records is stated in the REMARKS in the station description. "Excellent" indicates that about 95 percent of the daily discharges are within 5 percent of the true value; "good" within 10 percent; and "fair," within 15 percent. "Poor" indicates that daily discharges have less than "fair" accuracy. Different accuracies may be attributed to different parts of a given record.

Values of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft^3/s; to the nearest tenths between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures above 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharge values listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, values of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other Data Records Available

Information of a more detailed nature than that published for most of the stream-gaging stations such as discharge measurements, gage-height records, and rating tables is available from the District office. Also, most stream-gaging station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the District office (see address that is shown on the back of the title page of this report).

EXPLANATION OF PRECIPITATION RECORDS

Data Collection and Computation

Rainfall data generally are collected using electronic data loggers that measure the rainfall in 0.01-inch increments every 15 minutes using either a tipping-bucket rain gage or a collection well gage. Twenty-four

hour rainfall totals are tabulated and presented. A 24-hour period extends from just past midnight of the previous day to midnight of the current day. Snowfall-affected data can result during cold weather when snow fills the rain-gage funnel and then melts as temperatures rise. Snowfall-affected data are subject to errors. Missing values are indicated by this symbol "---" in the table.

Data Presentation

Precipitation records collected at surface-water gaging stations are identified with the same station number and name as the stream-gaging station. Where a surface-water daily-record station is not available, the precipitation record is published with its own name and latitude-longitude identification number.

Information pertinent to the history of a precipitation station is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, period of record, and general remarks.

The following information is provided with each precipitation station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.—See Data Presentation in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

PERIOD OF RECORD.—See Data Presentation in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

INSTRUMENTATION.—Information on the type of rainfall collection system is given.

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

EXPLANATION OF WATER-QUALITY RECORDS

Collection and Examination of Data

Surface-water samples for analysis usually are collected at or near stream-gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, water temperature, sediment discharge, and so forth); extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, sampling date, or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water Analysis

Most of the methods used for collecting and analyzing water samples are described in the TWRIs. A list of TWRIs is provided in this report.

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 at several verticals to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

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 and minimum values (and sometimes mean or median values) for each constituent measured, and are based on 15-minute or 1-hour intervals of recorded data beginning at 0000 hours and ending at 2400 hours for the day of record.

EXPLANATION OF SURFACE-WATER-QUALITY RECORDS

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because discharge data is useful in the interpretation of surface-water quality. Records of surface-water quality in this report 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 *continuous-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 continuous- or partial-record station, where 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 *continuous records* as used in this report and *continuous recordings* that refer to a continuous graph or a series of discrete values recorded at short intervals. 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. Locations of stations for which records on the quality of surface water appear in this report are shown in figures 6 through 35.

Accuracy of the Records

One of four accuracy classifications is applied for measured physical properties at continuous-record stations on a scale ranging from poor to excellent. The accuracy rating is based on data values recorded

before any shifts or corrections are made. Additional consideration also is given to the amount of publishable record and to the amount of data that have been corrected or shifted.

Rating classifications for continuous water-quality records

[≤, less than or equal to; ±, plus or minus value shown; °C, degree Celsius; >, greater than; %, percent; mg/L, milligram per liter; pH unit, standard pH unit]

Measured physical property	Rating			
	Excellent	Good	Fair	Poor
Water temperature	≤ ±0.2 °C	> ±0.2 to 0.5 °C	> ±0.5 to 0.8 °C	> ±0.8 °C
Specific conductance	≤ ±3%	> ±3 to 10%	> ±10 to 15%	> ±15%
Dissolved oxygen	≤ ±0.3 mg/L	> ±0.3 to 0.5 mg/L	> ±0.5 to 0.8 mg/L	> ±0.8 mg/L
pH	≤ ±0.2 unit	> ±0.2 to 0.5 unit	> ±0.5 to 0.8 unit	> ±0.8 unit
Turbidity	≤ ±5%	> ±5 to 10%	> ±10 to 15%	> ±15%

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, a major concern is assuring that the data obtained represent the naturally occurring quality of the water. To ensure this, certain measurements, such as water temperature, pH, and dissolved oxygen, must be made on site when the samples are taken. To assure that measurements made in the laboratory also represent the naturally occurring water, carefully prescribed procedures must be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRIs Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1-A9. These TWRIs are listed in this report. Also, detailed information on collecting, treating, and shipping samples can be obtained from the USGS District office (see address that is shown on the back of title page in this report).

Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at the 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 District office.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross section.

During periods of rapidly changing flow or rapidly changing concentration, samples may be 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 are collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observation, 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, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

Laboratory Measurements

Samples for biochemical oxygen demand (BOD) and indicator bacteria are analyzed locally. All other samples are analyzed in the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chapter C1. Methods used by the USGS laboratories are given in the TWRIs, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. These methods are consistent with ASTM standards and generally follow ISO standards.

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 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 information in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

DRAINAGE AREA.—See Data Presentation information in the EXPLANATION OF STAGE- AND WATER-DISCHARGE RECORDS section of this report (same comments apply).

PERIOD OF RECORD.—This indicates the time periods for which published water-quality records for the station are available. 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 temperature record, 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 USGS by a cooperating organization are identified here.

EXTREMES.—Maximums and minimums are given only for parameters measured daily or more frequently. For parameters measured weekly or less frequently, true maximums or minimums may not have been obtained. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.—Records are revised if errors in published water-quality records are discovered. Appropriate updates are made in the USGS distributed data system, NWIS, and subsequently to its Web-based National data system, NWISWeb (*http://waterdata.usgs.gov/nwis*). Users of USGS water-quality data are encouraged to obtain all required data from NWIS or NWISWeb to ensure that they have the most recent updates. Updates to the NWISWeb are made on an annual basis.

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 section:

Printed Output	Remark
E or e	Estimated value.
>	Actual value is known to be greater than the value shown.
<	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).
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted).
D	Biological organism count equal to or greater than 15 percent (dominant).
V	Analyte was detected in both the environmental sample and the associated blanks.
&	Biological organism estimated as dominant.

Water-Quality Control Data

The USGS National Water Quality Laboratory collects quality-control data on a continuing basis to evaluate selected analytical methods to determine long-term method detection levels (LT-MDLs) and laboratory reporting levels (LRLs). These values are re-evaluated each year on the basis of the most recent quality-control data and, consequently, may change from year to year.

This reporting procedure limits the occurrence of false positive error. Falsely reporting a concentration greater than the LT-MDL for a sample in which the analyte is not present is 1 percent or less. Application of the LRL limits the occurrence of false negative error. The chance of falsely reporting a non-detection for a sample in which the analyte is present at a concentration equal to or greater than the LRL is 1 percent or less.

Accordingly, concentrations are reported as less than LRL for samples in which the analyte was either not detected or did not pass identification. Analytes detected at concentrations between the LT-MDL and the LRL and that pass identification criteria are estimated. Estimated concentrations will be noted with a remark code of “E.” These data should be used with the understanding that their uncertainty is greater than that of data reported without the E remark code.

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this District office are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples. These data are not presented in this report but are available from the District office.

Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated in the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank

sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. Many types of blank samples are possible; each is designed to segregate a different part of the overall data-collection process. The types of blank samples collected in this district are:

Field blank—A blank solution that is subjected to all aspects of sample collection, field processing preservation, transportation, and laboratory handling as an environmental sample.

Trip blank—A blank solution that is put in the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.

Equipment blank—A blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to a field blank but normally done in the more controlled conditions of the office).

Sampler blank—A blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

Filter blank—A blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank—A blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank—A blank solution that is treated with the sampler preservatives used for an environmental sample.

Reference Samples

Reference material is a solution or material prepared by a laboratory. The reference material composition is certified for one or more properties so that it can be used to assess a measurement method. Samples of reference material are submitted for analysis to ensure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

Replicate Samples

Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. Many types of replicate samples are possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this district are:

Concurrent samples—A type of replicate sample in which the samples are collected simultaneously with two or more samplers or by using one sampler and alternating the collection of samples into two or more compositing containers.

Sequential samples—A type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample—A type of replicate sample in which a sample is split into subsamples, each subsample contemporaneous in time and space.

Spike Samples

Spike samples are samples to which known quantities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

EXPLANATION OF GROUND-WATER-LEVEL RECORDS

Generally, only ground-water-level data from selected wells with continuous recorders from a basic network of observation wells are published in this report. This basic network contains observation wells located so that the most significant data are obtained from the fewest wells in the most important aquifers.

Site Identification Numbers

See “NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES”, page 5 in this report, for a detailed explanatio-

Data Collection and Computation

Measurements are made in many types of wells, under varying conditions of access and at different temperatures; hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Most methods for collecting and analyzing water samples are described in the TWRIs referred to in the On-site Measurements and Sample Collection and the Laboratory Measurements sections in this report. In addition, TWRI Book 1, Chapter D2, describes guidelines for the collection and field analysis of ground-water samples for selected unstable constituents. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRIs Book 1, Chapter D2; Book 3, Chapters A1, A3, and A4; and Book 9, Chapters A1 through A9. The values in this report represent water-quality conditions at the time of sampling, as much as possible, and that are consistent with available sampling techniques and methods of analysis. These methods are consistent with ASTM standards and generally follow ISO standards. Trained personnel collected all samples. The wells sampled were pumped long enough to ensure that the water collected came directly from the aquifer and had not stood for a long time in the well casing where it would have been exposed to the atmosphere and to the material, possibly metal, comprising the casings.

Water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum above sea level is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (EOM).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth of water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

Data Presentation

Water-level data are presented in alphabetical order by county. The primary identification number for a given well is the 15-digit site identification number that appears in the upper left corner of the table. The secondary identification number is the local or county well number. Well locations are shown in figure 36*;* each well is identified on the map by its local well or county well number.

Each well record consists of three parts: the well description, the data table of water levels observed during the water year, and, for most wells, a hydrograph following the data table. Well descriptions are presented in the headings preceding the tabular data.

The following comments clarify information presented in these various headings.

LOCATION.—This paragraph follows the well-identification number and reports the hydrologic-unit number and a geographic point of reference. Latitudes and longitudes used in this report are reported as North American Datum of 1927 unless otherwise specified.

AQUIFER.—This entry designates by name and geologic age the aquifer that the well taps.

WELL CHARACTERISTICS.—This entry describes the well in terms of depth, casing diameter and depth or screened interval, method of construction, use, and changes since construction.

INSTRUMENTATION.—This paragraph provides information on both the frequency of measurement and the collection method used, allowing the user to better evaluate the reported water-level extremes by knowing whether they are based on continuous, monthly, or some other frequency of measurement.

DATUM.—This entry describes both the measuring point and the land-surface elevation at the well. The altitude of the land-surface datum is described in feet above the altitude datum; it is reported with a precision depending on the method of determination. The measuring point is described physically (such as top of casing, top of instrument shelf, and so forth), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above National Geodetic Vertical Datum of 1929 (NGVD 29); it is reported with a precision depending on the method of determination.

REMARKS.—This entry describes factors that may influence the water level in a well or the measurement of the water level, when various methods of measurement were begun, and the network (climatic, terrane, local, or areal effects) or the special project to which the well belongs.

PERIOD OF RECORD.—This entry indicates the time period for which records are published for the well, the month and year at the start of publication of water-level records by the USGS, and the words “to current year” if the records are to be continued into the following year. Time periods for which water-level records are available, but are not published by the USGS, may be noted.

EXTREMES FOR PERIOD OF RECORD.—This entry contains the highest and lowest instantaneously recorded or measured water levels of the period of published record, with respect to land-surface datum or sea level, and the dates of occurrence.

Water-Level Tables

A table of water levels follows the well description for each well. Water-level measurements in this report are given in feet with reference to either sea level or land-surface datum (lsd). Missing records are indicated by dashes in place of the water-level value.

For wells not equipped with recorders, water-level measurements were obtained periodically by steel or electric tape. Tables of periodic water-level measurements in these wells show the date of measurement and the measured water-level value.

Hydrographs

Hydrographs are a graphic display of water-level fluctuations over a period of time. In this report, current water year and, when appropriate, period-of-record hydrographs are shown. Hydrographs that display periodic water-level measurements show points that may be connected with a dashed line from one measurement to the next. Hydrographs that display recorder data show a solid line representing the mean water level recorded for each day. Missing data are indicated by a blank space or break in a hydrograph. Missing data may occur as a result of recorder malfunctions, battery failures, or mechanical problems related to the response of the recorder's float mechanism to water-level fluctuations in a well.

EXPLANATION OF GROUND-WATER-QUALITY DATA

Data Collection and Computation

The ground-water-quality data in this report were obtained as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some wells within a county but not for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality Statewide.

Most methods for collecting and analyzing water samples are described in the TWRIs. Procedures for on-site measurements and for collecting, treating, and shipping samples are given in TWRI, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. Also, detailed information on collecting, treating, and shipping samples may be obtained from the USGS District office (see address shown on back of title page in this report).

Laboratory Measurements

Analysis for sulfide and measurement of alkalinity, pH, water temperature, specific conductance, and dissolved oxygen are performed on site. All other sample analyses are performed at the USGS laboratory in Lakewood, Colorado, unless otherwise noted. Methods used by the USGS laboratory are given in TWRI, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4.

ACCESS TO USGS WATER DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the World Wide Web (WWW). These data may be accessed from *http://water.usgs.gov*.

Water-quality data and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on various media. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each Water Discipline District Office (See address that is shown on the back of the title page of this report.)

DEFINITION OF TERMS

Specialized technical terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. Terms such as algae, water level, precipitation are used in their common everyday meanings, definitions of which are given in standard dictionaries. Not all terms defined in this alphabetical list apply to every State. See also table for converting English units to International System (SI) Units . Other glossaries that also define water-related terms are accessible from *http://water.usgs.gov/glossaries.html*.

Acid neutralizing capacity (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point. This term designates titration of an "unfiltered" sample (formerly reported as alkalinity).

Acre-foot (AC-FT, acre-ft) is a unit of volume, commonly used to measure quantities of water used or stored, equivalent to the volume of water required to cover 1 acre to a depth of 1 foot and equivalent to 43,560 cubic feet, 325,851 gallons, or 1,233 cubic meters. (See also "Annual runoff")

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

Adjusted discharge is discharge data that have been mathematically adjusted (for example, to remove the effects of a daily tide cycle or reservoir storage).

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. (See also "Biomass" and "Dry weight")

Alkalinity is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a "filtered" sample.

Annual runoff is the total quantity of water that is discharged ("runs off") from a drainage basin in a year. Data reports may present annual runoff data as volumes in acre-feet, as discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches.

Annual 7-day minimum is the lowest mean value for any 7-consecutive-day period in a year. Annual 7-day minimum values are reported herein for the calendar year and the water year (October 1 through September 30). Most

low-flow frequency analyses use a climatic year (April 1-March 31), which tends to prevent the low-flow period from being artificially split between adjacent years. The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day, 10-year low-flow statistic.)

Aroclor is the registered trademark for a group of poly-chlorinated biphenyls that were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific 4-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type, and the last two digits represent the percentage weight of the hydrogen-substituted chlorine.

Artificial substrate is a device that purposely is 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 collected. 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 collection. (See also "Substrate")

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

Aspect is the direction toward which a slope faces with respect to the compass.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, whereas 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.

Bankfull stage, as used in this report, is the stage at which a stream first overflows its natural banks formed by floods with 1- to 3-year recurrence intervals.

Base discharge (for peak discharge) is a discharge value, determined for selected stations, above which peak discharge data are published. The base discharge at each station is selected so that an average of about three peak flows per year will be published. (See also "Peak flow")

Base flow is sustained flow of a stream in the absence of direct runoff. It includes natural and human-induced streamflows. Natural base flow is sustained largely by ground-water discharge.

Bed material is the sediment mixture of which a stream-bed, lake, pond, reservoir, or estuary bottom is composed. (See also "Bedload" and "Sediment")

Bedload is material in transport that primarily is supported by the streambed. In this report, bedload is considered to consist of particles in transit from the bed to the top of the bedload sampler nozzle (an elevation ranging from 0.25 to 0.5 foot). These particles are retained in the bedload sampler. A sample collected with a pressure-differential bedload sampler also may contain a component of the suspended load.

Bedload discharge (tons per day) is the rate of sediment moving as bedload, reported as dry weight, that passes through a cross section in a given time. NOTE: Bedload discharge values in this report may include a component of the suspended-sediment discharge. A correction may be necessary when computing the total sediment discharge by summing the bedload discharge and the suspended-sediment discharge. (See also "Bedload," "Dry weight," "Sediment," and "Suspended-sediment discharge")

Benthic organisms are the group of organisms inhabiting the bottom of an aquatic environment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are useful as indicators of water quality.

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 microorganisms, such as bacteria.

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

Biomass pigment ratio is an indicator of the total proportion of periphyton that are autotrophic (plants). This also is called the Autotrophic Index.

Blue-green algae (*Cyanophyta*) are a group of phytoplankton and periphyton organisms with a blue pigment in addition to a green pigment called chlorophyll. Blue-green algae can cause nuisance water-quality conditions in lakes and slow-flowing rivers; however, they are found commonly in streams throughout the year. The abundance of blue-green algae in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter (μm^3/mL). The abundance of blue-green algae in periphyton samples is given in cells per square centimeter (cells/cm^2) or biovolume per square centimeter ($\mu m^3/cm^2$). (See also "Phytoplankton"and "Periphyton")

Bottom material (See "Bed material")

Bulk electrical conductivity is the combined electrical conductivity of all material within a doughnut-shaped volume surrounding an induction probe. Bulk conductivity is affected by different physical and chemical properties of the material including the dissolved-solids content of the pore water, and the lithology and porosity of the rock.

Canadian Geodetic Vertical Datum 1928 is a geodetic datum derived from a general adjustment of Canada's first order level network in 1928.

Cell volume (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are used frequently in aquatic surveys as an indicator of algal production. However, cell numbers alone cannot represent true biomass because of considerable cell-size variation among the algal species. Cell volume (μm^3) is determined by obtaining critical cell measurements or cell dimensions (for example, length, width, height, or radius) for 20 to 50 cells of each important species to obtain an average biovolume per cell. Cells are categorized according to the correspondence of their cellular shape to the nearest geometric solid or combinations of simple solids (for example, spheres, cones, or cylinders). Representative formulae used to compute biovolume are as follows:

$$\text{sphere } 4/3\ \pi r^3 \quad \text{cone } 1/3\ \pi r^2 h \quad \text{cylinder } \pi r^2 h.$$

pi (π) is the ratio of the circumference to the diameter of a circle; pi = 3.14159….

From cell volume, total algal biomass expressed as biovolume (μm^3/mL) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes for all species.

Cells/volume refers to the number of cells of any organism that 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 volume, and generally are reported as cells or units per milliliter (mL) or liter (L).

Cfs-day (See "Cubic foot per second-day")

Channel bars, as used in this report, are the lowest prominent geomorphic features higher than the channel bed.

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 BOD or with carbonaceous organic pollution from sewage or industrial wastes. [See also "Biochemical oxygen demand (BOD)"]

***Clostridium perfringens** (C. perfringens)* is a spore-forming bacterium that is common in the feces of human and other warmblooded animals. Clostridial spores are being used experimentally as an indicator of past fecal contamination and the presence of microorganisms that are resistant to disinfection and environmental stresses. (See also "Bacteria")

Coliphages are viruses that infect and replicate in coliform bacteria. They are indicative of sewage contamination of water and of the survival and transport of viruses in the environment.

Color unit is produced by 1 milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Confined aquifer is a term used to describe an aquifer containing water between two relatively impermeable boundaries. The water level in a well tapping a confined aquifer stands above the top of the confined aquifer and can be higher or lower than the water table that may be present in the material above it. In some cases, the water level can rise above the ground surface, yielding a flowing well.

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.

Continuous-record station is a site where data are collected with sufficient frequency to define daily mean values and variations within a day.

Control designates a feature in the channel that physically affects the water-surface elevation and thereby determines the stage-discharge relation at the gage. This feature may be a constriction of the channel, a bedrock outcrop, a gravel bar, 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 saltwater.

Cubic foot per second (CFS, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point in 1 second. It is equivalent to approximately 7.48 gallons per second or approximately 449 gallons per minute, or 0.02832 cubic meters per second. The term "second-foot" sometimes is used synonymously with "cubic foot per second" but is now obsolete.

Cubic foot per second-day (CFS-DAY, Cfs-day, [$(ft^3/s)/d$]) 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, 1.98347 acre-feet, 646,317 gallons, or 2,446.6 cubic meters. The daily mean discharges reported in the daily value data tables numerically are equal to the daily volumes in cfs-days, and the totals also represent volumes in cfs-days.

Cubic foot per second per square mile [CFSM, $(ft^3/s)/mi^2$] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area. (See also "Annual runoff")

Daily mean suspended-sediment concentration is the time-weighted mean concentration of suspended sediment passing a stream cross section during a 24-hour day. (See also "Sediment" and "Suspended-sediment concentration")

Daily record station is a site where data are collected with sufficient frequency to develop a record of one or more data values per day. The frequency of data collection can range from continuous recording to data collection on a daily or near-daily basis.

Data collection platform (DCP) is an electronic instrument that collects, processes, and stores data from various sensors, and transmits the data by satellite data relay, line-of-sight radio, and/or landline telemetry.

Data logger is a microprocessor-based data acquisition system designed specifically to acquire, process, and store data. Data usually are downloaded from onsite data loggers for entry into office data systems.

Datum is a surface or point relative to which measurements of height and/or horizontal position are reported. A vertical datum is a horizontal surface used as the zero point for measurements of gage height, stage, or elevation; a horizontal datum is a reference for positions given in terms of latitude-longitude, State Plane coordinates, or Universal Transverse Mercator (UTM) coordinates. (See also "Gage datum," "Land-surface datum," "National Geodetic Vertical Datum of 1929," and "North American Vertical Datum of 1988")

Diatoms *(Bacillariophyta)* are unicellular or colonial algae with a siliceous cell wall. The abundance of diatoms in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter (μm^3/mL). The abundance of diatoms in periphyton samples is given in cells per square centimeter (cells/cm^2) or biovolume per square centimeter ($\mu m^3/cm^2$). (See also "Phytoplankton" and "Periphyton")

Diel is of or pertaining to a 24-hour period of time; a regular daily cycle.

Discharge, or **flow**, is the rate that matter passes through a cross section of a stream channel or other water body per unit of time. The term commonly refers to the volume of water (including, unless otherwise stated, any sediment or other constituents suspended or dissolved in the water) that passes a cross section in a stream channel, canal, pipeline, and so forth, within a given period of time (cubic feet per second). Discharge also can apply to the rate at which constituents, such as suspended sediment, bedload, and dissolved or suspended chemicals, pass through a cross section, in which cases the quantity is expressed as the mass of constituent that passes the cross section in a given period of time (tons per day).

Dissolved refers to that material in a representative water sample that passes through a 0.45-micrometer membrane filter. This is a convenient operational definition used by Federal and State agencies that collect water-quality data. Determinations of "dissolved" constituent concentrations are made on sample water that has been filtered.

Dissolved oxygen (DO) is the molecular oxygen (oxygen gas) dissolved in water. The concentration in water is a function of atmospheric pressure, temperature, and dissolved-solids concentration of the water. The ability of water to retain oxygen decreases with increasing temperature or dissolved-solids concentration. Photosynthesis and respiration by plants commonly cause diurnal variations in dissolved-oxygen concentration in water from some streams.

Dissolved solids concentration in water is the quantity of dissolved material in a sample of water. It 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, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. In the mathematical calculation, the bicarbonate value, in milligrams per liter, is multiplied by 0.4926 to convert it to carbonate. Alternatively, alkalinity concentration (as mg/L $CaCO_3$) can be converted to carbonate concentration by multiplying by 0.60.

Diversity index (H) (Shannon index) is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i \approx 1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n},$$

where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specific location is that area upstream from the location, measured in a horizontal plane, that has a common outlet at the site for its surface runoff from precipitation that normally drains by gravity

into a stream. Drainage areas given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

Drainage basin is a part of the Earth's surface that contains a drainage system with a common outlet for its surface runoff. (See "Drainage area")

Dry mass refers to the mass of residue present after drying in an oven at 105 °C, 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. (See also "Ash mass," "Biomass," and "Wet mass")

Dry weight refers to the weight of animal tissue after it has been dried in an oven at 65 °C until a constant weight is achieved. Dry weight represents total organic and inorganic matter in the tissue. (See also "Wet weight")

Embeddedness is the degree to which gravel-sized and larger particles are surrounded or enclosed by finer-sized particles. (See also "Substrate embeddedness class")

Enterococcus bacteria commonly are found in the feces of humans and other warmblooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria that produce pink to red colonies with black or reddish-brown precipitate after incubation at 41 °C on mE agar (nutrient medium for bacterial growth) and subsequent transfer to EIA medium. Enterococci include *Streptococcus feacalis, Streptococcus feacium, Streptococcus avium,* and their variants. (See also "Bacteria")

EPT Index is the total number of distinct taxa within the insect orders Ephemeroptera, Plecoptera, and Trichoptera. This index summarizes the taxa richness within the aquatic insects that generally are considered pollution sensitive; the index usually decreases with pollution.

Escherichia coli *(E. coli)* are bacteria present in the intestine and feces of warmblooded animals. *E. coli* are a member species of the fecal coliform group of indicator bacteria. In the laboratory, they are defined as those bacteria that produce yellow or yellow-brown colonies on a filter pad saturated with urea substrate broth after primary culturing for 22 to 24 hours at 44.5 °C on mTEC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample. (See also "Bacteria")

Estimated (E) value of a concentration is reported when an analyte is detected and all criteria for a positive result are met. If the concentration is less than the method detection limit (MDL), an E code will be reported with the value. If the analyte is identified qualitatively as present, but the quantitative determination is substantially more uncertain, the National Water Quality Laboratory will identify the result with an E code even though the measured value is greater than the MDL. A value reported with an E code should be used with caution. When no analyte is detected in a sample, the default reporting value is the MDL preceded by a less than sign (<). For bacteriological data, concentrations are reported as estimated when results are based on non-ideal colony counts.

Euglenoids (*Euglenophyta*) are a group of algae that usually are free-swimming and rarely creeping. They have the ability to grow either photosynthetically in the light or heterotrophically in the dark. (See also "Phytoplankton")

Extractable organic halides (EOX) are organic compounds that contain halogen atoms such as chlorine. These organic compounds are semivolatile and extractable by ethyl acetate from air-dried streambed sediment. The ethyl acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the streambed sediment.

Fecal coliform bacteria are present in the intestines or feces of warmblooded animals. They often are 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. (See also "Bacteria")

Fecal streptococcal bacteria are present in the intestines of warmblooded animals and are ubiquitous in the environment. They are characterized as gram-positive, cocci bacteria that are capable of growth in brain-heart infusion broth. In the laboratory, they are defined as all the organisms that 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. (See also "Bacteria")

Fire algae (*Pyrrhophyta*) are free-swimming unicells characterized by a red pigment spot. (See also "Phytoplankton")

Flow-duration percentiles are values on a scale of 100 that indicate the percentage of time for which a flow is not exceeded. For example, the 90th percentile of river flow is greater than or equal to 90 percent of all recorded flow rates.

Gage datum is a horizontal surface used as a zero point for measurement of stage or gage height. This surface usually is located slightly below the lowest point of the stream bottom such that the gage height is usually slightly greater than the maximum depth of water. Because the gage datum is not an actual physical object, the datum is usually defined by specifying the elevations of permanent reference marks such as bridge abutments and survey monuments, and the gage is set to agree with the reference marks. Gage datum is a local datum that is maintained independently of any national geodetic datum. However, if the elevation of the gage datum relative to the national datum (North American Vertical Datum of 1988 or National Geodetic Vertical Datum of 1929) has been determined, then the gage readings can be converted to elevations above the national datum by adding the elevation of the gage datum to the gage reading.

Gage height (G.H.) is the water-surface elevation, in feet above the gage datum. If the water surface is below the gage datum, the gage height is negative. Gage height often is used interchangeably with the more general term "stage," although gage height is more appropriate when used in reference to a reading on a gage.

Gage values are values that are recorded, transmitted, and/or computed from a gaging station. Gage values typically are collected at 5-, 15-, or 30-minute intervals.

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

Gas chromatography/flame ionization detector (GC/FID) is a laboratory analytical method used as a screening technique for semivolatile organic compounds that are extractable from water in methylene chloride.

Geomorphic channel units, as used in this report, are fluvial geomorphic descriptors of channel shape and stream velocity. Pools, riffles, and runs are types of geomorphic channel units considered for National Water-Quality Assessment (NAWQA) Program habitat sampling.

Green algae *(Chlorophyta)* are unicellular or colonial algae with chlorophyll pigments similar to those in terrestrial green plants. Some forms of green algae produce mats or floating "moss" in lakes. The abundance of green algae in phytoplankton samples is expressed as the number of cells per milliliter (cells/mL) or biovolume in cubic micrometers per milliliter (μm^3/mL). The abundance of green algae in periphyton samples is given in cells per square centimeter (cells/cm^2) or biovolume per square centimeter ($\mu m^3/cm^2$). (See also "Phytoplankton" and "Periphyton")

Habitat, as used in this report, includes all nonliving (physical) aspects of the aquatic ecosystem, although living components like aquatic macrophytes and riparian vegetation also are usually included. Measurements of habitat typically are made over a wider geographic scale than are measurements of species distribution.

Habitat quality index is the qualitative description (level 1) of instream habitat and riparian conditions surrounding the reach sampled. Scores range from 0 to 100 percent with higher scores indicative of desirable habitat conditions for aquatic life. Index only applicable to wadable streams.

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

High tide is the maximum height reached by each rising tide. The high-high and low-high tides are the higher and lower of the two high tides, respectively, of each tidal day. *See NOAA Web site: http://www.co-ops.nos.noaa.gov/tideglos.html*

Hilsenhoff's Biotic Index (HBI) is an indicator of organic pollution that uses tolerance values to weight taxa abundances; usually increases with pollution. It is calculated as follows:

$$HBI = sum\frac{(n)(a)}{N},$$

where n is the number of individuals of each taxon, a is the tolerance value of each taxon, and N is the total number of organisms in the sample.

Horizontal datum (See "Datum")

Hydrologic index stations referred to in this report are continuous-record gaging stations that have been selected as representative of streamflow patterns for their respective regions. Station locations are shown on index maps.

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as defined by the former Office of Water Data Coordination and delineated on the State Hydrologic Unit Maps by the USGS. Each hydrologic unit is identified by an 8-digit number.

Inch (IN., in.), in reference to streamflow, as used in this report, refers to the depth to which the drainage area would be covered with water if all of the runoff for a given time period were distributed uniformly on it. (See also "Annual runoff")

Instantaneous discharge is the discharge at a particular instant of time. (See also "Discharge")

International Boundary Commission Survey Datum refers to a geodetic datum established at numerous monuments along the United States-Canada boundary by the International Boundary Commission.

Island, as used in this report, is a mid-channel bar that has permanent woody vegetation, is flooded once a year, on average, and remains stable except during large flood events.

Laboratory reporting level (LRL) generally is equal to twice the yearly determined long-term method detection level (LT-MDL). The LRL controls false negative error. The probability of falsely reporting a nondetection for a sample that contained an analyte at a concentration equal to or greater than the LRL is predicted to be less than or equal to 1 percent. The value of the LRL will be reported with a "less than" (<) remark code for samples in which the analyte was not detected. The National Water Quality Laboratory (NWQL) collects quality-control data from selected analytical methods on a continuing basis to determine LT-MDLs and to establish LRLs. These values are reevaluated annually on the basis of the most current quality-control data and, therefore, may change. The LRL replaces the term 'non-detection value' (NDV).

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

Latent heat flux (often used interchangeably with latent heat-flux density) is the amount of heat energy that converts water from liquid to vapor (evaporation) or from vapor to liquid (condensation) across a specified cross-sectional area per unit time. Usually expressed in watts per square meter.

Light-attenuation coefficient, also known as the extinction coefficient, is a measure of water clarity. Light is attenuated according to the Lambert-Beer equation:

$$I = I_o e^{-\lambda L},$$

where I_o is the source light intensity, I is the light intensity at length L (in meters) from the source, λ is the light-attenuation coefficient, and e is the base of the natural logarithm. The light-attenuation coefficient is defined as

$$\lambda = -\frac{1}{L}\log_e \frac{I}{I_o}.$$

Lipid is any one of a family of compounds that are insoluble in water and that make up one of the principal components of living cells. Lipids include fats, oils, waxes, and steroids. Many environmental contaminants such as organochlorine pesticides are lipophilic.

Long-term method detection level (LT-MDL) is a detection level derived by determining the standard deviation of a minimum of 24 method detection limit (MDL) spike-sample measurements over an extended period of time. LT-MDL data are collected on a continuous basis to assess year-to-year variations in the LT-MDL. The LT-MDL controls false positive error. The chance of falsely reporting a concentration at or greater than the LT-MDL for a sample that did not contain the analyte is predicted to be less than or equal to 1 percent.

Low tide is the minimum height reached by each falling tide. The high-low and low-low tides are the higher and lower of the two low tides, respectively, of each tidal day. *See NOAA Web site: http://www.co-ops.nos.noaa.gov/tideglos.html*

Macrophytes are the macroscopic plants in the aquatic environment. The most common macrophytes are the rooted vascular plants that usually are arranged in zones in aquatic ecosystems and restricted in the area by the extent of illumination through the water and sediment deposition along the shoreline.

Mean concentration of suspended sediment (Daily mean suspended-sediment concentration) is the time-weighted concentration of suspended sediment passing a stream cross section during a given time period. (See also "Daily mean suspended-sediment concentration" and "Suspended-sediment concentration")

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

Mean high or **low tide** is the average of all high or low tides, respectively, over a specific period.

Mean sea level is a local tidal datum. It is the arithmetic mean of hourly heights observed over the National Tidal Datum Epoch. Shorter series are specified in the name; for example, monthly mean sea level and yearly mean sea level. In order that they may be recovered when needed, such datums are referenced to fixed points known as benchmarks. (See also "Datum")

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

Megahertz is a unit of frequency. One megahertz equals one million cycles per second.

Membrane filter is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

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.

Method detection limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99-percent confidence that the analyte concentration is greater than zero. It is determined from the analysis of a sample in a given matrix containing the analyte. At the MDL concentration, the risk of a false positive is predicted to be less than or equal to 1 percent.

Method of Cubatures is a method of computing discharge in tidal estuaries based on the conservation of mass equation.

Methylene blue active substances (MBAS) indicate the presence of detergents (anionic surfactants). 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, µg/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 kilogram (UG/KG, µg/kg) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the constituent per unit mass (kilogram) of the material analyzed. One microgram per kilogram is equivalent to 1 part per billion.

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in water as mass (micrograms) of constituent per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. One microgram per liter is equivalent to 1 part per billion.

Microsiemens per centimeter (US/CM, µS/cm) is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of Units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

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

Minimum reporting level (MRL) is the smallest measured concentration of a constituent that may be reliably reported by using a given analytical method.

Miscellaneous site, miscellaneous station, or miscellaneous sampling site is a site where streamflow, sediment, and/or water-quality data or water-quality or sediment samples are collected once, or more often on a random or discontinuous basis to provide better areal coverage for defining hydrologic and water-quality conditions over a broad area in a river basin.

Most probable number (MPN) is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. MPN is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

Multiple-plate samplers are artificial substrates of known surface area used for obtaining benthic invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

Nanograms per liter (NG/L, ng/L) is a unit expressing the concentration of chemical constituents in solution as mass (nanograms) of solute per unit volume (liter) of water. One million nanograms per liter is equivalent to 1 milligram per liter.

National Geodetic Vertical Datum of 1929 (NGVD 29) is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It formerly was called "Sea Level Datum of 1929" or "mean sea level." Although the datum was derived from the mean sea level at 26 tide stations**,** it does not necessarily represent local mean sea level at any particular place. *See NOAA Web site: http://www.ngs.noaa.gov/faq.shtml#WhatVD29VD88* (See "North American Vertical Datum of 1988")

Natural substrate refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives. (See also "Substrate")

Nekton are the consumers in the aquatic environment and consist of large, free-swimming organisms that are capable of sustained, directed mobility.

Nephelometric turbidity unit (NTU) is the measurement for reporting turbidity that is based on use of a standard suspension of formazin. Turbidity measured in NTU uses nephelometric methods that depend on passing specific light of a specific wavelength through the sample.

North American Datum of 1927 (NAD 27) is the horizontal control datum for the United States that was defined by a location and azimuth on the Clarke spheroid of 1866.

North American Datum of 1983 (NAD 83) is the horizontal control datum for the United States, Canada, Mexico, and Central America that is based on the adjustment of 250,000 points including 600 satellite Doppler stations that constrain the system to a geocentric origin. NAD 83 has been officially adopted as the legal horizontal datum for the United States by the Federal government.

North American Vertical Datum of 1988 (NAVD 88) is a fixed reference adopted as the official civilian vertical datum for elevations determined by Federal surveying and mapping activities in the United States. This datum was established in 1991 by minimum-constraint adjustment of the Canadian**,** Mexican, and United States first-order terrestrial leveling networks.

Open or **screened interval** is the length of unscreened opening or of well screen through which water enters a well, in feet below land surface.

Organic carbon (OC) is a measure of organic matter present in aqueous solution, suspension, or bottom sediment. May be reported as dissolved organic carbon (DOC), particulate organic carbon (POC), or total organic carbon (TOC).

Organic mass or **volatile mass** of a living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. Organic mass is expressed in the same units as for ash mass and dry mass. (See also "Ash mass," "Biomass," and "Dry mass")

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per 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.

Organochlorine compounds are any chemicals that contain carbon and chlorine. Organochlorine compounds that are important in investigations of water, sediment, and biological quality include certain pesticides and industrial compounds.

Parameter code is a 5-digit number used in the USGS computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent or property.

Partial-record station is a site where discrete measurements of one or more hydrologic parameters are obtained over a period of time without continuous data being recorded or computed. A common example is a crest-stage gage partial-record station at which only peak stages and flows are recorded.

Particle size is the diameter, in millimeters (mm), of a particle determined by sieve or sedimentation methods. The sedimentation method uses the principle of Stokes Law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, sedigraph) 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, as used in this report, agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	>0.00024 - 0.004	Sedimentation
Silt	>0.004 - 0.062	Sedimentation
Sand	>0.062 - 2.0	Sedimentation/sieve
Gravel	>2.0 - 64.0	Sieve
Cobble	>64 - 256	Manual measurement
Boulder	>256	Manual measurement

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. For the sedimentation method, 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.

Peak flow (peak stage) is an instantaneous local maximum value in the continuous time series of streamflows or stages, preceded by a period of increasing values and followed by a period of decreasing values. Several peak values ordinarily occur in a year. The maximum peak value in a year is called the annual peak; peaks lower than the annual peak are called secondary peaks. Occasionally, the annual peak may not be the maximum value for the year; in such cases, the maximum value occurs at midnight at the beginning or end of the year, on the recession from or rise toward a higher peak in the adjoining year. If values are recorded at a discrete series of times, the peak recorded value may be taken as an approximation of the true peak, which may occur between the recording instants. If the values are recorded with finite precision, a sequence of equal recorded values may occur at the peak; in this case, the first value is taken as the peak.

Percent composition or **percent of total** 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, weight, mass, or volume.

Percent shading is a measure of the amount of sunlight potentially reaching the stream. A clinometer is used to measure left and right bank canopy angles. These values are added together, divided by 180, and multiplied by 100 to compute percentage of shade.

Periodic-record station is a site where stage, discharge, sediment, chemical, physical, or other hydrologic measurements are made one or more times during a year but at a frequency insufficient to develop a daily record.

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

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

pH of water is the negative logarithm of the hydrogen-ion activity. Solutions with pH less than 7.0 standard units are termed "acidic," and solutions with a pH greater than 7.0 are termed "basic." Solutions with a pH of 7.0 are neutral. The presence and concentration of many dissolved chemical constituents found in water are affected, in part, by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms also are affected, in part, by the hydrogen-ion activity of water.

Phytoplankton is the plant part of the plankton. They usually are 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 commonly are known as algae. (See also "Plankton")

Picocurie (PC, pCi) is one-trillionth (1×10^{-12}) of the amount of radioactive nuclide represented by a curie (Ci). A curie is the quantity of radioactive nuclide that yields 3.7×10^{10} radioactive disintegrations per second (dps). A picocurie yields 0.037 dps, or 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Polychlorinated naphthalenes (PCNs) are industrial chemicals that are mixtures of chlorinated naphthalene compounds. They have properties and applications similar to polychlorinated biphenyls (PCBs) and have been identified in commercial PCB preparations.

Pool, as used in this report, is a small part of a stream reach with little velocity, commonly with water deeper than surrounding areas.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photo-synthetic 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 (carbon method) by the plants.

Primary productivity (carbon method) is expressed as milligrams of carbon per area per unit time [mg C/(m^2/time)] for periphyton and macrophytes or per volume [mg C/(m^3/time)] for phytoplankton. The carbon method defines 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 with unenriched water samples. Unit time may be either the hour or day, depending on the incubation period. (See also "Primary productivity")

Primary productivity (oxygen method) is expressed as milligrams of oxygen per area per unit time [mg O/(m^2/time)] for periphyton and macrophytes or per volume [mg O/(m^3/time)] for phytoplankton. The oxygen method defines 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. (See also "Primary productivity")

Radioisotopes are isotopic forms of elements that exhibit radioactivity. Isotopes are varieties of a chemical element that differ in atomic weight but are very nearly alike in chemical properties. The difference arises because the atoms of the isotopic forms of an element differ in the number of neutrons in the nucleus; for example, ordinary chlorine is a mixture of isotopes having atomic weights of 35 and 37, and the natural mixture has an atomic weight of about 35.453. Many of the elements similarly exist as mixtures of isotopes, and a great many new isotopes have been produced in the operation of nuclear devices such as the cyclotron. There are 275 isotopes of the 81 stable elements, in addition to more than 800 radioactive isotopes.

Reach, as used in this report, is a length of stream that is chosen to represent a uniform set of physical, chemical, and biological conditions within a segment. It is the principal sampling unit for collecting physical, chemical, and biological data.

Recoverable from bed (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. (See also "Bed material")

Recurrence interval, also referred to as return period, is the average time, usually expressed in years, between occurrences of hydrologic events of a specified type (such as exceedances of a specified high flow or nonexceedance of a specified low flow). The terms "return period" and "recurrence interval" do not imply regular cyclic occurrence. The actual times between occurrences vary randomly, with most of the times being less than the average and a few being substantially greater than the average. For example, the 100-year flood is the flow rate that is exceeded by the annual maximum peak flow at intervals whose average length is 100 years (that is, once in 100 years, on average); almost two-thirds of all exceedances of the 100-year flood occur less than 100 years after the previous exceedance, half occur less than 70 years after the previous exceedance, and about one-eighth occur more than 200 years after the previous exceedance. Similarly, the 7-day, 10-year low flow ($7Q_{10}$) is the flow rate below which the annual minimum 7-day-mean flow dips at intervals whose average length is 10 years (that is, once in 10 years, on average); almost two-thirds of the nonexceedances of the $7Q_{10}$ occur less than 10 years after the previous nonexceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous nonexceedance. The recurrence interval for annual events is the reciprocal of the annual probability of occurrence. Thus, the 100-year flood has a 1-percent chance of being exceeded by the maximum peak flow in any year, and there is a 10-percent chance in any year that the annual minimum 7-day-mean flow will be less than the $7Q_{10}$.

Replicate samples are a group of samples collected in a manner such that the samples are thought to be essentially identical in composition.

Return period (See "Recurrence interval")

Riffle, as used in this report, is a shallow part of the stream where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.

River mileage is the curvilinear distance, in miles, measured upstream from the mouth along the meandering path of a stream channel in accordance with Bulletin No. 14 (October 1968) of the Water Resources Council and typically is used to denote location along a river.

Run, as used in this report, is a relatively shallow part of a stream with moderate velocity and little or no surface turbulence.

Runoff is the quantity of water that is discharged ("runs off") from a drainage basin during a given time period. Runoff data may be presented as volumes in acre-feet, as mean discharges per unit of drainage area in cubic feet per second per square mile, or as depths of water on the drainage basin in inches. (See also "Annual runoff")

Sea level, as used in this report, refers to one of the two commonly used national vertical datums (NGVD 1929 or NAVD 1988). See separate entries for definitions of these datums.

Sediment is solid material that originates mostly from disintegrated rocks; when transported by, suspended in, or deposited from water, it is referred to as "fluvial sediment." Sediment 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 affected by environmental and land-use factors. Some major factors are topography, soil characteristics, land cover, and depth and intensity of precipitation.

Sensible heat flux (often used interchangeably with latent sensible heat-flux density) is the amount of heat energy that moves by turbulent transport through the air across a specified cross-sectional area per unit time and goes to heating (cooling) the air. Usually expressed in watts per square meter.

Seven-day, 10-year low flow ($7Q_{10}$) is the discharge below which the annual 7-day minimum flow falls in 1 year out of 10 on the long-term average. The recurrence interval of the $7Q_{10}$ is 10 years; the chance that the annual 7-day minimum flow will be less than the $7Q_{10}$ is 10 percent in any given year. (See also "Annual 7-day minimum" and "Recurrence interval")

Shelves, as used in this report, are streambank features extending nearly horizontally from the flood plain to the lower limit of persistent woody vegetation.

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. Sodium hazard in water is an index that can be used to evaluate the suitability of water for irrigating crops.

Soil heat flux (often used interchangeably with soil heat-flux density) is the amount of heat energy that moves by conduction across a specified cross-sectional area of soil per unit time and goes to heating (or cooling) the soil. Usually expressed in watts per square meter.

Soil-water content is the water lost from the soil upon drying to constant mass at 105 °C; expressed either as mass of water per unit mass of dry soil or as the volume of water per unit bulk volume of soil.

Specific electrical conductance (conductivity) is a measure of the capacity of water (or other media) to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific electrical conductance is a function of the types and quantity of dissolved substances in water and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is from 55 to 75 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.

Stable isotope ratio (per MIL) is a unit expressing the ratio of the abundance of two radioactive isotopes. Isotope ratios are used in hydrologic studies to determine the age or source of specific water, to evaluate mixing of different water, as an aid in determining reaction rates, and other chemical or hydrologic processes.

Stage (See "Gage height")

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

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.

Substrate embeddedness class is a visual estimate of riffle streambed substrate larger than gravel that is surrounded or covered by fine sediment (<2 mm, sand or finer). Below are the class categories expressed as the percentage covered by fine sediment:

0	no gravel or larger substrate	3	26-50 percent
1	> 75 percent	4	5-25 percent
2	51-75 percent	5	< 5 percent

Surface area of a lake is that area (acres) encompassed by the boundary of the lake as shown on USGS topographic maps, or other available maps or photographs. Because surface area changes with lake stage, surface areas listed in this report represent those determined for the stage at the time the maps or photographs were obtained.

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

Surrogate is an analyte that behaves similarly to a target analyte, but that is highly unlikely to occur in a sample. A surrogate is added to a sample in known amounts before extraction and is measured with the same laboratory procedures used to measure the target analyte. Its purpose is to monitor method performance for an individual sample.

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

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative suspended water-sediment sample that is retained on a 0.45-micrometer 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 directly analyzing the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total recoverable concentrations of the constituent. (See also "Suspended")

Suspended sediment is the sediment maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid. (See also "Sediment")

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 foot above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The analytical technique uses the mass of all of the sediment and the net weight of the water-sediment mixture in a sample to compute the suspended-sediment concentration. (See also "Sediment" and "Suspended sediment")

Suspended-sediment discharge (tons/d) is the rate of sediment transport, as measured by dry mass or volume, that passes a cross section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft^3/s) x 0.0027. (See also "Sediment," "Suspended sediment," and "Suspended-sediment concentration")

Suspended-sediment load is a general term that refers to a given characteristic of the material in suspension that passes a point during a specified period of time. The term needs to be qualified, such as "annual suspended-sediment load" or "sand-size suspended-sediment load," and so on. It is not synonymous with either suspended-sediment discharge or concentration. (See also "Sediment")

Suspended solids, total residue at 105 °C concentration is the concentration of inorganic and organic material retained on a filter, expressed as milligrams of dry material per liter of water (mg/L). An aliquot of the sample is used for this analysis.

Suspended, total is the total amount of a given constituent in the part of a water-sediment sample that is retained on a 0.45-micrometer membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. 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 directly analyzing portions of the suspended material collected on the filter or, more commonly, by difference, on the basis of determinations of (1) dissolved and (2) total concentrations of the constituent. (See also "Suspended")

Synoptic studies are short-term investigations of specific water-quality conditions during selected seasonal or hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

Taxa (Species) richness is the number of species (taxa) present in a defined area or sampling unit.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchial 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:	Arthropeda
Class:	Insecta
Order:	Ephemeroptera
Family:	Ephemeridae
Genus:	*Hexagenia*
Species:	*Hexagenia limbata*

Thalweg is the line formed by connecting points of minimum streambed elevation (deepest part of the channel).

Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder" is used in the table descriptions 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 resulting from the mixing of flow proportionally to the duration of the concentration.

Tons per acre-foot (T/acre-ft) is the dry mass (tons) of a constituent per unit volume (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, tons/d) is a common chemical or sediment discharge unit. It is the quantity of a substance in solution, in suspension, or as bedload that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric ton per day.

Total is the amount of a given constituent in a representative whole-water (unfiltered) 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 at least 95 percent of the constituent in the sample.)

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. This group includes coliforms that inhabit the intestine of warmblooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that 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 of sample. (See also "Bacteria")

Total discharge is the quantity of a given constituent, measured as dry mass or volume, that passes a stream cross section per unit of time. When referring to constituents other than water, this term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

Total in bottom material is the amount of a given constituent in a representative sample of bottom material. 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 judge when the results should be reported as "total in bottom material."

Total length (fish) is the straight-line distance from the anterior point of a fish specimen's snout, with the mouth closed, to the posterior end of the caudal (tail) fin, with the lobes of the caudal fin squeezed together.

Total load refers to all of a constituent in transport. When referring to sediment, it includes suspended load plus bed load.

Total organism count is the number of organisms collected and enumerated in any particular sample. (See also "Organism count/volume")

Total recoverable is the amount of a given constituent in a whole-water sample after a 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 for whole-water samples, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures may produce different analytical results.

Total sediment discharge is the mass of suspended-sediment plus bed-load transport, measured as dry weight, that passes a cross section in a given time. It is a rate and is reported as tons per day. (See also "Bedload," "Bedload discharge," "Sediment," "Suspended sediment," and "Suspended-sediment concentration")

Total sediment load or **total load** is the sediment in transport as bedload and suspended-sediment load. The term may be qualified, such as "annual suspended-sediment load" or "sand-size suspended-sediment load," and so on. It differs from total sediment discharge in that load refers to the material, whereas discharge refers to the quantity of

material, expressed in units of mass per unit time. (See also "Sediment," "Suspended-sediment load," and "Total load")

Transect, as used in this report, is a line across a stream perpendicular to the flow and along which measurements are taken, so that morphological and flow characteristics along the line are described from bank to bank. Unlike a cross section, no attempt is made to determine known elevation points along the line.

Turbidity is the reduction in the transparency of a solution because of the presence of suspended and some dissolved substances. The measurement technique records the collective optical properties of the solution that cause light to be scattered and attenuated rather than transmitted in straight lines; the higher the intensity of scattered or attenuated light, the higher the value of the turbidity. Turbidity is expressed in nephelometric turbidity units (NTU). Depending on the method used, the turbidity units as NTU can be defined as the intensity of light of a specified wavelength scattered or attenuated by suspended particles or absorbed at a method specified angle, usually 90 degrees, from the path of the incident light. Currently approved methods for the measurement of turbidity in the USGS include those that conform to USEPA Method 180.1, ASTM D1889-00, and ISO 7027. Measurements of turbidity by these different methods and different instruments are unlikely to yield equivalent values.

Ultraviolet (UV) absorbance (absorption) at 254 or 280 nanometers is a measure of the aggregate concentration of the mixture of UV absorbing organic materials dissolved in the analyzed water, such as lignin, tannin, humic substances, and various aromatic compounds. UV absorbance (absorption) at 254 or 280 nanometers is measured in UV absorption units per centimeter of path length of UV light through a sample.

Unconfined aquifer is an aquifer whose upper surface is a water table free to fluctuate under atmospheric pressure. (See "Water-table aquifer")

Vertical datum (See "Datum")

Volatile organic compounds (VOCs) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and, subsequently, analyzed by gas chromatography. Many VOCs are human-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They often are components of fuels, solvents, hydraulic fluids, paint thinners, and dry-cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human-health concern because many are toxic and are known or suspected human carcinogens.

Water table is that surface in a ground-water body at which the water pressure is equal to the atmospheric pressure.

Water-table aquifer is an unconfined aquifer within which the water table is found.

Water year in USGS 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, 2003, is called the "2003 water year."

Watershed (See "Drainage basin")

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.

Wet mass is the mass of living matter plus contained water. (See also "Biomass" and "Dry mass")

Wet weight refers to the weight of animal tissue or other substance including its contained water. (See also "Dry weight")

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

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and often are 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. (See also "Plankton")

Techniques of Water-Resources Investigations of the U.S. Geological Survey

The USGS publishes a series of manuals, the Techniques of Water-Resources Investigations, 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.

Reports in the Techniques of Water-Resources Investigations series, which are listed below, are online at *http://water.usgs.gov/pubs/twri/*. Printed copies are for sale by the USGS, Information Services, Box 25286, Federal Center, Denver, CO 80225 (authorized agent of the Superintendent of Documents, Government Printing Office), telephone 1-888-ASK-USGS. Please telephone 1-888-ASK-USGS for current prices, and refer to the title, book number, chapter number, and mention the "U.S. Geological Survey Techniques of Water-Resources Investigations." Products can then be ordered by telephone, or online at http://www.usgs.gov/sales.html, or by FAX to (303)236-469 of an order form available online at *http://mac.usgs.gov/isb/pubs/forms/*. Prepayment by major credit card or by a check or money order payable to the "U.S. Geological Survey" is required.

Book 1. Collection of Water Data by Direct Measurement

Section D. Water Quality

1–D1.*Water temperature—Influential factors, field measurement, and data presentation*, by H.H. Stevens, Jr., J.F. Ficke, and G.F. Smoot: USGS–TWRI book 1, chap. D1. 1975. 65 p.
1–D2.*Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W. Wood: USGS–TWRI book 1, chap. D2. 1976. 24 p.

Book 2. Collection of Environmental Data

Section D. Surface Geophysical Methods

2–D1.*Application of surface geophysics to ground-water investigations,* by A.A.R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS–TWRI book 2, chap. D1. 1974. 116 p.
2–D2.*Application of seismic-refraction techniques to hydrologic studies,* by F.P. Haeni: USGS–TWRI book 2, chap. D2. 1988. 86 p.

Section E. Subsurface Geophysical Methods

2–E1.*Application of borehole geophysics to water-resources investigations,* by W.S. Keys and L.M. MacCary: USGS–TWRI book 2, chap. E1. 1971. 126 p.
2–E2.*Borehole geophysics applied to ground-water investigations,* by W.S. Keys: USGS–TWRI book 2, chap. E2. 1990. 150 p.

Section F. Drilling and Sampling Methods

2–F1.*Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and W.E. Teasdale: USGS–TWRI book 2, chap. F1. 1989. 97 p.

Book 3. Applications of Hydraulics

Section A. Surface-Water Techniques

3–A1.*General field and office procedures for indirect discharge measurements,* by M.A. Benson and Tate Dalrymple: USGS–TWRI book 3, chap. A1. 1967. 30 p.

3–A2.*Measurement of peak discharge by the slope-area method,* by Tate Dalrymple and M.A. Benson: USGS–TWRI book 3, chap. A2. 1967. 12 p.
3–A3.*Measurement of peak discharge at culverts by indirect methods,* by G.L. Bodhaine: USGS–TWRI book 3, chap. A3. 1968. 60 p.
3–A4.*Measurement of peak discharge at width contractions by indirect methods,* by H.F. Matthai: USGS-TWRI book 3, chap. A4. 1967. 44 p.
3–A5.*Measurement of peak discharge at dams by indirect methods,* by Harry Hulsing: USGS–TWRI book 3, chap. A5. 1967. 29 p.
3–A6.*General procedure for gaging streams,* by R.W. Carter and Jacob Davidian: USGS–TWRI book 3, chap. A6. 1968. 13 p.
3–A7.*Stage measurement at gaging stations,* by T.J. Buchanan and W.P. Somers: USGS–TWRI book 3, chap. A7. 1968. 28 p.
3–A8.*Discharge measurements at gaging stations,* by T.J. Buchanan and W.P. Somers: USGS–TWRI book 3, chap. A8. 1969. 65 p.
3–A9.*Measurement of time of travel in streams by dye tracing,* by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS–TWRI book 3, chap. A9. 1989. 27 p.
3–Al0.*Discharge ratings at gaging stations,* by E.J. Kennedy: USGS–TWRI book 3, chap. A10. 1984. 59 p.
3–A11.*Measurement of discharge by the moving-boat method,* by G.F. Smoot and C.E. Novak: USGS–TWRI book 3, chap. A11. 1969. 22 p.
3–A12.*Fluorometric procedures for dye tracing*, Revised, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS–TWRI book 3, chap. A12. 1986. 34 p.
3–A13.*Computation of continuous records of streamflow*, by E.J. Kennedy: USGS–TWRI book 3, chap. A13. 1983. 53 p.
3–A14.*Use of flumes in measuring discharge,* by F.A. Kilpatrick and V.R. Schneider: USGS–TWRI book 3, chap. A14. 1983. 46 p.
3–A15.*Computation of water-surface profiles in open channels,* by Jacob Davidian: USGS–TWRI book 3, chap. A15. 1984. 48 p.
3–A16.*Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS–TWRI book 3, chap. A16. 1985. 52 p.
3–A17.*Acoustic velocity meter systems,* by Antonius Laenen: USGS–TWRI book 3, chap. A17. 1985. 38 p.
3–A18.*Determination of stream reaeration coefficients by use of tracers,* by F.A. Kilpatrick, R.E. Rathbun, Nobuhiro Yotsukura, G.W. Parker, and L.L. DeLong: USGS–TWRI book 3, chap. A18. 1989. 52 p.
3–A19.*Levels at streamflow gaging stations*, by E.J. Kennedy: USGS–TWRI book 3, chap. A19. 1990. 31 p.
3–A20.*Simulation of soluble waste transport and buildup in surface waters using tracers*, by F.A. Kilpatrick: USGS–TWRI book 3, chap. A20. 1993. 38 p.
3–A21*Stream-gaging cableways,* by C. Russell Wagner: USGS–TWRI book 3, chap. A21. 1995. 56 p.

Section B. Ground-Water Techniques

3–B1. *Aquifer-test design, observation, and data analysis,* by R.W. Stallman: USGS–TWRI book 3, chap. B1. 1971. 26 p.
3–B2.*Introduction to ground-water hydraulics, a programed text for self-instruction*, by G.D. Bennett: USGS–TWRI book 3, chap. B2. 1976. 172 p.
3–B3.*Type curves for selected problems of flow to wells in confined aquifers*, by J.E. Reed: USGS–TWRI book 3, chap. B3. 1980. 106 p.
3–B4.*Regression modeling of ground-water flow,* by R.L. Cooley and R.L. Naff: USGS–TWRI book 3, chap. B4. 1990. 232 p.
3–B4.*Supplement 1. Regression modeling of ground-water flow—Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems,* by R.L. Cooley: USGS–TWRI book 3, chap. B4. 1993. 8 p.
3–B5.*Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems—An introduction*, by O.L. Franke, T.E. Reilly, and G.D. Bennett: USGS–TWRI book 3, chap. B5. 1987. 15 p.
3–B6.*The principle of superposition and its application in ground-water hydraulics,* by T.E. Reilly, O.L. Franke, and G.D. Bennett: USGS–TWRI book 3, chap. B6. 1987. 28 p.

3–B7.*Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow,* by E.J. Wexler: USGS–TWRI book 3, chap. B7. 1992. 190 p.
3–B8.*System and boundary conceptualization in ground-water flow simulation,* by T.E. Reilly: USGS–TWRI book 3, chap. B8. 2001. 29 p.

Section C. Sedimentation and Erosion Techniques

3–C1.*Fluvial sediment concepts,* by H.P. Guy: USGS–TWRI book 3, chap. C1. 1970. 55 p.
3–C2.*Field methods for measurement of fluvial sediment*, by T.K. Edwards and G.D. Glysson: USGS–TWRI book 3, chap. C2. 1999. 89 p.
3–C3.*Computation of fluvial-sediment discharge,* by George Porterfield: USGS–TWRI book 3, chap. C3. 1972. 66 p.

Book 4. Hydrologic Analysis and Interpretation

Section A. Statistical Analysis

4–A1.*Some statistical tools in hydrology*, by H.C. Riggs: USGS–TWRI book 4, chap. A1. 1968. 39 p.
4–A2.*Frequency curves,* by H.C. Riggs: USGS–TWRI book 4, chap. A2. 1968. 15 p.
4–A3.*Statistical methods in water resources*, by D.R. Helsel and R.M. Hirsch: USGS–TWRI book 4, chap. A3. 1991. Available only online at http://water.usgs.gov/pubs/twri/twri4a3/. (Accessed August 30, 2002.)

Section B. Surface Water

4–B1.*Low-flow investigations,* by H.C. Riggs: USGS–TWRI book 4, chap. B1. 1972. 18 p.
4–B2.*Storage analyses for water supply*, by H.C. Riggs and C.H. Hardison: USGS–TWRI book 4, chap. B2. 1973. 20 p.
4–B3.*Regional analyses of streamflow characteristics,* by H.C. Riggs: USGS–TWRI book 4, chap. B3. 1973. 15 p.

Section D. Interrelated Phases of the Hydrologic Cycle

4–D1.*Computation of rate and volume of stream depletion by wells*, by C.T. Jenkins: USGS–TWRI book 4, chap. D1. 1970. 17 p.

Book 5. Laboratory Analysis

Section A. Water Analysis

5–A1.*Methods for determination of inorganic substances in water and fluvial sediments,* by M.J. Fishman and L.C. Friedman, editors: USGS–TWRI book 5, chap. A1. 1989. 545 p.
5–A2.*Determination of minor elements in water by emission spectroscopy,* by P.R. Barnett and E.C. Mallory, Jr.: USGS–TWRI book 5, chap. A2. 1971. 31 p.
5–A3.*Methods for the determination of organic substances in water and fluvial sediments*, edited by R.L. Wershaw, M.J. Fishman, R.R. Grabbe, and L.E. Lowe: USGS–TWRI book 5, chap. A3. 1987. 80 p.
5–A4.*Methods for collection and analysis of aquatic biological and microbiological samples,* by L.J. Britton and P.E. Greeson, editors: USGS–TWRI book 5, chap. A4. 1989. 363 p.
5–A5.*Methods for determination of radioactive substances in water and fluvial sediments,* by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS–TWRI book 5, chap. A5. 1977. 95 p.
5–A6.*Quality assurance practices for the chemical and biological analyses of water and fluvial sediments,* by L.C. Friedman and D.E. Erdmann: USGS–TWRI book 5, chap. A6. 1982. 181 p.

Section C. Sediment Analysis

5–C1.*Laboratory theory and methods for sediment analysis*, by H.P. Guy: USGS–TWRI book 5, chap. C1. 1969. 58 p.

Book 6. Modeling Techniques

Section A. Ground Water

6–A1.*A modular three-dimensional finite-difference ground-water flow model*, by M.G. McDonald and A.W. Harbaugh: USGS–TWRI book 6, chap. A1. 1988. 586 p.
6–A2.*Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model,* by S.A. Leake and D.E. Prudic: USGS–TWRI book 6, chap. A2. 1991. 68 p.
6–A3.*A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 1: Model Description and User's Manual,* by L.J. Torak: USGS–TWRI book 6, chap. A3. 1993. 136 p.
6–A4.*A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions,* by R.L. Cooley: USGS–TWRI book 6, chap. A4. 1992. 108 p.
6–A5.*A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 3: Design philosophy and programming details,* by L.J. Torak: USGS–TWRI book 6, chap. A5. 1993. 243 p.
6–A6.*A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction*, by Eric D. Swain and Eliezer J. Wexler: USGS–TWRI book 6, chap. A6. 1996. 125 p.
6–A7.*User's guide to SEAWAT: A computer program for simulation of three-dimensional variable-density ground-water flow*, by Weixing Guo and Christian D. Langevin: USGS–TWRI book 6, chap. A7. 2002.
77 p.

Book 7. Automated Data Processing and Computations

Section C. Computer Programs

7–C1.*Finite difference model for aquifer simulation in two dimensions with results of numerical experiments,* by P.C. Trescott, G.F. Pinder, and S.P. Larson: USGS–TWRI book 7, chap. C1. 1976. 116 p.
7–C2.*Computer model of two-dimensional solute transport and dispersion in ground water*, by L.F. Konikow and J.D. Bredehoeft: USGS–TWRI book 7, chap. C2. 1978. 90 p.
7–C3.*A model for simulation of flow in singular and interconnected channels,* by R.W. Schaffranek, R.A. Baltzer, and D.E. Goldberg: USGS–TWRI book 7, chap. C3. 1981. 110 p.

Book 8. Instrumentation

Section A. Instruments for Measurement of Water Level

8–A1.*Methods of measuring water levels in deep wells,* by M.S. Garber and F.C. Koopman: USGS–TWRI book 8, chap. A1. 1968. 23 p.
8–A2.*Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS–TWRI book 8, chap. A2. 1983. 57 p.

Section B. Instruments for Measurement of Discharge

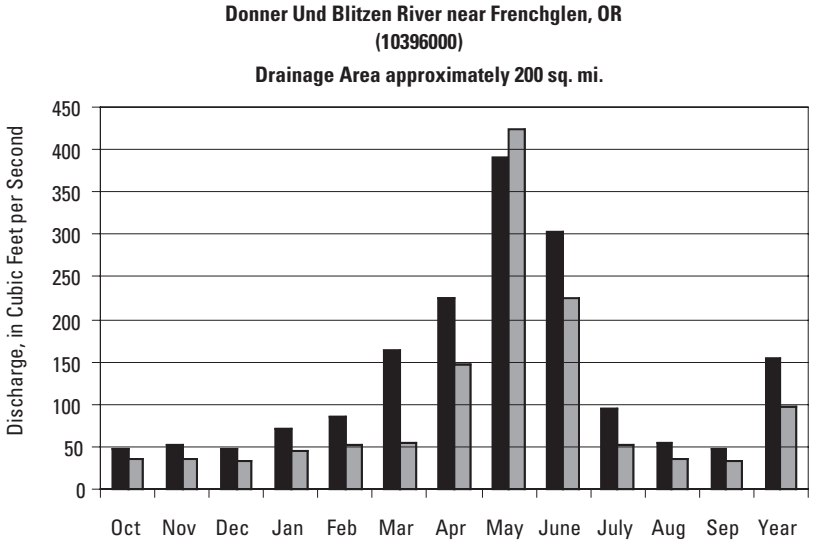
8–B2.*Calibration and maintenance of vertical-axis type current meters,* by G.F. Smoot and C.E. Novak: USGS–TWRI book 8, chap. B2. 1968. 15 p.

Book 9. Handbooks for Water-Resources Investigations

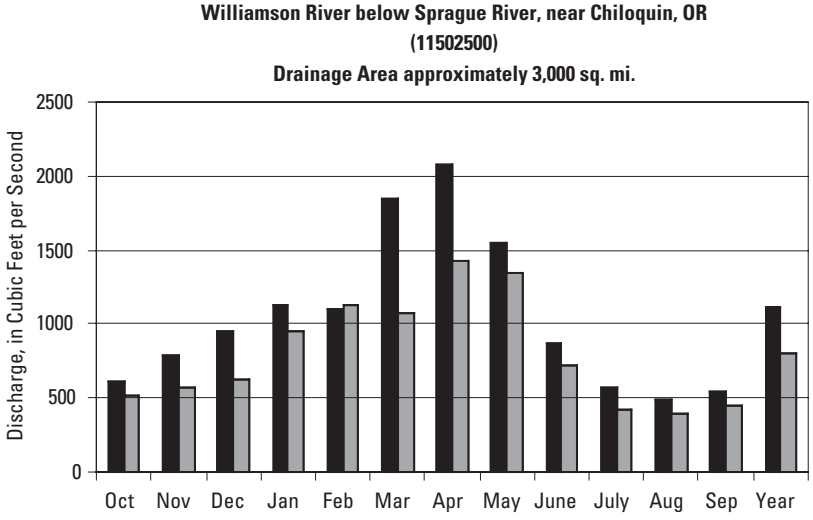
Section A. National Field Manual for the Collection of Water-Quality Data

9–A1.*National field manual for the collection of water-quality data: Preparations for water sampling*, by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A1. 1998. 47 p.

9–A2.*National field manual for the collection of water-quality data: Selection of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A2. 1998. 94 p.
9–A3.*National field manual for the collection of water-quality data: Cleaning of equipment for water sampling*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A3. 1998. 75 p.
9–A4.*National field manual for the collection of water-quality data: Collection of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A4. 1999. 156 p.
9–A5.*National field manual for the collection of water-quality data: Processing of water samples*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS–TWRI book 9, chap. A5. 1999, 149 p.
9–A6.*National field manual for the collection of water-quality data: Field measurements*, edited by F.D. Wilde and D.B. Radtke: USGS–TWRI book 9, chap. A6. 1998. Variously paginated.
9–A7.*National field manual for the collection of water-quality data: Biological indicators*, edited by D.N. Myers and F.D. Wilde: USGS–TWRI book 9, chap. A7. 1997 and 1999. Variously paginated.
9–A8.*National field manual for the collection of water-quality data: Bottom-material samples*, by D.B. Radtke: USGS–TWRI book 9, chap. A8. 1998. 48 p.
9–A9.*National field manual for the collection of water-quality data: Safety in field activities*, by S.L. Lane and R.G. Fay: USGS–TWRI book 9, chap. A9. 1998. 60 p.

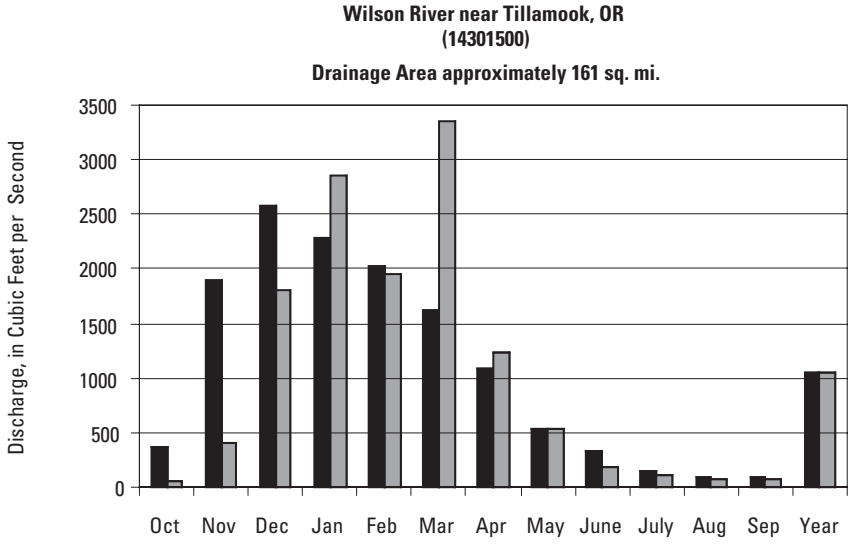


	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Year
Median	48	51	48.3	70.7	85	164	224	390	304	93.6	55	47.4	153
2003	34.6	34.9	33.5	44.1	52.5	53.6	147	423	225	51.9	35.5	33.5	97.6

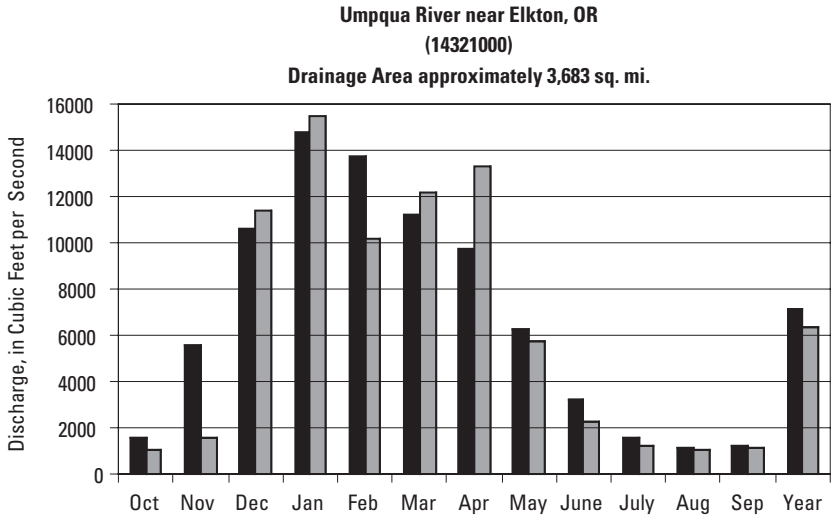


	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Year
Median	615	786	956	1122	1106	1848	2081	1548	864	564	488	548	1118
2003	522	573	619	955	1129	1079	1433	1343	717	417	392	452	800

Figure 3. Discharge during 2003 water year compared with median discharge for period 1971-2000 for two representative gaging stations in Eastern Oregon.



	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Year
Median	366	1900	2586	2292	2020	1617	1078	541	325	149	92	91	1051
2003	55.2	409	1800	2854	1952	3347	1241	535	181	104	76.5	72.9	1051



	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Year
Median	1544	5577	10580	14780	13700	11240	9716	6248	3219	1582	1141	1254	7140
2003	1083	1607	11350	15500	10160	12200	13300	5771	2275	1243	1007	1089	6370

Figure 4. Discharge during 2003 water year compared with median discharge for period 1971-2000 for two representative gaging stations in Western Oregon.i

SURFACE-WATER-DISCHARGE AND SURFACE-WATER-QUALITY RECORDS

Remarks Codes

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

PRINT OUTPUT	REMARK
E	Value is estimated.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
M	Presence of material verified, but not quantified.
N	Presumptive evidence of presence of material.
U	Material specifically analyzed for, but not detected.
A	Value is an average.
V	Analyte was detected in both the environmental sample and the associated blanks
S	Most probable value.

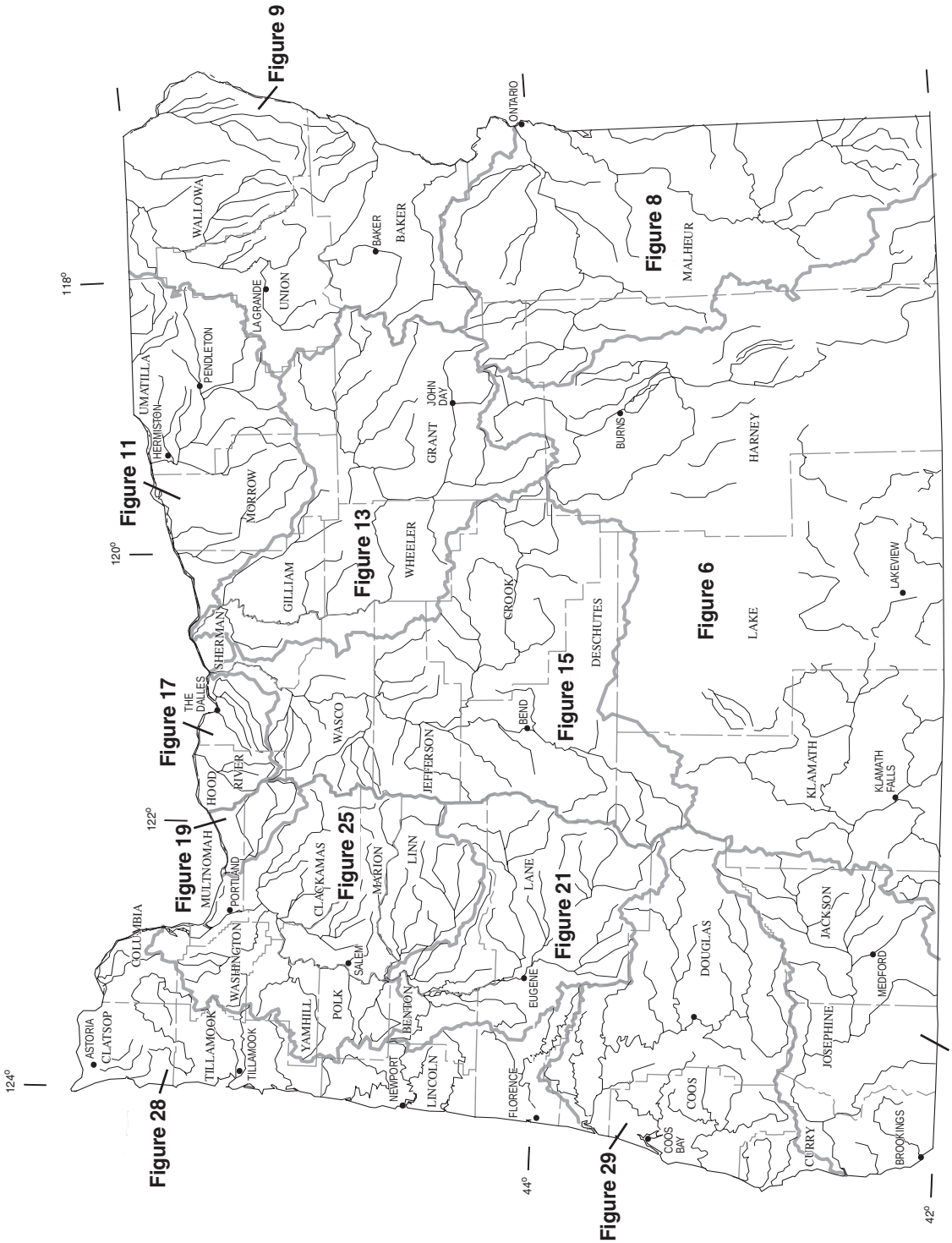


Figure 5. Location map of major drainage basins in Oregon.

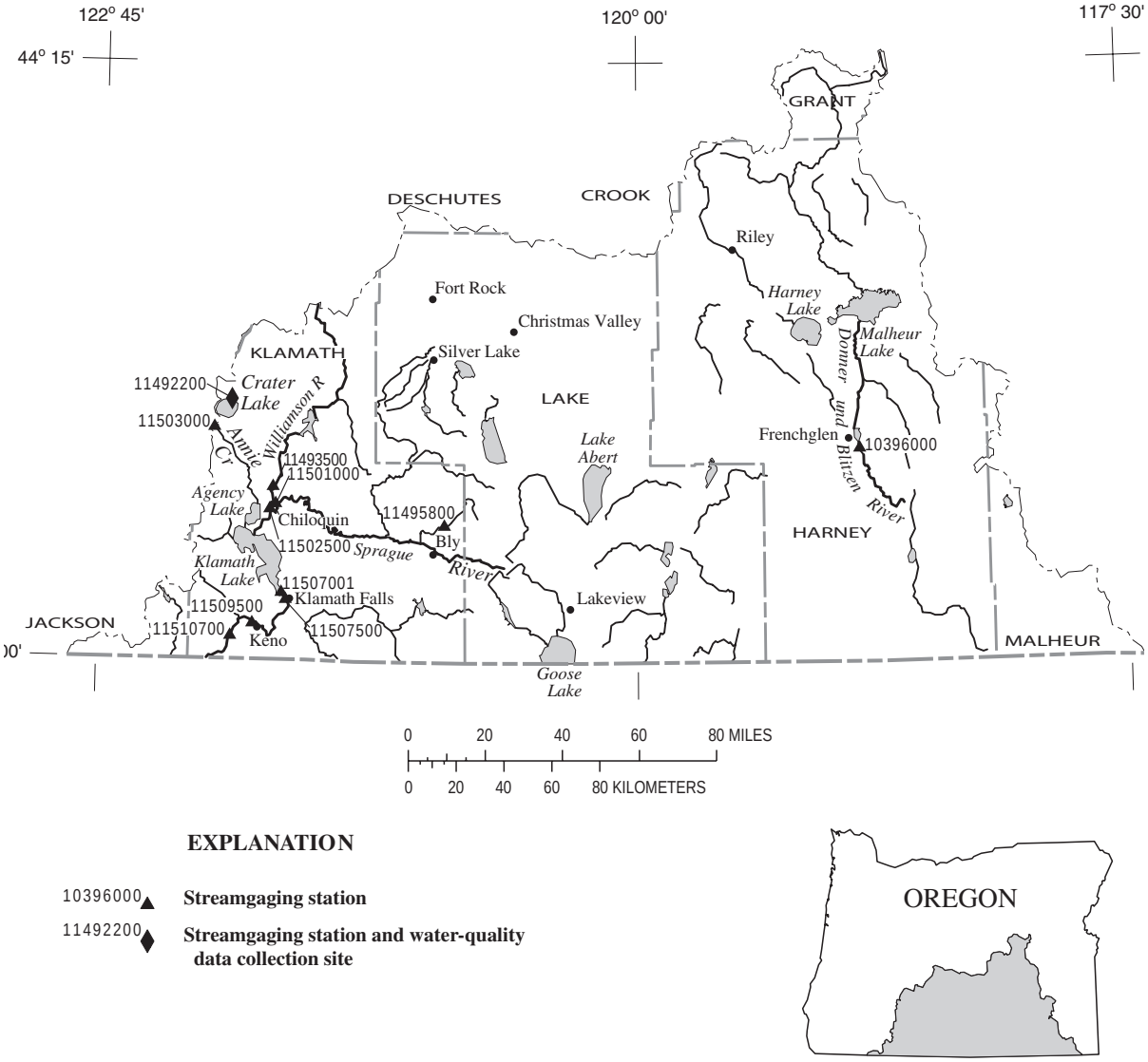


Figure 6. Location of surface-water and water-quality stations in The Great Basin and the Klamath River Basin.

THE GREAT BASIN

MALHEUR AND HARNEY LAKES BASIN

10396000 DONNER UND BLITZEN RIVER NEAR FRENCHGLEN, OR

LOCATION.--Lat 42°47'28", long 118°52'00", in NW 1/4 NW 1/4 sec.20, T.32 S., R.32-1/2 E., Harney County, Hydrologic Unit 17120003, Bureau of Land Management land, on left bank 1.5 mi upstream from upper diversions for Malheur National Wildlife Refuge, 2.0 mi downstream from Fish Creek, and 3.5 mi southeast of Frenchglen.

DRAINAGE AREA.--200 mi^2, approximately.

PERIOD OF RECORD.--March 1911 to September 1913, March 1914 to September 1916, April 1917 to September 1921, August to November 1929, April to September 1930, December 1937 to current year. Monthly discharge only for some periods, published in WSP 1314. Published as "near Diamond" 1911-21. Records of discharge for January 1909 to September 1910 (published in WSP 270, 290, and 370, for a nonequivalent site as "near Diamond") have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 330: Drainage area (former site). WSP 860: Drainage area (present site). WSP 1564: 1938-39(M), 1942-43(M), 1948(M), 1951(P), 1952-53. WSP 1714: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,254 ft above NGVD of 1929, (levels by Fish and Wildlife Service). Prior to December 1937, nonrecording gage at several sites within 2 mi downstream at different datums. Dec. 6, 1937, to Feb. 14, 1938, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station. Periodic water-quality records for the period March 1975 to September 1986 and continuous water-quality records for the period October 1975 to September 1981 have been collected at this location. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--73 years (water years 1912-13, 1915-16, 1918-21, 1939-2003), 126 ft^3/s, 91,510 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,270 ft^3/s Apr. 26, 1978, gage height, 7.15 ft, from floodmarks, from rating curve extended above 1,900 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 4.2 ft^3/s Dec. 9, 1972, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 650 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 7	2230	652	3.73	May 30	2130	1,110	4.39
May 9	2000	*1,600	*4.96				

Minimum discharge, 11 ft^3/s Oct. 31.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	26	35	31	84	43	92	111	616	81	36	32
2	35	33	32	35	71	36	101	109	502	76	37	33
3	36	35	33	33	67	43	107	118	432	73	43	32
4	40	39	33	33	61	37	98	211	386	70	42	32
5	36	38	34	35	46	38	122	257	354	68	42	33
6	36	37	32	29	48	38	162	166	341	65	39	33
7	35	36	32	32	49	37	215	150	342	63	37	32
8	35	39	24	38	54	37	361	161	320	62	36	33
9	35	37	32	37	59	37	266	710	324	60	36	35
10	35	36	42	37	60	38	185	662	274	56	35	40
11	34	35	34	34	55	42	173	562	235	55	34	36
12	35	35	33	35	57	46	159	421	206	53	35	35
13	35	36	33	37	55	52	173	312	197	52	35	34
14	35	35	38	47	59	57	168	294	194	51	34	34
15	35	33	36	47	65	56	137	324	180	49	34	33
16	35	34	34	39	58	58	128	341	169	48	34	33
17	35	34	34	37	49	56	124	310	168	46	34	34
18	34	33	30	37	47	49	123	278	167	44	34	35
19	34	34	29	37	44	50	117	253	166	44	33	34
20	34	34	33	38	46	52	110	245	164	43	33	34
21	35	35	35	38	48	50	114	276	130	41	34	33
22	36	35	33	38	48	54	131	350	114	41	37	33
23	35	34	30	40	41	62	135	506	107	40	38	33
24	35	34	29	40	41	56	132	689	101	43	35	33
25	35	27	32	42	36	57	136	680	94	45	34	32
26	35	27	37	46	39	102	136	629	94	43	33	33
27	34	39	38	83	42	85	146	624	95	41	34	33
28	35	40	37	106	40	71	126	784	97	41	33	33
29	35	39	36	62	---	71	121	818	91	39	33	32
30	34	37	34	57	---	73	115	966	91	38	33	32
31	21	---	34	86	---	78	---	793	---	37	33	---
TOTAL	1074	1046	1038	1366	1469	1661	4413	13110	6751	1608	1100	1004
MEAN	34.6	34.9	33.5	44.1	52.5	53.6	147	423	225	51.9	35.5	33.5
MAX	40	40	42	106	84	102	361	966	616	81	43	40
MIN	21	26	24	29	36	36	92	109	91	37	33	32
AC-FT	2130	2070	2060	2710	2910	3290	8750	26000	13390	3190	2180	1990

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 2003, BY WATER YEAR (WY)

MEAN	43.7	47.6	54.9	67.2	89.8	151	224	381	285	97.8	48.0	42.5
MAX	86.4	94.3	181	277	310	500	666	826	802	320	113	87.3
(WY)	1985	1985	1965	1997	1921	1993	1952	1998	1917	1984	1984	1984
MIN	24.2	25.3	25.2	25.0	27.8	40.5	61.2	105	44.7	28.9	21.1	22.2
(WY)	1993	1962	1960	1916	1964	1977	1968	1992	1992	1968	1992	1992

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1912 - 2003	
ANNUAL TOTAL	34483		35640			
ANNUAL MEAN	94.5		97.6		126	
HIGHEST ANNUAL MEAN					273	1984
LOWEST ANNUAL MEAN					49.1	1992
HIGHEST DAILY MEAN	545	Apr 14	966	May 30	2700	Mar 17 1993
LOWEST DAILY MEAN	20	Jan 28	21	Oct 31	11	Nov 16 1961
ANNUAL SEVEN-DAY MINIMUM	31	Oct 27	31	Oct 27	14	Jan 2 1974
ANNUAL RUNOFF (AC-FT)	68400		70690		91510	
10 PERCENT EXCEEDS	230		239		320	
50 PERCENT EXCEEDS	41		40		57	
90 PERCENT EXCEEDS	34		33		32	

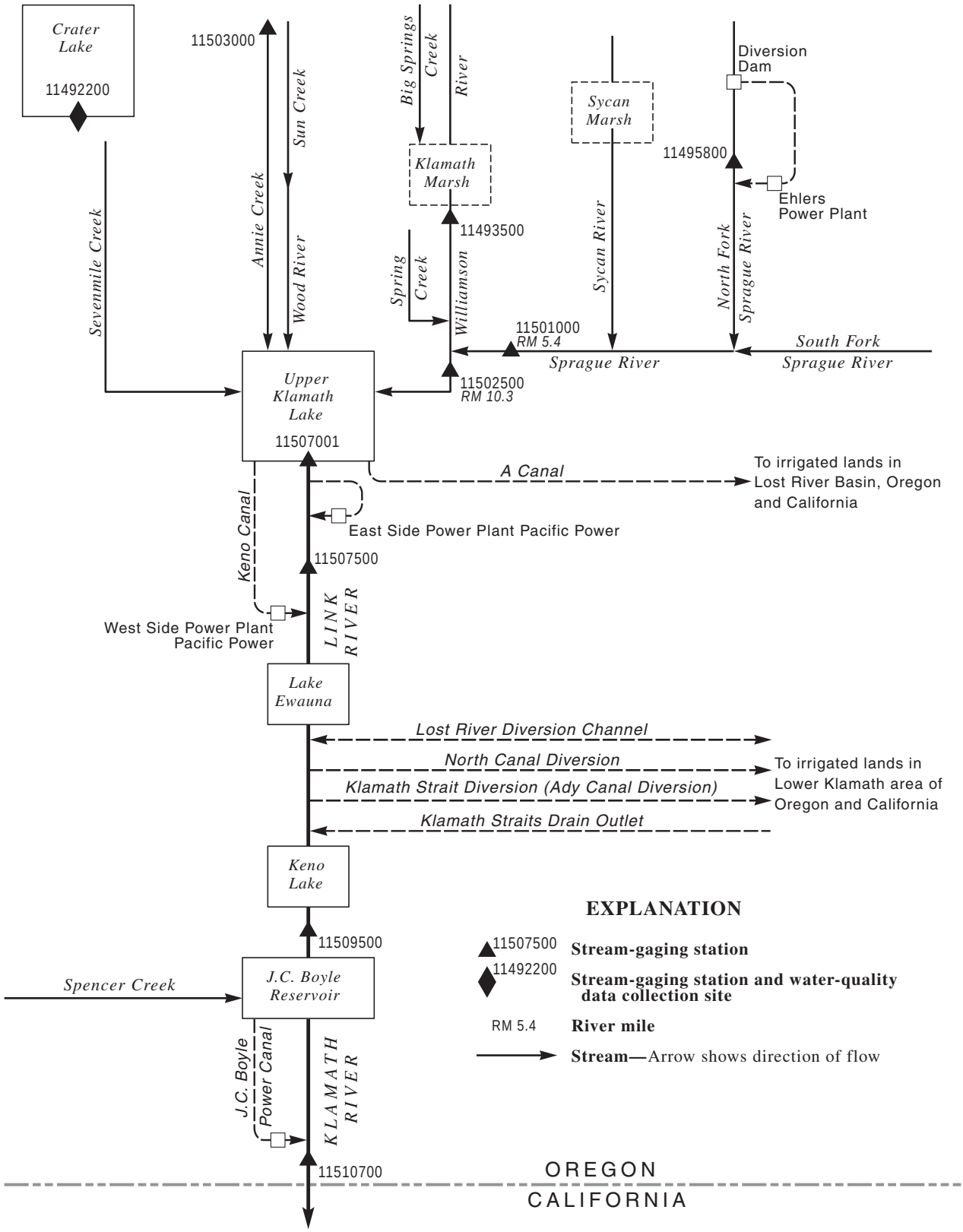


Figure 7. Schematic diagram showing gaging stations and major diversions in the Klamath Basin in Oregon.

KLAMATH RIVER BASIN

11492200 CRATER LAKE NEAR CRATER LAKE, OR
(Hydrologic bench-mark station)

LOCATION.--Lat 42°58'33", long 122°05'17", Crater Lake National Park and Vicinity Quadrangle, Klamath County, Hydrologic Unit 18010201, at boat harbor at end of trail in Cleetwood Cove and 6 mi northeast of Crater Lake post office.

DRAINAGE AREA.--26.2 mi^2, of which 20.5 mi^2 is lake area at elevation 6,176 ft.

WATER-ELEVATION RECORDS

PERIOD OF RECORD.--October 1961 to current year. 1878 to September 1961 (fragmentary records) available in files of U.S. Geological Survey.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. Prior to September 1961, nonrecording gage and various reference points used near old boat landing at abandoned trail (Eagle Cove) directly across Lake.

REMARKS.--Crater Lake occupies the caldera of prehistoric Mount Mazama. It has no visible inlet or outlet. Over a period of years precipitation and runoff from snowmelt on the walls of the crater are offset by seepage and evaporation. Records of accumulated annual precipitation, collected at the north rim of Crater Lake as part of the operation of this station, are published annually in reports of the National Weather Service. U.S.Geological Survey satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 6,179.34 ft Mar. 25, 1975; minimum elevation observed, 6,163.2 ft Sept. 10, 1942.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum elevation known, 6,180.5 ft, average of several observations of line of crustose lichens made between 1916 and 1960; that stage may have occurred near the close of the 19th century. The occurrence of living pine trees slightly higher suggests that the lake has not been materially higher for several centuries.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 6,172.32 ft May 4, 5; minimum elevation, 6,170.27 Dec. 9, 12.

Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6171.05	6170.47	6170.40	6171.22	6171.67	6171.49	6172.11	6172.24	6172.16	6171.85	6171.39	6170.79
2	6171.03	6170.45	6170.39	6171.25	6171.63	6171.49	6172.12	6172.26	6172.15	6171.84	6171.37	6170.78
3	6171.03	6170.44	6170.37	6171.22	6171.62	6171.47	6172.13	6172.29	6172.15	6171.82	6171.36	6170.76
4	6171.01	6170.41	6170.36	6171.27	6171.60	6171.45	6172.17	6172.32	6172.15	6171.80	6171.34	6170.74
5	6170.99	6170.39	6170.34	6171.25	6171.59	6171.46	6172.20	6172.31	6172.14	6171.79	6171.31	6170.74
6	6170.98	6170.32	6170.33	6171.21	6171.55	6171.49	6172.24	6172.31	6172.14	6171.78	6171.30	6170.73
7	6170.96	6170.47	6170.32	6171.22	6171.54	6171.54	6172.22	6172.30	6172.14	6171.78	6171.27	6170.71
8	6170.95	6170.53	6170.28	6171.21	6171.52	6171.51	6172.22	6172.29	6172.13	6171.75	6171.25	6170.67
9	6170.93	6170.61	6170.30	6171.19	6171.51	6171.55	6172.20	6172.28	6172.12	6171.74	6171.23	6170.75
10	6170.90	6170.69	6170.31	6171.19	6171.49	6171.55	6172.21	6172.26	6172.11	6171.73	6171.21	6170.73
11	6170.87	6170.65	6170.32	6171.19	6171.48	6171.55	6172.19	6172.27	6172.10	6171.71	6171.17	6170.71
12	6170.85	6170.67	6170.33	6171.27	6171.46	6171.53	6172.21	6172.26	6172.10	6171.70	6171.15	6170.66
13	6170.84	6170.66	6170.37	6171.27	6171.49	6171.57	6172.25	6172.25	6172.08	6171.67	6171.14	6170.63
14	6170.82	6170.63	6170.52	6171.27	6171.47	6171.62	6172.24	6172.24	6172.06	6171.66	6171.11	6170.62
15	6170.80	6170.61	6170.57	6171.25	6171.55	6171.69	6172.22	6172.24	6172.05	6171.65	6171.09	6170.60
16	6170.79	6170.63	6170.67	6171.24	6171.62	6171.70	6172.25	6172.22	6172.05	6171.63	6171.06	6170.57
17	6170.82	6170.60	6170.68	6171.23	6171.62	6171.69	6172.25	6172.20	6172.04	6171.62	6171.05	6170.55
18	6170.81	6170.59	6170.62	6171.22	6171.62	6171.67	6172.24	6172.18	6172.03	6171.60	6171.03	6170.54
19	6170.79	6170.57	6170.60	6171.22	6171.62	6171.69	6172.22	6172.17	6172.03	6171.60	6171.02	6170.52
20	6170.77	6170.55	6170.70	6171.19	6171.62	6171.69	6172.22	6172.16	6172.00	6171.58	6171.00	6170.50
21	6170.74	6170.55	6170.71	6171.20	6171.63	6171.79	6172.21	6172.16	6171.98	6171.57	6170.98	6170.49
22	6170.73	6170.54	6170.68	6171.25	6171.60	6171.87	6172.19	6172.15	6171.96	6171.56	6170.97	6170.47
23	6170.71	6170.52	6170.66	6171.23	6171.58	6171.85	6172.21	6172.15	6171.95	6171.55	6170.96	6170.46
24	6170.69	6170.51	6170.66	6171.30	6171.56	6171.85	6172.23	6172.15	6171.94	6171.53	6170.94	6170.44
25	6170.67	6170.49	6170.68	6171.30	6171.54	6172.04	6172.28	6172.15	6171.93	6171.51	6170.92	6170.43
26	6170.65	6170.47	6170.71	6171.40	6171.53	6172.09	6172.26	6172.15	6171.92	6171.50	6170.90	6170.42
27	6170.62	6170.46	6170.95	6171.42	6171.51	6172.07	6172.24	6172.16	6171.90	6171.48	6170.87	6170.41
28	6170.61	6170.45	6171.03	6171.41	6171.50	6172.06	6172.25	6172.16	6171.90	6171.46	6170.87	6170.39
29	6170.56	6170.43	6171.01	6171.45	---	6172.05	6172.26	6172.16	6171.90	6171.45	6170.84	6170.38
30	6170.53	6170.42	6171.16	6171.63	---	6172.05	6172.25	6172.16	6171.87	6171.44	6170.82	6170.35
31	6170.50	---	6171.22	6171.63	---	6172.10	---	6172.16	---	6171.42	6170.80	---
MAX	6171.05	6170.69	6171.22	6171.63	6171.67	6172.10	6172.28	6172.32	6172.16	6171.85	6171.39	6170.79
MIN	6170.50	6170.32	6170.28	6171.19	6171.46	6171.45	6172.11	6172.15	6171.87	6171.42	6170.80	6170.35

WTR YR 2003 MAX 6172.32 MIN 6170.28

11492200 CRATER LAKE NEAR CRATER LAKE, OR

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1963 to current year.

INSTRUMENTATION.--Temperature recorder from October 1963 to current year. Elevation of probe is approximately 6,140 ft above sea level.

REMARKS.--Records good. Records represent water temperature at the probe and are not necessarily representative of the entire lake.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum 18.5°C Aug. 9, 10, 1978, several days in July and August, 1994, Aug. 14-16, 1998, July 14, 2002; minimum recorded, 0.5°C on several days in 1969, but may have been as low or lower during period of missing record Oct. 29, 1985 to July 1, 1986.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded, 19.9°C Aug. 1; minimum, 3.4°C Apr. 17.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.5	12.2	12.4	9.2	8.9	9.0	6.6	6.4	6.5	4.4	4.3	4.3
2	12.2	11.8	12.0	8.9	8.7	8.8	6.6	6.3	6.5	4.4	4.3	4.3
3	12.0	11.6	11.8	8.9	8.6	8.7	6.6	6.4	6.5	4.3	4.3	4.3
4	11.9	11.6	11.8	8.8	8.6	8.7	6.5	6.4	6.4	4.3	4.2	4.3
5	12.1	11.7	11.9	8.8	8.5	8.7	6.5	6.3	6.4	4.4	4.2	4.3
6	12.0	11.7	11.8	8.7	8.4	8.6	6.5	6.3	6.4	4.4	4.2	4.3
7	11.9	11.7	11.8	8.4	7.9	8.1	6.5	6.3	6.4	4.4	4.2	4.3
8	11.9	11.6	11.8	7.9	7.8	7.8	6.4	6.3	6.3	4.4	4.3	4.3
9	11.8	11.5	11.6	7.8	7.5	7.6	6.3	6.2	6.3	4.4	4.3	4.3
10	11.8	11.5	11.6	7.5	7.3	7.4	6.3	6.1	6.2	4.3	4.2	4.2
11	11.6	11.3	11.4	7.4	7.3	7.3	6.1	6.0	6.0	4.3	4.1	4.2
12	11.4	11.1	11.3	7.3	7.2	7.3	6.0	5.9	6.0	4.2	4.1	4.2
13	11.3	11.0	11.1	7.2	7.1	7.2	5.9	5.8	5.8	4.2	4.1	4.2
14	11.2	11.0	11.1	7.4	7.0	7.2	5.8	5.4	5.6	4.3	4.2	4.2
15	11.1	10.9	11.0	7.3	7.1	7.2	5.6	5.4	5.5	4.3	4.2	4.2
16	11.1	10.8	11.0	7.2	6.9	7.1	5.4	5.3	5.3	4.3	4.2	4.3
17	11.1	10.9	11.0	7.0	6.9	6.9	5.3	5.1	5.2	4.3	4.1	4.2
18	11.3	10.8	11.0	6.9	6.8	6.9	5.2	5.1	5.2	4.3	4.1	4.2
19	11.0	10.8	10.9	7.0	6.8	6.9	5.1	5.0	5.1	4.3	4.2	4.3
20	11.0	10.8	10.9	7.0	6.8	6.9	5.0	4.9	5.0	4.3	4.2	4.3
21	11.0	10.6	10.8	7.0	6.8	6.9	5.0	4.8	4.9	4.2	4.1	4.2
22	10.9	10.5	10.7	6.9	6.8	6.9	4.9	4.7	4.8	4.2	4.1	4.1
23	10.8	10.6	10.7	6.9	6.8	6.9	4.9	4.7	4.8	4.3	4.1	4.2
24	10.7	10.5	10.6	6.9	6.6	6.8	4.8	4.7	4.7	4.2	4.1	4.1
25	10.6	10.3	10.5	6.7	6.4	6.6	4.8	4.7	4.7	4.2	4.0	4.1
26	10.4	10.2	10.4	6.7	6.5	6.6	4.7	4.6	4.7	4.1	4.1	4.1
27	10.3	10.1	10.2	6.7	6.4	6.6	4.7	4.5	4.6	4.2	3.7	4.1
28	10.2	10.0	10.1	6.7	6.5	6.6	4.6	4.3	4.5	4.3	4.1	4.2
29	10.1	9.7	9.9	6.6	6.4	6.5	4.6	4.4	4.5	4.3	4.1	4.2
30	9.7	9.5	9.6	6.7	6.3	6.5	4.6	4.4	4.5	4.1	4.1	4.1
31	9.5	9.1	9.3	---	---	---	4.4	4.2	4.3	4.1	4.1	4.1
MONTH	12.5	9.1	11.0	9.2	6.3	7.4	6.6	4.2	5.5	4.4	3.7	4.2

11492200 CRATER LAKE NEAR CRATER LAKE, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	4.2	4.0	4.1	4.0	3.8	3.9	4.1	4.0	4.0	4.5	4.0	4.3
2	4.1	3.9	4.0	4.1	3.8	3.9	4.1	4.0	4.0	4.6	4.2	4.4
3	4.2	4.0	4.1	4.2	3.9	4.0	4.1	4.0	4.0	4.6	4.2	4.4
4	4.1	3.9	4.0	4.0	3.6	3.8	4.2	3.8	4.0	4.2	4.1	4.2
5	4.3	3.9	4.0	4.1	3.8	4.0	4.0	3.9	4.0	4.6	4.0	4.3
6	4.2	3.8	3.9	4.0	3.9	4.0	4.0	3.9	3.9	4.6	4.3	4.4
7	4.3	3.9	4.1	4.0	3.8	3.9	4.0	3.9	3.9	4.5	4.3	4.4
8	4.3	4.1	4.2	4.0	3.9	3.9	4.1	3.9	4.0	4.4	4.2	4.4
9	4.4	4.2	4.3	3.9	3.8	3.9	4.1	3.8	4.0	4.4	4.0	4.2
10	4.4	4.1	4.2	4.1	3.8	3.9	4.0	3.8	3.9	4.4	4.1	4.3
11	4.4	4.1	4.2	4.0	3.8	3.9	4.3	3.9	4.0	4.5	4.3	4.4
12	4.3	4.1	4.2	4.0	3.8	3.9	4.0	3.9	3.9	4.6	4.3	4.4
13	4.2	4.1	4.2	3.9	3.8	3.9	4.0	3.8	3.9	4.7	4.4	4.5
14	4.5	4.1	4.2	4.0	3.8	3.9	4.3	3.9	4.0	4.7	4.4	4.6
15	4.2	4.0	4.1	4.0	3.8	3.9	4.1	3.9	4.0	4.6	4.3	4.4
16	4.1	4.0	4.0	4.2	3.9	4.0	4.0	3.8	3.9	5.0	4.2	4.5
17	4.1	4.0	4.0	4.1	3.8	4.0	4.2	3.4	3.9	4.6	3.8	4.3
18	4.2	4.0	4.1	4.1	3.9	4.0	4.3	3.9	4.0	4.5	4.1	4.3
19	4.2	4.0	4.1	4.0	3.8	3.9	4.2	3.8	4.1	4.9	4.2	4.6
20	4.1	3.9	4.0	4.2	4.0	4.0	4.2	4.0	4.1	4.8	4.1	4.7
21	4.2	3.9	4.0	4.0	3.8	4.0	4.2	3.7	4.0	5.0	4.6	4.8
22	4.2	3.9	4.1	4.0	3.9	4.0	4.4	3.9	4.1	5.2	4.8	5.0
23	4.3	3.9	4.1	4.2	3.9	4.1	4.1	4.0	4.1	5.3	4.8	5.1
24	4.1	3.9	4.0	4.3	4.0	4.1	4.2	4.0	4.1	5.6	4.8	5.2
25	4.1	3.7	3.9	4.0	4.0	4.0	4.1	3.9	3.9	7.4	4.8	6.4
26	4.0	3.9	3.9	4.1	3.9	4.0	4.1	3.9	4.0	7.7	6.4	7.3
27	4.0	3.5	3.6	4.0	3.8	3.9	4.0	3.8	4.0	8.0	7.2	7.6
28	3.9	3.5	3.7	4.2	3.9	4.0	4.0	3.8	3.9	7.2	6.8	7.1
29	---	---	---	4.2	4.0	4.1	4.2	3.9	4.1	7.1	6.5	6.7
30	---	---	---	4.3	4.1	4.2	4.4	4.0	4.1	7.7	7.1	7.5
31	---	---	---	4.3	4.0	4.1	---	---	---	7.3	6.7	7.1
MONTH	4.5	3.5	4.0	4.3	3.6	4.0	4.4	3.4	4.0	8.0	3.8	5.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.5	6.8	7.1	13.6	13.2	13.4	19.9	18.3	18.9	---	---	---
2	7.9	7.2	7.6	13.4	12.7	13.2	18.8	18.4	18.6	---	---	---
3	8.0	7.1	7.7	13.2	12.4	13.0	18.7	18.2	18.4	---	---	---
4	8.6	7.7	8.0	13.4	12.7	13.0	18.6	18.0	18.3	---	---	---
5	8.6	7.3	8.1	13.2	12.5	13.0	18.3	17.6	17.9	---	---	---
6	9.3	8.0	8.9	13.9	12.5	13.4	17.7	17.4	17.5	---	---	---
7	10.0	8.9	9.4	14.2	12.9	13.5	17.6	17.2	17.4	17.2	16.9	17.1
8	10.2	8.3	9.2	---	---	---	---	---	---	16.9	16.3	16.7
9	9.8	9.3	9.5	---	---	---	---	---	---	16.5	16.0	16.3
10	11.8	9.7	11.0	---	---	---	---	---	---	16.2	15.7	16.0
11	11.2	9.3	10.3	---	---	---	---	---	---	15.9	15.6	15.8
12	12.4	11.1	11.8	---	---	---	---	---	---	15.9	15.3	15.6
13	11.9	10.8	11.5	---	---	---	---	---	---	15.7	15.1	15.3
14	10.9	9.1	10.5	---	---	---	---	---	---	15.3	14.9	15.1
15	10.1	9.7	10.0	---	---	---	---	---	---	15.1	14.7	14.9
16	10.9	9.5	10.3	---	---	---	---	---	---	14.7	14.3	14.5
17	10.7	9.7	10.4	15.6	14.9	15.3	---	---	---	14.3	13.7	14.2
18	11.3	9.2	10.3	15.1	14.4	14.8	---	---	---	14.1	13.8	14.0
19	12.8	9.9	11.5	15.6	14.9	15.3	---	---	---	---	---	---
20	12.2	11.2	11.8	16.9	15.0	16.4	---	---	---	---	---	---
21	11.2	10.3	10.7	16.1	15.3	15.7	---	---	---	---	---	---
22	11.1	10.5	10.8	17.6	16.1	16.8	---	---	---	---	---	---
23	10.9	9.3	10.0	18.6	16.9	17.4	---	---	---	14.4	14.1	14.3
24	10.9	9.6	10.5	18.8	17.6	18.5	---	---	---	14.8	14.4	14.5
25	11.3	10.5	10.9	18.3	16.5	17.7	---	---	---	14.6	14.2	14.4
26	11.6	10.8	11.2	18.4	17.8	18.0	---	---	---	14.9	14.5	14.7
27	11.7	11.0	11.4	18.0	17.2	17.7	---	---	---	15.0	14.6	14.8
28	11.7	11.0	11.5	17.9	17.6	17.8	---	---	---	14.9	14.6	14.8
29	14.0	11.7	13.0	18.1	17.5	17.8	---	---	---	14.9	14.5	14.8
30	13.7	13.3	13.5	18.4	17.7	18.1	---	---	---	14.9	14.6	14.8
31	---	---	---	19.1	17.9	18.5	---	---	---	---	---	---
MONTH	14.0	6.8	10.3	---	---	---	---	---	---	---	---	---

11493500 WILLIAMSON RIVER NEAR KLAMATH AGENCY, OR

LOCATION.--Lat 42°44'25", long 121°50'00", in NW 1/4 SW 1/4 sec.1, T.33 S., R.7 E., Klamath County, Hydrologic Unit 18010201, on right bank 250 ft downstream from highway bridge, 0.6 mi southwest of railroad station at Kirk, 10 mi upstream from Spring Creek, and 10 mi northeast of Klamath Agency.

DRAINAGE AREA.--1,290 mi^2, approximately.

PERIOD OF RECORD.--March 1908 to January 1909, April 1909 to June 1910, October 1954 to September 1995, October 1998 to current year. Monthly discharge only June 1910, published in WSP 1315-B.

REVISED RECORDS.--WSP 1565: 1908-9.

GAGE.--Water-stage recorder. Datum of gage is 4,483.16 ft above NGVD of 1929. Mar. 25, 1908, to June 30, 1910, nonrecording gage or water-stage recorder at two sites about 0.5 mi upstream at different datums. Oct. 1, 1954, to Sept. 30, 1955, water-stage recorder at present site at datum 2.05 ft higher.

REMARKS.--Records fair. Flow affected by natural storage in Klamath Marsh. Small diversions upstream from station for irrigation in vicinity of marsh.

AVERAGE DISCHARGE.--46 years (water years 1955-95, 1999-2003), 181 ft^3/s, 131,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 1,590 ft^3/s Mar. 13, 1910, gage height, 3.7 ft, site and datum then in use, from rating curve extended above 800 ft^3/s; maximum gage height, 5.75 ft Mar. 3, 1958; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 406 ft^3/s Feb. 6, gage height, 4.50 ft; minimum discharge, no flow Oct. 1 to Dec. 28, July 10 to Sept. 30.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	14	373	258	193	129	24	0.56	0.00	0.00
2	0.00	0.00	0.00	18	385	245	185	126	25	0.53	0.00	0.00
3	0.00	0.00	0.00	22	394	244	184	124	24	0.44	0.00	0.00
4	0.00	0.00	0.00	26	399	241	187	122	23	0.37	0.00	0.00
5	0.00	0.00	0.00	31	401	221	186	124	21	0.31	0.00	0.00
6	0.00	0.00	0.00	37	403	209	189	124	17	0.21	0.00	0.00
7	0.00	0.00	0.00	41	394	205	192	121	15	0.13	0.00	0.00
8	0.00	0.00	0.00	43	389	206	190	124	13	0.08	0.00	0.00
9	0.00	0.00	0.00	42	379	202	188	124	11	0.02	0.00	0.00
10	0.00	0.00	0.00	42	375	208	182	123	11	0.00	0.00	0.00
11	0.00	0.00	0.00	43	368	205	180	123	9.4	0.00	0.00	0.00
12	0.00	0.00	0.00	47	359	195	177	124	7.9	0.00	0.00	0.00
13	0.00	0.00	0.00	54	348	173	175	122	7.2	0.00	0.00	0.00
14	0.00	0.00	0.00	61	339	184	176	108	6.6	0.00	0.00	0.00
15	0.00	0.00	0.00	70	327	197	172	85	6.9	0.00	0.00	0.00
16	0.00	0.00	0.00	79	315	205	172	73	7.2	0.00	0.00	0.00
17	0.00	0.00	0.00	89	314	208	168	66	6.6	0.00	0.00	0.00
18	0.00	0.00	0.00	102	311	204	172	58	6.4	0.00	0.00	0.00
19	0.00	0.00	0.00	112	312	199	166	50	6.2	0.00	0.00	0.00
20	0.00	0.00	0.00	123	299	193	162	45	6.3	0.00	0.00	0.00
21	0.00	0.00	0.00	137	293	189	155	42	5.7	0.00	0.00	0.00
22	0.00	0.00	0.00	151	294	181	144	38	5.7	0.00	0.00	0.00
23	0.00	0.00	0.00	181	294	196	134	36	5.9	0.00	0.00	0.00
24	0.00	0.00	0.00	209	292	190	134	32	4.9	0.00	0.00	0.00
25	0.00	0.00	0.00	232	282	191	133	31	4.1	0.00	0.00	0.00
26	0.00	0.00	0.00	256	273	199	129	29	2.9	0.00	0.00	0.00
27	0.00	0.00	0.00	279	269	210	131	30	2.1	0.00	0.00	0.00
28	0.00	0.00	4.1	300	261	210	130	28	1.4	0.00	0.00	0.00
29	0.00	0.00	8.5	311	---	210	129	28	0.71	0.00	0.00	0.00
30	0.00	0.00	7.0	330	---	207	129	25	0.60	0.00	0.00	0.00
31	0.00	---	9.7	351	---	199	---	25	---	0.00	0.00	---
TOTAL	0.00	0.00	29.30	3833	9442	6384	4944	2439	288.71	2.65	0.00	0.00
MEAN	0.000	0.000	0.95	124	337	206	165	78.7	9.62	0.085	0.000	0.000
MAX	0.00	0.00	9.7	351	403	258	193	129	25	0.56	0.00	0.00
MIN	0.00	0.00	0.00	14	261	173	129	25	0.60	0.00	0.00	0.00
AC-FT	0.00	0.00	58	7600	18730	12660	9810	4840	573	5.3	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 2003, BY WATER YEAR (WY)

MEAN	40.3	115	213	222	291	424	435	254	119	42.9	14.0	12.3
MAX	255	391	580	730	799	1039	1081	952	531	332	146	95.8
(WY)	1958	1957	1956	1956	1965	1986	1956	1956	1956	1958	1958	1958
MIN	0.000	0.000	0.000	0.000	0.000	58.6	22.3	7.35	0.000	0.000	0.000	0.000
(WY)	1962	1965	1991	1992	1993	1994	1992	1992	1992	1981	1961	1960

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1955 - 2003	
ANNUAL TOTAL	36290.06		27362.66			
ANNUAL MEAN	99.4		75.0		181	
HIGHEST ANNUAL MEAN					468	1956
LOWEST ANNUAL MEAN					7.84	1992
HIGHEST DAILY MEAN	419	Mar 9	403	Feb 6	1250	Mar 1 1958
LOWEST DAILY MEAN	0.00	Jul 12	0.00	Oct 1	0.00	Jul 23 1960
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 12	0.00	Oct 1	0.00	Jul 23 1960
ANNUAL RUNOFF (AC-FT)	71980		54270		131200	
10 PERCENT EXCEEDS	319		244		476	
50 PERCENT EXCEEDS	4.9		1.4		106	
90 PERCENT EXCEEDS	0.00		0.00		0.00	

11495800 NORTH FORK SPRAGUE RIVER AT POWERPLANT, NEAR BLY, OR

LOCATION.--Lat 42°30'06", long 120°59'13", in SW 1/4 SE 1/4 sec.30, T.35 S., R.15 E., Klamath County, Hydrologic Unit 18010202, at powerplant 0.1 mi upstream from Yaden Creek, and 7.6 mi northeast of Bly.

DRAINAGE AREA.--77.7 mi^2.

PERIOD OF RECORD.--May 1993 to current year.

GAGE.--Water-stage record. Elevation of gage is 4,750 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. All records given herein do not include flow diverted through powerplant.

AVERAGE DISCHARGE.--10 years (water years 1994-2003), 69.8 ft^3/s, 50,580 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,180 ft^3/s Apr. 24, 1996, gage height, 7.12 ft; minimum discharge, 12 ft^3/s Dec. 10, 1993.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 427 ft^3/s May 23, gage height, 6.28 ft; minimum discharge, 19 ft^3/s Dec. 16, Jan. 13, 28, 29, Mar. 17-19, Apr. 27, Aug. 29.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	33	35	29	40	37	269	36	234	32	39	32
2	34	34	33	34	41	27	168	43	203	32	41	31
3	35	34	33	35	45	31	70	70	178	32	42	30
4	35	35	35	35	30	32	58	76	155	32	39	33
5	34	36	34	36	30	31	46	66	137	32	36	33
6	34	37	35	34	30	34	38	68	121	32	27	33
7	34	38	32	33	34	39	36	68	109	32	27	33
8	34	40	32	34	32	39	43	72	98	32	27	34
9	33	37	34	35	31	40	60	57	143	32	26	32
10	34	35	35	36	31	44	70	58	119	32	26	26
11	33	38	34	36	31	39	102	65	70	32	26	25
12	34	39	34	37	31	33	90	112	43	32	26	25
13	34	41	37	34	31	33	66	127	33	32	26	25
14	34	38	48	30	31	30	61	190	34	32	26	25
15	34	34	38	31	31	31	52	269	36	32	26	25
16	34	38	29	33	31	31	44	259	32	31	26	25
17	34	38	29	38	31	25	40	213	33	28	26	26
18	34	35	35	37	31	21	34	189	52	28	26	29
19	34	38	35	36	31	21	33	179	63	28	26	28
20	34	36	32	37	31	30	37	191	32	28	26	28
21	34	37	31	39	31	31	47	214	34	28	26	28
22	35	36	33	40	31	72	42	244	32	31	26	28
23	35	36	31	35	33	90	42	320	30	42	26	28
24	34	36	32	31	31	37	72	394	31	67	26	28
25	34	32	33	31	36	62	47	343	31	39	26	28
26	35	32	33	31	39	188	32	289	32	37	26	28
27	35	35	36	38	39	67	30	273	32	28	29	28
28	35	36	47	25	38	52	29	271	32	34	33	28
29	35	35	33	25	---	49	30	266	33	30	33	28
30	33	36	31	38	---	52	30	320	32	33	33	32
31	32	---	31	59	---	86	---	310	---	39	33	---
TOTAL	1057	1085	1060	1082	932	1434	1818	5652	2244	1031	907	862
MEAN	34.1	36.2	34.2	34.9	33.3	46.3	60.6	182	74.8	33.3	29.3	28.7
MAX	35	41	48	59	45	188	269	394	234	67	42	34
MIN	32	32	29	25	30	21	29	36	30	28	26	25
AC-FT	2100	2150	2100	2150	1850	2840	3610	11210	4450	2040	1800	1710

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2003, BY WATER YEAR (WY)

MEAN	36.2	39.9	42.0	52.9	41.8	51.8	140	220	107	41.6	31.9	31.2
MAX	51.2	75.7	81.4	211	83.1	91.4	271	425	253	67.2	38.3	43.8
(WY)	1997	1997	1996	1997	1996	1998	2000	1999	1998	1995	1998	1995
MIN	27.5	29.5	29.7	32.4	30.3	33.5	37.7	41.6	33.7	30.0	25.3	23.1
(WY)	2001	1995	2000	2000	1999	1999	2001	2001	2002	1999	2000	2000

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1994 - 2003	
ANNUAL TOTAL	19269		19164			
ANNUAL MEAN	52.8		52.5		69.8	
HIGHEST ANNUAL MEAN					93.4	1996
LOWEST ANNUAL MEAN					36.8	2001
HIGHEST DAILY MEAN	584	Apr 14	394	May 24	735	Jan 1 1997
LOWEST DAILY MEAN	27	Jun 13	21	Mar 18	16	Jan 11 1994
ANNUAL SEVEN-DAY MINIMUM	31	Jun 7	25	Sep 10	22	Sep 23 2000
ANNUAL RUNOFF (AC-FT)	38220		38010		50580	
10 PERCENT EXCEEDS	112		88		177	
50 PERCENT EXCEEDS	35		34		36	
90 PERCENT EXCEEDS	32		28		29	

11501000 SPRAGUE RIVER NEAR CHILOQUIN, OR

LOCATION.--Lat 42°35'05", long 121°50'55", in NE 1/4 NW 1/4 sec.35, T.34 S., R.7 E., Klamath County, Hydrologic Unit 18010202, on right bank 1.0 mi northeast of Chiloquin, 4.6 mi upstream from Modoc Point Canal intake, and at mile 5.4.

DRAINAGE AREA.--1,580 mi^2, approximately.

PERIOD OF RECORD.--July to October 1920, March 1921 to current year. Monthly discharge only July 1920, published in WSP 1315-B. Prior to October 1931, published as "at McCready Ranch, near Chiloquin."

REVISED RECORDS.--WSP 591: 1922(M). WSP 1011: 1943(M). WSP 1565: 1921-22.

GAGE.--Water-stage recorder. Datum of gage is 4,202.43 ft above NGVD of 1929. Prior to Oct. 1, 1931, nonrecording gage at site 12 mi upstream at different datum.

REMARKS.--Records good. Minor regulation from irrigation diversions upstream from station.

AVERAGE DISCHARGE.--82 years (water years 1922-2003), 582 ft^3/s, 421,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,900 ft^3/s Dec. 26, 1964, gage height, 10.37 ft; minimum daily discharge, 50 ft^3/s May 26, 1926.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,470 ft^3/s Mar. 30, gage height, 3.56 ft; minimum discharge, 67 ft^3/s Aug. 20, 21.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	179	250	267	525	797	365	995	1100	907	291	84	97
2	190	243	265	425	780	355	937	1050	932	271	78	97
3	192	241	264	384	780	385	981	1040	911	255	79	94
4	e200	251	262	366	784	379	1080	997	857	248	80	95
5	e210	253	259	371	693	375	1070	972	802	238	94	103
6	e217	263	262	378	588	361	1030	1030	754	212	115	113
7	e227	273	266	378	501	354	1050	1140	691	180	116	111
8	e234	286	263	352	459	350	1030	1150	659	169	108	100
9	238	304	262	331	414	345	1010	1070	626	159	104	97
10	231	311	259	326	400	340	996	1020	585	149	102	115
11	218	297	266	322	401	337	966	1030	555	147	108	136
12	223	287	275	333	389	342	934	1030	536	150	110	140
13	233	281	279	379	385	354	927	1020	499	132	104	142
14	240	281	286	448	403	362	940	1030	492	120	87	142
15	244	275	306	622	434	395	953	1070	492	112	76	134
16	246	273	335	879	465	419	960	1060	481	109	75	125
17	240	271	340	1000	483	476	955	1030	453	109	78	116
18	238	266	330	792	535	636	919	1020	419	99	74	113
19	241	266	312	600	553	726	886	1020	383	94	71	128
20	246	264	294	511	516	751	861	1010	351	106	68	137
21	243	263	287	459	494	655	814	964	356	102	72	139
22	245	266	287	428	493	578	779	906	353	96	91	139
23	245	268	286	413	481	541	778	855	332	88	93	139
24	248	266	262	414	463	555	858	813	333	85	97	145
25	253	266	266	479	436	729	902	812	326	102	123	135
26	258	266	274	529	417	893	950	840	333	129	127	127
27	256	263	291	650	386	877	1110	901	331	135	123	120
28	258	256	352	732	366	1080	1290	935	308	132	113	113
29	255	256	472	882	---	1360	1320	935	300	122	104	117
30	253	265	649	1060	---	1440	1210	924	300	112	110	119
31	253	---	701	937	---	1190	---	905	---	96	107	---
TOTAL	7254	8071	9779	16705	14296	18305	29491	30679	15657	4549	2971	3628
MEAN	234	269	315	539	511	590	983	990	522	147	95.8	121
MAX	258	311	701	1060	797	1440	1320	1150	932	291	127	145
MIN	179	241	259	322	366	337	778	812	300	85	68	94
AC-FT	14390	16010	19400	33130	28360	36310	58500	60850	31060	9020	5890	7200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1922 - 2003, BY WATER YEAR (WY)

MEAN	293	343	464	542	689	931	1265	1135	606	276	214	233
MAX	848	789	2853	3017	2877	2904	4250	3211	1762	560	405	374
(WY)	1963	1974	1965	1997	1996	1972	1956	1956	1983	1983	1956	1956
MIN	183	218	215	196	223	286	263	119	93.8	85.1	76.9	121
(WY)	1934	1995	1933	1937	1933	1992	1977	1992	1992	1994	1992	2003

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1922 - 2003	
ANNUAL TOTAL	143489		161385			
ANNUAL MEAN	393		442		582	
HIGHEST ANNUAL MEAN					1395	1956
LOWEST ANNUAL MEAN					199	1992
HIGHEST DAILY MEAN	1450	Apr 19	1440	Mar 30	14500	Dec 26 1964
LOWEST DAILY MEAN	88	Aug 25	68	Aug 20	50	May 26 1926
ANNUAL SEVEN-DAY MINIMUM	97	Aug 19	73	Aug 15	65	Aug 5 1992
ANNUAL RUNOFF (AC-FT)	284600		320100		421300	
10 PERCENT EXCEEDS	828		995		1300	
50 PERCENT EXCEEDS	287		326		345	
90 PERCENT EXCEEDS	108		107		198	

e Estimated

11502500 WILLIAMSON RIVER BELOW SPRAGUE RIVER, NEAR CHILOQUIN, OR

LOCATION.--Lat 42°33'54", long 121°52'42", in NE 1/4 SE 1/4 sec.4, T.35 S., R.7 E., Klamath County, Hydrologic Unit 18010201, on right bank 0.8 mi downstream from Sprague River and 1.2 mi southwest of Chiloquin, and at mile 10.3.

DRAINAGE AREA.--3,000 mi^2, approximately.

PERIOD OF RECORD.--June 1917 to current year. Monthly discharge only for October 1922 to August 1923 published in WSP 1315-B.

REVISED RECORDS.--WSP 981: 1938(M). WSP 1565: 1920(M), 1927(M), 1938.

GAGE.--Water-stage recorder. Datum of gage is 4,148.50 ft above NGVD of 1929. September 1, 1923 to July 12, 1991 at site 0.6 mi upstream at datum 7.05 ft higher. Prior to Sept. 1, 1923, at different datum.

REMARKS.--No estimated daily discharges. Records good. Some regulation by diversion dams and logpond operations on Sprague River. Diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--85 years (water years 1918-22, 1924-2003), 1,043 ft^3/s, 755,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,100 ft^3/s Jan. 5, 1997, gage height, 10.27 ft; minimum discharge, 285 ft^3/s Aug. 6, 8, 9, 1994.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,940 ft^3/s Mar. 30, gage height, 5.17 ft; minimum discharge, 347 ft^3/s Aug. 20.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	460	547	571	928	1460	905	1540	1530	1140	481	373	400
2	470	541	567	779	1430	896	1410	1480	1160	472	367	399
3	481	535	567	725	1420	893	1410	1470	1160	464	367	396
4	491	542	566	702	1440	909	1530	1430	1140	466	367	401
5	500	547	561	700	1400	894	1570	1390	1070	465	380	410
6	502	557	561	711	1300	876	1530	1440	1010	460	408	421
7	513	576	567	715	1200	851	1520	1540	920	440	415	423
8	511	597	567	704	1120	848	1530	1550	870	432	408	412
9	514	608	567	678	1080	842	1490	1480	828	425	404	447
10	514	633	567	668	1040	835	1470	1440	782	419	397	461
11	504	616	565	668	1030	834	1450	1440	747	417	407	484
12	498	597	575	679	1020	826	1400	1450	720	428	418	510
13	507	591	586	722	1010	830	1380	1430	683	453	411	527
14	516	586	600	793	1010	838	1390	1430	665	440	388	523
15	520	580	613	909	1030	867	1410	1440	660	415	373	491
16	540	579	654	1160	1060	905	1410	1420	650	389	366	465
17	534	578	656	1380	1070	929	1410	1380	621	388	371	449
18	531	570	641	1310	1100	1070	1360	1370	588	381	365	446
19	531	569	627	1080	1140	1190	1320	1360	557	363	360	461
20	535	567	606	971	1130	1250	1300	1340	524	379	356	471
21	536	567	596	919	1070	1190	1260	1290	518	376	353	470
22	537	567	589	892	1060	1090	1210	1210	519	373	384	470
23	538	574	590	887	1060	1040	1190	1150	504	369	394	468
24	542	574	579	890	1040	1020	1260	1100	504	369	393	474
25	547	571	571	961	1020	1120	1310	1080	497	381	423	466
26	554	567	570	1030	986	1370	1350	1110	500	415	435	455
27	552	567	587	1140	954	1410	1510	1160	502	435	429	447
28	554	562	668	1290	919	1470	1700	1200	497	431	421	437
29	552	555	726	1380	---	1750	1730	1190	485	418	408	441
30	551	564	897	1600	---	1920	1640	1180	483	407	413	444
31	547	---	1030	1630	---	1790	---	1150	---	389	412	---
TOTAL	16182	17184	19187	29601	31599	33458	42990	41630	21504	12940	12166	13569
MEAN	522	573	619	955	1129	1079	1433	1343	717	417	392	452
MAX	554	633	1030	1630	1460	1920	1730	1550	1160	481	435	527
MIN	460	535	561	668	919	826	1190	1080	483	363	353	396
AC-FT	32100	34080	38060	58710	62680	66360	85270	82570	42650	25670	24130	26910

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1918 - 2003, BY WATER YEAR (WY)

MEAN	650	756	938	1021	1242	1610	1967	1654	999	604	532	560
MAX	1237	1345	3682	4067	3846	4256	5488	4376	2658	1278	934	872
(WY)	1963	1974	1965	1997	1958	1972	1952	1956	1953	1958	1958	1958
MIN	488	530	545	524	547	619	583	391	338	311	304	382
(WY)	1993	1995	1993	1937	1933	1992	1992	1992	1992	1994	1994	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1918 - 2003	
ANNUAL TOTAL	286888		292010			
ANNUAL MEAN	786		800		1043	
HIGHEST ANNUAL MEAN					2187	1956
LOWEST ANNUAL MEAN					483	1992
HIGHEST DAILY MEAN	1990	Apr 19	1920	Mar 30	16000	Dec 26 1964
LOWEST DAILY MEAN	359	Aug 18	353	Aug 21	288	Aug 6 1994
ANNUAL SEVEN-DAY MINIMUM	367	Aug 15	363	Aug 15	294	Aug 4 1994
ANNUAL RUNOFF (AC-FT)	569000		579200		755300	
10 PERCENT EXCEEDS	1370		1420		1980	
50 PERCENT EXCEEDS	579		597		748	
90 PERCENT EXCEEDS	386		408		503	

11503000 ANNIE SPRING NEAR CRATER LAKE, OR

LOCATION.--Lat 42°52'18", long 122°10'04", unsurveyed, Klamath County, Hydrologic Unit 18010203, in Crater Lake National Park, at highway bridge 0.1 mi downstream from source.

DRAINAGE AREA.--Indeterminate, normal flow is entirely from Annie Spring.

PERIOD OF RECORD.--June 1977 to current year. Discharge measurement and fragmentary gage-height record August to October 1913. Discharge measurements only Oct. 11, 1967, June 26, Sept. 13, 1968.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 5,982.65 ft above NGVD of 1929 (National Park Service bench mark).

REMARKS.--Records poor. Fluctuations caused by pumps 0.1 mi upstream. Diversion for domestic use by National Park Service 0.1 mi upstream.

COOPERATION.--Records of diversion by pumping furnished by National Park Service.

AVERAGE DISCHARGE.--26 years (water years 1978-2003), 2.82 ft^3/s, 2,040 acre-ft/yr, adjusted for diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18 ft^3/s July 6, 1984, gage height, 1.56 ft; minimum daily discharge, 0.28 ft^3/s Mar. 2-5, 1993.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 3.69 ft occurred sometime in June, from high-water mark, possible snow aned ice jam, discharge not determined; minimum recorded daily discharge, 0.74 ft^3/s Jan. 19, 20.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.2	0.96	0.82	1.2	0.93	0.92	1.1	6.0	e7.1	2.7	e1.7
2	1.4	1.2	0.96	0.81	1.2	0.93	0.98	1.0	6.2	e6.8	2.6	e1.7
3	1.4	1.2	0.95	0.82	1.3	0.90	1.0	1.1	6.4	e6.6	2.6	e1.6
4	1.4	1.1	0.93	0.81	1.3	0.90	1.1	1.1	6.9	e6.4	2.5	e1.6
5	1.4	1.2	0.92	0.80	1.3	0.88	1.1	1.0	7.1	e6.3	2.5	e1.6
6	1.4	1.1	0.92	0.78	1.3	0.86	1.1	1.0	7.2	e6.0	2.4	e1.6
7	1.3	1.1	0.93	0.78	1.3	0.85	1.1	1.0	7.3	e5.5	2.4	e1.6
8	1.3	1.1	0.91	0.78	1.3	0.85	1.1	1.0	e7.3	5.2	2.4	e1.6
9	1.3	1.2	0.92	0.79	1.2	0.85	1.1	1.0	e7.7	5.1	2.3	e1.6
10	1.3	1.1	0.92	0.80	1.2	0.85	1.1	1.0	e7.9	4.9	2.3	e1.6
11	1.3	1.1	0.91	0.80	1.2	0.84	1.1	1.0	e8.1	4.6	2.3	e1.5
12	1.3	1.1	0.91	0.79	1.2	0.82	1.1	1.0	e8.3	4.5	2.2	e1.5
13	1.3	1.1	0.90	0.77	1.2	0.83	1.1	0.99	e8.6	4.3	2.2	e1.5
14	1.3	1.1	0.92	0.77	1.2	0.82	1.2	1.0	e8.8	4.1	2.1	e1.5
15	1.3	1.1	0.91	0.77	1.2	0.85	1.2	1.1	e8.9	3.8	2.1	e1.5
16	1.3	1.1	0.91	0.77	1.1	0.85	1.2	1.1	e9.0	3.7	2.1	e1.5
17	1.3	1.1	0.91	0.77	1.1	0.85	1.1	1.2	e9.1	3.6	2.0	e1.5
18	1.2	1.1	0.91	0.75	1.1	0.84	1.2	1.2	e9.2	3.5	2.0	e1.5
19	1.2	1.0	0.91	0.75	1.1	0.83	1.2	1.3	e9.1	3.4	2.0	e1.5
20	1.3	1.1	0.92	0.74	1.0	0.83	1.2	1.3	e9.1	3.3	2.0	e1.5
21	1.2	1.0	0.90	0.75	1.0	0.82	1.1	1.4	e9.1	3.2	1.9	e1.5
22	1.3	1.0	0.90	0.75	1.0	0.82	1.1	1.4	e9.0	3.2	1.9	e1.5
23	1.2	1.0	0.88	0.75	1.0	0.81	1.1	1.7	e8.9	3.1	1.9	e1.4
24	1.2	0.98	0.90	0.75	1.00	0.82	1.1	2.1	e8.8	3.1	1.9	e1.4
25	1.2	0.99	0.88	0.75	0.98	0.83	1.1	2.7	e8.6	3.1	1.9	e1.4
26	1.2	0.99	0.86	0.77	0.97	0.85	1.1	3.2	e8.4	3.0	1.8	e1.4
27	1.2	0.99	0.87	0.80	0.96	0.85	1.1	3.5	e8.2	2.9	1.8	e1.4
28	1.2	0.97	0.86	0.82	0.92	0.84	1.1	3.8	e8.1	2.9	1.8	e1.4
29	1.2	0.94	0.85	0.85	---	0.85	1.1	4.4	e7.9	2.8	1.8	e1.4
30	1.2	0.97	0.84	0.94	---	0.85	1.1	5.0	e7.5	2.8	1.7	e1.4
31	1.2	---	0.83	1.0	---	0.87	---	5.7	---	2.7	1.7	---
TOTAL	39.7	32.23	28.00	24.60	31.83	26.37	33.20	56.39	242.7	131.5	65.8	45.4
MEAN	1.28	1.07	0.90	0.79	1.14	0.85	1.11	1.82	8.09	4.24	2.12	1.51
MAX	1.4	1.2	0.96	1.0	1.3	0.93	1.2	5.7	9.2	7.1	2.7	1.7
MIN	1.2	0.94	0.83	0.74	0.92	0.81	0.92	0.99	6.0	2.7	1.7	1.4
AC-FT	79	64	56	49	63	52	66	112	481	261	131	90
MEAN†	1.34	1.10	0.92	0.81	1.15	0.87	1.12	1.86	8.17	4.35	2.23	1.59
AC-FT†	82	65	57	50	64	53	67	114	486	268	137	95

CAL YR 2002 TOTAL 675.90 MEAN 1.85 MAX 6.8 MIN 0.23 AC-FT 1340 MEAN† 1.90 AC-FT 1376
WTR YR 2003 TOTAL 757.72 MEAN 2.08 MAX 9.2 MIN 0.74 AC-FT 1500 MEAN† 2.12 AC-FT 1538

e Estimated
† Adjusted for diversion by pumping.

11507001 UPPER KLAMATH LAKE NEAR KLAMATH FALLS, OR

LOCATION.--Lat 42°15'00", long 121°48'55", in NW 1/4 SW 1/4 sec.19, T.38 S., R.9 E., Klamath County, Hydrologic Unit 18010203, at southeast end of lake, 1.4 mi upstream from outlet and 2.5 mi northwest of Main Street Bridge at Klamath Falls.

DRAINAGE AREA.--3,810 mi^2, approximately, including 26.2 mi^2 in closed basin of Crater Lake.

PERIOD OF RECORD.--May 1904 to September 1922 (gage heights only), October 1922 to current year. Monthend contents only October 1923 to September 1927, published in WSP 1315-B.

GAGE.--Water-stage recorder. Datum of gage is 4,098.22 ft above NGVD of 1929, or 4,100.00 ft above Bureau of Reclamation datum. Gage readings have been reduced to elevations above Bureau of Reclamation datum. See WSP 1735 for history of changes prior to Nov. 10, 1923. Since Oct. 1, 1974, supplementary water-stage recorders at sites 7 mi north and 21 mi northwest at same datum (water-surface transfer by Pacific Power and Light Co.).

REMARKS.--Reservoir is formed by concrete dam at outlet of natural lake, completed in 1921, replacing a temporary dam built in 1919; controlled storage began Apr. 15, 1919. Capacity, 523,700 acre-ft between elevations 4,136.0 ft and 4,143.3 ft. Dead storage below elevation 4,136.0 ft is 211,300 acre-ft. Stored water may be diverted through "A" Canal for irrigation on land under Klamath project of Bureau of Reclamation, or released to Link River through dam or powerplants at Klamath Falls. Contents given herein represent those above elevation 4,136.0 ft. Prior to Oct. 1,1973, contents given represented those above elevation 4,135.0 ft. Prior to Sept. 30, 1974, contents at end of month obtained by averaging elevations for last 3 days of month and first 3 days of following month to compensate for wind effect. Since Oct. 1, 1974, daily elevations are weighted mean of elevations at base and supplementary gages; contents at end of month are obtained from weighted midnight elevations of base and supplementary gages.

COOPERATION.--Capacity table furnished by Bureau of Reclamation, Klamath Project.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 4,144.98 ft about Apr. 20, 1904, from high-water marks; minimum recorded, 4,135.55 ft Oct. 30, 1944.

EXTREMES FOR CURRENT YEAR.--Maximum weighted daily elevation, 4,143.29 ft Mar. 27; minimum weighted daily, 4,138.50 ft Oct. 13, 14.

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

4,136	0	4,139	193,700	4,142	414,400
4,137	61,300	4,140	262,600	4,143	498,300
4,138	127,000	4,141	335,400	4,143.3	523,700

Elevation above USBR Datum, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4138.60	4138.69	4139.27	4140.22	4141.62	4142.46	4143.22	4143.25	4143.01	4141.94	4140.66	4139.61
2	4138.59	4138.67	4139.29	4140.25	4141.64	4142.48	4143.18	4143.23	4142.98	4141.89	4140.62	4139.58
3	4138.54	4138.67	4139.31	4140.29	4141.68	4142.52	4143.16	4143.24	4142.96	4141.84	4140.59	4139.52
4	4138.55	4138.68	4139.32	4140.31	4141.72	4142.52	4143.20	4143.23	4142.92	4141.79	4140.56	4139.51
5	4138.55	4138.69	4139.33	4140.34	4141.75	4142.54	4143.19	4143.24	4142.89	4141.73	4140.51	4139.50
6	4138.56	4138.64	4139.33	4140.37	4141.79	4142.55	4143.20	4143.22	4142.85	4141.69	4140.47	4139.45
7	4138.56	4138.54	4139.33	4140.38	4141.80	4142.56	4143.21	4143.22	4142.81	4141.64	4140.43	4139.42
8	4138.55	4138.73	4139.34	4140.40	4141.83	4142.58	4143.20	4143.21	4142.78	4141.58	4140.39	4139.39
9	4138.54	4138.78	4139.32	4140.43	4141.86	4142.60	4143.21	4143.19	4142.74	4141.54	4140.35	4139.37
10	4138.56	4138.84	4139.33	4140.45	4141.88	4142.66	4143.19	4143.18	4142.69	4141.50	4140.33	4139.40
11	4138.53	4138.90	4139.33	4140.46	4141.91	4142.68	4143.20	4143.17	4142.64	4141.46	4140.31	4139.39
12	4138.52	4138.92	4139.30	4140.50	4141.93	4142.66	4143.12	4143.18	4142.59	4141.40	4140.27	4139.39
13	4138.50	4138.95	4139.35	4140.58	4141.97	4142.55	4143.16	4143.18	4142.52	4141.36	4140.23	4139.38
14	4138.50	4138.97	4139.26	4140.66	4142.00	4142.66	4143.20	4143.20	4142.49	4141.32	4140.18	4139.33
15	4138.51	4139.00	4139.34	4140.71	4141.98	4142.81	4143.19	4143.20	4142.46	4141.28	4140.14	4139.31
16	4138.52	4138.99	4139.52	4140.76	4142.05	4142.90	4143.19	4143.21	4142.44	4141.24	4140.10	4139.30
17	4138.52	4139.04	4139.62	4140.81	4142.09	4142.95	4143.22	4143.21	4142.42	4141.20	4140.07	4139.28
18	4138.53	4139.06	4139.62	4140.86	4142.14	4142.96	4143.22	4143.17	4142.38	4141.16	4140.04	4139.27
19	4138.55	4139.08	4139.58	4140.90	4142.19	4142.97	4143.18	4143.16	4142.35	4141.12	4140.00	4139.26
20	4138.58	4139.10	4139.59	4140.93	4142.22	4143.02	4143.16	4143.17	4142.32	4141.08	4139.97	4139.24
21	4138.61	4139.12	4139.70	4140.94	4142.25	4143.04	4143.16	4143.18	4142.29	4141.05	4139.90	4139.22
22	4138.60	4139.13	4139.74	4140.95	4142.29	4143.08	4143.16	4143.18	4142.26	4140.99	4139.87	4139.19
23	4138.60	4139.14	4139.75	4141.02	4142.34	4143.15	4143.09	4143.18	4142.24	4140.95	4139.86	4139.17
24	4138.60	4139.17	4139.77	4141.06	4142.39	4143.17	4143.16	4143.17	4142.19	4140.91	4139.84	4139.16
25	4138.60	4139.22	4139.79	4141.14	4142.39	4143.18	4143.13	4143.15	4142.15	4140.89	4139.81	4139.13
26	4138.63	4139.19	4139.80	4141.20	4142.39	4143.28	4143.17	4143.14	4142.14	4140.87	4139.77	4139.11
27	4138.61	4139.20	4139.85	4141.28	4142.42	4143.29	4143.19	4143.15	4142.10	4140.84	4139.76	4139.10
28	4138.62	4139.22	4139.99	4141.34	4142.43	4143.24	4143.16	4143.12	4142.06	4140.82	4139.73	4139.08
29	4138.68	4139.24	4140.04	4141.37	---	4143.22	4143.20	4143.10	4142.01	4140.79	4139.72	4139.02
30	4138.72	4139.25	4140.05	4141.42	---	4143.22	4143.24	4143.07	4141.98	4140.75	4139.69	4139.02
31	4138.70	---	4140.16	4141.51	---	4143.22	---	4143.04	---	4140.72	4139.65	---
MEAN	4138.57	4138.96	4139.56	4140.77	4142.03	4142.86	4143.18	4143.18	4142.49	4141.27	4140.12	4139.30
MAX	4138.72	4139.25	4140.16	4141.51	4142.43	4143.29	4143.24	4143.25	4143.01	4141.94	4140.66	4139.61
MIN	4138.50	4138.54	4139.26	4140.22	4141.62	4142.46	4143.09	4143.04	4141.98	4140.72	4139.65	4139.02
(†)	174300	211400	276100	378000	451800	516900	519500	499900	409500	310900	238200	220900
(‡)	+10100	+37100	+64700	+101900	+73800	+65100	+2600	-19600	-90400	-98600	-72700	-17300

CAL YR 2002 MEAN 4140.88 MAX 4143.17 MIN 4138.50 AC-FT† -72300
WTR YR 2003 MEAN 4141.02 MAX 4143.29 MIN 4138.50 AC-FT† +56700

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

11507500 LINK RIVER AT KLAMATH FALLS, OR

LOCATION.--Lat 42°13'25", long 121°47'35", in SW 1/4 NW 1/4 sec.32, T.38 S., R.9 E., Klamath County, Hydrologic Unit 18010204, on right bank 600 ft upstream from outlet of Keno Canal and 0.4 mi upstream from Main Street Bridge at Klamath Falls.

DRAINAGE AREA.--3,810 mi^2, approximately, including 26.2 mi^2 in closed basin of Crater Lake.

PERIOD OF RECORD.--May 1904 to current year. Records since October 1983 equivalent to earlier records if flow in Keno Canal is added to flow past station.

GAGE.--Water-stage recorder. Datum of gage is 4,083.71 ft above NGVD of 1929, or 4,085.50 ft above Bureau of Reclamation datum. Prior to Sept. 14, 1912, water-stage recorder or nonrecording gages at several sites within 0.5 mi of present site at various datums. Sept. 14, 1912, to Nov. 23, 1923, at site 600 ft downstream at datum 5.42 ft lower. Nov. 24, 1923, to Nov. 15, 1961, at site on left bank at present datum.

REMARKS.--Records good. Flow regulated since 1919 by Upper Klamath Lake (station 11507001). Large diurnal fluctuation caused by powerplant upstream from station. Water diverted upstream from station by main or "A" Canal of Klamath project. Many other diversions upstream from lake. All records presented herein do not include flow in Keno Canal which, since September 1908, has diverted from Upper Klamath Lake at Link River Dam for power generation, and returns flow to Link River downstream from station.

AVERAGE DISCHARGE.--79 years (water years 1905-83), 1,593 ft^3/s, 1,154,000 acre-ft/yr, not adjusted for "A" Canal.
20 years (water years 1984-2003), 1,244 ft^3/s, 901,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,400 ft^3/s May 12, 1904, gage height at Main Street Bridge, 7.30 ft, datum then in use, from floodmarks; minimum daily discharge, 17 ft^3/s Dec. 13, 1937.

EXTREMES FOR CURRENT YEAR.-- Maximum discharge, 4,850 ft^3/s Mar. 27, gage height, 3.97 ft; minimum, 265 ft^3/s Mar. 13, result of regulation from Upper Klamath Lake.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	502	767	544	510	374	286	2540	1750	1700	1580	680	988
2	493	1100	544	512	501	286	2450	1930	1820	1760	632	875
3	483	1070	523	749	500	286	2020	2120	1740	1450	765	1060
4	481	934	720	754	501	287	1760	2130	1660	1190	846	869
5	472	603	923	867	503	287	1710	2130	1780	1180	819	817
6	608	697	1300	857	503	287	1650	2120	1690	1090	843	917
7	602	756	953	945	505	286	1680	2130	1530	1030	809	968
8	685	591	874	669	507	286	1780	2120	1530	1020	844	1270
9	684	510	1110	510	508	286	1780	e2020	1560	827	716	1260
10	747	542	1230	511	625	288	1780	e1870	1500	945	764	568
11	938	591	1170	511	741	287	1780	e1700	1670	862	871	533
12	839	607	848	511	559	285	1790	e1530	1770	849	765	578
13	818	563	616	519	493	278	1820	1270	1610	765	682	1000
14	732	503	504	523	494	283	1720	907	2190	567	871	930
15	512	503	512	525	492	291	1550	981	1120	634	848	820
16	515	503	517	475	495	296	e1440	1200	735	716	692	518
17	513	505	621	416	395	299	1630	1250	720	828	719	505
18	490	503	737	417	297	298	1790	1220	1220	722	802	644
19	505	560	746	419	299	296	1800	805	1010	713	980	876
20	506	687	737	421	291	299	1860	682	870	789	1080	1500
21	553	711	666	420	286	418	1870	658	742	930	1000	1550
22	771	736	713	417	287	744	1610	745	892	1020	875	632
23	795	735	595	423	288	757	1410	873	1230	1120	860	773
24	879	708	512	425	288	757	912	802	1220	645	619	751
25	875	698	513	428	282	1100	828	898	628	664	775	1270
26	878	754	511	429	281	2260	1050	638	855	610	792	1080
27	768	630	515	374	282	3740	1040	977	1330	590	666	891
28	498	582	508	277	282	3570	1030	1600	1400	551	638	934
29	356	562	505	276	---	2730	1100	1680	1220	644	610	1120
30	360	570	496	278	---	2830	1550	1640	1320	664	994	995
31	354	---	508	280	---	2710	---	1490	---	666	974	---
TOTAL	19212	19781	21771	15648	11859	27393	48730	43866	40262	27621	24831	27492
MEAN	620	659	702	505	424	884	1624	1415	1342	891	801	916
MAX	938	1100	1300	945	741	3740	2540	2130	2190	1760	1080	1550
MIN	354	503	496	276	281	278	828	638	628	551	610	505
AC-FT	38110	39240	43180	31040	23520	54330	96660	87010	79860	54790	49250	54530

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

MEAN	937	1085	1281	1426	1523	1940	1833	1420	1115	845	803	738
MAX	2125	3739	4075	5832	4797	5261	3801	3338	1998	1197	1264	1205
(WY)	1985	1985	1984	1997	1996	1986	1993	1998	1998	1999	2001	1996
MIN	606	434	451	372	214	119	342	286	648	543	551	268
(WY)	1990	1992	1995	1995	1994	1992	1991	1991	1990	1987	1991	2000

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1984 - 2003	
ANNUAL TOTAL	325838		328466			
ANNUAL MEAN	893		900		1244	
HIGHEST ANNUAL MEAN					2200	1984
LOWEST ANNUAL MEAN					547	1992
HIGHEST DAILY MEAN	1750	Mar 17	3740	Mar 27	6920	Jan 8 1997
LOWEST DAILY MEAN	278	Aug 28	276	Jan 29	95	Mar 1 1992
ANNUAL SEVEN-DAY MINIMUM	369	Sep 19	284	Feb 25	96	Feb 28 1992
ANNUAL RUNOFF (AC-FT)	646300		651500		901200	
10 PERCENT EXCEEDS	1400		1730		2550	
50 PERCENT EXCEEDS	832		747		909	
90 PERCENT EXCEEDS	489		355		417	

e Estimated

11509500 KLAMATH RIVER AT KENO, OR

LOCATION.--Lat 42°08'00", long 121°57'40", in NW 1/4 SE 1/4 sec.35, T.39 S., R.7 E., Klamath County, Hydrologic Unit 18010206, on left bank 1.7 mi northwest of Keno and 4.5 mi upstream from Spencer Creek, and at mile 231.9.

DRAINAGE AREA.--3,920 mi^2, approximately (not including Lost River or Lower Klamath Lake basins).

PERIOD OR RECORD.--June 1904 to December 1913, October 1929 to current year. Monthly discharge only October to December 1929, published in WSP 1315-B.

GAGE.--Water-stage recorder. Datum of gage is 3,961 ft above NGVD of 1929 (from river-profile survey). See WSP 1735 for history of changes prior to Nov. 6, 1954.

REMARKS.--Records good. Flow regulated since 1919 by Upper Klamath Lake (station 11507001). Fluctuation by Keno powerplant 0.9 mi upstream. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--83 years (water years 1905-13, 1930-2003), 1,629 ft^3/s, 1,180,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,300 ft^3/s Feb. 28, 1986, gage height, 12.82 ft, caused by regulation from Keno powerplant 0.9 mi upstream; minimum discharge, 26 ft^3/s Sept. 23, 1956; minimum daily, 60 ft^3/s May 19, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 15.3 ft, from floodmark (original datum), about May 10, 1904, discharge, 9,250 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,890 ft^3/s Mar. 28, gage height, 8.79 ft; minimum discharge, 261 ft^3/s June 21.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	630	591	313	765	494	328	2310	2240	1410	801	599	717
2	629	835	315	719	571	432	2290	2260	1450	807	615	717
3	630	839	315	834	583	463	2000	2570	1450	807	613	791
4	628	842	371	924	652	459	1850	2570	1180	807	617	768
5	652	740	557	920	759	441	1870	2540	1220	803	615	765
6	675	555	908	963	744	431	2020	2540	1300	805	669	765
7	674	549	721	990	585	439	2170	2560	1280	800	663	856
8	716	556	483	881	577	494	2130	2590	1280	813	700	854
9	754	555	663	761	564	555	2140	2420	1320	812	699	998
10	902	529	908	702	558	581	2140	2310	1390	774	698	471
11	1080	485	894	648	732	595	2150	2300	1380	657	698	692
12	940	471	657	613	722	484	2140	2150	1380	590	678	950
13	923	437	437	590	658	453	2140	1680	1390	587	659	1130
14	890	352	438	744	702	767	2060	1570	1390	590	672	1130
15	580	429	442	1150	590	1180	1900	1570	579	565	688	893
16	560	449	431	960	584	973	1870	1760	277	568	619	497
17	e556	484	300	612	462	993	2040	1760	279	578	615	544
18	e556	483	578	520	473	980	2180	1650	277	561	708	747
19	e563	479	578	493	466	978	2180	1250	278	520	789	1020
20	e569	476	574	428	476	794	2160	1150	285	505	779	1430
21	e574	392	574	471	480	574	2080	986	288	503	767	1370
22	612	386	574	484	480	858	1930	991	388	584	770	750
23	709	385	555	490	480	941	1790	990	486	532	690	793
24	762	387	497	494	482	784	1520	916	644	433	687	860
25	773	387	455	761	487	1450	1520	786	679	452	689	1110
26	775	386	434	775	507	2200	1540	801	704	505	631	1070
27	775	387	466	775	447	2530	1670	990	704	511	628	1010
28	722	323	806	462	303	3410	1750	1580	705	504	653	1010
29	302	312	966	491	---	2800	1750	1590	705	510	662	1010
30	303	312	838	560	---	2430	2070	1550	706	515	685	1020
31	300	---	796	570	---	2590	---	1380	---	516	678	---
TOTAL	20714	14793	17844	21550	15618	33387	59360	54000	26804	19315	20933	26738
MEAN	668	493	576	695	558	1077	1979	1742	893	623	675	891
MAX	1080	842	966	1150	759	3410	2310	2590	1450	813	789	1430
MIN	300	312	300	428	303	328	1520	786	277	433	599	471
AC-FT	41090	29340	35390	42740	30980	66220	117700	107100	53170	38310	41520	53030

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 2003, BY WATER YEAR (WY)

MEAN	1365	1607	1855	2006	2179	2570	2293	1760	1096	794	914	1142
MAX	3055	4673	5732	7702	7564	8197	6594	5258	3713	2748	1898	2214
(WY)	1957	1985	1984	1965	1965	1972	1956	1956	1906	1906	1958	1943
MIN	564	290	391	542	254	215	166	109	97.6	114	146	246
(WY)	1982	1935	1935	1935	1992	1992	1931	1931	1931	1931	1992	1992

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1905 - 2003	
ANNUAL TOTAL	309989		331056			
ANNUAL MEAN	849		907		1629	
HIGHEST ANNUAL MEAN					3582	1956
LOWEST ANNUAL MEAN					340	1992
HIGHEST DAILY MEAN	2390	Feb 26	3410	Mar 28	9780	Mar 5 1972
LOWEST DAILY MEAN	300	Oct 31	277	Jun 16	60	May 19 1934
ANNUAL SEVEN-DAY MINIMUM	323	Nov 28	296	Jun 16	78	Jun 4 1931
ANNUAL RUNOFF (AC-FT)	614900		656600		1180000	
10 PERCENT EXCEEDS	1500		1960		3170	
50 PERCENT EXCEEDS	715		702		1240	
90 PERCENT EXCEEDS	386		437		419	

e Estimated

11510700 KLAMATH RIVER BELOW JOHN C. BOYLE POWERPLANT, NEAR KENO, OR

LOCATION.--Lat 42°05'05", long 122°04'20", in SE 1/4 SE 1/4 sec.14, T.40 S., R.6 E., Klamath County, Hydrologic Unit 18010206, on right bank 0.7 mi downstream from John C. Boyle powerplant, 8 mi downstream from Spencer Creek, and 8.5 mi southwest of Keno, and at mile 219.7.

DRAINAGE AREA.--4,080 mi^2, approximately (not including Lost River or Lower Klamath Lake basins).

PERIOD OF RECORD.--January 1959 to current year. Prior to Oct. 1, 1961, published as "below Big Bend powerplant."

REVISED RECORDS.--WDR OR-87-1: 1967.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 3,274.82 ft above NGVD of 1929 (levels by Pacific Power & Light Co.).

REMARKS.--Records good. Flow regulated by Upper Klamath Lake (station 11507001). Large diurnal fluctuation caused by Keno and John C. Boyle powerplants. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--44 years(water years 1960-2003), 1,801 ft^3/s, 1,305,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft^3/s Feb. 21, 1996, gage height, 9.50 ft; minimum discharge, 283 ft^3/s Feb. 17, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,010 ft^3/s Mar. 28, gage height, 6.46 ft; minimum discharge, 293 ft^3/s Feb. 25, 26.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	850	1240	718	943	789	457	2980	e2830	1730	1030	759	1140
2	855	1230	403	946	805	442	2540	e2880	1720	1190	764	676
3	858	668	433	965	990	896	2560	2910	1680	1050	806	934
4	862	1350	864	1230	1010	441	2180	2920	1800	1010	830	1000
5	867	822	1090	1170	1110	878	2210	2920	1490	1060	868	1050
6	875	814	1060	1170	615	670	2270	2910	1560	908	866	1270
7	884	813	662	1150	1370	704	2700	2910	1530	1210	847	1070
8	893	804	663	807	848	697	2630	2920	1470	1050	1220	1150
9	908	725	1070	806	768	832	2520	2920	1570	1050	746	886
10	1420	725	1160	819	802	696	2530	2850	1670	899	976	461
11	1510	678	1170	763	722	724	2750	2600	1640	843	862	1090
12	987	784	739	740	666	949	2520	2490	1570	809	945	e1270
13	976	662	748	1020	1000	596	2520	2280	1630	793	946	1430
14	1360	636	617	1060	922	920	2520	1850	1800	828	1020	1400
15	815	763	634	1710	836	1570	2360	1800	671	835	961	912
16	824	721	741	881	841	1400	2170	1940	520	704	874	734
17	841	711	818	967	555	1270	2520	1950	520	788	896	e620
18	578	710	819	660	806	1270	2510	1830	518	742	931	e797
19	813	839	808	654	687	1280	2490	1830	519	715	952	e1060
20	814	746	815	753	671	1160	2500	1340	517	705	984	e1470
21	808	456	814	903	725	909	2480	1310	520	850	954	e1430
22	1040	651	810	755	695	1020	2400	1360	530	875	890	880
23	1040	679	815	750	667	1110	2300	1020	e623	725	927	e908
24	1030	606	740	762	673	993	2040	1400	e662	647	901	e1030
25	935	609	360	1220	744	1460	1600	1060	e695	812	1010	e1140
26	879	697	744	1150	701	2650	1730	1020	e713	721	733	e1110
27	1060	710	758	886	686	2890	2330	1640	728	705	1080	1060
28	1080	368	1130	970	469	3850	e2530	1640	995	711	941	e1050
29	366	355	1300	739	---	3250	e2560	1830	1060	827	951	e1050
30	534	657	1060	756	---	3000	e2700	1850	854	736	972	e1050
31	360	---	1010	807	---	3000	---	1400	---	717	970	---
TOTAL	27922	22229	25573	28912	22173	41984	72650	64410	33505	26545	28382	31128
MEAN	901	741	825	933	792	1354	2422	2078	1117	856	916	1038
MAX	1510	1350	1300	1710	1370	3850	2980	2920	1800	1210	1220	1470
MIN	360	355	360	654	469	441	1600	1020	517	647	733	461
AC-FT	55380	44090	50720	57350	43980	83280	144100	127800	66460	52650	56300	61740

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2003, BY WATER YEAR (WY)

MEAN	1502	1845	2256	2446	2545	2996	2499	1811	998	692	892	1174
MAX	3157	4506	5733	7905	7780	8755	5645	5156	2995	1339	1102	1876
(WY)	1985	1985	1984	1965	1965	1972	1974	1998	1998	1982	1998	1965
MIN	786	735	792	771	489	450	537	418	391	349	349	457
(WY)	1982	1992	1995	1993	1992	1992	1994	1992	1992	1992	1992	1992

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1960 - 2003	
ANNUAL TOTAL	420275		425413			
ANNUAL MEAN	1151		1166		1801	
HIGHEST ANNUAL MEAN					3024	1984
LOWEST ANNUAL MEAN					564	1992
HIGHEST DAILY MEAN	2870	Jan 29	3850	Mar 28	10800	Mar 5 1972
LOWEST DAILY MEAN	355	Nov 29	355	Nov 29	302	Aug 30 1995
ANNUAL SEVEN-DAY MINIMUM	521	Nov 27	521	Nov 27	338	Aug 30 1992
ANNUAL RUNOFF (AC-FT)	833600		843800		1305000	
10 PERCENT EXCEEDS	1890		2480		3390	
50 PERCENT EXCEEDS	931		922		1300	
90 PERCENT EXCEEDS	630		659		621	

e Estimated

11516530 KLAMATH RIVER BELOW IRON GATE DAM, CA

LOCATION.--Lat 41°55'41", long 122°26'35", in SE 1/4 NE 1/4 sec.17, T.47 N., R.5 W., Siskiyou County, Hydrologic Unit 18010206, on left bank 0.1 mi downstream from Bogus Creek, 0.6 mi downstream from Iron Gate Dam, and 5.9 mi northeast of Hornbrook.

DRAINAGE AREA.--4,630 mi^2, approximately (not including Lost River, Butte Creek, or Lower Klamath Lake basins).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1960 to current year. Chemical data available October 1961 to September 1981. Water temperature data available October 1962 to September 1980.

GAGE.--Water-stage recorder. Datum of gage is 2,162.44 ft above NGVD of 1929 (levels by PacifiCorp, formerly Pacific Power and Light Co.).

REMARKS.--Records excellent. Flow regulated by Upper Klamath Lake (station 11507001), capacity, 523,700 acre-ft, Iron Gate Reservoir, other smaller reservoirs, and diversions upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,400 ft^3/s Dec. 22, 1964, gage height, 13.63 ft, from rating curve extended above 15,000 ft^3/s, on basis of slope-area measurement of peak flow; minimum daily discharge, 389 ft^3/s Aug. 25-28, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 4,180 ft^3/s Mar. 28, gage height, 6.14 ft; minimum daily discharge, 730 ft^3/s July 16.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1350	884	886	2190	1730	1030	3190	2580	1710	1010	960	1170
2	1350	887	885	1890	1590	908	3110	2650	1640	1010	996	1190
3	1350	888	882	1810	1450	907	3020	2970	1640	1010	999	1190
4	1350	890	885	1720	1340	902	2820	3050	1640	1010	998	1190
5	1350	890	886	1600	1220	910	2650	3120	1640	1010	994	1190
6	1350	890	886	1460	1150	871	2580	3160	1530	1010	992	1190
7	1340	889	886	1350	1060	868	2620	3090	1500	1010	995	1190
8	1320	895	887	1230	1020	870	2820	3140	1500	1010	995	1190
9	1330	882	889	1100	1010	869	2830	3110	1510	1010	996	1190
10	1310	881	891	978	957	869	2910	3040	1510	969	996	1190
11	1200	880	891	881	878	869	3100	3030	1400	843	1000	1190
12	1060	886	890	894	763	872	3090	3020	1350	755	1000	1190
13	912	887	888	993	775	873	3150	2750	1340	747	1000	1190
14	880	886	892	1510	778	1040	3180	2490	1360	746	995	1190
15	880	886	888	1820	772	1720	3010	2440	1370	734	995	1190
16	883	886	922	1810	809	1750	2830	2300	1260	723	995	1190
17	889	887	894	1810	779	1600	2720	2040	1220	731	995	1190
18	885	888	887	1730	773	1440	2690	1840	1220	731	995	1190
19	884	890	886	1580	772	1370	2690	1800	1220	731	995	1190
20	886	891	892	1440	923	1420	2670	1790	1210	731	997	1350
21	889	891	893	1300	1030	1470	2660	1790	1110	731	1000	1360
22	884	887	891	1160	1030	1480	2660	1790	1050	731	1000	1380
23	882	886	891	1030	1030	1490	2620	1790	1050	736	1000	1390
24	881	886	891	1020	1020	1480	2490	1790	1050	739	1000	1380
25	880	886	891	1120	1080	1610	2440	1780	1050	749	1000	1370
26	876	886	891	1120	1160	1910	2390	1780	1000	735	995	1370
27	875	886	965	1460	1160	2750	2360	1780	1010	735	996	1360
28	876	886	1740	1810	1120	4180	2350	1780	1010	734	999	1360
29	879	886	2480	1790	---	4040	2310	1780	1010	736	1000	1360
30	881	886	2280	1780	---	3670	2420	1780	1010	737	1000	1360
31	881	---	2380	1780	---	3310	---	1780	---	736	1000	---
TOTAL	32443	26609	32986	45166	29179	49348	82380	73030	39120	25630	30878	37630
MEAN	1047	887	1064	1457	1042	1592	2746	2356	1304	827	996	1254
MAX	1350	895	2480	2190	1730	4180	3190	3160	1710	1010	1000	1390
MIN	875	880	882	881	763	868	2310	1780	1000	723	960	1170
AC-FT	64350	52780	65430	89590	57880	97880	163400	144900	77590	50840	61250	74640

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2003, BY WATER YEAR (WY)

MEAN	1611	2042	2623	2923	3067	3572	2985	2147	1158	798	976	1280
MAX	3353	5254	6735	9553	9150	10780	6922	5559	3289	1429	1208	2052
(WY)	1985	1985	1984	1997	1965	1972	1971	1998	1998	1982	1965	1965
MIN	852	873	889	888	525	511	572	512	506	428	398	538
(WY)	1982	1992	1992	1992	1992	1992	1994	1992	1992	1992	1992	1992

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1961 - 2003	
ANNUAL TOTAL	473055		504399			
ANNUAL MEAN	1296		1382		2094	
HIGHEST ANNUAL MEAN					3657	1965
LOWEST ANNUAL MEAN					641	1992
HIGHEST DAILY MEAN	3070	Feb 28	4180	Mar 28	25000	Dec 22 1964
LOWEST DAILY MEAN	659	Aug 4	723	Jul 16	389	Aug 25 1992
ANNUAL SEVEN-DAY MINIMUM	660	Aug 2	730	Jul 16	390	Aug 24 1992
MAXIMUM PEAK FLOW			4410	Mar 28	29400	Dec 22 1964
MAXIMUM PEAK STAGE			6.14	Mar 28	13.63	Dec 22 1964
ANNUAL RUNOFF (AC-FT)	938300		1000000		1517000	
10 PERCENT EXCEEDS	2070		2650		4060	
50 PERCENT EXCEEDS	988		1050		1390	
90 PERCENT EXCEEDS	758		873		735	

11516530 KLAMATH RIVER BELOW IRON GATE DAM, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Water years 2000.01, June 2002 to current year (seasonal only)
pH: Water years 2000.01, June 2002 to current year (seasonal only).
WATER TEMPERATURE: Water years 1962.80, 2000.01, June 2002 to current year (seasonal only).
DISSOLVED OXYGEN: Water years 2000.01, June 2002 to current year (seasonal only).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1999 to September 2001, June 2002 to current year (seasonal only).
pH: December 1999 to September 2001, June 2002 to current year (seasonal only).
WATER TEMPERATURE: October 1962 to June 1980, December 1999 to September 2001, June 2002 to current year (seasonal only).
DISSOLVED OXYGEN: December 1999 to September 2001, June 2002 to current year (seasonal only).

INSTRUMENTATION.--Water-quality monitor since December 1999. Electronic data logger with 60 minute interval.

REMARKS.--Dissolved Oxygen records rated excellent except for Oct. 14.16, May 26 to June 2, July 15.17, July 30 to Aug. 2, Aug. 16.21, 28.30 and Sept. 18.21, which are rated good; Oct. 1.3, July 18.22, Aug. 3.6, Aug. 31 to Sept. 3, Sept. 22.27, which are rated fair; Sept. 4.10, 28.30, which are rated poor. pH records rated excellent Specific condutance records rated excellent, except for Oct. 27 to Nov. 6 and Sept. 26.30, which are rated good. Water temperature records rated excellent. Interruption in record due to malfunction of the recording equipment.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 219 microsiemens, June 16, 17, 2000; minimum recorded, 115 microsiemens, July 31, 2003.
pH: Maximum recorded, 9.3 standard units, Aug. 20, 2001; minimum recorded, 6.4 standard units, Dec. 7, 8, 2001.
WATER TEMPERATURE: Maximum recorded, 23.5°C, Aug. 3, 4, 1977, Aug. 10, 1978; minimum recorded, 0.5°C, many days in 1972.
DISSOLVED OXYGEN: Maximum recorded, 15.3 mg/L, Sept. 18, 2003; minimum recorded, 3.0 mg/L, July 23, 2001.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 216 microsiemens, Oct. 10, 13; minimum recorded, 115 microsiemens, July 31.
pH: Maximum recorded, 9.1 standard units, Sept. 6,7; minimum recorded, 7.4 standard units, Nov. 2.5.
WATER TEMPERATURE: Maximum recorded, 23.1°C, July 30; minimum recorded, 10.4°C, Nov. 5.
DISSOLVED OXYGEN: Maximum recorded, 15.3 mg/L, Sept. 18; minimum recorded, 5.2 mg/L, Aug. 5, 9.

WATER-QUALITY DATA

Date	Time	Instan-taneous dis-charge, cfs (00061)	Turbid-ity, wat unf lab, Hach 2100AN NTU (99872)	Baro-metric pres-sure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	pH, solved oxygen, percent of sat-uration (00301)	Specif. water, unfltrd field, std units (00400)	conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)
JUL 2003									
14...	0810	747	1.9	712	8.6	105	8.2	198	21.5
SEP									
15...	0800	1190	4.1	710	7.0	82	8.4	160	19.5

Date	Hard-ness, water, aunfltrd mg/L as CaCO3 ((00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)	Potas-sium, water, fltrd, mg/L (00935)	Sodium dsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)
JUL 2003									
14...	65	13.4	7.73	3.03	.9	16.3	34	100	122
SEP									
15...	55	11.5	6.43	2.54	.8	13.2	33	68	82

Date	Carbon-ate, wat flt incrm. titr., field, mg/L (00452)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)
JUL 2003									
14...	.0	4.25	<.2	28.1	13.3	147	.20	150	.53
SEP									
15...	.0	3.88	<.2	37.5	6.3	123	.18	130	.61

Date	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, unfltrd mg/L (00665)	Organic carbon, water, unfltrd mg/L (00680)	Pheo-phytin a, phyto-plank-ton, ug/L (62360)	Chloro-phyll a phyto-plank-ton, fluoro, ug/L (70953)	Iron, water, fltrd, ug/L (01046)	Mangan-ese, water, fltrd, ug/L (01056)
JUL 2003									
14...	E.014	.125	.10	.12	6.9	3.8	5.8	24	3.2
SEP									
15...	E.009	.317	.12	.16	8.5	3.8	6.8	21	2.4

< -- Less than
E -- Estimated value

11516530 KLAMATH RIVER BELOW IRON GATE DAM, CA--Continued

WATER-QUALITY RECORDS

SPECIFIC CONDUCTANCE, MICROSIEMENS/CM AT 25 DEG. C, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	194	193	208	192	---	---	---	---	---	---	---	---
2	200	194	206	193	---	---	---	---	---	---	---	---
3	204	196	215	200	---	---	---	---	---	---	---	---
4	205	203	213	201	---	---	---	---	---	---	---	---
5	206	205	214	194	---	---	---	---	---	---	---	---
6	208	206	---	---	---	---	---	---	---	---	---	---
7	210	204	---	---	---	---	---	---	---	---	---	---
8	211	209	---	---	---	---	---	---	---	---	---	---
9	211	210	---	---	---	---	---	---	---	---	---	---
10	216	203	---	---	---	---	---	---	---	---	---	---
11	214	207	---	---	---	---	---	---	---	---	---	---
12	214	206	---	---	---	---	---	---	---	---	---	---
13	216	207	---	---	---	---	---	---	---	---	---	---
14	211	206	---	---	---	---	---	---	---	---	---	---
15	213	206	---	---	---	---	---	---	---	---	---	---
16	213	207	---	---	---	---	---	---	---	---	---	---
17	209	207	---	---	---	---	---	---	---	---	---	---
18	210	208	---	---	---	---	---	---	---	---	---	---
19	211	209	---	---	---	---	---	---	---	---	---	---
20	213	210	---	---	---	---	---	---	---	---	---	---
21	212	205	---	---	---	---	---	---	---	---	---	---
22	213	211	---	---	---	---	---	---	---	---	---	---
23	213	210	---	---	---	---	---	---	---	---	---	---
24	215	200	---	---	---	---	---	---	---	---	---	---
25	204	197	---	---	---	---	---	---	---	---	---	---
26	203	197	---	---	---	---	---	---	---	---	---	---
27	204	198	---	---	---	---	---	---	---	---	---	---
28	206	196	---	---	---	---	---	---	---	---	---	---
29	208	194	---	---	---	---	---	---	---	---	---	---
30	201	192	---	---	---	---	---	---	---	---	---	---
31	200	193	---	---	---	---	---	---	---	---	---	---
MONTH	216	192	---	---	---	---	---	---	---	---	---	---

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	181	177	194	192	172	116	167	161
2	---	---	---	---	184	179	194	193	180	161	168	165
3	---	---	---	---	186	181	194	192	174	166	173	165
4	---	---	---	---	190	186	194	191	175	165	168	166
5	---	---	---	---	193	189	192	185	182	167	168	166
6	---	---	---	---	195	192	192	187	180	174	169	163
7	---	---	---	---	197	194	192	189	177	175	169	163
8	---	---	---	---	198	194	192	190	178	175	168	166
9	---	---	---	---	198	191	193	191	180	176	167	164
10	---	---	---	---	199	197	193	185	178	176	168	164
11	---	---	---	---	199	196	195	183	178	177	168	165
12	---	---	---	---	198	193	194	189	187	177	170	165
13	---	---	---	---	198	197	200	192	189	178	170	164
14	---	---	165	163	202	196	193	184	182	178	166	165
15	---	---	164	161	197	196	195	185	182	177	167	165
16	---	---	162	160	198	196	199	186	177	175	167	165
17	---	---	161	159	198	196	199	182	177	175	170	166
18	---	---	161	159	198	196	197	165	176	174	168	167
19	---	---	162	159	198	190	193	161	175	173	169	163
20	---	---	164	156	198	196	196	161	176	175	169	164
21	---	---	161	157	197	195	196	167	176	174	173	165
22	---	---	163	156	197	195	191	178	176	168	166	165
23	---	---	164	161	197	194	187	183	171	160	166	163
24	---	---	166	163	197	193	189	184	171	165	166	163
25	---	---	166	164	197	196	188	181	178	164	166	164
26	---	---	168	164	197	195	190	175	178	167	165	161
27	---	---	171	167	197	195	187	170	171	168	162	160
28	---	---	172	167	196	195	180	140	170	168	162	160
29	---	---	174	170	196	190	179	140	173	167	162	157
30	---	---	176	170	194	193	166	143	169	167	163	161
31	---	---	178	175	---	---	144	115	168	161	---	---
MONTH	---	---	---	---	202	177	200	115	189	116	173	157

11516530 KLAMATH RIVER BELOW IRON GATE DAM, CA--Continued

WATER-QUALITY RECORDS

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.0	7.7	7.6	7.5	---	---	---	---	---	---	---	---
2	7.9	7.6	7.5	7.4	---	---	---	---	---	---	---	---
3	7.8	7.6	7.5	7.4	---	---	---	---	---	---	---	---
4	8.0	7.7	7.5	7.4	---	---	---	---	---	---	---	---
5	8.0	7.7	7.5	7.4	---	---	---	---	---	---	---	---
6	7.9	7.7	---	---	---	---	---	---	---	---	---	---
7	8.3	7.7	---	---	---	---	---	---	---	---	---	---
8	8.0	7.7	---	---	---	---	---	---	---	---	---	---
9	7.9	7.8	---	---	---	---	---	---	---	---	---	---
10	8.4	7.8	---	---	---	---	---	---	---	---	---	---
11	8.0	7.8	---	---	---	---	---	---	---	---	---	---
12	7.9	7.6	---	---	---	---	---	---	---	---	---	---
13	7.7	7.6	---	---	---	---	---	---	---	---	---	---
14	7.8	7.7	---	---	---	---	---	---	---	---	---	---
15	7.7	7.6	---	---	---	---	---	---	---	---	---	---
16	7.8	7.6	---	---	---	---	---	---	---	---	---	---
17	7.9	7.7	---	---	---	---	---	---	---	---	---	---
18	8.0	7.7	---	---	---	---	---	---	---	---	---	---
19	8.0	7.8	---	---	---	---	---	---	---	---	---	---
20	8.3	7.8	---	---	---	---	---	---	---	---	---	---
21	8.0	7.7	---	---	---	---	---	---	---	---	---	---
22	7.9	7.6	---	---	---	---	---	---	---	---	---	---
23	7.8	7.6	---	---	---	---	---	---	---	---	---	---
24	8.0	7.6	---	---	---	---	---	---	---	---	---	---
25	8.0	7.7	---	---	---	---	---	---	---	---	---	---
26	7.9	7.6	---	---	---	---	---	---	---	---	---	---
27	7.8	7.7	---	---	---	---	---	---	---	---	---	---
28	7.9	7.7	---	---	---	---	---	---	---	---	---	---
29	7.8	7.7	---	---	---	---	---	---	---	---	---	---
30	7.8	7.6	---	---	---	---	---	---	---	---	---	---
31	7.7	7.6	---	---	---	---	---	---	---	---	---	---
MONTH	8.4	7.6	---	---	---	---	---	---	---	---	---	---

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	8.4	8.2	8.5	8.0	8.1	7.7	8.7	8.4
2	---	---	---	---	8.4	8.2	8.3	8.0	8.0	7.7	8.8	8.4
3	---	---	---	---	8.3	8.0	8.4	8.1	7.9	7.7	8.8	7.6
4	---	---	---	---	8.5	8.0	8.3	8.0	8.0	7.5	8.9	7.9
5	---	---	---	---	8.3	8.0	8.4	8.0	8.1	7.5	8.9	8.2
6	---	---	---	---	8.2	8.0	8.3	8.0	8.2	7.5	9.1	7.6
7	---	---	---	---	8.3	8.0	8.3	7.9	8.2	7.6	9.1	8.4
8	---	---	---	---	8.4	7.9	8.2	8.0	8.3	7.7	9.0	8.6
9	---	---	---	---	8.5	8.0	8.1	7.9	8.3	7.5	8.8	8.6
10	---	---	---	---	8.7	8.2	8.2	7.9	8.4	7.7	8.8	8.3
11	---	---	---	---	8.7	8.3	8.2	8.0	8.4	7.9	8.8	8.3
12	---	---	---	---	8.7	8.2	8.2	7.8	8.4	8.0	8.7	8.3
13	---	---	---	---	8.6	8.2	8.2	7.8	8.3	7.9	8.8	8.4
14	---	---	8.3	8.0	8.7	8.4	8.2	7.9	8.3	7.5	8.4	8.2
15	---	---	8.3	8.0	8.6	8.3	8.3	7.8	8.7	7.5	8.4	8.1
16	---	---	8.2	8.0	8.4	8.2	8.3	7.8	8.5	8.2	8.5	8.2
17	---	---	8.2	8.0	8.6	8.1	8.3	7.8	8.5	8.2	8.4	8.1
18	---	---	8.1	8.0	8.4	8.1	8.3	7.8	8.5	8.1	8.2	7.9
19	---	---	8.2	8.0	8.5	8.1	8.3	7.7	8.8	8.1	8.1	7.8
20	---	---	8.2	8.0	8.4	8.1	8.4	7.7	8.5	8.2	8.0	7.8
21	---	---	8.2	8.0	8.3	8.0	8.6	7.7	8.8	8.2	8.1	7.8
22	---	---	8.2	8.0	8.2	8.0	8.3	7.7	8.8	8.0	8.1	7.8
23	---	---	8.2	8.0	8.3	7.9	8.3	7.8	8.6	8.3	8.2	7.8
24	---	---	8.3	8.0	8.1	7.9	8.3	7.8	8.7	8.2	8.4	7.8
25	---	---	8.3	8.0	8.1	7.9	8.1	7.8	8.6	8.2	8.3	7.9
26	---	---	8.2	8.0	8.2	7.9	8.1	7.8	8.7	8.3	8.2	7.8
27	---	---	8.2	8.0	8.2	8.0	8.2	7.8	8.8	8.5	8.1	7.7
28	---	---	8.3	8.0	8.1	7.9	8.2	7.7	8.7	8.4	8.5	7.9
29	---	---	8.2	7.8	8.1	7.8	8.1	7.7	8.8	8.1	9.0	8.2
30	---	---	8.4	7.8	8.3	8.0	8.1	7.7	8.7	8.3	8.6	7.8
31	---	---	8.6	8.2	---	---	8.1	7.7	8.9	8.5	---	---

11516530 KLAMATH RIVER BELOW IRON GATE DAM, CA--Continued

WATER-QUALITY RECORDS

WATER TEMPERATURE, DEGREES C, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	16.9	16.3	11.8	11.2	---	---	---	---	---	---	---	---
2	16.7	15.9	11.4	10.9	---	---	---	---	---	---	---	---
3	16.3	15.9	11.1	10.7	---	---	---	---	---	---	---	---
4	16.6	15.8	11.0	10.5	---	---	---	---	---	---	---	---
5	16.6	15.8	10.9	10.4	---	---	---	---	---	---	---	---
6	16.4	15.7	---	---	---	---	---	---	---	---	---	---
7	16.6	15.6	---	---	---	---	---	---	---	---	---	---
8	16.3	15.5	---	---	---	---	---	---	---	---	---	---
9	15.9	15.3	---	---	---	---	---	---	---	---	---	---
10	16.0	15.3	---	---	---	---	---	---	---	---	---	---
11	15.6	14.8	---	---	---	---	---	---	---	---	---	---
12	15.0	14.4	---	---	---	---	---	---	---	---	---	---
13	14.9	14.3	---	---	---	---	---	---	---	---	---	---
14	14.9	14.3	---	---	---	---	---	---	---	---	---	---
15	14.8	14.2	---	---	---	---	---	---	---	---	---	---
16	14.7	14.2	---	---	---	---	---	---	---	---	---	---
17	14.6	14.0	---	---	---	---	---	---	---	---	---	---
18	14.7	14.0	---	---	---	---	---	---	---	---	---	---
19	14.8	14.0	---	---	---	---	---	---	---	---	---	---
20	14.9	14.1	---	---	---	---	---	---	---	---	---	---
21	14.4	14.0	---	---	---	---	---	---	---	---	---	---
22	14.2	13.7	---	---	---	---	---	---	---	---	---	---
23	13.9	13.4	---	---	---	---	---	---	---	---	---	---
24	13.9	13.4	---	---	---	---	---	---	---	---	---	---
25	13.7	13.2	---	---	---	---	---	---	---	---	---	---
26	13.7	12.9	---	---	---	---	---	---	---	---	---	---
27	13.2	12.9	---	---	---	---	---	---	---	---	---	---
28	13.2	12.7	---	---	---	---	---	---	---	---	---	---
29	12.8	12.4	---	---	---	---	---	---	---	---	---	---
30	12.5	12.0	---	---	---	---	---	---	---	---	---	---
31	12.2	11.7	---	---	---	---	---	---	---	---	---	---
MONTH	16.9	11.7	---	---	---	---	---	---	---	---	---	---

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	18.1	16.8	21.4	19.4	22.7	21.8	20.8	20.2
2	---	---	---	---	18.9	17.1	20.4	19.5	22.3	21.7	20.8	20.2
3	---	---	---	---	19.0	17.4	21.2	19.7	22.1	21.4	20.6	19.7
4	---	---	---	---	19.4	17.9	21.2	19.6	22.1	21.0	20.7	19.8
5	---	---	---	---	19.3	18.4	21.7	19.6	21.8	20.8	20.7	19.9
6	---	---	---	---	19.6	18.1	21.6	19.7	21.7	20.7	20.5	19.5
7	---	---	---	---	20.6	18.7	21.3	19.8	21.7	20.7	20.3	19.7
8	---	---	---	---	21.1	18.9	21.1	19.8	21.6	20.7	19.9	19.4
9	---	---	---	---	20.7	18.8	20.8	19.8	21.6	20.5	19.7	19.2
10	---	---	---	---	20.8	19.2	21.1	19.9	21.6	20.7	19.8	18.9
11	---	---	---	---	20.6	19.2	21.2	19.9	21.6	20.7	20.1	19.0
12	---	---	---	---	20.3	19.0	21.4	19.9	21.5	20.7	20.1	19.0
13	---	---	---	---	19.7	19.1	21.3	19.6	21.4	20.7	19.5	18.8
14	---	---	15.6	11.7	20.1	19.0	21.6	19.9	21.2	20.0	19.0	18.4
15	---	---	14.2	11.8	20.5	19.1	22.0	19.9	21.5	20.0	19.3	18.3
16	---	---	13.6	11.7	20.5	19.3	22.1	20.0	21.4	20.5	18.9	18.3
17	---	---	13.5	12.2	21.2	19.6	21.5	20.1	21.3	20.6	18.7	18.0
18	---	---	13.1	11.7	20.7	19.6	22.0	20.4	21.5	20.6	18.2	17.7
19	---	---	13.4	12.1	21.2	19.3	22.5	20.4	22.3	20.9	18.4	17.5
20	---	---	14.6	12.2	20.9	19.5	22.4	20.6	21.4	20.7	18.4	17.7
21	---	---	14.7	12.9	20.7	19.2	22.3	20.8	21.5	20.7	18.4	17.7
22	---	---	15.6	13.4	20.2	19.0	22.6	20.9	21.4	20.5	18.2	17.6
23	---	---	15.4	13.9	20.0	18.8	22.6	21.2	21.1	20.5	18.2	17.6
24	---	---	16.1	14.2	19.8	18.5	22.2	21.2	21.2	20.2	18.4	17.5
25	---	---	16.0	14.3	19.8	18.7	22.2	21.2	21.1	20.2	18.2	17.5
26	---	---	15.9	14.4	20.4	19.0	22.2	21.1	20.8	20.2	17.7	17.2
27	---	---	16.5	14.9	20.7	19.3	22.2	21.2	21.2	20.2	17.7	17.1
28	---	---	17.5	15.2	20.3	19.3	22.5	21.1	21.0	20.2	18.0	17.3
29	---	---	16.4	15.0	20.0	18.7	22.7	21.3	21.2	19.7	18.8	17.5
30	---	---	17.8	15.0	20.9	19.3	23.1	21.4	20.9	19.9	17.8	17.1
31	---	---	18.5	16.6	---	---	22.9	21.3	21.3	20.1	---	---
MONTH	---	---	---	---	21.2	16.8	23.1	19.4	22.7	19.7	20.8	17.1

11516530 KLAMATH RIVER BELOW IRON GATE DAM, CA--Continued

WATER-QUALITY RECORDS

OXYGEN DISSOLVED, MG/L, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	8.1	6.8	10.9	10.2	---	---	---	---	---	---	---	---
2	8.4	6.7	10.8	10.1	---	---	---	---	---	---	---	---
3	7.1	6.3	11.1	10.6	---	---	---	---	---	---	---	---
4	7.6	6.7	11.3	10.7	---	---	---	---	---	---	---	---
5	8.0	6.8	11.4	10.8	---	---	---	---	---	---	---	---
6	7.6	6.8	---	---	---	---	---	---	---	---	---	---
7	9.1	6.8	---	---	---	---	---	---	---	---	---	---
8	8.3	7.2	---	---	---	---	---	---	---	---	---	---
9	8.0	7.2	---	---	---	---	---	---	---	---	---	---
10	9.7	7.9	---	---	---	---	---	---	---	---	---	---
11	9.2	8.3	---	---	---	---	---	---	---	---	---	---
12	8.8	7.8	---	---	---	---	---	---	---	---	---	---
13	8.9	8.0	---	---	---	---	---	---	---	---	---	---
14	9.2	8.5	---	---	---	---	---	---	---	---	---	---
15	9.2	8.7	---	---	---	---	---	---	---	---	---	---
16	9.6	8.5	---	---	---	---	---	---	---	---	---	---
17	9.5	8.6	---	---	---	---	---	---	---	---	---	---
18	9.8	8.8	---	---	---	---	---	---	---	---	---	---
19	10.1	9.2	---	---	---	---	---	---	---	---	---	---
20	10.7	9.2	---	---	---	---	---	---	---	---	---	---
21	10.4	9.3	---	---	---	---	---	---	---	---	---	---
22	10.5	9.3	---	---	---	---	---	---	---	---	---	---
23	10.2	9.2	---	---	---	---	---	---	---	---	---	---
24	10.8	9.4	---	---	---	---	---	---	---	---	---	---
25	10.9	9.4	---	---	---	---	---	---	---	---	---	---
26	10.6	9.4	---	---	---	---	---	---	---	---	---	---
27	10.9	10.2	---	---	---	---	---	---	---	---	---	---
28	11.0	10.2	---	---	---	---	---	---	---	---	---	---
29	10.8	10.2	---	---	---	---	---	---	---	---	---	---
30	10.9	10.3	---	---	---	---	---	---	---	---	---	---
31	10.9	10.3	---	---	---	---	---	---	---	---	---	---
MONTH	11.0	6.3	---	---	---	---	---	---	---	---	---	---

	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	---	---	---	---	9.2	8.5	8.8	8.0	7.3	6.3	8.4	6.8
2	---	---	---	---	9.2	8.4	8.6	7.9	7.0	6.2	9.1	6.8
3	---	---	---	---	8.9	8.1	8.6	8.0	6.8	6.2	8.8	5.5
4	---	---	---	---	8.8	7.9	8.6	8.0	7.0	5.3	9.2	6.0
5	---	---	---	---	8.5	7.8	8.4	7.8	7.1	5.2	9.6	6.5
6	---	---	---	---	8.4	7.5	8.3	7.6	7.1	5.3	9.1	5.3
7	---	---	---	---	8.4	7.6	8.1	7.5	7.2	5.6	10.2	6.7
8	---	---	---	---	8.5	7.5	8.4	7.6	7.4	5.9	8.4	7.2
9	---	---	---	---	8.7	7.4	8.3	7.8	7.4	5.2	8.7	6.9
10	---	---	---	---	9.5	8.0	9.0	7.8	7.6	6.1	9.1	6.9
11	---	---	---	---	9.7	8.2	8.9	8.0	7.1	6.5	9.5	7.6
12	---	---	---	---	9.5	8.1	9.0	8.1	7.0	6.3	13.0	7.5
13	---	---	---	---	9.1	8.2	9.1	8.2	7.8	6.2	11.3	9.2
14	---	---	9.8	8.9	9.6	8.5	9.1	8.1	8.1	5.8	9.7	8.2
15	---	---	10.0	8.8	9.0	8.3	9.0	8.1	8.8	5.8	11.9	8.2
16	---	---	9.0	8.8	8.8	8.1	8.9	8.0	8.7	7.8	14.4	11.2
17	---	---	9.2	8.8	8.9	8.0	8.9	8.0	8.6	7.7	14.6	10.7
18	---	---	9.2	8.8	8.6	8.0	8.9	7.9	8.8	7.5	15.3	11.6
19	---	---	9.3	8.7	8.5	8.0	9.0	7.8	9.2	7.5	11.6	10.2
20	---	---	9.0	8.7	8.4	7.9	8.9	7.7	8.3	7.5	12.6	8.4
21	---	---	9.1	8.7	8.5	7.8	8.8	7.6	9.0	7.6	9.4	8.2
22	---	---	9.1	8.7	8.3	7.8	8.3	7.3	8.9	7.4	10.0	7.6
23	---	---	9.0	8.6	8.5	7.7	8.2	7.1	9.2	7.8	8.9	7.6
24	---	---	9.2	8.5	8.3	7.8	8.3	7.1	9.3	7.5	9.1	7.2
25	---	---	9.1	8.4	8.4	7.8	8.1	7.2	9.5	7.5	9.3	7.4
26	---	---	9.0	8.5	8.6	7.8	8.1	7.1	8.9	7.5	10.3	7.1
27	---	---	9.0	8.4	8.6	8.0	8.1	6.9	9.2	7.8	8.6	6.6
28	---	---	9.0	8.4	8.5	7.9	8.0	6.9	8.9	7.3	10.1	7.9
29	---	---	8.9	7.8	8.5	7.5	8.0	6.8	9.2	7.0	11.9	8.2
30	---	---	9.1	7.9	8.7	7.9	7.9	6.8	9.1	7.2	10.2	6.8
31	---	---	9.4	8.6	---	---	7.9	6.7	9.1	7.4	---	---
MONTH	---	---	---	---	9.7	7.4	9.1	6.7	9.5	5.2	15.3	5.3
MONTH	---	---	---	---	8.7	7.8	8.6	7.7	8.9	7.5	9.1	7.6

11516530 KLAMATH RIVER BELOW IRON GATE DAM, CA--Continued

WATER-QUALITY RECORDS

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Depth at sample location, feet (81903)	Baro-metric pres-sure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of sat-uration (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Locatn in X-sect. looking dwnstrm ft from l bank (00009)
JUL									
08...*	1110	2.20	705	8.4	103	8.2	192	21.3	128
08...*	1115	3.00	705	8.2	100	8.1	192	21.2	100
08...*	1120	4.50	705	8.1	99	8.1	192	21.2	72.0
08...*	1125	4.20	705	8.2	99	8.1	191	20.7	44.0
08...*	1130	3.80	705	8.3	100	8.1	190	20.3	16.0
SEP									
10...*	1450	2.50	711	7.1	85	8.7	160	20.5	110
10...*	1452	4.60	711	7.1	85	8.7	161	20.5	81.0
10...*	1454	5.30	711	7.1	85	8.7	161	20.4	64.0
10...*	1456	4.20	711	7.2	85	8.6	162	20.2	47.0
10...*	1458	5.30	711	7.3	86	8.6	164	19.9	30.0

* Instantaneous discharge at the time of the cross-sectional measurements: July 8, 1010 ft3/s; Sept. 10, 1190 ft3/s.

12472800 COLUMBIA RIVER BELOW PRIEST RAPIDS DAM, WA

LOCATION.--Lat 46°37'44", long 119°51'49", in SE 1/4 NW 1/4 sec.7, T.13 N., R.24 E., Grant County, Hydrologic Unit 17020016, on left bank 2.6 mi downstream from Priest Rapids Dam, 14.7 mi south of Beverly, and at mile 394.5.

DRAINAGE AREA.--96,000 mi^2, approximately.

PERIOD OF RECORD.--January 1917 to current year. January 1917 to September 1930, at site 3.4 mi downstream, published as "at Vernita." October 1930 to July 27, 1959, at site 46.5 mi upstream, published as "at Trinidad."

REVISED RECORDS.--WSP 1933: Drainage area. WDR WA-82-2: 1965(m), 1971(m).

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. Prior to Oct. 1, 1930, nonrecording gages at site 3.4 mi downstream at datum 388.7 ft above sea level. Oct. 1, 1930, to July 27, 1959, water-stage recorder at site 46.5 mi upstream at datum 499.3 ft above sea level (river-profile survey).

REMARKS.--No estimated daily discharges. Records good. Diversions for irrigation of about 600,000 acres upstream from station. Flow regulated by 10 major reservoirs and numerous smaller reservoirs and powerplants. U.S. Geological Survey satellite telemeter at station. Water temperatures March 1980 to April 1993. Temperature records for site "at Vernita Bridge, near Priest Rapids Dam" (station 12472900) for period July 1974 to September 1980 are equivalent.

AVERAGE DISCHARGE.--86 years (water years 1918-2003), 119,200 ft^3/s, 86,320,000 acre-ft/yr, unadjusted.
44 years (water years 1960-2003), 119,200 ft^3/s, 86,340,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 692,600 ft^3/s June 12, 1948, gage height, 59.35 ft, site and datum then in use; minimum discharge, 4,120 ft^3/s Feb. 10, 1932, due to construction at Rock Island Dam, site and datum then in use; minimum daily discharge prior to construction of Rock Island Dam (1932), 22,000 ft^3/s Feb. 1-7, 1930, site and datum then in use; minimum daily discharge after completion of Rock Island Dam (1932), 20,000 ft^3/s Jan. 31 to Feb. 10, 1937, site and datum then in use; minimum discharge since completion of Priest Rapids Dam (1959), 16,300 ft^3/s Nov. 7. 1998, due to emergency flow reduction at Priest Rapids Dam.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 7, 1894, reached a discharge of about 740,000 ft^3/s, based on a rating extension for a Weather Bureau gage at Wenatchee.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 250,000 ft^3/s June 6, elevation, 414.53 ft; minimum discharge, 37,100 ft^3/s Nov. 24, elevation, 396.52 ft; minimum daily discharge, 42,600 ft^3/s Sept. 14.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89800	115000	95900	73400	71400	77900	98800	127000	106000	140000	110000	59300
2	87500	105000	114000	71900	71000	73000	96000	119000	121000	106000	97800	64700
3	83500	96400	127000	71600	71000	108000	98200	127000	145000	92800	60700	81800
4	74400	87900	117000	72500	70700	99500	105000	134000	134000	105000	70800	93200
5	51000	91000	118000	72000	70800	91100	74300	145000	145000	65400	101000	85300
6	62700	106000	106000	78700	82100	91300	73300	156000	163000	81000	95300	53700
7	82400	121000	114000	92200	100000	92000	98200	142000	171000	112000	93700	49400
8	88900	105000	82000	95500	72700	83300	118000	158000	151000	120000	92100	53500
9	125000	100000	101000	89800	71100	71100	91500	135000	149000	126000	103000	63100
10	86600	89700	114000	83000	71600	70800	103000	113000	176000	125000	75600	50100
11	72900	107000	111000	72500	77400	70500	112000	101000	172000	135000	99200	59500
12	72300	95100	94300	71300	72000	71600	91000	124000	172000	120000	103000	63700
13	55000	82500	94400	71500	71900	71300	84200	180000	182000	99700	89900	60500
14	92500	83100	87600	72500	70800	70800	96400	143000	156000	120000	104000	42600
15	76600	91000	75700	96000	71000	70800	105000	156000	137000	123000	117000	57700
16	68900	99500	84900	107000	70900	72000	130000	153000	181000	125000	93800	77200
17	86100	107000	105000	99300	71600	82700	146000	130000	176000	109000	74900	69900
18	71300	99500	103000	90400	71300	79000	113000	127000	171000	110000	87000	59400
19	58300	66600	103000	71400	71500	80100	115000	120000	117000	104000	108000	57300
20	50100	107000	89700	82700	72700	71100	98500	144000	121000	85800	108000	63600
21	70700	116000	82900	108000	71900	72500	110000	150000	116000	102000	128000	54200
22	84900	97000	75700	101000	71200	74200	157000	181000	87800	137000	138000	81000
23	81700	116000	84000	81100	72700	71800	144000	175000	124000	126000	101000	67900
24	73600	96900	101000	76400	71600	71300	136000	122000	143000	124000	85100	75200
25	105000	116000	80200	71200	73300	87300	156000	88300	167000	108000	119000	82800
26	105000	130000	89900	71500	74400	127000	125000	116000	178000	103000	127000	93500
27	100000	104000	103000	71600	83600	132000	109000	129000	154000	66600	92900	75500
28	76500	93900	94400	73700	76100	126000	123000	136000	149000	103000	85700	59200
29	92300	81900	77000	72600	---	130000	145000	171000	122000	110000	99400	85400
30	108000	89200	83800	71200	---	119000	145000	159000	121000	119000	101000	84500
31	114000	---	97700	71600	---	110000	---	124000	---	122000	70400	---
TOTAL	2547500	2996200	3007100	2505100	2068300	2719000	3397400	4285300	4407800	3425300	3032300	2024700
MEAN	82180	99870	97000	80810	73870	87710	113200	138200	146900	110500	97820	67490
MAX	125000	130000	127000	108000	100000	132000	157000	181000	182000	140000	138000	93500
MIN	50100	66600	75700	71200	70700	70500	73300	88300	87800	65400	60700	42600
AC-FT	5053000	5943000	5965000	4969000	4102000	5393000	6739000	8500000	8743000	6794000	6015000	4016000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1918 - 2003, BY WATER YEAR (WY)

MEAN	72150	73510	77640	80320	81480	82450	104400	191600	265400	196900	120100	82130
MAX	119800	121200	163800	168400	195000	201800	196500	348500	590700	385400	192000	131700
(WY)	1928	1991	1996	1996	1996	1983	1934	1934	1948	1950	1920	1927
MIN	45950	32290	26840	21710	20900	26500	37160	61840	78810	56650	66740	60050
(WY)	1932	1937	1937	1937	1937	1937	1944	2001	1977	2001	1985	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1918 - 2003	
ANNUAL TOTAL	42811000		36416000			
ANNUAL MEAN	117300		99770		119200	
HIGHEST ANNUAL MEAN					165600	1997
LOWEST ANNUAL MEAN					78070	1944
HIGHEST DAILY MEAN	270000	Jul 2	182000	Jun 13	690000	Jun 12 1948
LOWEST DAILY MEAN	47000	Sep 8	42600	Sep 14	20000	Jan 31 1937
ANNUAL SEVEN-DAY MINIMUM	51700	Mar 24	56100	Sep 6	20100	Jan 30 1937
ANNUAL RUNOFF (AC-FT)	84920000		72230000		86320000	
10 PERCENT EXCEEDS	195000		143000		229000	
50 PERCENT EXCEEDS	104000		95500		93800	
90 PERCENT EXCEEDS	67600		70800		46700	

Figure 8. Location of surface-water stations in the Owyhee and Malheur River Basins.

13181000 OWYHEE RIVER NEAR ROME, OR

LOCATION.--Lat 42°52'02", long 117°38'52", in SE 1/4 NE 1/4 sec.14, T.31 S., R.41 E., Malheur County, Hydrologic Unit 17050107, on right bank 0.5 mi downstream from Jordan Creek, 2.6 mi north of Rome, and at mile 122.4.

DRAINAGE AREA.--About 8,000 mi^2.

PERIOD OF RECORD.--October 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,344.20 ft above NGVD of 1929. Prior to Feb 10, 1960, at datum 0.24 ft lower.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Antelope Reservoir, capacity, 70,000 acre-ft, increased in 1970, and Wild Horse Reservoir, capacity, 32,690 acre-ft, and numerous small reservoirs. Diversions upstream from station for irrigation. Continuous water-quality records for the period October 1972 to June 1977 have been collected at this location. U. S. Bureau of Reclamation satellite telemeter at station.

AVERAGE DISCHARGE.--54 years (water years 1950-2003), 932 ft^3/s, 674,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 55,700 ft^3/s Mar. 18, 1993, gage height, 20.11 ft; minimum discharge, 42 ft^3/s Aug. 12, 1954, July 28, Aug. 5, 1961, July 31, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,780 ft^3/s May 11, gage height, 6.08 ft; minimum daily discharge, 60 ft^3/s Sept. 8.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	128	134	173	2120	208	339	503	468	153	97	64
2	116	126	144	178	2250	213	322	553	489	150	93	65
3	126	118	150	169	1450	205	306	514	475	146	96	66
4	127	119	144	171	834	201	294	502	444	141	105	83
5	121	119	146	174	582	188	294	537	420	146	129	77
6	119	124	139	180	436	189	300	910	385	138	126	71
7	119	125	139	175	344	185	309	1040	348	132	119	66
8	119	126	137	168	276	185	341	1080	314	124	115	60
9	119	131	138	142	250	181	441	1130	262	117	102	61
10	117	136	131	152	240	180	734	1750	253	125	96	67
11	114	139	134	182	237	184	1170	3650	244	133	88	72
12	114	143	140	185	231	183	635	2900	225	137	90	75
13	112	143	142	191	238	206	489	2120	216	143	92	74
14	116	148	152	221	256	256	424	1580	206	129	96	73
15	117	154	152	304	265	272	411	1280	200	121	95	76
16	117	154	158	268	286	272	410	1120	199	110	91	77
17	117	150	165	243	462	264	379	1050	192	102	85	79
18	117	148	163	232	460	257	347	963	188	98	81	77
19	119	148	161	232	417	260	335	904	191	95	75	77
20	119	148	153	223	349	258	328	861	188	95	73	77
21	121	148	154	212	307	249	314	815	183	93	73	77
22	121	148	152	204	285	240	421	754	192	86	78	78
23	122	148	156	205	260	233	439	657	180	79	75	79
24	124	148	146	203	246	237	402	586	173	82	80	80
25	124	148	147	212	232	228	408	534	170	77	92	79
26	123	145	147	234	227	232	456	524	170	84	95	78
27	124	143	140	284	218	322	505	488	175	88	93	81
28	125	143	147	366	204	469	500	466	174	96	87	81
29	127	133	160	631	---	424	494	464	161	94	79	82
30	129	133	156	805	---	389	499	494	160	94	75	82
31	128	---	173	1070	---	357	---	489	---	95	67	---
TOTAL	3720	4164	4600	8389	13962	7727	13046	31218	7645	3503	2838	2234
MEAN	120	139	148	271	499	249	435	1007	255	113	91.5	74.5
MAX	129	154	173	1070	2250	469	1170	3650	489	153	129	83
MIN	107	118	131	142	204	180	294	464	160	77	67	60
AC-FT	7380	8260	9120	16640	27690	15330	25880	61920	15160	6950	5630	4430

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2003, BY WATER YEAR (WY)

MEAN	161	212	374	667	1209	2453	2831	1946	867	252	150	136
MAX	442	593	2898	4461	8820	9404	16960	10470	4870	1035	452	361
(WY)	1976	1971	1965	1971	1986	1972	1952	1984	1984	1984	1984	1984
MIN	85.3	107	104	114	129	233	144	86.5	89.6	61.2	56.0	62.5
(WY)	1955	1955	1955	1955	1955	1977	1992	1992	1992	1968	1992	1955

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1950 - 2003	
ANNUAL TOTAL	226827		103046			
ANNUAL MEAN	621		282		932	
HIGHEST ANNUAL MEAN					3400	1984
LOWEST ANNUAL MEAN					162	1992
HIGHEST DAILY MEAN	8150	Apr 2	3650	May 11	46900	Mar 18 1993
LOWEST DAILY MEAN	69	Aug 23	60	Sep 8	44	Aug 1 1968
ANNUAL SEVEN-DAY MINIMUM	75	Aug 18	67	Sep 6	47	Jul 26 1968
ANNUAL RUNOFF (AC-FT)	449900		204400		674900	
10 PERCENT EXCEEDS	1360		504		2450	
50 PERCENT EXCEEDS	177		160		230	
90 PERCENT EXCEEDS	94		81		106	

13183000 OWYHEE RIVER BELOW OWYHEE DAM, OR

LOCATION.--Lat 43°39'17", long 117°15'16", in SE 1/4 sec.18, T.22 S., R.45 E.,Malheur County, Hydrologic Unit 17050110, on left bank 0.8 mi downstream from Owyhee Dam, 20 mi southwest of Nyssa, and at mile 27.3.

DRAINAGE AREA.--11,160 mi^2, approximately.

PERIOD OF RECORD.--February 1929 to current year.

REVISED RECORDS.--WSP 983: 1941-42. WSP 1397: 1930, 1933, 1946.

GAGE.--Water-stage recorder. Datum of gage is 2,343.67 ft above NGVD of 1929 (levels by Bureau of Reclamation).

REMARKS.--No estimated daily discharges. Records good. Flow regulated since October 1932 by Lake Owyhee (station 13182500), and by many smaller reservoirs. Diversion of up to 457,000 acre-ft from Lake Owyhee during the year for irrigation of lands downstream from station and outside the basin. Many smaller diversions upstream from Lake Owyhee for irrigation upstream from station. Computation of monthly and annual adjusted flows discontinued in 1991.

AVERAGE DISCHARGE.--71 years (water years 1933-2003), 408 ft^3/s, 295,300 acre-ft/yr, not adjusted for storage or diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,900 ft^3/s Apr. 15, 1952, gage height, 15.70 ft; no flow for part of Aug. 8, 9, 1932, when temporary diversion tunnel at Owyhee Dam was closed.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 188 ft^3/s Oct. 1-10; minimum daily discharge, 10 ft^3/s Oct. 12.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	188	14	14	14	14	14	14	143	153	148	159	161
2	188	14	14	14	14	14	14	143	153	148	158	161
3	188	14	14	14	14	14	14	143	152	148	160	161
4	188	14	14	14	14	14	14	142	152	148	161	161
5	188	14	14	14	14	14	14	141	153	147	162	161
6	188	14	14	14	14	14	14	141	153	147	162	162
7	188	14	14	14	14	14	14	141	153	146	162	161
8	188	14	14	14	14	14	14	140	153	147	162	162
9	188	14	14	14	14	14	14	138	153	146	161	163
10	188	14	14	14	14	14	14	142	164	146	161	162
11	76	14	14	14	14	14	14	142	173	146	161	163
12	10	14	14	14	14	14	14	142	173	146	160	163
13	11	14	14	14	14	14	14	141	172	145	160	164
14	12	14	14	14	14	14	14	142	172	144	160	165
15	12	14	14	14	14	14	14	143	171	144	160	163
16	12	14	14	14	14	14	14	143	170	145	161	164
17	13	14	14	14	14	14	14	143	170	157	141	164
18	14	14	14	14	14	14	14	143	151	164	161	163
19	14	14	14	14	14	14	15	143	139	162	160	163
20	14	14	14	14	14	14	22	144	152	162	160	164
21	14	14	14	14	14	14	87	145	151	161	160	165
22	14	14	14	14	14	14	151	146	150	161	161	165
23	14	14	14	14	14	14	149	146	149	160	161	164
24	14	14	14	14	14	14	149	137	149	161	162	165
25	14	14	14	14	14	14	145	147	149	162	161	164
26	14	14	14	14	14	14	145	147	148	161	161	164
27	14	14	14	14	14	14	145	147	149	161	162	164
28	14	14	14	14	14	14	146	148	150	160	164	162
29	14	14	14	14	---	14	145	149	149	160	164	161
30	14	14	14	14	---	14	144	149	148	159	162	162
31	14	---	14	14	---	14	---	150	---	159	162	---
TOTAL	2222	420	434	434	392	434	1695	4451	4674	4751	4972	4887
MEAN	71.7	14.0	14.0	14.0	14.0	14.0	56.5	144	156	153	160	163
MAX	188	14	14	14	14	14	151	150	173	164	164	165
MIN	10	14	14	14	14	14	14	137	139	144	141	161
AC-FT	4410	833	861	861	778	861	3360	8830	9270	9420	9860	9690

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2003, BY WATER YEAR (WY)

MEAN	69.5	9.84	23.9	142	384	1024	1623	837	330	174	156	131
MAX	242	196	703	2751	5198	7799	12790	8565	3246	618	312	248
(WY)	1986	1933	1985	1971	1986	1972	1984	1984	1984	1933	1933	1933
MIN	2.80	1.00	1.31	1.17	1.13	1.66	28.2	39.5	45.8	44.3	22.4	8.00
(WY)	1955	1953	1993	1993	1993	1992	1955	1955	1948	1948	1948	1948

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1933 - 2003	
ANNUAL TOTAL	38315		29766			
ANNUAL MEAN	105		81.6		408	
HIGHEST ANNUAL MEAN					2991	1984
LOWEST ANNUAL MEAN					22.3	1948
HIGHEST DAILY MEAN	211	Apr 9	188	Oct 1	21800	Apr 16 1952
LOWEST DAILY MEAN	10	Mar 28	10	Oct 12	1.0	Oct 18 1952
ANNUAL SEVEN-DAY MINIMUM	11	Mar 27	12	Oct 12	1.0	Oct 18 1952
ANNUAL RUNOFF (AC-FT)	76000		59040		295300	
10 PERCENT EXCEEDS	198		163		579	
50 PERCENT EXCEEDS	187		14		85	
90 PERCENT EXCEEDS	11		14		2.7	

13213100 SNAKE RIVER AT NYSSA, OR

LOCATION.--Lat 43°52'34", long 116°58'53", in NW 1/4 SW 1/4 NE 1/4 sec.7, T.6 N., R.5 W., Canyon County, Hydrologic Unit 17050115, on right bank, 300 upstream from U.S. Highway 20-26 bridge at Nyssa, 2.3 mi downstream from Boise River and at mile 385.2.

DRAINAGE AREA.--58,700 mi^2, approximately.

PERIOD OF RECORD.--November 1974 to September 1986, February 1989 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,170 ft above NGVD of 1929, from topographic map. Prior to 1989, station located on left bank, in Oregon.

REMARKS.--No estimated daily discharges. Records good. Station equipment includes satellite telemetry. Flow regulated by many reservoirs upstream from station.

AVERAGE DISCHARGE.--26 years (water years 1976-86, 1989-2003), 13,870 ft^3/s, 10,500,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 57,900 ft^3/s Apr. 19, 1984, gage height, 13.34 ft; minimum discharge, 4,110 ft^3/s June 7, 1992, gage height, 4.32 ft.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 9,780 ft^3/s Oct. 6, 20; minimum daily discharge, 4,690 ft^3/s June 11.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8910	9000	8400	9290	8750	8010	7900	8220	8190	5550	5840	6690
2	9050	8870	8400	8510	9000	7730	7230	7560	7580	5480	5710	6790
3	9490	8660	8720	8470	8410	8340	7500	7540	7720	5180	5540	7030
4	8380	7960	8830	8370	8470	8190	7510	7630	7500	5430	5720	6810
5	8790	8670	8650	8270	8440	7800	7300	7980	6840	5300	5790	6690
6	9780	8240	8630	7980	8260	8360	7080	8450	6480	5540	6020	6680
7	9370	8940	8460	8160	8220	7910	7250	8310	6600	5710	6240	6910
8	9170	8630	8550	8000	7780	8170	7270	8410	6290	5640	6030	6950
9	9480	8580	8070	8610	8340	8480	7330	8460	6210	5320	6380	6730
10	9090	8560	8300	8340	8070	7570	7360	8370	5460	5080	6050	7080
11	8980	8960	8150	7720	7930	8120	7120	8450	4690	5040	6020	7120
12	8650	8780	8500	7540	7750	8060	7100	9210	4890	4940	5700	7100
13	9000	9090	8310	8310	8260	8110	7100	9520	5320	4840	5840	7440
14	9410	8620	8660	8650	8370	8190	7120	8780	5090	4920	6000	7520
15	8820	8350	8660	7980	8180	7920	6480	8690	5280	4860	5900	7990
16	9680	8550	8180	8050	8150	8280	6720	7610	5250	4960	5910	7780
17	9320	8750	8460	8430	8430	8030	6980	7040	5230	5000	5970	7630
18	9400	8380	8030	8180	8070	8380	7040	7300	5140	4960	6030	7600
19	8720	8550	7970	8050	8490	7520	7040	7970	5420	4980	6100	7850
20	9780	8670	8590	7880	8710	8310	6970	7810	5600	5050	6070	7850
21	9310	8540	8040	8030	9050	7990	7310	7710	5780	5070	5790	7500
22	9380	8580	8080	8180	7680	7920	7450	7640	6180	5010	6140	8290
23	9540	8810	8110	8200	7210	8130	7180	7630	6210	4950	6840	7850
24	9120	8490	8200	8130	8330	7630	7460	7650	6060	5180	7510	8150
25	9180	8350	8620	8020	8240	7670	7160	7360	5950	5350	7730	7430
26	9200	8660	8430	7950	8020	7850	7480	7170	5890	5800	7730	7590
27	9680	8770	8160	8330	8060	8090	7390	7430	5850	6190	7240	7250
28	9330	8630	8370	8920	8290	8100	7460	7650	5860	6770	7000	7650
29	8380	8490	8280	8570	---	8050	7650	7830	5790	6190	6790	7620
30	8910	8870	8020	9010	---	7400	7720	7960	5700	5780	6460	7640
31	9340	---	8510	8820	---	7280	---	7680	---	5830	6610	---
TOTAL	284640	259000	259340	256950	230960	247590	217660	247020	180050	165900	194700	221210
MEAN	9182	8633	8366	8289	8249	7987	7255	7968	6002	5352	6281	7374
MAX	9780	9090	8830	9290	9050	8480	7900	9520	8190	6770	7730	8290
MIN	8380	7960	7970	7540	7210	7280	6480	7040	4690	4840	5540	6680
AC-FT	564600	513700	514400	509700	458100	491100	431700	490000	357100	329100	386200	438800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2003, BY WATER YEAR (WY)

MEAN	12140	12630	13090	14220	15180	17590	19870	18790	16080	8680	8613	10510
MAX	21360	24660	24320	30290	38580	40010	43970	49060	41100	16480	12620	17110
(WY)	1985	1985	1984	1984	1997	1986	1984	1984	1984	1983	1997	1997
MIN	8102	8633	8366	8289	8212	7987	6033	5367	5223	5352	5075	6664
(WY)	1993	2003	2003	2003	2002	2003	1992	1992	1992	2003	1992	1992

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1976 - 2003	
ANNUAL TOTAL	2864810		2765020			
ANNUAL MEAN	7849		7575		13870	
HIGHEST ANNUAL MEAN					26260	1984
LOWEST ANNUAL MEAN					7365	1992
HIGHEST DAILY MEAN	10100	Mar 26	9780	Oct 6	57400	Apr 20 1984
LOWEST DAILY MEAN	5040	Jun 30	4690	Jun 11	4240	Jun 7 1992
ANNUAL SEVEN-DAY MINIMUM	5240	Jun 29	4930	Jul 12	4520	Jun 6 1992
ANNUAL RUNOFF (AC-FT)	5682000		5484000		10050000	
10 PERCENT EXCEEDS	8910		8890		25600	
50 PERCENT EXCEEDS	8160		7920		10600	
90 PERCENT EXCEEDS	6170		5680		7100	

13215000 MALHEUR RIVER BELOW WARMSPRINGS RESERVOIR, NEAR RIVERSIDE, OR

LOCATION.--Lat 43°34'29", long 118°12'31", on line between NW 1/4 SW 1/4 and SW 1/4 NW 1/4 sec.17, T.23 S., R.37 E., Malheur County, Hydrologic Unit 17050116, on left bank 0.9 mi downstream from Warmsprings Dam, 3.0 mi upstream from South Fork, 4.0 mi northwest of Riverside, and at mile 113.

DRAINAGE AREA.--1,100 mi^2, approximately.

PERIOD OF RECORD.--January 1906 to March 1907 and December 1908 (gage heights only), January 1909 to September 1910, December 1914 to July 1917, March 1919 to current year. Monthly discharge only for some periods, published in WSP 1317. Figures of discharge for January 1906 to March 1907, published in WSP 272 and 370, have been found to be unreliable and should not be used. Published as Middle Fork of Malheur River at Riverside 1906-7, as Middle Fork of Malheur River above South Fork, at Riverside 1909-10, as Malheur River above South Fork, at Riverside in WSP 370, 1906-10, and as Malheur River at Warmsprings reservoir site, near Riverside 1914-17.

REVISED RECORDS.--WSP 833: 1936. WSP 1063: 1942-45. WSP 1397: 1909-10, 1917. WSP 1447: 1955. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Elevation of gage is 3,305 ft above NGVD of 1929, by barometer. See WSP 1317 or 1737 for history of changes prior to Sept. 29, 1949.

REMARKS.--Records good except for those below 40 ft^3/s, which are poor. Flow completely regulated since November 1919 by Warmsprings Reservoir (station 13214500). Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--84 years (water years 1920-2003), 189 ft^3/s, 137,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 7,200 ft^3/s Mar. 1, 1910, gage height, 10.7 ft, site and datum then in use, from rating curve extended above 820 ft^3/s; maximum discharge since storage began November 1919, 3,150 ft^3/s Mar. 22, 1984, gage height, 9.70 ft, from floodmark; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 482 ft^3/s June 14, gage height, 4.97 ft and 4.98 ft respectively; minimum discharge, no flow many days.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	0.02	0.01	0.06	0.04	0.00	0.00	195	395	436	259	1.2
2	22	0.02	0.01	0.05	0.04	0.00	0.00	261	389	434	240	0.88
3	26	0.02	0.01	0.04	0.03	0.00	0.00	339	384	437	215	0.67
4	32	0.02	0.01	0.04	0.03	0.00	0.00	363	380	440	187	0.56
5	38	0.01	0.01	0.03	0.03	0.00	0.00	381	389	436	160	0.50
6	41	0.01	0.01	0.03	0.02	0.00	0.00	391	391	434	126	0.40
7	41	0.01	0.01	0.03	0.02	0.00	0.00	388	400	434	73	0.32
8	37	0.02	0.01	0.03	0.01	0.00	0.00	384	407	418	34	0.26
9	32	0.02	0.00	0.02	0.01	0.00	0.00	388	410	407	17	0.30
10	31	0.02	0.00	0.02	0.01	0.00	0.00	391	414	401	9.0	1.0
11	16	0.02	0.00	0.02	0.01	0.00	0.00	391	447	396	5.7	0.73
12	0.21	0.02	0.01	0.03	0.01	0.00	0.00	389	450	394	4.1	1.9
13	0.09	0.02	0.03	0.03	0.01	0.00	0.00	387	456	390	3.3	3.4
14	0.09	0.02	0.05	0.04	0.02	0.00	0.00	387	475	386	2.3	4.6
15	0.09	0.02	0.05	0.04	0.01	0.00	0.00	392	476	377	4.1	5.9
16	0.09	0.02	0.05	0.04	0.01	0.00	0.00	403	476	380	4.2	6.6
17	0.07	0.01	0.06	0.04	e0.01	0.00	0.00	434	470	383	3.3	6.6
18	0.07	0.01	0.05	0.04	e0.01	0.00	0.00	449	455	389	2.8	9.0
19	0.06	0.01	0.05	0.03	e0.00	0.00	0.00	435	447	386	2.7	11
20	0.05	0.01	0.03	0.02	e0.00	0.00	0.00	436	445	375	2.4	12
21	0.05	0.01	0.03	0.02	0.00	0.00	0.00	451	442	382	2.1	14
22	0.04	0.01	0.03	0.02	0.00	0.00	0.00	458	436	379	2.4	14
23	0.04	0.01	0.03	0.02	0.00	0.00	0.00	459	436	368	2.1	14
24	0.04	0.01	0.03	0.03	0.00	0.00	0.00	467	428	356	1.9	14
25	0.04	0.01	0.03	0.04	0.00	0.00	0.00	468	420	343	1.8	15
26	0.04	0.01	0.03	0.04	0.00	0.00	167	455	429	328	1.7	16
27	0.03	0.01	0.06	0.04	0.00	0.00	114	462	434	281	1.9	19
28	0.03	0.01	0.06	0.05	0.00	0.00	100	470	432	205	1.9	20
29	0.03	0.01	0.06	0.04	---	0.00	123	470	430	196	1.8	20
30	0.02	0.01	0.06	0.04	---	0.00	159	451	433	244	1.7	20
31	0.02	---	0.06	0.04	---	0.00	---	410	---	270	1.5	---
TOTAL	334.20	0.43	0.94	1.06	0.33	0.00	663.00	12605	12876	11485	1375.7	233.82
MEAN	10.8	0.014	0.030	0.034	0.012	0.000	22.1	407	429	370	44.4	7.79
MAX	41	0.02	0.06	0.06	0.04	0.00	167	470	476	440	259	20
MIN	0.02	0.01	0.00	0.02	0.00	0.00	0.00	195	380	196	1.5	0.26
AC-FT	663	0.9	1.9	2.1	0.7	0.00	1320	25000	25540	22780	2730	464

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 2003, BY WATER YEAR (WY)

MEAN	35.3	0.76	6.87	18.1	38.1	84.9	318	427	349	434	350	196
MAX	138	19.8	323	452	763	1440	1603	1162	570	677	575	398
(WY)	1953	1920	1984	1971	1983	1983	1984	1958	2000	1945	1946	1999
MIN	0.000	0.000	0.000	0.000	0.000	0.000	0.000	31.4	92.0	30.3	0.041	0.000
(WY)	1934	1933	1933	1933	1933	1933	1935	1932	1942	1992	1988	1988

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1920 - 2003	
ANNUAL TOTAL	40662.09		39575.48			
ANNUAL MEAN	111		108		189	
HIGHEST ANNUAL MEAN					566	1983
LOWEST ANNUAL MEAN					46.8	1930
HIGHEST DAILY MEAN	517	May 5	476	Jun 15	3030	Mar 22 1984
LOWEST DAILY MEAN	0.00	Apr 8	0.00	Dec 9	0.00	Oct 5 1932
ANNUAL SEVEN-DAY MINIMUM	0.01	Dec 5	0.00	Feb 19	0.00	Oct 5 1932
ANNUAL RUNOFF (AC-FT)	80650		78500		137000	
10 PERCENT EXCEEDS	397		432		505	
50 PERCENT EXCEEDS	0.10		0.06		3.0	
90 PERCENT EXCEEDS	0.02		0.00		0.00	

e Estimated

13217500 NORTH FORK MALHEUR RIVER AT BEULAH, OR

LOCATION.--Lat 43°54'28", long 118'°09'08", in NW 1/4 NE 1/4 sec.22, T.19 S., R.37 E., Malheur County, Hydrologic Unit 17050116, on left bank at Beulah, 0.3 mi downstream from Agency Valley Dam, 12 mi northwest of Juntura, and at mile 14.5.

DRAINAGE AREA.--440 mi^2, approximately.

PERIOD OF RECORD.--June 1926 to current year. Published as "near Beulah" June 1926 to September 1935.

REVISED RECORDS.--WSP 1397: 1927-32, 1934, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,261.20 ft above NGVD of 1929. Prior to Apr. 25, 1926, water-stage recorder at site 1 mi downstream at different datum. Apr. 25, 1936, to Sept. 30, 1949, nonrecording gage at site 20 ft downstream at datum 1.0 ft higher. Oct. 1, 1949, to June 30, 1964, at present site at datum 1.0 ft higher.

REMARKS.--Records good except those below 20 ft^3/s and estimated daily discharges, which are poor. Flow regulated since 1935 by Beulah Reservoir (station 13217000). Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--68 years (water years 1936-2003), 144 ft^3/s, 104,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,000 ft^3/s May 7, 1942, gage height, 9.4 ft, present datum, from floodmark, caused by failure of gates at Agency Valley Dam, from rating curve extended above 1,100 ft^3/s on basis of computation of peak flow over dam; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 416 ft^3/s Aug. 7, gage height, 3.47 ft; minimum daily discharge, 0.00 Dec. 5-12.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	e0.80	e0.01	e0.02	e0.03	e0.02	e0.02	238	272	302	318	35
2	45	e0.40	e0.01	e0.02	e0.03	e0.02	e0.02	258	262	291	323	32
3	48	e0.10	e0.01	e0.02	e0.03	e0.02	e0.02	286	246	293	323	31
4	51	e0.08	e0.01	e0.02	e0.03	e0.02	e0.02	296	261	296	339	33
5	49	e0.04	e0.00	e0.02	e0.03	e0.02	e0.02	294	283	296	369	33
6	47	e0.02	e0.00	e0.02	e0.03	e0.02	e0.02	293	296	296	389	35
7	47	e0.02	e0.00	e0.02	e0.03	e0.02	e0.02	293	290	295	407	33
8	45	e0.02	e0.00	e0.02	e0.03	e0.02	e0.02	293	290	292	380	37
9	44	e0.02	e0.00	e0.02	e0.03	e0.02	e0.02	293	290	273	328	40
10	24	e0.02	e0.00	e0.02	e0.03	e0.02	e0.02	306	290	275	170	42
11	6.8	e0.02	e0.00	e0.02	e0.03	e0.02	e0.02	312	311	275	49	43
12	3.1	e0.02	e0.00	e0.03	e0.03	e0.02	e0.02	312	321	274	42	41
13	3.2	e0.02	e0.01	e0.04	e0.03	e0.02	e0.02	312	325	272	38	40
14	3.3	e0.02	e0.01	e0.04	e0.03	e0.02	e0.02	301	327	272	39	41
15	3.3	e0.02	e0.02	e0.04	e0.03	e0.02	e0.50	307	325	270	42	42
16	3.4	e0.02	e0.02	e0.04	e0.03	e0.02	1.2	305	324	285	40	37
17	3.4	e0.02	e0.02	e0.04	e0.03	e0.02	1.4	302	324	293	39	39
18	3.5	e0.02	e0.02	e0.04	e0.03	e0.02	1.5	302	324	291	36	41
19	3.5	e0.02	e0.01	e0.04	e0.03	e0.02	1.5	302	310	271	37	41
20	3.6	e0.02	e0.01	e0.04	e0.03	e0.02	1.5	302	300	263	37	40
21	3.6	e0.02	e0.01	e0.04	e0.03	e0.02	1.5	302	299	287	37	32
22	3.6	e0.02	e0.01	e0.04	e0.03	e0.02	1.5	302	299	298	41	24
23	3.6	e0.02	e0.01	e0.04	e0.03	e0.02	1.5	302	299	294	44	24
24	3.6	e0.02	e0.01	e0.04	e0.03	e0.02	1.6	299	296	290	43	29
25	3.8	e0.01	e0.01	e0.04	e0.03	e0.02	30	299	295	290	41	35
26	4.3	e0.01	e0.01	e0.04	e0.03	e0.02	261	299	293	287	39	37
27	4.6	e0.01	e0.01	e0.04	e0.03	e0.02	241	299	304	286	39	34
28	5.0	e0.01	e0.01	e0.04	e0.03	e0.02	218	298	306	280	38	37
29	5.2	e0.01	e0.02	e0.04	---	e0.02	230	296	304	277	40	37
30	5.7	e0.01	e0.02	e0.04	---	e0.02	238	296	302	311	38	37
31	e3.0	---	e0.02	e0.04	---	e0.02	---	281	---	322	37	---
TOTAL	526.1	1.86	0.30	1.01	0.84	0.62	1231.98	9180	8968	8897	4182	1082
MEAN	17.0	0.062	0.010	0.033	0.030	0.020	41.1	296	299	287	135	36.1
MAX	51	0.80	0.02	0.04	0.03	0.02	261	312	327	322	407	43
MIN	3.0	0.01	0.00	0.02	0.03	0.02	0.02	238	246	263	36	24
AC-FT	1040	3.7	0.6	2.0	1.7	1.2	2440	18210	17790	17650	8290	2150

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2003, BY WATER YEAR (WY)

MEAN	36.2	0.96	1.61	10.2	28.9	86.0	293	354	285	276	214	133
MAX	134	35.5	62.7	287	478	936	856	810	510	402	399	341
(WY)	1954	1936	1943	1943	1965	1983	1958	1983	1974	1979	1980	1945
MIN	0.086	0.000	0.000	0.000	0.000	0.000	2.29	120	53.7	39.5	30.4	31.9
(WY)	1974	1938	1938	1936	1938	1938	1981	1977	1939	1992	1992	1961

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1936 - 2003	
ANNUAL TOTAL	37767.31		34071.71			
ANNUAL MEAN	103		93.3		144	
HIGHEST ANNUAL MEAN					335	1983
LOWEST ANNUAL MEAN					54.6	1936
HIGHEST DAILY MEAN	431	Aug 7	407	Aug 7	3700	May 7 1942
LOWEST DAILY MEAN	0.00	Dec 5	0.00	Dec 5	0.00	Dec 22 1935
ANNUAL SEVEN-DAY MINIMUM	0.00	Dec 5	0.00	Dec 5	0.00	Dec 22 1935
ANNUAL RUNOFF (AC-FT)	74910		67580		104000	
10 PERCENT EXCEEDS	345		302		363	
50 PERCENT EXCEEDS	10		3.5		43	
90 PERCENT EXCEEDS	0.02		0.02		0.09	

e Estimated

13233300 MALHEUR RIVER BELOW NEVADA DAM, NEAR VALE, OR

LOCATION.--Lat 43°59'20", long 117°13'10", in NE 1/4 SW 1/4 sec.21, T.18 S., R.45 E.,Malheur County, Hydrologic Unit 17050117, on right bank, 510 ft downstream from dam and headgates of Nevada Canal, and 1.5 mi northeast of Vale.

DRAINAGE AREA.--3,880 mi^2, approximately.

PERIOD OF RECORD.--June 1926 to September 1934, April 1936 to March 1942, March 1944 to September 1954, October 1993 to current year. Monthly discharge only for some periods, published in WSP 1317.

GAGE.--Water-stage recorder. Elevation of gage is 2,220 ft above NGVD of 1929, from topographic map. Prior to Nov. 17, 1930, at datum 1.00 ft higher.

REMARKS.--Records good. Many diversions for irrigation upstream from station. Since March 1930, Vale-Oregon Canal has diverted in sec.31 T.20 S., R.41 E., for irrigation upstream from station and on Willow Creek, a tributary which enters partly above and partly below station. Gilleman-Frohman Canal diverts on left bank in sec.8 T.19 S., .44 E., for irrigation above and below station. Nevada Canal diverts on right bank 300 ft above station for irrigation below station. Flow regulated by Warmsprings Reservoir and, since December 1935, by Beulah Reservoir.

AVERAGE DISCHARGE.--10 years (water years 1994-2003), 246 ft^3/s, 178,000 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,530 ft^3/s Feb. 28, 1940, gage height, 8.88 ft; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 24, 1957 reached a stage of 14.6 ft, discharge 21,000 ft^3/s. Flood of Mar. 19, 1993 reached a stage of 13.31 ft, discharge 16,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 632 ft^3/s July 27, gage height, 2.72 ft; minimum daily discharge, 0.32 ft^3/s Sept. 30.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.5	139	78	72	72	61	4.2	39	75	20	3.0	12
2	8.4	141	77	68	73	61	4.9	7.0	39	16	5.1	3.0
3	13	99	76	66	72	61	5.0	3.7	31	14	7.3	2.8
4	19	98	76	66	70	59	5.4	3.8	18	13	6.8	2.8
5	23	108	78	66	68	57	6.0	11	8.0	10	9.9	2.4
6	25	103	76	66	69	55	6.4	12	4.5	14	5.3	2.4
7	32	100	75	66	67	54	7.0	8.7	4.8	14	11	1.8
8	38	98	75	63	65	53	6.6	7.2	13	9.3	13	1.3
9	40	97	74	63	65	53	8.5	8.2	13	6.7	5.1	1.2
10	40	96	73	63	64	53	9.7	5.3	7.0	6.2	4.9	1.3
11	38	90	74	63	63	54	6.6	4.9	3.8	8.2	5.5	1.3
12	38	90	76	63	64	53	6.3	14	4.6	5.1	5.4	1.8
13	40	90	76	63	65	53	7.6	14	6.1	12	5.2	2.0
14	38	86	79	67	70	53	7.0	6.4	4.1	8.0	4.5	2.0
15	36	85	75	70	68	57	6.5	5.1	4.2	5.1	1.7	2.0
16	28	84	73	65	68	60	5.6	3.7	4.1	3.8	1.2	1.8
17	23	85	73	63	68	56	4.7	3.0	4.2	3.0	1.8	1.6
18	16	83	71	63	66	53	3.0	12	8.7	3.1	2.8	1.6
19	15	83	68	63	66	53	3.1	42	24	3.7	2.8	1.6
20	22	80	69	63	66	54	3.8	26	52	4.2	2.7	1.6
21	24	80	66	63	63	53	3.2	6.6	26	4.4	2.4	1.6
22	19	79	66	63	63	53	3.6	11	25	4.2	2.2	1.6
23	21	80	66	63	61	53	e3.0	20	33	4.0	3.9	1.6
24	21	79	66	65	60	53	e2.0	18	30	4.0	12	1.6
25	24	79	66	66	61	22	3.4	16	36	3.6	5.1	1.6
26	26	79	66	66	62	3.0	7.4	23	24	3.8	1.4	0.93
27	27	79	66	66	62	3.0	13	25	23	191	1.5	0.40
28	30	79	67	66	61	2.8	73	13	20	119	1.6	0.40
29	31	78	68	66	---	2.8	69	17	18	47	1.6	0.40
30	34	78	70	68	---	2.8	48	33	21	20	1.7	0.32
31	97	---	79	70	---	2.8	---	102	---	5.7	4.8	---
TOTAL	890.9	2725	2238	2024	1842	1364.2	343.5	521.6	585.1	586.1	143.2	58.75
MEAN	28.7	90.8	72.2	65.3	65.8	44.0	11.4	16.8	19.5	18.9	4.62	1.96
MAX	97	141	79	72	73	61	73	102	75	191	13	12
MIN	4.5	78	66	63	60	2.8	2.0	3.0	3.8	3.0	1.2	0.32
AC-FT	1770	5410	4440	4010	3650	2710	681	1030	1160	1160	284	117

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2003, BY WATER YEAR (WY)

MEAN	150	138	138	293	442	541	534	262	147	96.1	92.4	131
MAX	228	175	314	1589	1322	1881	1695	988	541	179	220	300
(WY)	2000	2001	1997	1997	1997	1999	1999	1998	1998	1998	1999	1998
MIN	24.3	76.8	72.2	65.3	65.8	44.0	11.4	16.8	15.2	17.8	4.62	1.96
(WY)	2002	2002	2003	2003	2003	2003	2003	2003	2002	2002	2003	2003

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1994 - 2003	
ANNUAL TOTAL	17750.2		13322.35			
ANNUAL MEAN	48.6		36.5		246	
HIGHEST ANNUAL MEAN					535	1999
LOWEST ANNUAL MEAN					36.5	2003
HIGHEST DAILY MEAN	175	Mar 14	191	Jul 27	6230	Jan 3 1997
LOWEST DAILY MEAN	2.8	Sep 14	0.32	Sep 30	0.32	Sep 30 2003
ANNUAL SEVEN-DAY MINIMUM	3.1	Sep 12	0.81	Sep 24	0.81	Sep 24 2003
ANNUAL RUNOFF (AC-FT)	35210		26420		178000	
10 PERCENT EXCEEDS	100		78		583	
50 PERCENT EXCEEDS	38		24		137	
90 PERCENT EXCEEDS	4.3		2.4		13	

e Estimated

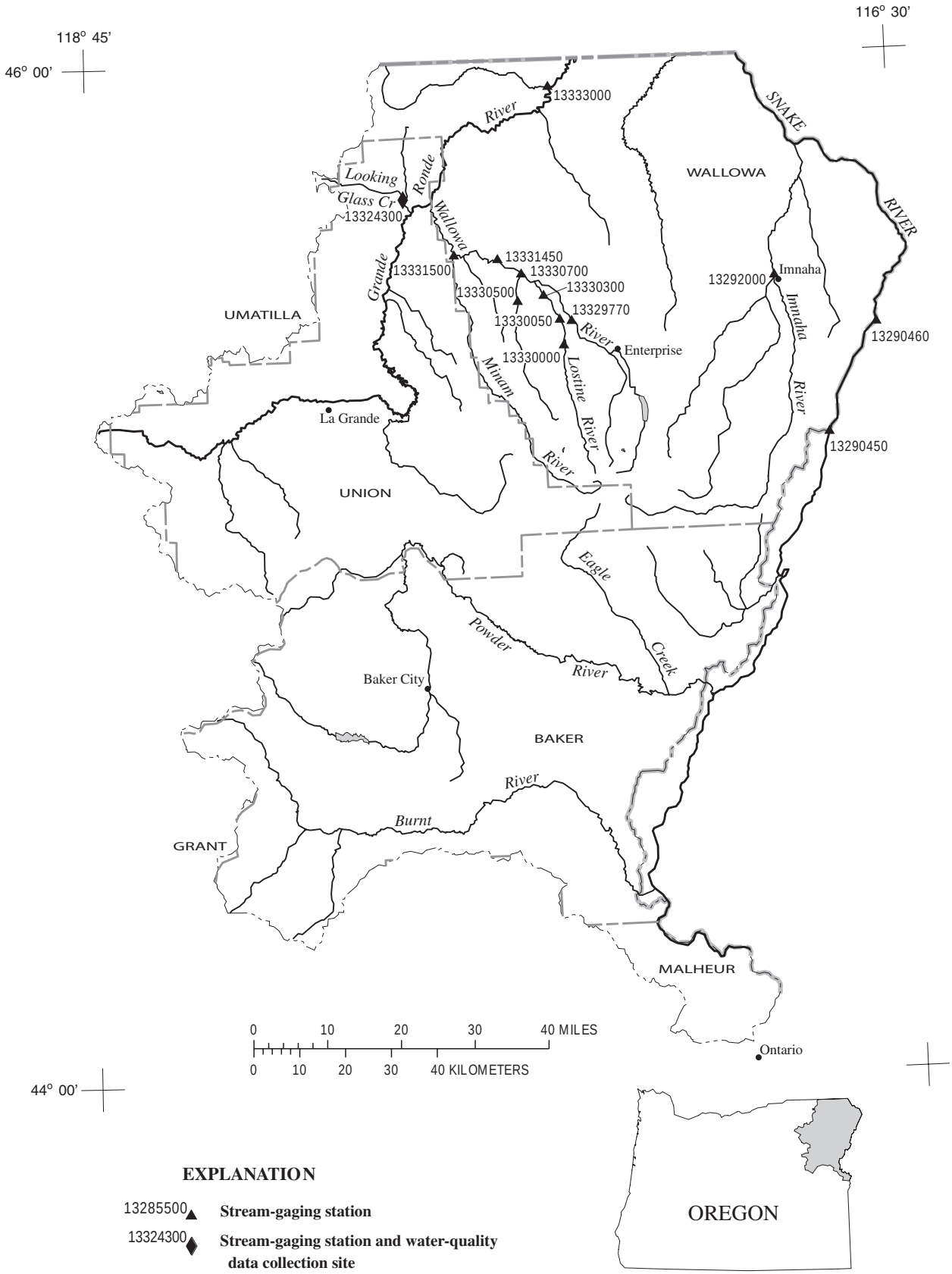


Figure 9. Location of surface-water and water-quality stations in the Powder River, Snake River Main Stem , Pine Creek, Imnaha River, and Grande Ronde River Basins.

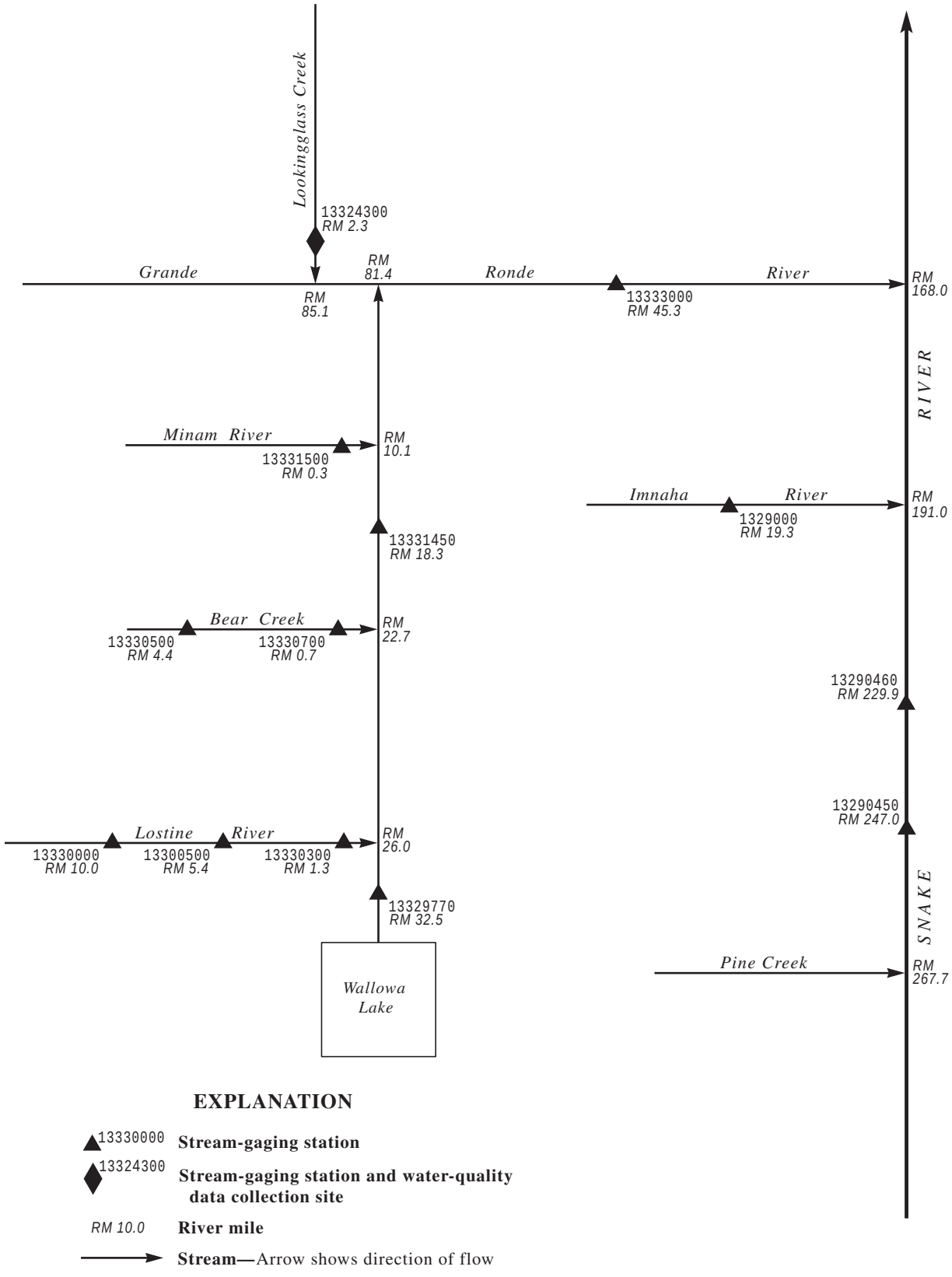


Figure 10. Schematic diagram showing gaging stations in the Imhaha and Grande Ronde River Basins, and Snake River Main Stem.

13290450 SNAKE RIVER AT HELLS CANYON DAM, IDAHO-OREGON STATE LINE

LOCATION.--Lat 45°15'05", long 116°41'50", in SE 1/4 SE 1/4 sec.33, T.3 S., R.49 E., unsurveyed (Willamette meridian), Wallowa County, Wallowa-Whitman National Forest, Hydrologic Unit 17050201, on left bank, 0.2 mi upstream from Hells Canyon Creek, 0.4 mi downstream from Deep Creek, 0.6 mi downstream from Hells Canyon Dam, 15.5 mi northeast of Homestead, Oregon, and at mile 247.0.

DRAINAGE AREA.--73,300 mi^2, approximately.

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

REVISED RECORDS.--WDR ID-78-2: 1969-70, 1972-76, WDR ID-79-2: 1972-73(m).

GAGE.--Water-stage recorder. Datum of gage is 1,400 ft above NGVD of 1929 (levels by Idaho Power Company).

REMARKS.--Station equipment includes satellite telemetry. Flow regulated by many reservoirs upstream from station, with a total usable capacity of more than 10,000,000 acre-feet, the most effective of which is Brownlee Reservoir, 38 mi upstream. Diurnal fluctuations caused by Hells Canyon powerplant. Diversions upstream from station for irrigation of about 3,820,000 acres, of which 742,000 acres are irrigated by withdrawals from ground water (1966 determination).

AVERAGE DISCHARGE.--48 years (water years 1966-2003), 20,190 ft^3/s, 14,630,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 103,000 ft^3/s Jan. 2, 1997, gage height, 86.17 ft; minimum discharge, 1,580 ft^3/s Mar. 19, 1967, gage height, 59.9 ft; minimum daily discharge, 4,360 ft^3/s May 8, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 45,600 ft^3/s May 31, gage height, 75.81 ft; minimum discharge, 6,520 ft^3/s July 27.

COOPERATION.--Discharge records furnished by Idaho Power and reviewed by U.S. Geological Survey beginning April 2001.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14100	9130	9030	8720	21300	10100	17900	12700	26800	8620	12600	11100
2	13100	9140	9090	8690	21400	11900	20200	12300	32500	9170	8520	14900
3	12000	9140	9100	8670	21300	16000	19200	10300	25700	10300	7620	15000
4	14100	9150	8630	8640	20400	16400	17700	8740	21500	10300	10900	13000
5	12200	9120	8550	8710	20300	15600	17300	14400	21200	8260	11300	16100
6	7790	9110	8570	9540	18600	13900	17300	14900	21200	10600	13500	12800
7	12800	9110	8610	8520	20700	13000	17100	16500	21200	9540	15900	12800
8	13500	9140	8540	11000	19600	16000	16400	17300	20100	7790	14600	12700
9	13500	9140	8560	12400	11500	9810	17800	16900	20900	7500	15100	9780
10	14200	9160	8560	11600	12900	10800	17300	16100	21200	9350	14600	8580
11	11700	9140	8540	8610	15900	15000	17500	15300	20900	11800	14900	9760
12	7720	9120	8540	8620	15900	14500	14500	19400	21000	11400	10200	11700
13	8360	9130	8610	9180	14800	11100	11100	20800	18100	7430	11500	9520
14	9110	9130	8560	9370	13100	10000	15800	20300	16000	7250	11300	10800
15	9080	9200	8540	11100	12700	9100	18300	20300	15200	8020	12600	14000
16	9090	9220	8670	15700	10500	8920	18400	20700	19000	9220	8100	11300
17	9100	9240	8660	15500	13500	16000	16900	21200	18100	8490	9240	12900
18	9110	9190	8640	11900	15800	18100	13500	21200	15500	9860	13900	13500
19	9130	9110	8980	11300	16900	16200	14400	13300	11200	7870	13500	15500
20	9130	9150	8670	14100	15300	10600	15600	13400	17000	10900	11500	12800
21	9120	9070	8700	14900	15600	12000	18600	14100	11100	13100	8240	13900
22	9110	9050	8730	14900	17400	10000	19400	18200	16200	13400	8430	16000
23	9120	9100	8720	10700	11600	11800	18800	21000	18900	12700	8450	16200
24	9140	9090	8700	12700	17600	10000	17900	19900	15200	10200	8530	14800
25	9140	9130	8720	8660	14700	12300	16700	17900	15600	7990	16900	15100
26	9120	9120	8690	8600	14000	15100	17100	16400	12100	8400	17400	13700
27	9140	9150	8680	11900	14600	16500	16400	23000	10300	8490	14000	9550
28	9150	9190	8750	16300	16000	13400	18100	25000	9090	8760	11900	9300
29	9160	9130	8900	17200	---	13700	17400	27400	9700	10500	8960	11000
30	9160	9100	8650	19100	---	14400	19200	28700	11700	13000	9330	11700
31	9120	---	8680	20800	---	16200	---	41900	---	10900	10000	---
TOTAL	319300	274100	269570	367630	453900	408430	513800	579540	534190	301110	363520	379790
MEAN	10300	9137	8696	11860	16210	13180	17130	18690	17810	9713	11730	12660
MAX	14200	9240	9100	20800	21400	18100	20200	41900	32500	13400	17400	16200
MIN	7720	9050	8540	8520	10500	8920	11100	8740	9090	7250	7620	8580
AC-FT	633300	543700	534700	729200	900300	810100	1019000	1150000	1060000	597300	721000	753300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2003, BY WATER YEAR (WY)

MEAN	15240	15170	17680	22040	24100	28360	29670	26720	24230	14040	11490	14000
MAX	24140	28630	30410	50150	58220	66340	61960	68840	59080	25550	19860	24960
(WY)	1972	1985	1984	1997	1997	1986	1984	1984	1984	1983	1997	1997
MIN	8941	8992	8696	11860	11300	10600	7371	6401	5868	6901	6583	6887
(WY)	2002	2002	2003	2003	2001	1991	1988	1977	1992	1977	1992	1977

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1966 - 2003	
ANNUAL TOTAL	4597080		4764880			
ANNUAL MEAN	12590		13050		20190	
HIGHEST ANNUAL MEAN					36560	1984
LOWEST ANNUAL MEAN					9746	1992
HIGHEST DAILY MEAN	27500	Mar 31	41900	May 31	98100	Jan 2 1997
LOWEST DAILY MEAN	7220	Jul 26	7250	Jul 14	4360	May 8 1977
ANNUAL SEVEN-DAY MINIMUM	7830	Jul 26	8310	Jul 13	5330	Jun 4 1992
ANNUAL RUNOFF (AC-FT)	9118000		9451000		14630000	
10 PERCENT EXCEEDS	18900		19300		38300	
50 PERCENT EXCEEDS	11200		11900		16300	
90 PERCENT EXCEEDS	8540		8620		8990	

13290460 SNAKE RIVER AT JOHNSON BAR, ID

LOCATION.--Lat 45°27'50", long 116°33'16", in SE 1/4 NE 1/4 sec.22, T.1 S., R.50 E., (Willamette meridian), Wallowa County, Hydrologic Unit 17060101, Hells Canyon National Recreation Area, on left bank opposite lower end of Johnson Bar, 0.5 mi upstream from mouth of Sheep Creek, and at mile 229.9.

DRAINAGE AREA.--73,400 mi^2, approximately.

PERIOD OF RECORD.--July 1959 to September 1992 (gage heights only), October 1992 to September 1995 (discharge), October 1995 to current year (gage heights only).

GAGE.--Water-stage recorder. Datum of gage is 1,226.341 ft above NGVD of 1929 (levels by Corps of Engineers.)

REMARKS.--Station equipment includes satellite telemetry. Diurnal fluctuations in stage are caused by Hells Canyon Powerplant. Records for years prior to the 1991 water year were not published, but are available from the Boise, Idaho Field Office.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 14.61 ft May 31; minimum recorded gage height, 4.31 ft June 28.

COOPERATION.--Gage-height records furnished by Idaho Power and reviewed by U.S. Geological Survey beginning April 2001.

Gage height, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.88	5.31	5.24	5.17	8.51	5.86	7.60	6.60	10.06	5.27	6.08	5.71
2	6.44	5.32	5.25	5.15	8.53	5.91	8.22	6.23	11.32	5.22	5.34	6.86
3	6.24	5.32	5.26	5.14	8.52	7.07	8.15	5.68	9.74	5.51	4.76	6.89
4	6.58	5.32	5.13	5.13	8.34	7.34	7.70	5.30	8.75	5.54	5.60	6.51
5	6.26	5.31	5.09	5.15	8.25	7.14	7.53	6.70	8.55	5.18	5.77	7.12
6	5.03	5.31	5.08	5.39	7.90	6.64	7.57	6.95	8.54	5.49	6.50	6.38
7	6.17	5.31	5.10	5.12	8.35	6.45	7.54	7.22	8.55	5.52	7.01	6.24
8	6.54	5.32	5.08	5.74	8.14	7.15	7.34	7.63	8.30	4.91	6.84	6.45
9	6.46	5.32	5.09	6.14	6.29	5.61	7.70	7.44	8.49	4.72	6.92	5.49
10	6.76	5.31	5.09	6.12	6.21	5.72	7.57	7.28	8.54	5.20	6.74	5.11
11	6.13	5.31	5.08	5.12	7.10	6.99	7.57	7.01	8.48	5.80	6.84	5.32
12	4.86	5.31	5.07	5.12	7.14	6.79	6.95	7.93	8.47	6.18	5.86	6.19
13	4.98	5.30	5.11	5.26	7.03	6.11	5.97	8.45	7.90	4.77	5.87	5.38
14	5.31	5.30	5.10	5.36	6.42	5.64	7.01	8.37	7.10	4.64	5.91	5.64
15	5.30	5.30	5.09	5.84	6.30	5.26	7.85	8.30	7.03	4.78	6.11	6.62
16	5.30	5.30	5.13	6.94	5.74	5.36	7.78	8.43	7.95	5.29	5.08	6.01
17	5.31	5.30	5.13	7.13	6.42	7.00	7.54	8.56	7.75	5.09	5.18	6.19
18	5.31	5.29	5.12	6.14	6.98	7.64	6.65	8.53	7.37	5.47	6.45	6.49
19	5.32	5.28	5.22	5.83	7.43	7.35	6.78	6.72	5.92	4.90	6.49	7.04
20	5.32	5.30	5.13	6.67	7.15	5.94	6.98	6.56	7.18	5.59	6.03	6.35
21	5.32	5.28	5.13	6.95	6.97	6.12	7.75	6.68	6.10	6.32	5.12	6.41
22	5.31	5.27	5.14	6.92	7.56	5.57	8.18	7.59	6.97	6.25	5.07	7.24
23	5.31	5.28	5.14	5.84	6.18	6.03	7.93	8.48	7.80	6.38	5.07	7.29
24	5.32	5.27	5.13	6.25	7.45	5.61	7.79	8.28	7.11	5.79	5.07	6.88
25	5.32	5.28	5.14	5.23	6.92	6.12	7.39	7.88	7.15	4.87	6.94	6.90
26	5.31	5.28	5.14	5.13	6.66	6.93	7.46	7.28	6.26	4.98	7.82	6.54
27	5.32	5.29	5.14	5.94	6.69	7.12	7.30	8.98	5.62	5.14	6.65	5.47
28	5.33	5.30	5.17	7.12	7.07	6.80	7.83	9.49	5.14	5.02	6.12	5.38
29	5.32	5.28	5.22	7.54	---	6.31	7.48	10.14	5.43	5.62	5.27	5.77
30	5.32	5.27	5.14	7.85	---	6.96	8.02	10.36	5.96	6.23	5.35	5.91
31	5.31	---	5.15	8.39	---	7.17	---	13.83	---	5.92	5.50	---
MEAN	5.64	5.30	5.14	6.03	7.22	6.44	7.50	7.90	7.65	5.41	5.98	6.26
MAX	6.88	5.32	5.26	8.39	8.53	7.64	8.22	13.83	11.32	6.38	7.82	7.29
MIN	4.86	5.27	5.07	5.12	5.74	5.26	5.97	5.30	5.14	4.64	4.76	5.11

13292000 IMNAHA RIVER AT IMNAHA, OR

LOCATION.--Lat 45°33'45", long 116°50'00", in NW 1/4 SW 1/4 sec.16, T.1 N., R.48 E., Wallowa County, Hydrologic Unit 17060102, on left bank at Imnaha, 0.3 mi downstream from Big Sheep Creek, and at mile 19.3.

DRAINAGE AREA.--622 mi^2.

PERIOD OF RECORD.--June 1928 to current year.

REVISED RECORDS.--WSP 833: 1938. WSP 1397: 1929, 1932(M), 1949. WSP 1737: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,941.14 ft above NGVD of 1929. Prior to Aug. 6, 1934, nonrecording gage at site 0.25 mi upstream at different datum. Aug. 6-31, 1934, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. No regulation. Diversions for irrigation upstream from station. Water is diverted from Big Sheep Creek and tributaries upstream from station for irrigation in Wallowa River basin. National Weather Service satellite telemeter at station. Continuous water-quality records for the period August 1965 to September 1968 and from May 1976 to September 1977 have been collected at this location.

AVERAGE DISCHARGE.--75 years (water years 1929-2003), 512 ft^3/s, 370,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,200 ft^3/s Jan. 1, 1997, gage height, 11.44 ft, from floodmark,from rating curve extended above 7,900 ft^3/s, on basis of slope-area measurement of peak flow; minimum discharge observed, 16 ft^3/s Nov. 22, 1931, result of freezeup; minimum daily, 25 ft^3/s Nov. 22, 23, 1931.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 5	2245	1,660	3.91	May 30	2115	*3,110	*5.17
May 16	0100	1,630	3.87				

Minimum discharge, 58 ft^3/s Nov. 1.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	131	77	127	239	501	236	999	1030	2260	920	205	125
2	128	103	123	228	514	212	1070	1030	2000	846	198	123
3	125	114	116	237	463	226	1030	1200	1860	755	198	123
4	132	121	128	237	417	213	977	1500	1740	709	201	121
5	133	128	133	262	367	209	944	1630	1680	658	193	122
6	130	140	119	251	319	217	897	1610	1710	626	187	126
7	128	135	102	240	282	217	840	1500	1770	600	181	124
8	126	182	93	226	282	233	807	1370	1780	597	174	148
9	124	175	114	210	286	237	842	1260	1800	569	169	155
10	124	148	134	222	275	263	925	1190	1710	528	162	150
11	122	137	135	222	248	311	1120	1170	1600	502	157	142
12	122	131	133	214	243	411	1230	1210	1490	480	156	135
13	126	131	144	212	261	623	1320	1270	1510	456	155	131
14	127	129	209	233	262	854	1260	1370	1520	424	152	126
15	126	126	318	277	244	976	1140	1540	1460	393	148	124
16	126	124	279	281	272	1150	1040	1550	1440	372	145	125
17	123	127	253	262	291	968	982	1390	1420	358	142	126
18	122	126	208	240	292	807	920	1230	1420	338	142	129
19	122	124	183	233	290	707	833	1090	1530	323	140	124
20	121	124	186	224	287	671	818	1030	1630	307	139	122
21	121	125	184	219	280	623	919	1030	1320	297	137	122
22	122	129	177	210	284	741	1050	1130	1150	282	149	122
23	120	131	156	215	272	1330	1260	1280	1030	273	198	119
24	120	130	107	208	232	1090	1360	1580	968	265	162	118
25	120	123	149	206	218	952	1440	1940	953	263	147	116
26	121	104	155	218	248	872	1330	1960	919	262	140	113
27	120	116	171	350	254	776	1180	1900	940	264	136	112
28	123	134	219	434	240	699	1080	2030	964	242	135	112
29	129	135	289	382	---	646	1030	2230	963	237	133	112
30	125	129	262	362	---	614	1040	2770	953	223	130	112
31	101	---	261	359	---	672	---	2610	---	213	127	---
TOTAL	3840	3858	5367	7913	8424	18756	31683	46630	43490	13582	4938	3759
MEAN	124	129	173	255	301	605	1056	1504	1450	438	159	125
MAX	133	182	318	434	514	1330	1440	2770	2260	920	205	155
MIN	101	77	93	206	218	209	807	1030	919	213	127	112
AC-FT	7620	7650	10650	15700	16710	37200	62840	92490	86260	26940	9790	7460

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2003, BY WATER YEAR (WY)

MEAN	157	184	212	212	243	414	941	1555	1318	558	196	145
MAX	501	625	806	1343	570	1026	1760	2804	2612	1348	380	256
(WY)	1963	1974	1942	1997	1996	1995	1956	1948	1974	1975	1982	1978
MIN	81.5	80.0	88.6	69.3	82.4	114	345	445	361	123	78.8	82.8
(WY)	1937	1937	1936	1937	1937	1977	1977	1977	1992	1977	1931	1931

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1929 - 2003	
ANNUAL TOTAL	154725		192240			
ANNUAL MEAN	424		527		512	
HIGHEST ANNUAL MEAN					897	1974
LOWEST ANNUAL MEAN					184	1977
HIGHEST DAILY MEAN	1980	Apr 14	2770	May 30	12400	Jan 1 1997
LOWEST DAILY MEAN	46	Jan 29	77	Nov 1	25	Nov 22 1931
ANNUAL SEVEN-DAY MINIMUM	96	Jan 27	110	Oct 30	43	Jan 8 1993
ANNUAL RUNOFF (AC-FT)	306900		381300		370700	
10 PERCENT EXCEEDS	1150		1380		1390	
50 PERCENT EXCEEDS	170		240		229	
90 PERCENT EXCEEDS	121		122		113	

13324300 LOOKINGGLASS CREEK NEAR LOOKING GLASS, OR

LOCATION.--Lat 45°43'55", long 117°51'50", in NW 1/4 NW 1/4 sec.19, T.3 N., R.40 E., Union County, Hydrologic Unit 17060104, on left bank at Oregon State Fish and Wildlife Service fish hatchery, 310 ft upstream from Jarboe Creek, 2.3 mi northwest of Looking Glass, and at mile 2.3.

DRAINAGE AREA.--78.3 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,530 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except for estimated daily discharges and those greater than 250 ft^3/s , which are poor. Records include a diversion by the fish hatchery 0.3 mi upstream from station of up to 50 ft^3/s that is returned through the fish ladder to the gage pool.

AVERAGE DISCHARGE.--21 years (water years 1983-2003), 138 ft^3/s, 100,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,120 ft^3/s Feb. 9, 1996, gage height, 7.41 ft, from rating curve extended above 1,000 ft^3/s; minimum discharge, 25 ft^3/s Oct. 11, 1983, result of regulation at fish hatchery upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 380 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 15	unknown	*596	a*5.85	Apr. 24	1845	485	5.55

Minimum daily discharge, 49 ft^3/s July 28-31.
a From crest-stage gage.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	53	53	61	e280	e90	e400	404	240	64	50	51
2	52	55	52	65	e240	e88	e370	394	210	63	50	51
3	52	52	52	85	e195	e89	e320	412	201	62	53	51
4	54	51	53	79	e170	e87	e295	419	184	61	50	51
5	55	50	55	89	e140	e96	e270	397	179	60	54	51
6	54	50	54	74	e120	e107	e255	350	151	60	53	51
7	52	51	53	79	e100	e140	e240	347	142	60	53	51
8	52	63	53	99	e99	e180	e225	317	139	62	53	55
9	52	66	54	63	e95	e235	e245	287	117	59	52	55
10	53	62	58	63	e95	e300	e260	300	117	58	51	56
11	52	58	59	59	e90	e390	e300	333	106	57	51	55
12	52	59	55	65	e88	e430	342	341	105	57	52	54
13	52	60	61	73	e93	e480	393	333	99	56	51	54
14	51	61	73	78	e92	e500	412	376	93	55	51	54
15	51	58	72	74	e100	e520	406	390	88	54	51	54
16	51	57	74	69	e100	e430	373	381	83	54	50	55
17	52	58	64	66	e105	e390	356	344	79	53	50	56
18	51	57	63	61	e97	e330	348	310	79	53	50	56
19	51	61	53	60	e97	e290	345	274	82	53	50	56
20	53	59	57	59	e99	e270	362	255	81	53	50	55
21	52	58	54	59	e110	e240	366	262	80	52	51	55
22	52	58	53	65	e110	e280	427	275	78	52	52	55
23	52	57	52	81	e100	e430	442	301	76	51	53	55
24	53	56	50	76	e90	e360	448	342	75	50	52	55
25	54	52	53	80	e87	e320	443	379	82	50	51	55
26	55	53	54	150	e90	e290	451	378	72	50	51	55
27	55	52	56	240	e93	e270	408	347	69	50	51	54
28	56	52	58	161	e93	e240	371	363	68	49	51	55
29	57	52	58	e105	---	e230	397	336	66	49	51	55
30	54	55	59	e96	---	e220	412	311	65	49	51	55
31	56	---	66	e270	---	e260	---	274	---	49	51	---
TOTAL	1641	1686	1781	2804	3268	8582	10682	10532	3306	1705	1590	1621
MEAN	52.9	56.2	57.5	90.5	117	277	356	340	110	55.0	51.3	54.0
MAX	57	66	74	270	280	520	451	419	240	64	54	56
MIN	51	50	50	59	87	87	225	255	65	49	50	51
AC-FT	3250	3340	3530	5560	6480	17020	21190	20890	6560	3380	3150	3220

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2003, BY WATER YEAR (WY)

MEAN	53.6	70.8	80.8	87.2	132	197	334	370	163	67.4	53.4	52.3
MAX	66.7	167	288	213	483	431	564	608	425	117	65.3	61.9
(WY)	1986	1996	1996	1997	1996	1997	1997	1997	1984	1984	1985	1984
MIN	45.2	46.8	53.2	51.0	54.4	83.3	183	114	57.4	47.0	37.1	40.1
(WY)	1995	1988	1988	2001	2001	1985	2001	1992	1992	1994	1994	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1983 - 2003	
ANNUAL TOTAL	53344		49198			
ANNUAL MEAN	146		135		138	
HIGHEST ANNUAL MEAN					227	1997
LOWEST ANNUAL MEAN					93.0	2001
HIGHEST DAILY MEAN	858	Apr 14	520	Mar 15	1740	Feb 9 1996
LOWEST DAILY MEAN	45	Sep 9	49	Jul 28	35	Oct 11 1983
ANNUAL SEVEN-DAY MINIMUM	47	Aug 31	49	Jul 25	35	Aug 16 1994
ANNUAL RUNOFF (AC-FT)	105800		97580		100200	
10 PERCENT EXCEEDS	428		361		339	
50 PERCENT EXCEEDS	62		63		69	
90 PERCENT EXCEEDS	50		51		50	

e Estimated

13324300 LOOKINGGLASS CREEK NEAR LOOKING GLASS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1999 to current year.

PERIOD OF DAILY RECORD.--May 1999 to current year.

INSTRUMENTATION.--Temperature recorder since May 1999.

REMARKS.--Records excellent for the period Apr. 10 to Sept. 30; good for the period Oct. 25 to Apr. 9; poor for the period Oct. 1-24.

EXTREMES FOR PERIOD OF DAILY RECORD.--Maximum recorded, 20.0°C Aug. 24, 1999; minimum recorded, 0.0°C Dec. 15, 2000, Jan. 27, Feb. 8, 2001, Nov. 28, Dec. 24, 2001, Jan. 28, 29, Feb. 5, 2002.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded, 19.8°C July 10-12, 21 minimum, 0.3°C Oct. 31 to Nov. 2.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.5	5.5	6.8	2.7	0.3	1.5	3.6	2.1	2.8	4.8	3.3	4.0
2	8.9	4.1	6.3	3.1	0.3	1.7	3.3	2.1	2.7	5.6	4.1	4.8
3	8.9	5.6	7.3	3.7	0.6	2.0	3.2	2.3	2.7	5.7	4.5	5.0
4	10.6	7.3	8.7	4.1	1.6	2.7	4.3	2.4	3.3	5.5	4.3	4.8
5	9.2	6.9	7.9	5.0	2.2	3.4	4.9	3.3	4.3	4.8	3.2	4.3
6	10.1	5.4	7.6	5.6	2.1	3.7	4.1	2.9	3.4	3.4	2.4	2.9
7	9.9	5.4	7.5	6.5	4.0	5.1	3.0	2.1	2.6	3.5	2.1	2.8
8	9.5	4.9	7.0	6.9	4.7	6.0	4.0	2.6	3.2	2.9	1.7	2.3
9	9.2	4.5	6.8	6.4	4.6	5.4	4.2	2.5	3.3	3.4	1.7	2.5
10	8.4	4.6	6.4	6.9	5.1	5.8	4.4	2.7	3.7	4.6	2.7	3.5
11	7.6	4.0	5.9	6.9	4.8	5.7	4.4	2.9	3.7	5.1	3.5	4.2
12	6.8	2.5	4.6	6.2	4.6	5.4	5.0	3.1	4.2	5.6	4.2	4.9
13	7.2	2.6	4.8	6.9	4.7	5.6	5.9	4.5	5.2	5.9	4.7	5.1
14	7.3	2.9	5.0	6.2	4.1	5.4	5.7	5.3	5.5	5.8	3.7	5.0
15	7.7	3.3	5.4	5.1	3.1	4.1	5.3	4.9	5.1	4.6	2.7	3.7
16	7.9	3.6	5.7	6.0	4.1	5.1	5.7	4.2	5.2	5.0	3.0	3.8
17	7.8	3.6	5.6	6.5	4.6	5.7	4.2	3.1	3.8	3.9	2.5	3.2
18	7.6	3.4	5.4	5.9	3.9	4.9	4.1	2.5	3.5	4.4	2.7	3.5
19	7.8	3.8	5.7	6.7	5.3	5.9	3.4	1.5	2.5	5.1	4.0	4.4
20	8.0	5.4	6.7	6.0	4.6	5.3	4.4	2.9	3.6	5.6	4.2	4.7
21	8.7	5.2	6.8	6.6	4.2	5.3	4.5	3.2	3.9	5.1	4.3	4.7
22	8.1	4.3	6.1	7.2	4.5	5.8	5.1	3.5	4.4	4.9	4.4	4.6
23	6.4	3.6	5.0	6.7	4.9	5.6	4.0	2.0	3.1	6.1	3.9	5.1
24	5.5	2.1	3.8	5.6	3.4	5.0	3.0	0.8	1.9	5.8	3.5	4.6
25	5.6	2.1	3.8	3.4	2.2	2.9	4.2	2.8	3.4	6.3	4.9	5.5
26	5.5	2.1	3.7	3.6	2.1	2.9	3.6	1.6	2.8	6.0	4.9	5.5
27	5.2	2.0	3.7	3.6	2.2	2.8	5.1	2.8	4.2	5.2	4.2	4.7
28	6.8	4.7	5.7	3.8	2.1	2.9	4.9	4.1	4.5	5.5	3.5	4.5
29	5.8	3.8	5.1	4.0	2.5	3.1	4.5	2.9	4.0	4.8	3.2	4.0
30	3.8	1.5	3.0	3.8	2.3	3.0	3.4	0.9	2.5	5.2	4.2	4.5
31	2.7	0.3	1.5	---	---	---	5.3	3.2	4.2	5.3	4.2	4.6
MONTH	10.6	0.3	5.7	7.2	0.3	4.3	5.9	0.8	3.7	6.3	1.7	4.2

13324300 LOOKINGGLASS CREEK NEAR LOOKING GLASS, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5.0	3.7	4.3	5.2	2.1	3.4	6.2	4.1	4.9	7.1	4.8	5.8
2	5.1	3.7	4.2	5.3	1.6	3.3	6.2	3.4	4.6	8.7	4.0	6.2
3	4.8	3.5	4.1	6.0	3.5	4.4	5.0	3.0	3.7	6.5	5.0	5.7
4	4.0	2.8	3.5	5.8	3.1	4.2	5.9	3.0	4.1	7.2	4.7	5.5
5	3.8	2.3	3.0	5.1	2.4	3.8	5.8	3.4	4.2	7.0	4.1	5.3
6	3.5	1.5	2.3	3.3	1.7	2.8	5.6	2.5	3.8	7.3	3.2	4.8
7	3.6	1.1	2.2	3.3	1.7	2.6	7.4	2.6	4.6	6.2	3.0	4.5
8	3.8	1.6	2.6	4.4	2.1	3.3	9.0	3.5	5.7	8.4	3.1	5.5
9	3.6	1.4	2.4	5.9	3.3	4.3	8.4	4.5	5.9	7.8	4.2	5.9
10	4.1	1.7	2.7	6.1	3.8	4.7	8.7	4.1	6.1	8.6	4.5	6.4
11	3.9	1.3	2.4	6.5	4.0	4.8	7.3	5.0	5.8	8.8	5.0	6.5
12	4.0	1.3	2.5	6.4	4.1	4.9	7.9	4.4	5.7	7.8	5.4	6.3
13	5.1	2.2	3.5	6.2	4.2	4.8	7.9	4.6	5.8	10.8	4.2	7.1
14	5.0	3.6	4.2	5.8	4.0	4.6	6.6	4.3	5.2	11.2	5.3	7.8
15	5.7	3.3	4.3	5.1	3.9	4.5	6.6	3.3	4.8	8.2	5.2	6.5
16	5.4	3.9	4.7	5.5	3.9	4.5	6.6	3.8	5.0	8.2	4.4	5.9
17	5.5	3.7	4.5	6.4	3.6	4.6	7.2	4.6	5.4	7.5	4.2	5.6
18	5.8	3.0	4.3	6.2	3.0	4.3	7.5	4.0	5.3	7.9	3.8	5.4
19	5.8	2.6	3.9	6.7	3.2	4.7	7.9	3.0	5.1	10.0	3.4	6.3
20	5.1	3.6	4.3	6.7	4.1	5.1	9.1	3.5	5.8	10.2	4.2	7.0
21	5.4	3.7	4.6	5.8	4.2	4.9	7.9	4.8	6.1	9.8	6.1	7.8
22	5.3	2.8	3.9	5.4	3.9	4.8	6.5	5.2	5.7	11.2	6.0	8.5
23	4.5	1.8	3.2	5.5	3.6	4.3	8.4	4.5	6.1	13.0	7.0	9.7
24	3.7	0.6	1.9	5.9	3.4	4.4	6.0	4.1	5.1	12.5	7.6	9.9
25	3.9	0.5	1.9	5.4	4.2	4.7	7.0	3.6	4.8	10.5	7.9	9.1
26	4.6	0.8	2.5	5.8	4.0	4.5	5.8	3.5	4.5	10.9	7.8	9.3
27	5.3	1.7	3.1	5.9	3.5	4.3	7.3	3.2	5.0	13.5	7.8	10.3
28	3.7	1.5	2.6	6.5	2.9	4.4	8.5	3.4	5.7	13.6	8.6	10.8
29	---	---	---	7.2	3.4	5.0	8.0	4.5	6.1	13.7	8.5	11.0
30	---	---	---	8.4	3.8	5.7	8.4	4.1	5.8	11.3	9.8	10.4
31	---	---	---	7.0	4.6	5.5	---	---	---	12.7	8.9	10.4
MONTH	5.8	0.5	3.3	8.4	1.6	4.4	9.1	2.5	5.2	13.7	3.0	7.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.7	7.8	10.4	16.9	8.6	12.4	18.2	8.8	13.3	15.1	7.7	11.3
2	13.8	8.3	10.6	17.3	8.8	12.5	12.9	9.9	11.4	14.0	8.2	11.1
3	14.1	7.2	10.2	17.0	8.2	12.1	14.1	9.9	11.6	15.5	8.1	11.5
4	14.6	7.3	10.6	17.9	7.2	12.2	17.2	8.0	12.3	13.8	8.7	11.1
5	15.4	7.9	11.3	18.1	7.8	12.6	14.5	10.1	12.1	14.0	9.3	11.3
6	16.0	8.5	11.9	19.0	8.4	13.1	18.2	9.6	13.4	15.3	8.7	11.6
7	16.7	9.0	12.3	18.7	8.4	13.2	18.0	9.6	13.4	13.2	9.0	10.9
8	17.0	9.4	12.6	18.2	10.0	13.6	18.0	9.2	13.2	10.6	8.8	9.4
9	16.9	9.3	12.6	19.1	8.6	13.4	18.3	9.0	13.3	10.1	7.0	8.5
10	16.3	8.8	12.0	19.8	9.1	14.0	18.1	9.1	13.3	10.8	8.1	9.4
11	16.5	8.3	11.9	19.8	9.5	14.2	17.6	9.3	13.1	10.7	8.7	9.7
12	16.9	8.2	12.0	19.8	9.9	14.5	17.3	8.9	12.7	12.6	8.5	10.1
13	16.0	9.8	12.2	17.0	10.4	13.3	17.4	8.2	12.4	12.0	5.5	8.6
14	15.9	9.3	11.8	18.4	8.7	13.2	17.4	8.2	12.5	12.6	5.7	8.9
15	17.4	8.5	12.5	19.2	9.0	13.8	15.2	8.9	12.0	12.9	8.2	10.2
16	17.9	8.6	12.7	19.5	9.7	14.3	16.9	9.4	12.8	10.4	7.3	8.6
17	18.5	8.8	13.1	19.4	9.6	14.2	17.2	8.3	12.4	10.9	7.1	8.6
18	17.3	9.9	12.9	19.6	9.5	14.3	17.1	8.5	12.6	11.4	5.4	8.2
19	14.0	9.9	11.6	19.7	9.9	14.5	16.3	8.9	12.5	12.3	6.6	9.2
20	11.7	8.2	9.7	19.6	9.8	14.4	16.3	8.7	12.4	11.9	6.6	9.1
21	11.8	7.5	9.3	19.8	9.7	14.4	14.7	8.1	11.4	11.6	5.5	8.4
22	11.6	7.7	9.2	19.5	9.6	14.3	13.8	10.2	11.8	11.7	5.8	8.7
23	13.6	6.0	9.4	19.4	10.3	14.5	16.1	9.8	12.4	11.6	5.8	8.6
24	13.2	6.8	9.9	16.0	10.3	13.1	15.9	9.0	12.2	11.9	6.2	8.9
25	17.2	7.2	11.4	16.5	10.0	13.1	16.1	8.1	11.9	12.0	6.4	9.0
26	18.2	7.8	12.5	16.8	9.8	13.1	15.3	9.0	12.1	12.4	6.9	9.5
27	18.5	8.3	12.9	19.6	9.7	14.2	15.5	9.6	12.2	12.1	6.7	9.3
28	19.1	8.7	13.3	19.6	9.6	14.2	14.9	7.4	11.0	11.8	6.6	9.2
29	17.7	9.2	13.0	19.4	9.3	14.0	15.2	7.5	11.2	11.8	6.7	9.1
30	18.3	9.5	13.4	19.3	8.9	13.7	15.2	7.6	11.2	11.7	6.8	9.1
31	---	---	---	18.1	9.1	13.4	15.0	7.7	11.2	---	---	---
MONTH	19.1	6.0	11.6	19.8	7.2	13.6	18.3	7.4	12.3	15.5	5.4	9.6
YEAR	19.8	0.3	7.1									

13329770 WALLOWA RIVER ABOVE CROSS COUNTRY CANAL, NEAR ENTERPRISE, OR

LOCATION.--Lat 45°29'18", long 117°24'10", in SW 1/4 SE 1/4 sec.11, T.1 S., R.43 E., Wallowa County, Hydrologic Unit 17060105, on left bank 300 ft upstream from Cross Country canal, 6 mi northwest of Enterprise, and at mile 32.5.

DRAINAGE AREA.--272 mi^2.

PERIOD OF RECORD.--April 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,330 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except for the period May 25 to July 10 and estimated daily discharges, which are poor. Regulation by Wallowa Lake. Many diversions for irrigation upstream from gage. U.S. Geological Survey satellite telemeter at station.

COOPERATION.--Gage height record was collected and discharge measurements made by the Wallowa County Soil and Water Conservation District. Records were provided by the State of Oregon Water Resources Department. Discharge measurements and records were reviewed by the U.S. Geological Survey.

AVERAGE DISCHARGE.--8 years (water years 1996-2003), 262 ft^3/s, 190,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,590 ft^3/s July 9, 1997, gage height, 4.17 ft; maximum gage height, 4.27 ft May 16, 1997; minimum discharge, 92 ft^3/s Sept. 5, 2001.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
June 2	1615	*743	*3.04				

Minimum discharge, 123 ft^3/s Feb. 25.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	179	173	159	160	208	155	221	204	605	307	180	186
2	188	174	158	167	189	147	205	201	628	304	195	176
3	188	178	155	189	180	154	199	211	609	316	215	181
4	191	182	154	185	172	149	191	251	568	305	231	177
5	186	183	159	194	166	148	196	249	590	295	230	178
6	186	182	152	174	155	155	194	231	596	300	215	186
7	185	189	149	165	149	167	186	222	588	285	207	185
8	186	203	147	160	151	185	178	215	606	290	206	200
9	184	200	148	155	153	180	175	210	590	271	198	206
10	185	200	152	157	152	179	174	208	560	252	194	214
11	179	196	153	155	147	179	176	210	577	235	200	203
12	180	188	154	155	147	199	180	219	545	213	192	194
13	177	190	167	157	155	214	185	212	486	202	194	198
14	174	185	173	167	166	215	178	214	446	198	193	196
15	170	182	178	158	165	198	173	234	465	178	196	199
16	171	185	169	156	173	189	175	224	438	178	187	203
17	168	186	162	155	167	192	180	215	426	175	178	217
18	168	182	153	151	164	182	174	210	429	170	171	218
19	167	183	144	153	159	171	169	201	416	168	169	212
20	169	178	e146	154	161	168	164	199	404	175	174	205
21	171	175	e152	154	160	163	163	194	411	170	177	205
22	168	173	e158	152	164	174	191	208	407	155	200	203
23	165	172	e153	173	159	196	220	262	403	157	242	197
24	164	169	e134	161	143	177	228	378	407	163	210	199
25	167	158	136	158	141	175	242	482	410	176	197	199
26	167	155	142	172	147	198	229	498	404	190	200	193
27	167	154	176	207	149	187	219	513	378	206	204	190
28	173	157	189	190	150	174	213	552	308	203	201	186
29	187	159	176	176	---	167	207	568	324	188	193	180
30	188	159	163	200	---	162	206	570	336	181	189	180
31	177	---	167	209	---	166	---	591	---	182	188	---
TOTAL	5475	5350	4878	5219	4492	5465	5791	9156	14360	6788	6126	5866
MEAN	177	178	157	168	160	176	193	295	479	219	198	196
MAX	191	203	189	209	208	215	242	591	628	316	242	218
MIN	164	154	134	151	141	147	163	194	308	155	169	176
AC-FT	10860	10610	9680	10350	8910	10840	11490	18160	28480	13460	12150	11640

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2003, BY WATER YEAR (WY)

MEAN	215	209	204	194	201	217	239	380	501	329	223	235
MAX	294	272	356	233	297	323	339	598	843	630	340	369
(WY)	1998	1996	1996	1997	1996	1996	1997	1997	1998	1997	1996	1996
MIN	145	155	138	152	139	160	186	199	179	174	124	107
(WY)	2002	2002	2002	2002	2002	2002	2001	2002	2001	2001	2001	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1996 - 2003	
ANNUAL TOTAL	68515		78966			
ANNUAL MEAN	188		216		262	
HIGHEST ANNUAL MEAN					358	1996
LOWEST ANNUAL MEAN					179	2001
HIGHEST DAILY MEAN	456	May 30	628	Jun 2	1140	May 16 1997
LOWEST DAILY MEAN	109	May 13	134	Dec 24	98	Sep 5 2001
ANNUAL SEVEN-DAY MINIMUM	118	Aug 13	146	Dec 20	103	Sep 3 2001
ANNUAL RUNOFF (AC-FT)	135900		156600		190000	
10 PERCENT EXCEEDS	290		329		435	
50 PERCENT EXCEEDS	170		185		211	
90 PERCENT EXCEEDS	135		154		154	

e Estimated

13330000 LOSTINE RIVER NEAR LOSTINE, OR

LOCATION.--Lat 45°26'20", long 117°25'35", in NW 1/4 sec.34, T.1 S., R.43 E., Wallowa County, Hydrologic Unit 17060105, on left bank, 3.5 mi south of Lostine, and at mile 10.0.

DRAINAGE AREA.--70.9 mi^2.

PERIOD OF RECORD.--August 1912 to March 1914, April to September 1915, July 1925 to September 1991, April 1995 to current year. Monthly discharge only for some periods, published in WSP 1317.

REVISED RECORDS.--WSP 1397: 1913, 1942. WSP 1737: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,650 ft above NGVD of 1929, by barometer. See WSP 1317 or 1737 for history of changes prior to Dec. 16, 1953. Dec. 16, 1953 to Aug. 23 1977, at datum 1.04 ft higher.

REMARKS.--No estimated daily discharges. Records good. Minam Lake, capacity 440 acre-ft, has stored and diverted flow from Minam River since 1917 for irrigation in Lostine River basin. Diversions for irrigation upstream from station. Continuous water-quality records for the period October 1957 to September 1958 have been collected at this location. U.S. Geological Survey satellite telemeter at station.

COOPERATION.--Gage height record was collected and discharge measurements made by the Wallowa County Soil and Water Conservation District. Records were provided by the State of Oregon Water Resources Department. Discharge measurements and records were reviewed by the U.S. Geological Survey.

AVERAGE DISCHARGE.--74 years (water years 1913,1926-91, 1996-2003), 192 ft^3/s, 139,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,550 ft^3/s June 16, 1974, gage height, 8.59 ft, present datum; minimum discharge, 7.5 ft^3/s Mar. 2, 1966, result of freezeup; minimum daily, 10 ft^3/s Nov. 28-30, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 30	1415	*2,100	*8.41	June 20	0045	1,330	6.73
June 8	2315	1,300	6.63				

Minimum discharge, 12 ft^3/s Dec 24.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	17	24	27	143	44	148	162	1290	585	80	36
2	35	20	24	32	122	42	138	159	1080	511	77	35
3	34	21	23	41	110	42	126	165	957	457	77	35
4	38	22	24	37	99	39	118	175	891	431	73	34
5	39	24	24	42	89	39	112	169	884	411	70	33
6	35	24	20	33	80	42	106	159	959	398	66	36
7	33	25	19	29	74	46	100	151	1060	380	62	33
8	32	35	19	25	73	50	98	145	1100	413	60	37
9	31	29	18	23	73	51	100	140	1120	368	56	39
10	30	29	22	27	71	53	107	137	1030	342	53	39
11	29	27	24	26	65	50	127	138	957	330	52	38
12	28	27	24	28	62	60	140	143	878	315	49	37
13	29	28	28	28	64	72	165	143	921	288	48	34
14	28	26	33	29	61	86	157	174	927	248	45	32
15	28	25	41	27	57	90	146	264	927	227	44	30
16	27	25	34	27	58	91	139	273	929	216	42	30
17	27	26	28	26	56	87	133	242	915	205	40	33
18	26	25	28	25	54	80	126	218	966	190	38	32
19	26	25	22	26	52	77	119	199	1160	178	37	31
20	25	26	26	26	52	75	118	195	1040	168	36	29
21	27	29	27	25	54	73	127	218	696	154	43	27
22	26	32	26	28	55	89	168	298	542	140	51	26
23	26	31	22	37	52	108	201	465	484	133	68	25
24	24	29	15	33	39	97	238	808	469	126	54	23
25	24	24	21	31	42	95	249	1090	482	120	49	23
26	24	25	23	66	47	99	225	1080	517	119	46	22
27	23	26	31	128	47	90	202	1090	577	111	44	21
28	26	27	31	100	44	85	188	1330	631	103	43	21
29	28	26	29	83	---	81	179	1530	638	98	41	21
30	25	25	26	102	---	82	170	1900	645	91	40	21
31	17	---	30	143	---	98	---	1610	---	86	38	---
TOTAL	888	780	786	1360	1895	2213	4470	14970	25672	7942	1622	913
MEAN	28.6	26.0	25.4	43.9	67.7	71.4	149	483	856	256	52.3	30.4
MAX	39	35	41	143	143	108	249	1900	1290	585	80	39
MIN	17	17	15	23	39	39	98	137	469	86	36	21
AC-FT	1760	1550	1560	2700	3760	4390	8870	29690	50920	15750	3220	1810

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1926 - 2003, BY WATER YEAR (WY)

MEAN	56.0	64.0	58.8	50.1	48.2	55.7	160	511	784	382	85.6	49.5
MAX	291	226	212	158	191	169	393	909	1374	913	180	104
(WY)	1960	1928	1959	1974	1996	1986	1934	1928	1974	1975	1943	1978
MIN	18.0	14.7	15.3	15.0	14.8	16.3	35.7	203	332	59.7	30.6	23.0
(WY)	1937	1937	1937	1937	1937	1955	1975	1977	1926	1977	1931	1931

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1926 - 2003	
ANNUAL TOTAL	65988		63511			
ANNUAL MEAN	181		174		192	
HIGHEST ANNUAL MEAN					288	1974
LOWEST ANNUAL MEAN					90.9	1977
HIGHEST DAILY MEAN	1410	May 30	1900	May 30	2290	Jun 17 1974
LOWEST DAILY MEAN	15	Dec 24	15	Dec 24	10	Nov 28 1936
ANNUAL SEVEN-DAY MINIMUM	21	Oct 31	21	Oct 31	11	Nov 26 1936
ANNUAL RUNOFF (AC-FT)	130900		126000		139200	
10 PERCENT EXCEEDS	577		513		596	
50 PERCENT EXCEEDS	49		52		63	
90 PERCENT EXCEEDS	25		24		28	

13330050 LOSTINE RIVER AT CAUDLE LANE, AT LOSTINE, OR

LOCATION.--Lat 45°29'22", long 117°26'08", in NW 1/4 SW 1/4 sec.10, T.1 S., R.43 E., Wallowa County, Hydrologic Unit 17060105, on left bank, 500 ft downstream from bridge at Caudle Lane, at Lostine, and at mile 5.4.

DRAINAGE AREA.--81.1 mi^2.

PERIOD OF RECORD.--April 1995 to September 2003 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 3,360 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except for the period Sept. 1-30, those above 1,400 ft^3/s and estimated daily discharges, which are poor. Minam Lake, capacity 400 acre-ft, has stored and diverted flow from Minam River since 1917 for irrigation in Lostine River basin. Many diversions for irrigation upstream from station.

COOPERATION.--Gage height record was collected and discharge measurements made by the Wallowa County Soil and Water Conservation District. Records were provided by the State of Oregon Water Resources Department. Discharge measurements and records were reviewed by the U.S. Geological Survey.

AVERAGE DISCHARGE.--8 years (water years 1996-2003), 174 ft^3/s, 126,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,400 ft^3/s Mar. 30, 2003, from rating curve extended above above 1,400 ft^3/s, from partial record, gage height, 7.39 ft; minimum discharge, 5.2 ft^3/s Aug. 20, 2001.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 30	1630	(a)*2,400	*7.39	June 19	0000	1,320	6.02

Minimum daily discharge, 8.5 ft^3/s Sept. 21.
(a) From partial record.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	e13	21	23	127	41	129	148	e1330	609	e35	9.1
2	24	e16	21	27	108	39	124	146	e1120	540	e31	9.8
3	29	e17	20	35	94	40	114	153	e980	470	e30	9.8
4	31	e18	21	31	86	37	108	167	953	430	e25	9.5
5	32	e20	21	36	79	37	102	158	939	402	e22	9.5
6	29	e20	18	28	78	39	96	144	987	385	e18	9.7
7	28	21	e17	25	73	42	88	136	1060	341	16	9.1
8	27	27	e17	23	71	46	85	128	1080	374	14	10
9	26	24	17	22	67	45	88	125	1110	311	15	11
10	25	24	19	24	65	46	94	122	1040	274	14	11
11	25	21	20	24	60	43	113	125	982	255	14	13
12	24	20	21	24	58	54	125	129	928	230	13	11
13	24	21	23	25	58	65	152	126	973	201	12	10
14	24	20	26	25	56	77	145	163	978	162	11	10
15	24	19	33	24	52	78	134	274	980	136	10	9.7
16	23	19	28	24	53	80	127	272	983	120	11	8.6
17	23	20	24	23	52	76	122	244	933	110	10	9.3
18	22	19	24	22	50	69	116	207	992	94	9.7	10
19	21	19	21	24	47	65	112	178	1160	78	10	9.7
20	18	20	22	24	47	65	110	178	1020	e72	9.9	9.1
21	18	22	23	23	49	62	117	215	709	e67	10	8.5
22	18	24	23	23	51	75	160	294	572	e60	9.7	11
23	17	24	e19	30	48	96	203	493	504	e55	15	12
24	17	23	e13	27	39	86	251	847	485	e52	14	12
25	17	20	e18	26	41	84	266	e1100	503	e50	13	12
26	17	21	e20	49	46	88	236	e1090	549	e50	13	11
27	17	22	e28	112	44	80	206	e1100	624	e46	12	10
28	19	22	28	88	40	76	183	e1360	674	e45	11	9.9
29	22	22	26	72	---	72	170	e1580	673	e40	11	9.9
30	20	21	23	87	---	71	159	e1900	663	e40	10	9.4
31	e13	---	26	125	---	84	---	e1640	---	e38	9.7	---
TOTAL	696	619	681	1175	1739	1958	4235	14942	26484	6137	459.0	304.6
MEAN	22.5	20.6	22.0	37.9	62.1	63.2	141	482	883	198	14.8	10.2
MAX	32	27	33	125	127	96	266	1900	1330	609	35	13
MIN	13	13	13	22	39	37	85	122	485	38	9.7	8.5
AC-FT	1380	1230	1350	2330	3450	3880	8400	29640	52530	12170	910	604

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2003, BY WATER YEAR (WY)

MEAN	39.8	64.0	59.7	55.4	63.5	65.3	146	439	722	359	52.6	22.2
MAX	66.5	172	170	118	166	118	193	533	1000	784	149	40.7
(WY)	2001	1996	1996	1997	1996	1996	2000	1997	1997	1999	1999	2000
MIN	22.5	20.6	22.0	29.0	24.9	36.3	87.5	313	238	52.6	9.55	6.55
(WY)	2003	2003	2003	2001	2001	2002	2001	1996	2001	2001	2001	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1996 - 2003	
ANNUAL TOTAL	58687.7		59429.6			
ANNUAL MEAN	161		163		174	
HIGHEST ANNUAL MEAN					235	1997
LOWEST ANNUAL MEAN					90.7	2001
HIGHEST DAILY MEAN	1210	May 30	1900	May 30	1900	May 30 2003
LOWEST DAILY MEAN	7.8	Aug 18	8.5	Sep 21	5.8	Sep 29 2001
ANNUAL SEVEN-DAY MINIMUM	11	Sep 20	9.3	Sep 15	6.0	Sep 24 2001
ANNUAL RUNOFF (AC-FT)	116400		117900		126200	
10 PERCENT EXCEEDS	579		544		550	
50 PERCENT EXCEEDS	35		39		56	
90 PERCENT EXCEEDS	17		11		21	

e Estimated

13330300 LOSTINE RIVER AT BAKER ROAD, NEAR LOSTINE, OR

LOCATION.--(Revised)Lat 45°32'14", long 117°28'43", in NW 1/4 SW 1/4 sec.29, T.1 N., R.43 E., Wallowa County, Hydrologic Unit 17060105, on left bank, 300 ft upstream from bridge at Baker road, 4 mi northwest of Lostine, and at mile 1.3.

DRAINAGE AREA.--90.9 mi^2.

PERIOD OF RECORD.--June 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,050 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for the period May 30 to June 20, which are fair; those for the period July 17 to Sept. 30 and estimated daily discharges, which are poor. Minam Lake, capacity 440 acre-ft, has stored and diverted flow from Minam River since 1917 for irrigation in Lostine River basin. Many diversions for irrigation upstream from gage. U.S. Geological Survey satellite telemetry at station.

COOPERATION.--Gage height record was collected and discharge measurements made by the Wallowa County Soil and Water Conservation District. Records were provided by the State of Oregon Water Resources Department. Discharge measurements and records were reviewed by the U.S. Geological Survey.

AVERAGE DISCHARGE.--8 years (water years 1996-2003), 178 ft^3/s, 129,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,330 ft^3/s May 30, 2003, from rating curve extended above 1,500 ft^3/s, gage height, 6.73 ft; maximum gage height, 6.88 ft June 9, 1996; minimum discharge, 6.3 ft^3/s Aug. 22, 1995.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 30	1900	a*2,330	*6.73	No other peak greater than base discharge.			

Minimum daily discharge, 19 ft^3/s Dec. 24.
a From rating curve extended above 1,500 ft^3/s.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	117	47	31	29	135	e48	137	156	1190	435	39	35
2	105	48	30	32	118	47	135	153	958	356	44	32
3	83	52	29	40	104	e46	125	158	833	276	48	34
4	84	53	30	37	95	46	117	169	758	243	68	34
5	88	54	30	44	89	45	112	145	720	228	63	31
6	87	54	27	34	86	50	107	110	789	207	37	32
7	83	54	26	32	79	55	101	110	911	171	34	32
8	82	64	26	30	75	59	97	108	978	210	32	32
9	80	64	25	28	74	57	98	98	1010	180	39	32
10	80	62	e27	29	72	59	103	95	883	136	36	41
11	78	60	e29	29	67	55	121	98	814	129	36	60
12	76	58	e29	30	64	63	132	123	726	115	e36	56
13	76	58	e34	31	65	73	156	121	779	99	e34	73
14	75	55	e39	31	63	87	152	129	791	90	e32	66
15	71	54	e46	29	59	92	143	208	778	77	e28	58
16	70	54	e39	29	61	93	136	230	785	64	e26	61
17	68	54	e33	28	e58	90	132	204	764	56	e28	69
18	67	54	e33	27	e56	83	126	203	812	53	e24	61
19	65	55	e27	28	e54	78	119	202	1020	62	e24	66
20	62	55	e30	29	e54	78	116	201	958	54	e24	68
21	63	57	e31	28	e56	76	124	217	578	42	e24	71
22	62	59	e30	28	e56	85	158	274	421	37	32	84
23	61	58	e25	36	e53	109	189	408	355	39	35	80
24	59	57	e19	34	e39	99	218	721	321	32	35	65
25	58	53	e24	32	e40	95	233	1050	342	31	34	61
26	58	53	e26	49	e42	101	214	1050	363	34	39	45
27	58	51	e33	115	e43	93	196	1050	419	37	41	37
28	61	37	e33	95	e47	87	181	1260	469	40	45	42
29	67	35	e31	78	---	84	172	1490	482	e36	39	42
30	65	32	e28	92	---	82	164	1910	487	e47	35	31
31	53	---	32	130	---	91	---	1660	---	e46	36	---
TOTAL	2262	1601	932	1343	1904	2306	4314	14111	21494	3662	1127	1531
MEAN	73.0	53.4	30.1	43.3	68.0	74.4	144	455	716	118	36.4	51.0
MAX	117	64	46	130	135	109	233	1910	1190	435	68	84
MIN	53	32	19	27	39	45	97	95	321	31	24	31
AC-FT	4490	3180	1850	2660	3780	4570	8560	27990	42630	7260	2240	3040
CFSM	0.81	0.59	0.33	0.48	0.76	0.83	1.60	5.06	7.96	1.31	0.40	0.57
IN.	0.93	0.66	0.39	0.56	0.79	0.95	1.78	5.83	8.88	1.51	0.47	0.63

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2003, BY WATER YEAR (WY)

MEAN	73.7	90.1	75.7	63.0	71.3	65.9	165	452	679	284	62.3	52.8
MAX	103	243	218	148	198	96.1	254	586	887	479	107	97.2
(WY)	2001	1996	1996	1997	1996	1996	2000	1997	1997	1996	1999	2000
MIN	58.7	48.4	30.1	29.0	24.6	41.9	104	308	252	71.3	25.9	22.4
(WY)	1997	1999	2003	2001	2001	2002	2001	1999	2001	2001	2001	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1996 - 2003	
ANNUAL TOTAL	62074		56587			
ANNUAL MEAN	170		155		178	
HIGHEST ANNUAL MEAN					251	1996
LOWEST ANNUAL MEAN					107	2001
HIGHEST DAILY MEAN	1400	May 30	1910	May 30	1910	May 30 2003
LOWEST DAILY MEAN	19	Dec 24	19	Dec 24	8.7	Sep 2 1998
ANNUAL SEVEN-DAY MINIMUM	26	Dec 20	25	Aug 15	11	Aug 31 1998
ANNUAL RUNOFF (AC-FT)	123100		112200		129000	
ANNUAL RUNOFF (CFSM)	0.000		0.000		0.000	
ANNUAL RUNOFF (INCHES)	0.00		0.00		0.00	
10 PERCENT EXCEEDS	499		381		505	
50 PERCENT EXCEEDS	59		62		75	
90 PERCENT EXCEEDS	34		30		33	

e Estimated

13330500 BEAR CREEK NEAR WALLOWA, OR

LOCATION.--Lat 45°31'37", long 117°33'05", in NW 1/4 NE 1/4 sec.34, T.1 N., R.42 E., Wallowa County, Hydrologic Unit 17060105, on left bank, at private road bridge, 3.0 mi southwest of Wallowa, and at mile 4.4.

DRAINAGE AREA.--68 mi^2, approximately.

PERIOD OF RECORD.--April to September 1915, April 1924 to September 1985, April 1995 to current year. Monthly discharge only for some periods, published in WSP 1317.

REVISED RECORDS.--WSP 1397: 1915, 1927, 1929-30, 1932, 1936-40, 1945, 1949.

GAGE.--Water-stage recorder. Elevation of gage is 3,250 ft above NGVD of 1929, by barometer. Apr. 13 to Sept. 16, 1915, nonrecording gage at site 1.0 mi upstream at different datum. Apr. 22, 1924 to Nov. 2, 1931, water-stage recorder at site 1.5 mi upstream at different datum.

REMARKS.--Records good except those for the period May 25 to Sept. 30, which are fair; those above 1,000 ft^3/s and estimated daily discharges, which are poor. No regulation. Diversions for irrigation upstream from station. Water for irrigation in Lostine River basin diverted from Little Bear Creek,a tributary upstream from station, in sec.32, T.1 S., R.43 E. U.S. Geological Survey satellite telemeter at station.

COOPERATION.--Gage height record was collected and discharge measurements made by the Wallowa County Soil and Water Conservation District. Records were provided by the State of Oregon Water Resources Department. Discharge measurements and records were reviewed by the U.S. Geological Survey.

AVERAGE DISCHARGE.--69 years (water years 1925-85, 1996-2003), 114 ft^3/s, 82,810 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,150 ft^3/s May 30, 2003, gage height, 4.37 ft, from rating curve extended above 800 ft^3/s; maximum gage height, 5.38 ft Jan. 24, 1984 (result of ice jam); minimum daily discharge, 3 ft^3/s Jan. 20, Feb. 1, 1937.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 30	1715	(a)*2,150	*4.37	June 8	0015	729	3.43

Minimum daily discharge, 6.0 ft^3/s Oct. 31 to Nov. 1.
(a) From rating curve extended above 800 ft^3/s.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	e6.0	e13	14	214	37	213	156	764	192	21	13
2	11	e6.5	e13	15	180	35	213	151	592	167	20	13
3	11	e7.0	e11	22	153	34	188	158	515	144	21	13
4	13	e7.0	e11	20	129	33	166	166	468	130	20	13
5	12	e9.0	e13	25	110	33	148	158	451	118	21	12
6	12	e12	e10	22	95	34	132	149	487	110	19	13
7	12	e13	e10	e20	85	38	119	140	518	103	18	12
8	12	17	e11	e20	77	44	111	132	624	111	17	16
9	12	12	e11	e17	71	50	115	125	586	96	16	14
10	11	12	e12	e18	64	65	131	119	e469	87	16	14
11	11	11	e13	e19	59	75	170	121	e405	77	15	13
12	11	11	e14	e19	56	107	197	131	e387	68	15	12
13	11	13	e14	20	54	157	232	137	382	63	14	12
14	11	12	15	21	52	200	224	174	357	58	15	11
15	11	11	16	20	49	191	201	257	342	53	15	11
16	11	11	15	19	51	174	178	252	337	50	14	12
17	11	12	14	20	49	156	163	223	334	45	13	13
18	11	11	16	23	47	135	146	194	342	42	12	13
19	10	11	e15	19	45	120	131	170	424	40	12	12
20	10	12	e14	19	45	111	126	163	424	40	13	12
21	11	12	e16	19	46	102	137	182	311	35	12	12
22	11	14	e16	21	47	122	182	252	256	33	15	12
23	10	15	e13	31	45	161	258	384	217	31	21	11
24	10	15	e8.0	29	e37	159	297	607	210	32	16	11
25	10	e13	e10	30	e39	153	295	793	218	29	15	11
26	10	e11	e13	65	e40	149	262	734	220	28	14	11
27	10	e12	e13	174	41	140	228	638	227	27	14	11
28	11	e14	e15	145	39	128	203	827	232	26	14	10
29	11	e14	e15	117	---	115	183	978	228	25	14	11
30	e7.5	e13	e16	132	---	109	168	1390	212	23	12	10
31	e6.0	---	e14	189	---	135	---	1130	---	21	13	---
TOTAL	333.5	349.5	410.0	1344	2019	3302	5517	11191	11539	2104	487	364
MEAN	10.8	11.7	13.2	43.4	72.1	107	184	361	385	67.9	15.7	12.1
MAX	13	17	16	189	214	200	297	1390	764	192	21	16
MIN	6.0	6.0	8.0	14	37	33	111	119	210	21	12	10
AC-FT	661	693	813	2670	4000	6550	10940	22200	22890	4170	966	722

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 2003, BY WATER YEAR (WY)

MEAN	25.0	40.5	49.7	44.7	48.7	67.2	171	372	398	119	20.1	15.7
MAX	160	220	195	141	192	186	422	682	869	388	37.5	44.2
(WY)	1928	1928	1996	1984	1996	1972	1936	1928	1974	1943	1975	1941
MIN	7.58	8.20	7.29	5.16	4.46	11.1	49.6	138	112	18.6	8.10	6.33
(WY)	1936	1953	1937	1937	1937	1977	1975	1977	1926	1977	1940	1935

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1925 - 2003	
ANNUAL TOTAL	38534.5		38960.0			
ANNUAL MEAN	106		107		114	
HIGHEST ANNUAL MEAN					178	1974
LOWEST ANNUAL MEAN					46.2	1977
HIGHEST DAILY MEAN	806	May 29	1390	May 30	1480	Jun 17 1974
LOWEST DAILY MEAN	6.0	Oct 31	6.0	Oct 31	3.0	Jan 20 1937
ANNUAL SEVEN-DAY MINIMUM	7.0	Oct 30	7.0	Oct 30	3.9	Jan 19 1937
ANNUAL RUNOFF (AC-FT)	76430		77280		82810	
10 PERCENT EXCEEDS	351		254		348	
50 PERCENT EXCEEDS	32		29		42	
90 PERCENT EXCEEDS	11		11		11	

e Estimated

13330700 BEAR CREEK AT WALLOWA, OR

LOCATION.--Lat 45°34'50", long 117°32'21", in NW 1/4 SW 1/4 sec.11, T.1 N., R.42 E., Wallowa County, Hydrologic Unit 17060105, on right bank, 5 ft upstream from bridge crossing, 0.5 mi northwest of Wallowa, and at mile 0.7.

DRAINAGE AREA.--72.8.

PERIOD OF RECORD.--May 1995 to September 2003 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 2,900 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for the period May 25 to Aug. 7, which are fair; those above 1,000 ft^3/s and estimated daily discharges, which are poor.No regulation. Many diversions for irrigation upstream from station. Water for irrigation in the Lostine River basin is diverted from Little Bear Creek, a tributary upstream from station.

COOPERATION.--Gage height record was collected and discharge measurements made by the Wallowa County Soil and Water Conservation District. Records were provided by the State of Oregon Water Resources Department. Discharge measurements and records were reviewed by the U.S. Geological Survey.

AVERAGE DISCHARGE.--8 years (water years 1996-2003), 109 ft^3/s, 79,030 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,160 ft^3/s May 30, 2003, from rating curve extended above 950 ft^3/s; gage height, 6.99 ft; minimum recorded discharge, 1.6 ft^3/s Aug. 19, 2002, Aug. 6, 7, 2003.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 30	1030	a*2,160	*6.99	No other peak greater than base discharge.			

Minimum recorded discharge, 1.6 ft^3/s Aug. 6, 7.
a From rating curve extended above 950 ft^3/s.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	e3.0	e8.0	e11	208	36	219	154	692	157	3.1	e2.4
2	3.6	e3.0	e8.0	e11	174	35	219	150	576	128	3.1	e2.4
3	3.7	e3.0	e7.0	e19	159	33	193	158	527	102	3.6	e2.4
4	5.0	e3.5	e7.0	16	133	32	170	168	438	91	4.0	e2.4
5	5.2	e4.5	e9.0	23	111	32	149	159	386	80	3.7	e2.2
6	5.1	6.2	e7.0	18	93	34	133	149	439	68	2.0	e2.4
7	4.5	6.3	6.8	e16	81	41	119	140	485	64	2.0	e2.2
8	4.3	8.9	e7.0	e16	76	49	110	132	534	72	2.2	e2.8
9	4.2	6.8	7.4	e14	68	54	115	123	516	57	e2.4	e2.6
10	4.0	7.0	9.2	e15	61	69	131	116	460	42	e2.6	e2.6
11	4.1	5.9	11	16	55	79	169	117	397	33	e2.4	e2.4
12	3.9	5.3	11	16	52	113	196	124	400	28	e2.4	e2.2
13	4.2	6.3	11	16	50	166	235	124	379	23	e2.4	e2.2
14	4.4	5.7	11	17	48	213	226	165	369	19	e2.8	e2.0
15	4.2	5.3	11	15	44	203	200	260	352	16	e2.8	e2.0
16	4.1	5.3	11	15	47	184	177	253	350	12	e2.6	e2.2
17	4.3	5.8	12	16	45	162	162	218	337	9.7	e2.4	e2.4
18	4.4	5.1	13	18	44	138	144	185	333	7.9	e2.2	e2.4
19	4.5	5	10	14	42	123	130	160	397	5.6	e2.2	e2.2
20	4.8	5.2	11	14	42	112	124	148	359	5.5	e2.4	e2.2
21	5.1	5.5	12	14	44	97	133	176	269	5.6	e2.2	e2.2
22	3.5	6.4	11	16	46	118	177	262	214	5.0	e2.6	e2.2
23	3.8	7.0	9.1	24	44	160	258	394	189	4.5	e3.8	e2.0
24	3.7	7.3	e6.0	23	36	158	311	602	179	4.3	e2.8	e2.0
25	4.0	e6.0	e7.5	24	e41	152	311	665	182	3.9	e2.6	e2.0
26	4.4	e6.0	e10	51	e42	150	279	803	179	3.7	e2.4	e2.0
27	4.6	e7.0	e10	164	42	141	234	676	187	3.6	e2.4	e2.0
28	5.0	e9.0	e12	135	40	129	204	766	197	4.1	e2.4	e1.8
29	e5.0	e9.0	13	108	---	116	184	1010	188	4.5	e2.4	e2.0
30	e4.0	e8.0	e12	125	---	108	167	1490	177	4.2	e2.2	e1.8
31	e3.0	---	e12	183	---	136	---	1030	---	3.2	e2.4	---
TOTAL	132.5	178.3	303.0	1183	1968	3373	5579	11077	10687	1067.3	81.5	66.6
MEAN	4.27	5.94	9.77	38.2	70.3	109	186	357	356	34.4	2.63	2.22
MAX	5.2	9.0	13	183	208	213	311	1490	692	157	4.0	2.8
MIN	3.0	3.0	6.0	11	36	32	110	116	177	3.2	2.0	1.8
AC-FT	263	354	601	2350	3900	6690	11070	21970	21200	2120	162	132
CFSM	0.06	0.08	0.13	0.52	0.97	1.49	2.55	4.91	4.89	0.47	0.04	0.03
IN.	0.07	0.09	0.15	0.60	1.01	1.72	2.85	5.66	5.46	0.55	0.04	0.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2003, BY WATER YEAR (WY)

MEAN	14.9	46.5	56.8	47.9	64.6	77.7	179	366	353	88.8	8.01	6.09
MAX	33.0	164	202	114	224	109	254	494	528	182	19.5	9.45
(WY)	1996	1996	1996	1997	1996	2003	2000	1997	1999	1997	1999	1997
MIN	4.27	5.94	9.77	10.8	9.40	37.4	119	281	127	14.7	2.63	2.22
(WY)	2003	2003	2003	2001	2001	2001	1998	1996	2001	2001	2003	2003

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1996 - 2003	
ANNUAL TOTAL	37221.9		35696.2			
ANNUAL MEAN	102		97.8		109	
HIGHEST ANNUAL MEAN					149	1997
LOWEST ANNUAL MEAN					65.6	2001
HIGHEST DAILY MEAN	920	May 29	1490	May 30	1490	May 30 2003
LOWEST DAILY MEAN	1.8	Aug 18	1.8	Sep 28	1.8	Aug 18 2002
ANNUAL SEVEN-DAY MINIMUM	2.0	Aug 17	1.9	Sep 24	1.9	Sep 24 2003
ANNUAL RUNOFF (AC-FT)	73830		70800		79030	
ANNUAL RUNOFF (CFSM)	1.40		1.34		1.50	
ANNUAL RUNOFF (INCHES)	19.02		18.24		20.36	
10 PERCENT EXCEEDS	379		255		330	
50 PERCENT EXCEEDS	26		16		37	
90 PERCENT EXCEEDS	2.8		2.4		5.3	

e Estimated

13331450 WALLOWA RIVER BELOW WATER CANYON, NEAR WALLOWA, OR

LOCATION.--Lat 45°36'30", long 117°36'55", in NW 1/4 SW 1/4 sec.31, T.2 N., R.42 E., Wallowa County, Hydrologic Unit 17060105, on left bank, 160 ft upstream from bridge, approximately 6 mi east of Wallowa, and at mile 18.3.

DRAINAGE AREA.--628 mi^2.

PERIOD OF RECORD.--August 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,760 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except those for the period Feb. 1 to Apr. 9, which are fair. Flow regulated by Wallowa Lake. Many diversions for irrigation upstream from station.

COOPERATION.--Gage height record was collected and discharge measurements made by the Wallowa County Soil and Water Conservation District. Records were provided by the State of Oregon Water Resources Department. Discharge measurements and records were reviewed by the U.S. Geological Survey.

AVERAGE DISCHARGE.--8 years (water years 1996-2003), 649 ft^3/s, 470,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,640 ft^3/s Feb 9, 1996, gage height, 4.76 ft; minimum discharge, 102 ft^3/s July 29, 1998.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 30	2345	*3,960	*4.31	No other peak greater than base discharge.			

Minimum discharge, 140 ft^3/s Aug. 20

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	313	268	264	275	898	e344	821	633	2460	1040	194	237
2	325	268	262	278	751	339	809	623	2090	911	203	231
3	329	275	261	322	648	e330	745	635	1810	748	208	236
4	325	276	261	314	588	321	692	698	1650	691	238	243
5	322	275	264	355	532	317	661	685	1640	647	267	232
6	317	274	258	304	473	386	636	615	1750	607	275	220
7	320	280	247	289	434	585	592	590	1940	544	260	223
8	320	301	246	275	415	755	557	586	2090	595	249	235
9	311	300	246	267	395	702	546	559	2150	531	234	243
10	310	299	252	268	381	834	613	580	1900	456	225	272
11	304	289	258	266	360	761	691	566	1770	445	221	274
12	301	279	260	268	346	914	725	561	1630	410	201	259
13	302	280	267	272	355	1030	755	554	1690	371	175	278
14	304	276	273	287	369	1040	730	577	1690	363	170	265
15	303	275	288	277	360	992	684	760	1660	343	176	256
16	301	278	278	270	381	954	635	767	1670	315	171	268
17	303	283	270	267	376	825	616	692	1620	290	168	284
18	304	274	260	264	373	736	585	678	1650	260	162	281
19	296	275	247	263	359	672	556	689	2030	223	155	285
20	282	272	250	264	357	647	541	669	2050	207	150	280
21	281	272	256	264	377	619	553	703	1500	206	154	286
22	275	276	259	268	449	716	640	823	1250	186	180	285
23	274	277	254	304	425	837	768	1150	1120	194	243	276
24	272	275	233	299	368	732	855	1670	1080	186	247	257
25	272	264	234	290	e340	700	909	2260	1070	188	242	259
26	271	263	246	348	e344	844	849	2280	1040	196	248	248
27	270	266	280	657	e346	737	774	2130	1080	212	241	245
28	275	269	321	548	e348	659	716	2510	1140	213	245	246
29	291	268	292	475	---	587	685	2950	1140	218	244	252
30	290	265	275	656	---	565	656	3520	1120	206	231	234
31	275	---	280	801	---	613	---	3010	---	190	242	---
TOTAL	9238	8292	8142	10555	12148	21093	20595	35723	48480	12192	6619	7690
MEAN	298	276	263	340	434	680	686	1152	1616	393	214	256
MAX	329	301	321	801	898	1040	909	3520	2460	1040	275	286
MIN	270	263	233	263	340	317	541	554	1040	186	150	220
AC-FT	18320	16450	16150	20940	24100	41840	40850	70860	96160	24180	13130	15250

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2003, BY WATER YEAR (WY)

MEAN	347	409	424	410	500	606	769	1297	1631	774	303	320
MAX	436	743	864	747	1124	830	1122	1955	2508	1472	463	454
(WY)	1998	1996	1996	1997	1996	1997	1997	1997	1997	1997	1996	1997
MIN	261	276	263	239	227	409	552	836	526	285	157	166
(WY)	2002	2003	2003	2001	2001	2001	2001	2002	2001	2001	2001	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1996 - 2003	
ANNUAL TOTAL	193222		200767			
ANNUAL MEAN	529		550		649	
HIGHEST ANNUAL MEAN					952	1997
LOWEST ANNUAL MEAN					395	2001
HIGHEST DAILY MEAN	2590	May 30	3520	May 30	3900	Feb 9 1996
LOWEST DAILY MEAN	152	Aug 20	150	Aug 20	109	Jul 29 1998
ANNUAL SEVEN-DAY MINIMUM	177	Aug 14	162	Aug 15	123	Aug 21 2001
ANNUAL RUNOFF (AC-FT)	383300		398200		470000	
10 PERCENT EXCEEDS	1120		1080		1490	
50 PERCENT EXCEEDS	320		314		428	
90 PERCENT EXCEEDS	246		234		245	

e Estimated

13331500 MINAM RIVER AT MINAM, OR
(Hydrologic bench-mark station)

LOCATION.--Lat 45°37'12", long 117°43'32", in SW 1/4 SW 1/4 sec.29, T.2 N., R.41 E., Wallowa County, Hydrologic Unit 17060105, on left bank 2.3 mi downstream from Squaw Creek, 0.3 mi west of Minam, and at mile 0.3.

DRAINAGE AREA.--240 mi^2, approximately.

PERIOD OF RECORD.--June 1912 to March 1914, September 1965 to current year. Monthly discharge only for some periods, published in WSP 1317.

GAGE.--Water-stage recorder. Datum of gage is 2,540.48 ft above NGVD of 1929. June 1912 to March 1914, nonrecording gage at approximately same site at different datum.

REMARKS.--Records good except those for the period December to February, which are fair, and estimated daily discharges, which are poor. No regulation. Minam Lake, capacity 440 acre-ft, has stored and diverted flow from Minam River since 1917 for irrigation in Lostine River basin. Continuous water temperature October 1965 to September 1985. Chemical analysis water years 1966 to 1995.

AVERAGE DISCHARGE.--39 years (water years 1913, 1966-2003), 455 ft^3/s, 25.77 in/yr, 329,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,260 ft^3/s June 16, 1974, gage height, 6.89 ft; maximum gage height, 7.3 ft May 28, 1913, datum then in use; minimum discharge, 10 ft^3/s Dec. 6, 1972, Jan. 10, 1973, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,450 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 30	1530	*4,880	*5.82	No other peak greater than base discharge.			

Minimum daily discharge, 38 ft^3/s Nov. 1.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e66	e38	e64	84	589	160	705	557	2920	886	129	65
2	e62	e44	e60	88	482	143	672	540	2480	789	125	64
3	e60	e50	e56	109	397	151	576	570	2260	701	126	62
4	e64	e56	e62	102	335	140	517	612	2070	639	126	60
5	e66	e64	e66	129	282	137	478	597	2000	592	126	60
6	e64	e76	e56	106	233	152	444	567	2070	558	121	59
7	e62	e74	e50	91	209	203	408	541	2230	529	112	58
8	e60	e88	e46	81	205	333	392	516	2300	546	107	73
9	e60	104	e54	79	199	361	409	499	2310	504	102	95
10	e60	83	e70	97	200	432	450	485	2130	460	98	84
11	e58	74	e70	107	178	472	558	485	1940	433	93	87
12	e58	70	e68	103	169	678	612	516	1760	409	92	82
13	e62	73	90	99	184	897	735	534	1750	384	90	75
14	e62	73	104	96	185	935	697	602	1710	346	87	70
15	e62	68	135	98	169	792	614	859	1660	311	84	66
16	e62	65	100	88	179	724	558	856	1640	285	81	65
17	e58	69	88	88	180	581	527	773	1590	269	80	72
18	e58	67	74	79	182	481	493	701	1600	251	78	74
19	e58	63	e54	79	180	420	459	631	1800	236	77	71
20	e56	65	e54	87	180	399	448	610	1710	224	76	67
21	e56	71	e52	90	184	369	482	664	1280	211	75	64
22	e56	82	e50	90	200	411	568	821	1040	197	77	62
23	e56	79	e46	114	199	600	668	1160	908	186	130	60
24	54	77	e40	121	172	550	801	1870	837	176	102	58
25	54	67	e50	120	163	512	860	2540	825	169	86	56
26	55	e52	e66	170	179	541	787	2600	816	184	79	56
27	54	e62	e68	406	183	537	696	2480	876	174	75	55
28	57	e70	e72	352	160	481	640	2890	935	158	72	54
29	65	e70	97	276	---	431	608	3350	945	152	70	52
30	61	e68	75	363	---	405	582	4220	940	143	68	52
31	47	---	97	592	---	460	---	3810	---	136	66	---
TOTAL	1833	2062	2134	4584	6357	13888	17444	38456	49332	11238	2910	1978
MEAN	59.1	68.7	68.8	148	227	448	581	1241	1644	363	93.9	65.9
MAX	66	104	135	592	589	935	860	4220	2920	886	130	95
MIN	47	38	40	79	160	137	392	485	816	136	66	52
AC-FT	3640	4090	4230	9090	12610	27550	34600	76280	97850	22290	5770	3920
CFSM	0.25	0.29	0.29	0.62	0.95	1.87	2.42	5.17	6.85	1.51	0.39	0.27
IN.	0.28	0.32	0.33	0.71	0.99	2.15	2.70	5.96	7.65	1.74	0.45	0.31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2003, BY WATER YEAR (WY)

MEAN	94.3	149	187	201	256	321	546	1304	1557	607	151	95.1
MAX	173	508	765	470	977	697	888	2016	3125	1392	257	180
(WY)	1969	1996	1996	1997	1996	1986	1913	1971	1974	1975	1974	1978
MIN	38.1	56.1	62.4	59.6	56.9	66.7	235	484	494	125	72.6	45.9
(WY)	1988	1994	1979	1977	1977	1977	1967	1977	1992	1977	1966	1987

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1913 - 2003	
ANNUAL TOTAL	163101		152216			
ANNUAL MEAN	447		417		455	
HIGHEST ANNUAL MEAN					713	1974
LOWEST ANNUAL MEAN					189	1977
HIGHEST DAILY MEAN	3360	May 30	4220	May 30	5160	Jun 15 1974
LOWEST DAILY MEAN	38	Nov 1	38	Nov 1	11	Dec 6 1972
ANNUAL SEVEN-DAY MINIMUM	49	Dec 19	49	Dec 19	15	Dec 6 1972
ANNUAL RUNOFF (AC-FT)	323500		301900		329800	
ANNUAL RUNOFF (CFSM)	1.86		1.74		1.90	
ANNUAL RUNOFF (INCHES)	25.28		23.59		25.77	
10 PERCENT EXCEEDS	1390		901		1290	
50 PERCENT EXCEEDS	155		143		197	
90 PERCENT EXCEEDS	60		58		72	

e Estimated

13333000 GRANDE RONDE RIVER AT TROY, OR

LOCATION.--Lat 45°56'45", long 117°27'00", in NE 1/4 NW 1/4 sec.4, T.5 N., R.43 E., Wallowa County, Hydrologic Unit 17060106, on left bank, on upstream side of bridge at Troy, 100 ft downstream from Wenaha River, and at mile 45.3.

DRAINAGE AREA.--3,275 mi^2.

PERIOD OF RECORD.--August 1944 to current year. Monthly discharge only August 1944, published in WSP 1317.

REVISED RECORDS.--WSP 1397: 1946(M), 1948-50.

GAGE.--Water-stage recorder. Datum of gage is 1,585.98 ft above NGVD of 1929. Aug. 17, 1944, to Sept. 30, 1949, nonrecording gage at datum 10.85 ft lower. Oct. 1, 1949, to Sept. 5, 1963, water-stage recorder at datum 1.15 ft higher. Sept. 6, 1963 to Oct. 19, 1994, water-stage recorder at site 500 ft downstream, at present datum.

REMARKS.--No estimated daily discharges. Records fair. Flow slightly regulated by Wallowa Lake and small reservoirs. Diversions for irrigation upstream from station, chiefly in vicinity of LaGrande, Enterprise, and Wallowa; transbasin diversions for irrigation from Big Sheep Creek and tributaries in Imnaha River Basin to Wallowa River Basin, and from South Fork Catherine Creek to the Powder River Basin. U.S. Geological Survey satellite telemeter and National Weather Service telemeter at station.

AVERAGE DISCHARGE.--59 years (water years 1945-2003), 3,060 ft^3/s, 2,217,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,800 ft^3/s Feb. 9, 1996, gage height, 13.76 ft, from rating curve extended above 20,000 ft^3; minimum discharge, 321 ft^3/s Nov. 25, 1993; result of freezeup, but may have been less during period of ice effect that day.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 1	0000	9,420	7.09	Mar. 23	0100	11,000	7.64
Mar. 16	0400	12,800	8.07	May 31	0300	*13,300	*8.25

Minimum discharge, 438 ft^3/s Aug. 21, 22.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	632	584	600	770	8930	1780	7430	5320	9880	2280	557	521
2	658	579	598	776	7110	1650	7380	5190	8350	2080	557	515
3	668	590	595	916	5660	1580	6930	5220	7360	1840	585	507
4	673	613	583	1020	4710	1530	6390	5340	6520	1640	588	510
5	681	631	611	1130	3890	1500	5940	5510	5990	1550	611	514
6	677	641	624	1090	3170	1770	5570	5260	5900	1470	650	502
7	664	649	581	953	2630	2640	5300	5060	6030	1400	626	491
8	657	722	570	878	2330	5420	4970	4820	6080	1390	602	527
9	650	770	586	804	2120	5420	4940	4550	6200	1400	584	571
10	642	739	578	759	2040	6200	5090	4340	5700	1240	559	580
11	643	714	624	777	1910	6510	5540	4240	5280	1160	540	600
12	633	692	663	793	1770	8020	5800	4320	4810	1110	531	587
13	632	691	685	840	1700	9980	6260	4520	4630	1030	511	570
14	634	695	810	890	1780	11100	6300	4670	4550	993	488	577
15	629	686	852	937	1840	11100	5970	5190	4420	937	481	559
16	624	684	871	902	1950	12000	5560	5260	4330	891	483	553
17	620	689	817	855	2130	10000	5330	4970	4180	840	477	587
18	623	664	748	824	2210	8490	5110	4660	4030	797	473	596
19	622	648	695	797	2180	7370	4800	4300	4520	753	464	591
20	622	649	626	783	2120	6670	4580	3990	4710	700	454	589
21	620	644	645	782	2190	6250	4590	3880	3810	680	450	580
22	617	661	672	786	2840	7880	4950	4020	3160	667	457	581
23	608	686	667	926	3110	10100	5420	4620	2770	633	509	579
24	604	677	624	1030	2760	8680	5840	5950	2510	622	595	564
25	613	652	556	1040	2380	7740	6340	8370	2430	605	558	543
26	606	618	597	1390	2170	8340	6290	8930	2350	606	542	539
27	599	593	671	3450	2080	8020	5980	8580	2320	627	539	528
28	607	597	777	3270	1920	7280	5630	8950	2430	620	531	525
29	643	603	778	2620	---	6580	5540	10300	2440	605	534	530
30	654	605	786	4470	---	6080	5440	11300	2390	595	528	536
31	626	---	781	8450	---	6200	---	12100	---	576	513	---
TOTAL	19681	19666	20871	45708	81630	203880	171210	183730	140080	32337	16577	16552
MEAN	635	656	673	1474	2915	6577	5707	5927	4669	1043	535	552
MAX	681	770	871	8450	8930	12000	7430	12100	9880	2280	650	600
MIN	599	579	556	759	1700	1500	4580	3880	2320	576	450	491
AC-FT	39040	39010	41400	90660	161900	404400	339600	364400	277800	64140	32880	32830

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2003, BY WATER YEAR (WY)

MEAN	873	1229	1962	2177	3188	4338	6322	7327	5635	2136	837	760
MAX	2559	3766	7212	6280	14390	11520	11390	13820	11610	4951	1385	1291
(WY)	1960	1996	1996	1974	1996	1972	1997	1948	1974	1975	1984	1984
MIN	528	618	673	702	769	888	2257	2368	1501	520	438	409
(WY)	1988	1988	2003	1979	1977	1977	1968	1977	1992	1977	1992	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1945 - 2003	
ANNUAL TOTAL	946487		951922			
ANNUAL MEAN	2593		2608		3060	
HIGHEST ANNUAL MEAN					5253	1996
LOWEST ANNUAL MEAN					1136	1977
HIGHEST DAILY MEAN	19100	Apr 14	12100	May 31	42200	Feb 9 1996
LOWEST DAILY MEAN	502	Sep 26	450	Aug 21	344	Aug 20 1977
ANNUAL SEVEN-DAY MINIMUM	514	Sep 23	465	Aug 16	361	Aug 18 1977
ANNUAL RUNOFF (AC-FT)	1877000		1888000		2217000	
10 PERCENT EXCEEDS	6540		6360		7420	
50 PERCENT EXCEEDS	1190		890		1620	
90 PERCENT EXCEEDS	590		557		686	

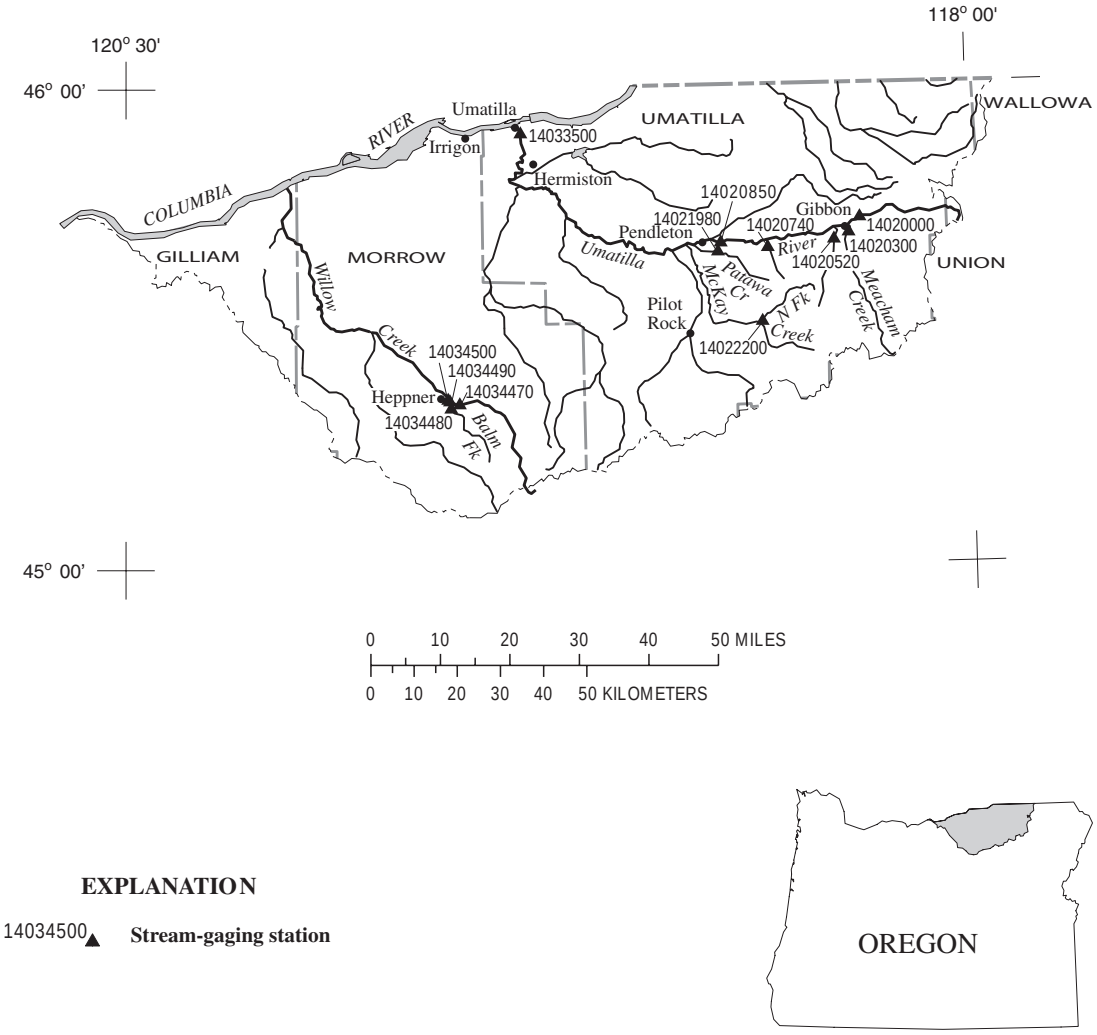


Figure 11. Location of surface-water stations in the Umatilla and Willow Creek Basins.

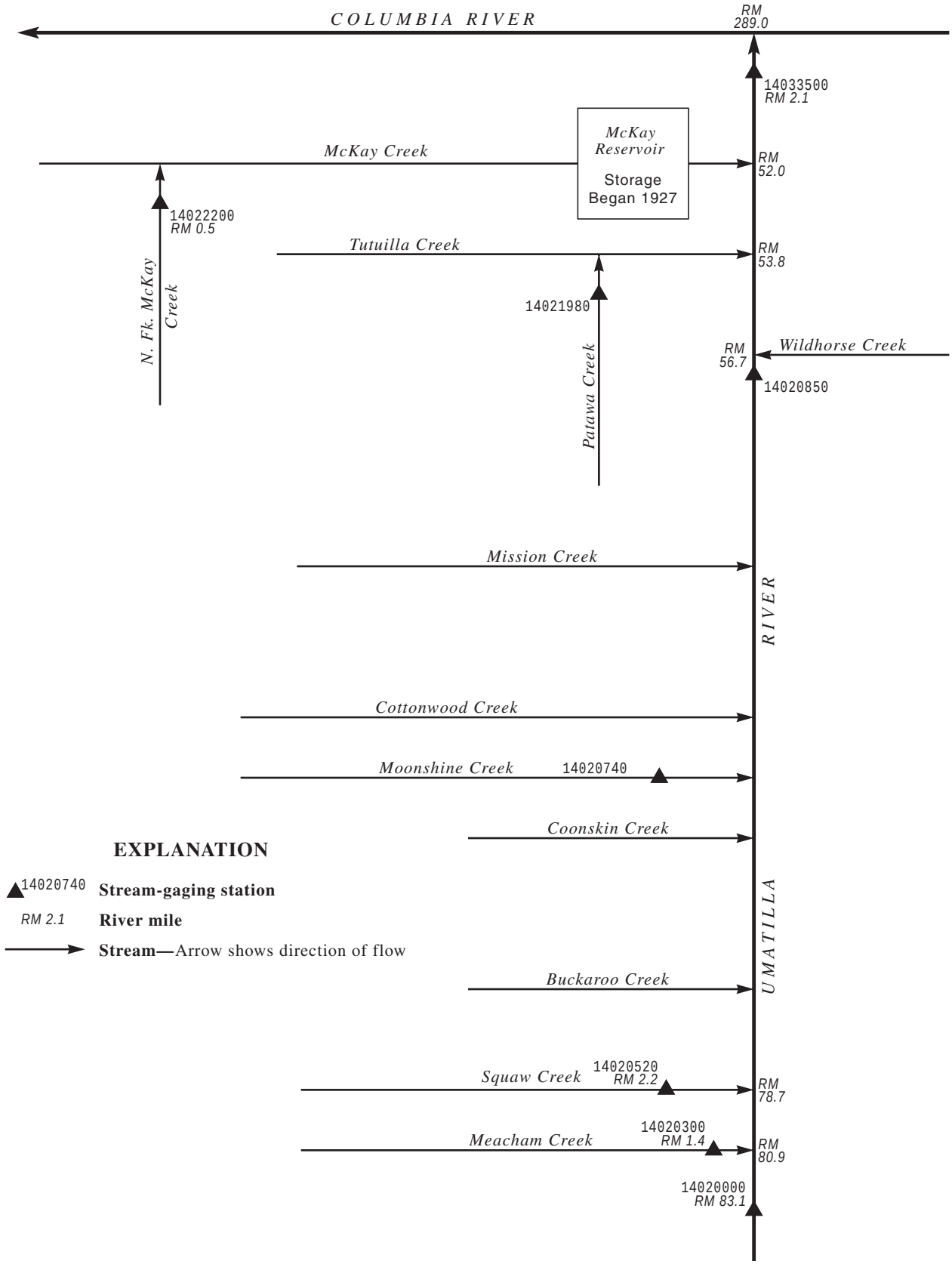


Figure 12. Schematic diagram showing gaging stations in the Umatilla River Basin.

14020000 UMATILLA RIVER ABOVE MEACHAM CREEK, NEAR GIBBON, OR

LOCATION.--Lat 45°43'11", long 118°19'20", in SE 1/4 SW 1/4 sec.21, T.3 N., R.36 E., Umatilla County, Hydrologic Unit 17070103, Umatilla Indian Reservation, on right bank 0.8 mi downstream from Ryan Creek, 2.2 mi upstream from Meacham Creek, 2.5 mi northeast of Gibbon, and at mile 83.1.

DRAINAGE AREA.--131 mi^2.

PERIOD OF RECORD.--April 1933 to current year.

REVISED RECORDS.--WSP 1935: 1946-48(M), 1950(M), 1953(M), 1956-59(M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,854.81 ft above NGVD of 1929. Prior to June 27, 1939, at site 1 mi downstream at datum 43.94 ft lower.

REMARKS.--Records good. No regulation or diversion upstream from station. Continuous water-quality records for the period June 1959 to September 1980 have been collected at this location. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--70 years (water years 1934-2003), 226 ft^3/s, 23.47 in/yr, 163,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,220 ft^3/s Nov. 28, 1995, gage height, 9.40 ft (high-water mark), from rating curve extended above 3,500 ft^3/s; maximum gage height, 9.50 ft Jan. 29, 1965; minimum discharge, 16 ft^3/s Nov. 9, 1965, momentary regulation from unknown source.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 27	0330	1,600	5.78	Mar. 13	1915	1,630	5.82
Jan. 30	2345	*2,360	*6.56	Mar. 22	2230	1,420	5.59

Minimum discharge, 33 ft^3/s Aug. 15, 16, 18-20, 25, 26

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	47	52	152	1640	181	682	469	143	53	37	37
2	44	47	51	161	1020	167	605	450	132	52	38	38
3	45	47	51	292	653	176	537	447	123	51	41	37
4	48	49	51	264	477	181	488	437	115	51	39	36
5	46	50	51	306	378	186	452	434	109	50	43	38
6	45	51	51	227	306	210	441	403	103	50	43	38
7	44	51	51	175	270	378	433	369	98	49	40	39
8	43	60	51	145	249	641	467	333	93	49	39	53
9	44	62	51	127	224	575	531	310	89	48	38	49
10	44	61	53	115	206	785	553	298	86	47	37	46
11	43	57	57	106	191	869	591	295	83	46	37	45
12	43	57	65	103	183	1080	597	337	80	45	37	43
13	44	56	62	106	179	1520	610	377	78	45	37	43
14	44	57	73	121	191	1390	580	395	76	45	36	43
15	44	55	73	147	198	1340	492	385	74	44	36	42
16	44	54	72	139	259	1330	433	336	72	44	35	43
17	44	53	69	127	316	950	416	301	69	43	36	46
18	44	53	64	116	344	688	386	277	67	42	35	44
19	44	58	61	110	348	553	352	253	67	41	35	43
20	44	56	59	103	332	505	344	241	67	41	35	43
21	44	55	60	98	324	499	376	234	66	41	36	43
22	44	54	59	97	373	917	436	233	66	40	36	42
23	44	56	58	107	386	1250	429	233	64	39	39	42
24	44	56	57	117	329	908	466	240	62	39	37	42
25	45	54	56	134	281	715	449	248	60	40	36	42
26	45	53	59	400	251	698	508	234	58	40	35	42
27	45	52	62	1220	222	649	572	208	57	39	36	42
28	49	52	69	589	200	558	561	193	56	38	36	42
29	52	52	78	390	---	473	546	178	54	37	36	42
30	49	52	97	1570	---	437	504	175	54	37	36	42
31	47	---	163	1780	---	530	---	163	---	37	36	---
TOTAL	1394	1617	1986	9644	10330	21339	14837	9486	2421	1363	1153	1267
MEAN	45.0	53.9	64.1	311	369	688	495	306	80.7	44.0	37.2	42.2
MAX	52	62	163	1780	1640	1520	682	469	143	53	43	53
MIN	43	47	51	97	179	167	344	163	54	37	35	36
AC-FT	2760	3210	3940	19130	20490	42330	29430	18820	4800	2700	2290	2510
CFSM	0.34	0.41	0.49	2.37	2.82	5.25	3.78	2.34	0.62	0.34	0.28	0.32
IN.	0.40	0.46	0.56	2.74	2.93	6.06	4.21	2.69	0.69	0.39	0.33	0.36

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2003, BY WATER YEAR (WY)

MEAN	57.3	128	233	263	329	396	538	440	182	63.8	46.9	46.6
MAX	169	405	716	656	1074	989	885	1135	591	110	63.4	81.6
(WY)	1952	1948	1976	1965	1996	1972	1974	1948	1974	1948	1975	1959
MIN	39.1	40.2	44.4	45.7	71.8	189	162	67.0	49.4	39.5	36.9	34.9
(WY)	1936	1936	1966	1937	1977	1955	1941	1934	1992	1934	1939	1935

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1934 - 2003	
ANNUAL TOTAL	76228		76837			
ANNUAL MEAN	209		211		226	
HIGHEST ANNUAL MEAN					415	1974
LOWEST ANNUAL MEAN					114	1977
HIGHEST DAILY MEAN	2690	Apr 14	1780	Jan 31	5130	Dec 12 1946
LOWEST DAILY MEAN	39	Sep 1	35	Aug 16	28	Jan 9 1937
ANNUAL SEVEN-DAY MINIMUM	40	Aug 29	35	Aug 14	31	Sep 26 1935
ANNUAL RUNOFF (AC-FT)	151200		152400		163900	
ANNUAL RUNOFF (CFSM)	1.59		1.61		1.73	
ANNUAL RUNOFF (INCHES)	21.65		21.82		23.47	
10 PERCENT EXCEEDS	500		541		546	
50 PERCENT EXCEEDS	81		64		117	
90 PERCENT EXCEEDS	42		39		44	

14020300 MEACHAM CREEK AT GIBBON, OR

LOCATION.--Lat 45°41'20", long 118°21'20", in SE 1/4 SE 1/4 sec.31, T.3 N., R.36 E., Umatilla County, Hydrologic Unit 17070103, on left bank 250 ft downstream from Union Pacific railroad bridge, 0.9 mi southeast of Gibbon, and at mile 1.4.

DRAINAGE AREA.--176 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 1,803.05 ft above NGVD of 1929.

REMARKS.--Records good except for estimated daily discharges, which are fair. Possible regulation or diversion upstream from station. U.S. Geological Survery satellite telemeter at station.

AVERAGE DISCHARGE.--28 years (water years 1976-2003), 203 ft^3/s, 15.65 in/yr, 146,800 acre-ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,930 ft^3/s Nov. 28, 1995, gage height, 7.67 ft, from rating curve extended above 4,600 ft^3/s; maximum gage height, 8.16 ft, from floodmark; minimum discharge, 5.9 ft^3/s Sept. 3-6, 2003.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 25, 1975, reached a stage of 7.21 ft, from floodmark, discharge, about 8,200 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	0100	*3,170	*5.87	Mar. 13	2130	2,230	5.27

Minimum discharge, 5.9 ft^3/s Sept. 3-6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	12	15	70	1620	166	760	400	114	20	7.2	6.6
2	11	12	15	72	1200	140	693	368	102	19	7.3	6.8
3	11	12	15	130	830	142	597	352	93	19	8.1	6.5
4	13	12	15	e120	586	132	529	345	84	18	7.8	6.4
5	13	12	15	e180	436	135	492	380	77	17	8.7	6.4
6	12	12	15	e160	328	177	477	377	71	17	10	6.4
7	12	12	15	e140	267	299	473	351	65	16	9.4	6.8
8	12	15	15	e120	230	712	546	309	60	14	9.1	9.3
9	12	17	17	108	198	702	643	270	56	15	8.7	10
10	12	17	15	94	175	904	652	242	52	14	8.9	9.5
11	12	16	15	81	152	1220	659	226	48	14	8.4	8.8
12	12	16	18	74	137	1500	631	257	45	13	8.1	8.4
13	12	17	18	71	131	2030	595	299	42	13	7.8	8.6
14	12	17	19	82	155	1950	536	300	40	13	7.7	9.0
15	11	17	19	114	171	1700	451	298	37	12	7.3	9.0
16	11	17	19	118	222	1660	380	257	35	12	7.0	9.5
17	11	17	19	106	288	1270	353	227	32	11	7.1	10
18	11	17	19	95	334	912	337	203	30	11	7.0	10
19	11	18	19	84	347	717	293	178	29	11	6.9	9.1
20	11	17	19	78	336	659	270	161	29	10	6.7	9.0
21	11	16	20	e74	337	668	272	151	29	9.5	6.6	9.2
22	11	16	20	e72	434	981	295	149	29	8.9	6.8	8.9
23	11	18	19	e76	478	1330	283	145	28	8.7	7.9	8.9
24	11	17	19	78	406	1060	298	153	26	8.7	7.6	8.7
25	11	17	18	95	319	842	304	178	25	8.9	7.1	8.7
26	11	17	19	288	266	879	356	e162	24	8.8	6.7	8.6
27	11	16	21	1340	223	876	456	141	23	8.8	6.6	8.5
28	11	16	22	868	191	771	495	130	22	8.1	6.7	8.6
29	14	16	25	544	---	643	489	123	21	7.8	6.8	8.5
30	13	15	37	1680	---	561	446	123	21	7.5	6.9	8.6
31	12	---	69	2270	---	612	---	131	---	7.5	6.7	---
TOTAL	361	466	625	9482	10797	26350	14061	7386	1389	382.2	235.6	253.3
MEAN	11.6	15.5	20.2	306	386	850	469	238	46.3	12.3	7.60	8.44
MAX	14	18	69	2270	1620	2030	760	400	114	20	10	10
MIN	11	12	15	70	131	132	270	123	21	7.5	6.6	6.4
AC-FT	716	924	1240	18810	21420	52270	27890	14650	2760	758	467	502
CFSM	0.07	0.09	0.11	1.74	2.19	4.83	2.66	1.35	0.26	0.07	0.04	0.05
IN.	0.08	0.10	0.13	2.00	2.28	5.57	2.97	1.56	0.29	0.08	0.05	0.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2003, BY WATER YEAR (WY)

MEAN	16.0	77.5	197	243	390	519	552	308	96.3	23.4	12.3	11.9
MAX	28.8	323	582	583	1074	1016	956	668	354	52.2	20.7	16.7
(WY)	2001	1996	1976	1997	1996	1997	1985	1991	1984	1984	1993	1978
MIN	8.48	11.2	18.0	22.2	27.1	134	228	58.3	21.7	12.3	7.60	8.44
(WY)	1988	1988	1977	1977	1977	1977	1986	1992	1992	2003	2003	2003

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1976 - 2003	
ANNUAL TOTAL	64879.7		71788.1			
ANNUAL MEAN	178		197		203	
HIGHEST ANNUAL MEAN					352	1997
LOWEST ANNUAL MEAN					66.2	1977
HIGHEST DAILY MEAN	2250	Apr 14	2270	Jan 31	4820	Feb 8 1996
LOWEST DAILY MEAN	8.1	Sep 14	6.4	Sep 4	6.4	Sep 4 2003
ANNUAL SEVEN-DAY MINIMUM	8.3	Sep 10	6.5	Aug 31	6.5	Aug 31 2003
ANNUAL RUNOFF (AC-FT)	128700		142400		146800	
ANNUAL RUNOFF (CFSM)	1.01		1.12		1.15	
ANNUAL RUNOFF (INCHES)	13.71		15.17		15.65	
10 PERCENT EXCEEDS	480		603		552	
50 PERCENT EXCEEDS	29		22		70	
90 PERCENT EXCEEDS	9.3		8.4		11	

e Estimated

14020520 SQUAW CREEK NEAR GIBBON, OR

LOCATION.--Lat 45°40'22", long 118°24'00", in NW 1/4 NE 1/4 sec.11, T.2 N., R.35 E., Umatilla County, Hydrologic Unit 17070103, on right bank, 2 mi southwest of townsite of Gibbon, and at mile 2.2.

DRAINAGE AREA.--32.6 mi^2.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,850 ft above NGVD of 1929, from topographic map.

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

AVERAGE DISCHARGE.--5 years (water years 1999-2003), 29.5 ft^3/s, 12.28 in/yr, 21,350 acre-ft/yr

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 900 ft^3/s Dec. 30, 1998, gage height, 3.71 ft, from highwater mark, from rating curve extended above 300 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 0.48 ft^3/s Aug. 21, 30, 31, Sept. 1, 3-6 2003.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 370 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 27	0315	420	2.69	Jan. 30	0745	*525	*2.96

Minimum discharge, 0.48 ft^3/s Aug. 21, 30, 31, Sept. 1, 3-6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.6	2.1	28	269	e27	e74	41	8.8	1.6	0.67	0.59
2	1.3	1.7	2.1	37	180	e26	e96	37	8.0	1.7	0.72	0.63
3	1.7	1.6	2.1	130	120	e38	e94	33	7.3	1.6	0.89	0.61
4	1.7	1.6	2.0	124	88	e48	e82	32	6.5	1.5	0.84	0.59
5	1.5	1.7	2.0	122	72	e44	e76	33	5.8	1.5	0.89	0.60
6	1.4	1.6	2.0	63	55	e52	e80	33	5.2	1.5	0.93	0.60
7	1.2	1.8	1.9	39	44	e90	e90	31	4.8	1.4	0.85	0.68
8	1.2	2.4	1.9	27	37	e200	e110	28	4.4	1.4	0.79	1.1
9	1.2	2.5	1.9	20	30	e240	113	25	4.0	1.4	0.73	1.1
10	1.2	2.7	2.0	15	26	e260	97	22	3.8	1.2	0.70	1.0
11	1.2	2.3	2.3	13	23	e240	77	20	3.6	1.2	0.69	0.97
12	1.3	2.3	2.9	11	e23	e230	63	29	3.3	1.1	0.70	0.91
13	1.3	2.3	2.8	14	e26	e240	49	41	3.1	1.1	0.70	0.90
14	1.4	2.3	3.1	24	e75	e200	41	39	2.9	1.1	0.68	0.86
15	1.4	2.2	2.9	27	e86	e210	34	35	2.7	1.1	0.65	0.85
16	1.4	2.3	3.2	21	e130	e230	28	31	2.6	1.1	0.63	0.91
17	1.5	2.3	3.1	18	e160	e180	28	27	2.5	1.0	0.66	1.0
18	1.4	2.2	3.0	15	e180	e110	27	24	2.5	1.0	0.65	0.95
19	1.4	2.6	2.8	13	e170	e88	24	21	2.4	0.95	0.63	0.87
20	1.4	2.4	2.8	11	e180	e80	23	18	2.5	0.92	0.63	0.92
21	1.5	2.3	2.9	10	e180	e86	23	16	2.4	0.93	0.58	0.93
22	1.5	2.2	2.9	9.5	e180	e130	22	14	2.2	0.87	0.65	0.89
23	1.5	2.5	2.7	11	e140	e130	20	12	2.1	0.78	0.86	0.85
24	1.5	2.5	2.6	14	e100	e110	21	12	2.0	0.79	0.77	0.80
25	1.5	2.3	2.6	17	e70	e96	21	15	1.9	0.82	0.66	0.78
26	1.5	2.2	2.8	98	e50	e110	37	12	1.8	0.80	0.62	0.79
27	1.5	2.1	3.1	292	e36	e100	60	10	1.7	0.75	0.61	0.80
28	1.6	2.1	3.5	157	e29	e90	60	9.3	1.6	0.69	0.64	0.80
29	1.9	2.1	4.9	104	---	e74	55	8.5	1.6	0.66	0.64	0.84
30	1.7	2.1	11	385	---	e64	47	10	1.7	0.65	0.61	0.85
31	1.7	---	30	289	---	e58	---	11	---	0.65	0.60	---
TOTAL	44.9	64.8	117.9	2158.5	2759	3881	1672	729.8	105.7	33.76	21.87	24.97
MEAN	1.45	2.16	3.80	69.6	98.5	125	55.7	23.5	3.52	1.09	0.71	0.83
MAX	1.9	2.7	30	385	269	260	113	41	8.8	1.7	0.93	1.1
MIN	1.2	1.6	1.9	9.5	23	26	20	8.5	1.6	0.65	0.58	0.59
AC-FT	89	129	234	4280	5470	7700	3320	1450	210	67	43	50
CFSM	0.04	0.07	0.12	2.14	3.02	3.84	1.71	0.72	0.11	0.03	0.02	0.03
IN.	0.05	0.07	0.13	2.46	3.15	4.43	1.91	0.83	0.12	0.04	0.02	0.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

MEAN	3.00	14.2	42.6	49.2	68.3	100	54.8	15.4	4.71	1.29	0.93	1.14
MAX	7.55	20.5	88.9	76.7	98.5	144	85.1	23.5	11.2	1.67	1.09	1.91
(WY)	2001	1999	1999	1999	2003	2000	2002	2003	2000	2000	1999	2000
MIN	1.14	2.16	3.80	17.2	24.9	57.3	34.6	8.14	2.62	1.04	0.71	0.83
(WY)	2000	2003	2003	2001	2001	2001	2000	2002	2001	2002	2003	2003

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	8884.96		11614.20			
ANNUAL MEAN	24.3		31.8		29.5	
HIGHEST ANNUAL MEAN					35.5	2000
LOWEST ANNUAL MEAN					19.0	2001
HIGHEST DAILY MEAN	371	Feb 24	385	Jan 30	830	Dec 30 1998
LOWEST DAILY MEAN	0.64	Sep 15	0.58	Aug 21	0.58	Aug 21 2003
ANNUAL SEVEN-DAY MINIMUM	0.72	Aug 13	0.60	Aug 31	0.60	Aug 31 2003
ANNUAL RUNOFF (AC-FT)	17620		23040		21350	
ANNUAL RUNOFF (CFSM)	0.75		0.98		0.90	
ANNUAL RUNOFF (INCHES)	10.14		13.25		12.28	
10 PERCENT EXCEEDS	84		102		82	
50 PERCENT EXCEEDS	2.7		2.7		8.2	
90 PERCENT EXCEEDS	0.85		0.78		0.95	

e Estimated

14020740 MOONSHINE CREEK NEAR MISSION, OR

LOCATION.--(Revised)Lat 45°39'37", long 118°33'55", in NW 1/4 NE 1/4 sec.16, T.2 N., R.34 E., Umatilla County, Hydrologic Unit 17070103, Umatilla Indian Reservation, on left bank, 60 ft upstream from county road crossing, 5.7 mi east of Mission, and at mile 1.1.

DRAINAGE AREA.--4.62 mi^2.

PERIOD OF RECORD.--October 1991 to current year.

REVISED RECORDS.--WDR OR-93-1: 1992(M); WDR OR-94-1: 1993.

GAGE.--Water-stage recorder. Elevation of gage is 1,600 ft above NGVD of 1929, from topographic map.

REMARKS.--Records poor. No known regulation.

AVERAGE DISCHARGE.--12 years (water years 1992-2003), 3.05 ft^3/s, 2,210 acre-ft per year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 247 ft^3/s Feb. 7, 1996, gage height, 6.67 ft, from rating curve extended above 75 ft^3/s; no flow part of or all of each day Oct. 1-14, 1992, Sept. 6-10, 1993, Oct. 2, 15-19, 1993.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 30 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 30	2115	41	5.67	Feb. 1	0615	*67	*5.96
Jan. 26	2330	39	5.65				

Minimum discharge, 0.05 ft^3/s part or all of each day Oct. 1, 2, 5-9, 14-19.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.05	0.19	0.36	5.2	44	3.9	5.7	2.7	0.70	0.12	0.14	0.13
2	0.06	0.22	0.36	6.0	22	3.6	7.2	2.6	0.67	0.12	0.14	0.13
3	0.06	0.25	0.35	13	15	4.0	8.1	2.6	0.63	0.12	0.14	0.13
4	0.06	0.29	0.32	11	13	4.1	7.9	2.6	0.59	0.13	0.14	0.12
5	0.06	0.29	0.32	9.5	11	4.1	7.5	2.4	0.53	0.13	0.15	0.12
6	0.06	0.30	0.32	5.7	9.1	4.4	8.0	2.3	0.48	0.13	0.16	0.12
7	0.06	0.37	0.32	3.9	7.5	5.0	8.6	2.2	0.43	0.13	0.15	0.13
8	0.06	0.41	0.32	2.9	6.5	9.4	8.7	2.0	0.38	0.13	0.14	0.15
9	0.06	0.39	0.32	2.2	5.6	14	7.8	1.8	0.37	0.13	0.14	0.14
10	0.06	0.37	0.33	1.8	5.1	17	7.0	1.6	0.36	0.12	0.14	0.15
11	0.06	0.36	0.33	1.6	4.7	14	6.1	1.5	0.37	0.12	0.14	0.14
12	0.06	0.37	0.32	1.7	4.4	12	5.3	2.4	0.38	0.12	0.14	0.14
13	0.06	0.36	0.33	1.9	4.3	11	4.6	2.8	0.29	0.12	0.14	0.14
14	0.05	0.37	0.35	2.2	6.5	8.9	4.0	2.7	0.27	0.12	0.14	0.14
15	0.05	0.37	0.33	2.3	7.1	10	3.4	2.7	0.25	0.12	0.14	0.14
16	0.05	0.40	0.36	2.2	11	13	2.9	2.5	0.23	0.12	0.14	0.14
17	0.05	0.38	0.36	2.0	12	11	3.0	2.4	0.20	0.12	0.14	0.14
18	0.05	0.36	0.35	1.7	15	9.3	2.8	2.1	0.19	0.13	0.13	0.14
19	0.06	0.36	0.36	1.7	14	8.0	2.7	1.8	0.20	0.12	0.13	0.14
20	0.06	0.36	0.36	1.5	13	6.8	2.6	1.7	0.21	0.12	0.12	0.14
21	0.07	0.36	0.36	1.4	12	6.5	2.5	1.4	0.21	0.13	0.13	0.13
22	0.07	0.36	0.34	1.4	12	7.9	2.3	1.3	0.18	0.13	0.13	0.13
23	0.07	0.37	0.32	1.5	9.9	8.7	2.0	1.1	0.18	0.12	0.13	0.13
24	0.10	0.36	0.33	1.6	8.1	8.2	2.2	1.3	0.17	0.13	0.13	0.13
25	0.10	0.36	0.34	1.6	6.5	7.7	2.0	1.5	0.15	0.13	0.13	0.13
26	0.10	0.36	0.37	7.0	5.5	8.4	2.7	1.1	0.14	0.12	0.13	0.13
27	0.12	0.36	0.36	22	4.8	8.3	2.7	0.90	0.13	0.12	0.12	0.13
28	0.12	0.36	0.37	11	4.4	7.7	2.9	0.80	0.13	0.12	0.13	0.13
29	0.17	0.36	0.38	8.2	---	7.0	2.9	0.73	0.12	0.12	0.13	0.14
30	0.18	0.36	12	39	---	6.2	2.8	0.85	0.12	0.12	0.13	0.14
31	0.20	---	14	33	---	5.8	---	0.81	---	0.14	0.13	---
TOTAL	2.44	10.38	35.94	207.7	294.0	255.9	138.9	57.19	9.26	3.85	4.22	4.04
MEAN	0.079	0.35	1.16	6.70	10.5	8.25	4.63	1.84	0.31	0.12	0.14	0.13
MAX	0.20	0.41	14	39	44	17	8.7	2.8	0.70	0.14	0.16	0.15
MIN	0.05	0.19	0.32	1.4	4.3	3.6	2.0	0.73	0.12	0.12	0.12	0.12
AC-FT	4.8	21	71	412	583	508	276	113	18	7.6	8.4	8.0

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2003, BY WATER YEAR (WY)

MEAN	0.17	1.75	4.76	6.00	7.68	8.16	4.34	3.09	0.52	0.13	0.097	0.078
MAX	0.58	4.46	14.2	9.67	25.1	15.4	9.35	12.6	1.39	0.23	0.19	0.15
(WY)	2001	1992	1997	1997	1996	2000	2001	1995	2000	2000	1995	2001
MIN	0.000	0.22	0.48	1.93	1.90	2.41	0.58	0.13	0.000	0.002	0.001	0.000
(WY)	1992	2000	1994	1992	1994	1992	1992	1992	1992	1992	1992	1992

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1992 - 2003	
ANNUAL TOTAL	798.36		1023.82			
ANNUAL MEAN	2.19		2.80		3.05	
HIGHEST ANNUAL MEAN					4.95	1996
LOWEST ANNUAL MEAN					1.47	1992
HIGHEST DAILY MEAN	34	Feb 24	44	Feb 1	164	Feb 7 1996
LOWEST DAILY MEAN	0.05	Sep 29	0.05	Oct 1	0.00	Oct 1 1991
ANNUAL SEVEN-DAY MINIMUM	0.05	Oct 12	0.05	Oct 12	0.00	Oct 1 1991
ANNUAL RUNOFF (AC-FT)	1580		2030		2210	
10 PERCENT EXCEEDS	6.2		8.6		8.0	
50 PERCENT EXCEEDS	0.36		0.36		0.69	
90 PERCENT EXCEEDS	0.06		0.12		0.06	

14020850 UMATILLA RIVER AT WEST RESERVATION BOUNDARY, NEAR PENDLETON, OR

LOCATION.--Lat 45°40'18", long 118°44'08", in NE 1/4 NW 1/4 sec.7, T.2 N., R.33 E., Umatilla County, Hydrologic Unit 17070103, on left bank, 0.5 mi east of west line of boundary for Umatilla Indian Reservarion, 1.6 mi upstream from Wildhorse Creek, 2.5 mi east of Post Office in Pendleton, and at mile 58.3.

DRAINAGE AREA.--440.8 mi^2.

PERIOD OF RECORD.--October 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,130 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair. No known regulation. Many diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--8 years (water years 1996-2003), 549 ft^3/s, 398,000 acre-ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft^3/s Feb. 9, 1996, gage height, 11.64 ft; minimum discharge, 25 ft^3/s Aug. 19, 2003.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 27	0915	3,580	6.99	Mar. 14	0645	4,580	7.57
Jan. 31	0415	*6,380	*8.64	Mar. 23	0400	3,220	6.77

Minimum discharge, 25 ft^3/s Aug. 19.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	51	59	330	4530	573	1630	1040	350	52	28	28
2	45	51	59	311	2900	527	1570	972	308	51	29	29
3	45	51	59	585	1860	534	1460	955	282	50	32	29
4	48	52	59	679	1370	535	1360	928	258	48	33	28
5	48	54	59	856	1080	541	1300	957	238	47	34	27
6	47	54	59	737	872	589	1290	933	220	46	38	27
7	46	54	59	546	751	757	1310	901	201	45	36	29
8	45	60	59	429	661	1780	1370	845	186	43	34	43
9	45	68	59	357	591	1820	1470	774	171	43	33	64
10	45	70	62	307	527	2110	1490	724	160	42	31	60
11	45	67	63	272	483	2500	1490	695	150	41	30	54
12	45	65	74	251	454	2710	1470	748	141	39	30	48
13	45	66	77	238	436	3900	1430	874	130	39	31	46
14	46	63	83	250	489	4000	1370	878	121	40	30	45
15	46	64	88	306	533	3510	1180	885	118	38	29	44
16	45	62	88	325	674	3770	1000	799	109	38	27	44
17	46	60	88	300	879	2820	941	726	99	37	28	49
18	46	59	84	273	1010	2120	920	676	92	36	28	51
19	46	64	81	250	1090	1660	852	610	89	36	27	e46
20	46	66	77	231	1030	1480	800	561	88	35	27	45
21	48	64	79	217	999	1430	813	529	87	34	27	46
22	48	62	81	209	1100	1930	879	518	87	34	28	45
23	48	63	78	215	1170	3000	883	505	84	33	32	43
24	48	69	76	231	1040	2460	897	508	82	33	33	43
25	48	65	76	263	900	1910	929	556	76	33	31	42
26	48	63	79	490	791	1870	986	523	70	33	29	41
27	48	62	84	2820	698	1830	1180	474	65	33	29	e42
28	48	62	91	1790	622	1620	1240	430	60	31	29	e41
29	57	60	112	1090	---	1420	1230	399	56	30	29	e44
30	56	59	139	3270	---	1300	1150	385	53	29	29	45
31	52	---	298	5300	---	1340	---	397	---	28	29	---
TOTAL	1464	1830	2589	23728	29540	58346	35890	21705	4231	1197	940	1268
MEAN	47.2	61.0	83.5	765	1055	1882	1196	700	141	38.6	30.3	42.3
MAX	57	70	298	5300	4530	4000	1630	1040	350	52	38	64
MIN	45	51	59	209	436	527	800	385	53	28	27	27
AC-FT	2900	3630	5140	47060	58590	115700	71190	43050	8390	2370	1860	2520

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2003, BY WATER YEAR (WY)

MEAN	64.7	274	619	776	1078	1324	1328	780	232	64.9	41.8	45.9
MAX	101	717	1186	1360	2801	1971	1898	1030	416	81.9	47.6	54.4
(WY)	2001	1996	1997	1997	1996	1997	2002	1998	2000	1998	1997	1998
MIN	47.2	61.0	83.5	246	339	871	693	517	117	38.6	30.3	40.2
(WY)	2003	2003	2003	2001	2001	2001	1998	2000	2001	2003	2003	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1996 - 2003	
ANNUAL TOTAL	164002		182728			
ANNUAL MEAN	449		501		549	
HIGHEST ANNUAL MEAN					777	1997
LOWEST ANNUAL MEAN					343	2001
HIGHEST DAILY MEAN	5610	Apr 14	5300	Jan 31	11700	Feb 9 1996
LOWEST DAILY MEAN	35	Aug 15	27	Aug 16	27	Aug 16 2003
ANNUAL SEVEN-DAY MINIMUM	36	Aug 14	27	Aug 16	27	Aug 16 2003
ANNUAL RUNOFF (AC-FT)	325300		362400		398000	
10 PERCENT EXCEEDS	1170		1420		1370	
50 PERCENT EXCEEDS	112		84		254	
90 PERCENT EXCEEDS	41		33		44	

e Estimated

14021980 PATAWA CREEK AT WEST RESERVATION BOUNDARY, NEAR PENDLETON, OR

LOCATION.--Lat 45°39'11", long 118°44'39", in NW 1/4 SW 1/4 sec. 18, T.2 N., R.33 E., Umatilla County, Hydrologic Unit 17070103, Umatilla Indian Reservation, on right bank, at downstream side of county road crossing, 2 mi southwest of Pendleton City Hall, and at mile 2.9.

DRAINAGE AREA.--30 mi^2, excludes about 1 mi^2 in upper basin where water has been diverted directly to the Umatilla River.

PERIOD OF RECORD.--December 1973 to April 1975 (discharge measurements only), October 1991 to current year.

REVISED RECORDS.--WDR OR-94-1: 1993 (M).

GAGE.--Water-stage recorder. Elevation of gage is 1,220 ft above NGVD of 1929, from topographic map.

REMARKS.--Records poor. No known regulation.

AVERAGE DISCHARGE.--12 years (water years 1992-2003), 5.16 ft^3/s, 3,740 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 378 ft^3/s Feb. 7, 1996, gage height, 7.94 ft; minimum discharge, 0.01 ft^3/s July 22, 23, 27, 28, July 30 to Aug. 1, 1999.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 57 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 27	0300	69	5.28	Feb. 1	0000	*260	*6.32
Jan. 30	2245	108	5.62				

Minimum discharge, 0.04 ft^3/s Nov. 25-28, Dec. 5-31.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.13	0.09	0.05	0.64	142	5.0	9.5	e4.4	e1.3	0.83	0.19	0.08
2	0.13	0.09	0.05	0.08	39	4.9	12	e4.2	e1.2	0.81	0.17	0.09
3	0.15	0.09	0.05	6.1	23	5.9	13	e4.0	e1.1	0.79	0.17	0.08
4	0.14	0.09	0.05	6.1	19	6.8	12	e3.8	e0.98	0.82	0.17	0.06
5	0.13	0.09	0.04	4.9	16	6.8	11	e3.8	e0.90	0.85	0.19	0.07
6	0.13	0.09	0.04	2.5	12	7.6	12	e3.4	e0.86	0.83	0.20	0.09
7	0.13	0.06	0.04	0.95	9.7	8.4	15	e3.2	e0.80	0.82	0.17	0.09
8	0.15	0.07	0.04	0.25	8.1	13	13	e3.0	e0.74	0.74	0.18	0.13
9	0.16	0.07	0.04	0.06	6.8	18	12	e2.6	e0.70	0.74	0.18	0.09
10	0.17	0.07	0.04	0.05	5.8	21	11	e2.4	e0.64	0.76	0.16	0.10
11	0.13	0.06	0.04	0.05	5.1	19	9.6	e2.2	0.60	0.76	0.16	0.09
12	0.13	0.06	0.04	0.05	4.5	16	8.6	e2.8	0.59	0.73	0.13	0.09
13	0.13	0.05	0.04	0.05	4.3	13	7.4	e3.8	0.59	0.72	0.13	0.10
14	0.13	0.05	0.04	0.05	8.7	11	6.5	e3.8	0.59	0.71	0.13	0.10
15	0.13	0.05	0.04	0.05	8.9	17	5.6	e3.6	0.59	0.69	0.11	0.09
16	0.12	0.05	0.04	0.06	14	26	5.0	e3.6	0.55	0.67	0.11	0.09
17	0.10	0.05	0.04	0.06	16	19	4.8	e3.4	0.55	0.72	0.11	0.11
18	0.09	0.05	0.04	0.06	28	15	5.1	e3.2	0.55	0.58	0.09	0.09
19	0.09	0.05	0.04	0.06	27	13	4.4	e2.8	0.55	0.53	0.09	0.10
20	0.09	0.05	0.04	0.06	24	11	4.1	e2.6	0.55	0.50	0.09	0.10
21	0.09	0.05	0.04	0.06	20	10	3.9	e2.2	0.57	0.50	0.09	0.11
22	0.09	0.05	0.04	0.06	16	12	3.7	e2.0	0.64	0.51	0.09	0.12
23	0.08	0.05	0.04	0.06	13	11	3.5	e1.6	0.64	0.48	0.09	0.12
24	0.09	0.05	0.04	0.06	11	10	3.5	e1.8	0.60	0.47	0.09	0.12
25	0.09	0.05	0.04	0.06	8.6	9.9	4.2	e2.2	0.60	0.43	0.09	0.13
26	0.08	0.05	0.04	0.12	7.3	11	e4.4	e1.8	0.66	0.37	0.09	0.13
27	0.07	0.04	0.04	31	6.1	10	e4.4	e1.6	0.69	0.32	0.09	0.13
28	0.06	0.05	0.04	12	5.6	10	e4.8	e1.4	0.73	0.30	0.09	0.13
29	0.13	0.05	0.04	7.5	---	9.2	e5.0	e1.2	0.73	0.27	0.09	0.13
30	0.09	0.05	0.04	39	---	8.4	e4.6	e1.4	0.76	0.24	0.08	0.12
31	0.09	---	0.81	61	---	8.0	---	e1.3	---	0.20	0.08	---
TOTAL	3.52	1.82	2.05	173.10	509.5	366.9	223.6	85.1	21.55	18.69	3.90	3.08
MEAN	0.11	0.061	0.066	5.58	18.2	11.8	7.45	2.75	0.72	0.60	0.13	0.10
MAX	0.17	0.09	0.81	61	142	26	15	4.4	1.3	0.85	0.20	0.13
MIN	0.06	0.04	0.04	0.05	4.3	4.9	3.5	1.2	0.55	0.20	0.08	0.06
AC-FT	7.0	3.6	4.1	343	1010	728	444	169	43	37	7.7	6.1

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2003, BY WATER YEAR (WY)

MEAN	0.49	1.78	4.29	9.06	11.8	14.0	9.58	8.22	1.60	0.70	0.48	0.40
MAX	1.10	5.88	14.5	21.8	34.6	26.7	24.2	37.0	3.67	1.45	0.98	0.89
(WY)	2001	1992	1997	1997	1996	1997	2001	1995	1998	1997	1997	1993
MIN	0.085	0.061	0.066	0.70	2.84	5.19	1.81	0.86	0.35	0.22	0.13	0.10
(WY)	2002	2003	2003	2002	1992	1992	1992	2002	2002	1992	2003	2003

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1992 - 2003	
ANNUAL TOTAL	523.16		1412.81			
ANNUAL MEAN	1.43		3.87		5.16	
HIGHEST ANNUAL MEAN					10.6	1995
LOWEST ANNUAL MEAN					1.47	2002
HIGHEST DAILY MEAN	40	Mar 25	142	Feb 1	218	Feb 7 1996
LOWEST DAILY MEAN	0.04	Nov 27	0.04	Nov 27	0.03	Jul 22 1999
ANNUAL SEVEN-DAY MINIMUM	0.04	Dec 5	0.04	Dec 5	0.04	Jul 25 1999
ANNUAL RUNOFF (AC-FT)	1040		2800		3740	
10 PERCENT EXCEEDS	3.6		12		14	
50 PERCENT EXCEEDS	0.31		0.50		1.3	
90 PERCENT EXCEEDS	0.05		0.05		0.19	

e Estimated

14022200 NORTH FORK MCKAY CREEK NEAR PILOT ROCK, OR

LOCATION.--Lat 45°30'24", long 118°36'57", in NE 1/4 SE 1/4 sec.1, T.1 S., R.33 E., Umatilla County, Hydrologic Unit 17070103, Umatilla Indian Reservation, on left bank 10 mi northeast of Pilot Rock and at mile 0.5.

DRAINAGE AREA.--48.6 mi^2.

PERIOD OF RECORD.--May 1973 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,870 ft above NGVD of 1929, from topographic map.

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

AVERAGE DISCHARGE.--30 years (water years 1974-2003), 42.0 ft^3/s, 31,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,980 ft^3/s Jan. 25, 1975, gage height, 8.48 ft, from floodmark, from rating curve extended above 150 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 0.22 ft^3/s June 26, 1985 (result of temporary construction upstream).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 290 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 27	0030	561	4.08	Feb. 1	0730	586	4.17
Jan. 30	1930	*791	*4.88	Mar. 10	1800	335	3.24

Minimum discharge, 0.41 ft^3/s July 30 to Aug. 1.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1.8	2.6	50	462	57	104	51	16	1.7	0.46	0.59
2	1.3	1.6	2.5	55	293	54	120	45	15	1.6	0.53	0.61
3	1.3	1.6	2.5	138	216	73	131	42	13	1.5	0.67	0.61
4	1.4	1.6	2.5	136	175	81	123	45	12	1.4	0.70	0.59
5	1.3	1.6	2.5	119	144	78	116	46	11	1.3	0.86	0.58
6	1.2	1.6	2.5	77	113	92	132	43	9.7	1.3	0.98	0.59
7	1.2	1.7	2.5	57	97	131	166	40	8.8	1.2	0.88	0.58
8	1.2	2.4	2.5	46	84	256	188	37	7.8	1.2	0.80	1.9
9	1.2	2.5	2.5	37	72	278	173	33	6.9	1.1	0.74	1.6
10	1.2	2.8	2.5	32	65	317	145	30	6.3	1.1	0.72	1.2
11	1.2	2.8	3.4	28	59	289	123	28	5.7	1.0	0.69	0.98
12	1.2	3.1	5.2	27	55	276	104	40	5.3	0.95	0.67	0.87
13	1.2	3.1	5.1	31	56	284	87	47	4.8	0.93	0.67	0.80
14	1.2	2.9	5.4	41	105	244	73	42	4.4	0.93	0.65	0.78
15	1.2	2.7	5.2	45	117	254	62	39	4.1	0.89	0.64	0.75
16	1.3	2.5	5.0	42	160	267	54	35	3.8	0.85	0.57	0.82
17	1.3	2.8	4.8	37	184	211	56	32	3.4	0.80	0.56	1.0
18	1.4	2.8	4.5	34	210	164	57	29	3.2	0.75	0.57	0.98
19	1.4	3.5	4.1	31	202	133	50	26	3.1	0.71	0.57	0.89
20	1.4	3.1	3.8	28	209	118	46	23	3.1	0.65	0.56	0.85
21	1.5	2.9	3.8	26	210	124	42	20	2.9	0.64	0.58	0.88
22	1.4	2.9	4.2	26	211	168	40	18	2.9	0.61	0.67	0.89
23	1.4	3.0	3.9	26	173	167	36	16	2.7	0.57	0.83	0.85
24	1.4	3.1	3.9	28	136	142	37	18	2.5	0.56	0.80	0.85
25	1.5	2.9	3.7	32	108	127	39	26	2.3	0.57	0.71	0.84
26	1.5	2.9	4.2	161	87	148	57	20	2.2	0.57	0.65	0.83
27	1.5	2.8	5.5	368	72	142	66	17	2.0	0.57	0.65	0.85
28	1.7	2.8	9.3	192	65	134	65	15	1.9	0.52	0.65	0.86
29	2.7	2.8	16	140	---	117	62	14	1.8	0.50	0.64	0.84
30	2.1	2.6	27	599	---	101	57	18	1.7	0.48	0.64	0.87
31	1.9	---	59	440	---	96	---	20	---	0.47	0.61	---
TOTAL	44.2	77.2	212.1	3129	4140	5123	2611	955	170.3	27.92	20.92	26.13
MEAN	1.43	2.57	6.84	101	148	165	87.0	30.8	5.68	0.90	0.67	0.87
MAX	2.7	3.5	59	599	462	317	188	51	16	1.7	0.98	1.9
MIN	1.2	1.6	2.5	26	55	54	36	14	1.7	0.47	0.46	0.58
AC-FT	88	153	421	6210	8210	10160	5180	1890	338	55	41	52

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2003, BY WATER YEAR (WY)

MEAN	3.06	22.3	53.9	75.8	96.0	118	83.7	45.7	13.7	2.21	1.08	1.21
MAX	22.6	74.6	197	170	225	223	200	154	60.4	4.97	2.77	2.74
(WY)	2001	1992	1974	1976	1996	1984	1974	1995	1984	1991	1993	1977
MIN	0.89	1.30	3.11	5.01	4.39	29.3	16.2	5.08	2.26	0.73	0.53	0.78
(WY)	1999	1988	1977	1977	1977	1992	1992	1992	1992	1985	1998	1987

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1974 - 2003	
ANNUAL TOTAL	11472.64		16536.77			
ANNUAL MEAN	31.4		45.3		42.8	
HIGHEST ANNUAL MEAN					72.5	1974
LOWEST ANNUAL MEAN					10.7	1977
HIGHEST DAILY MEAN	486	Feb 24	599	Jan 30	1070	Feb 23 1986
LOWEST DAILY MEAN	0.72	Aug 17	0.46	Aug 1	0.34	Aug 15 1998
ANNUAL SEVEN-DAY MINIMUM	0.74	Aug 13	0.50	Jul 27	0.41	Aug 11 1998
ANNUAL RUNOFF (AC-FT)	22760		32800		31010	
10 PERCENT EXCEEDS	98		143		122	
50 PERCENT EXCEEDS	4.2		3.9		12	
90 PERCENT EXCEEDS	0.89		0.67		0.99	

14033500 UMATILLA RIVER NEAR UMATILLA, OR

LOCATION.--Lat 45°54'11", long 119°19'33", in SW 1/4 NW 1/4 sec.21, T.5 N., R.28 E., Umatilla County, Hydrologic Unit 17070103, on left bank, 1.2 mi southeast of Umatilla, 1.6 mi downstream from West Extension main canal of Umatilla project, and at mile 2.1.

DRAINAGE AREA.--2,290 mi^2, approximately.

PERIOD OF RECORD.--October 1903 to current year.

REVISED RECORDS.--WSP 794: Drainage area. WSP 1398: 1909, 1911, 1914, 1928, 1935.

GAGE.--Water-stage recorder. Datum of gage is 330.47 ft above NGVD of 1929. Oct. 21, 1903, to Jan. 25, 1931, nonrecording gage.

REMARKS.--No estimated daily discharges. Records fair. Some regulation since 1927 by McKay Reservoir. Many diversions upstream from station for irrigation of lands upstream and downstream from station; Brownell Canal diverts downstream from station. Diversions since 1908 to Cold Springs Reservoir, an off-channel reservoir, capacity, 52,380 acre-ft. Continuous water-quality records for the period October 1962 to September 1969 have been collected at this location. U.S. Bureau of Reclamation satellite telemeter at station.

AVERAGE DISCHARGE.--76 years (water years 1928-2003), 476 ft^3/s, 344,700 acre-ft/yr. Water years prior to 1928 not included in computation of average discharge owing to increased regulation and diversion since 1927.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,800 ft^3/s Jan. 30, 1965, gage height, 10.75 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	1815	*5,800	*6.18	Mar, 14	1715	4,050	5.52

Minimum discharge, 1.2 ft^3/s part or all of each day July 29-31, Aug. 1, 2.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	149	277	141	344	4410	461	1160	811	202	118	1.3	64
2	147	253	141	362	3540	389	1340	698	163	100	4.6	61
3	156	249	140	356	2290	356	1250	635	185	96	14	59
4	160	245	139	499	1790	343	1130	637	196	77	4.7	56
5	159	245	139	537	1400	337	1080	647	193	59	2.1	57
6	166	244	139	634	1110	367	993	649	177	37	1.7	58
7	164	243	136	454	886	461	1080	613	182	17	4.0	56
8	159	243	138	304	744	952	1260	546	179	1.8	2.5	69
9	160	247	137	314	648	1760	1390	539	182	1.6	2.1	109
10	159	254	137	375	554	1790	1470	558	197	1.5	1.9	105
11	164	254	141	339	469	2190	1370	479	194	1.5	1.5	95
12	172	251	146	315	401	2320	1370	467	199	6.2	1.4	75
13	174	251	145	298	357	2890	1510	612	197	1.7	8.3	63
14	176	251	154	283	351	3770	1240	636	199	1.6	30	72
15	172	248	151	303	437	3260	1030	608	191	1.5	21	73
16	171	247	154	365	500	3490	767	584	190	1.8	53	67
17	171	244	152	379	786	2880	650	480	183	1.7	66	66
18	172	240	153	355	967	2150	648	413	186	1.5	56	64
19	182	242	152	329	1130	1690	578	330	204	1.7	53	65
20	183	244	150	307	1080	1380	563	257	193	1.8	58	69
21	183	233	149	289	1020	1260	520	251	224	1.6	60	67
22	183	209	149	277	976	1330	502	244	233	1.5	64	66
23	186	185	150	273	1070	2220	597	279	212	1.7	59	64
24	194	164	146	274	1050	2330	557	289	197	1.7	65	108
25	205	150	145	291	896	1870	630	305	201	1.6	65	135
26	199	147	146	327	741	1640	629	399	202	1.5	71	146
27	201	145	157	1260	634	1650	776	327	186	3.6	61	164
28	203	145	157	2270	536	1540	918	257	194	3.6	57	170
29	209	144	174	1330	---	1320	979	215	186	1.3	60	167
30	217	142	187	1260	---	1120	926	192	166	1.3	65	189
31	221	---	210	4650	---	980	---	219	---	1.7	64	---
TOTAL	5517	6636	4655	19953	30773	50496	28913	14176	5793	551.0	1078.1	2679
MEAN	178	221	150	644	1099	1629	964	457	193	17.8	34.8	89.3
MAX	221	277	210	4650	4410	3770	1510	811	233	118	71	189
MIN	147	142	136	273	351	337	502	192	163	1.3	1.3	56
AC-FT	10940	13160	9230	39580	61040	100200	57350	28120	11490	1090	2140	5310

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2003, BY WATER YEAR (WY)

MEAN	110	271	540	718	959	1161	1159	604	130	21.8	23.8	45.7
MAX	481	1302	1948	2366	3786	3678	3056	3362	805	149	95.0	153
(WY)	1928	1928	1974	1965	1996	1972	1958	1948	1950	1942	1993	1998
MIN	4.18	40.2	70.8	89.3	86.7	154	4.56	1.55	1.33	0.81	1.04	0.59
(WY)	1978	1932	1988	1930	1977	1977	1968	1977	1979	1985	1985	1987

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1928 - 2003	
ANNUAL TOTAL	143304.8		171220.1			
ANNUAL MEAN	393		469		476	
HIGHEST ANNUAL MEAN					1026	1997
LOWEST ANNUAL MEAN					77.5	1977
HIGHEST DAILY MEAN	4990	Apr 15	4650	Jan 31	15600	Jan 30 1965
LOWEST DAILY MEAN	1.2	Jul 23	1.3	Jul 29	0.00	Apr 20 1930
ANNUAL SEVEN-DAY MINIMUM	1.6	Jul 13	1.6	Jul 20	0.00	Oct 18 1931
ANNUAL RUNOFF (AC-FT)	284200		339600		344700	
10 PERCENT EXCEEDS	840		1260		1320	
50 PERCENT EXCEEDS	217		202		158	
90 PERCENT EXCEEDS	19		12		6.2	

14034470 WILLOW CREEK ABOVE WILLOW CREEK LAKE, NEAR HEPPNER, OR

LOCATION.--Lat 45°20'27", long 119°30'53", in NE 1/4 NE 1/4 sec.1, T.3 S., R.26 E., Morrow County, Hydrologic Unit 17070104, on right bank 1.5 mi southeast of Heppner, 1.7 mi upstream from Willow Creek dam, and at mile 54.1.

DRAINAGE AREA.--67.6 mi^2.

PERIOD OF RECORD.--October 1982 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,085.41 ft above NGVD of 1929 (levels by Corps of Engineers).

REMARKS.--Records fair. Many diversions for irrigation upstream from station. Part of flow of Ditch Creek (John Day River basin) is diverted to Willow Creek upstream from station. Chemical analysis May 1985 to September 1987.

AVERAGE DISCHARGE.--21 years (water years 1983-2003), 20.9 ft^3/s, 15,160 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 544 ft^3/s Feb. 1, 1997, gage height, 9.60 ft, from crest-stage gage; minimum discharge, no flow several days in August 2000, Aug. 27 to Oct. 7, 2001, and may have been no flow during period of no gage-height record July 31 to Sept. 14, 1988.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 140 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 15	2345	*100	*6.89				

Minimum discharge, no flow part of or all of each day Aug. 1-6, Sept. 1-5, 9.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.72	0.99	1.6	5.3	79	14	45	45	14	1.1	0.04	0.04
2	0.78	0.98	1.6	4.7	66	12	41	41	12	1.1	0.03	0.01
3	0.88	1.0	1.5	5.9	52	13	41	38	11	0.85	0.03	0.01
4	1.3	1.1	1.5	7.2	41	12	40	37	10	1.0	0.01	0.05
5	1.1	1.2	1.5	9.9	34	12	38	36	9.2	0.87	0.01	0.04
6	0.78	1.0	1.4	7.6	27	12	36	34	8.4	0.94	0.01	0.05
7	0.46	1.0	1.4	6.4	22	12	34	31	7.7	0.93	0.10	0.03
8	0.38	1.5	1.5	5.2	20	18	33	28	7.0	0.83	0.09	0.06
9	0.38	1.8	1.5	4.8	16	25	33	26	6.4	0.91	0.11	0.41
10	0.41	1.5	1.8	4.5	15	32	33	23	6.1	e1.0	0.06	0.51
11	0.45	1.4	2.2	4.8	13	39	33	23	5.8	e0.69	0.05	0.48
12	0.48	1.3	2.8	5.3	12	45	31	25	5.7	0.72	0.06	0.34
13	0.55	1.3	3.1	6.0	12	55	31	24	5.3	0.61	0.06	0.33
14	0.54	1.3	3.8	6.2	14	61	32	22	5.1	0.55	0.07	0.38
15	0.51	1.3	4.4	6.6	13	73	30	20	4.9	0.57	0.07	0.25
16	0.55	1.4	4.5	6.2	21	83	28	20	4.4	0.39	0.06	0.31
17	0.59	1.5	5.2	5.9	26	69	29	19	4.1	0.32	0.06	0.55
18	0.63	1.4	5.4	5.2	29	57	30	18	3.7	0.26	0.06	0.68
19	0.69	1.4	4.2	5.0	28	49	29	17	3.9	0.37	0.04	0.58
20	0.69	1.8	4.1	5.2	28	45	28	15	4.0	0.34	0.04	0.40
21	0.73	1.9	3.7	4.8	27	42	29	15	4.1	0.39	0.05	0.39
22	0.74	2.0	3.6	4.8	28	44	37	13	4.5	0.25	0.05	0.38
23	0.74	2.0	3.3	5.4	26	49	41	6.4	4.3	0.12	0.06	0.29
24	0.80	1.9	2.1	5.7	21	49	48	7.5	3.5	0.08	0.42	0.22
25	0.82	1.7	3.0	6.5	20	49	52	9.6	2.6	0.10	0.82	0.19
26	0.86	1.5	3.5	9.9	19	58	53	11	1.9	0.17	0.37	0.10
27	0.89	1.5	3.6	25	17	58	51	11	2.0	0.14	0.08	0.08
28	0.94	1.5	4.3	21	15	55	48	13	2.3	0.14	0.04	0.08
29	1.0	1.7	7.3	17	---	51	52	13	2.2	0.08	0.07	0.08
30	1.1	1.6	6.0	37	---	46	49	15	2.0	0.05	0.08	0.10
31	1.0	---	6.4	73	---	40	---	17	---	0.07	0.07	---
TOTAL	22.49	43.47	101.8	328.0	741	1279	1135	673.5	168.1	15.94	3.17	7.42
MEAN	0.73	1.45	3.28	10.6	26.5	41.3	37.8	21.7	5.60	0.51	0.10	0.25
MAX	1.3	2.0	7.3	73	79	83	53	45	14	1.1	0.82	0.68
MIN	0.38	0.98	1.4	4.5	12	12	28	6.4	1.9	0.05	0.01	0.01
AC-FT	45	86	202	651	1470	2540	2250	1340	333	32	6.3	15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2003, BY WATER YEAR (WY)

MEAN	3.14	7.61	14.9	20.9	35.6	57.5	49.3	40.1	16.3	3.93	1.35	1.42
MAX	7.10	21.2	72.8	78.2	109	128	116	110	55.4	11.2	3.99	6.13
(WY)	1983	1987	1997	1997	1996	1993	1984	1995	1984	1993	1997	1984
MIN	0.20	1.45	3.15	6.68	7.52	9.81	11.9	2.73	1.60	0.51	0.010	0.000
(WY)	1989	2003	2002	1990	1994	1988	1992	1992	1992	2003	1988	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1983 - 2003	
ANNUAL TOTAL	2161.33		4518.89			
ANNUAL MEAN	5.92		12.4		20.9	
HIGHEST ANNUAL MEAN					44.3	1984
LOWEST ANNUAL MEAN					6.13	2002
HIGHEST DAILY MEAN	55	Apr 14	83	Mar 16	450	Feb 1 1997
LOWEST DAILY MEAN	0.16	Aug 2	0.01	Aug 4	0.00	Aug 11 2000
ANNUAL SEVEN-DAY MINIMUM	0.22	Jul 28	0.03	Jul 31	0.00	Aug 11 2000
ANNUAL RUNOFF (AC-FT)	4290		8960		15160	
10 PERCENT EXCEEDS	13		41		58	
50 PERCENT EXCEEDS	3.3		3.9		8.0	
90 PERCENT EXCEEDS	0.45		0.08		0.61	

e Estimated

14034480 BALM FORK NEAR HEPPNER, OR

LOCATION.--Lat 45°19'56", long 119°32'24", in NW 1/4 SE 1/4 sec.2, T.3 S., R.26 E., Morrow County, Hydrologic Unit 17070104, on right bank, 0.7 mi upstream from bridge on Willow Creek Road, 1.0 mi southeast of Heppner, 1.2 mi upstream from Willow Creek dam, and at mile 1.1.

DRAINAGE AREA.--26.3 mi^2.

PERIOD OF RECORD.--May 1982 to September 2003 (discontinued).

REVISED RECORDS.--WDR OR-83-1: Drainage area. WDR OR-88-1: 1987(M).

GAGE.--Water-stage recorder. Concrete control since Aug. 24, 1982. Datum of gage is 2,101.52 ft above NGVD of 1929 (Corps of Engineers bench mark).

REMARKS.--No estimated daily discharges. Records poor. Diversion for irrigation of about 170 acres upstream from station. Chemical analysis May 1985 to September 1987.

AVERAGE DISCHARGE.--21 years (water years 1983-2003), 2.51 ft^3/s, 1,820 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 190 ft^3/s Mar. 4, 1983, gage height, 4.90 ft, from rating curve extended above 82 ft^3/s on basis of slope-area measurement of peak flow; maximum gage height, 5.12 ft Dec. 29, 1996; no flow for part or all of several days in 1982, 1990, 1991, 1992, 2001, 2002, part of or all of each day Oct. 1, 2002 to Feb. 21, 2003, July 17 to Sept. 30, 2003

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, about 36,000 ft^3/s June 14, 1903, by computation of slope-area measurement (see WSP 96).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 60 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 2	1145	*3.90	3.25	Mar. 12	2100	(a)	*3.91

Minimum discharge, no flow part of or all of each day Oct. 1 to Feb. 21, July 17 to Sept. 30.
a Backwater from debris on control.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	0.00	0.00	0.62	2.1	3.0	0.58	0.05	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.41	1.7	3.1	0.52	0.05	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.49	0.94	3.1	0.52	0.04	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.51	0.99	2.8	0.48	0.03	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.69	1.2	2.6	0.29	0.03	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.58	1.3	2.4	0.23	0.03	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.66	1.3	2.1	0.20	0.02	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.76	1.3	2.0	0.19	0.02	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	1.1	1.2	1.9	0.18	0.02	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	1.9	1.2	1.9	0.18	0.01	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	2.2	1.1	1.8	0.17	0.01	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	2.4	1.1	1.8	0.17	0.02	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	1.1	1.00	1.6	0.18	0.01	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.70	1.1	1.5	0.18	0.01	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	1.3	1.0	1.3	0.18	0.01	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	1.4	1.1	1.3	0.18	0.01	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	2.0	1.1	1.3	0.17	0.01	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	1.8	1.2	1.2	0.16	0.01	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	1.7	1.3	1.0	0.15	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	1.7	1.0	0.75	0.14	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	1.6	1.0	0.60	0.14	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.18	1.5	1.2	0.38	0.13	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.23	1.3	1.2	0.34	0.12	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.27	1.5	1.4	0.32	0.11	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.27	2.2	2.0	0.34	0.10	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.38	2.3	3.1	0.34	0.10	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.41	2.2	3.4	0.31	0.08	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.66	2.2	3.3	0.36	0.10	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	---	2.1	3.5	0.45	0.08	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	---	2.0	3.2	0.44	0.07	0.00	0.00	0.00
31	0.00	---	0.00	0.00	---	2.0	---	0.47	---	0.00	0.00	---
TOTAL	0.00	0.00	0.00	0.00	2.40	44.92	47.53	42.80	6.08	0.39	0.00	0.00
MEAN	0.000	0.000	0.000	0.000	0.086	1.45	1.58	1.38	0.20	0.013	0.000	0.000
MAX	0.00	0.00	0.00	0.00	0.66	2.4	3.5	3.1	0.58	0.05	0.00	0.00
MIN	0.00	0.00	0.00	0.00	0.00	0.41	0.94	0.31	0.07	0.00	0.00	0.00
AC-FT	0.00	0.00	0.00	0.00	4.8	89	94	85	12	0.8	0.00	0.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2003, BY WATER YEAR (WY)

MEAN	0.30	0.83	2.33	3.16	5.42	8.04	4.26	3.81	1.51	0.35	0.13	0.17
MAX	1.53	3.97	20.1	12.3	19.2	21.0	16.4	13.0	5.95	1.24	0.51	1.02
(WY)	1985	1997	1997	1997	1996	1993	1984	1995	1998	1993	1984	1984
MIN	0.000	0.000	0.000	0.000	0.086	0.32	0.27	0.19	0.077	0.013	0.000	0.000
(WY)	1992	2002	2002	2003	2003	2002	2002	2002	1992	2003	2002	2002

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1983 - 2003	
ANNUAL TOTAL	33.46		144.12			
ANNUAL MEAN	0.092		0.39		2.51	
HIGHEST ANNUAL MEAN					6.23	1997
LOWEST ANNUAL MEAN					0.092	2002
HIGHEST DAILY MEAN	0.65	Apr 2	3.5	Apr 29	80	Feb 22 1986
LOWEST DAILY MEAN	0.00	Jan 1	0.00	Oct 1	0.00	Dec 25 1990
ANNUAL SEVEN-DAY MINIMUM	0.00	Jan 1	0.00	Oct 1	0.00	Sep 18 1991
ANNUAL RUNOFF (AC-FT)	66		286		1820	
10 PERCENT EXCEEDS	0.30		1.5		6.9	
50 PERCENT EXCEEDS	0.00		0.00		0.68	
90 PERCENT EXCEEDS	0.00		0.00		0.02	

14034490 WILLOW CREEK LAKE AT HEPPNER, OR

LOCATION.--Lat 45°20'50", long 119°32'37", in NW 1/4 SE 1/4 sec.35, T.2 S., R.26 E., Morrow County, Hydrologic Unit 17070104, U.S. Corps of Engineers land, on top left side of spillway on dam on Willow Creek, 2,000 ft upstream from Court Street bridge and at mile 52.4.

DRAINAGE AREA.--96.6 mi^2.

PERIOD OF RECORD.--February 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (levels by Corps of Engineers). Prior to Dec. 22, 1983, nonrecording gage at nearby site at present datum. U.S. Geological Survey satellite telemeter at station.

REMARKS.--Lake is formed behind roller-compacted, concrete dam; storage began Feb. 16, 1983. Capacity, 14,020 acre-ft between elevations 2,000.0 ft, sill of outlet gates, and 2,113.5 ft, crest of spillway. Average minimum lake elevation 2,047.0 ft, storing 2,540 acre-ft. Dead storage, 73 acre-ft below elevation 2,000.0 ft. Reservoir used for flood control. Figures given herein represent total contents. U.S. Geological Survey satellite telemeter at station.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 7,340 acre-ft May 8, 1995, elevation, 2,083.06 ft; no usable contents at times.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 6,340 acre-ft Apr. 26, elevation, 2,077.06 ft; minimum contents, 4,040 acre-ft Sept. 30, elevation, 2,060.72 ft.

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

2,050	2,840	2,060	3,950	2,070	5,280	2,080	6,820
2,055	3,370	2,065	4,590	2,075	6,020		

Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2065.36	2064.05	2063.11	2063.22	2064.27	2072.03	2075.94	2076.39	2076.79	2076.18	2070.56	2064.00
2	2065.32	2064.02	2063.07	2063.16	2064.24	2072.20	2075.91	2076.23	2076.80	2076.13	2070.34	2063.83
3	2065.31	2063.99	2063.04	2063.13	2064.50	2072.36	2075.90	2076.10	2076.77	2076.02	2070.12	2063.67
4	2065.27	2063.95	2063.02	2063.13	2065.07	2072.47	2076.10	2076.05	2076.70	2075.83	2069.91	2063.51
5	2065.24	2063.92	2062.99	2063.14	2065.53	2072.59	2076.17	2076.06	2076.67	2075.66	2069.70	2063.34
6	2065.21	2063.89	2062.96	2063.13	2065.91	2072.72	2076.18	2076.11	2076.70	2075.49	2069.48	2063.17
7	2065.16	2063.87	2062.92	2063.10	2066.22	2072.87	2076.21	2076.34	2076.72	2075.32	2069.26	2063.04
8	2065.11	2063.86	2062.89	2063.05	2066.50	2073.06	2076.17	2076.54	2076.71	2075.15	2069.03	2062.87
9	2065.06	2063.84	2062.86	2063.05	2066.73	2073.33	2076.16	2076.58	2076.70	2074.99	2068.81	2062.72
10	2065.01	2063.81	2062.84	2063.02	2066.94	2073.70	2076.19	2076.50	2076.69	2074.82	2068.57	2062.56
11	2064.95	2063.81	2062.86	2063.02	2067.12	2074.14	2076.27	2076.43	2076.69	2074.66	2068.34	2062.45
12	2064.90	2063.76	2062.84	2063.03	2067.28	2074.68	2076.31	2076.39	2076.68	2074.47	2068.11	2062.36
13	2064.86	2063.72	2062.88	2063.04	2067.49	2075.27	2076.35	2076.33	2076.66	2074.30	2067.88	2062.29
14	2064.81	2063.69	2062.89	2063.04	2067.68	2075.88	2076.39	2076.29	2076.66	2074.14	2067.66	2062.21
15	2064.77	2063.65	2062.97	2063.05	2067.88	2076.29	2076.41	2076.35	2076.64	2073.98	2067.42	2062.09
16	2064.72	2063.61	2062.90	2063.06	2068.18	2076.57	2076.42	2076.40	2076.63	2073.81	2067.17	2061.98
17	2064.68	2063.56	2062.93	2063.06	2068.53	2076.70	2076.43	2076.43	2076.60	2073.63	2066.94	2061.86
18	2064.64	2063.53	2062.97	2063.07	2068.92	2076.68	2076.44	2076.47	2076.57	2073.46	2066.72	2061.74
19	2064.60	2063.49	2062.99	2063.06	2069.30	2076.55	2076.45	2076.49	2076.53	2073.31	2066.47	2061.63
20	2064.56	2063.46	2063.02	2063.06	2069.65	2076.38	2076.44	2076.50	2076.49	2073.17	2066.25	2061.52
21	2064.51	2063.43	2063.04	2063.05	2069.99	2076.20	2076.46	2076.50	2076.45	2073.02	2066.02	2061.40
22	2064.47	2063.40	2063.06	2063.06	2070.35	2075.99	2076.55	2076.47	2076.43	2072.83	2065.82	2061.31
23	2064.42	2063.38	2063.07	2063.05	2070.67	2075.86	2076.72	2076.39	2076.42	2072.60	2065.61	2061.24
24	2064.38	2063.34	2063.07	2063.07	2070.93	2075.73	2076.87	2076.31	2076.41	2072.37	2065.40	2061.17
25	2064.34	2063.30	2063.12	2063.10	2071.18	2075.71	2077.00	2076.27	2076.39	2072.15	2065.18	2061.09
26	2064.29	2063.26	2063.08	2063.19	2071.42	2075.82	2077.00	2076.34	2076.37	2071.93	2065.01	2061.02
27	2064.25	2063.23	2063.11	2063.44	2071.63	2075.95	2076.90	2076.42	2076.33	2071.71	2064.84	2060.95
28	2064.21	2063.19	2063.16	2063.63	2071.85	2076.03	2076.78	2076.51	2076.31	2071.49	2064.67	2060.87
29	2064.17	2063.17	2063.26	2063.72	---	2076.07	2076.70	2076.61	2076.27	2071.26	2064.50	2060.80
30	2064.13	2063.13	2063.28	2063.93	---	2076.05	2076.57	2076.70	2076.23	2071.03	2064.33	2060.72
31	2064.09	---	2063.24	2064.15	---	2075.92	---	2076.77	---	2070.79	2064.17	---
MAX	2065.36	2064.05	2063.28	2064.15	2071.85	2076.70	2077.00	2076.77	2076.80	2076.18	2070.56	2064.00
MIN	2064.09	2063.13	2062.84	2063.02	2064.24	2072.03	2075.90	2076.05	2076.23	2070.79	2064.17	2060.72
(†)	4470	4340	4360	4480	5540	6160	6260	6290	6210	5390	4480	4040
(‡	-170	-130	+20	+120	+1060	+620	+100	+30	-80	-820	-910	-440

CAL YR 2002 MAX 2070.78 MIN 2062.35 AC-FT‡ +120
WTR YR 2003 MAX 2077.00 MIN 2060.72 AC-FT‡ -600

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

14034500 WILLOW CREEK AT HEPPNER, OR

LOCATION.--Lat 45°21'02", long 119°32'56", in SE 1/4 NW 1/4 sec.35, T.2 S., R.26 E., Morrow County, Hydrologic Unit 17070104, on right bank at Heppner, 100 ft upstream from Court Street bridge, 800 ft southeast of Morrow County courthouse, 0.2 mi downstream from Willow Creek Dam and at mile 52.2.

DRAINAGE AREA.--96.8 mi^2.

PERIOD OF RECORD.--May 1951 to current year.

REVISED RECORDS.--WDR OR-83-1: Drainage area.

GAGE.--Water-stage recorder. Concrete control since September 1985. Datum of gage is 1,952.73 ft above NGVD of 1929.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Willow Creek Lake, 0.2 mi upstream, since Feb. 16, 1983. Many diversions for irrigation upstream from station. Part of flow of Ditch Creek (John Day River basin) is diverted to Willow Creek upstream from station. Continuous water-quality records for the period February 1963 to June 1968 and March 1972 to September 1973 have been collected at this location. Chemical analysis Oct. 1984 to September 1987.

AVERAGE DISCHARGE.--31 years (water years 1952-82), 19.1 ft^3/s, 13,840 acre-ft/yr.
21 years (water years 1983-2003), 21.7 ft^3/s, 15,740 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 812 ft^3/s May 10, 1957, gage height, 6.15 ft, from rating curve extended above 230 ft^3/s; maximum gage height, 6.46 ft May 25, 1971, backwater from Shobe Canyon; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, about 36,000 ft^3/s June 14, 1903, result of slope-area measurement (see WSP 96). Discharge for flood of Feb. 22, 1949, was 1,700 ft^3/s, result of slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 57 ft^3/s Jan. 31, gage height, 3.86 ft; minimum discharge, 2.5 ft^3/s Oct. 30 to Nov. 3, Dec. 18.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	2.5	2.9	6.5	54	3.2	38	50	6.8	3.2	15	9.2
2	2.8	2.5	2.9	6.5	54	3.1	36	49	6.8	3.2	15	9.2
3	2.8	2.5	2.9	6.5	29	3.8	33	43	8.8	6.8	15	9.2
4	2.8	2.6	2.9	6.5	3.1	5.4	19	35	11	12	15	9.2
5	2.8	2.6	2.8	6.5	3.1	5.5	28	30	7.8	12	15	9.2
6	2.8	2.6	2.8	6.5	3.1	5.6	28	25	4.2	12	15	9.1
7	2.8	2.6	2.8	6.5	3.1	5.6	28	9.4	4.2	10	15	8.1
8	2.8	2.7	2.8	6.5	3.1	5.7	28	9.4	4.2	11	15	8.1
9	2.8	2.7	2.8	5.7	3.1	5.7	28	18	4.2	11	15	8.1
10	2.8	2.7	2.8	5.1	3.1	5.7	25	24	4.2	11	15	8.1
11	2.8	2.7	2.9	5.1	3.1	5.7	23	24	4.2	11	14	6.4
12	2.8	2.7	2.8	5.1	3.1	5.7	23	24	4.2	11	14	4.0
13	2.9	2.7	2.8	5.1	3.1	5.7	23	24	4.2	11	14	4.0
14	2.9	2.7	2.8	5.1	3.1	8.6	23	19	4.2	11	14	4.4
15	2.9	3.1	2.8	5.0	3.1	34	23	11	4.2	11	14	5.4
16	2.9	3.1	2.9	4.9	3.1	52	23	11	4.2	11	14	5.9
17	2.9	3.1	2.9	4.9	3.1	52	23	11	4.2	11	14	6.2
18	2.9	3.1	2.7	4.9	3.2	52	23	11	4.2	11	14	5.9
19	2.9	3.1	2.7	4.9	3.2	52	23	11	4.2	10	14	5.8
20	2.9	3.0	2.7	4.9	3.2	52	23	11	4.2	9.7	14	5.8
21	2.9	2.9	2.7	4.9	3.2	52	24	11	4.2	9.7	14	5.8
22	2.9	2.9	2.7	4.9	3.2	52	24	11	4.2	13	14	5.2
23	2.9	2.9	2.7	4.9	3.2	52	24	11	3.5	15	14	3.9
24	2.9	2.9	2.7	4.9	3.2	52	31	11	3.2	15	13	3.9
25	2.9	2.9	2.7	5.0	3.2	46	36	9.7	3.2	15	13	3.8
26	2.9	2.9	2.7	5.0	3.2	41	45	3.4	3.2	15	10	3.7
27	2.9	2.9	2.7	5.1	3.2	41	50	3.5	3.2	15	9.4	3.7
28	2.9	2.9	2.7	6.4	3.2	41	50	3.4	3.2	15	9.4	3.7
29	2.9	2.9	2.7	10	---	42	50	3.4	3.2	15	9.2	3.7
30	2.8	2.9	4.8	19	---	42	50	5.3	3.2	15	9.2	3.6
31	2.5	---	6.5	46	---	42	---	6.8	---	15	9.2	---
TOTAL	88.2	84.3	92.0	228.8	215.6	872.0	905	529.3	138.5	357.6	414.4	182.3
MEAN	2.85	2.81	2.97	7.38	7.70	28.1	30.2	17.1	4.62	11.5	13.4	6.08
MAX	2.9	3.1	6.5	46	54	52	50	50	11	15	15	9.2
MIN	2.5	2.5	2.7	4.9	3.1	3.1	19	3.4	3.2	3.2	9.2	3.6
AC-FT	175	167	182	454	428	1730	1800	1050	275	709	822	362

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2003, BY WATER YEAR (WY)

MEAN	7.00	12.5	14.1	24.2	31.1	50.2	46.6	42.5	18.1	6.24	4.83	4.08
MAX	15.6	26.3	48.3	110	110	115	152	127	54.2	11.5	14.3	12.4
(WY)	1994	1997	1997	1997	1996	1983	1984	1995	1984	2003	1992	1988
MIN	1.93	1.69	2.65	3.40	5.81	4.40	10.4	2.15	2.17	2.39	2.34	2.56
(WY)	1992	1992	1993	1991	2002	2002	1994	1992	1992	1987	1983	1991

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1983 - 2003	
ANNUAL TOTAL	1741.8		4108.0			
ANNUAL MEAN	4.77		11.3		21.7	
HIGHEST ANNUAL MEAN					45.5	1984
LOWEST ANNUAL MEAN					5.99	2002
HIGHEST DAILY MEAN	34	Apr 13	54	Feb 1	306	May 6 1983
LOWEST DAILY MEAN	2.1	Sep 8	2.5	Oct 31	0.48	Aug 4 1983
ANNUAL SEVEN-DAY MINIMUM	2.4	Sep 3	2.5	Oct 31	1.3	Aug 1 1983
ANNUAL RUNOFF (AC-FT)	3450		8150		15740	
10 PERCENT EXCEEDS	5.8		28		53	
50 PERCENT EXCEEDS	2.9		5.4		9.2	
90 PERCENT EXCEEDS	2.6		2.8		2.8	

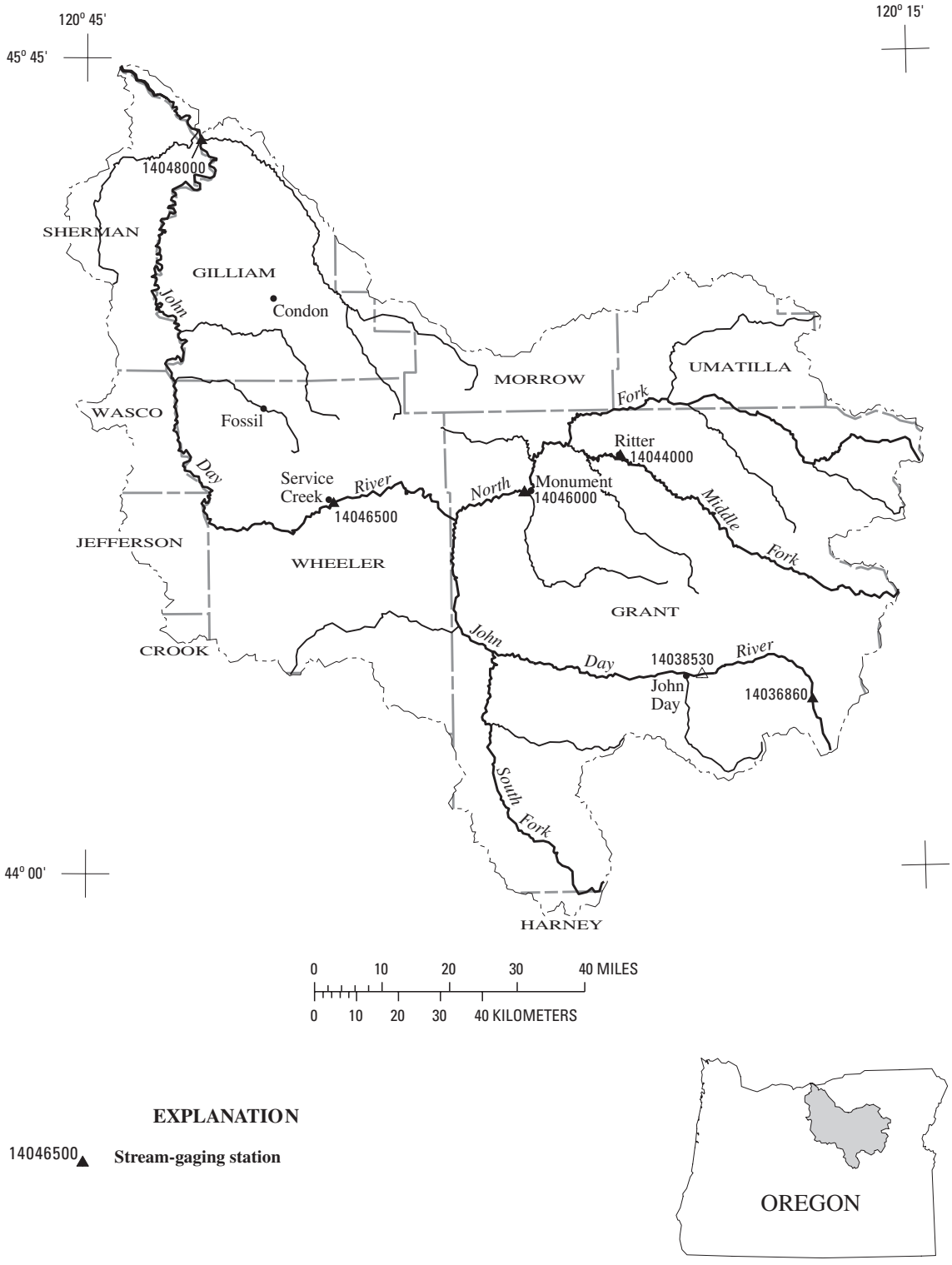


Figure 13. Location of surface-water and water-quality stations in the John Day River Basin.

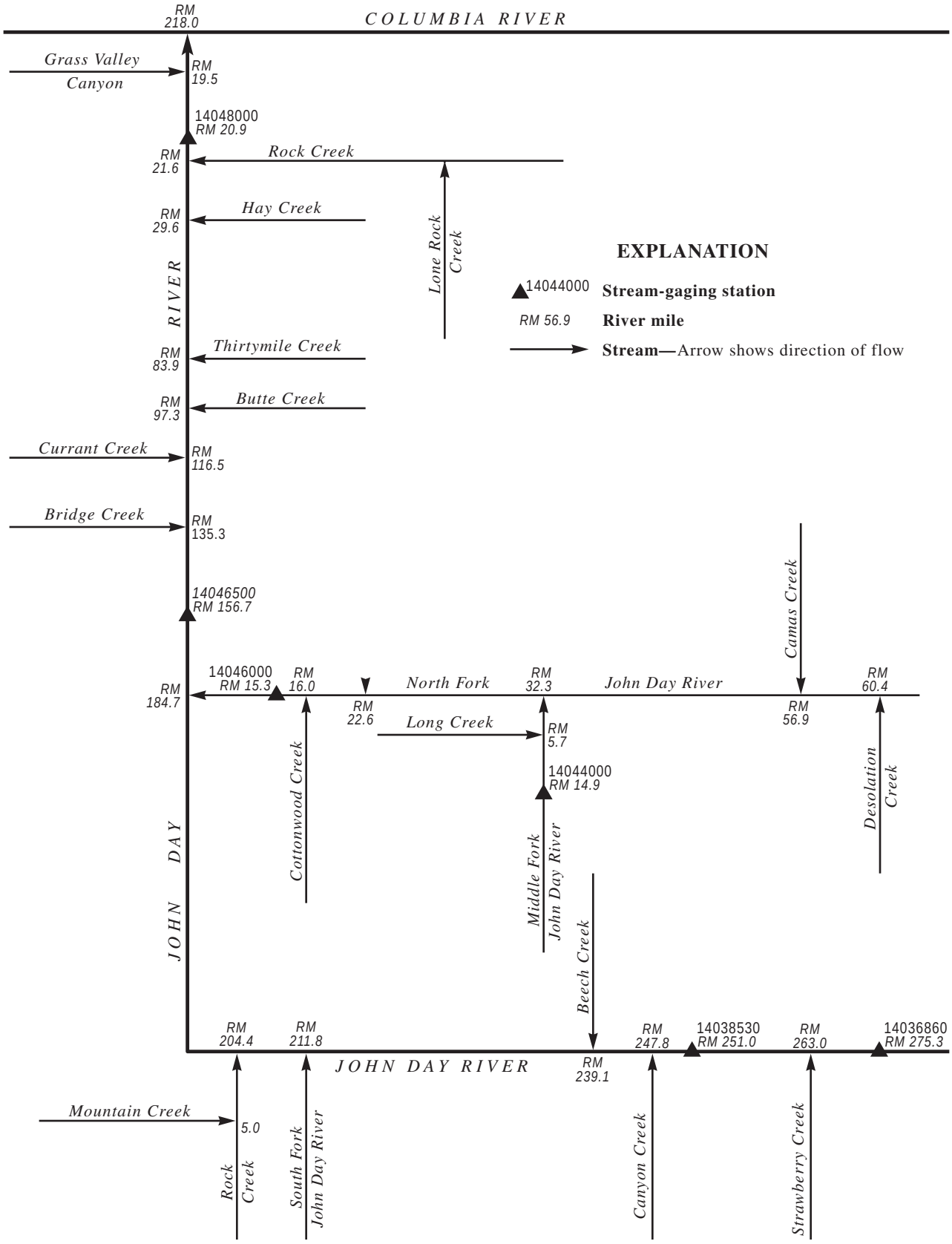


Figure 14. Schematic diagram showing gaging stations in the John Day River Basin.

14036860 JOHN DAY RIVER AT BLUE MOUNTAIN HOT SPRINGS, NEAR PRAIRIE CITY, OR

LOCATION.--Lat 44°21'29", long 118°34'30", in SE 1/4 NW 1/4, sec. 13, T.14 S., R.34 E., Grant County, Hydrologic Unit 17070201, on right bank at private road crossing, 0.25 mi downstream from Blue Mountain Hot Springs, 0.6 mi downstream from Rail Creek, 8 mi southeast of Prairie City, and at mile 275.3.

DRAINAGE AREA.--40.14 mi^2.

PERIOD OF RECORD.--October 1996 to September 2000, October 2002 to September 2003.

GAGE.--Water-stage recorder. Elevation of gage is 4,200 ft above sea level, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. No regulation. Some diversions for irrigation.

AVERAGE DISCHARGE.--5 years (water year 1997-2000, 2003), 55.6 ft^3/s, 40,310 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 950 ft^3/s May 25, 1998, gage height, 3.90 ft, from crest-stage gage, from rating curve extended above 300 ft^3/s; minimum daily discharge, 25 ft^3/s Dec. 23, 24, 1998.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 270 ft^3/s May 20, gage height, 2.90 ft; minimum discharge, 23 ft^3/s Feb. 29, Aug. 28-31, Sept. 1-7, 13, 21-30.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e28	e27	e26	e31	e70	29	76	78	164	38	30	25
2	e29	e26	e26	e30	e60	29	77	77	144	37	30	25
3	e30	e26	e26	e31	e52	28	73	80	132	37	31	25
4	e29	e27	e26	e32	e44	28	68	84	122	37	30	25
5	e28	e27	e26	e31	e36	28	63	82	107	37	29	26
6	e28	e28	e26	e30	e32	28	60	80	96	36	29	26
7	e27	e32	e26	e30	e30	28	57	76	92	36	29	25
8	e26	e31	e26	e29	e30	28	57	72	86	36	28	27
9	e26	e30	e27	e28	e30	28	60	68	80	35	27	27
10	e26	e29	e28	e28	e30	30	63	66	74	35	27	28
11	e26	e28	e29	e29	e30	31	67	69	68	34	27	28
12	e27	e28	e30	e30	e32	32	75	71	64	34	27	27
13	e26	e27	e34	e31	e34	38	86	75	61	34	27	26
14	e26	e27	e32	e32	e32	43	84	90	58	34	27	26
15	e26	e27	e32	e30	31	69	80	113	56	33	26	26
16	e26	e27	e30	e29	33	70	74	119	53	33	27	26
17	e26	e27	e28	e28	32	63	70	111	51	33	26	28
18	e27	e26	e26	e28	31	56	67	95	50	33	26	27
19	e27	e27	e27	e28	31	54	61	84	52	32	26	26
20	e27	e28	e27	e28	31	53	60	80	51	32	26	26
21	e26	e28	e27	e28	31	52	62	83	48	33	26	26
22	e26	e28	e26	e30	31	85	71	102	48	33	28	26
23	e26	e27	e28	e28	30	109	77	136	45	33	29	26
24	e26	e26	e27	e28	32	91	93	188	44	33	27	25
25	e26	e27	e28	e30	38	81	100	219	43	35	27	25
26	e26	e27	e30	e32	34	77	97	186	42	51	27	25
27	e27	e27	e32	e30	30	70	90	169	39	39	27	25
28	e27	e27	e36	e29	29	65	88	187	38	35	26	25
29	e26	e26	e32	e50	---	60	85	199	39	33	26	25
30	e25	e26	e31	e78	---	58	82	217	38	32	25	25
31	e26	---	e32	e76	---	63	---	188	---	31	25	---
TOTAL	828	824	887	1032	986	1604	2223	3544	2085	1084	848	778
MEAN	26.7	27.5	28.6	33.3	35.2	51.7	74.1	114	69.5	35.0	27.4	25.9
MAX	30	32	36	78	70	109	100	219	164	51	31	28
MIN	25	26	26	28	29	28	57	66	38	31	25	25
AC-FT	1640	1630	1760	2050	1960	3180	4410	7030	4140	2150	1680	1540

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2003, BY WATER YEAR (WY)

MEAN	36.4	38.3	40.6	46.2	39.4	54.3	83.8	135	85.2	41.4	34.0	32.5
MAX	40.3	49.8	64.6	84.7	47.8	62.6	101	174	119	53.0	39.4	36.8
(WY)	2000	1997	1997	1997	1997	1999	1997	1998	1999	1998	1997	1997
MIN	26.7	27.5	28.6	33.3	35.2	44.0	68.4	88.1	46.7	31.6	27.4	25.9
(WY)	2003	2003	2003	2003	2003	2000	1998	2000	2000	2000	2003	2003

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 1997 - 2003	
ANNUAL TOTAL	16723			
ANNUAL MEAN	45.8		55.6	
HIGHEST ANNUAL MEAN			65.8	1997
LOWEST ANNUAL MEAN			45.6	2000
HIGHEST DAILY MEAN	219	May 25	303	Jan 1 1997
LOWEST DAILY MEAN	25	Oct 30	25	Dec 23 1998
ANNUAL SEVEN-DAY MINIMUM	25	Sep 24	25	Sep 24 2003
ANNUAL RUNOFF (AC-FT)	33170		40310	
10 PERCENT EXCEEDS	83		107	
50 PERCENT EXCEEDS	31		39	
90 PERCENT EXCEEDS	26		28	

e Estimated

14038530 JOHN DAY RIVER NEAR JOHN DAY, OR

LOCATION.--Lat 44°25'07", long 118°54'19", in SW 1/4 SE 1/4 sec.19, T.13 S., R.32 E., Grant County, Hydrologic Unit 17070101, on left bank 1,200 ft downstream from Dog Creek, 2.5 mi east of John Day, and at mile 250.8.

DRAINAGE AREA.--386 mi^2.

PERIOD OF RECORD.--October 1968 to September 1994, May 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,130.56 ft above NGVD of 1929.

REMARKS.--Records good except for estimated daily discharges, those below 20 ft^3/s and above 500 ft^3/s, which are fair, and those for May 30, which are poor. No regulation upstream. Many diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--33 years (water years 1969-94, 1997-2003), 200 ft^3/s, 144,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,830 ft^3/s June 9, 1969, gage height, 10.80 ft, from floodmark; minimum discharge, 3.5 ft^3/s Aug. 26-28, 1969.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 30	1630	*1,400	*6.59	No other peak greater than base discharge.			

Minimum discharge, 13 ft^3/s Aug. 31, Sept. 1.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	74	75	117	426	132	569	355	766	62	26	14
2	83	79	75	111	378	122	617	335	622	67	26	15
3	81	76	75	119	318	135	521	340	517	68	28	16
4	84	76	75	114	271	132	439	376	457	62	29	15
5	83	76	76	121	228	125	463	366	416	e59	31	17
6	80	e76	74	111	199	120	503	338	391	e52	30	17
7	77	76	75	104	180	121	472	317	378	51	29	18
8	77	94	74	102	173	130	397	290	364	53	30	27
9	76	91	75	99	164	129	378	273	340	53	29	35
10	76	88	76	97	157	130	372	267	298	48	26	42
11	76	83	79	97	149	128	376	300	269	44	24	41
12	75	80	82	100	143	138	387	312	251	43	24	34
13	75	79	85	103	149	167	414	305	224	43	23	34
14	73	78	102	123	178	205	412	308	208	43	19	35
15	72	76	102	122	160	272	383	348	185	e46	17	37
16	72	76	101	112	218	341	355	360	168	44	16	38
17	72	76	95	107	226	371	339	355	147	47	16	41
18	72	76	86	104	195	342	330	333	129	46	16	43
19	73	76	84	102	177	331	305	296	133	43	17	39
20	74	76	84	101	169	317	289	266	179	40	17	38
21	75	77	86	102	160	286	295	245	160	39	16	39
22	72	79	86	105	157	360	342	265	166	39	18	41
23	72	78	83	121	149	499	346	338	156	38	19	40
24	72	76	80	116	130	412	387	508	135	30	18	40
25	72	75	e82	127	125	396	457	743	111	34	17	39
26	e72	76	86	136	136	640	469	745	98	50	16	41
27	72	76	101	186	133	479	417	624	82	71	17	40
28	72	76	140	174	125	401	396	673	73	52	14	41
29	73	76	132	161	---	356	408	820	68	39	16	45
30	73	76	116	323	---	328	378	1190	67	33	17	47
31	66	---	135	444	---	327	---	1070	---	30	16	---
TOTAL	2322	2347	2777	4161	5373	8372	12216	13661	7558	1469	657	1009
MEAN	74.9	78.2	89.6	134	192	270	407	441	252	47.4	21.2	33.6
MAX	84	94	140	444	426	640	617	1190	766	71	31	47
MIN	66	74	74	97	125	120	289	245	67	30	14	14
AC-FT	4610	4660	5510	8250	10660	16610	24230	27100	14990	2910	1300	2000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2003, BY WATER YEAR (WY)

MEAN	95.2	125	158	203	225	308	342	428	314	105	41.5	54.4
MAX	156	244	435	613	689	746	718	845	810	314	116	145
(WY)	1983	1974	1997	1997	1982	1984	1984	1984	1982	1982	1984	1984
MIN	65.8	78.2	89.6	88.1	88.8	88.6	88.1	85.4	53.9	25.9	10.4	24.2
(WY)	1989	2003	2003	1977	1977	1977	1977	1992	1992	1973	1973	1990

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1969 - 2003	
ANNUAL TOTAL	43615.7		61922			
ANNUAL MEAN	119		170		200	
HIGHEST ANNUAL MEAN					393	1984
LOWEST ANNUAL MEAN					73.5	1977
HIGHEST DAILY MEAN	711	Apr 15	1190	May 30	2640	May 19 1991
LOWEST DAILY MEAN	9.0	Aug 21	14	Aug 28	3.5	Aug 27 1969
ANNUAL SEVEN-DAY MINIMUM	11	Aug 16	15	Aug 28	4.3	Aug 24 1969
ANNUAL RUNOFF (AC-FT)	86510		122800		144800	
10 PERCENT EXCEEDS	233		393		447	
50 PERCENT EXCEEDS	90		98		128	
90 PERCENT EXCEEDS	28		30		39	

e Estimated

14044000 MIDDLE FORK JOHN DAY RIVER AT RITTER, OR

LOCATION.--Lat 44°53'20", long 119°08'25", in SW 1/4 NW 1/4 sec.8, T.8 S., R.30 E., Grant County, Hydrologic Unit 17070203, on left bank 0.2 mi south of Ritter, 0.8 mi downstream from Twelvemile Creek, and at mile 14.9.

DRAINAGE AREA.--515 mi^2.

PERIOD OF RECORD.--October 1929 to current year.

REVISED RECORDS.--WSP 739: 1931. WSP 1218: 1950. WSP 1448: 1930-32, 1937, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,544.56 ft above NGVD of 1929.

REMARKS.--Records good except those for the period Oct. 31 to Mar. 3, which are fair, and estimated daily discharges, which are poor. No regulation. Diversions for irrigation upstream from station. Continuous water-quality records for the period July 1966 to September 1968 have been collected at this location.

AVERAGE DISCHARGE.--74 years (water years 1930-2003), 255 ft^3/s, 185,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,730 ft^3/s Jan. 30, 1965, gage height, 8.39 ft, from rating curve extended above 2,200 ft^3/s; maximum gage height, 9.13 ft Feb. 1, 1963, ice jam; minimum discharge, 0.90 ft^3/s Aug. 19, 20, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	0200	*1,950	*5.89	Apr. 1	1230	1,060	5.19
Mar. 16	0200	1,070	5.20	May 30	2200	1,490	5.57
Mar. 26	1130	1,310	5.42				

Minimum daily discharge, 27 ft^3/s Sept. 4, 5.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	e29	e40	69	866	149	930	570	775	84	34	29
2	37	e30	e40	68	637	132	966	562	660	81	34	28
3	34	e32	e39	86	472	147	866	585	581	79	37	28
4	36	e38	e39	82	388	146	761	640	524	76	40	27
5	37	44	e40	94	292	137	736	638	482	72	40	27
6	35	46	e39	77	232	137	695	577	452	70	40	28
7	34	50	e40	67	193	138	641	527	428	67	38	28
8	32	51	e40	59	176	189	605	486	395	66	36	37
9	31	52	e40	52	168	234	586	458	369	66	34	50
10	31	46	e40	60	168	294	585	439	332	62	32	46
11	31	45	44	66	159	343	607	488	300	59	31	48
12	31	43	45	65	149	413	642	654	265	56	30	42
13	31	42	51	64	164	572	666	668	245	54	31	38
14	31	43	69	72	275	710	679	648	224	53	31	36
15	31	41	92	90	233	776	627	706	204	52	30	35
16	31	38	75	78	329	952	571	678	187	49	29	33
17	31	39	70	72	414	812	546	622	170	47	28	34
18	30	40	50	66	341	658	561	569	156	46	28	40
19	30	39	39	59	304	555	507	509	146	44	28	38
20	30	41	e38	61	285	513	473	483	154	42	28	36
21	31	40	e40	67	269	488	485	478	148	41	29	34
22	31	41	e39	66	268	531	626	532	156	40	30	35
23	30	41	e38	68	251	866	652	597	154	39	39	35
24	30	41	e40	74	186	723	674	752	137	37	45	33
25	29	e40	e42	91	172	660	772	980	125	37	36	32
26	30	e41	e41	137	175	1170	771	923	115	46	33	31
27	30	e41	55	317	171	1010	713	824	106	51	31	31
28	32	e41	70	313	147	857	647	839	100	46	31	31
29	35	e42	90	207	---	726	652	866	93	40	30	31
30	34	43	74	549	---	663	606	1020	89	37	29	32
31	e28	---	69	1360	---	659	---	1100	---	35	29	---
TOTAL	991	1240	1568	4656	7884	16360	19848	20418	8272	1674	1021	1033
MEAN	32.0	41.3	50.6	150	282	528	662	659	276	54.0	32.9	34.4
MAX	37	52	92	1360	866	1170	966	1100	775	84	45	50
MIN	28	29	38	52	147	132	473	439	89	35	28	27
AC-FT	1970	2460	3110	9240	15640	32450	39370	40500	16410	3320	2030	2050

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2003, BY WATER YEAR (WY)

MEAN	44.2	73.0	128	164	247	472	749	704	345	79.8	32.5	32.3
MAX	99.5	231	482	727	1073	1214	1426	1457	1127	285	98.4	108
(WY)	1983	1974	1956	1997	1996	1972	1984	1984	1984	1984	1984	1984
MIN	17.4	20.2	29.0	23.4	31.3	69.8	175	79.2	56.6	17.4	3.75	10.0
(WY)	1937	1937	1933	1937	1937	1977	1968	1934	1992	1973	1966	1935

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1930 - 2003	
ANNUAL TOTAL	69938		84965			
ANNUAL MEAN	192		233		255	
HIGHEST ANNUAL MEAN					538	1984
LOWEST ANNUAL MEAN					85.1	1977
HIGHEST DAILY MEAN	2220	Apr 14	1360	Jan 31	4360	Jan 30 1965
LOWEST DAILY MEAN	23	Sep 14	27	Sep 4	0.90	Aug 20 1966
ANNUAL SEVEN-DAY MINIMUM	25	Sep 11	28	Sep 1	1.1	Aug 19 1966
ANNUAL RUNOFF (AC-FT)	138700		168500		185100	
10 PERCENT EXCEEDS	563		664		723	
50 PERCENT EXCEEDS	66		68		90	
90 PERCENT EXCEEDS	30		31		26	

e Estimated

14046000 NORTH FORK JOHN DAY RIVER AT MONUMENT, OR

LOCATION.--Lat 44°48'50", long 119°25'50", in SE 1/4 sec.2, T.9 S., R.27 E., Grant County, Hydrologic Unit 17070202, on right bank just downstream from entrance to canyon, 0.7 mi downstream from Cottonwood Creek, 0.8 mi west of Monument, and at mile 15.3.

DRAINAGE AREA.--2,520 mi^2, approximately.

PERIOD OF RECORD.--March 1925 to current year. Monthly discharge only for some periods 1925-28, published in WSP 1318.

REVISED RECORDS.--WSP 754: 1932(M). WSP 1448: 1927, 1931(M), 1949.

GAGE.--Water-stage recorder. Datum of gage is 1,959.64 ft above NGVD of 1929. Prior to Nov. 24, 1925, nonrecording gage and Nov. 24, 1925, to Oct. 16, 1928, water-stage recorder at datum 1.10 ft higher. Oct. 17, 1928, to Sept. 30, 1930, water-stage recorder at datum 1.00 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor. Very slight regulation by small reservoirs upstream. Many small diversions for irrigation upstream from station. Continuous water-quality records for the period July 1966 to September 1968 have been collected at this location. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--75 years (water years 1929-2003), 1,292 ft^3/s, 935,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,400 ft^3/s Jan. 30, 1965, gage height, 18.45 ft, from rating curve extended above 17,000 ft^3/s; minimum discharge, 6 ft^3/s sometime during period Nov. 2-13, 1936 (result of freezeup); minimum daily, 17 ft^3/s Dec. 12, 1932.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	0515	*7,690	*8.86	Mar. 16	0500	6,050	8.07

Minimum daily discharge, 52 ft^3/s Sept. 6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e110	e98	e120	290	4830	747	3930	2990	3200	338	84	59
2	115	e94	e120	263	3660	716	4300	2890	2630	314	80	58
3	119	e98	e130	306	2650	712	3840	2950	2300	298	83	58
4	118	e110	e135	421	2120	740	3300	3230	2070	288	92	56
5	118	e120	138	510	1680	695	3080	3350	1890	273	110	54
6	121	e130	149	431	1340	686	2920	2980	1770	255	107	52
7	116	e160	e140	285	1050	687	2750	2680	1690	243	111	53
8	110	169	e140	247	963	764	2590	2450	1580	234	97	76
9	104	179	e130	220	897	1020	2540	2270	1480	234	85	95
10	100	186	e120	231	858	1190	2620	2140	1330	229	79	155
11	97	166	e140	262	815	1440	2840	2190	1190	209	74	140
12	97	150	e160	302	725	1830	3140	2680	1090	193	68	132
13	97	143	154	311	771	2810	3320	3040	999	178	67	114
14	97	144	182	346	1150	3780	3350	2960	926	164	67	101
15	98	143	269	415	1210	4340	3090	3220	863	162	67	94
16	100	129	333	370	1530	5490	2850	3220	798	157	64	88
17	101	121	288	316	2210	4530	2670	2890	729	151	62	89
18	101	123	e240	293	1720	3490	2730	2610	675	142	60	91
19	100	124	e180	258	1610	2920	2490	2320	630	131	58	105
20	99	123	e170	239	1470	2690	2310	2120	606	122	57	104
21	100	129	e160	258	1390	2560	2360	2040	629	117	58	96
22	100	130	e200	289	1340	2790	3040	2160	600	112	61	92
23	102	136	e200	325	1290	4640	3510	2420	600	108	70	88
24	102	139	e150	386	1080	4010	3610	2900	561	101	87	86
25	100	e130	e140	455	859	3440	4140	4130	515	96	119	83
26	96	e110	e140	700	845	4430	4040	4090	475	97	90	80
27	97	e96	e200	1560	894	4250	3640	3620	438	114	76	79
28	98	e94	253	1800	806	3740	3250	3460	404	133	69	78
29	106	e110	290	1290	---	3250	3350	3570	378	115	66	78
30	120	e120	285	2190	---	2940	3150	3610	360	99	64	79
31	e110	---	291	6410	---	2980	---	4390	---	89	62	---
TOTAL	3249	3904	5747	21979	41763	80307	94750	91570	33406	5496	2394	2613
MEAN	105	130	185	709	1492	2591	3158	2954	1114	177	77.2	87.1
MAX	121	186	333	6410	4830	5490	4300	4390	3200	338	119	155
MIN	96	94	120	220	725	686	2310	2040	360	89	57	52
AC-FT	6440	7740	11400	43600	82840	159300	187900	181600	66260	10900	4750	5180

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2003, BY WATER YEAR (WY)

MEAN	160	313	714	944	1455	2461	3634	3572	1650	376	133	120
MAX	420	1621	3374	4126	6103	6456	6695	8794	5227	1211	345	423
(WY)	1983	1974	1965	1965	1996	1983	1943	1948	1948	1982	1984	1984
MIN	58.5	64.5	96.6	75.8	134	345	822	378	259	97.4	36.6	45.2
(WY)	1937	1937	1937	1937	1929	1977	1968	1934	1992	1973	1931	1934

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1929 - 2003	
ANNUAL TOTAL	338475		387178			
ANNUAL MEAN	927		1061		1292	
HIGHEST ANNUAL MEAN					2608	1984
LOWEST ANNUAL MEAN					441	1977
HIGHEST DAILY MEAN	9120	Apr 15	6410	Jan 31	31900	Jan 30 1965
LOWEST DAILY MEAN	57	Aug 19	52	Sep 6	17	Dec 12 1932
ANNUAL SEVEN-DAY MINIMUM	60	Aug 15	56	Sep 1	29	Aug 28 1931
ANNUAL RUNOFF (AC-FT)	671400		768000		935900	
10 PERCENT EXCEEDS	2670		3240		3710	
50 PERCENT EXCEEDS	315		273		420	
90 PERCENT EXCEEDS	82		85		97	

e Estimated

14046500 JOHN DAY RIVER AT SERVICE CREEK, OR

LOCATION.--Lat 44°47'38", long 120°00'20", in NW 1/4 NE 1/4 sec.18, T.9 S., R.23 E., Wheeler County, Hydrologic Unit 17070204, on left bank 0.2 mi downstream from bridge on State Highway 207, 0.8 mi downstream from Service Creek, 0.5 mi southwest of town of Service Creek, and at mile 156.7.

DRAINAGE AREA.--5,090 mi^2, approximately.

PERIOD OF RECORD.--March 1925 to September 1926, October 1929 to current year. Monthly discharge only March 1925 to September 1926, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 1,632.42 ft above NGVD of 1929. See WSP 1738 for history of changes prior to Feb. 24, 1957.

REMARKS.--Records good except for estimated daily discharges, which are fair. Slight regulation by several small reservoirs upstream from station. Many small diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--74 years (water years 1930-2003), 1,921 ft^3/s, 1,392,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,200 ft^3/s Dec. 23, 1964, gage height, 17.85 ft, from rating curve extended above 14,000 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 6.0 ft^3/s Aug. 23, 24, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	1430	*8,630	*8.37	No other peak greater than base discharge.			

Minimum discharge, 41 ft^3/s Aug. 22.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	245	261	634	6340	1170	4730	4380	5280	457	80	78
2	146	193	264	615	5550	1150	5980	4190	4240	424	69	72
3	241	188	266	574	4120	1070	5660	4140	3600	392	63	66
4	284	192	274	678	3270	1150	4960	4400	3100	379	60	64
5	281	203	294	809	2670	1110	4570	4740	2770	369	71	e62
6	277	241	321	853	2140	1070	4410	4450	2510	359	99	e60
7	277	262	332	725	1690	1060	4340	4030	2340	339	102	e57
8	269	311	322	590	1500	1060	4080	3700	2190	310	102	e58
9	258	357	315	542	1440	1240	3950	e3400	2040	285	91	e74
10	248	385	286	508	1340	1420	4010	3170	1890	283	76	e100
11	243	391	279	520	1310	1660	4160	3110	1690	265	67	158
12	243	367	324	561	1200	1980	4490	3560	1540	233	62	163
13	243	343	346	605	1170	2770	4670	4170	1410	213	53	161
14	247	332	368	663	1360	4190	4810	4060	1310	197	50	146
15	245	331	416	760	1700	4730	4700	4150	1220	189	45	131
16	245	327	519	818	1630	6440	4340	4360	1150	176	45	121
17	246	315	568	722	2820	6000	4050	4080	1060	160	44	117
18	246	307	513	659	2460	5050	4010	3760	970	145	45	118
19	247	310	414	620	2240	4220	3830	3370	895	133	45	122
20	245	310	336	576	2020	3780	3450	3000	840	124	45	132
21	245	310	321	553	1940	3660	3340	2790	855	118	42	142
22	246	316	313	586	1840	3550	3900	2740	871	117	e44	140
23	247	317	391	624	1800	5320	4720	2990	854	106	e54	140
24	247	323	397	711	1660	5690	4810	3470	831	97	71	136
25	248	325	297	791	1350	4880	5470	5040	756	90	84	132
26	252	305	270	1020	1220	5510	5560	5620	686	86	117	125
27	244	247	272	1520	1280	6430	5290	5260	628	86	109	117
28	246	216	413	2570	1270	5570	4750	4710	572	93	89	116
29	249	212	555	2040	---	e4860	4700	4830	517	116	80	108
30	256	238	642	1850	---	4360	4660	4860	496	116	78	103
31	270	---	617	6670	---	e4200	---	6230	---	95	80	---
TOTAL	7588	8719	11506	31967	60330	106350	136400	126760	49111	6552	2162	3319
MEAN	245	291	371	1031	2155	3431	4547	4089	1637	211	69.7	111
MAX	284	391	642	6670	6340	6440	5980	6230	5280	457	117	163
MIN	107	188	261	508	1170	1060	3340	2740	496	86	42	57
AC-FT	15050	17290	22820	63410	119700	210900	270500	251400	97410	13000	4290	6580

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2003, BY WATER YEAR (WY)

MEAN	325	586	1205	1527	2298	3729	5205	4914	2395	562	175	178
MAX	811	2284	5540	6335	7930	9773	10280	12050	8327	1850	594	862
(WY)	1985	1974	1965	1965	1982	1983	1984	1948	1948	1982	1984	1984
MIN	70.5	152	216	195	358	597	1010	491	302	90.6	15.2	31.4
(WY)	1937	1937	1936	1937	1937	1977	1968	1934	1992	1973	1973	1935

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1930 - 2003	
ANNUAL TOTAL	456159		550764			
ANNUAL MEAN	1250		1509		1921	
HIGHEST ANNUAL MEAN					4116	1984
LOWEST ANNUAL MEAN					619	1977
HIGHEST DAILY MEAN	12200	Apr 15	6670	Jan 31	36400	Jan 30 1965
LOWEST DAILY MEAN	41	Aug 22	42	Aug 21	6.2	Aug 23 1973
ANNUAL SEVEN-DAY MINIMUM	46	Aug 17	44	Aug 16	7.7	Aug 19 1973
ANNUAL RUNOFF (AC-FT)	904800		1092000		1392000	
10 PERCENT EXCEEDS	3550		4680		5340	
50 PERCENT EXCEEDS	550		519		745	
90 PERCENT EXCEEDS	82		90		130	

e Estimated

14048000 JOHN DAY RIVER AT MCDONALD FERRY, OR

LOCATION.--Lat 45°35'16", long 120°24'30", in NE 1/4 NW 1/4 sec.11, T.1 N., R.19 E., Sherman County, Hydrologic Unit 17070204, on left bank at McDonald Ferry, 0.8 mi downstream from Rock Creek, 10 mi east of Klondike, and at mile 20.9.

GAGE AREA.--7,580 mi^2, approximately.

PERIOD OF RECORD.--December 1904 to September 1996, October 1997 to current year. Prior to Oct. 1, 1930, published as "at McDonald."

REVISED RECORDS.--WSP 1094: 1894(M), 1932(M). WSP 1448: 1908-9, 1912, 1916, 1920(M), 1922, 1932.

GAGE.--Water-stage recorder. Datum of gage is 392.27 ft above NGVD of 1929. Prior to Aug. 30, 1930, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good except those below 60 ft^3/s, which are fair. No regulation. Many diversions for irrigation upstream from station. Additional water-quality data available for this site. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--97 years (water years 1906-96, 1998-2003), 2,066 ft^3/s, 1,497,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,800 ft^3/s Dec. 24, 1964, gage height, 13.59 ft, from floodmark, from rating curve extended above 11,000 ft^3/s on basis of slope-area measurement of peak flow; no flow for part of Sept. 2, 1966, Aug. 15 to Sept. 16, 1973, Aug. 13, 14, 19-25, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1894 reached a stage of 12.8 ft, from floodmarks, discharge, 39,100 ft^3/s, from rating curve extended above 22,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 1	1415	*8,220	*6.80	No other peak greater than base discharge.			

Minimum discharge, 38 ft^3/s Aug. 26.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74	292	265	609	5860	1370	4340	5070	6020	488	85	81
2	73	298	252	602	6430	1300	4660	4760	5350	446	68	74
3	83	312	262	601	5720	1220	5970	4530	4370	434	90	67
4	86	296	292	608	4410	1210	5720	4430	3800	403	97	82
5	97	260	296	578	3610	1130	5100	4610	3320	385	91	62
6	187	229	299	632	3010	1200	4700	4930	2930	361	132	60
7	295	228	303	744	2430	1120	4530	4720	2640	360	91	57
8	298	241	311	781	2030	1080	4460	4310	2420	342	81	89
9	296	256	337	688	1680	1090	4190	4000	2250	319	98	57
10	296	278	352	593	1540	1130	4100	3740	2080	307	85	54
11	288	315	348	554	1470	1400	4150	3550	1930	283	98	75
12	282	360	344	555	1390	1580	4250	3460	1750	275	127	98
13	276	384	322	552	1350	1860	4540	3720	1580	253	93	78
14	273	382	325	623	1260	2430	4740	4270	1440	274	86	60
15	274	364	361	643	1290	3940	4900	4230	1330	219	72	107
16	277	350	367	657	1660	4680	4850	4250	1250	216	60	162
17	279	340	395	720	1870	6340	4540	4460	1160	201	53	146
18	280	340	439	768	2570	6060	4260	4280	1030	180	49	126
19	282	336	517	694	2840	5190	4190	3970	923	186	45	137
20	285	330	500	650	2460	4450	4070	3670	848	163	41	149
21	287	325	459	621	2290	4000	3790	3320	778	156	41	106
22	290	328	401	596	2110	3880	3650	3040	729	144	42	101
23	286	327	364	576	1990	3730	3990	2860	761	132	42	104
24	285	327	351	582	1920	5090	4860	3050	769	119	42	113
25	286	332	349	620	1810	5760	5030	3500	748	111	41	121
26	286	331	417	677	1610	5050	5640	4790	726	104	40	119
27	286	339	413	764	1380	5530	5830	5590	663	99	44	119
28	288	339	346	1120	1310	6510	5650	5320	611	90	52	114
29	298	322	343	2170	---	5710	5180	4750	559	79	51	111
30	295	289	354	2320	---	5050	5060	4800	525	74	50	109
31	290	---	515	2110	---	4560	---	4890	---	75	63	---
TOTAL	7758	9450	11199	25008	69300	104650	140940	130870	55290	7278	2150	2938
MEAN	250	315	361	807	2475	3376	4698	4222	1843	235	69.4	97.9
MAX	298	384	517	2320	6430	6510	5970	5590	6020	488	132	162
MIN	73	228	252	552	1260	1080	3650	2860	525	74	40	54
AC-FT	15390	18740	22210	49600	137500	207600	279600	259600	109700	14440	4260	5830

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 2003, BY WATER YEAR (WY)

MEAN	330	604	1173	1643	2631	4003	5630	5162	2672	647	193	181
MAX	892	2310	7030	6402	9736	11450	11900	13180	9531	2131	700	923
(WY)	1985	1974	1965	1965	1996	1983	1984	1917	1948	1984	1984	1984
MIN	59.9	157	221	217	374	557	964	533	285	88.0	5.70	23.8
(WY)	1937	1937	1937	1937	1933	1977	1968	1934	1992	1926	1973	1934

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1906 - 2003	
ANNUAL TOTAL	463994		566831			
ANNUAL MEAN	1271		1553		2066	
HIGHEST ANNUAL MEAN					4724	1984
LOWEST ANNUAL MEAN					603	1977
HIGHEST DAILY MEAN	11500	Apr 16	6510	Mar 28	39400	Dec 24 1964
LOWEST DAILY MEAN	25	Aug 26	40	Aug 26	0.00	Aug 15 1973
ANNUAL SEVEN-DAY MINIMUM	28	Aug 24	41	Aug 20	0.00	Aug 15 1973
ANNUAL RUNOFF (AC-FT)	920300		1124000		1497000	
10 PERCENT EXCEEDS	3530		4740		5780	
50 PERCENT EXCEEDS	517		515		781	
90 PERCENT EXCEEDS	66		83		140	

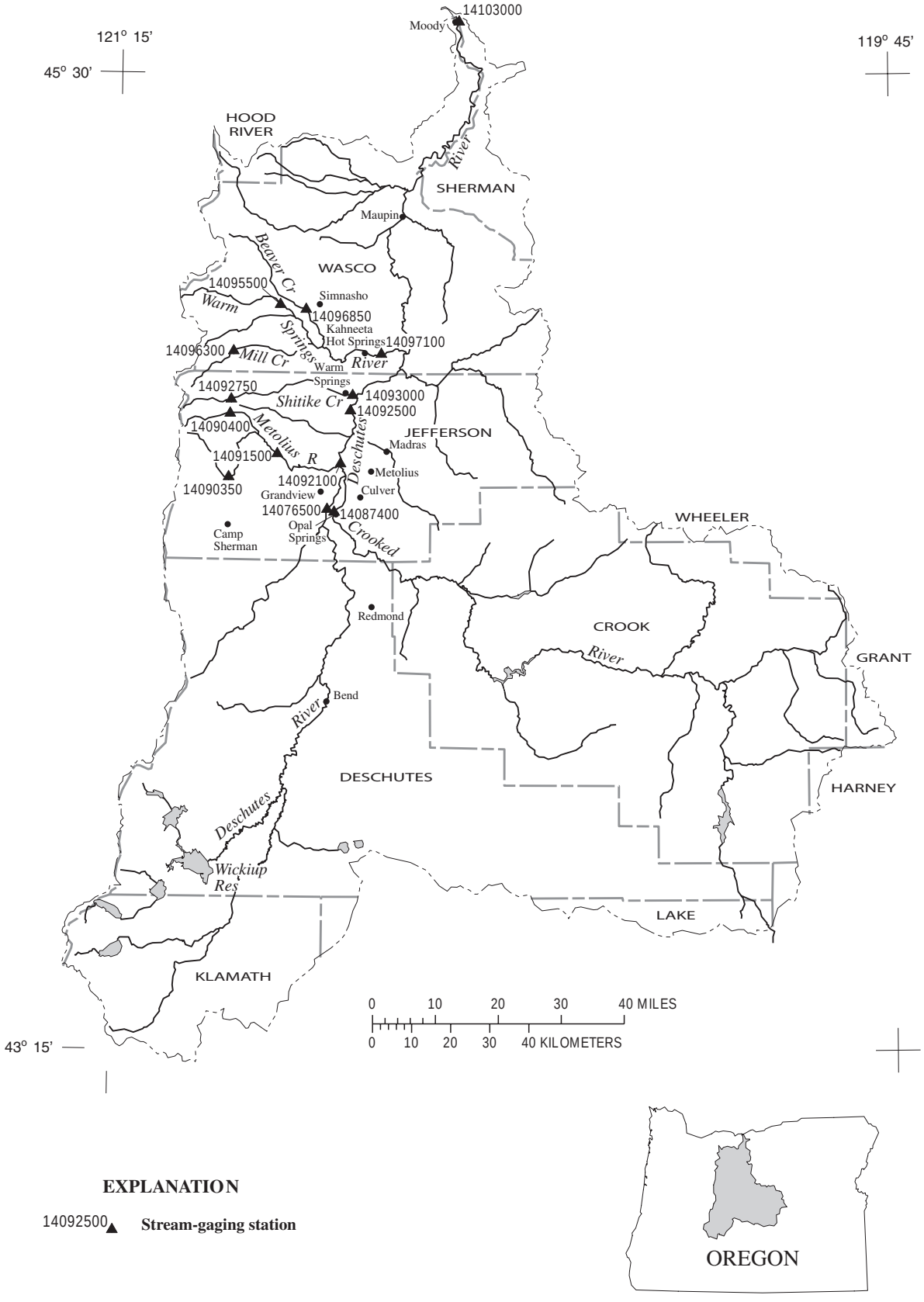


Figure 15. Locaton of surface-water and water-quality stations in the Deschutes River Basin.

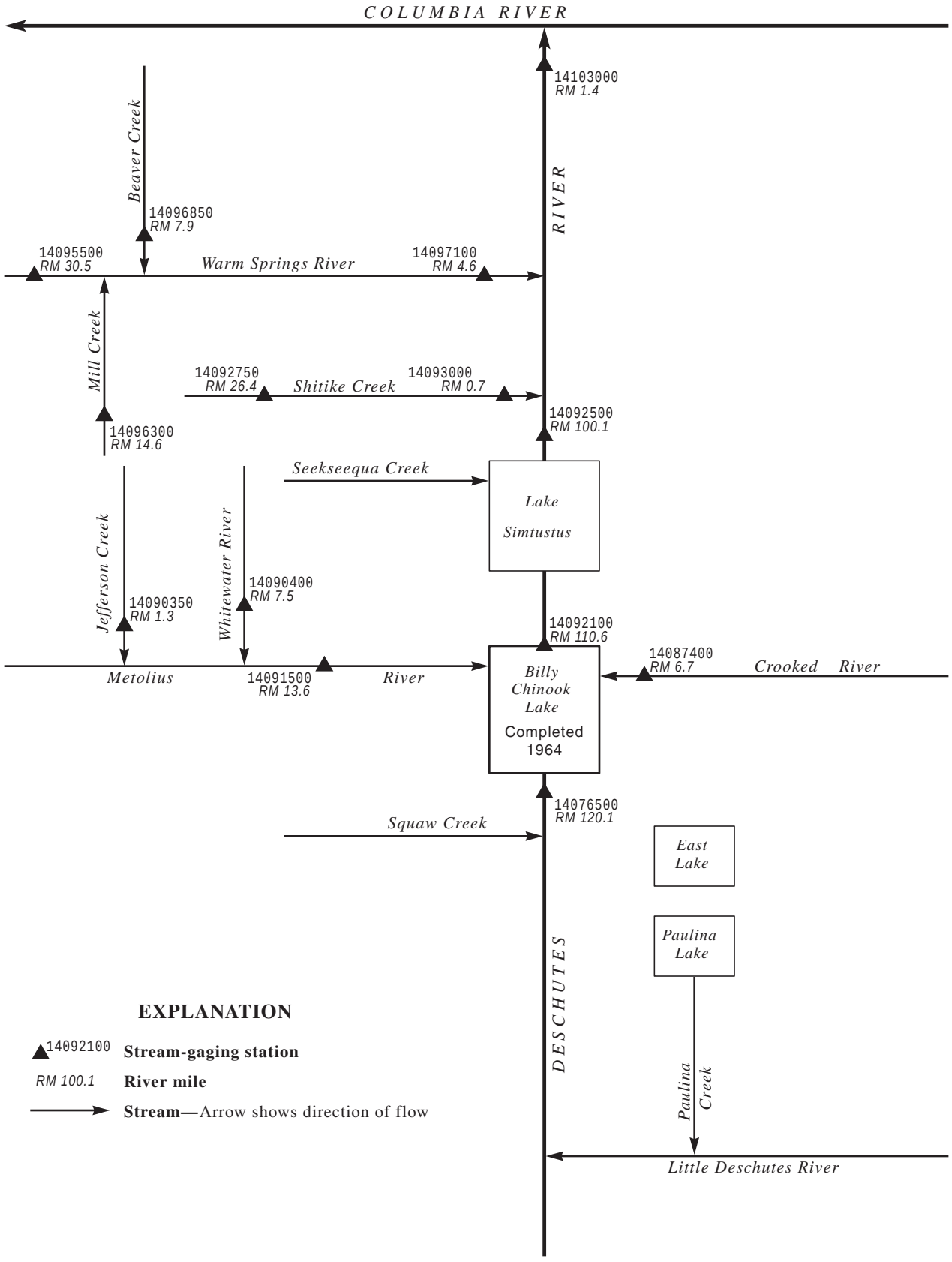


Figure 16. Schematic diagram showing gaging stations in the Deschutes River Basin.

14076500 DESCHUTES RIVER NEAR CULVER, OR

LOCATION.--Lat 44°29'56", long 121°19'12", in NW 1/4 SE 1/4 sec.29, T.12 S., R.12 E., Jefferson County, Hydrologic Unit 17070301, on right bank 2.5 mi downstream from Squaw Creek, 6.0 mi southwest of Culver, and at mile 120.1.

DRAINAGE AREA.--2,705 mi^2.

PERIOD OF RECORD.--July 1952 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,980 ft above NGVD of 1929 (river-profile survey). July 14, 1952, to Sept. 30, 1961, at site 4.1 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Crescent Lake and Crane Prairie and Wickiup Reservoirs. Many diversions for irrigation upstream from station. Continuous water-quality records for the period October 1954 to September 1957 and January 1959 to September 1974 have been collected at this location.

AVERAGE DISCHARGE.--51 years (water years 1953-2003), 921 ft^3/s, 667,000 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,680 ft^3/s Dec. 24, 1964, gage height, 10.00 ft, from rating curve extended above 3,000 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 418 ft^3/s July 7, 8, 1964.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,860 ft^3/s Jan. 31, gage height, 5.14 ft; minimum discharge, 481 ft^3/s May 20-22.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	530	861	933	1010	1620	1010	1180	499	806	591	491	500
2	569	872	928	1010	1460	1000	1160	499	648	553	495	500
3	572	899	927	1060	1380	986	1130	502	596	524	499	497
4	568	919	932	1070	1350	972	1130	501	592	510	500	497
5	551	877	940	1100	1330	961	1140	495	581	511	504	495
6	539	871	941	1080	1310	955	1140	494	585	505	505	499
7	534	875	938	1070	1270	953	1170	492	605	501	507	508
8	537	889	938	1050	1250	976	1110	493	635	495	513	510
9	528	938	930	1020	1200	998	1090	496	649	499	509	519
10	525	951	728	1010	1160	1010	1090	497	616	499	504	522
11	518	928	709	1020	894	806	1100	499	580	491	505	517
12	518	860	746	1030	867	805	1090	501	554	493	503	507
13	643	766	775	1050	852	852	1080	496	547	508	500	502
14	634	743	964	866	866	898	1080	497	547	504	500	500
15	595	737	996	852	1060	1060	987	507	543	495	498	499
16	731	876	958	852	1090	1070	963	490	530	497	495	497
17	758	954	761	854	1080	1070	822	485	534	499	498	499
18	895	952	670	1030	858	856	970	485	555	500	502	499
19	878	783	677	1020	833	833	649	484	571	496	500	498
20	871	706	721	1010	844	849	570	484	545	496	495	499
21	863	721	908	817	843	856	580	483	517	500	500	497
22	856	721	982	752	1030	1080	578	496	506	505	515	497
23	859	902	963	780	1010	1130	561	505	504	507	515	497
24	857	952	960	792	989	1100	532	524	502	494	511	494
25	855	945	950	998	980	1130	527	593	502	490	504	495
26	856	942	962	1080	1000	1220	521	619	509	499	499	495
27	855	945	1000	1230	998	1150	513	609	520	499	497	497
28	860	937	1040	1190	1000	1120	507	643	543	496	495	506
29	861	938	1040	1130	---	1140	503	693	561	495	495	506
30	855	933	1030	1360	---	1170	500	718	578	493	496	514
31	835	---	1050	1810	---	1190	---	861	---	492	497	---
TOTAL	21906	26193	27997	32003	30424	31206	25973	16640	17061	15637	15547	15062
MEAN	707	873	903	1032	1087	1007	866	537	569	504	502	502
MAX	895	954	1050	1810	1620	1220	1180	861	806	591	515	522
MIN	518	706	670	752	833	805	500	483	502	490	491	494
AC-FT	43450	51950	55530	63480	60350	61900	51520	33010	33840	31020	30840	29880

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2003, BY WATER YEAR (WY)

MEAN	750	1163	1274	1342	1404	1363	883	606	641	556	534	562
MAX	1598	1894	2130	2760	2679	2360	1799	1228	1053	960	852	997
(WY)	1998	1998	1985	1997	1997	1972	1984	1956	1999	1999	1999	1997
MIN	470	783	813	853	892	839	510	457	455	430	441	455
(WY)	1964	1995	1995	1995	1993	1964	1968	1964	1964	1964	1964	1963

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1953 - 2003	
ANNUAL TOTAL	268845		275649			
ANNUAL MEAN	737		755		921	
HIGHEST ANNUAL MEAN					1461	1997
LOWEST ANNUAL MEAN					677	1964
HIGHEST DAILY MEAN	1260	Apr 8	1810	Jan 31	4790	Dec 24 1964
LOWEST DAILY MEAN	461	May 15	483	May 21	425	Jul 7 1964
ANNUAL SEVEN-DAY MINIMUM	463	Jul 27	487	May 16	426	Jul 7 1964
ANNUAL RUNOFF (AC-FT)	533300		546700		667000	
10 PERCENT EXCEEDS	1050		1090		1630	
50 PERCENT EXCEEDS	709		721		778	
90 PERCENT EXCEEDS	469		497		490	

14087400 CROOKED RIVER BELOW OPAL SPRINGS, NEAR CULVER, OR

LOCATION.--Lat 44°29'33", long 121°17'50", in NW 1/4 NE 1/4 sec.33, T.12 S., R.12 E., Jefferson County, Hydrologic Unit 17070305, on right bank 0.2 mi downstream from Opal Springs, 4.8 mi southwest of Culver, and at mile 6.7.

DRAINAGE AREA.--4,300 mi^2, approximately, of which 500 mi^2 is probably noncontributing.

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,953.60 ft above NGVD of 1929 (Portland General Electric Co. bench mark).

REMARKS.--No estimated daily discharges. Records good. Flow regulated since December 1960 by Prineville Reservoir, active capacity of 152,800 acre-ft and Ochoco Reservoir, active capacity, 46,500 acre-ft. Dam and powerplant 0.3 mi upstream, completed in 1985, causes brief fluctuations in flow. Many diversions for irrigation upstream from station. Practically all of the summer flow comes from Opal Springs and other springs within 15 mi upstream from station. Simultaneous records (1961-63) at former gaging station 5.6 mi downstream indicated over 15 percent increase to summer flow from springs downstream from this station. Continuous water-quality records for the period October 1963 to September 1974 have been collected at this location.

AVERAGE DISCHARGE.--42 years (water years 1962-2003), 1,547 ft^3/s, 1,121,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,660 ft^3/s Dec. 24, 1964, gage height, 9.36 ft; minimum daily discharge, 1,090 ft^3/s May 11, 1981, minimum instantaneous discharge after October 1989, 656 ft^3/s many days in the 1990 water year, prior to that date minimum instantaneous discharge was not determined.

EXTREMES FOR CURRENT YEAR.--Maximum recorded discharge, 2,460 ft^3/s Aug. 7, gage height, 4.43 ft, due to powerplant operation; minimum discharge, 672 ft^3/s Aug. 16, due to powerplant operation.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1360	1300	1280	1280	1430	1280	1300	1290	1310	1200	1180	1210
2	1370	1300	1280	1270	1410	1280	1280	1260	1320	1180	1180	1210
3	1370	1300	1280	1280	1370	1280	1280	1230	1300	1180	1190	1200
4	1400	1300	1280	1290	1350	1290	1280	1250	1260	1190	1190	1200
5	1390	1300	1280	1280	1340	1280	1290	1260	1230	1180	1210	1190
6	1370	1300	1280	1280	1320	1280	1280	1240	1210	1190	1220	1190
7	1370	1300	1280	1280	1320	1280	1280	1220	1190	1190	1240	1200
8	1370	1300	1280	1280	1310	1280	1280	1190	1180	1190	1230	1210
9	1360	1300	1280	1280	1300	1280	1280	1210	1180	1180	1240	1270
10	1360	1290	1280	1280	1300	1280	1280	1210	1200	1190	1240	1320
11	1360	1290	1300	1280	1300	1280	1300	1210	1220	1190	1230	1310
12	1360	1290	1300	1280	1310	1300	1290	1250	1210	1180	1230	1360
13	1370	1290	1310	1290	1320	1300	1300	1280	1200	1190	1230	1360
14	1390	1310	1300	1290	1320	1300	1340	1260	1190	1200	1200	1360
15	1430	1300	1280	1320	1310	1290	1330	1250	1190	1200	1190	1380
16	1420	1300	1290	1310	1290	1280	1330	1230	1190	1190	1190	1360
17	1380	1290	1280	1310	1300	1290	1320	1220	1190	1190	1190	1340
18	1360	1290	1280	1290	1300	1280	1360	1220	1190	1190	1200	1340
19	1340	1280	1290	1290	1300	1280	1340	1230	1180	1210	1200	1330
20	1320	1290	1310	1280	1310	1300	1310	1200	1180	1220	1170	1320
21	1320	1290	1310	1280	1320	1300	1330	1200	1190	1230	1190	1330
22	1320	1300	1290	1290	1320	1300	1340	1200	1190	1270	1190	1340
23	1320	1300	1280	1300	1300	1280	1320	1180	1200	1270	1200	1330
24	1320	1290	1280	1330	1300	1280	1310	1190	1200	1260	1210	1310
25	1320	1280	1270	1330	1290	1270	1290	1190	1190	1200	1230	1250
26	1310	1280	1280	1330	1290	1280	1270	1190	1190	1190	1230	1240
27	1310	1280	1280	1340	1290	1300	1280	1200	1180	1190	1210	1230
28	1300	1280	1290	1350	1290	1310	1280	1200	1180	1200	1210	1250
29	1300	1280	1290	1330	---	1300	1290	1190	1180	1190	1190	1260
30	1300	1290	1290	1320	---	1300	1290	1200	1190	1190	1190	1260
31	1300	---	1280	1410	---	1300	---	1260	---	1180	1190	---
TOTAL	41870	38790	39880	40350	36910	39930	39050	37910	36210	37200	37390	38460
MEAN	1351	1293	1286	1302	1318	1288	1302	1223	1207	1200	1206	1282
MAX	1430	1310	1310	1410	1430	1310	1360	1290	1320	1270	1240	1380
MIN	1300	1280	1270	1270	1290	1270	1270	1180	1180	1180	1170	1190
AC-FT	83050	76940	79100	80030	73210	79200	77460	75190	71820	73790	74160	76290

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2003, BY WATER YEAR (WY)

MEAN	1421	1370	1495	1596	1772	1937	2073	1661	1344	1266	1294	1357
MAX	1650	2069	2686	3551	3490	4208	4793	3295	2614	1475	1593	1541
(WY)	1970	1985	1965	1965	1965	1972	1984	1984	1998	1983	1976	1965
MIN	1239	1232	1179	1182	1245	1232	1192	1173	1195	1122	1133	1187
(WY)	1969	1964	1964	1964	1989	1977	1977	1964	2002	1981	1980	1980

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1962 - 2003	
ANNUAL TOTAL	458690		463950			
ANNUAL MEAN	1257		1271		1547	
HIGHEST ANNUAL MEAN					2196	1984
LOWEST ANNUAL MEAN					1250	1992
HIGHEST DAILY MEAN	1430	Oct 15	1430	Oct 15	6130	Dec 24 1964
LOWEST DAILY MEAN	1160	Apr 24	1170	Aug 20	1090	May 11 1981
ANNUAL SEVEN-DAY MINIMUM	1170	May 10	1180	Jun 27	1100	May 10 1981
ANNUAL RUNOFF (AC-FT)	909800		920200		1121000	
10 PERCENT EXCEEDS	1330		1340		2160	
50 PERCENT EXCEEDS	1270		1280		1340	
90 PERCENT EXCEEDS	1170		1190		1200	

14090350 JEFFERSON CREEK NEAR CAMP SHERMAN, OR

LOCATION.--Lat 44°34'18", long 121°38'17", in SW 1/4 SE 1/4 sec.34, T.11 S., R.9 E., Jefferson County, Hydrologic Unit 17070301, Warm Springs Indian Reservation, on left bank 100 ft upstream from bridge, 7.6 mi north of Camp Sherman, and at mile 1.3.

DRAINAGE AREA.--27.8 mi^2.

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,780 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--20 years (water years 1984-2003), 93.7 ft^3/s, 45.79 in/yr, 67,870 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 908 ft^3/s Nov. 25, 1999, gage height, 4.38 ft, from high-water mark, not including approximately 400 ft^3/s which flowed out of the channel 150 ft upstream of gage and flowed into Candle Creek; minimum daily discharge, 36 ft^3/s Dec. 22, 1990, but could have been lower during period of ice effect Dec. 19-25, 1990.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 220 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 26	2130	303	2.62	Jan. 31	2000	426	3.04
Jan. 30	1100	*482	*3.22				

Minimum discharge, 58 ft^3/s Dec. 11, 24, 25.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e85	e75	e65	64	219	e75	103	82	115	89	80	78
2	e80	e70	e60	75	e130	e70	94	84	115	85	79	78
3	85	e70	62	111	e120	72	91	88	111	85	79	79
4	83	e70	64	123	e110	e70	89	85	111	85	82	e80
5	82	e70	64	105	e100	71	87	83	113	85	85	e75
6	81	e70	62	81	e95	72	87	e80	115	86	81	e75
7	80	69	62	76	e90	75	e85	80	117	86	82	e75
8	e80	72	61	72	e90	77	86	79	121	86	80	e80
9	e80	71	61	69	e85	82	90	78	116	86	80	e85
10	e80	70	62	67	e85	90	92	79	110	85	81	e85
11	e75	70	65	67	e85	89	98	81	106	86	80	e80
12	e75	77	71	79	e85	103	94	82	104	87	77	e80
13	e75	77	69	93	82	100	92	86	103	87	76	e75
14	e75	76	82	78	80	95	89	94	99	85	78	e75
15	e75	e70	78	72	e80	94	87	94	98	84	83	e75
16	e75	e75	80	69	81	e90	86	87	98	85	82	e75
17	e75	75	69	67	80	e85	85	83	99	83	82	e75
18	e75	e70	66	66	78	e80	84	81	103	83	83	e75
19	e75	72	64	66	78	e80	e85	e80	98	84	83	e70
20	75	72	64	66	77	81	e85	82	92	84	82	e70
21	e75	71	63	66	79	84	85	88	91	84	82	e70
22	e75	71	61	72	79	151	85	99	89	84	85	e70
23	e75	69	61	90	e75	113	87	110	87	86	84	e70
24	e75	67	60	83	e75	e95	88	130	87	85	81	e70
25	e75	e65	e60	111	e80	98	e85	135	88	82	82	e70
26	e75	e65	61	210	e75	101	82	120	89	81	82	e70
27	e70	e65	76	173	e75	93	e80	118	91	82	80	e70
28	71	e65	70	e100	e75	e90	83	131	94	82	79	e70
29	e70	e65	64	100	---	89	83	135	92	82	78	e70
30	e70	e65	67	369	---	92	81	150	93	81	78	e70
31	e75	---	68	328	---	106	---	124	---	80	78	---
TOTAL	2372	2109	2042	3268	2543	2763	2628	3008	3045	2615	2504	2240
MEAN	76.5	70.3	65.9	105	90.8	89.1	87.6	97.0	102	84.4	80.8	74.7
MAX	85	77	82	369	219	151	103	150	121	89	85	85
MIN	70	65	60	64	75	70	80	78	87	80	76	70
AC-FT	4700	4180	4050	6480	5040	5480	5210	5970	6040	5190	4970	4440
CFSM	2.75	2.53	2.37	3.79	3.27	3.21	3.15	3.49	3.65	3.03	2.91	2.69
IN.	3.17	2.82	2.73	4.37	3.40	3.70	3.52	4.03	4.07	3.50	3.35	3.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

MEAN	77.3	83.8	79.9	83.9	87.8	83.5	93.5	117	129	112	94.3	81.3
MAX	124	131	155	160	244	148	135	179	191	189	169	124
(WY)	1998	1996	1996	1997	1996	1996	1996	1997	1999	1999	1999	1999
MIN	55.5	59.3	58.6	55.5	50.6	55.5	59.8	83.3	80.0	70.5	62.0	56.8
(WY)	1993	1988	1993	2001	1989	2001	2001	1991	1992	1992	1994	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1984 - 2003	
ANNUAL TOTAL	33666		31137			
ANNUAL MEAN	92.2		85.3		93.7	
HIGHEST ANNUAL MEAN					137	1996
LOWEST ANNUAL MEAN					66.8	1994
HIGHEST DAILY MEAN	268	Apr 14	369	Jan 30	634	Feb 7 1996
LOWEST DAILY MEAN	55	Feb 14	60	Dec 2	36	Dec 22 1990
ANNUAL SEVEN-DAY MINIMUM	55	Feb 14	61	Dec 20	38	Feb 4 1989
ANNUAL RUNOFF (AC-FT)	66780		61760		67870	
ANNUAL RUNOFF (CFSM)	3.32		3.07		3.37	
ANNUAL RUNOFF (INCHES)	45.05		41.67		45.79	
10 PERCENT EXCEEDS	151		103		139	
50 PERCENT EXCEEDS	81		81		85	
90 PERCENT EXCEEDS	59		67		60	

e Estimated

14090400 WHITEWATER RIVER NEAR CAMP SHERMAN, OR

LOCATION.--Lat 44°43'09", long 121°38'21", in SW 1/4 NW 1/4 sec.11, T.10 S., R.9 E., Jefferson County, Hydrologic Unit 17070301, Warm Springs Indian Reservation, on left bank 300 ft upstream from road J-100 bridge, 18 mi north of Camp Sherman, and at mile 7.5.

DRAINAGE AREA.--22.8 mi^2.

PERIOD OF RECORD.--July 1982 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,240 ft above NGVD of 1929, from topographic map. July 1982 to Feb. 7, 1996, at comparable site 1/4 mi downstream, at different datum. Feb. 8, 1996 to Sept. 30, 2001, at comparable site 300 ft downstream, at different datum.

REMARKS.--No estimated daily discharges. Records good except for the period Dec. 15 to Jan. 25, which is poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--21 years (water years 1983-2003), 85.0 ft^3/s, 50.63 in/yr, 61,540 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,320 ft^3/s Feb. 7, 1996, from slope-area measurement of peak flow, gage height, unknown; maximum gage height, 8.30 ft Feb. 9, 1996, from outside highwater mark caused by debris, channel fill, and channel reconfiguration, datum then in use; minimum daily discharge, 28 ft^3/s Dec. 22, 1990, but could be less because of ice effect.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 220 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 26	2030	253	5.92	Jan. 30	2300	*506	*6.42

Minimum discharge, 36 ft^3/s Dec. 8.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	41	38	62	253	57	100	63	106	96	77	59
2	46	37	38	76	190	56	95	63	106	87	74	60
3	49	38	38	99	159	55	93	64	105	86	73	66
4	50	38	38	108	141	54	90	64	105	85	80	71
5	54	38	38	92	129	55	87	63	109	85	78	67
6	50	38	37	75	118	56	86	61	112	87	73	68
7	48	38	37	69	111	66	82	59	118	86	76	64
8	47	40	37	64	105	74	80	59	130	88	73	57
9	46	40	37	62	99	75	81	58	128	87	75	62
10	44	40	39	59	95	70	83	58	119	87	76	56
11	43	39	44	57	91	69	87	59	111	91	73	69
12	43	42	43	69	87	83	85	57	109	97	65	59
13	43	42	45	71	85	86	84	58	109	95	63	52
14	43	41	59	68	82	86	80	61	104	90	65	54
15	42	39	60	65	81	88	78	63	102	89	67	54
16	43	42	70	65	79	84	77	62	102	88	63	49
17	43	43	59	65	76	80	76	61	106	83	66	46
18	43	40	54	67	75	78	74	59	118	83	69	47
19	42	40	49	69	72	77	72	57	114	86	70	49
20	42	40	48	70	70	77	71	57	101	88	63	47
21	42	40	47	74	71	79	70	58	92	89	68	47
22	42	40	41	81	69	117	69	63	86	91	72	48
23	42	40	41	84	66	101	70	71	81	93	69	48
24	41	40	40	88	64	95	71	83	79	88	64	48
25	40	39	40	107	62	98	69	94	80	82	68	49
26	40	39	42	169	61	105	66	92	84	81	69	55
27	40	38	68	164	60	96	65	91	93	83	63	56
28	40	38	51	113	58	92	67	102	101	84	58	59
29	40	38	46	110	---	89	67	110	101	84	59	54
30	38	38	60	348	---	90	64	124	104	82	59	51
31	42	---	66	383	---	100	---	119	---	78	60	---
TOTAL	1354	1186	1450	3153	2709	2488	2339	2213	3115	2699	2128	1671
MEAN	43.7	39.5	46.8	102	96.8	80.3	78.0	71.4	104	87.1	68.6	55.7
MAX	54	43	70	383	253	117	100	124	130	97	80	71
MIN	38	37	37	57	58	54	64	57	79	78	58	46
AC-FT	2690	2350	2880	6250	5370	4930	4640	4390	6180	5350	4220	3310
CFSM	1.92	1.73	2.05	4.46	4.24	3.52	3.42	3.13	4.55	3.82	3.01	2.44
IN.	2.21	1.94	2.37	5.14	4.42	4.06	3.82	3.61	5.08	4.40	3.47	2.73

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2003, BY WATER YEAR (WY)

MEAN	52.9	67.3	72.8	80.3	88.9	79.8	93.7	111	123	104	83.2	62.3
MAX	93.4	124	174	220	329	147	148	188	206	155	163	96.6
(WY)	1998	2000	1996	1997	1996	1997	1997	1997	1999	1999	1999	1997
MIN	36.0	34.7	45.5	38.4	37.1	48.7	50.3	64.5	60.7	54.0	54.8	42.2
(WY)	1993	1994	1994	1993	1994	2001	1991	1991	1992	1992	1994	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1983 - 2003	
ANNUAL TOTAL	29948		26505			
ANNUAL MEAN	82.0		72.6		85.0	
HIGHEST ANNUAL MEAN					142	1997
LOWEST ANNUAL MEAN					54.0	1994
HIGHEST DAILY MEAN	384	Apr 14	383	Jan 31	1400	Feb 7 1996
LOWEST DAILY MEAN	37	Nov 2	37	Nov 2	28	Dec 22 1990
ANNUAL SEVEN-DAY MINIMUM	37	Dec 3	37	Dec 3	31	Oct 19 1994
ANNUAL RUNOFF (AC-FT)	59400		52570		61540	
ANNUAL RUNOFF (CFSM)	3.60		3.18		3.73	
ANNUAL RUNOFF (INCHES)	48.86		43.25		50.63	
10 PERCENT EXCEEDS	148		105		137	
50 PERCENT EXCEEDS	65		68		74	
90 PERCENT EXCEEDS	40		40		44	

14091500 METOLIUS RIVER NEAR GRANDVIEW, OR

LOCATION.--(Revised)Lat 44°37'35", long 121°28'58", in SE 1/4 SW 1/4 sec.12, T.11 S., R.10 E., Jefferson County, Hydrologic Unit 17070301, Deschutes National Forest, on right bank 1.0 mi upstream from maximum controlled pool of Lake Billy Chinook, 9 mi northwest of Grandview, and at mile 13.6.

DRAINAGE AREA.--316 mi^2, at cableway 1.0 mi downstream, where all discharge measurements are made. Hydrologic drainage boundary uncertain because of interbasin ground-water exchange.

PERIOD OF RECORD.--April 1910 to February 1912 (gage heights and discharge measurements only), March 1912 to December 1913, October 1921 to current year. Published as "at Hubbard's ranch, near Sisters" 1910, and as "at Hubbard's ranch, near Grandview" 1910-13.

REVISED RECORDS.--WSP 1448: 1913.

GAGE.--Water-stage recorder. Datum of gage is 1,974.36 ft above NGVD of 1929 (levels by Portland General Electric Co.). Prior to Dec. 31, 1913, nonrecording gage at site 2.3 mi upstream at different datum. Oct. 1, 1921 to May 3, 1949, nonrecording gage and May 4, 1949 to June 18, 1963, water-stage recorder at site 2.7 mi downstream at datum 64 ft lower.

REMARKS.--No estimated daily discharges. Records good. No regulation. Many small diversions for irrigation upstream from station. Stream is spring fed. Records herein are for measuring site. Continuous water-quality records for the period October 1954 to September 1974 have been collected at this location.

AVERAGE DISCHARGE.--83 years (water years 1913, 1922-2003), 1,497 ft^3/s, 1,084,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,430 ft^3/s Feb. 7, 1996, gage height, 7.38 ft; minimum discharge, 1,080 ft^3/s Feb. 17, 1932, Oct. 2-31, Nov. 6, 7, 10-14, 1942.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,760 ft^3/s Jan. 31, gage height, 2.69 ft; minimum discharge, 1,240 ft^3/s Dec. 2, 3.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1350	1290	1260	1360	2310	1390	1660	1390	1510	1400	1340	1290
2	1340	1300	1250	1370	2020	1380	1630	1380	1500	1380	1340	1290
3	1350	1300	1250	1510	1870	1390	1610	1380	1510	1380	1340	1290
4	1350	1300	1270	1530	1750	1390	1590	1380	1490	1380	1340	1300
5	1350	1300	1280	1520	1680	1390	1560	1390	1490	1380	1350	1300
6	1350	1300	1290	1410	1630	1410	1560	1390	1490	1390	1340	1300
7	1340	1310	1290	1380	1590	1450	1550	1390	1510	1380	1350	1290
8	1330	1330	1280	1360	1550	1490	1540	1390	1530	1380	1340	1290
9	1330	1330	1280	1350	1530	1480	1540	1390	1530	1380	1340	1310
10	1330	1320	1300	1360	1500	1500	1550	1390	1510	1380	1340	1300
11	1320	1310	1320	1360	1480	1510	1550	1400	1480	1380	1330	1300
12	1320	1320	1320	1390	1470	1540	1530	1390	1470	1390	1320	1300
13	1320	1330	1320	1430	1460	1540	1520	1390	1460	1390	1310	1280
14	1320	1320	1350	1400	1440	1540	1520	1400	1440	1380	1300	1280
15	1320	1310	1350	1380	1440	1550	1510	1410	1430	1370	1310	1280
16	1330	1310	1350	1370	1450	1530	1500	1410	1430	1380	1300	1280
17	1330	1320	1310	1360	1450	1510	1490	1400	1440	1370	1300	1280
18	1330	1300	1300	1350	1430	1500	1480	1390	1460	1370	1310	1270
19	1330	1300	1310	1350	1420	1490	1460	1390	1460	1370	1310	1270
20	1330	1300	1340	1350	1420	1510	1450	1390	1430	1370	1300	1270
21	1330	1300	1350	1340	1420	1520	1470	1390	1410	1370	1310	1270
22	1330	1300	1330	1360	1430	1690	1470	1400	1400	1370	1320	1270
23	1330	1300	1320	1420	1410	1680	1470	1420	1390	1370	1310	1270
24	1320	1300	1310	1410	1400	1630	1470	1460	1390	1360	1300	1270
25	1330	1270	1300	1450	1390	1660	1450	1510	1380	1350	1300	1270
26	1330	1250	1320	1660	1390	1770	1440	1500	1390	1350	1300	1270
27	1340	1250	1400	1830	1400	1700	1430	1480	1400	1350	1300	1270
28	1330	1250	1390	1600	1390	1650	1430	1510	1410	1350	1290	1280
29	1320	1250	1350	1560	---	1620	1410	1540	1420	1350	1290	1270
30	1280	1260	1400	2260	---	1620	1390	1590	1420	1350	1290	1270
31	1270	---	1410	2540	---	1640	---	1560	---	1340	1290	---
TOTAL	41180	38930	40900	46320	43120	47670	45230	44200	43580	42510	40810	38480
MEAN	1328	1298	1319	1494	1540	1538	1508	1426	1453	1371	1316	1283
MAX	1350	1330	1410	2540	2310	1770	1660	1590	1530	1400	1350	1310
MIN	1270	1250	1250	1340	1390	1380	1390	1380	1380	1340	1290	1270
AC-FT	81680	77220	81130	91880	85530	94550	89710	87670	86440	84320	80950	76330

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2003, BY WATER YEAR (WY)

MEAN	1351	1399	1487	1523	1571	1543	1558	1610	1630	1517	1419	1368
MAX	1690	1816	2454	2512	2997	2504	2040	2099	2163	1995	1854	1678
(WY)	1998	1922	1965	1997	1996	1972	1997	1997	1999	1999	1999	1999
MIN	1081	1140	1110	1154	1148	1157	1162	1244	1196	1173	1136	1103
(WY)	1943	1940	1945	1979	1941	1941	1941	1941	1941	1941	1931	1942

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1913 - 2003	
ANNUAL TOTAL	546010		512930			
ANNUAL MEAN	1496		1405		1497	
HIGHEST ANNUAL MEAN					1949	1997
LOWEST ANNUAL MEAN					1167	1941
HIGHEST DAILY MEAN	2630	Apr 14	2540	Jan 31	7100	Dec 24 1964
LOWEST DAILY MEAN	1250	Nov 26	1250	Nov 26	1080	Feb 17 1932
ANNUAL SEVEN-DAY MINIMUM	1250	Nov 26	1250	Nov 26	1080	Oct 2 1942
ANNUAL RUNOFF (AC-FT)	1083000		1017000		1084000	
10 PERCENT EXCEEDS	1750		1540		1810	
50 PERCENT EXCEEDS	1430		1380		1450	
90 PERCENT EXCEEDS	1310		1290		1230	

14092100 LAKE BILLY CHINOOK NEAR METOLIUS, OR

LOCATION.--Lat 44°36'14", long 121°16'40", in SW 1/4 NE 1/4 sec.22, T.11 S., R.12 E., Jefferson County, Hydrologic Unit 17070301, Warm Springs Indian Reservation, near left end of Round Butte Dam on Deschutes River, 5.0 mi west of Metolius, and at mile 110.6.

DRAINAGE AREA.--7,490 mi^2, approximately.

PERIOD OF RECORD.--January 1964 to current year.

GAGE.--Nonrecording gage. Datum of gage is NGVD of 1929 (levels by Portland General Electric Co.).

REMARKS.--Reservoir is formed by rock fill dam completed in June 1964 by Portland General Electric Co.; storage began Jan. 2, 1964. Total capacity is 534,700 acre-ft at elevation 1,945.0 ft proposed upper limit of operation, and usable capacity is 273,900 acre-ft between elevations 1,860.0 ft, proposed lower limit of operation, and 1,945.0 ft. Reservoir used for power generation under FERC license 2030. Figures given herein represent total contents.

COOPERATION.--Gage readings and capacity tables furnished by Portland General Electric Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 538,700 acre-ft July 15, 16, 1972, elevation, 1,946.00 ft; minimum contents observed since first filling, 431,100 acre-ft Feb. 13, 1972, elevation, 1,917.13 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 534,700 acre-ft May 30, elevation, 1,944.98 ft; minimum contents observed, 520,500 acre-ft Jan. 17, elevation, 1,941.37 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	1,944.33	532,100	--
Oct. 31	1,944.14	531,300	-800
Nov. 30	1,944.32	532,000	+700
Dec. 31	1,942.46	524,700	-7,300
CAL YR 2002	--	--	-200
Jan. 31	1,943.05	527,000	+2,300
Feb. 28	1,941.69	521,800	-5,200
Mar. 31	1,943.62	529,300	+7,500
Apr. 30	1,943.85	530,200	+900
May 31	1,944.63	533,300	+3,100
June 30	1,944.37	532,200	-1,100
July 31	1,944.25	531,800	-400
Aug. 31	1,944.16	531,400	-400
Sept.30	1,944.25	531,800	+400
WTR YR 2003	--	--	-300

14092500 DESCHUTES RIVER NEAR MADRAS, OR

LOCATION.--Lat 44°43'34", long 121°14'45", in SE 1/4 SW 1/4 sec.1, T.10 S., R.12 E., Jefferson County, Hydrologic Unit 17070306, on right bank 400 ft downstream from reregulating dam, 2.7 mi downstream from Pelton Dam, 8.5 mi northwest of Madras, and at mile 100.1.

DRAINAGE AREA.--7,820 mi^2, approximately.

PERIOD OF RECORD.--December 1923 to current year.

REVISED RECORDS.--WSP 1398: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,390.25 ft above NGVD of 1929 (levels by Portland General Electric Co.). See WSP 1738 for history of changes prior to Nov. 23, 1957.

REMARKS.--No estimated daily discharges. Records good. Diurnal fluctuation caused by Lake Simtustus and reregulating reservoir since 1957, combined capacity for normal operation, 6,500 acre-ft. Some winter and spring runoff stored in Ochoco Reservoir, capacity, 47,500 acre-ft, in Crescent Lake, Crane Prairie and Wickiup Reservoirs, combined capacity, 354,600 acre-ft, and since 1960, in Prineville Reservoir, capacity, 152,800 acre-ft, and since 1964, in Lake Billy Chinook, capacity, 534,700 acre-ft. Large diversions in upper basin for irrigation. Continuous water-quality records for the period October 1978 to September 1988 have been collected at this location.

AVERAGE DISCHARGE.--19 years (water years 1924-1942), 4,112 ft^3/s, 2,979,000 acre-ft/yr.
61 years (water years 1943-2003), 4,690 ft^3/s, 3,397,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,500 ft^3/s July 16, 1983, accidental release from Pelton Dam, gage height, 7.70 ft, from floodmarks; minimum discharge, 916 ft^3/s July 4, 1982, caused by power company testing control gates on dam.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,370 ft^3/s Feb. 1, gage height, 3.75 ft; minimum discharge, 3,500 ft^3/s July 10.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3930	4050	4310	4570	6260	4310	4700	3940	4530	3820	3700	3580
2	3930	4060	4300	4450	6260	4310	4700	3940	4440	3810	3700	3580
3	3940	4060	4300	4430	5840	4300	4700	3820	4320	3820	3690	3580
4	3930	4170	4310	4430	5400	4310	4560	3820	4070	3810	3700	3580
5	3940	4300	4300	4560	5240	4310	4560	3820	3940	3810	3580	3580
6	4060	4310	4300	4560	5240	4310	4560	3690	3930	3810	3580	3580
7	4060	4310	4300	4560	4970	4320	4560	3690	3820	3820	3580	3590
8	4050	4310	4300	4560	4940	4310	4560	3580	3940	3700	3700	3580
9	3930	4320	4300	4430	4830	4320	4560	3580	3930	3690	3690	3700
10	3940	4310	4300	4550	4580	4430	4440	3580	3930	3580	3690	3820
11	3820	4310	4310	4950	4560	4440	4440	3700	3940	3570	3700	3910
12	3810	4310	4310	4930	4570	4440	4430	3820	3940	3580	3690	3940
13	3930	4310	4320	4660	4440	4200	4570	3810	3830	3580	3690	3940
14	3930	3960	4440	4310	4430	4190	4440	3810	3820	3580	3700	3940
15	3940	3930	4430	4300	4430	4400	4430	3820	3820	3690	3690	3940
16	4050	3940	4560	4310	4430	4430	4440	3810	3810	3690	3700	3940
17	4170	4060	4430	4180	4430	4560	4430	3690	3810	3700	3700	3830
18	4180	4300	4430	4180	4430	4440	4440	3690	3700	3690	3690	3700
19	4300	4190	4300	4180	4310	4190	4440	3690	3820	3690	3700	3700
20	4310	4180	4300	4180	4310	4180	4190	3700	3820	3690	3700	3700
21	4310	4180	4300	4190	4310	4190	4070	3700	3820	3690	3700	3700
22	4310	4180	4300	4180	4310	4190	4060	3690	3820	3690	3590	3700
23	4310	4190	4420	4180	4430	4180	4050	3690	3820	3810	3580	3810
24	4300	4190	4430	4180	4440	4250	3940	3820	3810	3820	3690	3820
25	4310	4300	4430	4180	4440	4430	3940	3830	3700	3810	3690	3820
26	4310	4310	4430	4310	4430	4690	3940	3940	3690	3810	3690	3810
27	4180	4310	4430	4490	4440	4830	3940	3930	3690	3690	3700	3700
28	4180	4300	4430	4690	4430	4690	3940	3930	3690	3690	3700	3700
29	4180	4310	4690	4690	---	4560	3930	4050	3700	3580	3700	3700
30	4180	4310	4700	5160	---	4570	3930	4190	3810	3570	3690	3700
31	4060	---	4700	5960	---	4700	---	4390	---	3690	3690	---
TOTAL	126780	126270	136110	139490	133130	135980	129890	118160	116710	114980	113990	112170
MEAN	4090	4209	4391	4500	4755	4386	4330	3812	3890	3709	3677	3739
MAX	4310	4320	4700	5960	6260	4830	4700	4390	4530	3820	3700	3940
MIN	3810	3930	4300	4180	4310	4180	3930	3580	3690	3570	3580	3580
AC-FT	251500	250500	270000	276700	264100	269700	257600	234400	231500	228100	226100	222500

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1943 - 2003, BY WATER YEAR (WY)

MEAN	4157	4626	5030	5250	5489	5588	5369	4569	4358	4016	3923	3957
MAX	5410	6124	7253	9600	8974	9590	8988	6949	5899	4863	4718	4911
(WY)	1998	1985	1997	1997	1996	1972	1984	1956	1998	1999	1976	1997
MIN	3085	3521	3818	3305	3094	3455	3602	3503	3492	3059	3064	3081
(WY)	1965	1965	1945	1964	1964	1964	1968	1944	1964	1964	1964	1964

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1943 - 2003	
ANNUAL TOTAL	1528430		1503660			
ANNUAL MEAN	4187		4120		4690	
HIGHEST ANNUAL MEAN					5980	1997
LOWEST ANNUAL MEAN					3558	1964
HIGHEST DAILY MEAN	5390	Jan 10	6260	Feb 1	17800	Feb 8 1996
LOWEST DAILY MEAN	3690	Jul 29	3570	Jul 11	2440	Dec 3 1957
ANNUAL SEVEN-DAY MINIMUM	3690	Sep 9	3580	Sep 1	2590	Nov 30 1957
ANNUAL RUNOFF (AC-FT)	3032000		2983000		3397000	
10 PERCENT EXCEEDS	4700		4560		6130	
50 PERCENT EXCEEDS	4190		4170		4350	
90 PERCENT EXCEEDS	3810		3690		3670	

14092750 SHITIKE CREEK AT PETERS PASTURE, NEAR WARM SPRINGS, OR

LOCATION.--Lat 44°45'02", long 121°37'56", in NW 1/4 NE 1/4 sec.35, T.9 S., R.9 E., Jefferson County, Hydrologic Unit 17070306, Warm Springs Indian Reservation, on left bank 0.5 mi downstream from Peters Pasture, and 18 mi west of town of Warm Springs, and at mile 26.4.

DRAINAGE AREA.--22.9 mi^2.

PERIOD OF RECORD.--July 1982 to current year.

REVISED RECORDS.--WDR OR-96-1: 1983, 1985, 1986, 1988, 1990, 1995.

GAGE.--Water-stage recorder. Elevation of gage is 3,580 ft, from topographic map.

REMARKS.--Records good. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--21 years (water years 1983-2003), 78.2 ft^3/s, 46.41 in/yr, 56,670 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,430 ft^3/s Feb. 7, 1996, gage height, 6.66 ft, from rating curve extended above 800 ft^3/s on basis of slope area measurement of peak flow; minimum discharge, 17 ft^3/s Dec. 22, 1990.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 27	0000	503	2.65	Jan. 30	2230	*862	*3.53

Minimum discharge, 21 ft^3/s, Oct. 31 to Nov. 1.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	e22	25	52	479	e45	130	58	108	68	42	30
2	29	e22	25	57	268	e45	113	57	106	63	41	30
3	29	23	24	140	186	44	101	59	101	61	41	30
4	31	23	24	165	145	e45	91	62	99	60	42	29
5	30	23	24	166	121	e45	84	62	105	61	42	29
6	30	22	24	111	106	e45	78	59	108	61	42	28
7	29	23	24	85	94	e50	73	57	112	60	43	29
8	27	25	24	71	85	e60	70	55	125	60	41	35
9	27	25	24	64	e80	e70	72	53	121	59	40	36
10	26	25	25	58	e75	e80	76	54	108	57	40	37
11	26	25	29	54	e70	e100	91	58	98	56	39	34
12	26	27	31	58	e65	e150	93	57	96	57	39	33
13	26	31	33	70	e65	e160	90	59	93	56	39	32
14	25	34	48	71	e60	e170	85	65	87	53	39	30
15	25	32	60	65	e60	e160	79	73	84	52	38	28
16	25	32	62	60	e60	e140	74	72	84	52	37	29
17	24	35	51	56	e60	e110	71	67	86	51	37	30
18	24	32	44	52	e55	95	68	63	100	49	36	30
19	24	31	41	50	e55	87	65	59	94	49	36	29
20	24	30	39	49	e55	80	63	56	79	48	35	29
21	24	31	37	48	e55	81	62	56	72	48	35	28
22	24	32	34	52	e55	193	62	63	68	47	35	27
23	23	33	33	83	e55	195	63	84	66	46	35	26
24	23	32	32	80	e50	145	65	124	66	45	34	26
25	24	30	31	105	e50	130	64	154	66	45	33	25
26	24	29	32	284	e50	143	62	130	70	45	32	25
27	24	28	48	353	e45	119	59	115	75	44	32	25
28	23	27	52	184	e45	106	59	132	78	44	32	24
29	23	26	46	140	---	96	61	141	76	43	31	24
30	23	25	54	581	---	92	60	154	74	42	31	24
31	e22	---	59	685	---	111	---	135	---	42	30	---
TOTAL	794	835	1139	4149	2649	3192	2284	2493	2705	1624	1149	871
MEAN	25.6	27.8	36.7	134	94.6	103	76.1	80.4	90.2	52.4	37.1	29.0
MAX	31	35	62	685	479	195	130	154	125	68	43	37
MIN	22	22	24	48	45	44	59	53	66	42	30	24
AC-FT	1570	1660	2260	8230	5250	6330	4530	4940	5370	3220	2280	1730
CFSM	1.12	1.22	1.60	5.84	4.13	4.50	3.32	3.51	3.94	2.29	1.62	1.27
IN.	1.29	1.36	1.85	6.74	4.30	5.19	3.71	4.05	4.39	2.64	1.87	1.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2003, BY WATER YEAR (WY)

MEAN	39.2	69.1	76.0	84.6	95.2	85.6	102	122	114	71.9	45.9	34.9
MAX	98.8	175	205	218	363	166	154	207	217	142	96.3	59.7
(WY)	1998	1996	1996	1997	1996	1986	2002	1997	1999	1999	1999	1999
MIN	20.3	23.4	34.0	33.5	28.2	41.4	50.4	69.4	41.7	33.4	24.5	20.1
(WY)	1988	1994	2001	2001	1994	1985	1991	1991	1992	1992	1992	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1983 - 2003	
ANNUAL TOTAL	26083		23884			
ANNUAL MEAN	71.5		65.4		78.2	
HIGHEST ANNUAL MEAN					136	1997
LOWEST ANNUAL MEAN					43.2	1994
HIGHEST DAILY MEAN	720	Apr 14	685	Jan 31	2020	Feb 7 1996
LOWEST DAILY MEAN	22	Oct 31	22	Oct 31	17	Dec 22 1990
ANNUAL SEVEN-DAY MINIMUM	22	Oct 31	22	Oct 31	18	Oct 2 1994
ANNUAL RUNOFF (AC-FT)	51740		47370		56670	
ANNUAL RUNOFF (CFSM)	3.12		2.86		3.42	
ANNUAL RUNOFF (INCHES)	42.37		38.80		46.41	
10 PERCENT EXCEEDS	143		114		142	
50 PERCENT EXCEEDS	50		52		60	
90 PERCENT EXCEEDS	25		25		29	

e Estimated

14093000 SHITIKE CREEK NEAR WARM SPRINGS, OR

LOCATION.--Lat 44°45'41", long 121°14'25", in NE 1/4 NE 1/4, sec.25, T.9 S., R.12 E., Jefferson County, Hydrologic Unit 17070306, Warm Springs Indian Reservation on left bank 1.5 mi east of Warm Springs, and at mile 0.7.

DRAINAGE AREA.--104 mi^2.

PERIOD OF RECORD.--July 1911 to October 1916, April 1923 to September 1928, October 1972 to September 1974. October 1996 to current year. Records for October 1974 to September 1996 (see station 14092885) at site upstream not equivalent owing to difference in drainage area.

REVISED RECORDS.--WSP 1318: 1911-12, 1916, 1927.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,380 ft above NGVD of 1929, from topographic map. Prior to September 1928 non-recording gage 1.3 mi upstream, October 1972 to September 1974 water-stage recorder 0.4 mi downstream.

REMARKS.--Records fair. No regulation. Some diversions for irrigation and municipal use.

AVERAGE DISCHARGE.--19 years (water years 1912-16, 1924-28, 1973-74, 1997-2003), 112 ft^3/s, 14.64 in/yr, 81,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,000 ft^3/s Jan. 15, 1974, gage height, 4.36 ft; minimum daily discharge, 20 ft^3/s Dec. 8-15, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 7, 1996 reached a stage of 12.4 ft, information supplied by local resident, discharge about 4,400 ft^3/s, from rating curve extended above 900 ft^3/s on basis of runoff comparisons with nearby stations.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	0400	*566	*5.48	Feb. 1	0200	544	5.41

Minimum discharge, 34 ft^3/s Sept. 26-30.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	e40	e42	78	392	57	152	83	132	83	44	37
2	43	e40	e42	74	248	56	142	80	127	72	45	37
3	45	e40	41	139	192	56	130	79	122	65	45	37
4	44	e42	41	164	160	55	120	83	117	64	45	37
5	45	e46	42	198	141	54	112	85	121	63	48	37
6	44	45	41	155	126	56	106	83	121	65	46	36
7	43	41	41	123	117	62	104	80	126	63	49	38
8	42	43	40	104	109	90	100	77	129	62	46	41
9	41	43	40	92	103	94	100	74	143	63	45	46
10	41	43	41	82	96	113	104	72	128	60	44	46
11	41	43	43	75	90	120	113	81	118	59	43	44
12	41	43	49	79	84	148	120	79	113	59	43	42
13	41	47	48	96	81	166	118	78	109	59	42	41
14	40	50	60	102	77	165	116	82	104	57	42	40
15	40	50	81	94	75	156	109	94	98	55	41	39
16	40	48	93	86	78	147	102	98	97	55	40	38
17	39	52	80	79	74	137	98	91	99	54	40	41
18	39	50	69	74	71	125	92	85	109	52	40	39
19	39	48	63	71	69	118	87	80	117	51	39	39
20	39	47	59	69	68	113	83	77	97	51	39	39
21	39	47	59	68	68	106	83	74	86	50	40	38
22	39	49	53	70	73	151	83	76	82	49	41	37
23	39	50	51	98	70	197	84	93	79	48	41	37
24	39	50	48	106	68	168	88	126	78	48	40	36
25	39	e48	47	116	e66	154	88	164	77	48	39	36
26	39	e46	49	192	65	168	88	156	78	47	39	35
27	39	e46	61	311	61	153	83	136	82	47	39	35
28	39	e44	77	215	59	136	86	144	87	46	38	35
29	40	e44	70	166	---	125	91	158	87	45	38	35
30	e42	e42	72	323	---	120	87	162	85	45	37	35
31	e40	---	87	465	---	126	---	163	---	44	37	---
TOTAL	1266	1367	1730	4164	2981	3692	3069	3093	3148	1729	1295	1153
MEAN	40.8	45.6	55.8	134	106	119	102	99.8	105	55.8	41.8	38.4
MAX	45	52	93	465	392	197	152	164	143	83	49	46
MIN	39	40	40	68	59	54	83	72	77	44	37	35
AC-FT	2510	2710	3430	8260	5910	7320	6090	6130	6240	3430	2570	2290
CFSM	0.39	0.44	0.54	1.29	1.02	1.15	0.98	0.96	1.01	0.54	0.40	0.37
IN.	0.45	0.49	0.62	1.49	1.07	1.32	1.10	1.11	1.13	0.62	0.46	0.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 2003, BY WATER YEAR (WY)

MEAN	63.8	94.6	113	141	131	124	138	160	153	103	67.7	58.6
MAX	109	167	283	432	261	222	206	238	315	213	127	87.7
(WY)	1998	1928	1997	1974	1916	1997	2002	1974	1974	1916	1999	1997
MIN	40.8	45.6	49.8	48.8	51.6	64.7	66.4	86.2	68.9	46.7	36.2	35.3
(WY)	2003	2003	2001	2001	2001	1973	1973	1973	1924	1924	1924	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1912 - 2003	
ANNUAL TOTAL	35600		28687			
ANNUAL MEAN	97.5		78.6		112	
HIGHEST ANNUAL MEAN					187	1997
LOWEST ANNUAL MEAN					62.0	2001
HIGHEST DAILY MEAN	797	Apr 14	465	Jan 31	2300	Jan 15 1974
LOWEST DAILY MEAN	39	Oct 17	35	Sep 26	20	Dec 8 1972
ANNUAL SEVEN-DAY MINIMUM	39	Oct 17	35	Sep 24	20	Dec 8 1972
ANNUAL RUNOFF (AC-FT)	70610		56900		81200	
ANNUAL RUNOFF (CFSM)	0.94		0.76		1.08	
ANNUAL RUNOFF (INCHES)	12.73		10.26		14.64	
10 PERCENT EXCEEDS	175		136		195	
50 PERCENT EXCEEDS	80		65		91	
90 PERCENT EXCEEDS	41		39		48	

e Estimated

14095500 WARM SPRINGS RIVER NEAR SIMNASHO, OR

LOCATION.--Lat 44°58'10", long 121°28'35", in SE 1/4 SW 1/4 sec.7, T.7 S., R.11 E., Wasco County, Hydrologic Unit 17070306, Warm Springs Indian Reservation, on right bank abutment of log bridge at Hehe Butte rodeo grounds, 3.3 mi upstream from Badger Creek, and 6.2 mi west of Simnasho, and at mile 30.5.

DRAINAGE AREA.--107 mi^2.

PERIOD OF RECORD.--June to September 1915, August 1949 to September 1954, October 1983 to current year. Prior to October 1983, published as "at Hehe Mill near Warm Springs."

GAGE.--Water-stage recorder. Datum of gage is 2,533.78 ft above NGVD of 1929. June to September 1915 1.0 mi downstream at different datum. August 1949 to September 1954 0.5 mi downstream at datum 7.12 ft lower.

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

AVERAGE DISCHARGE.--25 years (water years 1950-54, 1984-2003), 164 ft^3/s, 20.81 in/yr, 118,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,670 ft^3/s Feb. 7, 1996, gage height, 6.98 ft, from rating curve extended above 1,300 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 89 ft^3/s Aug. 14, 1994, due to temporary diversion.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 350 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb, 1	0200	*346	*3.50				

Minimum discharge, 96 ft^3/s Sept. 25-28.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	109	105	105	113	305	127	210	142	120	108	104	99
2	108	105	105	112	241	125	205	141	118	108	104	98
3	108	105	105	128	206	124	195	141	118	108	104	98
4	108	105	106	132	185	123	189	141	116	106	108	98
5	108	106	105	131	169	123	182	143	116	105	117	98
6	108	106	105	119	158	133	180	141	116	105	113	98
7	106	106	105	114	151	164	175	139	115	105	107	98
8	106	107	105	112	145	214	171	137	114	105	105	99
9	107	107	105	110	142	201	169	136	113	105	105	102
10	107	108	108	109	139	193	172	135	113	105	104	99
11	106	106	112	109	136	187	175	137	113	105	104	98
12	106	107	111	112	134	193	175	137	112	104	104	98
13	106	110	111	121	133	198	176	135	112	104	104	97
14	106	109	116	118	131	193	173	133	112	104	103	97
15	106	107	114	115	130	197	166	133	112	104	102	97
16	106	107	117	113	135	190	162	133	112	104	102	98
17	106	110	111	111	137	181	162	133	110	104	102	101
18	106	107	109	110	137	172	160	132	110	104	102	98
19	106	106	108	110	133	167	156	130	110	104	102	97
20	106	106	108	109	132	167	154	128	110	102	102	97
21	106	106	110	109	132	167	155	127	110	101	102	97
22	106	106	108	111	140	217	153	126	112	101	102	97
23	106	106	106	120	137	234	152	125	111	101	102	97
24	106	106	106	119	134	214	156	125	110	100	101	97
25	106	106	106	118	132	209	152	125	110	100	100	97
26	106	105	107	127	132	237	150	125	109	100	100	97
27	106	105	119	159	130	225	145	123	109	100	100	96
28	106	105	119	144	128	215	145	122	109	100	100	97
29	106	105	114	137	---	206	151	121	108	100	100	97
30	105	105	113	193	---	202	146	120	108	103	100	97
31	105	---	116	263	---	206	---	120	---	104	100	---
TOTAL	3299	3190	3395	3908	4244	5704	5012	4086	3368	3209	3205	2934
MEAN	106	106	110	126	152	184	167	132	112	104	103	97.8
MAX	109	110	119	263	305	237	210	143	120	108	117	102
MIN	105	105	105	109	128	123	145	120	108	100	100	96
AC-FT	6540	6330	6730	7750	8420	11310	9940	8100	6680	6370	6360	5820
CFSM	0.99	0.99	1.02	1.18	1.42	1.72	1.56	1.23	1.05	0.97	0.97	0.91
IN.	1.15	1.11	1.18	1.36	1.48	1.98	1.74	1.42	1.17	1.12	1.11	1.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2003, BY WATER YEAR (WY)

MEAN	118	129	150	168	230	211	226	209	161	129	121	118
MAX	144	197	286	351	784	374	351	325	310	169	154	144
(WY)	1998	1951	1997	1997	1996	1986	1997	1997	1950	1999	1999	1999
MIN	102	106	104	107	106	112	120	106	102	97.9	95.6	96.9
(WY)	1993	1953	1953	1993	1993	1994	1994	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1950 - 2003	
ANNUAL TOTAL	54655		45554			
ANNUAL MEAN	150		125		164	
HIGHEST ANNUAL MEAN					242	1997
LOWEST ANNUAL MEAN					107	1994
HIGHEST DAILY MEAN	552	Apr 14	305	Feb 1	3000	Feb 8 1996
LOWEST DAILY MEAN	105	Oct 30	96	Sep 27	93	Dec 14 1992
ANNUAL SEVEN-DAY MINIMUM	105	Nov 26	97	Sep 21	95	Jul 25 1994
ANNUAL RUNOFF (AC-FT)	108400		90360		118700	
ANNUAL RUNOFF (CFSM)	1.40		1.17		1.53	
ANNUAL RUNOFF (INCHES)	19.00		15.84		20.81	
10 PERCENT EXCEEDS	227		174		256	
50 PERCENT EXCEEDS	122		110		135	
90 PERCENT EXCEEDS	106		100		106	

14096300 MILL CREEK NEAR BADGER BUTTE, NEAR WARM SPRINGS, OR

LOCATION.--Lat 44°51'42", long 121°37'35", in SW 1/4 sec.23, T.8 S., R.9 E., Wasco County, Hydrologic Unit 17070306, Warm Springs Indian Reservation, on right bank 200 ft upstream from bridge on road B241, 3.4 mi upstream from headworks of Mill Creek Canal, 19.3 mi northwest of Warm Springs, and at mile 14.6.

DRAINAGE AREA.--26.8 mi^2.

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,380 ft above NGVD of 1929, from topographic map.

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

AVERAGE DISCHARGE.--20 years (water years 1984-2003), 69.5 ft^3/s, 35.22 in/yr, 50,330 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,300 ft^3/s Feb. 7, 1996, from rating curve extended above 800 ft^3/s on basis of slope-area measurement of peak flow, gage height, 8.42; maximum gage height, 9.49 ft, Feb. 7, 1996, from high-water mark on crest-stage gage; minimum discharge recorded, 23 ft^3/s Feb. 15, 25, 1993, but may have been lower during period of estimated record.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 4	2330	205	5.68	Feb. 1	0230	*631	*6.76
Jan. 27	0630	360	6.14	Mar. 22	1930	279	5.99

Minimum discharge, 32 ft^3/s Sept. 5.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	e40	42	72	520	54	125	74	99	41	35	35
2	43	e40	42	76	318	53	119	75	92	40	35	35
3	43	41	42	137	211	53	108	78	85	40	36	36
4	43	42	43	159	157	52	100	84	80	40	43	35
5	41	42	42	161	124	52	92	84	75	39	45	35
6	41	42	42	140	103	60	89	78	72	39	40	35
7	40	43	42	117	89	103	83	72	70	39	46	35
8	40	47	41	92	79	141	79	69	68	39	40	38
9	40	49	41	74	74	124	80	66	65	39	39	41
10	40	48	47	62	70	124	83	65	62	38	38	39
11	41	46	55	54	66	118	96	69	59	38	38	37
12	41	49	56	63	63	149	103	68	57	38	37	37
13	41	55	59	80	62	158	106	71	54	38	37	36
14	41	53	68	76	61	161	100	79	53	38	37	36
15	41	46	74	70	61	164	93	87	51	38	37	35
16	41	49	95	62	66	144	86	90	49	38	36	39
17	40	54	74	57	68	123	85	87	48	37	36	43
18	40	47	64	53	69	107	82	79	47	37	36	38
19	40	45	57	49	67	97	77	72	46	37	36	36
20	40	44	55	47	66	92	74	69	46	37	36	36
21	40	43	55	46	72	98	76	67	49	37	36	36
22	40	43	52	52	79	204	76	71	49	37	37	36
23	40	43	49	82	70	211	81	79	47	36	37	35
24	40	42	47	85	64	165	88	90	46	35	36	35
25	41	42	46	97	e62	153	84	102	44	36	36	35
26	41	43	49	185	59	175	79	104	44	36	36	35
27	41	43	88	301	57	142	75	100	43	36	35	35
28	41	42	76	200	56	120	75	101	42	36	36	35
29	41	42	66	158	---	105	82	102	42	36	36	35
30	41	42	76	371	---	99	77	109	41	35	35	35
31	e40	---	90	536	---	106	---	110	---	35	35	---
TOTAL	1267	1347	1775	3814	2913	3707	2653	2551	1725	1165	1158	1089
MEAN	40.9	44.9	57.3	123	104	120	88.4	82.3	57.5	37.6	37.4	36.3
MAX	44	55	95	536	520	211	125	110	99	41	46	43
MIN	40	40	41	46	56	52	74	65	41	35	35	35
AC-FT	2510	2670	3520	7570	5780	7350	5260	5060	3420	2310	2300	2160
CFSM	1.53	1.68	2.14	4.59	3.88	4.46	3.30	3.07	2.15	1.40	1.39	1.35
IN.	1.76	1.87	2.46	5.29	4.04	5.15	3.68	3.54	2.39	1.62	1.61	1.51

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

MEAN	45.4	69.7	77.9	82.7	88.2	80.1	90.4	94.7	74.4	48.6	42.0	41.0
MAX	84.6	136	203	162	275	123	132	141	151	87.9	63.3	64.9
(WY)	1998	1996	1996	1996	1996	1997	2002	1997	1999	1999	1997	1997
MIN	30.0	38.2	44.1	43.8	40.0	58.1	62.4	43.7	33.3	34.2	31.1	28.2
(WY)	1993	1988	1994	1992	1993	1994	1991	1992	1992	1994	1992	1995

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1984 - 2003	
ANNUAL TOTAL	24812		25164			
ANNUAL MEAN	68.0		68.9		69.5	
HIGHEST ANNUAL MEAN					114	1996
LOWEST ANNUAL MEAN					46.5	1994
HIGHEST DAILY MEAN	439	Apr 14	536	Jan 31	1060	Feb 7 1996
LOWEST DAILY MEAN	39	Sep 2	35	Jul 24	25	Sep 21 1995
ANNUAL SEVEN-DAY MINIMUM	40	Sep 9	35	Sep 23	25	Sep 20 1995
ANNUAL RUNOFF (AC-FT)	49210		49910		50330	
ANNUAL RUNOFF (CFSM)	2.54		2.57		2.59	
ANNUAL RUNOFF (INCHES)	34.44		34.93		35.22	
10 PERCENT EXCEEDS	105		109		110	
50 PERCENT EXCEEDS	54		51		59	
90 PERCENT EXCEEDS	40		36		36	

e Estimated

14096850 BEAVER CREEK BELOW QUARTZ CREEK, NEAR SIMNASHO, OR

LOCATION.--Lat 44°57'32", long 121°23'35", in NE 1/4 SW 1/4 sec.14, T.7 S., R.11 E., Wasco County, Hydrologic Unit 17070306, Warm Springs Indian Reservation, on right bank 600 ft downstream from culvert on Warm Springs Reservation Highway 9, 200 ft downstream from Quartz Creek, and 2.4 mi west of Simnasho, and at mile 7.92.

DRAINAGE AREA.--145 mi^2.

PERIOD OF RECORD.--October 1983 to current year.

REVISED RECORDS.--WDR OR-96-1: 1986.

GAGE.--Water-stage recorder. Elevation of gage is 2,260 ft above NGVD of 1929, from topographic map.

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

AVERAGE DISCHARGE.--20 years (water years 1984-2003), 84.6 ft^3/s, 7.93 in/yr, 61,320 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,760 ft^3/s, Feb. 7, 1996, gage height, 10.57 ft; minimum discharge, 4.5 ft^3/s Jan. 7, 1991.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 30	2230	*367	*3.62				

Minimum discharge, 32 ft^3/s Oct. 31.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	36	37	45	327	65	118	70	47	37	34	34
2	37	37	37	44	227	63	115	69	47	37	34	34
3	37	37	37	62	174	63	108	68	46	37	34	34
4	37	37	37	68	143	61	105	67	45	37	34	34
5	37	37	37	77	121	60	100	66	44	37	38	34
6	37	37	37	59	107	67	98	66	44	36	38	34
7	37	37	37	51	96	99	93	65	44	36	37	34
8	37	37	37	47	90	189	90	64	43	36	36	34
9	36	37	37	45	84	187	88	62	42	36	36	34
10	36	37	37	44	80	179	86	60	42	36	35	34
11	36	37	39	43	75	163	86	60	42	36	35	34
12	36	37	40	53	71	156	86	62	42	35	35	34
13	36	38	40	75	69	155	87	61	42	35	35	34
14	36	39	43	73	69	147	91	60	42	35	35	34
15	36	39	44	64	67	143	87	59	42	35	35	34
16	36	38	47	57	77	138	84	58	41	35	34	34
17	36	37	45	52	85	126	82	57	41	35	34	35
18	36	37	41	49	93	115	81	57	40	35	34	36
19	36	37	40	48	85	108	78	56	40	35	34	35
20	36	37	40	47	88	106	75	55	40	35	34	34
21	36	37	39	47	80	105	75	55	40	35	34	34
22	36	37	39	50	85	134	74	53	40	35	34	34
23	36	37	39	76	84	147	73	52	40	35	34	34
24	36	37	39	74	73	135	74	52	40	34	34	34
25	36	37	37	80	67	128	73	52	39	34	34	34
26	36	36	38	89	70	154	72	52	39	34	34	34
27	36	37	42	119	67	150	70	50	38	34	34	34
28	36	37	49	100	66	135	69	49	37	34	34	34
29	36	37	46	90	---	127	76	49	37	34	34	34
30	36	37	46	242	---	121	74	49	37	34	34	34
31	35	---	51	330	---	118	---	49	---	34	34	---
TOTAL	1124	1114	1254	2400	2820	3844	2568	1804	1243	1093	1075	1024
MEAN	36.3	37.1	40.5	77.4	101	124	85.6	58.2	41.4	35.3	34.7	34.1
MAX	38	39	51	330	327	189	118	70	47	37	38	36
MIN	35	36	37	43	66	60	69	49	37	34	34	34
AC-FT	2230	2210	2490	4760	5590	7620	5090	3580	2470	2170	2130	2030
CFSM	0.25	0.26	0.28	0.53	0.69	0.86	0.59	0.40	0.29	0.24	0.24	0.24
IN.	0.29	0.29	0.32	0.62	0.72	0.99	0.66	0.46	0.32	0.28	0.28	0.26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

MEAN	38.8	49.6	78.2	124	196	156	121	85.7	57.4	42.0	38.2	37.2
MAX	47.7	104	315	479	646	305	188	132	95.5	54.1	47.4	44.4
(WY)	1998	1985	1997	1997	1996	1986	2000	1999	1993	1999	1999	1999
MIN	33.1	35.6	40.0	42.3	42.7	53.0	60.8	44.6	36.6	32.3	30.5	30.4
(WY)	1995	1988	1986	2001	1994	2001	1994	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1984 - 2003	
ANNUAL TOTAL	27181		21363			
ANNUAL MEAN	74.5		58.5		84.6	
HIGHEST ANNUAL MEAN					166	1997
LOWEST ANNUAL MEAN					41.6	1994
HIGHEST DAILY MEAN	442	Jan 7	330	Jan 31	3600	Feb 7 1996
LOWEST DAILY MEAN	35	Sep 12	34	Jul 24	5.8	Jan 7 1991
ANNUAL SEVEN-DAY MINIMUM	35	Sep 12	34	Jul 24	8.3	Jan 2 1991
ANNUAL RUNOFF (AC-FT)	53910		42370		61320	
ANNUAL RUNOFF (CFSM)	0.51		0.40		0.58	
ANNUAL RUNOFF (INCHES)	6.97		5.48		7.93	
10 PERCENT EXCEEDS	133		105		162	
50 PERCENT EXCEEDS	47		40		48	
90 PERCENT EXCEEDS	36		34		36	

14097100 WARM SPRINGS RIVER NEAR KAHNEETA HOT SPRINGS, OR

LOCATION.--Lat 44°51'24", long 121°08'55", in SE 1/4 SW 1/4 sec.23, T.8 S., R.13 E., Wasco County, Hydrologic Unit 17070306, Warm Springs Indian Reservation, on right bank 25 ft upstream from bridge, 2.5 mi east of Kahneeta Hot Springs, and at mile 4.6.

DRAINAGE AREA.--526 mi^2.

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,394.96 ft above NGVD 1929.

REMARKS.--No estimated daily discharges. Records good. No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--31 years (water years 1973-2003), 443 ft^3/s, 11.45 in/yr, 321,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,600 ft^3/s Feb. 7, 1996, gage height, 14.32 ft, from inside highwater mark and slope-area computation; minimum discharge, 149 ft^3/s Dec. 20, 1990, but may have been less during period of ice effect Dec. 20, 1990 to Jan. 10, 1991.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 1	0830	*1,460	*4.01				

Minimum discharge, 182 ft^3/s Oct. 31.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	256	227	238	309	1350	341	613	399	336	240	216	215
2	250	235	243	292	1020	333	609	392	322	241	218	216
3	252	243	246	365	796	331	579	387	314	240	221	217
4	252	255	247	407	672	327	557	390	307	238	223	218
5	248	259	248	497	576	323	536	398	301	236	247	216
6	245	256	246	417	520	341	517	392	295	236	248	216
7	243	249	243	374	475	400	502	381	292	235	248	218
8	243	253	243	340	444	651	483	372	288	233	236	220
9	243	257	243	315	420	673	472	364	284	233	230	230
10	242	257	245	298	406	669	466	358	279	233	227	233
11	243	253	265	290	387	632	481	373	276	232	225	228
12	243	252	276	301	373	644	492	374	274	230	224	224
13	243	264	271	409	370	668	497	365	270	230	224	222
14	245	266	289	395	364	668	500	361	268	231	223	221
15	244	257	295	359	356	673	478	363	266	231	221	220
16	244	251	316	332	387	656	461	370	263	230	218	219
17	244	266	303	316	398	608	456	367	259	229	219	233
18	245	264	277	304	419	562	451	361	254	227	219	234
19	244	256	267	297	399	531	436	350	253	227	218	225
20	243	253	260	290	397	522	423	341	253	225	217	218
21	243	251	266	287	384	510	424	336	257	226	219	216
22	242	249	255	293	407	604	420	333	260	225	224	216
23	242	242	253	368	404	782	416	334	259	222	226	216
24	243	241	251	401	374	701	432	339	255	219	223	217
25	246	240	243	404	337	656	431	353	251	220	220	215
26	246	234	254	442	365	730	423	357	248	220	218	215
27	242	239	285	692	358	722	406	348	245	221	217	215
28	241	241	341	627	347	659	400	340	243	220	216	214
29	244	241	308	520	---	620	431	338	242	219	217	214
30	242	239	295	751	---	594	421	342	240	218	216	216
31	221	---	338	1280	---	587	---	350	---	217	216	---
TOTAL	7564	7490	8350	12972	13505	17718	14213	11228	8154	7084	6934	6597
MEAN	244	250	269	418	482	572	474	362	272	229	224	220
MAX	256	266	341	1280	1350	782	613	399	336	241	248	234
MIN	221	227	238	287	337	323	400	333	240	217	216	214
AC-FT	15000	14860	16560	25730	26790	35140	28190	22270	16170	14050	13750	13090
CFSM	0.46	0.47	0.51	0.80	0.92	1.09	0.90	0.69	0.52	0.43	0.43	0.42
IN.	0.53	0.53	0.59	0.92	0.96	1.25	1.01	0.79	0.58	0.50	0.49	0.47

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2003, BY WATER YEAR (WY)

MEAN	262	322	485	584	751	644	586	521	387	283	259	253
MAX	358	570	1216	1773	2894	1285	956	848	803	407	344	334
(WY)	1998	1985	1997	1997	1996	1986	1997	1997	1974	1999	1999	1997
MIN	211	229	242	201	239	274	278	278	235	198	196	197
(WY)	1993	1994	1994	1979	1994	1977	1977	1977	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1973 - 2003	
ANNUAL TOTAL	148951		121809			
ANNUAL MEAN	408		334		443	
HIGHEST ANNUAL MEAN					786	1997
LOWEST ANNUAL MEAN					246	1994
HIGHEST DAILY MEAN	1750	Apr 15	1350	Feb 1	15800	Feb 7 1996
LOWEST DAILY MEAN	221	Oct 31	214	Sep 28	160	Jan 1 1979
ANNUAL SEVEN-DAY MINIMUM	236	Oct 27	215	Sep 23	174	Dec 31 1978
ANNUAL RUNOFF (AC-FT)	295400		241600		321000	
ANNUAL RUNOFF (CFSM)	0.78		0.63		0.84	
ANNUAL RUNOFF (INCHES)	10.53		8.61		11.45	
10 PERCENT EXCEEDS	675		526		742	
50 PERCENT EXCEEDS	324		265		322	
90 PERCENT EXCEEDS	243		219		229	

14103000 DESCHUTES RIVER AT MOODY, NEAR BIGGS, OR

LOCATION.--Lat 45°37'20", long 120°54'05", in SW 1/4 SE 1/4 sec.26, T.2 N., R.15 E., Sherman County, Hydrologic Unit 17070306, on right bank at Moody, 4.0 mi southwest of Biggs, and at mile 1.4.

DRAINAGE AREA.--10,500 mi^2, approximately.

PERIOD OF RECORD.--October 1897 to December 1899 (published as "near Moro"), July 1906 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 754: Drainage area. WDR OR-96-1: 1965(M).

GAGE.--Water-stage recorder. Datum of gage is 167.54 ft above NGVD of 1929. Oct. 19, 1897, to Dec. 31, 1899, nonrecording gage at site 10 mi upstream at different datum. July 22, 1906, to July 18, 1930, nonrecording gage at site 300 ft downstream at datum 0.50 ft lower.

REMARKS.--Records good. Some fluctuation caused by regulation at Lake Simtustus since 1957. Some winter and spring runoff stored in Ochoco Reservoir, capacity, 46,420 acre-ft, in Crescent Lake, Crane Prairie, and Wickiup Reservoirs, combined capacity, 323,390 acre-ft, and since 1960, in Prineville Reservoir, and since 1964 in Lake Billy Chinook (station 14092100). Large diversions in upper river basin for irrigation. Water-quality records for periods 1911-12, 1953-58, 1962-90, have been collected at this location. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--52 years (water years 1898, 1899, 1907-1956), 5,851 ft^3/s, 4,239,000 acre-ft/yr.
47 years (water years 1957-2003), 5,797 ft^3/s, 4,200,000 acre-ft/yr, regulated.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,300 ft^3/s Feb. 8, 1996, gage height, 12.08 ft, from rating curve extended above 47,000 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 2,400 ft^3/s Dec. 5, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,600 ft^3/s Feb. 1, gage height, 4.47 ft; minimum discharge, 3,900 ft^3/s Sept. 6, 7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4470	4510	4800	5590	11400	5260	6230	4950	5330	4370	4160	4060
2	4460	4500	4790	5320	10300	5130	6280	4900	5370	4360	4150	3960
3	4450	4510	4800	5240	9140	5100	6280	4860	5210	4360	4180	3950
4	4470	4540	4790	5500	8100	5090	6250	4770	5020	4350	4180	3950
5	4450	4680	4800	5780	7350	5070	6150	4780	4770	4350	4190	3950
6	4460	4800	4800	5890	6990	5090	6070	4750	4660	4360	4120	3930
7	4560	4810	4800	5630	6730	5180	6000	4610	4630	4360	4130	3930
8	4560	4860	4790	5490	6350	5620	5930	4540	4560	4340	4120	3970
9	4530	4840	4800	5380	6180	5970	5880	4410	4650	4240	4180	4000
10	4440	4830	4800	5220	5960	6020	5850	4380	4650	4220	4170	4150
11	4430	4830	4820	5430	5690	6090	5820	4440	4620	4100	4180	4240
12	4330	4850	4860	5760	5600	6070	5820	4580	4590	4100	4180	4350
13	4330	4840	4910	6050	5530	6150	5820	4650	4550	4110	4160	4310
14	4440	4830	5010	5810	5410	5980	5900	4620	4460	4130	4150	4300
15	4440	4500	5140	5460	5370	6020	5820	4610	4430	4140	4140	4300
16	4440	4470	5190	5310	5470	6210	5670	4620	4440	4230	4120	4300
17	4550	4460	5300	5210	5560	6190	5600	4590	4420	4240	4120	4300
18	4650	4630	5100	5050	5560	6110	5540	4480	4390	4230	4120	4210
19	4670	4820	5040	5010	5510	5840	5510	4450	4320	4210	4110	4070
20	4790	4740	4900	4980	5370	5530	5390	4420	4420	4220	4110	4070
21	4800	4710	4920	4950	5380	5510	5160	4400	4420	4220	4110	4060
22	4800	4710	4900	4980	5440	5540	5080	4410	4430	4220	4120	4060
23	4800	4700	4880	5150	5460	5770	5050	4440	4420	4220	4030	4070
24	4800	4680	5000	5330	5470	5930	5100	4510	4400	4320	4030	4170
25	4790	4690	4990	5400	5380	5970	5030	4710	4360	4340	4130	4160
26	4800	4790	5000	5650	5350	6050	4990	4800	4240	4330	4110	4170
27	4790	4790	5080	6580	5350	6230	4940	4830	4230	4290	4110	4160
28	4680	4800	5160	6860	5320	6390	4900	4770	4240	4190	4100	4050
29	4680	4790	5280	6480	---	6390	5000	4810	4240	4160	4100	4050
30	4680	4800	5420	6790	---	6240	5000	4950	4270	4050	4070	4060
31	4650	---	5580	10400	---	6180	---	5150	---	4070	4070	---
TOTAL	142190	141310	154450	177680	176720	179920	168060	144190	136740	131430	127950	123310
MEAN	4587	4710	4982	5732	6311	5804	5602	4651	4558	4240	4127	4110
MAX	4800	4860	5580	10400	11400	6390	6280	5150	5370	4370	4190	4350
MIN	4330	4460	4790	4950	5320	5070	4900	4380	4230	4050	4030	3930
AC-FT	282000	280300	306400	352400	350500	356900	333300	286000	271200	260700	253800	244600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2003, BY WATER YEAR (WY)

MEAN	4750	5442	6392	6925	7515	7220	6766	5902	5285	4614	4415	4450
MAX	5860	7814	13150	14980	16980	13580	10930	8267	7643	5917	5359	5285
(WY)	1998	1985	1965	1997	1996	1972	1984	1984	1974	1974	1976	1997
MIN	3385	3910	4446	4378	4021	4192	4467	4141	3988	3597	3411	3394
(WY)	1965	1965	1994	1964	1964	1964	1977	1977	1994	1964	1964	1964

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1957 - 2003	
ANNUAL TOTAL	1861550		1803950			
ANNUAL MEAN	5100		4942		5797	
HIGHEST ANNUAL MEAN					7969	1997
LOWEST ANNUAL MEAN					4290	1994
HIGHEST DAILY MEAN	9180	Apr 15	11400	Feb 1	63400	Feb 8 1996
LOWEST DAILY MEAN	4150	Aug 25	3930	Sep 6	2880	Dec 4 1957
ANNUAL SEVEN-DAY MINIMUM	4170	Sep 9	3950	Sep 2	3180	Dec 1 1957
ANNUAL RUNOFF (AC-FT)	3692000		3578000		4200000	
10 PERCENT EXCEEDS	5890		5990		8060	
50 PERCENT EXCEEDS	5000		4790		5170	
90 PERCENT EXCEEDS	4280		4120		4200	

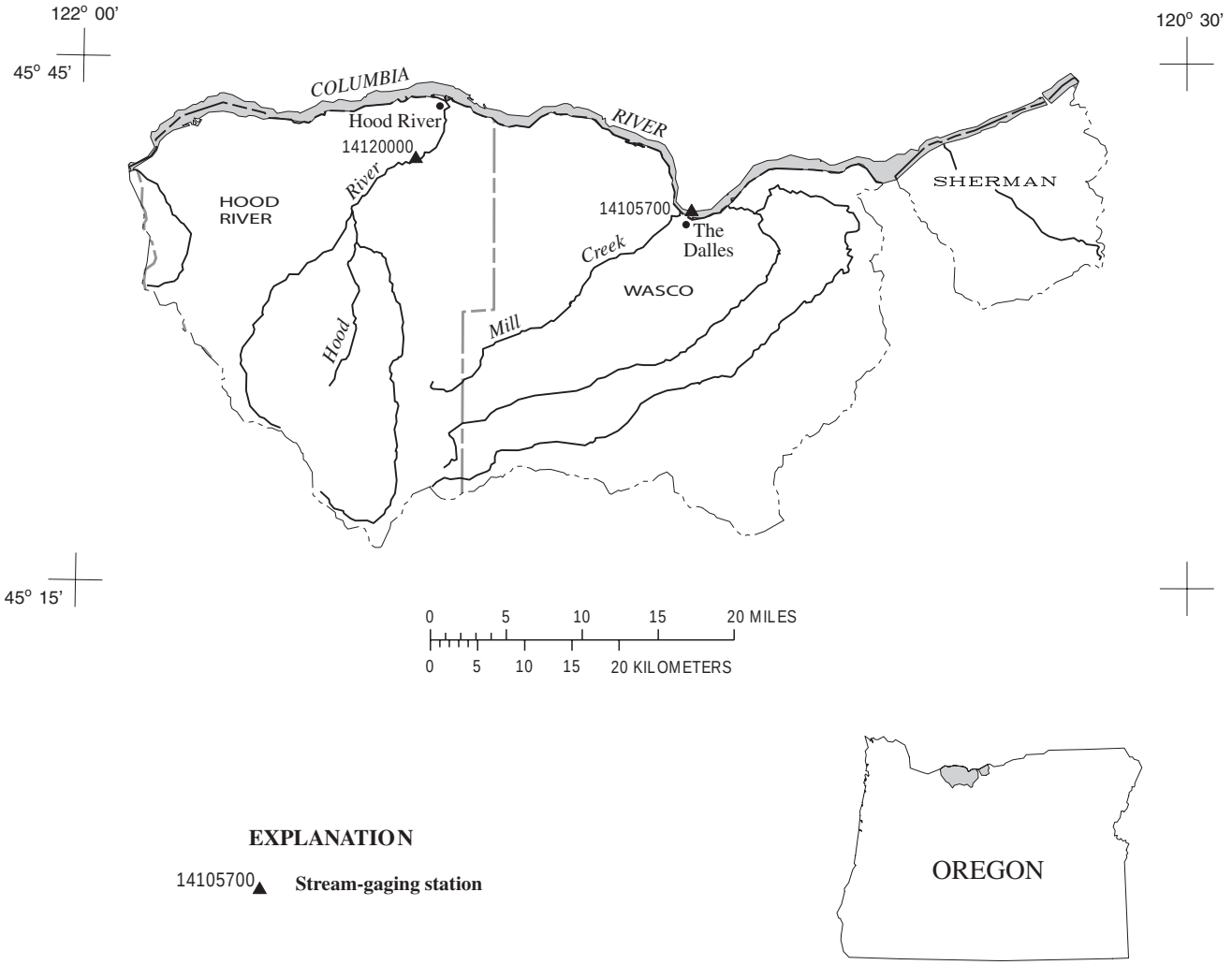
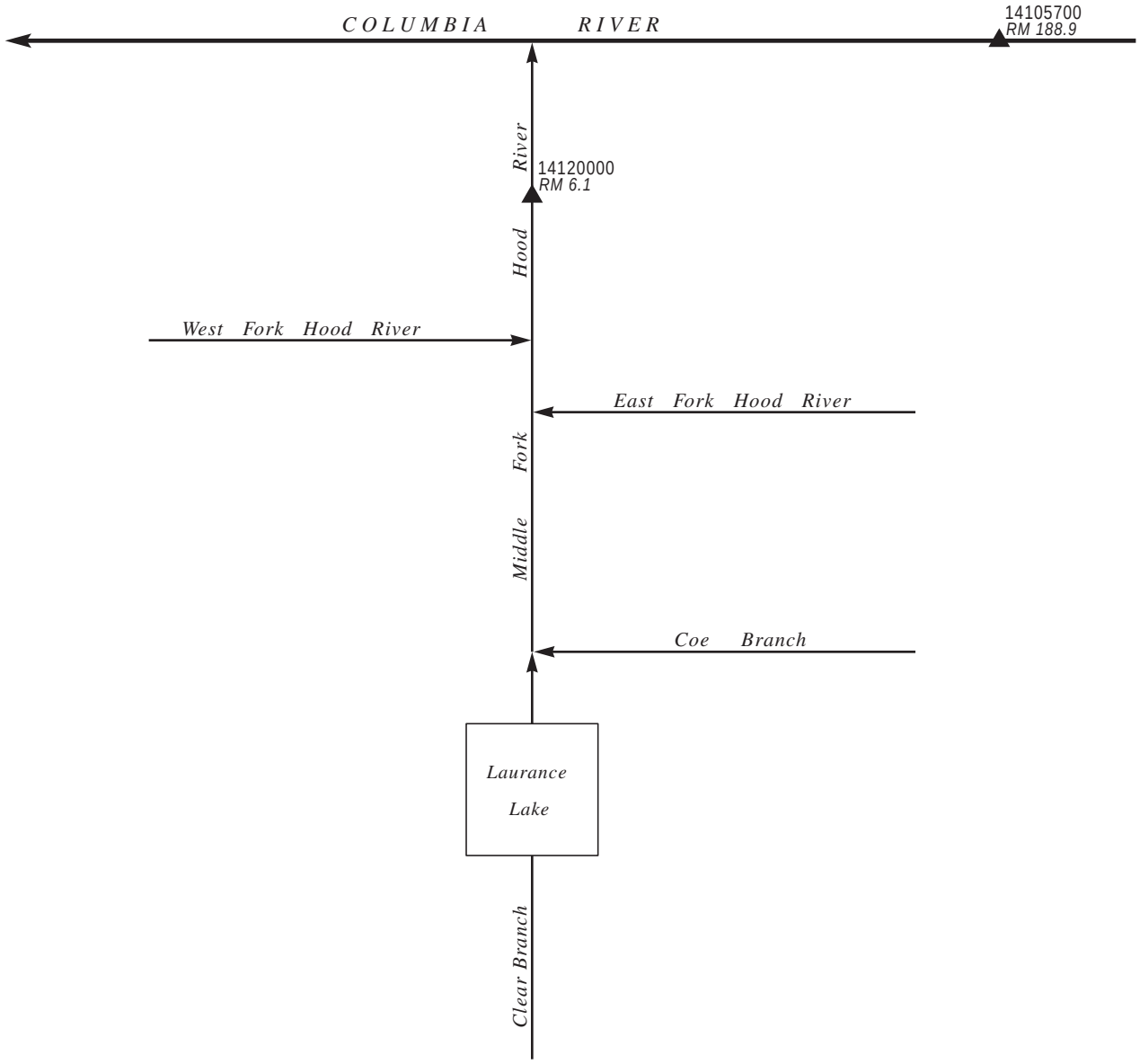


Figure 17. Location of surface-water stations in the Columbia River between the Deschutes River and Bonneville Dam and in the Hood River Basin.



EXPLANATION

14105700 **Stream-gaging station**

RM 6.1 **River mile**

Stream—Arrow shows direction of flow

Figure 18. Schematic diagram showing gaging stations in the Columbia River between the Deschutes River and Bonneville Dam and in the Hood River Basin.

14105700 COLUMBIA RIVER AT THE DALLES, OR

LOCATION.--Lat 45°36'27", long 121°10'20", in SW 1/4 SW 1/4 sec.34, T.2 N., R.13 E., Wasco County, Hydrologic Unit 17070105, Corps of Engineers land, on left bank 0.3 mi downstream from Mill Creek, 2.6 mi downstream from The Dalles Dam, and at mile 188.9.

DRAINAGE AREA.--237,000 mi^2, approximately.

PERIOD OF RECORD.--October 1857 to September 1877 (annual maximum only, at Lower Cascades Landing, published in WSP 1318), June 1878 to current year. Published as "near The Dalles" 1936-56.

REVISED RECORDS.--WSP 534: 1920(m). SP 1094: 1894. WSP 1248: 1866, 1888, 1899, 1909. WSP 1518: 1876(M).

GAGE.--Ultrasonic velocity meter (UVM) with water-stage and velocity-index recorder. Datum of gage is NGVD of 1929. See WSP 1738 for history of changes prior to Mar. 16, 1957. Mar. 16, 1957, to Sept 30, 1968, water-stage recorder at site 0.4 mi upstream at same datum.

REMARKS.--Records good. Considerable regulation by many large reservoirs. Diurnal fluctuations caused by powerplant and gates at The Dalles Dam. Many diversions for irrigation upstream from station. Continuous water-quality records for the period October 1957 to February 1985 have been collected at this location.

AVERAGE DISCHARGE.--125 years (water years 1879-2003), 190,900 ft^3/s, 138,300,000 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (since 1858), 1,240,000 ft^3/s June 6, 1894, elevation, 106.5 ft; minimum discharge (since 1878), 12,100 ft^3/s Apr. 16, 1968 (due to closure of John Day dam, recorded by UVM).

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 355,000 ft^3/s May 31; maximum elevation, 82.52 ft May 31; minimum daily discharge, 68,300 ft^3/s Sept. 11.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91400	143000	133000	119000	182000	132000	179000	239000	328000	174000	151000	115000
2	95400	146000	128000	108000	208000	117000	195000	199000	299000	170000	145000	97000
3	103000	113000	146000	107000	170000	139000	178000	201000	295000	115000	102000	98100
4	127000	129000	114000	104000	171000	137000	173000	194000	305000	136000	137000	102000
5	78300	112000	139000	100000	141000	156000	190000	222000	286000	157000	121000	93300
6	87100	120000	139000	114000	141000	137000	191000	226000	276000	114000	122000	94100
7	109000	123000	127000	116000	155000	149000	187000	249000	268000	133000	125000	78700
8	87500	127000	124000	136000	144000	150000	182000	201000	281000	116000	115000	81200
9	136000	115000	128000	141000	122000	130000	200000	239000	260000	187000	133000	98600
10	131000	119000	139000	125000	122000	137000	191000	222000	268000	175000	117000	90400
11	125000	130000	127000	129000	132000	126000	186000	174000	298000	160000	129000	68300
12	103000	133000	123000	103000	124000	125000	183000	202000	303000	164000	151000	81100
13	85900	130000	118000	106000	132000	134000	183000	200000	263000	140000	137000	84200
14	106000	106000	116000	122000	127000	143000	184000	262000	282000	174000	131000	82800
15	118000	138000	105000	120000	110000	144000	200000	222000	225000	152000	132000	81200
16	95700	111000	118000	121000	110000	151000	196000	244000	248000	146000	110000	100000
17	105000	119000	111000	132000	116000	175000	220000	238000	264000	172000	123000	99400
18	102000	148000	134000	142000	117000	186000	239000	244000	257000	142000	130000	92800
19	76600	118000	149000	117000	127000	192000	217000	229000	240000	102000	145000	86100
20	75300	126000	117000	130000	113000	172000	189000	219000	181000	143000	142000	80600
21	108000	121000	116000	108000	123000	153000	184000	221000	191000	152000	148000	83200
22	96700	134000	105000	124000	101000	133000	219000	251000	176000	146000	147000	112000
23	117000	128000	127000	116000	120000	115000	246000	250000	179000	159000	123000	120000
24	104000	122000	125000	123000	121000	130000	214000	253000	190000	162000	124000	104000
25	126000	130000	109000	110000	132000	160000	198000	232000	209000	152000	142000	104000
26	122000	145000	121000	86900	131000	175000	258000	248000	228000	126000	147000	113000
27	106000	145000	119000	109000	105000	221000	201000	315000	220000	116000	173000	127000
28	117000	130000	112000	148000	134000	231000	239000	328000	169000	146000	123000	75500
29	121000	123000	117000	155000	---	199000	220000	273000	191000	162000	107000	86600
30	132000	135000	110000	134000	---	192000	228000	347000	171000	135000	117000	107000
31	141000	---	106000	146000	---	183000	---	355000	---	125000	122000	---
TOTAL	3328900	3819000	3802000	3751900	3731000	4824000	6070000	7499000	7351000	4553000	4071000	2837200
MEAN	107400	127300	122600	121000	133200	155600	202300	241900	245000	146900	131300	94570
MAX	141000	148000	149000	155000	208000	231000	258000	355000	328000	187000	173000	127000
MIN	75300	106000	105000	86900	101000	115000	173000	174000	169000	102000	102000	68300
AC-FT	6603000	7575000	7541000	7442000	7400000	9568000	12040000	14870000	14580000	9031000	8075000	5628000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1879 - 2003, BY WATER YEAR (WY)

MEAN	104500	108400	116100	119200	129100	147100	204300	337500	434400	296600	171800	119700
MAX	174800	200800	258300	275000	340400	345000	386400	624400	1002000	793300	385700	198200
(WY)	1960	1928	1996	1997	1996	1983	1881	1897	1894	1880	1880	1880
MIN	69430	57830	52380	42430	51420	69820	98350	136100	123700	86780	91970	75760
(WY)	1930	1937	1937	1937	1937	1937	1944	1977	1977	2001	1994	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1879 - 2003	
ANNUAL TOTAL	61883600		55638000			
ANNUAL MEAN	169500		152400		190900	
HIGHEST ANNUAL MEAN					313600	1894
LOWEST ANNUAL MEAN					117600	2001
HIGHEST DAILY MEAN	377000	Jun 6	355000	May 31	1230000	Jun 6 1894
LOWEST DAILY MEAN	74300	Sep 16	68300	Sep 11	36000	Jan 12 1937
ANNUAL SEVEN-DAY MINIMUM	94200	Oct 16	83200	Sep 7	38200	Jan 7 1937
ANNUAL RUNOFF (AC-FT)	122700000		110400000		138300000	
10 PERCENT EXCEEDS	291000		239000		379000	
50 PERCENT EXCEEDS	143000		133000		142000	
90 PERCENT EXCEEDS	106000		102000		80900	

14120000 HOOD RIVER AT TUCKER BRIDGE, NEAR HOOD RIVER, OR

LOCATION.--Lat 45°39'20", long 121°32'50", in NE 1/4 SE 1/4 sec.15, T.2 N., R.10 E., Hood River County, Hydrologic Unit 17070105, on right bank 25 ft downstream from Tucker Bridge, 0.5 mi upstream from Odell Creek, 4.0 mi, southwest of town of Hood River, and at mile 6.1.

DRAINAGE AREA.--279 mi^2.

PERIOD OF RECORD.--October 1897 to December 1899, September 1913 to September 1914, August 1915 to September 1917, January 1965 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1318: 1899. WSP 1935: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 383.2 ft above NGVD of 1929 (Oregon State Highway Department bench mark). Prior to July 23, 1915, nonrecording gage at bridge at various datums. July 23 to Dec. 21, 1915, water-stage recorder at site 0.8 mi upstream at different datum. January 1916 to September 1917, nonrecording gage at bridge at different datum. Jan. 16 to July 23, 1965, nonrecording gage at bridge.

REMARKS.--Records good except for estimated daily discharges, which are fair. Some daily fluctuation possibly caused by diversion dam upstream from station and sawmill at Dee. Diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--43 years (water years 1898-99, 1914, 1916-17, 1966-2003), 1,009 ft^3/s, 731,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,300 ft^3/s Feb. 7, 1996, gage height, 17.11 ft, from rating curve extended above 8,700 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge recorded, 136 ft^3/s Sept. 16, 1915, caused by temporary storage behind dam at Dee.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 20.6 ft, present datum, discharge, 33,200 ft^3/s, from rating curve extended above 1,500 ft^3/s on basis of slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 26	1530	4,780	8.23	Jan. 31	2130	*6,780	*9.66

Minimum discharge, 185 ft^3/s Aug. 28.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	382	271	302	666	4250	818	1530	879	776	445	295	227
2	395	269	300	872	2740	784	1400	876	738	392	303	233
3	388	271	295	1430	2160	765	1260	879	690	376	296	261
4	404	279	297	1840	1770	737	1180	925	665	368	277	287
5	395	284	298	1800	1500	802	1130	1120	659	379	295	281
6	402	284	292	1250	1320	1330	1150	992	672	399	303	275
7	389	289	286	1000	1190	2800	1090	917	693	376	299	276
8	383	327	282	842	1100	2360	1080	877	694	386	290	300
9	378	384	281	733	1020	2270	1140	819	662	389	299	247
10	373	392	337	659	957	2190	1160	791	616	386	315	249
11	364	389	521	612	903	1940	1280	807	569	405	285	314
12	361	398	754	714	859	2250	1250	853	540	442	247	378
13	352	501	736	867	830	2200	1360	819	530	443	241	257
14	319	434	905	893	798	1880	1330	821	516	389	251	241
15	298	367	955	798	784	1770	1200	835	473	e391	275	249
16	293	352	957	729	818	1560	1120	851	469	e398	267	271
17	303	462	742	672	953	1400	1100	828	470	e365	251	328
18	307	402	609	632	1030	1270	1090	784	506	e364	261	268
19	297	491	537	598	955	1220	1010	762	507	e376	276	265
20	295	460	493	574	1080	1230	975	744	468	e382	243	264
21	295	417	482	556	1700	1550	1010	742	461	e385	227	260
22	294	395	444	652	1900	3130	982	782	460	368	279	262
23	289	374	425	942	1440	2510	964	835	411	390	239	264
24	299	350	407	935	1190	1940	1050	935	380	378	223	259
25	281	329	387	1480	1060	1800	965	981	368	341	224	257
26	276	319	409	3330	986	2270	960	887	372	311	252	286
27	275	314	625	2680	917	1920	916	837	394	289	234	288
28	279	311	654	1920	866	1660	881	898	430	304	210	291
29	281	308	558	1840	---	1500	946	884	463	321	209	311
30	265	305	574	4270	---	1450	898	911	484	302	214	293
31	288	---	696	5360	---	1570	---	849	---	290	224	---
TOTAL	10200	10728	15840	42146	37076	52876	33407	26720	16136	11530	8104	8242
MEAN	329	358	511	1360	1324	1706	1114	862	538	372	261	275
MAX	404	501	957	5360	4250	3130	1530	1120	776	445	315	378
MIN	265	269	281	556	784	737	881	742	368	289	209	227
AC-FT	20230	21280	31420	83600	73540	104900	66260	53000	32010	22870	16070	16350

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 2003, BY WATER YEAR (WY)

MEAN	480	1026	1428	1554	1569	1350	1313	1207	925	581	394	367
MAX	996	2546	4109	3313	4217	2915	2358	2418	2439	1687	1088	804
(WY)	1998	1996	1978	1974	1996	1972	1916	1969	1899	1899	1899	1899
MIN	218	282	438	363	430	681	704	532	278	229	209	188
(WY)	1988	1988	1977	1979	1977	1977	1973	1992	1992	1992	1992	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1898 - 2003	
ANNUAL TOTAL	293574		273005			
ANNUAL MEAN	804		748		1009	
HIGHEST ANNUAL MEAN					1664	1899
LOWEST ANNUAL MEAN					465	1977
HIGHEST DAILY MEAN	4860	Apr 14	5360	Jan 31	19200	Feb 7 1996
LOWEST DAILY MEAN	223	Sep 8	209	Aug 29	144	Sep 13 1994
ANNUAL SEVEN-DAY MINIMUM	242	Sep 5	222	Aug 27	155	Sep 10 1994
ANNUAL RUNOFF (AC-FT)	582300		541500		731000	
10 PERCENT EXCEEDS	1400		1490		1900	
50 PERCENT EXCEEDS	726		493		778	
90 PERCENT EXCEEDS	284		271		308	

e Estimated

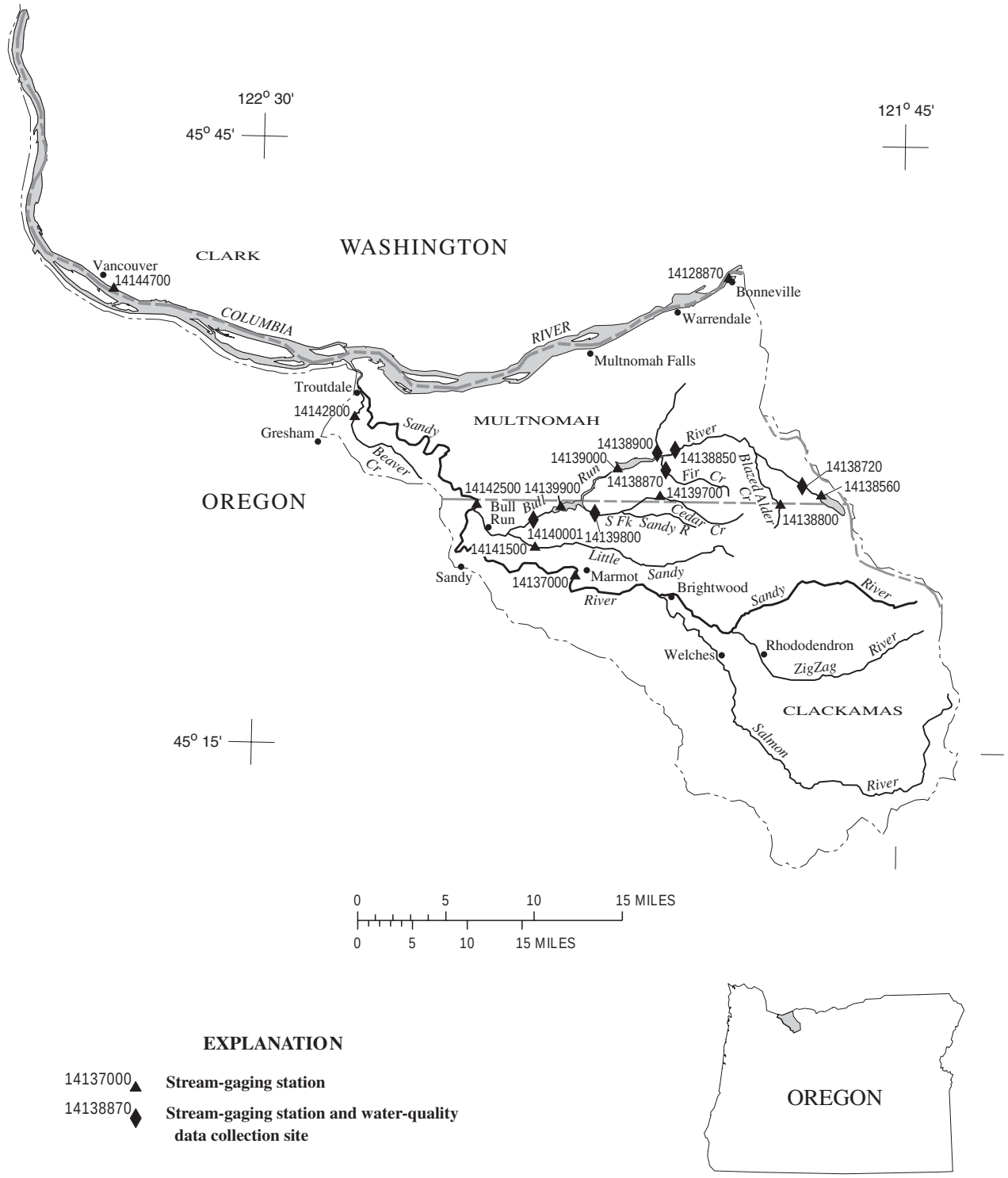


Figure 19. Location of surface-water and water-quality stations in the Columbia River between Bonneville Dam and confluence with the Willamette river and the Sandy River Basin.

14128870 COLUMBIA RIVER BELOW BONNEVILLE DAM, OR

LOCATION.--Lat 45°38'00", long 121°57'33", in sec.21, T.2 N., R.7 E., Multnomah County, Hydrologic Unit 17080001, on left bank 0.9 mi downstream from Bonneville Dam left bank powerhouse, 50 ft upstream from Tanner Creek, and at mile 144.5.

DRAINAGE AREA.--239,900 mi^2, approximately.

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

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. Prior to August 15, 1990, at a site 0.5 mi upstream at the same datum.

REMARKS.--Flow regulated by many reservoirs upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 35.11 ft Feb. 9, 1996; minimum, 6.06 ft Sept. 21, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 25.36 ft May 31; minimum, 6.06 ft Sept. 21.

Gage height, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.48	7.34	8.08	13.34	10.57	11.84	11.96	11.31	11.57	14.16	12.58	13.19
2	9.57	7.06	8.38	13.56	10.74	12.09	12.85	11.32	11.70	13.95	12.40	13.08
3	10.62	7.48	8.64	13.43	8.96	10.83	12.58	11.37	11.73	14.54	11.83	13.48
4	12.49	9.12	11.59	12.12	10.59	11.29	12.45	11.42	11.75	14.59	12.34	12.92
5	12.32	7.69	8.93	12.09	10.88	11.41	11.93	11.31	11.56	14.61	11.96	12.77
6	9.80	6.97	8.28	11.67	10.79	11.22	11.81	11.39	11.56	12.72	11.49	11.91
7	12.68	7.93	9.97	11.59	11.16	11.35	11.79	11.35	11.63	12.77	11.25	11.88
8	12.60	7.93	9.76	13.27	11.13	11.75	11.71	11.35	11.56	13.34	11.48	12.42
9	14.47	9.70	11.37	13.80	11.18	11.85	11.85	11.39	11.57	13.44	11.99	13.08
10	14.67	9.89	12.10	13.75	11.17	11.78	11.85	11.36	11.57	11.99	11.48	11.68
11	13.77	10.78	11.69	13.02	11.07	11.60	11.89	11.40	11.58	11.87	11.44	11.65
12	13.18	8.27	9.60	13.06	11.23	11.91	11.87	11.37	11.59	11.98	11.33	11.66
13	9.19	7.36	8.19	13.24	11.15	12.11	11.85	11.24	11.54	11.90	11.43	11.60
14	9.85	8.14	8.99	13.39	11.26	11.66	11.83	11.34	11.61	11.86	11.25	11.57
15	11.95	9.26	10.57	11.77	11.05	11.53	11.98	11.37	11.61	11.68	11.18	11.50
16	10.11	7.29	8.37	11.68	11.27	11.53	14.55	11.46	12.36	11.81	11.04	11.41
17	10.19	8.35	9.35	11.72	11.35	11.49	16.64	11.38	12.78	11.94	11.52	11.66
18	9.79	8.27	9.27	12.99	11.23	11.77	15.97	11.34	13.21	12.08	11.42	11.69
19	9.37	6.79	8.20	12.61	11.34	11.56	16.00	11.31	13.29	11.92	11.42	11.65
20	9.14	6.72	7.69	11.76	11.26	11.51	15.89	11.46	12.75	12.01	11.41	11.64
21	11.01	6.89	9.47	11.98	11.40	11.57	12.37	11.39	11.81	12.09	11.52	11.69
22	10.22	7.38	9.01	12.75	11.34	11.88	12.01	11.40	11.65	11.96	11.43	11.63
23	11.86	8.11	10.42	12.07	11.39	11.58	11.76	11.30	11.54	11.85	11.38	11.59
24	11.56	8.77	10.25	11.73	11.41	11.56	11.77	11.39	11.56	11.88	11.33	11.53
25	12.35	9.99	10.82	11.67	11.32	11.49	11.97	11.36	11.59	11.68	11.00	11.35
26	12.38	10.69	11.24	13.76	11.32	12.22	11.93	11.32	11.55	12.13	11.15	11.46
27	11.18	8.06	9.14	14.26	11.33	12.39	12.15	11.37	11.62	13.94	11.18	12.61
28	11.27	9.34	10.35	12.80	11.37	11.69	11.87	11.31	11.56	16.11	11.60	14.29
29	11.73	10.55	10.95	11.80	11.34	11.56	12.07	11.30	11.62	16.26	14.50	15.45
30	11.14	10.33	10.65	11.93	11.39	11.59	11.93	11.35	11.63	16.43	13.84	14.90
31	12.87	10.59	11.45	---	---	---	13.27	11.27	12.10	20.75	15.15	17.27
MONTH	14.67	6.72	9.77	14.26	8.96	11.65	16.64	11.24	11.83	20.75	11.00	12.46

14128870 COLUMBIA RIVER BELOW BONNEVILLE DAM, OR--Continued

Gage height, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	21.87	20.62	21.43	13.87	11.73	12.29	17.00	15.73	16.65	20.47	18.53	19.40
2	21.68	20.12	20.84	13.09	11.67	12.12	18.90	16.50	17.72	19.25	17.73	18.39
3	21.15	17.02	19.06	14.45	11.63	12.71	18.00	15.95	16.93	19.14	16.03	17.78
4	19.92	17.20	18.60	14.58	13.14	13.57	16.97	15.83	16.40	18.93	16.68	17.42
5	17.20	14.02	15.44	15.03	13.74	14.61	17.47	14.43	16.34	18.65	16.88	17.59
6	14.45	13.12	13.96	15.31	13.01	14.13	17.71	16.70	17.18	20.25	17.41	19.09
7	15.33	14.03	14.71	15.14	13.03	14.17	17.05	15.45	16.46	21.10	18.89	20.17
8	14.75	12.66	13.66	17.11	15.02	16.05	17.34	16.58	16.93	18.91	16.77	17.89
9	13.73	11.29	12.30	17.12	15.42	16.22	18.36	16.50	17.02	20.53	17.61	19.09
10	13.07	11.27	12.06	16.76	13.18	14.80	18.86	16.47	17.48	18.78	17.41	18.00
11	12.65	11.19	12.11	15.45	13.05	14.36	17.70	15.67	16.79	17.82	16.39	16.91
12	12.20	11.20	11.62	14.34	11.60	12.85	17.33	15.83	16.62	18.22	16.39	16.78
13	12.50	11.65	12.05	15.58	11.37	14.17	17.10	15.35	16.23	18.47	16.05	16.81
14	12.98	11.64	12.22	15.55	13.89	14.76	17.80	16.03	16.73	20.84	16.63	19.16
15	12.43	11.45	11.85	15.69	13.60	14.59	18.25	16.59	17.28	20.82	18.78	19.54
16	11.85	11.15	11.51	16.66	13.22	15.29	19.02	17.82	18.39	20.56	19.32	19.86
17	12.45	11.19	11.64	16.94	14.44	16.16	19.82	17.28	18.05	19.93	18.86	19.23
18	12.20	11.37	11.68	18.91	16.20	17.27	20.70	19.21	20.04	20.93	17.54	19.23
19	14.13	12.05	12.93	17.52	15.73	16.96	19.38	18.23	18.59	20.91	18.53	19.21
20	14.05	12.01	13.10	17.61	16.13	16.56	18.80	15.80	17.51	18.69	17.37	17.92
21	13.07	11.42	12.48	16.46	14.49	15.63	18.18	16.42	17.21	20.33	17.18	18.52
22	12.90	11.30	12.09	16.24	15.09	15.64	19.77	16.44	18.15	20.81	17.77	19.13
23	12.89	11.19	11.93	16.16	13.75	15.00	21.97	17.05	19.13	20.89	18.20	19.72
24	12.93	11.21	11.82	15.43	12.68	14.13	20.64	17.87	18.57	21.59	18.69	20.24
25	12.67	11.23	11.93	16.10	13.62	15.40	18.94	16.89	17.54	21.02	18.47	19.33
26	13.76	11.79	12.46	17.60	15.12	16.27	21.29	17.94	20.18	21.50	19.84	20.21
27	13.25	11.21	11.79	19.61	17.33	18.91	20.56	17.78	18.71	24.32	19.69	21.70
28	14.16	11.10	12.06	20.53	18.42	19.72	20.37	16.61	18.80	24.91	22.44	24.10
29	---	---	---	19.69	17.95	18.40	19.73	17.31	18.73	23.24	19.56	21.54
30	---	---	---	18.92	15.80	17.31	20.44	18.39	19.28	25.21	21.48	24.02
31	---	---	---	18.35	15.96	17.42	---	---	---	25.36	24.02	24.85
MONTH	21.87	11.10	13.55	20.53	11.37	15.40	21.97	14.43	17.72	25.36	16.03	19.45

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	25.35	24.10	24.75	16.03	13.92	14.91	14.96	10.88	12.76	15.83	10.34	10.99
2	24.56	22.33	23.31	15.98	14.18	15.00	14.95	12.36	13.44	12.56	8.59	9.45
3	24.22	21.10	22.77	14.91	10.77	12.18	13.85	9.99	11.01	9.83	8.45	9.26
4	23.35	20.87	22.03	14.42	10.60	11.72	13.18	10.53	11.59	10.29	8.38	9.36
5	23.60	21.30	21.96	14.59	13.14	13.53	13.35	9.41	11.06	10.49	8.09	8.99
6	22.52	20.61	21.42	14.43	10.12	12.23	12.51	9.74	11.13	9.67	8.23	8.88
7	22.65	20.36	21.12	13.67	9.55	11.10	11.85	10.64	11.19	9.59	7.65	8.53
8	22.55	20.66	21.46	13.70	9.86	11.72	12.82	10.73	11.42	9.42	7.05	8.03
9	22.24	19.26	20.55	16.57	12.12	14.08	14.02	10.54	11.45	9.97	7.10	9.01
10	22.60	19.09	21.02	17.16	14.56	15.60	14.06	10.36	11.52	9.82	7.72	8.78
11	23.62	21.31	22.40	16.43	13.89	14.88	13.75	9.91	11.44	8.56	6.61	7.68
12	23.22	21.29	22.41	15.88	12.95	14.21	15.53	11.90	13.33	8.64	6.74	7.77
13	22.76	19.98	21.05	16.02	11.62	13.07	15.65	11.95	13.15	9.34	6.76	8.00
14	22.66	20.34	21.22	16.13	11.95	14.84	14.54	11.29	12.26	9.30	6.63	7.93
15	22.28	18.58	20.27	15.94	12.14	14.05	13.43	10.27	11.74	8.63	6.78	7.76
16	19.39	18.50	18.90	15.82	11.97	13.13	13.34	9.24	10.45	10.81	7.13	8.64
17	21.65	19.27	20.41	15.93	13.21	14.58	13.51	10.35	12.00	10.39	8.05	9.31
18	21.72	19.80	20.35	15.93	12.07	13.61	13.75	9.57	11.15	9.39	7.52	8.26
19	21.98	18.67	20.27	13.89	9.58	10.79	14.00	11.26	13.05	9.62	6.75	8.23
20	18.67	15.08	17.01	13.44	9.63	11.34	14.35	10.24	12.29	7.90	6.62	7.26
21	16.02	14.81	15.49	15.09	12.59	13.43	15.21	12.14	13.75	9.95	6.06	7.44
22	16.70	13.97	15.69	15.09	11.72	12.61	14.54	11.05	12.04	10.58	7.23	9.28
23	16.09	15.50	15.75	15.47	11.40	13.56	13.71	11.24	11.86	11.64	10.17	10.91
24	15.99	13.47	15.38	16.03	13.62	14.46	12.78	9.77	10.97	11.05	8.94	10.05
25	17.56	13.51	16.00	14.95	12.29	13.29	14.24	10.35	12.27	12.04	7.69	9.48
26	19.78	17.21	18.56	13.13	10.35	11.38	14.49	10.14	12.39	12.41	9.35	10.70
27	19.33	16.83	17.86	13.41	10.68	11.51	16.19	12.75	14.74	13.23	8.92	11.45
28	18.34	15.09	15.95	14.86	10.54	12.06	16.01	11.59	12.38	12.81	9.24	10.31
29	17.42	14.83	16.07	14.95	12.53	14.05	11.98	9.48	10.25	9.78	8.06	9.10
30	17.04	14.29	15.23	14.96	11.83	12.84	12.32	8.13	10.60	10.97	8.10	9.62
31	---	---	---	13.66	10.94	11.89	14.03	10.49	11.59	---	---	---
MONTH	25.35	13.47	19.56	17.16	9.55	13.15	16.19	8.13	11.94	15.83	6.06	9.02
YEAR	25.36	6.06	13.79									

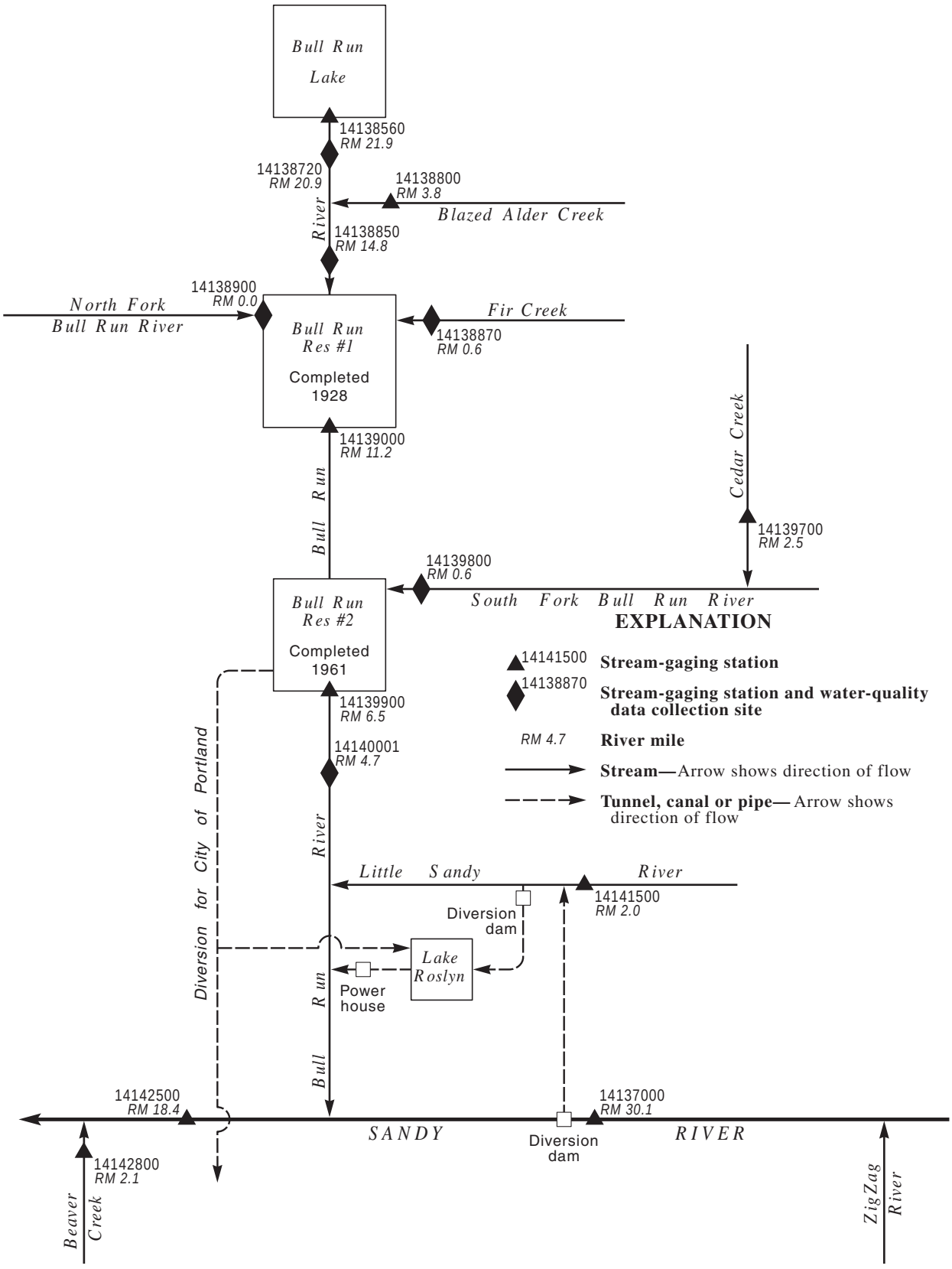


Figure 20. Schematic diagram showing gaging stations and diversions in the Sandy River Basin.

14137000 SANDY RIVER NEAR MARMOT, OR

LOCATION.--(Revised)Lat 45°23'59", long 122°08'10", in NW 1/4 sec.18, T.2 S., R.6 E., Clackamas County, Hydrologic Unit 17080001, on right bank 0.6 mi west/northwest of Marmot, 0.2 mi downstream from Marmot Dam of Portland General Electric Co., 7.7 mi downstream from Salmon River, and at mile 29.8.

DRAINAGE AREA.--263 mi^2, at dam.

PERIOD OF RECORD.--August 1911 to current year. Monthly discharges only, January to September 1916, October 1918 to June 1919, published in WSP 1318. 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. Records for October 2002 to September 2003 obtained by combining records for Sandy River Diversion above Marmot Dam (14137001) with records for Sandy River below Marmot Dam, near Marmot (14137002).

REVISED RECORDS.--WSP 594: Drainage area. WSP 1288: 1912(M), 1915, 1922, 1924, 1934(M). WSP 1318: 1932(M), WDR OR-97-1: Drainage Area.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (levels by Portland General Electric). Aug. 15, 1911, to Dec. 20, 1915, and July 2, 1919, to Oct. 19, 1933, nonrecording gage at site 1.5 mi upstream at different datum. Oct. 20, 1933, to Sept. 30, 1958, water-stage recorder at site 1.1 mi upstream at different datum. Sept. 30, 1958 to Mar. 11, 1997, water-stage recorder at site 0.6 mi upstream, at different datum. March 11, 1997 to Oct. 1, 2002 water-stage recorder at site 0.5 mi upstream, at same datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Streamflow values include diversion at Marmot Dam. No other regulation or diversion upstream from station.

AVERAGE DISCHARGE.--90 years (water years 1912-15, 1917-18, 1920-2003), 1,347 ft^3/s, 69.60 in/yr, 976,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 61,400 ft^3/s Dec. 22, 1964, gage height, 17.05 ft, site and datum then in use, from rating curve extended above 7,000 ft^3/s; maximum gage height, 20.40 ft, Feb. 7, 1996, site and datum then in use; minimum, 190 ft^3/s Oct. 13, 1994.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,200 ft^3/s Jan. 31; minimum daily discharge, 225 ft^3/s Nov. 1.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	327	225	269	1590	7760	1000	2320	1450	1040	529	346	275
2	277	228	267	1720	4510	949	2060	1400	980	487	347	280
3	272	229	262	2230	3380	962	1850	1390	919	474	342	288
4	257	231	264	2460	2630	900	1690	1460	e874	466	336	289
5	262	233	271	2550	2160	1100	1640	1720	868	468	343	285
6	271	233	261	1790	1800	2320	1740	1560	859	476	346	283
7	294	235	256	1400	1560	5670	1680	1410	866	462	349	296
8	283	266	252	1160	1380	4690	1720	1310	851	471	341	401
9	278	352	250	1030	1230	3910	1960	1210	786	479	345	348
10	276	380	282	909	1130	3610	2020	1140	740	467	353	360
11	278	394	470	832	1060	2950	2200	1120	703	472	345	431
12	267	395	679	1030	994	3060	2060	1210	682	475	317	464
13	262	496	819	1190	937	3010	2120	1180	669	463	309	313
14	261	479	865	1310	899	2650	2080	1190	645	431	315	287
15	258	371	986	1150	862	2520	1870	1210	607	434	328	280
16	249	336	1280	1030	917	2270	1720	1270	631	439	326	315
17	e250	521	1060	919	1070	2050	e1790	1320	638	405	309	514
18	e250	434	823	841	1240	1800	1880	1320	668	407	306	337
19	e250	676	700	782	1220	1670	1750	1310	645	418	310	304
20	e250	609	610	736	1540	1660	1630	1270	624	423	292	286
21	e245	479	658	709	2270	2440	1720	1230	701	426	285	269
22	e245	409	602	817	2900	5320	1760	1250	804	409	300	263
23	e240	371	567	1020	2290	4170	1700	1300	652	412	293	259
24	237	338	524	998	1790	2970	1870	1420	593	397	290	255
25	235	314	489	1640	1470	2580	1740	1410	559	374	291	250
26	236	e300	589	3210	1300	3240	1660	1270	546	361	303	265
27	235	292	1230	2940	1160	2850	1530	1180	561	354	291	269
28	249	286	1240	2240	1080	2440	1430	1230	572	359	278	265
29	251	280	1100	2300	---	2150	1580	1180	581	365	279	269
30	237	274	1360	8760	---	2080	1520	1210	589	358	278	270
31	227	---	2110	9760	---	2310	---	1130	---	350	277	---
TOTAL	8009	10666	21395	61053	52539	81301	54290	40260	21453	13311	9770	9270
MEAN	258	356	690	1969	1876	2623	1810	1299	715	429	315	309
MAX	327	676	2110	9760	7760	5670	2320	1720	1040	529	353	514
MIN	227	225	250	709	862	900	1430	1120	546	350	277	250
AC-FT	15890	21160	42440	121100	104200	161300	107700	79860	42550	26400	19380	18390
CFSM	0.98	1.35	2.62	7.49	7.13	9.97	6.88	4.94	2.72	1.63	1.20	1.17
IN.	1.13	1.51	3.03	8.64	7.43	11.50	7.68	5.69	3.03	1.88	1.38	1.31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 2003, BY WATER YEAR (WY)

MEAN	650	1591	2079	2011	1871	1658	1869	1794	1216	642	427	412
MAX	2168	4777	6278	4752	4971	3983	3134	3443	3457	1385	663	1056
(WY)	1960	1996	1965	1953	1996	1972	1962	1949	1917	1917	1974	1959
MIN	239	236	445	498	464	631	658	743	420	354	268	244
(WY)	1988	1937	1977	1937	1977	1941	1941	1992	1992	1992	1940	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1912 - 2003	
ANNUAL TOTAL	398137		383317			
ANNUAL MEAN	1091		1050		1347	
HIGHEST ANNUAL MEAN					2018	1996
LOWEST ANNUAL MEAN					766	1977
HIGHEST DAILY MEAN	8180	Apr 14	9760	Jan 31	41400	Dec 22 1964
LOWEST DAILY MEAN	225	Nov 1	225	Nov 1	193	Oct 13 1994
ANNUAL SEVEN-DAY MINIMUM	229	Oct 31	229	Oct 31	196	Oct 7 1994
ANNUAL RUNOFF (AC-FT)	789700		760300		976000	
ANNUAL RUNOFF (CFSM)	4.15		3.99		5.12	
ANNUAL RUNOFF (INCHES)	56.31		54.22		69.60	
10 PERCENT EXCEEDS	2050		2230		2610	
50 PERCENT EXCEEDS	986		652		995	
90 PERCENT EXCEEDS	267		263		350	

e Estimated

14138560 BULL RUN LAKE NEAR BRIGHTWOOD, OR

LOCATION.--Lat 45°27'40", long 121°50'37", in SE 1/4 SE 1/4 sec.20, T.1 S., R.8 E., Multnomah County, Hydrologic Unit 17080001, in Mount Hood National Forest, in main cabin on northwest side of Bull Run Lake, near outlet structure, 10.7 mi northeast of Brightwood, and at mile 21.9.

DRAINAGE AREA.--3.5 mi^2.

PERIOD OF RECORD.--October 1992 to current year.

REVISED RECORDS.--WDR OR-95-1: 1993, 1994.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929, Portland Water Bureau datum.

REMARKS.--Bull Run Lake was formed by natural processes, including a large landslide. A temporary log crib dam was constructed in 1917 to increase the capacity of the lake. In 1920 the log crib dam was reconstructed. A concrete dam and improved outlet valve were constructed in 1958. A lower outlet and tunnel was constructed in 1961. Portland Water Bureau releases water from the lake to augment streamflows during periods of low flow.

COOPERATION.--Capacity table provided by Portland Water Bureau, extended above 3,180 ft by U.S. Geological Survey, Oct. 1, 1996.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 48,340 acre-ft Feb. 9, 1996, elevation, 3,185.02 ft; minimum contents observed, 31,080 acre-ft Oct. 29, 1992, elevation, 3,143.97 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 44,180 acre-ft May 28, elevation, 3,175.77 ft; minimum contents, 38,330 acre-ft Dec. 10, elevation, 3,162.28 ft.

Capacity Table (elevation, in feet and contents, in acre-feet)

2,905	0	3,140	29,510
2,940	229	3,150	33,410
2,980	1,270	3,160	37,380
3,020	3,740	3,180	46,080
3,060	8,880	3,186	48,780
3,100	17,280		

Gage height, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3167.04	3164.11	3162.92	3163.75	3169.78	3170.29	3174.98	3175.57	3175.67	3173.02	3169.59	3166.32
2	3166.94	3163.99	3162.87	3164.08	3169.99	3170.27	3175.01	3175.54	3175.62	3172.91	3169.48	3166.23
3	3166.89	3163.90	3162.77	3164.28	3170.12	3170.22	3175.08	3175.53	3175.56	3172.79	3169.37	3166.13
4	3166.79	3163.82	3162.72	3164.73	3170.14	3170.18	3175.06	3175.66	3175.44	3172.69	3169.26	3166.03
5	3166.68	3163.74	3162.65	3164.88	3170.11	3170.36	3175.11	3175.69	3175.41	3172.58	3169.15	3165.93
6	3166.57	3163.60	3162.55	3164.94	3170.14	3170.60	3175.12	3175.68	3175.34	3172.47	3169.06	3165.84
7	3166.48	3163.60	3162.49	3164.97	3170.09	3170.86	3175.08	3175.66	3175.27	3172.36	3168.96	3165.82
8	3166.37	3163.60	3162.40	3164.95	3170.02	3170.96	3175.05	3175.62	3175.19	3172.26	3168.85	3165.79
9	3166.28	3163.67	3162.32	3164.90	3169.92	3171.23	3175.05	3175.56	3175.10	3172.16	3168.75	3165.77
10	3166.19	3163.66	3162.38	3164.89	3169.90	3171.41	3175.10	3175.52	3175.00	3172.04	3168.64	3165.71
11	3166.08	3163.68	3162.59	3164.96	3169.83	3171.66	3175.17	3175.53	3174.92	3171.93	3168.52	3165.76
12	3165.98	3163.70	3162.72	3165.13	3169.76	3172.08	3175.26	3175.55	3174.82	3171.83	3168.42	3165.67
13	3165.88	3163.76	3162.84	3165.23	3169.69	3172.33	3175.39	3175.53	3174.75	3171.71	3168.31	3165.58
14	3165.76	3163.72	3162.99	3165.30	3169.65	3172.44	3175.43	3175.53	3174.65	3171.60	3168.20	3165.48
15	3165.65	3163.64	3163.10	3165.31	3169.60	3172.58	3175.47	3175.57	3174.56	3171.50	3168.09	3165.38
16	3165.57	3163.66	3163.23	3165.28	3169.67	3172.66	3175.46	3175.65	3174.46	3171.38	3167.98	3165.43
17	3165.47	3163.69	3163.28	3165.29	3169.71	3172.72	3175.52	3175.64	3174.34	3171.27	3167.88	3165.37
18	3165.37	3163.69	3163.30	3165.24	3169.69	3172.75	3175.54	3175.61	3174.24	3171.16	3167.78	3165.27
19	3165.29	3163.75	3163.26	3165.22	3169.70	3172.77	3175.52	3175.57	3174.14	3171.04	3167.68	3165.20
20	3165.20	3163.71	3163.27	3165.18	3169.87	3172.83	3175.50	3175.54	3174.07	3170.94	3167.57	3165.11
21	3165.11	3163.66	3163.27	3165.14	3170.35	3173.16	3175.53	3175.52	3174.07	3170.84	3167.47	3165.02
22	3165.03	3163.62	3163.24	3165.23	3170.50	3173.82	3175.54	3175.52	3173.98	3170.73	3167.35	3164.93
23	3164.93	3163.56	3163.18	3165.27	3170.58	3173.98	3175.59	3175.56	3173.87	3170.61	3167.25	3164.84
24	3164.83	3163.50	3163.15	3165.51	3170.51	3174.03	3175.63	3175.64	3173.77	3170.48	3167.14	3164.75
25	3164.73	3163.41	3163.12	3165.85	3170.48	3174.26	3175.62	3175.69	3173.68	3170.37	3167.04	3164.66
26	3164.65	3163.34	3163.18	3166.60	3170.43	3174.57	3175.65	3175.70	3173.58	3170.26	3166.93	3164.55
27	3164.57	3163.27	3163.29	3166.82	3170.39	3174.64	3175.62	3175.67	3173.47	3170.15	3166.83	3164.47
28	3164.50	3163.16	3163.32	3166.94	3170.34	3174.67	3175.59	3175.72	3173.36	3170.04	3166.74	3164.38
29	3164.42	3163.11	3163.33	3167.35	---	3174.68	3175.59	3175.74	3173.27	3169.93	3166.64	3164.29
30	3164.28	3163.00	3163.54	3168.18	---	3174.71	3175.59	3175.73	3173.14	3169.81	3166.53	3164.18
31	3164.21	---	3163.62	3169.34	---	3174.87	---	3175.71	---	3169.70	3166.43	---
MAX	3167.04	3164.11	3163.62	3169.34	3170.58	3174.87	3175.65	3175.74	3175.67	3173.02	3169.59	3166.32
MIN	3164.21	3163.00	3162.32	3163.75	3169.60	3170.18	3174.98	3175.52	3173.14	3169.70	3166.43	3164.18
(†)	39140	38630	38890	41350	41790	43780	44100	44160	43010	41510	40090	39130
(‡)	-1250	-510	+260	+2460	+440	+1990	+320	+60	-1150	-1500	-1420	-960

CAL YR 2002 MAX 3176.59 MIN 3162.32 AC-FT‡ -930
WTR YR 2003 MAX 3175.74 MIN 3162.32 AC-FT‡ -1260

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

14138720 BULL RUN RIVER AT LOWER FLUME, NEAR BRIGHTWOOD, OR

LOCATION.--Lat 45°28'16", long 121°51'51", in SE 1/4 NE 1/4 sec.19, T.1 S., R.8 E., Multnomah County, Hydrologic Unit 17080001, at flume, 1.0 mi downstream from outlet structure at Bull Run Lake, 10.4 mi northeast of Brightwood, and at mile 20.9.

DRAINAGE AREA.--5.08 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1992 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,840 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Regulation at times by Bull Run Lake. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--11 years (water years 1993-2003), 26.2 ft^3/s, 18,950 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 148 ft^3/s Feb. 7, 1996, gage height, 3.05 ft, from rating curve extended above 63 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 8.2 ft^3/s Oct. 28, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 55 ft^3/s Jan. 31, gage height, 2.16 ft; minimum discharge, 14 ft^3/s Dec. 2-11.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	15	15	19	47	26	37	32	29	23	20	18
2	18	15	15	21	43	26	36	32	28	23	20	18
3	18	15	15	25	41	26	36	31	28	23	20	17
4	18	15	14	26	40	26	35	31	28	23	20	17
5	18	15	14	27	39	26	35	32	28	22	20	17
6	17	15	14	26	38	28	34	32	28	22	20	17
7	17	15	14	24	36	30	34	32	28	22	20	17
8	17	15	14	24	35	30	33	31	27	22	19	17
9	17	15	14	23	34	31	33	31	27	22	19	17
10	17	15	14	23	33	34	34	31	27	22	19	17
11	17	15	15	22	31	34	34	31	27	22	19	17
12	17	15	16	23	30	36	34	31	27	22	19	17
13	17	16	17	23	29	37	35	31	26	22	19	17
14	17	16	17	23	28	37	35	31	26	22	19	17
15	17	15	17	23	27	36	35	31	26	21	19	17
16	17	15	18	23	27	35	34	31	26	21	19	17
17	17	15	17	22	26	34	34	31	26	21	19	17
18	17	15	17	22	26	34	34	30	25	21	19	17
19	17	16	17	22	26	34	34	30	25	21	19	17
20	16	16	16	22	27	34	33	30	25	21	18	17
21	16	15	16	21	32	35	33	30	25	21	18	16
22	16	15	16	21	34	42	33	30	25	21	18	16
23	16	15	16	22	32	41	33	30	24	21	18	16
24	16	15	16	22	30	39	34	30	24	21	18	16
25	16	15	16	24	29	39	33	30	24	21	18	16
26	16	15	16	30	28	40	33	30	24	20	18	16
27	16	15	17	31	28	39	33	29	24	20	18	16
28	16	15	18	30	27	39	33	29	24	20	18	16
29	16	15	17	29	---	38	33	29	23	20	18	16
30	16	15	17	37	---	37	32	29	23	20	18	16
31	16	---	20	48	---	37	---	29	---	20	18	---
TOTAL	520	454	495	778	903	1060	1019	947	777	663	584	502
MEAN	16.8	15.1	16.0	25.1	32.2	34.2	34.0	30.5	25.9	21.4	18.8	16.7
MAX	18	16	20	48	47	42	37	32	29	23	20	18
MIN	16	15	14	19	26	26	32	29	23	20	18	16
AC-FT	1030	901	982	1540	1790	2100	2020	1880	1540	1320	1160	996

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2003, BY WATER YEAR (WY)

MEAN	15.9	20.8	28.0	31.6	30.6	31.5	32.0	33.4	28.8	22.4	20.5	18.7
MAX	22.8	37.0	49.1	67.3	55.8	62.7	57.6	67.0	42.7	28.3	40.0	32.4
(WY)	2000	1996	1996	1996	1996	1997	1997	1997	1999	2002	2000	2000
MIN	10.5	11.9	16.0	15.3	15.6	18.2	21.5	21.2	18.5	16.2	13.4	11.6
(WY)	1993	1994	2003	1993	1993	2001	2001	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1993 - 2003	
ANNUAL TOTAL	8837		8702			
ANNUAL MEAN	24.2		23.8		26.2	
HIGHEST ANNUAL MEAN					37.5	1997
LOWEST ANNUAL MEAN					17.4	2001
HIGHEST DAILY MEAN	54	Apr 14	48	Jan 31	130	Feb 7 1996
LOWEST DAILY MEAN	14	Dec 4	14	Dec 4	8.4	Oct 27 1992
ANNUAL SEVEN-DAY MINIMUM	14	Dec 4	14	Dec 4	8.6	Oct 22 1992
ANNUAL RUNOFF (AC-FT)	17530		17260		18950	
10 PERCENT EXCEEDS	34		34		39	
50 PERCENT EXCEEDS	23		22		24	
90 PERCENT EXCEEDS	15		15		15	

14138720 BULL RUN RIVER AT LOWER FLUME, NEAR BRIGHTWOOD, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: April 1996 to current year.
WATER TEMPERATURE: October 1995 to current year.

INSTRUMENTATION.--Water-quality monitor and data logger.

REMARKS.--Specific conductance and water temperature records excellent.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 32 microsiemens Oct. 10-16, 1996, but may have been higher during period of missing record; minimum, 18 microsiemens Dec. 27, 1998.
WATER TEMPERATURE: Maximum 9.0°C several days in September, 2000; minimum, 3.0°C Feb. 6, 1996.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 31 microsiemens several days in August and September; minimum, 24 microsiemens Jan. 31.
WATER TEMPERATURE: Maximum, 6.9°C many days in January, February, March; minimum, 5.9°C May 16, June 23-25.

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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

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

14138720 BULL RUN RIVER AT LOWER FLUME, NEAR BRIGHTWOOD, OR--Continued

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6.5	6.5	6.5	6.7	6.6	6.6	6.8	6.8	6.8	6.7	6.5	6.6
2	6.5	6.5	6.5	6.7	6.6	6.7	6.8	6.7	6.8	6.6	6.3	6.6
3	6.5	6.5	6.5	6.7	6.6	6.7	6.8	6.8	6.8	6.5	6.3	6.4
4	6.5	6.5	6.5	6.7	6.6	6.7	6.8	6.8	6.8	6.5	6.3	6.4
5	6.5	6.5	6.5	6.7	6.6	6.7	6.8	6.8	6.8	6.5	6.3	6.4
6	6.5	6.5	6.5	6.7	6.6	6.7	6.8	6.8	6.8	6.5	6.4	6.4
7	6.5	6.5	6.5	6.7	6.6	6.7	6.8	6.8	6.8	6.5	6.4	6.5
8	6.5	6.5	6.5	6.7	6.7	6.7	6.8	6.8	6.8	6.6	6.5	6.5
9	6.5	6.5	6.5	6.7	6.6	6.7	6.8	6.8	6.8	6.6	6.5	6.6
10	6.5	6.5	6.5	6.8	6.7	6.7	6.8	6.7	6.8	6.8	6.6	6.7
11	6.5	6.5	6.5	6.8	6.7	6.7	6.8	6.7	6.8	6.8	6.7	6.7
12	6.5	6.5	6.5	6.8	6.7	6.7	6.8	6.6	6.7	6.8	6.7	6.7
13	6.6	6.5	6.6	6.8	6.7	6.7	6.8	6.7	6.7	6.7	6.7	6.7
14	6.6	6.6	6.6	6.8	6.7	6.7	6.8	6.7	6.7	6.8	6.7	6.7
15	6.6	6.6	6.6	6.8	6.7	6.7	6.7	6.7	6.7	6.8	6.7	6.7
16	6.7	6.6	6.6	6.8	6.7	6.7	6.8	6.7	6.7	6.8	6.7	6.8
17	6.6	6.6	6.6	6.8	6.7	6.7	6.7	6.6	6.7	6.8	6.8	6.8
18	6.6	6.6	6.6	6.8	6.7	6.7	6.7	6.6	6.7	6.9	6.8	6.8
19	6.6	6.6	6.6	6.8	6.7	6.8	6.7	6.7	6.7	6.9	6.8	6.8
20	6.8	6.6	6.6	6.8	6.7	6.7	6.7	6.7	6.7	6.9	6.8	6.8
21	6.8	6.6	6.7	6.8	6.7	6.8	6.8	6.7	6.7	6.9	6.8	6.9
22	6.8	6.6	6.7	6.8	6.7	6.8	6.8	6.7	6.7	6.9	6.8	6.9
23	6.7	6.6	6.6	6.8	6.7	6.8	6.8	6.7	6.7	6.9	6.8	6.8
24	6.7	6.6	6.6	6.8	6.7	6.8	6.8	6.7	6.7	6.9	6.8	6.8
25	6.7	6.6	6.6	6.8	6.7	6.8	6.8	6.7	6.7	6.8	6.7	6.7
26	6.7	6.6	6.7	6.8	6.7	6.8	6.8	6.7	6.7	6.7	6.5	6.6
27	6.7	6.6	6.7	6.8	6.7	6.8	6.7	6.5	6.6	6.7	6.6	6.6
28	6.7	6.6	6.7	6.8	6.7	6.8	6.7	6.6	6.6	6.7	6.6	6.6
29	6.7	6.6	6.7	6.8	6.8	6.8	6.7	6.6	6.7	6.7	6.5	6.7
30	6.7	6.6	6.6	6.8	6.8	6.8	6.7	6.6	6.7	6.6	6.3	6.5
31	6.7	6.6	6.6	---	---	---	6.6	6.5	6.5	6.5	6.1	6.3
MONTH	6.8	6.5	6.6	6.8	6.6	6.7	6.8	6.5	6.7	6.9	6.1	6.6

14138720 BULL RUN RIVER AT LOWER FLUME, NEAR BRIGHTWOOD, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.4	6.2	6.3	6.8	6.7	6.8	6.5	6.4	6.5	6.3	6.2	6.2
2	6.5	6.3	6.4	6.8	6.8	6.8	6.5	6.4	6.5	6.3	6.2	6.3
3	6.6	6.5	6.6	6.9	6.8	6.8	6.5	6.4	6.4	6.3	6.2	6.3
4	6.7	6.6	6.7	6.9	6.8	6.8	6.5	6.4	6.4	6.3	6.2	6.2
5	6.8	6.7	6.7	6.9	6.7	6.8	6.4	6.3	6.4	6.2	6.1	6.2
6	6.8	6.7	6.8	6.7	6.6	6.6	6.4	6.3	6.4	6.2	6.1	6.2
7	6.9	6.8	6.8	6.7	6.4	6.6	6.4	6.4	6.4	6.2	6.1	6.2
8	6.9	6.8	6.8	6.7	6.5	6.6	6.4	6.4	6.4	6.2	6.1	6.1
9	6.9	6.8	6.9	6.6	6.3	6.5	6.4	6.3	6.4	6.2	6.1	6.1
10	6.9	6.8	6.9	6.4	6.3	6.3	6.4	6.3	6.4	6.2	6.1	6.1
11	6.9	6.8	6.9	6.5	6.3	6.4	6.4	6.3	6.3	6.2	6.1	6.2
12	6.9	6.8	6.9	6.4	6.2	6.3	6.4	6.3	6.3	6.2	6.1	6.1
13	6.9	6.8	6.9	6.4	6.2	6.3	6.4	6.3	6.3	6.2	6.1	6.1
14	6.9	6.8	6.9	6.5	6.3	6.4	6.3	6.3	6.3	6.2	6.1	6.2
15	6.9	6.9	6.9	6.5	6.5	6.5	6.3	6.3	6.3	6.2	6.1	6.1
16	6.9	6.9	6.9	6.6	6.5	6.6	6.3	6.3	6.3	6.1	5.9	6.1
17	6.9	6.8	6.9	6.6	6.6	6.6	6.3	6.2	6.3	6.1	6.0	6.0
18	6.9	6.8	6.9	6.7	6.6	6.6	6.3	6.1	6.3	6.1	6.0	6.0
19	6.9	6.8	6.9	6.7	6.6	6.7	6.3	6.3	6.3	6.1	6.0	6.0
20	6.9	6.7	6.8	6.7	6.6	6.7	6.3	6.2	6.3	6.1	6.0	6.0
21	6.7	6.3	6.5	6.7	6.4	6.6	6.3	6.3	6.3	6.1	6.0	6.1
22	6.6	6.4	6.6	6.4	6.0	6.2	6.3	6.3	6.3	6.1	6.0	6.1
23	6.7	6.6	6.6	6.3	6.2	6.3	6.3	6.2	6.3	6.2	6.1	6.1
24	6.7	6.6	6.6	6.3	6.2	6.3	6.3	6.2	6.3	6.2	6.1	6.2
25	6.7	6.6	6.7	6.4	6.3	6.3	6.3	6.2	6.3	6.2	6.1	6.2
26	6.7	6.6	6.7	6.3	6.2	6.3	6.3	6.2	6.2	6.2	6.1	6.2
27	6.8	6.7	6.7	6.4	6.3	6.3	6.3	6.2	6.2	6.2	6.1	6.2
28	6.8	6.7	6.7	6.4	6.3	6.4	6.3	6.2	6.2	6.2	6.1	6.2
29	---	---	---	6.5	6.4	6.4	6.3	6.2	6.2	6.2	6.1	6.2
30	---	---	---	6.5	6.4	6.5	6.3	6.2	6.3	6.2	6.1	6.2
31	---	---	---	6.5	6.5	6.5	---	---	---	6.2	6.0	6.1
MONTH	6.9	6.2	6.7	6.9	6.0	6.5	6.5	6.1	6.3	6.3	5.9	6.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	6.1	6.0	6.1	6.1	6.0	6.0	6.2	6.1	6.1	6.3	6.2	6.2
2	6.1	6.0	6.1	6.1	6.0	6.0	6.2	6.1	6.1	6.3	6.2	6.2
3	6.1	6.0	6.1	6.1	6.0	6.0	6.2	6.1	6.1	6.3	6.2	6.3
4	6.1	6.0	6.1	6.1	6.0	6.0	6.2	6.1	6.1	6.3	6.2	6.3
5	6.2	6.0	6.1	6.1	6.0	6.0	6.2	6.1	6.1	6.3	6.2	6.3
6	6.1	6.0	6.1	6.1	6.0	6.0	6.2	6.1	6.1	6.3	6.2	6.3
7	6.2	6.1	6.1	6.1	6.0	6.0	6.2	6.1	6.1	6.3	6.2	6.3
8	6.2	6.1	6.1	6.1	6.0	6.0	6.2	6.1	6.1	6.3	6.2	6.3
9	6.1	6.0	6.1	6.1	6.0	6.0	6.2	6.1	6.1	6.3	6.2	6.3
10	6.1	6.0	6.1	6.1	6.0	6.0	6.2	6.1	6.2	6.3	6.3	6.3
11	6.1	6.0	6.1	6.1	6.0	6.0	6.2	6.1	6.1	6.4	6.3	6.3
12	6.1	6.0	6.1	6.1	6.0	6.0	6.2	6.1	6.2	6.4	6.3	6.3
13	6.1	6.0	6.0	6.1	6.0	6.0	6.2	6.1	6.2	6.4	6.3	6.3
14	6.1	6.0	6.0	6.1	6.0	6.0	6.2	6.1	6.2	6.4	6.3	6.3
15	6.1	6.0	6.0	6.2	6.0	6.0	6.2	6.1	6.2	6.4	6.3	6.3
16	6.1	6.0	6.0	6.1	6.0	6.1	6.2	6.1	6.2	6.4	6.3	6.3
17	6.1	6.0	6.0	6.1	6.0	6.0	6.2	6.1	6.2	6.4	6.3	6.3
18	6.1	6.0	6.0	6.2	6.0	6.1	6.2	6.1	6.2	6.4	6.3	6.4
19	6.0	6.0	6.0	6.2	6.0	6.1	6.2	6.1	6.2	6.4	6.3	6.3
20	6.0	6.0	6.0	6.1	6.0	6.1	6.2	6.1	6.2	6.4	6.3	6.3
21	6.0	6.0	6.0	6.2	6.0	6.1	6.2	6.1	6.2	6.4	6.3	6.3
22	6.0	6.0	6.0	6.2	6.0	6.1	6.2	6.2	6.2	6.4	6.3	6.4
23	6.0	5.9	6.0	6.2	6.0	6.1	6.2	6.2	6.2	6.4	6.3	6.3
24	6.0	5.9	6.0	6.2	6.0	6.1	6.3	6.2	6.2	6.4	6.3	6.4
25	6.0	5.9	6.0	6.2	6.0	6.1	6.2	6.2	6.2	6.4	6.3	6.4
26	6.1	6.0	6.0	6.2	6.0	6.1	6.2	6.2	6.2	6.4	6.4	6.4
27	6.1	6.0	6.0	6.2	6.1	6.1	6.2	6.2	6.2	6.4	6.4	6.4
28	6.1	6.0	6.0	6.2	6.0	6.1	6.3	6.2	6.2	6.4	6.4	6.4
29	6.1	6.0	6.0	6.1	6.1	6.1	6.3	6.2	6.2	6.4	6.3	6.4
30	6.1	6.0	6.0	6.2	6.1	6.1	6.3	6.2	6.2	6.4	6.4	6.4
31	---	---	---	6.2	6.0	6.1	6.3	6.2	6.2	---	---	---
MONTH	6.2	5.9	6.0	6.2	6.0	6.0	6.3	6.1	6.2	6.4	6.2	6.3
YEAR	6.9	5.9	6.4									

14138800 BLAZED ALDER CREEK NEAR RHODODENDRON, OR

LOCATION.--Lat 45°27'10", long 121°53'23", 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 downstream from the confluence of Bedrock and Hickman Creeks and 8.6 mi north of Rhododendron, and at mile 3.78.

DRAINAGE AREA.--8.17 mi^2.

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

GAGE.--Water-stage recorder. Elevation of gage is 2,540 ft above NGVD of 1929, from topographic map.

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

AVERAGE DISCHARGE.--40 years (water years 1964-2003), 57.8 ft^3/s, 96.13 in/yr, 41,880 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,610 ft^3/s Dec. 22, 1964, gage height, 8.25 ft, from rating curve extended above 330 ft^3/s, on basis of slope-area measurement of peak flow; minimum discharge, 1.0 ft^3/s Sept. 2-7, 2003.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 30	1930	646	4.13	Mar. 22	1130	505	3.73
Jan. 31	1730	*767	*4.44				

Minimum discharge, 1.0 ft^3/s Sept. 2-7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	4.9	7.3	102	301	24	92	49	26	5.4	1.9	1.1
2	3.2	2.6	7.0	164	171	22	68	47	23	5.2	1.9	1.1
3	3.3	2.8	6.5	204	110	23	54	46	20	4.9	1.9	1.0
4	4.8	2.3	6.9	262	74	21	47	68	19	4.8	1.9	1.0
5	3.5	2.1	7.1	163	54	78	42	80	17	4.6	1.9	1.0
6	3.0	1.9	6.2	86	43	175	42	63	16	4.6	1.8	1.0
7	2.6	2.0	5.8	57	35	324	41	52	15	4.3	2.2	1.4
8	2.3	4.8	5.5	43	30	163	46	46	14	4.6	1.8	7.6
9	2.1	20	5.3	34	26	211	69	39	13	4.3	1.7	5.0
10	2.0	17	19	28	24	206	94	35	12	4.2	1.7	5.1
11	2.0	19	80	29	21	163	131	36	11	3.9	1.7	19
12	1.9	18	92	97	19	234	111	46	10	3.7	1.7	9.5
13	1.9	33	106	92	18	186	116	46	10	3.6	1.5	4.6
14	1.8	27	91	88	17	125	108	46	9.4	3.4	1.5	3.4
15	1.7	16	89	61	17	102	81	46	8.8	3.4	1.5	2.8
16	1.6	19	93	46	25	87	67	53	8.0	3.1	1.5	9.2
17	1.6	39	64	37	48	75	68	52	7.5	3.1	1.4	12
18	1.6	29	45	31	47	63	71	47	7.2	2.9	1.4	6.1
19	1.6	71	35	27	50	61	59	45	7.2	2.9	1.4	4.7
20	1.7	44	28	24	128	67	53	45	7.7	2.8	1.4	4.1
21	1.8	29	25	23	302	160	63	46	11	2.6	1.3	3.5
22	1.8	22	21	41	216	387	62	48	12	2.6	1.3	3.0
23	1.7	18	18	52	104	193	57	51	8.9	2.4	1.3	2.8
24	1.8	15	17	72	62	109	69	51	7.8	2.4	1.3	2.6
25	1.9	13	16	137	45	117	57	50	7.2	2.4	1.3	2.4
26	1.9	11	28	302	37	198	55	42	6.8	2.4	1.3	2.2
27	1.9	10	90	160	31	126	51	38	6.4	2.2	1.3	2.2
28	2.5	9.3	70	95	27	87	46	36	6.2	2.2	1.2	2.0
29	2.6	8.5	49	156	---	68	57	34	5.8	2.0	1.1	2.0
30	2.2	7.9	89	495	---	71	54	32	5.6	2.0	1.1	2.0
31	2.1	---	168	548	---	101	---	29	---	2.0	1.1	---
TOTAL	72.1	519.1	1390.6	3756	2082	4027	2031	1444	339.5	104.9	47.3	125.4
MEAN	2.33	17.3	44.9	121	74.4	130	67.7	46.6	11.3	3.38	1.53	4.18
MAX	5.7	71	168	548	302	387	131	80	26	5.4	2.2	19
MIN	1.6	1.9	5.3	23	17	21	41	29	5.6	2.0	1.1	1.0
AC-FT	143	1030	2760	7450	4130	7990	4030	2860	673	208	94	249
CFSM	0.28	2.12	5.49	14.8	9.10	15.9	8.29	5.70	1.39	0.41	0.19	0.51
IN.	0.33	2.36	6.33	17.10	9.48	18.34	9.25	6.57	1.55	0.48	0.22	0.57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2003, BY WATER YEAR (WY)

MEAN	30.2	88.5	105	102	83.3	69.8	79.5	72.6	38.5	10.8	5.28	9.94
MAX	82.5	218	288	207	221	167	150	165	115	35.4	27.6	35.5
(WY)	1968	1996	1965	1974	1996	1972	1990	1969	1964	1983	1968	1977
MIN	1.57	12.5	22.6	19.2	17.5	17.7	33.1	18.1	4.74	3.38	1.53	1.67
(WY)	1988	1994	1977	1985	1969	1992	1983	1992	1992	2003	2003	1991

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1964 - 2003	
ANNUAL TOTAL	16884.5		15938.9			
ANNUAL MEAN	46.3		43.7		57.8	
HIGHEST ANNUAL MEAN					88.1	1974
LOWEST ANNUAL MEAN					33.5	1977
HIGHEST DAILY MEAN	655	Apr 14	548	Jan 31	1810	Nov 25 1999
LOWEST DAILY MEAN	1.4	Sep 28	1.0	Sep 3	1.0	Sep 3 2003
ANNUAL SEVEN-DAY MINIMUM	1.6	Sep 22	1.0	Aug 31	1.0	Aug 31 2003
ANNUAL RUNOFF (AC-FT)	33490		31610		41880	
ANNUAL RUNOFF (CFSM)	5.66		5.34		7.07	
ANNUAL RUNOFF (INCHES)	76.88		72.57		96.13	
10 PERCENT EXCEEDS	106		108		132	
50 PERCENT EXCEEDS	28		19		31	
90 PERCENT EXCEEDS	1.9		1.7		3.3	

14138850 BULL RUN RIVER NEAR MULTNOMAH FALLS, OR

LOCATION.--Lat 45°29'54", long 122°00'40", 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 mi^2.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR OR-91-1: 1990.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,080 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair. Regulation at times since 1915 by Bull Run Lake, usable capacity, 12,270 acre-ft. No diversion upstream from station.

AVERAGE DISCHARGE.--37 years (water years 1967-2003), 408 ft^3/s, 115.64 in/yr, 295,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,800 ft^3/s Nov. 25, 1999, gage height, 14.46 ft; minimum discharge, 30 ft^3/s Oct. 28-31, 1987.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	1700	*5,730	*10.18	Mar. 22	1200	3,820	8.87
Mar. 7	0900	4,010	9.02				

Minimum discharge, 34 ft^3/s Nov. 2.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67	36	79	711	2430	216	558	303	184	70	48	40
2	49	36	76	983	1330	203	463	286	170	68	48	40
3	54	36	73	1260	857	224	407	278	159	67	48	39
4	66	37	73	1580	579	204	376	445	147	66	48	39
5	59	36	75	1060	438	546	372	666	138	65	47	39
6	56	36	70	597	364	1380	389	475	132	64	47	39
7	50	37	67	429	309	2870	393	389	126	63	50	42
8	47	56	64	339	276	1250	428	338	120	67	48	100
9	46	205	63	289	246	1520	609	295	115	65	47	70
10	45	169	153	250	221	1300	650	267	111	62	46	77
11	44	204	565	230	200	998	777	259	107	60	46	255
12	42	179	684	464	184	1470	658	303	103	59	46	147
13	41	329	826	e440	171	1230	669	287	106	59	45	78
14	40	290	787	e460	167	796	639	277	101	58	45	64
15	39	182	788	e380	160	650	528	281	93	57	44	58
16	39	176	814	326	211	536	455	325	89	56	44	141
17	38	292	572	283	363	471	476	348	85	55	44	190
18	38	257	409	250	407	427	550	339	83	55	43	103
19	39	669	337	222	427	422	451	314	83	54	43	89
20	39	432	283	203	979	455	391	295	85	53	43	80
21	39	294	258	193	2370	1170	413	280	107	53	43	71
22	38	225	232	288	1680	2940	416	275	120	52	43	64
23	38	183	215	378	789	1410	401	272	95	52	43	61
24	37	150	191	430	475	799	492	277	88	51	42	58
25	37	128	175	873	367	783	431	298	84	52	41	55
26	37	113	277	2240	310	1290	422	264	81	51	41	53
27	37	103	794	1140	271	907	396	240	78	51	42	51
28	43	95	625	695	241	656	350	231	75	50	41	49
29	42	89	457	987	---	491	355	218	73	50	41	49
30	38	83	674	3370	---	446	329	213	71	49	40	49
31	36	---	1210	4360	---	560	---	203	---	49	40	---
TOTAL	1360	5157	11966	25710	16822	28620	14244	9541	3209	1783	1377	2290
MEAN	43.9	172	386	829	601	923	475	308	107	57.5	44.4	76.3
MAX	67	669	1210	4360	2430	2940	777	666	184	70	50	255
MIN	36	36	63	193	160	203	329	203	71	49	40	39
AC-FT	2700	10230	23730	51000	33370	56770	28250	18920	6370	3540	2730	4540
CFSM	0.92	3.59	8.06	17.3	12.5	19.3	9.91	6.43	2.23	1.20	0.93	1.59
IN.	1.06	4.01	9.29	19.97	13.06	22.23	11.06	7.41	2.49	1.38	1.07	1.78

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2003, BY WATER YEAR (WY)

MEAN	238	606	713	683	608	514	516	438	280	114	80.1	116
MAX	535	1325	1434	1238	1216	1120	834	885	699	292	231	294
(WY)	1968	1996	1978	1975	1996	1972	1993	1969	1974	1983	1968	1977
MIN	36.5	72.4	193	177	167	148	242	150	54.8	54.0	43.7	39.9
(WY)	1988	1994	1977	1985	1993	1992	1967	1992	1992	1977	1967	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1967 - 2003	
ANNUAL TOTAL	116202		122079			
ANNUAL MEAN	318		334		408	
HIGHEST ANNUAL MEAN					643	1974
LOWEST ANNUAL MEAN					249	1977
HIGHEST DAILY MEAN	4020	Apr 14	4360	Jan 31	11900	Nov 25 1999
LOWEST DAILY MEAN	36	Oct 31	36	Oct 31	30	Oct 29 1987
ANNUAL SEVEN-DAY MINIMUM	36	Oct 31	36	Oct 31	31	Oct 25 1987
ANNUAL RUNOFF (AC-FT)	230500		242100		295400	
ANNUAL RUNOFF (CFSM)	6.65		6.98		8.51	
ANNUAL RUNOFF (INCHES)	90.24		94.81		115.64	
10 PERCENT EXCEEDS	667		788		860	
50 PERCENT EXCEEDS	237		182		260	
90 PERCENT EXCEEDS	44		42		58	

e Estimated

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

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1977 to current year.
pH: August 1990 to September 1992.
WATER TEMPERATURE: October 1977 to current year.
TURBIDITY: August 1990 to July 1994.
SUSPENDED SEDIMENT DISCHARGE: October 1977 to September 1986.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Specific conductance and water temperature records excellent.

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, Dec. 4, 1989, Apr. 14, 2002.
pH: Maximum recorded, 8.1 units Aug. 30, Sept. 1, 1990; minimum recorded, 5.7 units Jan. 18, 1991.
WATER TEMPERATURE: Maximum, 18.0°C June 22-25, 1992, July 23, 1994; minimum, 0.0°C on many days during winter periods.
TURBIDITY: Maximum recorded, 44 NTU Jan. 15, 1991; minimum recorded, 0.08 NTU Aug. 30, 31, 1992.
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 recorded, 33 microsiemens July 27, 28, 30, Aug. 1; minimum recorded, 11 microsiemens Feb. 2.
WATER TEMPERATURE: Maximum, 16.6°C July 21-23; minimum, 1.8°C Feb. 24.

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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

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

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	23	21	22	27	26	26	33	28	29	30	30	30
2	22	21	21	27	26	26	29	28	29	30	29	30
3	23	21	22	27	26	26	29	28	29	30	30	30
4	23	21	23	27	26	26	29	28	29	30	30	30
5	24	23	23	27	26	26	29	28	29	31	30	30
6	27	23	25	27	26	27	29	28	29	30	30	30
7	25	23	24	27	26	27	30	28	29	30	29	30
8	24	23	24	27	26	26	29	29	29	30	28	29
9	24	23	24	27	26	27	29	29	29	29	28	29
10	24	24	24	28	26	27	29	29	29	28	28	28
11	25	24	24	28	27	27	30	29	29	28	22	25
12	25	24	24	28	27	27	30	29	29	24	22	23
13	25	24	24	27	27	27	30	29	29	25	24	25
14	25	24	24	28	27	27	30	29	29	27	25	26
15	26	24	25	30	27	28	30	29	29	27	26	27
16	26	25	25	28	27	27	29	29	29	27	23	25
17	26	25	26	30	27	28	30	29	29	23	22	22
18	27	25	26	31	27	28	30	29	29	23	22	23
19	26	25	26	31	27	28	30	29	29	24	23	24
20	26	25	26	31	27	28	30	29	29	24	24	24
21	26	24	25	30	28	28	30	29	29	25	24	25
22	25	24	24	30	28	29	30	29	29	26	25	25
23	26	24	25	30	28	29	30	29	29	27	25	26
24	26	25	25	32	28	29	30	29	29	27	25	26
25	27	25	26	31	28	28	30	29	30	28	26	26
26	27	25	26	32	28	29	30	29	30	28	26	27
27	29	26	26	33	28	29	30	29	29	28	27	28
28	27	26	26	33	28	29	30	29	29	28	27	28
29	27	26	27	31	28	29	30	29	30	28	27	28
30	27	26	26	33	28	30	30	30	30	28	27	27
31	---	---	---	32	29	29	30	30	30	---	---	---
MONTH	29	21	25	33	26	28	33	28	29	31	22	27

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.4	8.0	8.2	2.1	1.9	2.0	5.0	4.5	4.7	5.0	4.7	4.9
2	8.2	7.3	7.8	2.2	1.9	2.1	5.2	4.7	5.1	5.5	5.0	5.3
3	8.8	7.9	8.3	2.6	2.1	2.3	4.7	3.6	4.0	5.7	5.0	5.3
4	9.5	8.7	9.1	3.7	2.6	3.1	4.1	3.5	3.7	5.9	5.4	5.6
5	9.7	9.3	9.6	5.1	3.7	4.4	4.1	3.6	3.9	5.4	4.5	4.9
6	10.3	9.7	9.9	5.9	5.1	5.5	3.6	3.5	3.6	4.9	4.4	4.7
7	10.3	10.1	10.2	6.6	5.9	6.3	3.5	3.3	3.4	4.4	3.9	4.2
8	10.3	9.5	9.8	6.8	6.6	6.7	3.3	3.0	3.2	4.2	3.6	3.7
9	9.7	9.5	9.6	6.8	6.1	6.4	3.8	3.2	3.4	3.8	3.3	3.6
10	9.7	8.5	9.1	6.6	6.1	6.3	4.5	3.8	4.2	3.3	3.0	3.2
11	8.5	7.6	8.0	7.1	6.6	6.9	5.7	4.2	4.7	3.9	3.0	3.4
12	7.6	6.5	6.9	7.9	7.1	7.4	6.2	5.7	6.0	4.9	3.9	4.5
13	6.9	6.5	6.7	7.9	7.5	7.7	6.4	5.7	6.0	---	---	---
14	7.2	6.5	6.8	7.7	7.0	7.6	7.2	6.4	6.8	---	---	---
15	7.8	7.0	7.3	7.0	5.9	6.3	6.9	6.2	6.4	---	---	---
16	8.5	7.8	8.2	6.6	5.8	6.1	6.5	5.5	6.0	4.4	3.9	4.2
17	8.3	7.9	8.1	7.0	6.6	6.8	5.5	4.2	4.8	4.2	3.8	4.0
18	8.1	7.8	7.9	7.0	6.1	6.5	4.5	4.1	4.4	3.9	3.5	3.7
19	8.9	8.0	8.4	7.9	6.8	7.6	4.5	4.2	4.4	4.2	3.3	3.7
20	9.5	8.9	9.3	8.3	7.5	7.9	4.4	4.1	4.2	5.0	4.1	4.4
21	9.7	9.3	9.6	8.3	7.9	8.1	4.2	3.3	3.6	5.2	4.9	5.0
22	9.5	8.3	8.9	8.2	7.7	8.0	4.2	3.6	4.0	5.7	5.0	5.2
23	8.3	7.6	8.0	8.1	7.3	7.8	4.1	3.6	3.7	6.0	5.5	5.7
24	7.6	6.3	6.8	7.3	5.6	6.4	3.6	3.3	3.4	6.2	5.4	5.7
25	6.3	5.5	5.7	5.6	4.3	4.6	4.2	3.4	3.8	6.7	6.0	6.2
26	5.6	5.3	5.4	4.3	3.7	4.0	4.5	4.1	4.3	7.3	6.5	6.9
27	5.8	5.1	5.4	4.7	4.1	4.4	5.0	4.1	4.7	6.5	6.2	6.4
28	7.0	5.8	6.5	4.7	4.5	4.6	5.0	4.7	4.8	6.2	5.7	6.0
29	7.0	5.8	6.7	5.2	4.7	4.9	4.7	4.2	4.4	6.5	5.7	6.0
30	5.8	2.8	4.0	5.2	5.0	5.0	4.6	3.9	4.3	7.2	6.5	6.8
31	2.8	2.0	2.3	---	---	---	5.0	4.5	4.8	7.4	6.3	7.1
MONTH	10.3	2.0	7.7	8.3	1.9	5.8	7.2	3.0	4.5	---	---	---

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

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.3	6.0	6.1	5.0	3.9	4.3	6.1	4.5	5.3	8.8	5.9	7.2
2	6.1	5.8	6.0	4.5	3.6	3.9	5.1	4.0	4.5	9.2	6.3	7.6
3	5.8	5.3	5.6	4.8	4.2	4.5	4.2	3.5	3.9	8.1	6.6	6.9
4	5.3	4.6	5.0	4.8	4.3	4.6	5.3	3.7	4.5	6.6	5.1	6.0
5	4.6	4.0	4.3	5.0	4.5	4.9	4.6	3.4	4.2	6.5	5.1	5.7
6	4.5	4.0	4.2	4.5	3.9	4.2	4.2	2.4	3.3	7.5	5.4	6.2
7	4.3	3.6	4.0	4.3	4.0	4.2	5.4	4.0	4.6	6.3	4.8	5.6
8	4.3	3.6	4.0	4.5	3.6	4.1	6.6	4.8	5.5	6.1	5.3	5.6
9	4.2	3.4	3.8	5.3	4.3	4.8	6.8	5.1	5.8	6.2	5.8	5.9
10	5.0	4.2	4.6	5.6	5.0	5.3	6.6	5.3	5.9	7.4	6.2	6.7
11	5.0	4.0	4.4	5.8	5.3	5.5	6.8	5.3	5.9	8.2	6.7	7.3
12	5.0	4.2	4.6	5.8	5.3	5.5	7.0	5.4	6.1	8.0	7.1	7.4
13	6.0	5.0	5.4	5.9	5.1	5.5	6.6	5.0	5.8	9.7	6.0	7.7
14	6.3	6.0	6.1	6.3	5.4	5.8	6.3	5.0	5.6	8.9	7.4	8.2
15	6.1	5.8	6.0	6.3	5.6	6.0	6.5	5.1	5.8	8.2	6.0	7.0
16	6.1	5.6	6.0	6.1	5.1	5.6	6.8	5.6	6.2	6.0	5.2	5.5
17	5.6	3.9	4.9	5.4	5.0	5.2	6.5	5.0	5.8	5.7	4.7	5.1
18	5.0	3.6	4.2	5.8	4.3	5.1	5.8	4.5	5.1	6.5	4.7	5.6
19	5.5	4.5	5.0	5.9	4.8	5.5	7.3	4.3	5.7	8.3	4.9	6.5
20	5.3	4.8	5.1	6.1	5.6	5.8	7.3	5.4	6.4	8.2	6.4	7.3
21	5.6	5.0	5.4	5.8	5.0	5.4	7.0	6.3	6.5	10.3	7.1	8.5
22	5.3	5.0	5.1	5.8	5.0	5.4	6.3	5.9	6.1	11.2	8.3	9.5
23	5.0	3.0	4.2	5.1	4.6	4.8	6.8	5.3	6.0	12.7	8.7	10.5
24	3.0	1.8	2.3	5.6	4.0	4.8	6.6	5.1	5.7	11.6	10.1	10.6
25	3.1	2.0	2.4	5.9	5.1	5.5	6.3	4.2	5.2	10.3	8.9	9.5
26	3.9	2.7	3.2	5.4	4.5	4.9	6.1	5.1	5.6	10.3	8.4	9.2
27	4.7	3.6	4.0	5.6	4.5	5.0	7.3	4.8	6.0	11.8	8.5	10.1
28	4.3	3.7	4.0	6.3	4.3	5.3	7.9	6.1	7.0	12.1	10.3	11.1
29	---	---	---	7.5	5.0	6.1	7.5	6.3	7.0	13.2	9.7	11.3
30	---	---	---	8.3	5.9	7.0	7.5	6.5	6.9	12.3	9.9	10.8
31	---	---	---	7.3	6.1	6.8	---	---	---	12.1	9.3	10.4
MONTH	6.3	1.8	4.6	8.3	3.6	5.2	7.9	2.4	5.6	13.2	4.7	7.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	12.5	9.7	10.9	14.3	12.4	12.9	15.5	14.0	14.7	13.4	12.4	12.9
2	12.5	9.7	11.0	13.3	10.8	12.1	15.0	13.7	14.2	13.6	12.2	12.9
3	13.0	9.3	11.0	13.6	11.1	12.3	14.0	13.2	13.6	14.1	13.1	13.6
4	13.7	10.1	11.8	14.1	11.3	12.7	14.7	12.5	13.5	14.6	13.6	14.1
5	14.4	10.7	12.5	14.6	11.9	13.2	14.7	13.7	14.2	14.6	13.6	14.1
6	15.2	11.6	13.3	15.1	13.1	14.1	14.7	13.5	14.2	14.1	13.4	13.8
7	15.7	12.5	14.0	14.8	12.6	13.9	15.0	13.7	14.4	13.9	12.9	13.4
8	15.2	12.7	14.1	14.6	12.9	13.3	15.0	14.0	14.6	12.9	11.7	12.1
9	14.2	11.4	12.1	14.8	11.5	13.0	14.7	13.7	14.3	11.7	11.3	11.4
10	11.4	10.4	10.9	15.9	13.1	14.4	14.7	13.5	14.1	11.7	11.3	11.4
11	12.4	10.2	11.2	16.2	14.1	15.2	14.5	13.5	13.9	12.7	11.7	12.2
12	12.2	10.4	11.4	15.9	14.1	14.9	14.5	13.2	13.8	12.7	11.5	12.0
13	11.9	10.9	11.1	15.3	14.0	14.5	14.2	12.8	13.5	11.5	10.0	10.7
14	12.2	10.2	11.1	15.3	13.0	14.1	14.4	12.7	13.6	11.1	10.0	10.7
15	13.1	10.0	11.4	15.8	13.7	14.7	14.6	14.1	14.2	11.1	10.1	10.6
16	13.8	10.6	12.1	15.5	14.0	14.6	14.6	13.6	14.0	10.6	9.5	9.9
17	14.8	11.7	13.2	15.0	12.8	14.0	14.4	13.1	13.8	10.1	9.1	9.6
18	14.6	11.7	12.6	15.3	13.2	14.3	14.6	13.4	14.0	10.3	9.1	9.6
19	11.7	10.4	10.9	15.5	13.2	14.5	14.6	13.9	14.2	10.6	10.1	10.3
20	10.4	9.6	9.9	15.8	13.7	14.8	13.9	12.0	12.9	10.6	9.5	10
21	9.8	9.2	9.4	16.6	14.5	15.6	13.6	12.4	13.0	10.1	9.1	9.7
22	9.6	8.8	9.1	16.6	14.7	15.9	13.6	13.1	13.3	10.3	9.3	9.8
23	9.4	9.0	9.2	16.6	15.0	15.8	13.1	12.0	12.6	10.6	9.9	10.2
24	12.4	9.0	10.3	16.1	14.0	15.0	12.7	11.5	12.2	11.0	10.1	10.6
25	13.3	10.2	11.7	15.2	13.5	14.4	13.1	11.7	12.4	11.2	10.6	10.9
26	14.6	11.3	12.8	15.0	13.2	14.1	12.9	12.4	12.7	11.6	10.8	11.1
27	15.4	12.6	14.0	14.7	12.8	13.9	13.1	12.0	12.5	12.3	11.6	11.9
28	15.9	13.1	14.5	15.5	13.5	14.5	12.9	11.7	12.3	12.3	11.9	12.2
29	15.9	13.8	14.9	15.8	14.0	14.9	13.1	12.0	12.6	12.3	11.9	12.1
30	15.6	13.6	14.4	16.1	14.2	15.2	13.4	12.4	12.9	11.9	10.8	11.2
31	---	---	---	16.1	14.5	15.3	13.6	12.7	13.1	---	---	---
MONTH	15.9	8.8	11.9	16.6	10.8	14.3	15.5	11.5	13.5	14.6	9.1	11.5

14138870 FIR CREEK NEAR BRIGHTWOOD, OR

LOCATION.--Lat 45°28'49", long 122°01'28", 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 mi^2.

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, WDR OR-91-1: 1976.

GAGE.--Water-stage recorder. Elevation of gage is 1,440 ft above NGVD of 1929, from topographic map.

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

AVERAGE DISCHARGE.--28 years (water years 1976-2003), 34.5 ft^3/s, 85.82 in/yr, 24,980 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,290 ft^3/s Dec. 2, 1977, gage height, 5.64 ft; minimum discharge, 1.4 ft^3/s Sept. 5-7, 2003.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	1800	*532	*3.85	No other peak greater than base discharge.			

Minimum discharge, 1.4 ft^3/s Sept. 5-7.

REVISIONS.--The maximum discharge for water years 2000, 2001, and 2002 have been revised as shown in the following table:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 25, 1999	0500	*1,630	*5.01	Apr. 14, 2002	0100	*386	*3.58
Apr. 30, 2001	1400	*291	*3.36				

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	1.9	4.0	70	203	20	48	25	13	5.1	2.6	1.6
2	2.9	1.9	3.8	80	127	19	42	23	12	4.9	2.5	1.6
3	3.6	1.9	3.6	88	86	19	37	22	12	4.8	2.5	1.6
4	5.2	1.9	3.7	102	60	18	34	35	11	4.7	2.5	1.5
5	4.3	1.9	3.8	82	47	47	33	53	10	4.6	2.5	1.5
6	4.0	1.9	3.3	54	37	103	36	43	9.9	4.4	2.5	1.4
7	3.2	2.0	3.1	40	31	257	39	35	9.4	4.4	2.7	2.2
8	2.8	3.5	3.0	31	27	142	45	29	9.0	4.5	2.5	7.3
9	2.6	14	2.9	26	23	152	63	25	8.6	4.4	2.4	4.7
10	2.6	10	10	22	21	121	62	22	8.4	4.1	2.3	5.2
11	2.5	11	37	21	19	89	67	21	8.2	4.1	2.3	16
12	2.4	12	47	43	18	113	55	23	7.9	3.9	2.3	9.6
13	2.2	22	65	43	16	96	57	22	8.2	3.9	2.2	5.4
14	2.2	19	61	44	16	63	53	21	7.8	3.7	2.2	4.3
15	2.1	12	60	34	15	54	48	21	7.3	3.5	2.1	3.8
16	2.0	12	60	27	18	45	44	24	6.9	3.5	2.1	8.8
17	2.0	16	48	22	28	40	47	26	6.7	3.4	2.1	12
18	1.9	15	35	20	37	36	53	27	6.5	3.4	2.0	7.2
19	1.9	42	29	18	41	36	48	27	6.5	3.2	2.0	6.3
20	1.9	28	24	16	83	38	41	25	6.7	3.2	2.0	5.7
21	1.9	19	22	16	164	97	44	23	9.0	3.2	1.9	4.9
22	1.9	14	21	25	140	220	48	21	9.7	3.1	1.9	4.3
23	1.9	11	20	29	77	126	44	20	7.6	3.0	1.9	4.0
24	1.8	9.0	18	30	47	75	51	20	6.9	3.0	1.8	3.7
25	1.8	7.4	16	58	36	75	46	23	6.4	3.0	1.8	3.4
26	1.8	6.4	24	103	29	113	44	19	6.1	3.0	1.8	3.3
27	1.8	5.6	70	78	25	81	40	18	5.8	2.8	1.8	3.1
28	2.4	5.1	56	55	22	62	34	17	5.6	2.8	1.8	3.0
29	2.3	4.6	44	79	---	50	32	16	5.4	2.7	1.8	2.8
30	2.1	4.3	65	245	---	43	28	15	5.2	2.7	1.7	2.8
31	2.0	---	100	352	---	50	---	15	---	2.6	1.6	---
TOTAL	78.9	316.3	963.2	1953	1493	2500	1363	756	243.7	113.6	66.1	143.0
MEAN	2.55	10.5	31.1	63.0	53.3	80.6	45.4	24.4	8.12	3.66	2.13	4.77
MAX	5.2	42	100	352	203	257	67	53	13	5.1	2.7	16
MIN	1.8	1.9	2.9	16	15	18	28	15	5.2	2.6	1.6	1.4
AC-FT	156	627	1910	3870	2960	4960	2700	1500	483	225	131	284
CFSM	0.47	1.93	5.69	11.5	9.77	14.8	8.32	4.47	1.49	0.67	0.39	0.87
IN.	0.54	2.16	6.56	13.31	10.17	17.03	9.29	5.15	1.66	0.77	0.45	0.97

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2003, BY WATER YEAR (WY)

MEAN	18.7	53.7	63.0	54.1	55.7	45.7	46.4	33.7	22.5	9.23	4.97	7.90
MAX	44.8	110	133	96.9	126	91.5	73.2	53.0	58.6	27.3	13.0	27.7
(WY)	1996	1996	1978	1976	1982	1997	1993	1977	1981	1983	1978	1977
MIN	1.97	6.09	15.3	15.8	16.9	14.0	24.9	14.6	3.80	3.50	2.13	2.40
(WY)	1988	1994	1977	2001	1977	1992	1998	1992	1992	1992	2003	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1976 - 2003	
ANNUAL TOTAL	9537.4		9989.8			
ANNUAL MEAN	26.1		27.4		34.5	
HIGHEST ANNUAL MEAN					53.5	1997
LOWEST ANNUAL MEAN					19.3	2001
HIGHEST DAILY MEAN	166	Apr 14	352	Jan 31	616	Dec 2 1977
LOWEST DAILY MEAN	1.8	Oct 24	1.4	Sep 6	1.4	Sep 6 2003
ANNUAL SEVEN-DAY MINIMUM	1.8	Oct 21	1.5	Aug 31	1.5	Aug 31 2003
ANNUAL RUNOFF (AC-FT)	18920		19810		24980	
ANNUAL RUNOFF (CFSM)	4.79		5.01		6.32	
ANNUAL RUNOFF (INCHES)	64.98		68.06		85.82	
10 PERCENT EXCEEDS	60		65		74	
50 PERCENT EXCEEDS	21		13		22	
90 PERCENT EXCEEDS	2.8		2.0		3.5	

14138870 FIR CREEK NEAR BRIGHTWOOD, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1977 to current year.
pH: August 1990 to September 1992.
WATER TEMPERATURE: October 1977 to current year.
TURBIDITY: August 1990 to September 1994.
SUSPENDED SEDIMENT DISCHARGE: October 1977 to September 1986.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Specific conductance record good. Water temperature record good. Turbidity data prior to October 1990 are available in the files of the Portland field office.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 49 microsiemens May 6, 1988, Aug. 13, 1990; minimum, 7 microsiemens Nov. 30, 1994.
pH: Maximum recorded, 7.7 units Sept. 13, 1990, but may have been higher during periods of missing record; minimum recorded, 6.0 units Sept. 5, 6, 8, 1991, but may have been lower during periods of missing record.
WATER TEMPERATURE: Maximum recorded, 16.0°C Sept. 1, 1987, June 23, 24, July 18, 19, 1992; minimum recorded, 0.0°C on several days during winter periods most years.
TURBIDITY: Maximum recorded, 11 NTU Nov. 25, 1991; minimum recorded, 0.04 NTU Feb. 15, 16, 1993.
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, 31 microsiemens Nov. 9; minimum, 14 microsiemens Mar. 22.
WATER TEMPERATURE: Maximum, 15.3°C July 22, 30, 31; minimum, 2.1°C Nov. 2.

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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

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

14138870 FIR CREEK NEAR BRIGHTWOOD, OR--Continued

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.0	7.6	7.9	2.6	2.4	2.5	5.4	4.9	5.2	5.1	4.9	5.1
2	7.8	7.1	7.5	2.5	2.1	2.3	5.4	4.6	5.2	5.2	4.9	5.1
3	8.2	7.6	7.9	2.8	2.2	2.4	4.6	4.0	4.2	5.2	4.9	5.1
4	8.8	8.2	8.5	3.4	2.8	3.1	4.6	4.0	4.2	5.4	5.1	5.2
5	8.9	8.4	8.8	4.4	3.4	4.0	4.6	4.1	4.4	5.1	4.8	5.0
6	9.5	8.8	9.1	5.2	4.3	4.8	4.1	3.8	4.0	5.1	4.6	4.9
7	9.5	8.9	9.2	5.7	5.2	5.5	3.8	3.5	3.7	4.8	4.4	4.6
8	9.3	8.8	9.0	6.1	5.7	5.9	3.5	3.2	3.4	4.6	4.3	4.4
9	9.3	8.8	9.0	6.1	5.7	5.9	4.0	3.4	3.6	4.4	3.8	4.2
10	8.8	7.8	8.4	6.1	5.7	5.8	4.4	4.0	4.2	4.0	3.7	3.8
11	7.8	7.1	7.5	6.4	6.1	6.3	5.2	4.3	4.6	4.6	3.7	4.1
12	7.1	6.6	6.9	6.9	6.4	6.7	5.9	5.2	5.6	4.8	4.6	4.7
13	7.1	6.6	6.9	7.1	6.9	6.9	6.1	5.6	5.7	5.1	4.8	5.0
14	7.3	6.7	7.0	7.1	6.4	6.9	6.6	6.1	6.4	5.1	4.4	4.9
15	7.8	7.1	7.4	6.4	5.9	6.2	6.4	5.9	6.1	4.6	4.1	4.4
16	8.4	7.8	8.1	6.4	5.7	6.0	6.2	5.6	5.8	5.0	4.3	4.7
17	8.2	7.8	8.0	6.6	6.4	6.5	5.6	4.4	5.0	4.8	4.5	4.6
18	8.0	7.6	7.8	6.4	6.1	6.3	4.9	4.4	4.7	4.7	4.1	4.4
19	8.6	7.8	8.3	7.3	6.4	7.0	4.8	4.6	4.8	4.7	4.4	4.5
20	8.9	8.6	8.8	7.5	7.1	7.3	4.8	4.4	4.6	5.2	4.5	4.8
21	8.9	8.8	8.9	7.6	7.3	7.5	4.4	3.7	3.9	5.5	5.2	5.3
22	8.9	8.2	8.4	7.6	7.3	7.5	4.4	4.0	4.2	5.8	5.3	5.6
23	8.4	7.5	7.9	7.5	6.9	7.4	4.3	4.0	4.2	5.7	5.3	5.5
24	7.5	6.6	6.9	6.9	5.4	6.2	4.1	3.8	4.0	5.9	5.4	5.6
25	6.6	5.9	6.1	5.4	4.3	4.7	4.4	4.1	4.2	6.2	5.7	6.0
26	5.9	5.6	5.8	4.6	4.3	4.4	4.6	4.3	4.4	6.8	6.2	6.5
27	6.1	5.2	5.7	4.9	4.4	4.7	4.8	4.3	4.6	6.4	6.1	6.2
28	6.8	6.1	6.4	5.1	4.8	5.0	5.1	4.6	4.9	6.1	5.7	5.9
29	6.4	5.1	6.0	5.6	5.1	5.3	4.8	4.3	4.5	6.0	5.6	5.7
30	5.1	3.4	4.0	5.6	5.2	5.5	4.6	4.1	4.4	6.7	6.0	6.3
31	3.4	2.6	3.0	---	---	---	5.1	4.4	4.8	6.8	6.1	6.6
MONTH	9.5	2.6	7.5	7.6	2.1	5.5	6.6	3.2	4.6	6.8	3.7	5.1

14138870 FIR CREEK NEAR BRIGHTWOOD, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.1	5.8	5.9	4.6	4.0	4.3	5.6	4.3	4.9	6.9	5.4	6.2
2	5.8	5.5	5.7	4.4	3.8	4.1	4.6	4.0	4.2	7.5	5.9	6.7
3	5.5	5.1	5.4	4.6	4.1	4.4	4.3	3.7	4.0	6.8	5.9	6.2
4	5.1	4.7	4.9	4.6	4.3	4.4	4.8	4.0	4.4	5.9	4.4	5.4
5	4.7	4.5	4.6	4.6	4.0	4.5	4.3	3.4	4.1	5.4	4.4	5.0
6	4.7	4.2	4.4	4.3	3.8	4.0	4.1	2.9	3.6	5.9	5.1	5.4
7	4.6	4.1	4.3	4.6	4.3	4.4	5.1	4.1	4.7	5.6	4.8	5.2
8	4.6	4.0	4.3	4.9	4.3	4.6	5.6	4.6	5.0	5.4	4.9	5.2
9	4.6	4.0	4.2	4.8	4.4	4.7	5.2	4.6	5.0	5.6	5.4	5.5
10	4.8	4.4	4.6	5.1	4.6	4.9	5.6	4.9	5.1	6.2	5.6	5.9
11	4.9	4.3	4.6	5.2	4.9	5.1	5.6	4.8	5.1	6.8	5.9	6.3
12	5.1	4.4	4.7	5.1	4.9	5.0	5.7	5.1	5.4	6.6	6.2	6.4
13	5.7	4.9	5.3	5.4	4.9	5.2	5.6	4.8	5.2	7.6	5.7	6.7
14	5.9	5.4	5.6	5.6	5.1	5.4	5.6	4.8	5.2	7.8	6.6	7.1
15	5.9	5.4	5.6	5.7	5.2	5.5	5.6	4.9	5.3	6.9	5.1	6.0
16	5.7	5.1	5.4	5.6	5.1	5.3	5.9	5.1	5.5	5.4	4.4	5.0
17	5.1	4.1	4.7	5.1	4.8	5.0	5.6	4.6	5.2	5.1	4.4	4.6
18	4.9	4.0	4.5	5.2	4.4	4.9	5.1	4.3	4.7	5.7	4.4	5.0
19	5.2	4.8	5.0	5.4	4.8	5.2	5.9	4.4	5.1	6.8	4.8	5.8
20	4.9	4.6	4.8	5.6	5.1	5.3	6.2	5.1	5.7	7.1	5.7	6.4
21	5.2	4.8	5.0	5.1	4.8	5.0	5.9	5.6	5.7	8.2	6.4	7.2
22	5.1	4.8	4.9	5.1	4.6	4.9	5.6	5.1	5.3	8.8	7.1	7.9
23	4.9	3.5	4.4	4.9	4.6	4.7	5.9	4.9	5.4	9.7	7.5	8.6
24	3.5	2.9	3.2	5.1	4.3	4.7	5.6	4.3	4.9	9.3	8.4	8.8
25	3.7	2.9	3.3	5.4	4.9	5.2	5.4	4.1	4.8	8.6	7.8	8.1
26	4.3	3.5	3.8	5.1	4.3	4.6	5.4	4.6	5.0	8.8	7.5	8.1
27	4.4	4.0	4.2	5.1	4.4	4.8	5.9	4.4	5.3	9.7	7.6	8.7
28	4.4	4.0	4.2	5.6	4.4	5.0	6.8	5.6	6.1	9.9	8.8	9.4
29	---	---	---	6.2	5.1	5.6	6.6	5.6	6.1	11.0	8.6	9.7
30	---	---	---	6.8	5.7	6.2	6.4	5.9	6.1	9.9	8.8	9.3
31	---	---	---	6.4	5.6	6.1	---	---	---	9.9	8.6	9.1
MONTH	6.1	2.9	4.7	6.8	3.8	4.9	6.8	2.9	5.1	11.0	4.4	6.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.3	8.6	9.4	11.9	10.9	11.4	14.5	13.1	13.9	13.0	11.8	12.5
2	10.3	8.6	9.4	11.7	9.6	10.8	14.0	13.5	13.8	13.4	12.1	12.8
3	10.9	8.5	9.6	11.7	9.8	10.8	13.8	13.3	13.4	14.2	13.0	13.5
4	11.5	9.1	10.3	12.2	10.2	11.2	14.0	12.4	13.3	14.4	13.4	13.9
5	12.2	9.8	10.9	12.6	10.7	11.6	13.8	13.1	13.4	14.4	13.4	13.9
6	12.8	10.4	11.6	13.1	11.3	12.2	13.8	12.8	13.4	14.2	13.4	13.7
7	13.3	11.1	12.2	12.8	11.1	12.1	14.0	12.8	13.4	13.7	12.5	13.2
8	13.1	11.3	12.1	12.4	11.3	11.7	13.8	12.8	13.3	12.5	11.4	11.7
9	11.7	10.2	10.8	12.8	10.6	11.7	13.5	12.8	13.2	11.4	11.0	11.1
10	10.2	9.8	10	13.8	11.7	12.7	13.5	12.6	13.1	11.4	11.0	11.2
11	10.4	9.4	9.9	14.0	12.4	13.2	13.5	12.6	13.0	11.6	11.2	11.4
12	10.9	9.4	10.0	14.0	12.4	13.2	13.5	12.6	13.1	11.6	10.5	11.1
13	10.0	9.4	9.8	13.3	12.6	12.9	13.5	12.1	12.8	10.8	9.9	10.4
14	10.2	9.0	9.6	13.5	11.9	12.8	14.0	12.2	13.2	11.0	9.9	10.5
15	11.1	8.9	9.9	13.8	12.2	13.1	13.8	13.3	13.5	10.5	9.7	10.1
16	11.9	9.4	10.6	13.3	12.6	12.9	13.8	13.1	13.3	10.1	9.1	9.6
17	12.6	10.2	11.4	13.3	11.5	12.5	14.0	12.6	13.2	9.5	8.9	9.2
18	11.7	10.4	11.0	13.8	11.9	12.9	14.3	12.8	13.5	9.7	8.8	9.2
19	10.4	9.4	9.8	14.0	12.2	13.2	13.8	12.8	13.4	9.9	9.5	9.7
20	9.4	8.9	9.1	14.3	12.4	13.5	13.0	11.7	12.5	9.7	8.9	9.5
21	8.9	8.3	8.7	15.0	13.3	14.1	13.2	11.8	12.7	9.7	8.9	9.3
22	8.9	8.1	8.4	15.3	13.5	14.4	13.2	12.7	12.9	10.1	9.1	9.6
23	8.7	8.3	8.4	15.0	13.5	14.3	12.7	11.6	12.3	10.1	9.5	9.9
24	10.0	8.3	9.1	14.0	12.8	13.5	12.5	11.2	11.9	10.6	9.7	10.2
25	11.1	8.7	9.9	14.0	12.4	13.2	12.7	11.4	12.1	10.8	10.1	10.4
26	12.2	9.6	10.9	13.8	12.1	13.0	12.5	12.1	12.4	11.4	10.3	10.8
27	12.8	10.7	11.8	13.5	11.7	12.8	12.5	12.1	12.3	12.1	11.2	11.6
28	13.5	11.1	12.3	14.5	12.6	13.5	12.5	11.2	11.9	12.3	11.6	11.9
29	13.8	12.2	12.9	14.8	13.1	14.0	12.7	11.6	12.3	12.1	11.4	11.6
30	13.1	11.9	12.4	15.3	13.3	14.3	13.2	11.8	12.6	11.4	10.8	11.1
31	---	---	---	15.3	13.5	14.4	13.2	12.3	12.7	---	---	---
MONTH	13.8	8.1	10.4	15.3	9.6	12.8	14.5	11.2	13.0	14.4	8.8	11.2
YEAR	15.3	2.1	7.7									

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 mi^2.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR OR-91-1: 1976.

GAGE.--Water-stage recorder. Elevation of gage is 1,060 ft above NGVD of 1929, from topographic map. Prior to Oct. 1, 1978, and from June 13, 1989 to July 1990 (during bridge construction), at site 700 ft upstream at datum 18.7 ft higher. From Oct. 1, 1978 to June 13, 1989, and July 1990 to present, site located 5 ft upstream from bridge, on left bank wing wall.

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

AVERAGE DISCHARGE.--38 years (water years 1966-2003), 73.3 ft^3/s, 119.77 in/yr, 53,130 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,700 ft^3/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 ft^3/s on basis of estimate of peak flow from slope-area survey; minimum discharge, 8.6 ft^3/s Oct. 19-29, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	1300	*1,030	*5.61	No other peak greater than base discharge.			

Minimum discharge, 9.4 ft^3/s Oct. 25-27, Sept. 3-7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	10	16	140	425	42	94	49	26	16	12	9.8
2	12	10	15	177	281	40	83	45	25	16	12	9.8
3	14	10	15	219	176	42	76	42	25	16	12	9.7
4	15	10	15	292	118	39	72	121	24	16	12	9.6
5	14	10	16	200	87	115	73	152	23	15	12	9.6
6	14	10	14	115	69	242	82	98	22	15	12	9.5
7	12	11	14	82	57	467	82	78	22	15	12	11
8	12	e30	13	64	50	250	88	67	21	16	12	19
9	12	e40	13	53	44	296	115	59	21	16	12	15
10	11	e35	29	46	40	228	107	53	21	15	11	16
11	11	e40	88	44	37	179	124	49	21	15	11	42
12	10	e35	103	97	34	245	110	52	20	15	11	21
13	10	e50	140	92	31	204	124	46	23	14	11	15
14	10	49	127	95	31	152	108	42	22	14	11	13
15	10	29	115	69	30	127	101	42	20	14	11	12
16	10	32	146	57	45	103	90	49	20	14	11	26
17	10	39	99	50	71	88	106	52	19	14	11	28
18	9.9	42	74	44	78	80	108	48	19	14	11	18
19	10	126	60	40	82	82	85	43	19	13	11	17
20	10	66	50	37	199	93	72	40	20	13	11	16
21	10	44	49	35	440	256	80	38	22	13	11	14
22	10	34	46	65	305	481	75	36	23	13	11	13
23	9.9	29	42	72	165	270	74	34	20	13	11	13
24	9.8	25	37	87	99	172	97	33	19	13	11	12
25	9.7	22	34	152	73	169	78	39	18	13	11	12
26	9.7	20	50	411	60	208	83	34	18	12	10	12
27	9.8	19	134	224	52	165	74	31	17	12	10	11
28	11	18	107	137	46	125	62	30	17	12	10	11
29	11	17	81	205	---	94	61	29	17	12	10	11
30	11	16	145	515	---	77	54	28	16	12	10	11
31	10	---	259	727	---	88	---	28	---	12	9.9	---
TOTAL	343.8	928	2146	4643	3225	5219	2638	1587	620	433	343.9	447.0
MEAN	11.1	30.9	69.2	150	115	168	87.9	51.2	20.7	14.0	11.1	14.9
MAX	15	126	259	727	440	481	124	152	26	16	12	42
MIN	9.7	10	13	35	30	39	54	28	16	12	9.9	9.5
AC-FT	682	1840	4260	9210	6400	10350	5230	3150	1230	859	682	887
CFSM	1.33	3.72	8.32	18.0	13.8	20.2	10.6	6.15	2.48	1.68	1.33	1.79
IN.	1.54	4.15	9.60	20.76	14.42	23.33	11.79	7.10	2.77	1.94	1.54	2.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2003, BY WATER YEAR (WY)

MEAN	42.8	106	131	129	109	90.6	88.4	73.1	48.0	24.6	17.1	22.9
MAX	95.9	222	285	309	231	200	147	137	111	62.7	35.2	54.4
(WY)	1998	1996	1976	1975	1996	1972	1993	1972	1974	1983	1968	1977
MIN	9.08	16.9	33.4	32.1	35.2	28.8	49.5	28.3	14.6	12.6	10.6	10.9
(WY)	1988	1994	1977	1979	1993	1992	1967	1992	1992	1992	1994	1987

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1966 - 2003	
ANNUAL TOTAL	24140.8		22573.7			
ANNUAL MEAN	66.1		61.8		73.3	
HIGHEST ANNUAL MEAN					121	1974
LOWEST ANNUAL MEAN					44.3	2001
HIGHEST DAILY MEAN	616	Apr 14	727	Jan 31	1910	Dec 2 1977
LOWEST DAILY MEAN	9.7	Oct 25	9.5	Sep 6	8.6	Oct 24 1987
ANNUAL SEVEN-DAY MINIMUM	9.8	Oct 21	9.7	Aug 31	8.7	Oct 23 1987
ANNUAL RUNOFF (AC-FT)	47880		44770		53130	
ANNUAL RUNOFF (CFSM)	7.95		7.43		8.81	
ANNUAL RUNOFF (INCHES)	107.94		100.93		119.77	
10 PERCENT EXCEEDS	142		145		152	
50 PERCENT EXCEEDS	55		30		47	
90 PERCENT EXCEEDS	11		11		14	

e Estimated

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, August 1990 to September 1992.
WATER TEMPERATURE: October 1978 to current year.
TURBIDITY: August 1990 to September 1994.
SUSPENDED SEDIMENT DISCHARGE: October 1978 to September 1986.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Turbidity data prior to October 1990 are available in the files of the Portland field office.
SPECIFIC CONDUCTANCE: Records good.
WATER TEMPERATURE: Records fair.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 103 microsiemens Jan. 13, 1981 (cement spill); minimum, 7 microsiemens Jan. 31, 1995, Feb. 19, 1995.
pH: Maximum recorded, 9.8 units Jan. 13, 1981 (cement spill); minimum recorded, 6.3 units June 19, 1981.
WATER TEMPERATURE: Maximum, 15.0°C July 28, 1998; minimum, 0.0°C on several days during winter periods.
TURBIDITY: Maximum recorded, 25 NTU Nov. 24, 1990; minimum recorded, 0.06 NTU Sept. 7, 13, 14, 1992.
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, 44 microsiemens Sept. 6, 29; minimum, 13 microsiemens Jan. 26, 30, 31, Feb. 1, Mar. 22.
WATER TEMPERATURE: Maximum recorded, 13.0°C July 21; minimum, 2.0°C Feb. 25.

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	40	36	39	42	42	42	33	32	33	18	17	18
2	41	39	40	42	42	42	33	33	33	18	16	17
3	42	39	40	42	42	42	34	33	33	16	15	16
4	40	39	40	42	42	42	34	33	34	16	15	15
5	40	39	39	42	42	42	34	33	33	17	15	16
6	40	39	40	42	42	42	34	34	34	18	17	18
7	41	40	40	42	42	42	35	34	34	19	18	19
8	41	40	41	42	---	---	35	34	35	20	19	20
9	42	41	41	---	---	---	35	35	35	21	20	21
10	41	40	41	---	---	---	35	29	32	22	21	22
11	41	40	41	---	---	---	29	20	26	23	22	22
12	41	41	41	---	---	---	22	19	21	22	18	19
13	42	41	41	---	28	---	19	18	19	19	18	19
14	42	41	42	28	27	27	19	18	19	19	18	18
15	42	41	42	30	28	29	19	18	18	20	19	19
16	42	41	42	30	27	29	19	18	18	21	20	20
17	42	42	42	28	27	27	19	18	19	22	21	21
18	42	41	42	28	24	28	20	19	20	23	22	22
19	43	42	42	24	20	22	21	20	21	23	23	23
20	43	42	42	23	21	22	22	21	22	24	23	24
21	43	42	42	25	23	24	22	21	22	24	24	24
22	43	42	42	27	25	26	23	22	22	24	19	22
23	42	42	42	27	27	27	24	22	23	21	18	20
24	43	42	42	28	27	28	24	23	23	21	18	20
25	43	42	42	29	28	29	24	24	24	18	16	17
26	42	42	42	30	29	30	24	22	23	17	13	15
27	42	42	42	31	30	30	22	18	19	16	15	16
28	43	42	42	31	31	31	19	18	19	18	16	17
29	42	41	42	32	31	32	20	19	20	18	14	17
30	42	41	41	33	32	32	20	16	19	15	13	14
31	42	41	42	---	---	---	17	16	16	14	13	13
MONTH	43	36	41	---	---	---	35	16	25	24	13	19

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

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

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.2	7.2	7.7	4.1	3.5	3.7	5.9	5.2	5.5	4.7	4.6	4.7
2	7.6	6.5	7.1	4.3	3.3	3.8	6.0	5.4	5.8	5.2	4.7	5.0
3	7.8	7.2	7.5	4.6	3.6	4.1	5.4	4.9	5.0	5.2	4.7	5.0
4	8.4	7.8	8.1	5.2	4.4	4.8	5.2	4.9	5.0	5.4	5.0	5.2
5	8.4	8.0	8.2	5.9	5.1	5.5	5.5	4.9	5.2	5.0	4.4	4.9
6	9.0	8.2	8.5	6.3	5.6	6.0	5.0	4.7	4.9	5.0	4.6	4.8
7	8.6	8.2	8.4	6.6	6.3	6.4	5.1	4.6	4.8	4.9	4.2	4.5
8	8.8	8.0	8.3	---	---	---	5.0	4.6	4.8	4.4	4.1	4.2
9	9.0	8.0	8.4	---	---	---	5.1	4.7	4.9	4.2	3.8	4.1
10	8.2	7.1	7.6	---	---	---	5.3	5.1	5.1	3.9	3.6	3.7
11	7.6	6.7	7.0	---	---	---	5.3	4.8	5.1	4.6	3.6	4.1
12	7.1	6.0	6.5	---	---	---	6.3	5.3	6.0	4.7	4.6	4.6
13	7.2	6.2	6.7	7.3	---	---	6.5	6.0	6.2	5.5	4.7	5.2
14	7.6	6.3	6.9	7.7	6.8	7.3	7.2	6.5	7.0	5.5	4.6	5.3
15	7.8	6.5	7.1	7.0	6.1	6.5	7.2	6.5	6.7	4.7	4.1	4.4
16	8.4	7.2	7.6	6.7	5.7	6.2	6.7	5.8	6.3	5.0	4.2	4.5
17	8.2	7.1	7.5	6.9	6.7	6.8	5.8	4.5	5.0	4.9	4.4	4.5
18	7.6	7.1	7.3	6.9	6.2	6.6	5.0	4.3	4.7	4.9	4.2	4.5
19	8.0	7.2	7.6	7.8	6.9	7.5	4.8	4.7	4.8	4.9	4.1	4.4
20	8.2	7.8	8.0	8.4	7.4	7.9	4.8	4.5	4.6	5.4	4.4	4.8
21	8.6	7.8	8.1	8.4	7.8	8.0	4.7	3.9	4.2	5.5	5.0	5.3
22	8.2	7.2	7.8	7.8	7.6	7.7	4.8	4.3	4.5	5.7	5.4	5.5
23	7.8	7.1	7.4	7.7	7.2	7.4	4.5	4.0	4.3	6.2	5.7	5.8
24	7.1	6.0	6.5	7.2	5.8	6.5	4.2	3.9	4.1	6.4	5.7	6.0
25	6.3	5.5	5.9	5.8	5.1	5.3	4.7	4.2	4.5	7.1	6.4	6.6
26	6.2	5.5	5.7	5.4	4.8	5.1	4.9	4.2	4.6	8.0	7.1	7.6
27	6.0	5.3	5.6	5.8	4.9	5.4	4.9	4.4	4.7	7.2	6.5	6.7
28	6.7	6.0	6.4	5.9	5.3	5.6	5.0	4.4	4.8	6.5	6.1	6.2
29	6.5	5.1	6.0	6.1	5.6	5.8	4.7	4.2	4.4	6.6	5.9	6.1
30	5.1	3.8	4.3	6.2	5.5	5.8	4.4	4.2	4.3	7.5	6.6	7.0
31	3.9	3.2	3.6	---	---	---	4.6	4.2	4.5	7.7	6.5	7.4
MONTH	9.0	3.2	7.1	---	---	---	7.2	3.9	5.0	8.0	3.6	5.2

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

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.5	6.1	6.2	4.8	3.6	4.2	6.6	4.3	5.3	8.6	6.2	7.2
2	6.1	5.9	6.1	4.2	3.6	3.9	4.7	3.8	4.1	8.8	6.5	7.5
3	5.9	5.3	5.6	4.5	4.0	4.2	3.8	3.2	3.5	7.5	6.7	7.1
4	5.3	4.6	4.9	4.5	4.0	4.3	4.7	3.3	3.9	6.7	5.0	6.0
5	4.9	4.1	4.5	4.7	4.2	4.5	3.8	3.0	3.7	6.0	4.5	5.2
6	4.8	4.0	4.3	4.4	3.9	4.1	3.9	2.6	3.3	6.7	5.3	5.9
7	4.6	3.7	4.2	4.5	3.9	4.3	4.9	3.6	4.2	5.9	5.2	5.5
8	4.6	3.7	4.2	4.4	3.6	4.0	5.9	4.2	4.9	5.7	5.1	5.4
9	4.6	3.7	4.2	4.5	4.0	4.3	6.1	4.6	5.1	6.1	5.7	5.9
10	5.1	4.3	4.7	5.0	4.4	4.6	5.9	4.9	5.3	6.6	5.9	6.2
11	5.1	4.1	4.6	5.3	4.8	5.0	6.3	4.9	5.5	7.5	6.3	6.8
12	5.3	4.3	4.7	5.5	5.0	5.3	6.4	5.2	5.8	7.2	6.8	7.0
13	5.8	4.9	5.3	5.7	5.0	5.3	6.1	4.9	5.6	8.9	6.1	7.3
14	6.1	5.6	5.8	6.2	5.3	5.7	6.3	5.1	5.7	8.3	7.2	7.7
15	6.1	5.6	5.8	6.2	5.8	6.0	6.1	5.2	5.7	7.5	6.3	6.9
16	5.9	5.1	5.6	6.0	5.3	5.7	6.8	5.6	6.1	6.3	5.1	5.8
17	5.1	3.8	4.6	5.8	5.0	5.3	6.4	4.9	5.7	5.7	4.9	5.2
18	4.9	3.8	4.3	5.7	4.5	5.2	5.4	4.4	5.0	6.3	4.9	5.5
19	5.3	4.5	4.8	5.8	5.0	5.5	6.8	4.6	5.6	7.6	5.1	6.2
20	4.9	4.6	4.8	5.8	5.5	5.7	7.0	5.7	6.4	7.6	6.2	6.9
21	4.9	4.3	4.7	5.5	4.8	5.1	6.8	6.3	6.4	9.4	6.9	7.9
22	4.9	4.5	4.6	5.7	4.8	5.3	6.3	5.7	5.9	9.8	7.8	8.7
23	4.5	3.1	3.9	4.8	4.0	4.4	6.5	5.5	6.0	11.1	8.4	9.6
24	3.1	2.3	2.6	5.5	3.6	4.4	6.4	5.0	5.6	10.2	9.4	9.8
25	3.5	2.0	2.7	5.7	5.0	5.3	6.0	4.3	5.1	9.6	9.0	9.3
26	3.8	2.9	3.4	5.5	4.2	4.8	5.8	5.0	5.3	9.8	8.4	9.0
27	4.5	3.4	3.9	5.2	4.0	4.5	6.5	4.7	5.7	10.7	8.2	9.5
28	4.0	3.6	3.9	5.8	4.2	5.1	7.5	6.0	6.7	10.9	9.4	10.0
29	---	---	---	7.1	5.0	6.1	7.6	6.2	6.8	11.6	9.0	10.2
30	---	---	---	7.8	6.2	7.0	7.3	6.7	7.0	10.5	9.0	9.7
31	---	---	---	7.5	6.6	7.2	---	---	---	10.7	8.8	9.5
MONTH	6.5	2.0	4.6	7.8	3.6	5.0	7.6	2.6	5.4	11.6	4.5	7.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.8	8.5	9.5	9.9	8.9	9.4	11.9	9.7	10.6	11.5	9.6	10.2
2	10.4	8.3	9.3	10.4	7.9	9.0	10.8	10.1	10.5	11.8	9.6	10.5
3	10.8	8.1	9.3	10.4	7.9	9.0	10.8	10.1	10.3	12.0	10.4	11.0
4	11.2	8.7	9.8	11.0	8.3	9.3	12.0	9.4	10.3	12.5	10.9	11.4
5	11.7	9.1	10.2	11.3	8.7	9.6	11.6	10.0	10.5	12.5	10.4	11.2
6	12.4	9.5	10.7	11.5	9.1	10.0	11.8	10.0	10.5	12.0	10.2	10.9
7	12.6	10.1	11.2	11.5	8.9	9.9	12.3	9.8	10.7	11.1	10.2	10.5
8	12.2	9.9	10.9	9.9	9.1	9.6	12.0	10.0	10.7	10.4	10.0	10.2
9	10.6	9.1	9.7	11.6	8.8	9.9	11.8	9.8	10.6	10.0	9.6	9.7
10	9.5	8.9	9.1	12.1	9.6	10.6	11.6	9.8	10.5	10.0	9.6	9.8
11	10.1	8.7	9.2	12.3	10.0	10.9	11.6	9.8	10.5	11.8	10.0	11.0
12	10.4	8.5	9.2	12.1	9.8	10.7	12.0	9.6	10.4	11.4	10.1	10.8
13	9.5	8.7	9.0	10.9	10.0	10.4	11.6	9.4	10.1	10.7	9.1	9.8
14	10.0	8.4	8.9	11.8	9.2	10.3	12.0	9.4	10.5	10.3	9.1	9.7
15	10.5	8.0	9.0	12.1	9.6	10.6	11.3	10.5	10.8	10.1	8.9	9.4
16	10.9	8.4	9.5	11.4	10.0	10.4	11.8	10.0	10.5	9.5	8.7	9.2
17	11.6	9.0	10.1	11.6	9.0	10.1	12.1	9.7	10.5	9.9	9.1	9.4
18	10.3	9.2	9.5	11.8	9.2	10.3	12.1	9.9	10.7	9.9	8.5	9.2
19	9.2	8.2	8.6	12.1	9.4	10.5	11.4	10.1	10.7	9.7	9.3	9.5
20	8.4	8.0	8.2	12.3	9.6	10.7	11.4	8.9	9.9	9.9	8.5	9.3
21	8.2	7.8	8.0	13.0	10.3	11.3	11.4	9.5	10.3	9.9	8.5	9.2
22	8.2	7.8	7.9	12.9	10.6	11.5	10.6	9.9	10.3	10.3	8.7	9.4
23	8.0	7.6	7.8	12.6	10.4	11.3	11.0	9.3	9.8	10.5	9.1	9.6
24	9.8	7.4	8.3	11.9	9.7	10.6	11.0	8.7	9.5	10.8	9.3	9.9
25	10.5	7.8	8.9	11.9	9.5	10.4	11.0	9.1	9.8	10.9	9.6	10.0
26	11.0	8.5	9.6	11.9	9.3	10.2	10.1	9.5	9.9	11.1	9.6	10.3
27	11.7	9.1	10.2	11.7	8.9	10.2	11.0	9.3	9.8	12.0	10.4	11.0
28	12.2	9.3	10.5	12.6	9.9	10.8	10.8	8.9	9.6	11.5	10.2	10.8
29	12.2	9.9	10.9	12.6	9.9	11.0	11.4	9.3	10.1	10.9	10.0	10.4
30	11.7	9.7	10.4	12.9	10.1	11.2	11.5	9.6	10.4	10.6	9.4	9.9
31	---	---	---	12.6	10.1	11.1	11.8	9.8	10.5	---	---	---
MONTH	12.6	7.4	9.4	13.0	7.9	10.3	12.3	8.7	10.3	12.5	8.5	10.1

14139000 BULL RUN RESERVOIR NUMBER ONE NEAR BULL RUN, OR

LOCATION.--Lat 45°28'58", long 122°04'56", 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 mi^2.

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

REMARKS.--Midnight elevations Oct. 29, 30, Nov. 2, furnished by Portland General Electric. 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, 30,800 acre-ft June 14, elevation, 1,045.50 ft; minimum contents, 8,050 acre-ft Nov. 8, elevation, 970.02 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 above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	982.54	975.59	992.37	1035.39	1037.78	1035.00	1035.04	1036.11	1044.91	1036.58	1005.69	990.22
2	982.38	976.15	991.20	1035.92	1036.19	1035.05	1035.03	1036.08	1044.77	1035.61	1005.27	990.63
3	982.33	976.73	991.14	1034.84	1035.67	1034.91	1035.36	1036.84	1044.43	1034.86	1004.62	991.05
4	982.43	977.30	991.13	1036.56	1034.99	1034.88	1034.96	1039.20	1043.97	1033.94	1003.94	991.46
5	982.44	975.89	991.49	1035.25	1035.25	1035.70	1035.15	1041.19	1043.99	1033.09	1003.21	991.86
6	982.39	973.20	992.27	1036.14	1034.79	1036.00	1035.08	1041.16	1044.36	1032.09	1002.67	992.28
7	982.27	970.31	993.05	1035.04	1034.99	1038.64	1034.92	1040.83	1044.46	1031.35	1003.16	992.81
8	982.07	971.05	993.73	1035.04	1035.35	1036.25	1034.96	1041.07	1044.56	1030.66	1003.57	993.32
9	981.87	974.23	994.43	1035.31	1034.83	1036.75	1035.22	1041.18	1044.68	1029.67	1004.02	992.39
10	981.65	976.63	996.01	1034.97	1034.91	1035.62	1035.15	1040.98	1044.77	1028.41	1004.47	990.74
11	981.43	977.19	1001.33	1034.90	1034.99	1035.99	1035.13	1040.97	1045.07	1027.46	1004.85	991.48
12	981.15	976.07	1003.54	1035.17	1034.95	1036.49	1035.37	1040.95	1045.21	1026.64	1003.94	991.26
13	980.89	976.64	1006.24	1034.80	1034.95	1035.55	1035.62	1041.03	1045.26	1025.73	1002.97	990.53
14	980.62	976.69	1013.19	1035.01	1034.74	1035.55	1035.44	1041.02	1045.07	1024.68	1002.03	990.42
15	980.32	976.43	1019.67	1035.06	1034.58	1034.96	1035.14	1041.09	1045.02	1023.44	1001.20	990.09
16	979.98	977.18	1026.38	1035.08	1034.53	1035.04	1035.07	1041.51	1044.95	1022.26	1000.61	989.99
17	979.65	980.12	1031.06	1035.06	1035.11	1035.15	1035.36	1041.50	1044.34	1021.20	999.97	991.86
18	979.33	982.74	1034.38	1034.89	1034.97	1035.22	1035.30	1041.21	1043.58	1019.90	999.30	992.91
19	979.01	990.25	1034.65	1034.93	1035.34	1035.16	1035.00	1040.98	1042.77	1018.47	998.57	992.28
20	978.71	991.42	1034.41	1034.97	1035.89	1035.07	1034.92	1041.04	1042.34	1017.05	997.71	990.83
21	978.51	991.50	1034.94	1035.00	1038.52	1036.87	1034.84	1041.34	1042.03	1015.60	997.07	990.41
22	978.36	992.09	1035.19	1034.83	1036.50	1038.59	1034.96	1041.08	1042.81	1014.54	996.32	991.09
23	978.11	992.08	1035.00	1034.86	1035.50	1036.10	1035.05	1041.35	1042.54	1013.65	995.67	990.15
24	977.70	991.69	1034.69	1035.41	1035.04	1035.67	1035.17	1041.96	1041.99	1012.96	994.95	990.78
25	977.26	991.17	1034.58	1035.67	1035.14	1036.01	1034.96	1042.89	1041.01	1012.21	994.29	989.93
26	976.81	992.43	1034.62	1037.85	1034.77	1035.85	1035.01	1043.41	1040.62	1011.61	993.25	990.49
27	976.37	991.16	1035.48	1035.81	1035.08	1035.53	1034.97	1043.87	1039.77	1010.78	992.40	989.94
28	976.06	991.58	1035.35	1035.15	1035.02	1035.03	1035.02	1044.22	1038.75	1009.89	991.78	990.48
29	975.73	991.38	1035.14	1037.01	---	1034.88	1034.89	1044.25	1037.96	1009.01	990.90	990.95
30	975.27	992.29	1035.70	1039.72	---	1035.04	1035.48	1044.41	1037.33	1007.98	990.21	989.82
31	975.01	---	1035.65	1041.40	---	1034.91	---	1044.71	---	1006.68	990.41	---
MAX	982.54	992.43	1035.70	1041.40	1038.52	1038.64	1035.62	1044.71	1045.26	1036.58	1005.69	993.32
MIN	975.01	970.31	991.13	1034.80	1034.53	1034.88	1034.84	1036.08	1037.33	1006.68	990.21	989.82
(†)	9020	12900	26800	29100	26600	26500	26700	30400	27400	16900	12500	12300
(‡)	-1580	+3880	+13900	+2300	-2500	-100	+200	+3700	-3000	-10500	-4400	-200

CAL YR 2002 MAX 1045.37 MIN 970.31 AC-FT‡ +300
WTR YR 2003 MAX 1045.26 MIN 970.31 AC-FT‡ +1700

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

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 mi^2.

PERIOD OF RECORD.--July to November 1964, June 1965 to September 2003 (discontinued).

REVISED RECORDS.--WDR OR 96-1: 1989(M), 1991 (M).

GAGE.--Water-stage recorder. Elevation of gage is 1,960 ft above NGVD of 1929, from topographic map.

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

AVERAGE DISCHARGE.--38 years (water years 1966-2003), 65.6 ft^3/s, 112.45 in/yr, 47,550 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,990 ft^3/s Dec. 22, 1964, gage height, 7.20 ft, from rating curve extended above 940 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 4.7 ft^3/s Oct. 28, 29, 1987.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	1700	877	4.22	Mar. 7	1000	*990	*4.40

Minimum discharge, 5.1 ft^3/s Sept. 6, 7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	7.0	11	134	364	35	88	49	24	13	9.1	6.3
2	10	7.0	11	150	219	34	78	44	23	13	9.0	6.2
3	12	7.0	10	161	145	40	70	41	22	13	9.2	6.0
4	18	7.0	11	212	100	35	66	74	21	13	8.8	6.0
5	13	7.0	11	149	73	109	67	82	20	13	8.8	6.0
6	12	7.0	10	91	58	252	82	64	19	12	8.8	5.8
7	11	7.0	9.6	65	47	706	78	56	18	12	9.4	6.7
8	9.7	11	9.2	51	41	273	80	52	18	13	8.8	14
9	9.3	43	8.8	42	36	259	118	46	18	12	8.7	11
10	8.9	31	29	35	32	213	114	42	18	12	8.4	13
11	8.7	31	85	34	29	156	125	39	17	12	8.4	36
12	8.2	26	91	85	26	197	103	43	17	12	8.3	19
13	8.0	43	139	73	24	163	113	39	18	12	8.0	11
14	7.8	38	113	77	24	113	96	36	17	11	7.9	8.9
15	7.5	24	110	56	24	98	86	37	16	11	7.7	8.1
16	7.3	23	120	47	35	83	76	49	15	11	7.7	15
17	7.3	34	85	40	77	78	90	58	15	11	7.7	20
18	7.3	30	66	35	88	69	101	56	15	11	7.6	12
19	7.3	86	58	31	87	67	79	50	15	11	7.3	10
20	7.3	51	46	28	179	73	67	47	16	10	7.3	10
21	7.3	35	47	26	328	211	73	43	21	10	7.2	8.8
22	7.3	28	43	41	257	397	78	40	25	10	7.0	8.1
23	7.1	23	39	46	146	232	72	37	19	10	7.0	7.6
24	7.0	20	33	57	89	143	95	35	17	10	7.0	7.1
25	7.0	18	30	116	64	143	80	39	16	10	6.9	6.7
26	7.0	16	51	231	52	210	81	35	15	9.7	6.6	6.6
27	7.0	14	128	146	44	151	71	32	15	9.6	6.6	6.1
28	7.7	13	97	97	39	109	61	29	14	9.6	6.6	6.0
29	7.9	13	80	152	---	83	60	28	14	9.5	6.6	6.0
30	7.4	12	147	494	---	71	55	26	13	9.2	6.3	6.0
31	7.3	---	231	603	---	88	---	26	---	9.2	6.3	---
TOTAL	275.6	712.0	1959.6	3605	2727	4891	2503	1374	531	344.8	241.0	300.0
MEAN	8.89	23.7	63.2	116	97.4	158	83.4	44.3	17.7	11.1	7.77	10.0
MAX	18	86	231	603	364	706	125	82	25	13	9.4	36
MIN	7.0	7.0	8.8	26	24	34	55	26	13	9.2	6.3	5.8
AC-FT	547	1410	3890	7150	5410	9700	4960	2730	1050	684	478	595
CFSM	1.12	2.99	7.97	14.7	12.3	19.9	10.5	5.59	2.23	1.40	0.98	1.26
IN.	1.29	3.34	9.19	16.91	12.79	22.94	11.74	6.45	2.49	1.62	1.13	1.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2003, BY WATER YEAR (WY)

MEAN	39.1	94.9	112	112	99.0	85.9	84.3	63.8	42.4	21.4	14.9	20.0
MAX	86.5	211	232	218	202	181	130	136	115	53.9	38.1	51.4
(WY)	1968	1996	1978	1975	1996	1972	1974	1969	1981	1983	1968	1977
MIN	5.43	15.5	29.4	31.9	29.8	22.6	46.0	30.6	12.8	10.9	7.77	7.43
(WY)	1988	1994	1977	1981	1993	1992	1998	1992	1992	1992	2003	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1966 - 2003	
ANNUAL TOTAL	19281.4		19464.0			
ANNUAL MEAN	52.8		53.3		65.6	
HIGHEST ANNUAL MEAN					105	1974
LOWEST ANNUAL MEAN					40.7	2001
HIGHEST DAILY MEAN	534	Apr 14	706	Mar 7	1510	Nov 25 1999
LOWEST DAILY MEAN	7.0	Oct 24	5.8	Sep 6	4.8	Oct 28 1987
ANNUAL SEVEN-DAY MINIMUM	7.0	Nov 1	6.1	Aug 31	4.9	Oct 23 1987
ANNUAL RUNOFF (AC-FT)	38240		38610		47550	
ANNUAL RUNOFF (CFSM)	6.66		6.72		8.28	
ANNUAL RUNOFF (INCHES)	90.45		91.31		112.45	
10 PERCENT EXCEEDS	115		126		141	
50 PERCENT EXCEEDS	39		26		41	
90 PERCENT EXCEEDS	8.9		7.2		11	

14139800 SOUTH FORK BULL RUN RIVER NEAR BULL RUN, OR

LOCATION.--Lat 45°26'41", long 122°06'30", 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 mi^2.

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR OR-91-1: 1989.

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

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

AVERAGE DISCHARGE.--29 years (water years 1975-2003), 111 ft^3/s, 97.77 in/yr, 80,280 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,630 ft^3/s Feb. 7, 1996, gage height, 9.54 ft, from rating curve extended above 1,800 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 5.4 ft^3/s Oct. 13, 1994.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 1,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 7	1030	*1,670	*7.85	No other peak greater than base discharge.			

Minimum discharge, 7.9 ft^3/s Sept. 7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	8.5	15	240	654	60	146	84	36	18	11	8.7
2	13	8.5	15	235	365	55	136	77	34	17	11	8.6
3	14	8.5	14	263	238	64	125	71	32	17	11	8.5
4	22	8.5	14	331	172	57	117	106	30	17	11	8.4
5	16	8.5	15	256	130	127	117	127	29	16	11	8.3
6	15	8.4	14	168	104	339	143	110	27	16	11	8.3
7	13	8.5	13	120	86	1180	144	96	26	16	12	9.0
8	12	12	13	93	73	490	144	88	25	16	11	18
9	11	43	12	75	64	386	179	78	25	16	11	15
10	11	36	29	63	57	313	178	70	24	16	11	16
11	11	33	94	56	51	227	193	64	24	15	11	40
12	10	29	113	113	46	252	173	68	23	15	10	27
13	9.8	51	198	110	42	229	181	62	24	15	10	14
14	9.6	50	168	123	41	178	167	57	24	15	10	12
15	9.4	33	164	98	39	154	151	57	22	14	10	11
16	9.2	29	177	81	52	134	137	72	21	14	10	17
17	9.1	42	146	69	100	124	153	85	20	14	9.9	27
18	9.0	37	114	60	137	112	179	87	20	14	9.8	16
19	9.0	106	99	52	138	108	152	83	20	14	9.7	14
20	9.1	78	80	45	238	113	129	78	21	13	9.6	14
21	9.1	56	85	41	467	262	127	72	28	13	9.5	12
22	9.0	43	77	57	385	556	135	66	34	13	9.5	11
23	8.8	35	72	70	236	352	128	61	25	13	9.5	11
24	8.6	29	63	77	156	235	158	57	22	13	9.3	10
25	8.5	25	56	158	115	215	143	62	21	13	9.2	10
26	8.5	22	80	345	93	297	141	55	20	12	9.2	9.9
27	8.5	20	184	248	77	238	127	49	20	12	9.2	9.6
28	9.5	18	167	169	68	191	109	46	19	12	9.1	9.3
29	9.5	17	144	222	---	154	105	42	18	12	9.0	9.2
30	8.9	16	227	853	---	129	94	40	18	12	8.8	9.3
31	8.6	---	429	1000	---	143	---	40	---	11	8.7	---
TOTAL	339.7	919.4	3091	5891	4424	7474	4311	2210	732	444	312.0	402.1
MEAN	11.0	30.6	99.7	190	158	241	144	71.3	24.4	14.3	10.1	13.4
MAX	22	106	429	1000	654	1180	193	127	36	18	12	40
MIN	8.5	8.4	12	41	39	55	94	40	18	11	8.7	8.3
AC-FT	674	1820	6130	11680	8780	14820	8550	4380	1450	881	619	798
CFSM	0.71	1.99	6.47	12.3	10.3	15.7	9.33	4.63	1.58	0.93	0.65	0.87
IN.	0.82	2.22	7.47	14.23	10.69	18.05	10.41	5.34	1.77	1.07	0.75	0.97

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2003, BY WATER YEAR (WY)

MEAN	62.1	165	199	183	179	149	144	103	70.0	32.0	20.8	29.1
MAX	146	313	413	321	353	275	215	163	180	91.2	53.2	93.4
(WY)	1997	1996	1997	1997	1996	1997	1976	1999	1981	1983	1978	1977
MIN	8.31	23.3	50.4	56.5	54.7	53.8	89.6	47.1	15.4	14.3	10.1	9.03
(WY)	1988	1994	1977	2001	1977	1992	1983	1992	1992	2003	2003	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1975 - 2003	
ANNUAL TOTAL	31760.1		30550.2			
ANNUAL MEAN	87.0		83.7		111	
HIGHEST ANNUAL MEAN					171	1997
LOWEST ANNUAL MEAN					74.9	2001
HIGHEST DAILY MEAN	967	Apr 14	1180	Mar 7	2880	Nov 25 1999
LOWEST DAILY MEAN	8.4	Nov 6	8.3	Sep 5	5.6	Oct 11 1994
ANNUAL SEVEN-DAY MINIMUM	8.5	Nov 1	8.5	Nov 1	5.7	Oct 7 1994
ANNUAL RUNOFF (AC-FT)	63000		60600		80280	
ANNUAL RUNOFF (CFSM)	5.65		5.44		7.20	
ANNUAL RUNOFF (INCHES)	76.72		73.80		97.77	
10 PERCENT EXCEEDS	191		192		236	
50 PERCENT EXCEEDS	63		36		73	
90 PERCENT EXCEEDS	12		9.3		15	

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, June 1990 to September 1992.
WATER TEMPERATURE: October 1978 to current year.
TURBIDITY: June 1990 to September 1994.
SUSPENDED SEDIMENT DISCHARGE: October 1978 to September 1986.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Specific conductance records good. Water temperature records excellent. Turbidity data prior to October 1990 are available in the files of the Portland field office.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 56 microsiemens Oct. 31, 1988; minimum, 9 microsiemens Jan. 4, 1983.
pH: Maximum recorded, 8.0 units Aug. 17, Oct. 2, 1990, but may have been higher in water year 1990, 1992 during period of missing record; minimum recorded, 6.4 units Dec. 6, 1991, but may have been lower during period of missing record.
WATER TEMPERATURE: Maximum, 18.0°C June 23, 24, July 18, 19, 1992; minimum, 0.0°C on many days during winter periods.
TURBIDITY: Maximum recorded, 16 NTU Oct. 16, 1993; minimum recorded, 0.08 NTU Sept. 2, 1994.
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, 47 microsiemens Aug. 19, 29-31, Sept. 2, 4; minimum, 12 microsiemens Jan. 30.
WATER TEMPERATURE: Maximum, 16.6°C July 22; minimum, 2.0°C Nov. 2, 3.

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	37	35	36	40	40	40	30	29	29	17	17	17
2	39	37	38	40	40	40	30	29	30	17	16	17
3	39	38	39	40	40	40	30	30	30	17	16	16
4	39	36	37	40	39	40	30	29	30	17	15	16
5	37	36	37	40	39	40	31	30	30	17	16	16
6	38	37	38	40	39	40	31	30	30	17	16	17
7	38	36	37	40	40	40	31	31	31	18	17	18
8	38	37	38	41	39	40	31	30	31	19	18	18
9	40	38	39	39	33	36	31	31	31	19	19	19
10	39	38	38	34	33	33	31	28	30	20	19	19
11	39	37	38	33	31	32	28	22	25	20	20	20
12	38	38	38	32	31	32	22	21	22	20	17	18
13	39	38	38	31	29	30	21	19	20	18	17	18
14	39	38	38	29	28	28	20	20	20	18	17	18
15	39	38	39	28	27	28	20	19	19	18	18	18
16	40	39	39	28	28	28	20	19	19	19	18	18
17	40	39	39	28	27	27	20	19	20	20	19	19
18	40	39	39	27	27	27	21	20	20	23	20	20
19	41	39	40	27	24	25	21	21	21	23	20	21
20	42	41	41	24	24	24	22	21	21	23	21	22
21	42	40	41	25	24	24	26	20	22	24	20	22
22	41	41	41	26	25	25	26	21	24	21	19	20
23	41	40	41	26	26	26	26	21	24	19	18	19
24	41	40	40	27	26	27	22	21	21	19	18	19
25	40	40	40	27	26	27	22	22	22	18	16	17
26	40	40	40	27	26	27	22	20	21	16	13	14
27	40	39	40	27	27	27	20	18	19	16	14	15
28	41	40	40	28	27	28	19	18	18	17	16	16
29	40	39	40	29	28	28	19	18	18	17	13	16
30	40	40	40	29	28	29	19	16	18	17	12	15
31	40	40	40	---	---	---	17	15	16	18	13	16
MONTH	42	35	39	41	24	31	31	15	24	24	12	18
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	16	14	15	24	23	23	21	20	21	25	24	24
2	18	16	17	24	24	24	21	21	21	25	24	25
3	19	18	18	24	23	23	22	21	22	26	25	26
4	20	19	19	27	23	25	22	22	22	26	22	24
5	21	19	20	26	18	22	22	22	22	23	22	22
6	21	20	20	18	16	17	22	21	22	24	22	23
7	22	21	21	17	13	14	22	21	22	24	23	23
8	22	21	22	17	15	16	22	22	22	24	23	24
9	24	22	23	17	16	16	22	20	20	25	24	25
10	24	23	23	17	16	17	21	20	20	26	25	25
11	24	23	23	18	17	18	20	19	20	26	26	26
12	25	24	24	18	17	17	20	20	20	27	25	26
13	25	24	25	18	17	17	20	19	20	26	25	26
14	26	25	25	19	18	18	21	20	20	28	26	27
15	26	25	25	19	19	19	21	20	21	28	26	27
16	26	24	25	20	19	20	22	21	21	27	24	25
17	24	20	22	20	20	20	22	20	21	24	23	24
18	20	20	20	21	20	21	21	20	20	23	22	23
19	20	19	20	21	21	21	21	21	21	24	23	23
20	19	16	18	21	21	21	22	21	22	24	23	24
21	16	16	16	21	16	18	23	21	22	25	24	24
22	17	16	16	17	15	16	22	21	22	26	24	25
23	18	17	18	18	17	18	22	21	22	26	25	25
24	20	18	19	20	18	19	22	20	21	27	26	26
25	21	19	20	20	18	20	21	21	21	26	25	25
26	22	21	21	19	18	18	21	21	21	26	25	26
27	22	21	22	19	19	19	22	21	21	27	26	27
28	23	22	22	20	19	20	23	22	22	28	27	28
29	---	---	---	21	20	21	24	23	23	29	28	28
30	---	---	---	23	21	22	24	23	24	29	28	29
31	---	---	---	23	20	21	---	---	---	29	28	29
MONTH	26	14	21	27	13	19	24	19	21	29	22	25

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

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.6	8.2	8.5	2.8	2.3	2.5	4.9	4.4	4.6	5.7	5.3	5.4
2	8.2	7.6	7.9	2.3	2.0	2.2	4.9	4.5	4.8	6.0	5.5	5.8
3	8.6	8.0	8.2	2.4	2.0	2.2	4.5	3.7	4.0	6.0	5.7	5.9
4	9.0	8.6	8.8	2.9	2.4	2.6	4.2	3.7	4.0	6.2	5.9	6.1
5	9.4	9.0	9.2	4.1	2.9	3.5	4.4	4.1	4.3	5.9	5.2	5.4
6	10.0	9.4	9.6	4.8	3.8	4.3	4.2	3.9	4.1	5.5	5.2	5.3
7	10.2	9.6	9.9	5.4	4.8	5.1	3.9	3.4	3.6	5.2	4.8	5.0
8	10.0	9.6	9.8	5.9	5.4	5.7	3.4	3.1	3.3	4.9	4.4	4.5
9	9.8	9.4	9.6	6.3	5.9	6.0	3.9	3.1	3.5	4.7	4.2	4.5
10	9.4	8.6	9.1	6.4	6.1	6.2	4.5	3.9	4.3	4.2	3.7	4.0
11	8.6	7.6	8.2	6.8	6.4	6.6	5.7	4.5	5.0	4.9	3.7	4.3
12	7.6	7.1	7.2	7.3	6.8	7.1	6.2	5.7	6.0	5.5	4.9	5.2
13	7.1	6.5	6.9	7.5	7.3	7.4	6.5	6.0	6.3	5.9	5.5	5.6
14	7.1	6.3	6.8	7.5	7.0	7.4	7.1	6.5	6.9	5.9	5.0	5.7
15	7.2	6.5	6.8	7.0	6.1	6.4	7.1	6.5	6.6	5.0	4.4	4.7
16	7.8	7.1	7.4	6.3	5.8	6.1	6.7	5.8	6.3	5.0	4.4	4.7
17	7.8	7.2	7.5	7.0	6.3	6.7	5.8	4.8	5.2	4.9	4.5	4.7
18	8.0	7.4	7.6	6.8	6.3	6.6	5.0	4.7	4.9	4.7	4.4	4.5
19	8.6	7.8	8.1	7.5	6.6	7.2	5.0	4.8	4.8	4.7	4.2	4.4
20	8.8	8.4	8.6	7.5	7.2	7.4	5.0	4.7	4.9	5.2	4.4	4.7
21	9.4	8.8	9.0	7.9	7.5	7.6	5.0	4.2	4.3	5.5	5.2	5.3
22	9.2	8.6	8.8	7.9	7.5	7.7	4.8	4.2	4.6	6.2	5.5	5.8
23	8.6	7.6	8.1	7.9	7.5	7.7	4.5	3.9	4.1	6.2	5.9	6.0
24	7.6	6.7	7.0	7.5	5.7	6.6	4.0	3.7	3.9	6.6	5.9	6.2
25	6.7	5.8	6.1	5.7	4.3	4.8	4.5	4.0	4.3	6.9	6.4	6.6
26	5.8	5.5	5.6	4.3	3.8	3.9	4.8	4.5	4.7	7.5	6.9	7.2
27	5.7	5.1	5.4	4.3	3.8	4.0	5.2	4.5	5.0	7.1	6.7	6.9
28	6.3	5.7	6.1	4.6	4.1	4.4	5.5	5.2	5.3	6.7	6.4	6.5
29	6.3	5.3	6.0	4.9	4.4	4.6	5.3	4.7	5.0	6.7	6.2	6.3
30	5.3	3.7	4.4	4.9	4.5	4.7	5.0	4.5	4.8	7.3	6.7	6.9
31	3.7	2.8	3.2	---	---	---	5.5	5.0	5.2	7.6	6.9	7.3
MONTH	10.2	2.8	7.6	7.9	2.0	5.5	7.1	3.1	4.8	7.6	3.7	5.5

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

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.9	6.6	6.7	4.7	4.1	4.4	6.6	4.7	5.6	8.4	6.0	7.1
2	6.6	6.4	6.5	4.4	3.7	4.1	5.3	4.4	4.8	8.8	6.5	7.7
3	6.4	5.9	6.1	4.7	4.2	4.5	4.7	4.2	4.4	8.4	6.9	7.3
4	5.9	5.0	5.5	4.9	4.4	4.6	5.2	4.1	4.7	6.9	6.4	6.6
5	5.0	4.5	4.8	5.0	4.7	5.0	5.0	4.1	4.6	6.9	5.9	6.4
6	4.7	4.2	4.5	4.7	4.4	4.5	4.5	3.6	4.1	7.4	6.0	6.6
7	4.2	3.9	4.1	4.7	4.4	4.5	5.7	4.4	5.0	6.5	5.5	6.0
8	4.2	3.7	4.0	5.2	4.5	4.8	6.6	5.2	5.8	6.2	5.7	5.9
9	4.2	3.6	3.9	5.5	5.0	5.3	6.6	5.4	6.0	6.4	6.0	6.2
10	4.5	4.2	4.4	5.9	5.4	5.6	6.4	5.5	6.0	7.3	6.4	6.7
11	4.4	3.7	4.0	6.0	5.7	5.9	6.7	5.5	6.0	7.6	6.7	7.2
12	4.5	3.7	4.2	6.0	5.7	5.9	6.7	5.7	6.2	7.8	7.3	7.4
13	5.7	4.5	5.1	6.2	5.7	5.9	6.4	5.4	6.0	9.2	6.5	7.8
14	6.0	5.7	5.9	6.6	5.9	6.2	6.6	5.3	6.0	9.0	8.0	8.5
15	6.0	5.5	5.8	6.6	6.2	6.4	6.6	5.5	6.1	8.6	6.7	7.5
16	6.0	5.7	5.9	6.4	5.7	6.0	6.7	5.9	6.3	6.7	5.6	6.2
17	5.7	4.5	5.2	5.9	5.3	5.7	6.6	5.3	6.0	5.8	5.1	5.4
18	5.3	4.4	4.8	5.9	4.9	5.4	6.0	5.0	5.4	7.0	5.1	5.9
19	5.7	5.0	5.3	6.0	5.2	5.7	7.1	4.9	5.9	7.9	5.1	6.5
20	5.5	5.2	5.4	6.2	5.9	6.0	7.1	5.7	6.4	7.9	6.6	7.4
21	6.0	5.3	5.6	5.9	5.3	5.7	6.9	6.4	6.5	9.7	7.2	8.4
22	5.7	5.3	5.4	5.9	5.3	5.7	6.6	6.0	6.2	10.3	8.5	9.4
23	5.3	3.9	4.8	5.5	5.0	5.2	6.7	5.5	6.1	11.6	9.1	10.3
24	3.9	3.0	3.3	5.9	4.5	5.2	6.6	5.2	5.8	11.4	10.3	10.6
25	3.7	2.8	3.2	6.0	5.5	5.8	6.5	4.5	5.5	10.3	9.3	9.7
26	4.2	3.3	3.8	5.7	4.9	5.3	6.4	5.3	5.8	9.9	8.9	9.4
27	4.5	4.1	4.3	5.9	4.9	5.3	7.1	5.0	6.0	11.4	8.9	10.2
28	4.5	4.1	4.3	6.4	4.9	5.6	7.6	6.2	7.0	11.8	10.5	11.2
29	---	---	---	7.1	5.3	6.1	7.5	6.4	7.1	12.3	10.3	11.4
30	---	---	---	7.6	6.0	6.8	7.3	6.7	7.0	12.1	10.3	11.2
31	---	---	---	7.3	6.6	7.0	---	---	---	11.4	9.9	10.6
MONTH	6.9	2.8	4.9	7.6	3.7	5.5	7.6	3.6	5.8	12.3	5.1	8.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.8	10.3	11.2	13.4	12.4	12.9	15.7	14.1	15.1	13.4	12.7	13.2
2	11.8	10.3	11.2	13.2	11.3	12.3	15.2	14.4	14.8	13.9	12.4	13.3
3	12.3	10.3	11.3	13.2	11.3	12.3	14.7	14.1	14.5	14.4	13.2	13.8
4	13.0	11.0	12.1	13.6	11.7	12.7	14.9	13.4	14.2	14.7	13.9	14.3
5	13.7	11.6	12.7	13.9	12.2	13.1	14.9	13.9	14.3	14.7	13.9	14.3
6	14.5	12.3	13.5	14.7	13.2	13.8	14.9	13.9	14.4	14.4	13.9	14.2
7	15.0	13.2	14.2	14.7	12.9	13.8	15.2	14.1	14.6	14.1	13.6	14.0
8	14.8	13.5	14.2	13.9	13.2	13.4	15.2	14.1	14.7	13.6	12.4	13.0
9	14.0	12.1	12.9	14.1	12.2	13.3	15.2	14.1	14.6	12.4	12.2	12.3
10	12.1	11.4	11.6	15.2	13.2	14.1	14.9	13.9	14.4	12.2	12.0	12.2
11	12.1	11.0	11.5	15.5	13.9	14.7	14.7	13.9	14.4	12.4	12.2	12.3
12	11.6	11.0	11.4	15.5	13.9	14.8	14.7	13.6	14.3	12.4	11.7	12.1
13	11.6	11.0	11.3	14.9	14.1	14.6	14.4	13.2	13.9	11.7	10.8	11.4
14	11.8	10.5	11.1	15.2	13.6	14.4	14.9	13.2	14.1	11.5	10.6	11.2
15	12.3	10.5	11.5	15.5	13.9	14.7	14.7	14.1	14.4	11.3	10.4	10.9
16	13.3	11.0	12.2	15.2	14.1	14.6	14.7	14.1	14.4	10.9	10.2	10.6
17	14.2	12.1	13.1	14.9	13.2	14.2	14.9	13.6	14.3	10.4	9.8	10.2
18	13.5	12.1	12.8	15.2	13.4	14.3	14.9	13.6	14.4	10.4	9.8	10.2
19	12.1	11.0	11.4	15.5	13.4	14.5	14.7	14.1	14.4	10.9	10.4	10.7
20	11.0	10.0	10.5	15.7	13.9	14.9	14.1	12.9	13.7	10.9	10.2	10.5
21	10.0	9.4	9.8	16.3	14.7	15.5	14.4	12.9	13.8	10.4	9.8	10.2
22	9.6	9.2	9.4	16.6	14.9	15.8	14.1	13.4	13.7	10.6	9.8	10.2
23	9.6	9.4	9.5	16.3	14.9	15.7	13.6	12.7	13.3	10.6	10.0	10.3
24	11.1	9.2	10.1	15.5	14.4	15.0	13.4	12.2	12.8	10.9	10.2	10.5
25	12.2	10.2	11.2	15.2	13.9	14.6	13.4	12.2	12.9	11.1	10.4	10.8
26	13.4	11.3	12.4	15.2	13.6	14.4	13.4	12.7	13.1	11.5	10.6	11.0
27	14.4	12.4	13.4	15.2	13.2	14.2	13.4	12.9	13.2	12.2	11.3	11.7
28	15.2	12.9	14.1	15.7	13.6	14.7	13.4	12.2	12.9	12.2	11.7	11.9
29	15.5	13.9	14.6	16.0	13.9	15.0	13.6	12.4	13.1	12.2	12.0	12.1
30	14.7	13.4	14.1	16.3	14.4	15.3	13.9	12.7	13.3	12.0	11.5	11.7
31	---	---	---	16.0	14.7	15.5	13.6	12.9	13.4	---	---	---
MONTH	15.5	9.2	12.0	16.6	11.3	14.3	15.7	12.2	14.0	14.7	9.8	11.8
YEAR	16.6	2.0	8.3									

14139900 BULL RUN RESERVOIR NUMBER TWO NEAR BULL RUN, OR

LOCATION.--Lat 45°26'52", long 122°08'52", 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, 4.1 mi northeast of Bull Run, and at mile 6.5.

DRAINAGE AREA.--102 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is NGVD 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 Jan. 31, elevation, 863.09 ft; minimum contents, 12,630 acre-ft Sept. 30, elevation, 838.04 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 above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	852.32	842.62	853.79	859.82	861.28	859.24	859.50	859.17	859.24	849.32	849.81	845.41
2	852.06	841.81	854.46	860.17	860.78	859.29	859.79	859.71	859.07	849.51	849.67	844.45
3	851.84	840.94	854.34	860.18	859.93	859.16	859.21	859.53	859.18	849.44	849.65	843.36
4	851.62	839.99	854.17	860.73	859.74	858.96	859.38	859.68	859.15	849.45	849.66	842.17
5	851.45	840.20	853.76	859.84	859.17	859.65	859.70	859.40	858.50	849.55	849.79	841.00
6	851.25	841.22	853.00	858.59	859.42	860.65	859.43	859.32	857.41	849.85	849.80	840.11
7	851.00	842.26	852.33	859.40	859.65	861.76	859.35	859.50	856.47	849.82	849.08	839.42
8	850.73	841.77	851.63	859.00	859.40	860.89	859.81	859.09	855.53	849.62	848.37	839.03
9	850.50	841.34	850.92	858.09	859.47	860.87	859.49	858.98	854.62	849.67	847.64	839.43
10	850.30	840.82	850.45	858.79	859.38	860.50	859.82	859.41	853.92	849.86	846.97	840.61
11	850.10	841.42	850.41	859.12	859.32	860.01	859.73	859.58	853.02	849.68	846.25	841.72
12	849.89	842.85	853.21	859.86	859.32	860.67	859.47	859.58	852.12	849.58	846.44	842.39
13	849.62	844.54	856.92	859.39	859.16	860.17	859.44	859.24	851.44	849.64	846.63	843.02
14	849.22	846.17	856.99	859.62	859.24	859.59	859.24	859.06	850.98	849.64	846.72	842.92
15	848.76	847.11	857.02	859.35	859.16	859.67	859.23	859.27	850.27	849.70	846.76	842.83
16	848.43	847.50	857.25	859.33	859.42	859.39	859.36	859.71	849.42	849.76	846.75	843.43
17	848.06	847.40	857.30	859.38	859.64	859.66	859.27	859.78	849.28	849.69	846.79	842.99
18	847.61	847.32	856.76	859.17	859.37	859.36	859.60	859.42	849.40	849.63	846.71	842.52
19	847.16	847.44	857.83	859.06	859.19	859.24	859.52	859.15	849.58	849.73	846.55	843.10
20	846.81	849.35	858.90	859.29	860.26	859.51	859.46	859.46	849.68	849.78	846.53	844.30
21	846.39	850.92	859.45	859.27	861.37	860.80	859.64	859.68	849.90	849.73	846.53	844.48
22	845.93	851.56	859.70	859.73	860.82	861.54	859.55	859.78	849.00	849.70	846.69	843.84
23	845.52	852.36	859.32	858.94	859.74	861.09	859.57	859.40	848.97	849.81	846.74	844.00
24	845.16	853.21	859.21	858.96	859.18	859.85	859.43	859.15	849.18	849.79	846.78	842.95
25	844.85	853.92	859.16	859.45	859.06	859.77	859.35	859.21	849.67	849.80	846.67	842.82
26	844.58	853.37	859.66	861.15	859.22	860.42	859.71	859.35	849.40	849.69	846.80	841.72
27	844.36	854.28	859.48	860.10	859.03	860.05	859.49	859.38	849.42	849.82	846.77	841.34
28	844.16	854.13	859.41	859.65	859.23	859.82	859.14	859.34	849.57	849.78	846.71	840.19
29	843.91	854.37	859.44	860.58	---	859.68	859.35	859.42	849.50	849.66	846.81	838.97
30	843.67	853.86	859.76	862.02	---	859.57	859.09	859.40	849.32	849.60	846.70	838.92
31	843.38	---	860.30	862.87	---	859.76	---	859.33	---	849.72	845.94	---
MAX	852.32	854.37	860.30	862.87	861.37	861.76	859.82	859.78	859.24	849.86	849.81	845.41
MIN	843.38	839.99	850.41	858.09	859.03	858.96	859.09	858.98	848.97	849.32	845.94	838.92
(†)	14450	18340	21130	22260	20660	20890	20600	20710	16560	16700	15340	12930
(‡)	-3370	+3890	+2790	+1130	-1600	+230	-290	+110	-4150	+140	-1360	-2410

CAL YR 2002 MAX 861.47 MIN 839.99 AC-FT ‡ +600
WTR YR 2003 MAX 862.87 MIN 838.92 AC-FT ‡ -4890

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

14140000 BULL RUN RIVER NEAR BULL RUN, OR

LOCATION.--Lat 45°26'15", long 122°10'42", 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 mi^2.

PERIOD OF DAILY RECORD.--December 2000 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Record good.

EXTREMES FOR PERIOD OF RECORD.--Maximum, 21.8°C July 10, 2002; minimum, 2.8°C Feb. 12, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum, 20.6°C Aug. 29 30, Sept. 6; minimum, 4.9°C Jan. 19, 20.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.8	13.8	14.6	9.8	8.9	9.3	8.6	7.7	8.2	5.8	5.6	5.7
2	15.1	13.1	14.1	10.2	9.1	9.6	8.6	7.7	8.4	5.8	5.7	5.8
3	15.0	14.1	14.6	10.3	9.2	9.7	7.8	7.3	7.5	5.9	5.7	5.8
4	15.8	14.4	15.1	10.7	9.6	10.1	8.0	7.5	7.8	6.0	5.8	5.9
5	15.1	14.4	14.8	11.6	10.2	10.8	7.9	7.2	7.6	5.9	5.7	5.8
6	15.7	14.5	15.1	11.3	10.3	10.8	7.6	7.0	7.2	6.0	5.8	6.0
7	16.0	14.6	15.2	11.3	10.6	11.0	7.4	6.8	7.1	6.0	5.8	5.9
8	16.1	14.2	15.0	11.3	10.6	10.9	7.2	6.5	6.9	5.8	5.6	5.7
9	15.6	14.3	15.0	10.7	9.9	10.4	7.6	6.7	7.2	5.7	5.5	5.6
10	14.9	13.2	14.1	10.3	9.8	10.0	7.9	7.5	7.6	5.6	5.2	5.4
11	14.5	12.7	13.5	10.6	9.9	10.2	7.8	7.5	7.6	5.8	5.2	5.6
12	14.1	12.0	12.9	10.8	10.2	10.5	8.0	7.8	7.9	5.8	5.3	5.6
13	14.6	12.4	13.3	10.6	10.2	10.4	7.8	7.5	7.6	5.4	5.3	5.3
14	14.6	12.4	13.3	10.6	9.6	10.3	7.8	7.5	7.6	5.5	5.2	5.4
15	14.6	12.6	13.5	10.0	9.0	9.5	7.5	7.1	7.2	5.4	5.1	5.3
16	14.9	12.8	13.7	9.5	8.7	9.1	7.3	7.0	7.2	5.6	5.2	5.4
17	14.4	12.7	13.5	10.0	9.4	9.7	7.0	6.7	6.8	5.6	5.3	5.4
18	14.0	12.9	13.4	9.5	9.0	9.3	7.0	6.6	6.8	5.6	5.2	5.4
19	14.9	13.4	14.1	9.9	9.4	9.6	7.0	6.7	6.9	5.3	4.9	5.1
20	14.6	14.1	14.3	10.2	9.2	9.7	7.0	6.7	6.8	5.4	4.9	5.1
21	14.6	14.0	14.3	10.2	9.6	9.8	6.8	6.5	6.6	5.4	5.1	5.2
22	14.2	13.4	13.8	10.0	9.6	9.8	6.8	6.4	6.6	5.4	5.2	5.3
23	13.5	12.5	13.0	10.0	9.2	9.7	6.4	6.3	6.4	5.2	5.0	5.1
24	12.8	11.6	12.2	9.2	8.0	8.7	6.4	6.2	6.3	5.4	5.2	5.3
25	12.4	11.2	11.8	8.0	7.4	7.7	6.4	6.1	6.3	5.4	5.2	5.2
26	12.6	11.4	11.9	8.2	7.2	7.7	6.4	6.2	6.3	5.5	5.1	5.3
27	12.5	11.2	11.9	8.8	7.9	8.3	6.2	6.0	6.1	5.5	5.2	5.4
28	13.3	12.3	12.7	8.8	8.2	8.5	6.1	6.0	6.0	5.5	5.3	5.4
29	12.5	10.6	11.8	9.2	8.0	8.6	6.0	5.8	5.9	5.6	5.4	5.6
30	10.6	9.8	10.1	8.9	8.2	8.5	5.9	5.8	5.9	5.8	5.6	5.7
31	10.1	9.4	9.7	---	---	---	5.9	5.7	5.8	6.1	5.6	5.8
MONTH	16.1	9.4	13.4	11.6	7.2	9.6	8.6	5.7	7.0	6.1	4.9	5.5

14140000 BULL RUN RIVER NEAR BULL RUN, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.4	6.1	6.3	6.0	5.1	5.5	6.3	6.0	6.1	9.3	7.1	7.9
2	6.6	6.4	6.5	5.5	5.1	5.4	6.3	6.0	6.1	10.6	7.3	8.4
3	6.5	6.4	6.5	5.5	5.2	5.4	6.3	6.1	6.2	8.4	7.6	7.9
4	6.4	6.3	6.4	5.4	5.2	5.3	6.6	6.1	6.3	8.4	7.6	7.9
5	6.4	6.1	6.2	5.5	5.1	5.3	6.3	6.1	6.2	8.1	7.6	7.8
6	6.4	6.1	6.2	5.4	5.1	5.3	6.6	6.1	6.4	8.4	7.7	8.0
7	6.4	5.8	6.1	5.4	5.1	5.2	6.7	6.4	6.5	8.3	7.7	7.9
8	6.2	5.7	5.9	5.3	5.0	5.1	6.9	6.4	6.5	8.1	7.8	7.9
9	6.0	5.5	5.7	5.4	5.2	5.3	6.8	6.2	6.4	8.2	7.9	8.0
10	6.0	5.5	5.7	5.5	5.2	5.3	6.6	6.4	6.5	8.4	7.9	8.2
11	6.6	5.3	5.9	5.6	5.3	5.4	6.7	6.4	6.5	9.0	7.9	8.3
12	6.9	6.0	6.4	5.8	5.3	5.6	6.8	6.4	6.5	8.6	8.0	8.2
13	7.0	6.4	6.7	5.8	5.6	5.7	6.8	6.4	6.5	9.2	7.8	8.3
14	6.9	6.2	6.6	5.6	5.4	5.5	7.1	6.4	6.6	8.9	7.9	8.3
15	6.7	6.2	6.4	5.6	5.4	5.5	7.0	6.6	6.8	8.5	7.9	8.1
16	6.5	6.0	6.3	5.8	5.4	5.5	7.3	6.7	6.9	8.6	7.8	8.1
17	6.2	5.9	6.0	5.9	5.4	5.6	7.1	6.9	7.0	8.6	7.8	8.1
18	6.3	6.1	6.1	5.9	5.4	5.6	7.3	6.9	7.0	8.8	8.0	8.3
19	6.2	6.0	6.1	6.0	5.7	5.8	7.7	6.9	7.2	9.2	8.0	8.5
20	6.0	5.8	5.9	5.9	5.7	5.8	7.6	7.0	7.3	9.3	8.2	8.6
21	6.1	5.8	6.0	6.3	5.7	6.0	7.3	7.1	7.2	10.4	8.3	9.0
22	5.9	5.8	5.8	6.2	6.0	6.1	7.5	7.0	7.2	10.0	8.5	9.0
23	6.1	5.7	5.8	6.1	6.0	6.0	7.5	7.0	7.2	10.4	8.6	9.2
24	5.7	5.4	5.6	6.3	5.9	6.0	7.5	7.0	7.2	9.8	8.8	9.2
25	5.8	5.3	5.5	6.0	5.8	5.9	7.8	7.0	7.3	9.5	8.9	9.2
26	5.8	5.2	5.4	6.1	5.8	5.9	7.8	7.0	7.3	10.6	8.8	9.4
27	6.0	5.2	5.5	6.2	5.8	5.9	7.9	7.0	7.4	11.8	8.7	9.8
28	5.6	5.2	5.4	6.9	5.8	6.1	7.9	7.2	7.5	11.9	9.1	10
29	---	---	---	6.5	6.0	6.1	8.1	7.2	7.5	12.3	8.9	10.1
30	---	---	---	6.6	6.0	6.2	8.0	7.3	7.6	9.6	9.1	9.3
31	---	---	---	6.3	6.0	6.2	---	---	---	11.9	9.1	10
MONTH	7.0	5.2	6.0	6.9	5.0	5.7	8.1	6.0	6.8	12.3	7.1	8.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.9	9.1	10.1	17.2	14.0	15.1	18.9	14.5	16.2	20.1	16.6	17.8
2	12.3	8.9	10.1	19.6	13.3	15.7	16.4	15.2	15.8	20.3	16.8	18.1
3	12.8	9.0	10.3	20.1	13.6	16.1	17.4	15.1	15.8	19.9	17.4	18.4
4	13.2	9.2	10.6	20.1	14.2	16.4	20.4	14.3	16.6	20.4	17.8	18.7
5	13.4	9.4	10.8	19.9	14.7	16.5	19.2	15.4	16.7	20.4	17.7	18.6
6	13.7	9.7	11.1	19.9	15.1	16.7	19.8	15.3	16.9	20.6	17.6	18.6
7	13.7	9.9	11.2	19.6	14.3	16.3	20.3	15.7	17.2	19.2	17.6	18.1
8	13.5	10.0	11.2	17.4	14.6	15.5	20.0	15.7	17.1	18.5	17.1	17.6
9	11.0	10.2	10.5	20.0	14.0	16.1	19.1	15.8	16.8	17.7	16.9	17.3
10	11.8	10.2	10.7	19.9	14.6	16.5	19.2	15.4	16.6	18.1	17.2	17.6
11	12.8	10.3	11.1	19.9	14.7	16.6	18.5	15.6	16.7	18.1	17.4	17.7
12	11.6	10.3	10.9	20.5	14.8	16.9	20.0	15.4	17.0	19.2	16.3	17.3
13	12.0	10.8	11.2	19.5	15.5	17.0	20.1	15.1	16.8	18.9	14.7	16.3
14	13.7	10.8	11.7	20.2	15.0	16.9	19.8	15.5	17.1	17.5	14.8	16.1
15	14.5	10.8	12.1	19.6	15.1	16.8	18.8	16.4	17.0	17.6	14.7	15.9
16	15.6	11.2	12.8	19.2	15.3	16.6	20.0	16.0	17.3	16.4	15.0	15.5
17	16.4	11.8	13.5	20.1	14.5	16.5	20.4	15.8	17.3	17.2	14.6	15.6
18	13.3	12.4	12.8	19.7	14.7	16.5	20.4	16.0	17.5	17.6	14.5	15.8
19	13.3	12.0	12.6	19.7	14.4	16.3	19.2	16.4	17.2	16.8	15.8	16.1
20	13.3	12.1	12.6	19.7	14.4	16.3	19.8	15.3	16.9	17.9	14.8	16.0
21	14.0	12.2	12.7	19.8	14.6	16.5	19.7	15.9	17.4	18.0	14.6	15.9
22	13.5	12.4	12.9	19.5	14.5	16.3	17.5	16.5	17.0	18.1	14.7	16.0
23	13.6	12.6	13.1	19.1	14.3	16.0	19.7	15.6	16.9	18.1	15.0	16.2
24	17.3	12.5	14.2	18.4	14.0	15.6	20.0	15.4	17.0	18.2	15.0	16.3
25	18.6	12.8	14.9	18.8	13.9	15.6	20.4	15.9	17.4	18.3	15.4	16.5
26	19.0	13.5	15.6	19.0	14.1	15.7	18.2	16.6	17.2	18.6	15.6	16.7
27	19.3	14.0	15.9	19.3	13.8	15.8	19.8	16.5	17.5	19.0	16.0	17.1
28	19.4	14.1	16.0	19.7	14.5	16.3	19.8	15.9	17.3	18.6	15.9	17.0
29	19.1	14.5	16.1	19.4	14.5	16.2	20.6	16.4	17.9	17.0	16.3	16.6
30	17.7	14.5	15.6	19.6	14.6	16.3	20.6	16.7	18.1	17.7	15.3	16.3
31	---	---	---	19.4	14.8	16.4	20.2	16.9	18.1	---	---	---
MONTH	19.4	8.9	12.5	20.5	13.3	16.3	20.6	14.3	17.0	20.6	14.5	16.9
YEAR	20.6	4.9	10.5									

14140001 BULL RUN RIVER NEAR BULL RUN, OR

LOCATION.--Lat 45°26'15", long 122°10'42", 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 mi^2.

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 NGVD 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. 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, 149,000 acre-ft of which 35,290 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.--96 years (water years 1908-2003), 775 ft^3/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 ft^3/s Dec. 22, 1964, gage height, 17.21 ft, from rating curve extended above 8,800 ft^3/s on basis of computation of peak flow over dam; minimum discharge, 1.1 ft^3/s Oct. 4, 1974.

Combined flow, maximum discharge, 25,100 ft^3/s Dec. 22, 1964; minimum daily, 11 ft^3/s Nov. 16, 1987.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 10,200 ft^3/s Jan. 31, gage height, 12.59 ft; minimum discharge, 16 ft^3/s Sept. 30.

Combined flow, maximum discharge, 10,500 ft^3/s (of which approximately 148 ft^3/s were diverted for Portland water supply) Jan. 31; minimum daily, 96 ft^3/s (of which approximately 77.5ft^3/s were diverted for Portland water supply) Sept. 19.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	158	148	139	1730	6090	472	1190	456	264	276	204	177
2	163	149	138	1630	3440	433	924	430	322	270	174	183
3	174	163	155	2380	2290	525	987	411	309	273	182	195
4	169	172	167	2220	1600	493	860	398	339	279	172	213
5	158	157	172	2410	1160	701	773	768	364	259	154	206
6	158	153	172	1350	881	2240	1080	930	371	236	153	164
7	165	163	161	909	630	5410	1060	768	373	253	157	143
8	165	160	156	780	585	3920	908	708	373	280	154	146
9	157	153	153	716	592	3030	1290	573	337	279	152	146
10	150	149	144	405	493	2810	1220	452	305	296	139	147
11	150	150	145	397	418	1960	1450	442	309	307	146	106
12	150	156	180	641	396	2180	1270	547	315	275	167	106
13	154	152	236	1080	384	2400	1270	558	315	246	173	121
14	184	148	235	833	373	1630	1300	511	300	276	184	130
15	192	147	236	782	378	1360	1130	421	307	300	177	142
16	165	143	242	619	379	1130	952	384	330	286	156	137
17	175	140	241	507	585	869	1040	587	311	288	150	124
18	189	140	357	518	1000	908	1120	731	282	309	174	106
19	188	148	393	431	924	883	1090	645	251	310	194	96
20	173	156	381	313	1490	854	897	448	238	310	184	112
21	173	155	359	351	3160	1500	883	369	232	333	152	131
22	173	146	431	456	3640	4320	896	479	229	267	139	134
23	173	133	591	810	2190	3400	837	477	231	207	141	176
24	173	127	524	626	1360	2140	1060	382	232	199	148	199
25	168	133	431	1210	888	1620	1010	289	255	194	166	205
26	161	149	462	2620	732	2260	818	285	267	193	176	205
27	150	149	1270	2730	588	1980	904	280	304	186	173	204
28	156	134	1230	1570	500	1570	807	298	309	217	155	207
29	157	131	1000	1290	---	1200	708	311	286	238	153	215
30	152	132	1290	4940	---	949	601	303	279	248	164	206
31	149	---	2420	7650	---	1100	---	266	---	244	174	---
TOTAL	5122	4436	14211	44904	37146	56247	30335	14907	8939	8134	5087	4782
MEAN	165	148	458	1449	1327	1814	1011	481	298	262	164	159
MAX	192	172	2420	7650	6090	5410	1450	930	373	333	204	215
MIN	149	127	138	313	373	433	601	266	229	186	139	96
AC-FT	10160	8800	28190	89070	73680	111600	60170	29570	17730	16130	10090	9490
MEAN†	84.6	278	730	1505	1253	1816	1010	543	178	94.0	70.4	116
CFSM†	0.79	2.60	6.82	14.1	11.7	17.0	9.44	5.07	1.66	0.88	0.66	1.08
IN.†	0.91	2.90	7.87	16.22	12.19	19.57	10.53	5.85	1.85	1.01	0.76	1.20
AC-FT†	5200	16570	44890	92520	69570	111600	60090	33380	10580	5780	4330	6870

CAL YR 2002 TOTAL 226035 MEAN 619 MAX 6040 MIN 127 AC-FT 448300 MEAN† 620 CFSM† 5.80 IN.† 78.74 AC-FT† 449200
WTR YR 2003 TOTAL 234250 MEAN 642 MAX 7650 MIN 96 AC-FT 464600 MEAN† 637 CFSM† 5.96 IN.† 80.88 AC-FT† 461400

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

14141500 LITTLE SANDY RIVER NEAR BULL RUN, OR

LOCATION.--Lat 45°24'56", long 122°10'13", 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 mi^2.

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 in water years 1911-13, 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 above NGVD of 1929, 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 sea level. Nov. 4, 1967, to Aug. 8, 1971, water-stage recorder at site 0.1 mi downstream at datum 697.44 ft above NGVD of 1929 (Portland General Electric Co. bench mark).

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

AVERAGE DISCHARGE.--84 years (water years 1920-2003), 144 ft^3/s, 87.50 in/yr, 104,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,320 ft^3/s Nov. 20, 1921, gage height, 9.18 ft, site and datum then in use, from rating curve extended above 2,200 ft^3/s; minimum discharge, 8.0 ft^3/s Aug. 20, Sept. 16, 17, 1940.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	1930	*1,550	*5.50	No other peak greater than base discharge.			

Minimum discharge, 10 ft^3/s Sept. 2-7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	13	17	280	814	86	243	124	49	23	13	11
2	19	13	17	312	549	79	211	112	44	23	13	11
3	21	13	16	349	393	97	184	104	42	22	13	10
4	34	14	16	407	288	88	164	136	40	22	13	10
5	26	13	18	314	220	212	161	164	37	21	13	10
6	24	14	17	204	172	405	191	127	34	21	13	10
7	20	14	16	151	140	1040	203	111	33	20	14	13
8	18	16	15	119	118	657	202	108	32	20	14	25
9	17	39	15	96	102	575	252	97	31	21	13	24
10	17	47	22	80	90	480	255	87	30	20	13	23
11	16	44	97	71	80	361	292	81	30	19	13	45
12	16	38	108	142	72	403	247	95	30	18	13	43
13	15	63	195	145	67	341	262	88	31	18	13	21
14	15	61	153	169	67	257	243	80	31	18	12	16
15	14	36	156	120	65	227	211	80	28	18	12	14
16	14	30	167	97	75	197	189	103	27	17	12	21
17	14	58	146	82	119	174	213	119	28	17	12	45
18	14	45	108	72	158	152	237	118	28	16	12	24
19	14	140	89	65	179	147	209	116	28	16	12	20
20	14	90	74	59	313	153	176	113	28	16	12	20
21	14	55	90	56	462	352	197	103	36	15	12	17
22	13	42	78	77	433	675	210	94	52	15	11	15
23	13	35	72	102	296	456	190	86	35	15	12	14
24	13	30	66	111	206	319	242	82	30	15	11	14
25	13	26	59	243	153	314	203	96	27	15	11	13
26	13	24	87	438	126	443	188	80	25	15	11	12
27	13	22	232	319	108	357	168	71	25	14	11	12
28	15	21	198	239	96	296	142	64	25	14	11	12
29	17	19	171	293	---	238	153	58	24	14	11	12
30	14	18	245	1020	---	213	138	55	23	13	11	12
31	13	---	446	1050	---	249	---	56	---	13	11	---
TOTAL	522	1093	3206	7282	5961	10043	6176	3008	963	544	378	549
MEAN	16.8	36.4	103	235	213	324	206	97.0	32.1	17.5	12.2	18.3
MAX	34	140	446	1050	814	1040	292	164	52	23	14	45
MIN	13	13	15	56	65	79	138	55	23	13	11	10
AC-FT	1040	2170	6360	14440	11820	19920	12250	5970	1910	1080	750	1090
CFSM	0.76	1.63	4.64	10.5	9.55	14.5	9.23	4.35	1.44	0.79	0.55	0.82
IN.	0.87	1.82	5.35	12.15	9.94	16.75	10.30	5.02	1.61	0.91	0.63	0.92

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 2003, BY WATER YEAR (WY)

MEAN	85.9	208	245	237	210	187	194	161	101	39.4	23.0	37.2
MAX	271	588	585	589	452	407	325	328	268	121	96.1	184
(WY)	1960	1956	1965	1953	1961	1932	1920	1945	1933	1983	1968	1927
MIN	10.6	14.3	57.5	45.9	59.2	49.9	54.0	55.8	19.2	13.8	10.1	12.4
(WY)	1988	1930	1977	1937	1977	1941	1941	1947	1992	1940	1940	1938

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1920 - 2003	
ANNUAL TOTAL	37699		39725			
ANNUAL MEAN	103		109		144	
HIGHEST ANNUAL MEAN					223	1974
LOWEST ANNUAL MEAN					87.6	1944
HIGHEST DAILY MEAN	974	Apr 14	1050	Jan 31	3500	Mar 31 1931
LOWEST DAILY MEAN	12	Sep 9	10	Sep 3	8.0	Sep 16 1940
ANNUAL SEVEN-DAY MINIMUM	12	Sep 9	10	Aug 31	9.0	Aug 16 1940
ANNUAL RUNOFF (AC-FT)	74780		78790		104000	
ANNUAL RUNOFF (CFSM)	4.63		4.88		6.44	
ANNUAL RUNOFF (INCHES)	62.89		66.27		87.50	
10 PERCENT EXCEEDS	223		269		302	
50 PERCENT EXCEEDS	85		45		96	
90 PERCENT EXCEEDS	13		13		18	

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 downstream from city of Portland water conduit crossing Sandy River, and at mile 18.4.

DRAINAGE AREA.--436 mi^2.

PERIOD OF RECORD.--April 1910 to September 1914, October 1929 to September 1966, May 1984 to current year. Monthly discharge only for some periods during the 1911, 1912, and water years, published in WSP 1318.

REVISED RECORDS.--WDR OR-96-1: 1986 (P).

GAGE.--Water-stage recorder. Elevation of gage is 240 ft above NGVD of 1929, 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.--No estimated daily discharges. Records fair. 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 169,100 acre-ft from Bull Run River, of which 50,540 acre-ft were used for power generation by Portland General Electric Company and returned to Bull Run River. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--4 years (water years 1911-14) 2,321 ft^3/s, 1,681,000 acre-ft/yr.
56 years (water years 1930-66, 1985-2003), 2,278 ft^3/s, 1,650,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 84,400 ft^3/s Dec. 22, 1964, gage height, 22.3 ft, site and datum then in use; minimum discharge, 45 ft^3/s Sept. 26, 1962, minimum daily, 63 ft^3/s Oct. 12, Nov. 9, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 27,600 ft^3/s Jan. 31, gage height, 17.44 ft; minimum discharge, 243 ft^3/s Sept. 26, 27.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	549	321	322	3730	15000	1640	4070	2170	1320	616	408	291
2	384	273	366	3670	8970	1530	3490	2080	1250	557	405	354
3	395	274	347	5070	6500	1660	3270	2030	1190	521	396	399
4	460	276	314	5180	4860	1580	2960	2100	1110	535	385	411
5	403	278	324	5610	3830	1970	2810	2780	1100	544	386	416
6	393	278	311	3550	3120	5100	3270	2730	1090	552	396	372
7	378	281	352	2600	2560	12300	3210	2430	1090	542	401	333
8	335	361	334	2180	2260	10100	3050	2240	1080	551	393	510
9	352	492	296	1930	2090	8150	3710	1980	1010	552	390	438
10	403	481	342	1430	1860	7450	3670	1770	965	555	399	458
11	341	521	577	1330	1650	5730	4230	1720	940	530	393	492
12	326	478	1040	1800	1540	6010	3840	1910	902	571	366	601
13	261	658	1220	2530	1480	6130	3930	1900	894	506	359	357
14	261	691	1230	2380	1420	4860	3900	1850	882	513	370	336
15	314	464	1370	2170	1390	4440	3470	1780	864	512	382	314
16	298	456	1680	1800	1440	3870	3090	1840	751	512	383	367
17	296	635	1520	1560	1820	3320	3280	2090	767	478	368	623
18	295	615	1280	1480	2600	3060	3470	2260	792	481	363	407
19	296	828	1200	1340	2450	2900	3310	2130	767	493	391	370
20	313	819	1070	1120	3370	2830	2930	1890	733	497	381	344
21	314	647	1160	1130	5950	4320	3010	1740	814	500	370	304
22	381	488	1150	1340	7170	10400	3080	1850	999	480	366	305
23	292	516	1300	1980	5040	8530	2940	1870	834	482	382	304
24	284	489	1130	1720	3530	5870	3360	1890	718	466	289	295
25	283	377	977	3020	2700	4810	3180	1830	659	443	362	303
26	282	360	1150	6350	2310	6280	2880	1660	648	430	362	247
27	282	349	2660	6360	1980	5570	2810	1520	663	425	351	292
28	296	375	2740	4300	1760	4640	2580	1550	676	425	340	325
29	302	371	2350	3950	---	3860	2630	1490	677	439	352	329
30	286	329	2820	15000	---	3480	2420	1500	683	432	364	330
31	274	---	5070	18800	---	3920	---	1440	---	418	361	---
TOTAL	10329	13781	38002	116410	100650	156310	97850	60020	26868	15558	11614	11227
MEAN	333	459	1226	3755	3595	5042	3262	1936	896	502	375	374
MAX	549	828	5070	18800	15000	12300	4230	2780	1320	616	408	623
MIN	261	273	296	1120	1390	1530	2420	1440	648	418	289	247
AC-FT	20490	27330	75380	230900	199600	310000	194100	119000	53290	30860	23040	22270

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2003, BY WATER YEAR (WY)

MEAN	1108	3044	3791	3446	3403	3019	3292	2777	1771	795	493	510
MAX	4086	7882	10700	8955	8793	6426	5176	5357	4887	1756	731	1947
(WY)	1960	1996	1965	1953	1996	1932	1937	1949	1933	1955	1964	1959
MIN	242	294	992	791	1196	997	980	998	479	390	308	310
(WY)	1988	1953	1953	1937	1993	1941	1941	1992	1992	1992	1992	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1930 - 2003	
ANNUAL TOTAL	652839		658619			
ANNUAL MEAN	1789		1804		2278	
HIGHEST ANNUAL MEAN					3456	1996
LOWEST ANNUAL MEAN					1334	2001
HIGHEST DAILY MEAN	15200	Apr 14	18800	Jan 31	57800	Dec 22 1964
LOWEST DAILY MEAN	261	Oct 13	247	Sep 26	63	Oct 12 1952
ANNUAL SEVEN-DAY MINIMUM	282	Oct 31	282	Oct 31	228	Oct 19 1942
ANNUAL RUNOFF (AC-FT)	1295000		1306000		1650000	
10 PERCENT EXCEEDS	3520		4000		4700	
50 PERCENT EXCEEDS	1520		940		1600	
90 PERCENT EXCEEDS	328		314		402	

14142800 BEAVER CREEK AT TROUTDALE, OR

LOCATION.--Lat. 45°31'10", long 122°23'16" in Land Grant parcel number 50, T.1 N., R.3 E., Multnomah County, Hydrologic Unit 17080001, on right bank, 100 ft downstream from Stark Street culvert outlet, and 2.1 mi upstream from mouth.

DRAINAGE AREA.--8.91 mi^2.

PERIOD OF RECORD.--October 1999 to current year.

Gage.--Water stage recorder. Datum of gage is 195 ft above NGVD of 1929, from topographic map.

REMARKS.--Records poor. No known diversions. Kelly Creek, an upstream tributary, is impounded at Mt. Hood Comumity College. The pond is approximately 10 acre-ft. Maintenance of the structure may effect downstream flow. Irrigation by the Gresham Golf Course, upstream from pond, may increase flow over the pond spillway during summer months.

AVERAGE DISCHARGE.--4 years (water year 2000-03), 22.3 ft^3/s, 33.95 in/yr, 16,130 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 872 ft^3/s Jan. 31, 2003, gage height, 12.01 ft; minimum discharge, 0.06 ft^3/s Aug. 29, 2000, Aug. 25, 30, 31, Sept. 6-11, 14, 2002.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 31	0100	586	10.32	Jan. 31	1845	*872	*12.01
Jan. 4	1530	615	10.50	Mar. 7	1245	697	10.98

Minimum discharge, 0.14 ft^3/s Sept. 30.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	e0.50	0.95	79	209	5.8	74	6.9	0.84	1.6	0.52	0.21
2	8.6	e0.50	0.93	123	71	5.1	51	6.5	0.59	1.3	0.53	0.63
3	33	e0.60	0.88	115	51	7.6	48	5.9	0.70	1.5	0.59	0.20
4	12	e0.80	0.95	251	32	6.2	32	26	0.66	1.7	0.59	0.24
5	5.9	1.3	1.0	95	22	8.2	27	13	0.55	1.2	0.56	0.45
6	4.4	1.9	0.99	41	16	39	60	9.6	1.6	1.4	0.63	0.45
7	e3.0	4.0	e1.0	26	12	438	33	8.7	1.4	2.2	0.48	23
8	e2.2	6.0	e1.0	19	9.7	215	24	7.5	1.2	1.7	0.38	16
9	e1.9	24	1.2	15	7.5	194	31	5.3	1.7	1.3	0.51	13
10	e1.6	3.0	e14	12	6.4	68	29	5.0	1.4	0.91	0.43	3.0
11	e1.4	2.9	e24	15	5.3	41	23	4.1	1.1	0.96	0.37	2.2
12	e1.3	8.3	e55	62	4.4	87	27	8.0	1.4	0.86	0.34	1.7
13	e1.2	5.0	e65	60	4.1	71	91	3.9	5.7	0.68	1.7	1.2
14	e1.1	10	e75	e60	3.6	49	32	3.3	2.1	0.68	1.2	0.99
15	e1.0	1.8	e55	e26	6.8	55	21	4.4	1.2	0.81	0.51	0.86
16	e1.0	15	e170	e17	13	47	17	8.7	1.2	0.69	0.41	37
17	e0.90	3.2	e85	e15	170	32	59	17	1.4	0.83	0.31	7.6
18	0.88	16	70	13	163	26	36	15	1.2	0.70	0.32	2.6
19	0.57	13	53	10	58	39	21	6.1	1.2	0.48	0.31	2.8
20	0.43	2.3	38	9.2	45	37	15	4.7	3.8	0.45	0.32	1.6
21	0.40	1.8	134	8.3	80	79	23	3.5	18	0.46	0.43	1.1
22	0.48	1.5	78	56	56	176	16	2.7	9.6	0.41	0.65	1.1
23	0.39	1.5	51	31	32	98	44	3.1	5.5	0.47	0.56	1.4
24	0.27	1.2	47	52	20	55	56	2.3	4.6	0.56	0.36	1.8
25	0.30	1.1	31	68	14	45	29	3.9	4.0	0.69	0.40	0.88
26	0.69	0.97	107	199	11	96	23	1.9	4.0	0.60	0.29	0.42
27	0.73	0.94	216	82	8.4	50	16	1.5	3.0	0.69	0.33	0.37
28	1.1	0.96	145	42	7.0	30	12	1.3	2.1	0.63	0.38	0.23
29	0.93	0.95	148	188	---	22	14	1.6	1.8	0.90	0.31	0.29
30	0.66	1.0	336	421	---	16	9.1	1.1	1.5	0.52	0.32	0.19
31	0.55	---	291	612	---	42	---	1.1	---	0.70	0.23	---
TOTAL	99.88	132.02	2296.90	2822.5	1138.2	2179.9	993.1	193.6	85.04	28.58	15.27	123.51
MEAN	3.22	4.40	74.1	91.0	40.6	70.3	33.1	6.25	2.83	0.92	0.49	4.12
MAX	33	24	336	612	209	438	91	26	18	2.2	1.7	37
MIN	0.27	0.50	0.88	8.3	3.6	5.1	9.1	1.1	0.55	0.41	0.23	0.19
AC-FT	198	262	4560	5600	2260	4320	1970	384	169	57	30	245
CFSM	0.36	0.49	8.32	10.2	4.56	7.89	3.72	0.70	0.32	0.10	0.06	0.46
IN.	0.42	0.55	9.59	11.78	4.75	9.10	4.15	0.81	0.36	0.12	0.06	0.52

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2003, BY WATER YEAR (WY)

MEAN	5.57	24.4	59.0	55.5	38.6	45.5	20.5	8.89	4.26	1.39	0.87	2.88
MAX	7.75	42.8	85.5	91.0	58.0	70.3	33.1	15.2	5.28	2.30	2.14	4.12
(WY)	2001	2002	2002	2003	2000	2003	2003	2000	2002	2002	2001	2003
MIN	3.22	4.40	25.7	12.5	16.9	28.7	9.72	4.77	2.83	0.92	0.18	1.60
(WY)	2003	2003	2001	2001	2001	2001	2000	2002	2003	2003	2002	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2000 - 2003	
ANNUAL TOTAL	8385.39		10108.50			
ANNUAL MEAN	23.0		27.7		22.3	
HIGHEST ANNUAL MEAN					27.7	2003
LOWEST ANNUAL MEAN					11.6	2001
HIGHEST DAILY MEAN	336	Dec 30	612	Jan 31	612	Jan 31 2003
LOWEST DAILY MEAN	0.06	Sep 11	0.19	Sep 30	0.06	Sep 11 2002
ANNUAL SEVEN-DAY MINIMUM	0.08	Sep 6	0.30	Aug 26	0.08	Sep 6 2002
ANNUAL RUNOFF (AC-FT)	16630		20050		16130	
ANNUAL RUNOFF (CFSM)	2.58		3.11		2.50	
ANNUAL RUNOFF (INCHES)	35.01		42.20		33.95	
10 PERCENT EXCEEDS	67		71		59	
50 PERCENT EXCEEDS	4.2		4.1		6.1	
90 PERCENT EXCEEDS	0.20		0.47		0.59	

e Estimated

14144700 COLUMBIA RIVER AT VANCOUVER, WA

LOCATION.--Lat 45°37'15", long 122°40'20", in NE 1/4 NW 1/4 sec.34, T.2 N., R.1 E., Clark County, Hydrologic Unit 17080001, near right bank in control house of Interstate Highway 5 bridge at south edge of Vancouver, 5.0 mi upstream from Willamette River, and at mile 106.5.

DRAINAGE AREA.--241,000 mi^2, approximately.

PERIOD OF RECORD.--October 1963 to June 1970 (discharge), February 1998 to current year (gage heights only).

GAGE.--Water-stage recorder. Datum of the gage is Columbia River Datum, add 1.82 feet to correct to NGVD of 1929. Prior to February 1998, datum of gage was NGVD of 1929.

REMARKS.--Considerable regulation by many large reservoirs. Diurnal fluctuations caused by powerplant operations at Bonneville Dam and tides. Gage maintained by National Weather Service.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 27.60 ft Dec. 25, 1964, present datum, (backwater from Willamette River).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 7, 1894, reached a stage of 34.4 ft, present datum, from information provided by U.S. Army Corps of Engineers. Flood of June 13, 14, 1948, reached a stage of 31.0 ft, present datum, from National Weather Service records.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 13.77 ft Feb. 1; minimum, -0.84 ft Sept. 21.

Gage height, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	3.03	-0.25	1.18	3.14	0.78	1.97	5.12	1.68	3.15	7.99	5.83	6.80
2	2.93	-0.35	1.26	4.34	1.43	2.76	5.63	1.85	3.38	8.52	6.58	7.34
3	3.28	-0.06	1.63	4.70	1.62	3.01	5.80	2.21	3.61	8.39	6.59	7.37
4	4.11	0.66	2.56	5.24	1.42	3.13	5.71	2.22	3.58	8.13	6.41	7.16
5	4.56	0.99	2.62	5.57	1.92	3.43	5.77	2.07	3.53	7.30	6.31	6.85
6	3.83	0.38	2.04	5.92	2.07	3.66	5.62	2.11	3.52	6.49	5.43	5.96
7	4.47	0.65	2.30	6.23	2.35	4.00	5.24	1.99	3.37	5.91	4.86	5.39
8	4.47	1.02	2.66	6.33	2.65	4.33	4.44	1.79	3.00	5.26	4.01	4.74
9	5.19	1.32	2.86	5.60	2.88	4.10	4.14	1.46	2.81	5.35	4.07	4.62
10	5.06	1.82	3.26	4.58	2.74	3.66	4.10	1.48	2.98	4.66	3.31	3.88
11	4.30	1.51	2.74	3.87	1.82	2.89	3.97	1.54	2.84	4.59	2.66	3.46
12	3.67	0.76	1.98	4.33	1.67	3.00	4.77	1.77	3.22	5.12	2.80	3.67
13	2.83	-0.10	1.14	4.10	2.02	3.00	5.05	2.29	3.48	5.13	2.95	3.75
14	2.76	-0.24	1.19	4.21	1.80	2.88	6.18	2.71	4.17	5.28	3.14	4.01
15	2.85	0.37	1.67	4.27	1.42	2.70	5.90	3.56	4.49	5.17	3.15	3.94
16	3.07	0.06	1.58	5.00	1.75	3.15	7.33	3.82	5.57	5.27	3.02	3.92
17	3.66	0.34	2.00	4.95	2.07	3.27	6.66	5.02	5.69	5.43	2.88	3.85
18	3.54	0.62	2.08	4.99	1.98	3.18	6.38	4.82	5.61	5.85	2.81	3.94
19	3.42	0.45	1.86	5.23	2.17	3.47	6.34	4.65	5.40	5.80	2.88	3.98
20	3.40	0.21	1.65	5.23	2.10	3.35	6.94	4.64	5.59	5.66	2.69	3.87
21	4.18	0.33	2.02	5.32	2.08	3.43	6.50	4.16	5.09	5.52	2.69	3.90
22	4.01	0.75	2.16	5.21	2.07	3.36	5.77	3.62	4.48	5.46	2.70	3.93
23	4.39	0.86	2.28	4.98	2.02	3.22	5.43	3.07	4.06	5.54	2.85	4.06
24	4.12	1.39	2.48	4.44	1.71	2.91	4.93	2.77	3.74	5.51	2.60	3.86
25	4.12	1.44	2.51	3.74	1.39	2.46	4.94	2.45	3.80	5.58	2.55	3.80
26	4.12	1.37	---	3.33	1.14	2.28	5.11	2.66	3.77	6.36	2.92	4.42
27	3.31	0.76	1.81	3.33	1.51	2.44	6.11	2.37	4.22	6.33	3.91	5.00
28	3.20	0.29	1.67	3.75	1.19	2.41	6.18	3.37	4.58	6.55	4.53	5.50
29	2.71	0.63	1.77	4.22	1.12	2.53	6.39	3.78	4.83	7.28	5.51	6.30
30	2.62	0.27	1.51	4.81	1.40	2.88	7.18	4.07	5.32	7.94	6.19	7.02
31	2.75	0.37	1.51	---	---	---	7.72	4.94	6.27	11.78	7.48	9.38
MONTH	5.19	-0.35	---	6.33	0.78	3.10	7.72	1.46	4.17	11.78	2.55	5.02

14144700 COLUMBIA RIVER AT VANCOUVER, WA--Continued

Gage height, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	13.77	11.78	13.13	5.30	2.55	3.70	7.23	6.21	6.76	7.75	6.63	7.18
2	13.53	12.52	12.94	5.27	2.57	3.68	7.46	6.18	6.83	7.66	6.15	6.91
3	12.52	10.70	11.38	5.31	2.43	3.72	7.66	6.42	6.97	7.09	5.57	6.34
4	10.70	9.19	10.01	5.26	2.91	4.02	7.02	5.78	6.35	7.17	5.49	6.23
5	9.19	6.89	7.85	5.67	3.05	4.40	6.46	5.26	5.89	6.67	5.23	5.87
6	6.89	5.33	5.93	5.75	3.81	4.70	6.98	5.75	6.20	6.71	5.50	6.15
7	5.83	4.69	5.23	5.86	3.64	5.00	6.37	5.39	5.87	7.34	6.55	6.88
8	5.39	3.87	4.64	7.15	5.36	6.40	6.58	5.55	5.98	7.15	5.29	6.21
9	4.64	2.91	3.77	7.91	6.93	7.48	6.26	5.29	5.81	6.05	5.50	5.80
10	4.09	2.46	3.06	7.58	6.59	7.06	6.22	5.65	5.90	6.23	4.84	5.59
11	4.19	2.38	3.10	6.61	5.70	6.15	6.27	5.27	5.81	5.82	4.12	5.10
12	4.36	2.18	3.13	5.95	4.64	5.44	6.29	5.34	5.90	5.51	4.16	4.84
13	5.10	2.22	3.54	6.79	4.94	5.92	6.86	5.43	6.24	5.96	4.26	5.06
14	5.38	2.49	3.67	7.10	5.82	6.45	7.18	5.91	6.66	6.88	4.48	5.99
15	5.99	2.66	4.03	7.55	6.03	6.67	7.70	6.30	7.10	8.07	6.31	7.05
16	6.17	2.84	4.22	7.51	5.92	6.70	8.23	6.83	7.67	8.17	6.51	7.23
17	6.23	2.95	4.34	7.57	6.08	6.76	8.43	7.09	7.70	8.27	6.55	7.25
18	6.18	3.43	4.68	7.53	6.19	6.83	9.13	7.44	8.38	7.67	6.36	6.90
19	6.27	3.82	4.98	7.60	6.26	6.94	8.87	7.27	8.04	7.36	5.93	6.55
20	6.34	4.39	5.27	7.72	6.19	6.85	8.43	6.60	7.45	6.83	5.15	6.05
21	6.19	3.98	4.96	7.39	5.69	6.44	7.47	5.94	6.64	6.11	4.88	5.47
22	6.21	3.85	4.73	8.30	5.95	7.29	6.78	5.82	6.32	6.25	5.30	5.79
23	5.54	3.15	4.01	8.29	7.14	7.60	7.03	6.11	6.60	6.57	5.63	6.10
24	5.05	2.59	3.64	7.50	5.96	6.76	7.59	6.31	7.00	6.95	5.94	6.51
25	4.63	2.40	3.28	6.89	5.83	6.30	7.21	5.94	6.63	7.34	5.66	6.46
26	5.06	2.67	3.62	7.27	6.37	6.69	7.78	5.97	7.21	7.05	5.74	6.48
27	5.11	2.30	3.71	8.07	6.54	7.52	8.39	6.65	7.65	7.19	6.10	6.87
28	5.18	2.24	3.49	8.87	7.95	8.51	7.38	6.34	6.93	9.17	7.16	8.68
29	---	---	---	8.79	7.71	8.30	7.73	6.69	7.19	9.18	7.59	8.35
30	---	---	---	8.02	6.92	7.47	7.81	6.83	7.24	9.43	7.91	8.66
31	---	---	---	7.70	6.64	7.26	---	---	---	10.02	9.40	9.78
MONTH	13.77	2.18	5.37	8.87	2.43	6.29	9.13	5.26	6.76	10.02	4.12	6.59

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.46	9.86	10.11	5.62	2.88	4.08	4.72	1.64	3.13	4.73	1.25	2.85
2	9.88	8.85	9.40	5.49	2.82	4.02	4.99	2.07	3.50	4.16	0.63	2.29
3	8.99	8.13	8.56	4.94	1.70	3.35	4.46	1.27	3.06	4.37	0.64	1.94
4	8.64	7.51	8.09	4.03	1.12	2.55	4.98	1.06	2.48	4.37	0.67	1.99
5	8.38	7.38	7.93	3.98	---	---	4.92	0.97	2.63	4.29	0.70	2.04
6	7.81	6.92	7.46	4.20	1.31	---	4.67	1.13	2.48	4.06	0.37	2.09
7	7.83	6.86	7.37	4.26	0.71	2.19	4.88	1.42	2.59	4.34	0.47	2.26
8	7.67	6.95	7.24	4.56	0.88	2.50	5.03	1.62	2.90	4.13	0.49	2.19
9	7.91	6.43	7.04	4.64	1.83	2.83	5.08	1.46	2.98	3.94	0.64	2.32
10	7.63	6.51	7.00	5.82	3.19	4.14	5.61	1.90	3.40	4.48	0.91	2.52
11	8.26	6.94	7.76	6.13	3.04	4.23	5.12	1.48	3.15	3.90	0.43	2.11
12	9.05	7.82	8.37	6.33	2.99	4.25	5.62	2.22	3.69	3.53	0.20	1.87
13	9.41	7.35	8.32	6.44	2.73	4.11	5.85	2.55	3.96	3.41	0.06	1.66
14	8.63	7.14	7.74	5.72	2.42	3.99	5.16	1.93	3.47	3.33	0.31	1.67
15	8.99	6.91	7.86	6.26	2.95	4.40	4.64	1.63	3.15	3.40	0.12	1.46
16	7.66	5.76	6.64	5.59	2.25	3.81	4.03	0.96	2.66	3.87	0.24	1.63
17	7.43	5.92	6.73	5.26	2.56	3.80	4.42	1.33	2.62	3.21	0.57	1.66
18	7.50	6.22	6.84	4.59	2.16	3.52	4.26	0.85	2.25	2.94	0.10	1.10
19	7.18	6.02	6.65	3.95	0.75	2.49	4.24	1.70	2.56	2.81	0.05	1.13
20	6.74	4.17	5.47	4.06	0.50	1.83	4.15	1.21	2.13	2.55	-0.70	0.72
21	5.09	2.82	3.84	4.17	1.34	2.39	4.07	1.65	2.54	2.43	-0.84	0.71
22	4.62	2.64	3.44	4.38	1.34	2.51	4.31	1.44	2.49	2.84	-0.39	1.32
23	4.79	2.69	3.57	4.16	1.53	2.45	4.03	1.16	2.42	3.69	0.72	2.18
24	4.70	2.65	3.45	4.47	2.27	3.04	4.14	0.68	2.35	4.22	0.81	2.43
25	4.32	2.23	3.20	4.47	1.90	2.93	4.63	1.25	2.93	4.08	0.59	2.32
26	5.10	3.14	4.32	4.51	1.18	2.54	5.07	1.48	3.27	4.52	1.20	2.74
27	6.02	4.04	4.87	4.61	1.21	2.62	5.56	2.58	3.92	5.21	1.50	3.09
28	5.93	3.49	4.52	4.53	1.10	2.64	5.61	2.35	3.89	5.15	1.67	3.37
29	5.88	3.34	4.46	5.39	2.15	3.53	4.84	1.44	3.09	4.66	1.15	2.73
30	5.95	3.33	4.45	5.56	2.18	3.71	4.78	1.14	2.73	4.70	0.90	2.47
31	---	---	---	5.21	1.81	3.38	4.87	1.43	3.01	---	---	---
MONTH	10.46	2.23	6.42	6.44	---	---	5.85	0.68	2.95	5.21	-0.84	2.03

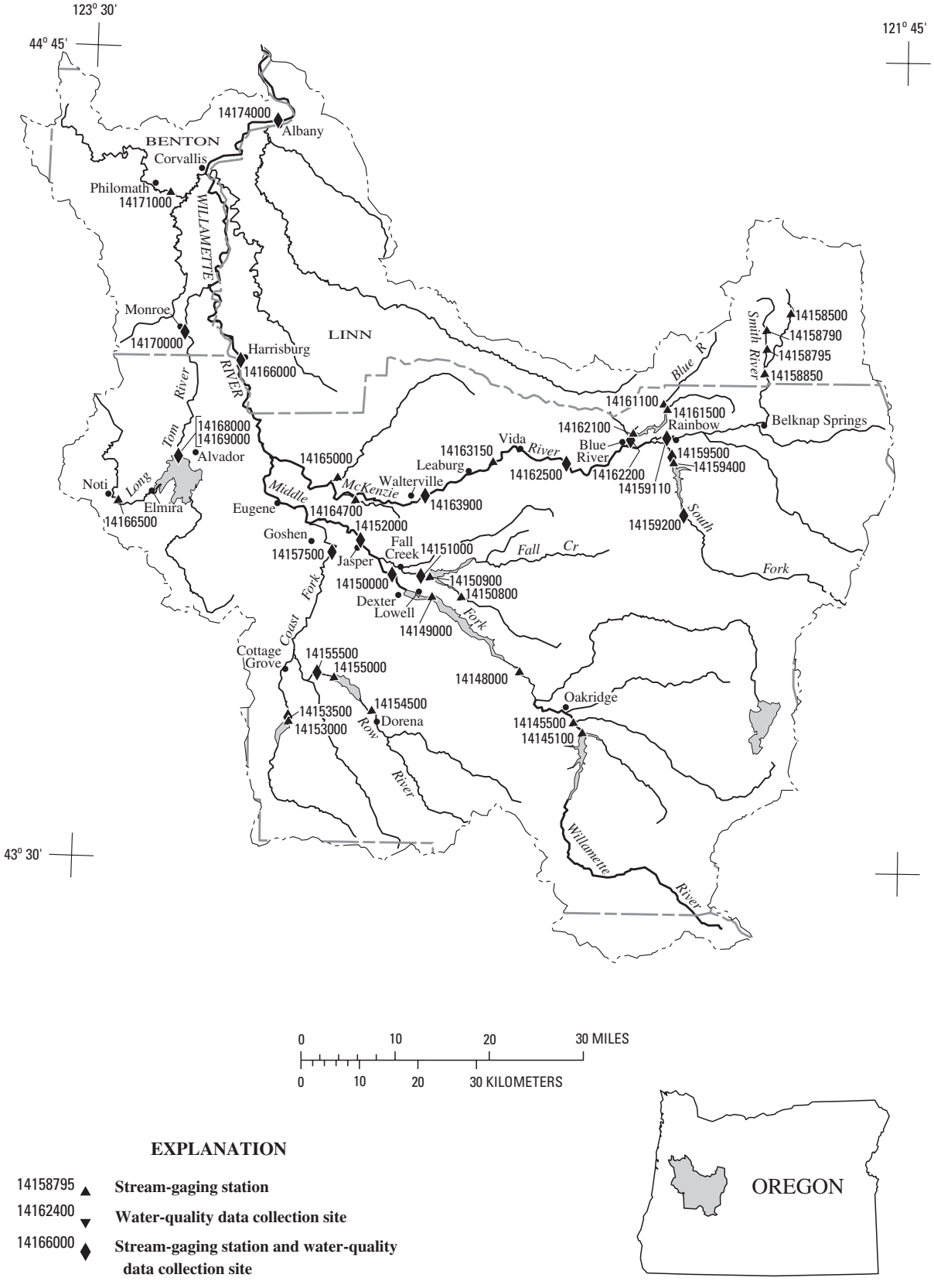


Figure 21. Location of surface-water and water-quality stations in the Willamette River Basin upstream from the Luckiamute River.

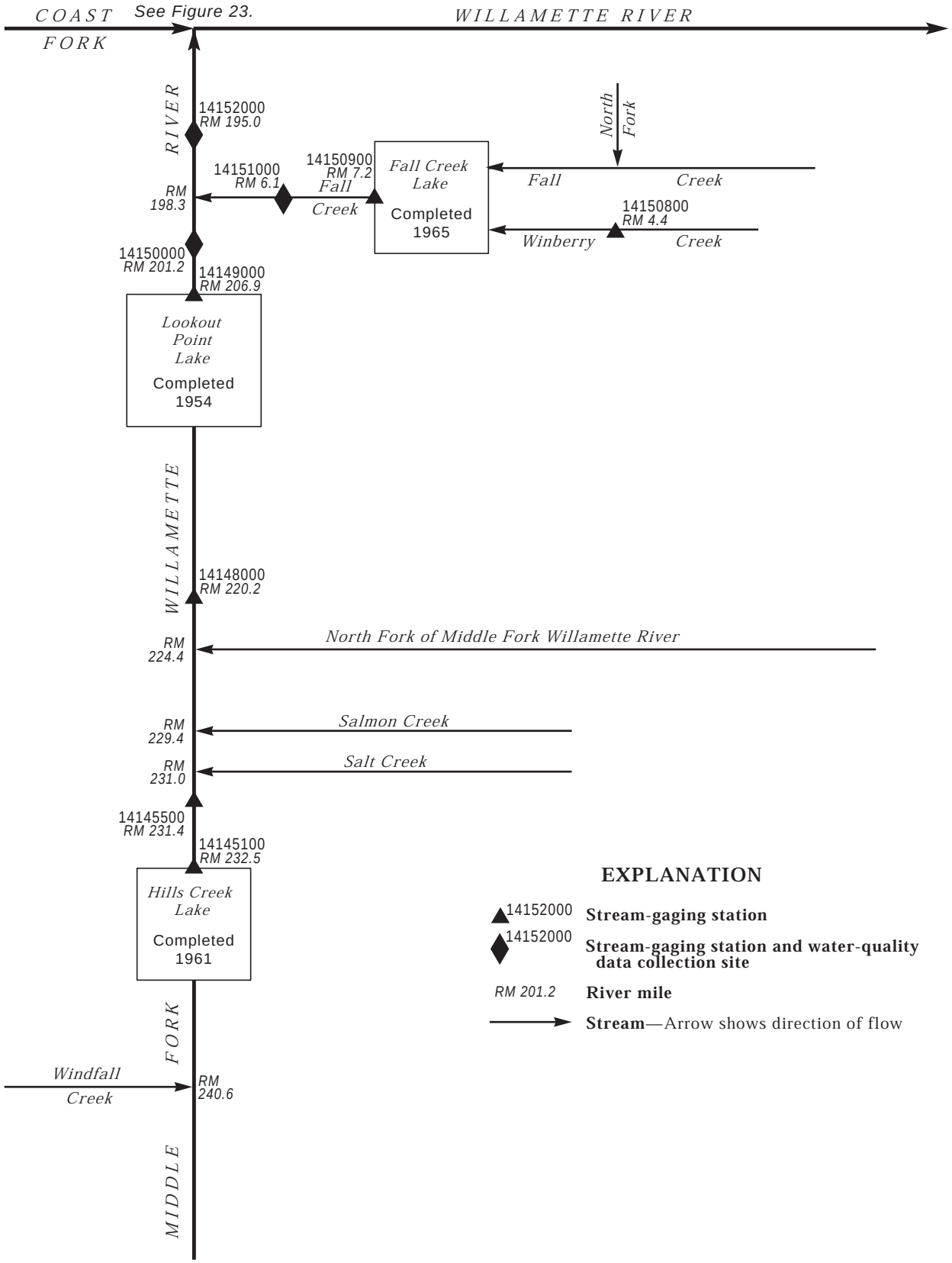


Figure 22. Schematic diagram showing gaging stations in the Middle Fork Willamette River Basin.

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 mi^2.

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 NGVD 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. Elevation for June 1 computed from data obtained through U.S.Army Corps of Engineers Columbia River Operational Hydromet System (CROHMS) database.

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, 352,400 acre-ft May 25, elevation, 1,541.88 ft; minimum contents, 157,000 acre-ft Dec. 13, 14, elevation, 1,449.05 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 above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1497.50	1483.98	1457.10	1463.05	1475.00	1486.56	1522.42	1533.73	1540.98	1531.64	1521.10	1500.75
2	1496.38	1483.64	1455.79	1463.71	1476.75	1486.82	1522.77	1534.12	1540.34	1531.35	1520.74	1499.94
3	1495.75	1483.32	1454.46	1466.85	1477.62	1487.09	1523.27	1534.56	1539.88	1531.05	1520.38	1499.13
4	1495.33	1482.99	1453.15	1468.13	1477.96	1487.35	1523.74	1535.11	1539.37	1530.75	1520.13	1498.38
5	1494.96	1482.66	1452.12	1468.98	1477.84	1487.59	1524.16	1535.64	1538.91	1530.44	1519.56	1497.66
6	1494.70	1482.34	1451.52	1468.39	1477.48	1487.92	1524.64	1536.11	1538.68	1530.13	1519.01	1496.92
7	1494.43	1482.05	1451.08	1466.56	1476.94	1488.69	1525.13	1536.52	1538.46	1529.81	1518.50	1496.24
8	1493.99	1481.96	1450.63	1464.38	1476.76	1489.85	1525.90	1536.95	1538.21	1529.49	1517.91	1495.36
9	1493.55	1481.79	1450.18	1461.95	1476.46	1491.32	1526.77	1537.35	1537.94	1529.17	1517.32	1494.49
10	1493.12	1481.47	1449.77	1459.73	1476.12	1493.07	1527.73	1537.71	1537.62	1528.83	1516.71	1493.70
11	1492.67	1481.10	1449.43	1457.39	1476.17	1494.49	1529.21	1538.10	1537.27	1528.51	1516.10	1492.88
12	1492.22	1480.71	1449.15	1455.18	1476.49	1495.77	1530.39	1538.48	1536.91	1528.17	1515.48	1492.05
13	1491.76	1480.29	1449.05	1453.37	1476.83	1496.97	1531.24	1538.88	1536.54	1527.83	1514.86	1491.21
14	1491.30	1479.14	1449.16	1453.12	1477.23	1498.16	1531.76	1539.34	1536.16	1527.50	1514.23	1490.38
15	1490.83	1477.91	1449.45	1453.13	1477.60	1499.46	1531.84	1539.88	1535.77	1527.16	1513.60	1489.53
16	1490.35	1476.66	1450.79	1453.54	1478.30	1500.58	1531.79	1540.34	1535.35	1526.81	1512.97	1488.75
17	1489.87	1475.54	1451.29	1453.83	1479.09	1501.55	1531.77	1540.56	1535.09	1526.46	1512.34	1487.94
18	1489.40	1474.33	1451.45	1454.10	1479.91	1502.35	1531.66	1540.80	1534.80	1526.11	1511.69	1487.11
19	1488.92	1473.06	1451.44	1454.33	1480.74	1503.10	1531.46	1541.07	1534.60	1525.76	1510.95	1486.27
20	1488.45	1471.79	1451.36	1454.47	1481.52	1503.91	1531.44	1541.13	1534.40	1525.42	1510.20	1485.44
21	1487.98	1470.51	1451.60	1454.55	1482.30	1505.10	1531.39	1541.20	1534.20	1525.08	1509.44	1484.59
22	1487.60	1469.22	1451.77	1454.70	1483.15	1508.17	1531.32	1541.34	1533.98	1524.74	1508.71	1483.71
23	1487.24	1467.90	1451.68	1455.04	1483.89	1511.22	1531.30	1541.57	1533.75	1524.38	1507.95	1482.81
24	1486.89	1466.59	1451.13	1455.07	1484.53	1513.18	1531.41	1541.80	1533.51	1524.02	1507.18	1481.87
25	1486.53	1465.27	1450.44	1455.39	1485.07	1515.86	1531.52	1541.85	1533.27	1523.66	1506.40	1480.97
26	1486.16	1463.89	1450.11	1456.48	1485.51	1519.87	1531.73	1541.65	1533.02	1523.30	1505.62	1480.04
27	1485.76	1462.46	1453.36	1460.19	1485.91	1521.21	1531.99	1541.44	1532.76	1522.93	1504.83	1479.14
28	1485.38	1461.03	1456.69	1461.92	1486.25	1521.43	1532.40	1541.40	1532.50	1522.56	1504.01	1478.23
29	1485.00	1459.69	1458.14	1462.73	---	1521.64	1532.88	1541.41	1532.22	1522.21	1503.20	1477.33
30	1484.62	1458.40	1460.44	1467.57	---	1521.85	1533.32	1541.42	1531.93	1521.85	1502.37	1476.41
31	1484.31	---	1462.84	1471.88	---	1522.07	---	1541.13	---	1521.47	1501.56	---
MAX	1497.50	1483.98	1462.84	1471.88	1486.25	1522.07	1533.32	1541.85	1540.98	1531.64	1521.10	1500.75
MIN	1484.31	1458.40	1449.05	1453.12	1475.00	1486.56	1522.42	1533.73	1531.93	1521.47	1501.56	1476.41
(†)	219400	172200	179700	195700	223200	302200	330000	350400	326500	300700	255300	204100
(‡)	-29400	-47200	+7500	+16000	+27500	+79000	+27800	+20400	-23900	-25800	-45400	-51200

CAL YR 2002 MAX 1541.04 MIN 1447.90 AC-FT‡ +20200
WTR YR 2003 MAX 1541.85 MIN 1449.05 AC-FT‡ -44700

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

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 mi^2.

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 NGVD 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. Records good. Flow regulated since 1961 by Hills Creek Lake (station 14145100). No diversions upstream from station.

AVERAGE DISCHARGE.--69 years (water years 1914, 1936-2003), 1,144 ft^3/s, 39.63 in/yr, 828,800 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,000 ft^3/s Dec. 28, 1945, gage height, 12.06 ft, site and datum then in use, from rating curve extended above 13,000 ft^3/s; minimum observed discharge, 0.70 ft^3/s Sept. 8-11, 13, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,500 ft^3/s Jan. 6, gage height, 5.83 ft; minimum discharge, 306 ft^3/s Mar. 15.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1540	545	1410	2000	1700	432	1650	435	1520	742	715	1150
2	1520	546	1410	2030	1690	429	1420	424	1520	740	718	1150
3	1000	546	1410	2200	1670	427	1060	421	1500	738	717	1140
4	758	549	1400	2510	1660	424	1050	420	1530	739	726	1090
5	669	548	1140	2530	1790	421	1050	412	1430	741	1000	1050
6	529	540	750	2820	1780	422	1050	418	1060	739	1020	1050
7	509	554	600	3450	1790	425	1050	422	1030	738	1020	1060
8	685	555	602	3420	1310	426	831	414	1030	736	1020	1270
9	685	902	603	3410	1270	425	831	423	1030	740	1020	1450
10	685	919	603	3060	1270	421	832	428	1040	754	1020	1200
11	689	909	604	2980	792	414	834	426	1040	741	1020	1170
12	695	907	593	2940	464	412	871	426	1040	744	1020	1160
13	694	907	592	2840	420	423	1030	426	1040	741	1020	1160
14	709	1560	602	1880	418	417	1230	423	1030	736	1020	1150
15	709	1610	601	1510	423	418	1630	426	1040	737	1020	1150
16	711	1610	607	934	423	429	1620	426	1040	754	1030	1150
17	717	1600	603	866	425	418	1560	691	827	752	1030	1170
18	717	1600	603	866	428	415	1610	571	825	741	1030	1150
19	715	1610	603	868	417	417	1600	484	719	740	1140	1140
20	714	1590	602	869	414	421	1270	747	725	727	1140	1140
21	712	1600	605	858	411	423	1270	776	725	725	1130	1150
22	616	1600	604	839	409	429	1260	777	723	722	1130	1180
23	585	1590	660	841	409	435	1250	781	727	722	1140	1190
24	587	1590	955	1200	413	433	1250	945	726	731	1150	1220
25	590	1590	1010	1640	413	441	1250	1280	725	738	1150	1190
26	599	1580	1020	1610	417	1030	990	1520	727	735	1150	1200
27	597	1600	869	1620	433	2220	829	1480	720	736	1150	1170
28	597	1590	1230	1660	432	2530	570	1160	716	735	1180	1170
29	598	1480	1520	1670	---	1950	433	1110	738	706	1190	1170
30	598	1420	1530	1690	---	1660	435	1150	741	713	1190	1180
31	544	---	1540	1680	---	1650	---	1460	---	719	1160	---
TOTAL	22273	35747	27481	59291	23891	21637	33616	21702	29284	22802	32166	34970
MEAN	718	1192	886	1913	853	698	1121	700	976	736	1038	1166
MAX	1540	1610	1540	3450	1790	2530	1650	1520	1530	754	1190	1450
MIN	509	540	592	839	409	412	433	412	716	706	715	1050
AC-FT	44180	70900	54510	117600	47390	42920	66680	43050	58080	45230	63800	69360
MEAN†	240	398	1008	2172	1349	1982	1588	1032	574	316	299	305
CFSM†	0.61	1.02	2.57	5.54	3.44	5.06	4.05	2.63	1.46	0.80	0.76	0.78
IN.†	0.71	1.13	2.97	6.39	3.58	5.83	4.52	3.03	1.63	0.93	0.88	0.87
AC-FT†	14780	23700	62010	133600	74890	121900	94480	63450	34180	19430	18400	18160

CAL YR 2002 TOTAL 323765 MEAN 887 AX 3030 MIN 295 AC-FT 642200 MEAN† 915 CFSM† 2.33 IN.† 31.68 AC-FT† 662400
WTR YR 2003 TOTAL 364860 MEAN 1000 MAX 3450 MIN 409 AC-FT 723700 MEAN† 938 CFSM† 2.39 IN.† 32.48 AC-FT† 679000

† Adjusted for change in contents, in Hills Creek Lake.

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 mi^2.

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 NGVD 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. Continuous water-quality records for the period September 1950 to September 1987 have been collected at this location.

AVERAGE DISCHARGE.--39 years (water years 1912, 1924-1961), 2,726 ft^3/s, 1,975,000 acre-ft/yr.
42 years (water years 1962-2003), 2,843 ft^3/s, 2,060,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 81,800 ft^3/s Dec. 28, 1945, gage height, 18.8 ft, from floodmark, site and datum then in use, from rating curve extended above 39,000 ft^3/s; minimum discharge, 322 ft^3/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 March 1911, 17.0 ft in February 1890 at site used 1923-50, from information by local resident, discharge, about 55,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,800 ft^3/s Jan. 30, gage height, 6.51 ft; minimum discharge, 820 ft^3/s Oct. 7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2100	876	1850	5200	9440	1790	5010	2060	2780	1260	1070	1480
2	1970	876	1840	4960	7460	1690	4560	1990	2700	1260	1070	1470
3	1520	878	1830	7560	6150	1740	3870	2000	2630	1250	1070	1460
4	1300	881	1820	7330	5220	1700	3730	2180	2600	1240	1090	1410
5	1150	878	1610	7530	4730	1650	3720	2230	2490	1230	1350	1360
6	957	869	1220	6420	4300	1900	3930	2120	2070	1230	1410	1360
7	871	888	992	6390	3970	3030	3950	2040	1990	1220	1520	1390
8	1080	1060	987	5880	3330	3720	3730	2010	1960	1210	1430	1630
9	1080	1660	988	5550	3050	3500	3890	1960	1920	1210	1410	2040
10	1070	1810	1030	4960	2890	3690	4000	1910	1890	1220	1400	1790
11	1070	1840	1140	4660	2340	3600	4730	1900	1850	1200	1400	1600
12	1070	1600	1260	4560	1880	3490	4500	1920	1820	1190	1390	1550
13	1060	1580	1400	4580	1740	3460	4580	1920	1800	1190	1380	1530
14	1070	2060	1480	3930	1740	3350	4460	1990	1780	1180	1380	1500
15	1070	2150	1600	3350	1680	3310	4580	2080	1750	1170	1370	1500
16	1070	2120	2180	2650	1960	3130	4350	2050	1740	1190	1380	1520
17	1070	2360	1890	2380	2020	2850	4310	2230	1520	1180	1380	1640
18	1080	2280	1620	2300	2160	2580	4300	2030	1490	1160	1380	1550
19	1070	2200	1490	2240	2140	2410	4140	1860	1380	1150	1490	1520
20	1070	2140	1400	2170	2200	2450	3670	2020	1370	1130	1500	1490
21	1070	2140	1610	2090	2440	3120	3530	2090	1370	1120	1490	1490
22	978	2120	1690	2040	2820	5440	3460	2150	1370	1120	1490	1510
23	925	2090	1550	2200	2710	5920	3390	2260	1350	1110	1510	1520
24	927	2130	1750	2490	2470	4670	3620	2550	1330	1120	1510	1540
25	928	2120	1760	3620	2250	5330	3550	2950	1310	1120	1500	1510
26	939	2070	1960	4070	2080	9460	3210	3170	1300	1120	1500	1520
27	938	2070	3300	6620	1970	8670	2870	3020	1270	1110	1500	1480
28	939	2050	4800	5470	1860	7470	2520	2690	1260	1100	1520	1480
29	944	1950	4780	4690	---	5970	2220	2590	1270	1070	1530	1480
30	938	1860	5190	11100	---	5060	2150	2650	1260	1070	1530	1490
31	887	---	6120	11500	---	4900	---	2820	---	1070	1500	---
TOTAL	34211	51606	64137	150490	89000	121050	114530	69440	52620	36200	43450	45810
MEAN	1104	1720	2069	4855	3179	3905	3818	2240	1754	1168	1402	1527
MAX	2100	2360	6120	11500	9440	9460	5010	3170	2780	1260	1530	2040
MIN	871	869	987	2040	1680	1650	2150	1860	1260	1070	1070	1360
AC-FT	67860	102400	127200	298500	176500	240100	227200	137700	104400	71800	86180	90860

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2003, BY WATER YEAR (WY)

MEAN	1871	3393	4859	4604	3356	3031	3218	3310	2387	1268	1169	1677
MAX	3035	7641	13540	10350	8460	7802	5606	5550	4969	1990	1753	2639
(WY)	1998	1997	1965	1997	1996	1972	1993	1996	1974	1999	1982	1966
MIN	625	1414	1073	874	710	1167	1464	1113	811	703	629	1102
(WY)	1962	1994	1977	1977	1977	1992	1968	1992	1992	1994	1994	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1962 - 2003	
ANNUAL TOTAL	845014		872544			
ANNUAL MEAN	2315		2391		2843	
HIGHEST ANNUAL MEAN					4710	1997
LOWEST ANNUAL MEAN					1416	1977
HIGHEST DAILY MEAN	14200	Apr 14	11500	Jan 31	43500	Dec 23 1964
LOWEST DAILY MEAN	742	Aug 29	869	Nov 6	334	Oct 5 1961
ANNUAL SEVEN-DAY MINIMUM	751	Aug 27	878	Oct 31	349	Oct 1 1961
ANNUAL RUNOFF (AC-FT)	1676000		1731000		2060000	
10 PERCENT EXCEEDS	4270		4660		5440	
50 PERCENT EXCEEDS	1950		1850		2090	
90 PERCENT EXCEEDS	861		1070		1010	

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 mi^2.

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 NGVD 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, 421,300 acre-ft May 2, elevation, 920.83 ft; minimum contents, 120,400 acre-ft Dec. 20, elevation, 825.78 ft.

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

810	89,600	860	205,500	900	338,900
820	108,600	870	235,500	910	377,400
830	129,500	880	267,800	920	417,800
840	152,500	890	302,300	930	460,200
850	177,700				

Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	843.81	832.95	827.50	834.19	853.25	870.23	908.49	920.23	905.45	888.41	866.67	847.61
2	843.59	832.56	827.60	833.34	856.65	870.79	907.83	920.37	905.00	887.99	865.83	847.09
3	842.99	832.14	827.60	834.81	858.18	871.36	907.45	920.33	903.88	887.65	864.89	846.67
4	842.67	831.70	827.61	835.96	858.12	871.93	907.42	920.12	902.75	887.26	863.92	846.30
5	842.45	831.25	827.65	837.42	857.93	872.31	907.88	919.84	901.52	886.89	863.26	845.98
6	842.07	830.76	827.61	837.72	857.00	872.91	908.72	919.63	900.06	886.25	862.69	845.65
7	841.60	830.42	827.47	837.08	856.99	874.45	909.48	919.34	898.58	885.85	861.91	845.56
8	841.34	830.17	827.33	836.60	856.96	876.28	910.38	919.02	897.13	885.28	861.26	845.42
9	841.03	830.24	827.17	836.08	857.27	877.99	911.33	918.68	895.55	884.65	860.64	845.70
10	840.75	830.24	827.17	835.69	857.61	879.64	912.39	918.29	893.96	884.05	860.11	845.69
11	840.42	830.17	827.18	834.85	857.84	881.21	913.78	917.89	892.61	883.44	859.36	845.48
12	840.04	829.80	827.37	834.23	857.95	882.64	915.29	917.52	891.49	882.78	858.75	845.33
13	839.72	829.45	827.58	833.50	858.32	884.09	916.58	917.07	890.93	882.20	857.98	845.08
14	839.46	828.90	827.64	833.01	858.73	885.40	917.36	916.48	890.55	881.56	857.25	844.83
15	839.15	828.47	827.19	832.71	859.19	886.76	917.86	915.91	890.54	880.87	856.75	844.57
16	838.88	827.93	827.38	832.30	860.04	887.92	918.31	915.02	890.33	880.16	856.21	844.45
17	838.65	827.59	827.01	831.92	860.86	888.89	918.61	913.89	890.38	879.46	855.38	844.37
18	838.39	827.16	826.39	831.80	861.52	889.87	918.91	912.71	890.54	878.73	854.77	844.25
19	838.05	826.69	825.98	832.10	862.44	890.64	919.12	911.40	890.63	878.02	854.18	844.09
20	837.76	826.51	825.96	832.26	863.30	891.43	919.15	910.51	890.55	877.26	853.66	843.90
21	837.41	826.64	826.59	832.33	864.26	892.65	919.09	909.50	890.54	876.59	853.02	843.76
22	836.97	826.76	827.25	832.45	865.40	895.23	918.98	908.88	890.53	875.72	852.43	843.60
23	836.71	827.01	827.71	832.73	866.46	898.11	919.04	908.47	890.47	874.77	851.84	843.45
24	836.31	827.22	827.93	832.68	867.28	900.21	919.17	908.25	890.29	873.80	851.30	843.31
25	835.93	827.41	827.78	832.70	867.95	902.68	919.31	908.24	890.16	872.91	850.77	843.16
26	835.44	827.52	827.80	832.56	868.69	907.07	919.48	908.33	889.92	871.91	850.33	843.04
27	834.95	827.45	829.17	833.98	869.24	908.94	919.45	908.28	889.67	871.05	849.85	842.84
28	834.47	827.54	831.27	833.42	869.72	909.90	919.51	907.84	889.44	870.16	849.32	842.63
29	834.07	827.45	832.48	832.36	---	909.74	919.83	907.14	889.14	869.22	848.91	842.46
30	833.78	827.46	833.17	838.68	---	909.27	920.05	906.48	888.65	868.41	848.58	842.39
31	833.42	---	834.69	846.85	---	908.86	---	905.98	---	867.53	848.07	---
MAX	843.81	832.95	834.69	846.85	869.72	909.90	920.05	920.37	905.45	888.41	866.67	847.61
MIN	833.42	826.51	825.96	831.80	853.25	870.23	907.42	905.98	888.65	867.53	848.07	842.39
(†)	137100	124000	140000	169500	234700	373000	418000	361700	297500	227900	172700	158300
(‡)	-25100	-13100	+16000	+29500	+65200	+138300	+45000	-56300	-64200	-69600	-55200	-14400

CAL YR 2002 MAX 922.21 MIN 823.42 AC-FT‡ +20100
WTR YR 2003 MAX 920.37 MIN 825.96 AC-FT‡ -3900

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

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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1946 to current year. Prior to October 1954, published as "at Lowell".

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

GAGE.--Water-stage recorder. Datum of gage is 592.30 ft above NGVD 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. 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.--6 years (water years 1947-1952), 3,572 ft^3/s, 2,588,000 acre-ft/yr.
51 years (water years 1953-2003), 3,046 ft^3/s, 2,207,000 acre-ft/yr, regulated.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,600 ft^3/s Jan. 18, 1953, gage height, 12.46 ft, site and datum then in use, from rating curve extended above 33,000 ft^3/s; minimum daily discharge, 100 ft^3/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, 7,030 ft^3/s Jan. 7, gage height, 6.99 ft; minimum discharge, 1,040 ft^3/s Mar. 3.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2450	1590	1950	5950	2040	1100	5720	1850	3770	2020	2550	2170
2	2450	1590	1980	5920	2950	1100	5730	1850	4000	2020	2760	2150
3	2450	1590	2020	6030	4150	1080	4650	2320	4670	2010	2520	1890
4	1990	1590	2030	6000	5040	1110	3770	2770	4820	2100	2390	1880
5	1680	1590	1820	6030	5140	1110	3110	2790	4770	2110	2380	1890
6	1670	1590	1480	6020	5060	1110	2620	2760	4780	2100	2390	1900
7	1670	1590	1360	6860	4060	1120	2590	2770	4800	2100	2380	1890
8	1670	1600	1360	6380	3400	1120	2060	2760	4800	2300	2390	1890
9	1670	2130	1360	5890	2530	1110	1980	2800	4810	2290	2380	1900
10	1670	2190	1320	5230	2490	1110	1970	2800	4820	2290	2380	1900
11	1680	2160	1310	5260	2030	1110	1970	2810	4360	2300	2340	1910
12	1640	2160	1320	5260	1720	1110	2050	2820	3840	2310	2330	1910
13	1640	2150	1460	5260	1270	1120	2480	2880	3080	2320	2320	1910
14	1630	2700	1920	4520	1210	1130	3040	3300	2400	2300	2340	1920
15	1650	2810	2460	3720	1270	1130	3700	3340	2060	2300	2330	1920
16	1680	2800	2540	3070	1220	1140	3720	3940	2030	2370	2350	1810
17	1650	2790	2540	3040	1220	1140	3760	4510	1600	2410	2350	1810
18	1640	2790	2550	2370	1300	1110	3760	4520	1510	2450	2350	1800
19	1650	2790	2160	2080	1290	1090	3790	4490	1490	2400	2240	1810
20	1650	2340	1550	2030	1230	1100	3790	3990	1510	2400	2280	1810
21	1650	2140	1330	2020	1230	1100	3720	4070	1540	2370	2270	1810
22	1650	2110	1320	2030	1230	1100	3640	3530	1500	2390	2260	1800
23	1640	2120	1320	2010	1230	1100	3680	3040	1710	2490	2260	1800
24	1600	2110	1640	2570	1230	1110	3680	3070	1690	2500	2260	1800
25	1610	2120	2270	3520	1230	1110	3560	3040	1680	2510	2260	1790
26	1610	2130	2360	4300	1160	1760	3050	3030	1680	2520	2160	1790
27	1610	2150	2260	5090	1110	5440	3030	3030	1680	2530	2140	1780
28	1610	2150	2870	6090	1110	5740	2490	3790	2010	2520	2140	1780
29	1610	2150	4020	5710	---	5730	1870	3860	2060	2540	2140	1780
30	1600	1960	4940	3890	---	5640	1810	3910	2060	2420	2150	1650
31	1600	---	4830	2090	---	5720	---	3780	---	2370	2170	---
TOTAL	53670	63680	65650	136240	60150	57800	96790	100220	87530	72060	71960	55850
MEAN	1731	2123	2118	4395	2148	1865	3226	3233	2918	2325	2321	1862
MAX	2450	2810	4940	6860	5140	5740	5730	4520	4820	2540	2760	2170
MIN	1600	1590	1310	2010	1110	1080	1810	1850	1490	2010	2140	1650
AC-FT	106500	126300	130200	270200	119300	114600	192000	198800	173600	142900	142700	110800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2003, BY WATER YEAR (WY)

MEAN	2829	4424	5277	4965	2859	2326	2301	2891	2479	1718	1977	2469
MAX	5266	8779	12310	13510	7724	8084	4854	5464	5072	3145	3171	3932
(WY)	1963	1985	1997	1965	1953	1957	1993	1996	1984	1999	2002	1972
MIN	808	874	981	1050	668	525	437	526	816	1053	1083	892
(WY)	1953	1953	1955	1977	1977	1977	1977	1977	1977	1957	1966	1953

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1953 - 2003	
ANNUAL TOTAL	886670		921600			
ANNUAL MEAN	2429		2525		3046	
HIGHEST ANNUAL MEAN					4660	1997
LOWEST ANNUAL MEAN					1392	1977
HIGHEST DAILY MEAN	6560	Apr 17	6860	Jan 7	43200	Jan 18 1953
LOWEST DAILY MEAN	1080	Feb 18	1080	Mar 3	100	Nov 25 1960
ANNUAL SEVEN-DAY MINIMUM	1090	Feb 14	1100	Mar 18	344	May 4 1977
ANNUAL RUNOFF (AC-FT)	1759000		1828000		2207000	
10 PERCENT EXCEEDS	3560		4660		6020	
50 PERCENT EXCEEDS	2150		2150		2260	
90 PERCENT EXCEEDS	1180		1230		1160	

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

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--August 1955 to September 1997, August 2001 to current year.

INSTRUMENTATION.--Water-temperature recorder.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF DAILY RECORD.--Maximum, 20.5°C several days in September, 1992, Aug. 28, Sept. 15, 16, 2001; minimum recorded, 2.5°C Feb. 6-8, 1989, but may have been lower during period of missing record Feb. 9 to Mar. 30, 1989

EXTREMES FOR CURRENT YEAR.--Maximum, 20.1°C Sept. 5; minimum, 6.8°C Feb. 12.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.0	16.7	17.2	13.8	12.3	12.8	10.3	9.8	10.0	8.2	7.8	8.0
2	17.8	16.6	17.0	13.4	12.0	12.5	10.2	9.6	9.9	8.2	7.9	8.0
3	17.0	16.5	16.7	13.1	11.8	12.2	10.1	9.4	9.7	8.3	7.9	8.1
4	17.3	16.5	16.8	13.0	11.6	12.2	10.0	9.4	9.7	8.4	8.1	8.2
5	17.6	16.4	16.8	13.1	11.9	12.2	9.9	9.5	9.7	8.3	7.9	8.1
6	17.8	16.4	16.8	12.6	11.8	12.1	9.8	9.4	9.6	8.0	7.5	7.8
7	17.8	16.4	16.8	12.5	11.9	12.2	9.8	9.3	9.5	8.0	7.5	7.7
8	17.9	16.4	16.9	12.3	12.0	12.1	9.6	9.2	9.4	7.7	7.3	7.6
9	17.9	16.4	16.9	12.2	11.9	12.0	9.6	9.0	9.3	7.8	7.3	7.5
10	17.6	16.3	16.6	12.0	11.8	11.9	9.5	8.9	9.2	7.7	7.2	7.4
11	17.4	15.9	16.4	12.1	11.6	11.8	9.4	9.0	9.1	7.5	7.2	7.4
12	17.2	15.6	16.1	12.3	11.6	11.9	9.7	8.9	9.3	7.7	7.3	7.5
13	17.1	15.4	16.0	12.2	11.6	11.9	9.5	9.0	9.3	7.6	7.2	7.4
14	17.0	15.3	15.9	12.3	11.7	12.0	9.7	9.3	9.5	7.6	7.3	7.4
15	16.9	15.3	15.8	11.9	11.5	11.7	9.6	9.2	9.4	7.7	7.2	7.4
16	17.0	15.2	15.9	11.9	11.2	11.5	9.5	9.1	9.3	7.6	7.1	7.3
17	16.9	15.3	15.8	11.8	11.2	11.5	9.5	9.0	9.2	7.5	7.1	7.3
18	16.5	15.4	15.8	11.5	11.0	11.3	9.3	8.9	9.1	7.7	7.0	7.3
19	16.8	15.3	15.8	11.6	11.2	11.3	9.1	8.6	8.8	7.5	7.0	7.2
20	16.2	15.3	15.6	11.6	11.0	11.3	9.2	8.5	8.8	7.8	6.9	7.2
21	16.5	15.2	15.7	11.5	10.9	11.2	9.2	8.4	8.7	7.8	7.0	7.3
22	16.5	15.3	15.6	11.4	11.1	11.2	8.9	8.4	8.6	7.7	7.3	7.5
23	16.2	14.9	15.4	11.7	11.0	11.2	9.0	8.1	8.5	8.0	7.3	7.6
24	15.4	15.1	15.2	11.4	10.9	11.2	8.7	8.1	8.4	7.9	7.5	7.7
25	15.9	14.8	15.2	11.3	10.5	10.9	8.5	8.0	8.3	8.1	7.7	7.8
26	15.7	14.5	14.9	10.9	10.2	10.5	8.4	8.0	8.2	8.2	7.9	8.0
27	14.9	14.2	14.6	10.8	10.0	10.3	8.7	8.2	8.4	8.2	7.7	7.9
28	15.3	14.0	14.6	10.7	10.0	10.2	8.4	8.1	8.2	8.0	7.6	7.8
29	15.0	13.6	14.3	10.4	9.9	10.1	8.5	8.1	8.3	7.9	7.6	7.7
30	14.7	13.1	13.8	10.5	9.8	10.1	8.3	8.0	8.2	8.2	7.7	8.0
31	14.2	12.6	13.2	---	---	---	8.3	8.0	8.1	8.6	7.9	8.2
MONTH	18.0	12.6	15.8	13.8	9.8	11.5	10.3	8.0	9.0	8.6	6.9	7.7

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

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.7	8.0	8.3	9.1	7.3	7.9	8.5	7.8	8.0	11.2	8.6	9.5
2	8.5	8.0	8.2	8.1	7.0	7.5	8.2	7.6	7.9	11.2	8.8	9.8
3	8.4	8.0	8.2	8.8	7.2	7.8	8.1	7.6	7.9	10.0	9.2	9.7
4	8.2	7.8	8.0	8.2	7.2	7.7	8.2	7.7	7.9	10.4	9.0	9.7
5	8.1	7.6	7.8	8.2	7.5	7.8	8.4	7.7	8.0	10.4	8.9	9.6
6	8.0	7.5	7.7	8.0	7.5	7.8	8.7	7.8	8.2	10.4	8.7	9.5
7	7.9	7.2	7.5	8.5	7.7	8.0	8.9	8.0	8.4	10.4	8.9	9.6
8	7.9	7.2	7.4	9.3	7.6	8.2	9.9	7.8	8.6	10.4	8.9	9.8
9	8.1	7.0	7.4	9.6	7.6	8.5	9.9	8.0	8.7	10.0	9.1	9.6
10	8.0	7.1	7.4	9.6	7.9	8.6	9.1	8.3	8.6	9.9	9.1	9.5
11	8.0	6.9	7.3	9.0	8.0	8.5	10.0	8.4	9.0	10.4	9.2	9.6
12	8.2	6.8	7.3	9.5	8.2	8.8	9.6	8.5	8.8	10.6	9.1	9.7
13	7.7	7.1	7.4	9.5	8.2	8.8	9.8	8.6	9.1	10.7	9.1	9.8
14	8.8	7.3	7.8	9.8	8.6	9.0	9.8	8.2	8.9	10.7	9.6	10.1
15	8.0	7.4	7.8	9.6	8.4	8.9	9.1	8.2	8.7	10.5	9.5	10.1
16	8.3	7.4	7.7	10.0	8.3	9.0	9.4	8.2	8.7	10.8	9.4	10.1
17	8.2	7.4	7.8	10.4	8.3	9.0	9.0	8.2	8.6	10.4	9.3	9.8
18	8.6	7.5	7.9	10.9	8.3	9.2	9.3	8.4	8.8	10.3	9.2	9.7
19	8.2	7.6	7.9	9.3	8.3	8.8	9.6	8.2	8.7	10.3	9.5	9.8
20	8.0	7.5	7.8	9.9	8.4	8.9	9.3	8.2	8.7	10.6	9.5	9.9
21	8.4	7.6	8.0	9.3	8.4	8.8	9.2	8.4	8.7	10.8	9.6	10.1
22	9.1	7.4	8.0	9.2	8.4	8.9	8.8	8.5	8.6	11.0	9.9	10.4
23	8.9	7.3	7.8	10.1	8.2	8.9	8.7	8.2	8.5	11.4	10.0	10.6
24	9.0	7.1	7.8	10.4	8.1	9.0	9.0	8.1	8.5	11.0	10.4	10.7
25	8.8	7.0	7.6	9.3	8.5	8.9	8.7	8.2	8.4	11.0	10.2	10.6
26	8.4	7.0	7.6	10.0	8.4	8.9	9.0	8.1	8.5	11.3	9.9	10.5
27	8.7	7.3	7.7	9.3	7.9	8.6	9.2	8.2	8.5	11.4	10.0	10.5
28	8.1	7.0	7.6	8.9	7.9	8.3	9.0	8.2	8.7	11.1	10.1	10.6
29	---	---	---	9.0	8.0	8.4	10.3	8.3	9.0	11.3	10.4	10.8
30	---	---	---	9.0	8.1	8.5	10.7	8.6	9.3	11.4	10.3	10.6
31	---	---	---	8.6	8.0	8.3	---	---	---	11.2	10.1	10.5
MONTH	9.1	6.8	7.7	10.9	7.0	8.5	10.7	7.6	8.6	11.4	8.6	10.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.2	10.2	10.6	14.6	13.6	14.0	16.8	15.4	16.1	19.4	17.9	18.5
2	11.5	10.4	10.9	15.5	13.4	14.2	16.8	16.0	16.4	19.6	17.9	18.6
3	11.7	10.7	11.1	15.6	13.5	14.3	17.0	16.4	16.6	19.7	18.0	18.6
4	11.7	10.8	11.2	15.7	13.5	14.4	17.8	16.2	16.8	19.9	18.1	18.8
5	11.7	10.9	11.3	15.7	13.7	14.5	17.8	16.4	16.9	20.1	18.1	18.9
6	12.0	11.1	11.4	15.9	13.9	14.7	18.0	16.6	17.1	19.8	18.3	18.8
7	12.1	11.3	11.6	16.1	13.9	14.7	18.1	16.6	17.2	19.1	18.3	18.7
8	12.2	11.4	11.7	16.0	14.2	15.1	18.2	16.8	17.3	19.2	18.3	18.6
9	12.1	11.2	11.6	16.1	14.4	15.1	18.2	16.8	17.3	19.1	18.3	18.6
10	11.8	11.3	11.5	16.1	14.2	15.0	18.2	16.8	17.3	19.3	18.3	18.6
11	12.0	11.2	11.5	16.2	14.3	15.0	18.1	16.8	17.3	19.7	18.3	18.7
12	11.9	11.3	11.6	16.0	14.4	15.0	18.4	16.9	17.5	19.8	18.1	18.7
13	11.9	11.3	11.5	15.7	14.8	15.1	18.6	17.0	17.6	19.8	18.1	18.7
14	13.0	11.2	11.9	16.2	14.6	15.2	18.6	17.0	17.6	19.6	18.0	18.6
15	13.6	11.3	12.3	16.3	14.7	15.3	18.5	17.0	17.5	19.6	18.1	18.6
16	13.9	11.7	12.7	16.2	14.8	15.3	18.6	17.0	17.6	18.9	18.0	18.3
17	14.6	11.8	13.0	16.3	14.6	15.3	19.0	17.3	17.9	19.4	17.8	18.4
18	13.2	12.0	12.6	16.2	14.6	15.2	19.0	17.4	18.1	19.4	17.5	18.2
19	13.1	12.1	12.6	16.0	14.4	15.0	19.2	17.7	18.2	18.8	17.6	18.1
20	14.3	12.1	13.0	16.1	14.2	14.9	19.0	17.5	18.1	19.1	17.5	18.0
21	14.1	12.4	13.1	16.3	14.3	15.2	19.3	17.7	18.3	19.1	17.4	18.0
22	13.8	12.4	13.1	16.3	14.8	15.4	18.5	17.7	18.0	19.3	17.5	18.2
23	13.8	12.7	13.2	16.5	15.0	15.6	19.0	17.8	18.3	19.4	17.6	18.3
24	15.2	12.8	13.6	16.5	15.0	15.6	19.3	17.7	18.3	19.3	17.6	18.2
25	15.3	12.7	13.8	16.7	15.3	15.9	19.3	17.7	18.3	19.4	17.6	18.3
26	15.7	12.7	13.9	16.7	15.4	15.9	19.2	17.8	18.2	19.5	17.7	18.3
27	15.9	12.9	14.1	16.9	15.3	16.0	19.3	17.7	18.3	19.6	17.9	18.5
28	15.6	13.1	14.1	17.0	15.2	16.0	19.4	17.7	18.3	19.6	17.9	18.4
29	15.4	13.4	14.2	17.1	15.4	16.1	19.5	17.7	18.4	18.6	18.0	18.3
30	15.3	13.7	14.2	17.1	15.1	15.9	19.4	17.8	18.5	19.4	17.7	18.3
31	---	---	---	17.0	15.3	16.0	19.5	18.0	18.5	---	---	---
MONTH	15.9	10.2	12.4	17.1	13.4	15.2	19.5	15.4	17.7	20.1	17.4	18.5
YEAR	20.1	6.8	11.9									

14150800 WINBERRY CREEK NEAR LOWELL, OR

LOCATION.--(Revised)Lat 43°54'52", long 122°41'15", in NE 1/4 SE 1/4 sec.16, T.19 S., R.1 E., Lane County, Hydrologic Unit 17090001, on right bank 0.9 mi upstream from Nelson Creek, 4.6 mi east of Lowell, and at mile 4.4.

DRAINAGE AREA.--43.9 mi^2.

PERIOD OF RECORD.--August 1963 to September 1981, October 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 863.70 ft above NGVD of 1929 (levels by Corps of Engineers).

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--21 years (water years 1964-1981, 2001-03), 113 ft^3/s, 35.06 in/yr, 82,070 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,500 ft^3/s Dec. 22, 1964, gage height, 8.07 ft; minimum discharge, 1.5 ft^3/s Sept. 4, 5, 8-10, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 26	0930	*957	*4.09				

Minimum discharge, 2.1 ft^3/s Sept. 4-7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	3.8	9.1	311	794	71	152	101	26	8.5	3.2	2.3
2	8.6	3.7	8.5	218	552	64	156	92	24	8.6	3.3	2.3
3	7.6	3.8	8.1	283	375	99	157	85	23	8.0	3.5	2.3
4	19	e3.8	8.3	298	249	107	170	92	22	7.4	3.7	2.2
5	12	e3.7	8.5	319	181	113	205	103	21	7.1	3.6	2.1
6	7.7	e3.6	7.8	212	139	168	276	100	20	7.0	3.6	2.1
7	6.2	3.9	7.3	152	e110	381	280	92	19	6.8	8.5	2.7
8	5.4	11	7.0	117	93	353	249	96	18	6.5	5.5	4.3
9	4.9	46	6.8	96	79	256	245	92	17	6.4	4.1	18
10	4.6	62	10	79	68	221	227	88	17	6.1	3.8	19
11	4.3	57	16	68	60	197	253	84	17	5.9	3.6	7.3
12	4.1	26	17	70	54	176	232	80	16	5.7	3.4	5.0
13	4.0	18	68	81	51	156	287	74	16	5.7	3.4	4.2
14	3.9	15	52	136	56	134	289	70	16	5.6	3.2	3.7
15	3.7	13	77	118	50	123	245	68	15	5.5	3.1	3.4
16	3.6	14	134	97	e90	115	214	66	14	5.3	3.1	3.8
17	3.5	65	98	83	99	e105	272	64	13	5.4	3.0	8.8
18	3.4	37	70	73	148	e100	327	60	13	5.1	2.9	6.2
19	3.4	24	64	63	150	e95	269	54	13	4.8	2.8	4.5
20	3.4	18	49	55	172	97	207	50	13	4.6	2.8	4.1
21	3.5	15	98	50	206	232	178	46	13	4.5	2.7	3.8
22	3.6	13	118	48	238	446	172	44	13	4.3	2.7	3.5
23	3.5	11	80	52	211	444	184	43	12	4.3	2.8	3.3
24	3.5	18	60	58	166	287	355	41	11	4.1	2.7	3.0
25	3.5	23	48	106	129	383	302	44	11	4.1	2.6	2.9
26	3.5	16	78	149	106	874	225	40	10	3.9	2.5	2.8
27	3.6	14	242	380	90	565	173	36	9.5	3.9	2.5	2.8
28	3.9	12	366	224	78	341	146	33	9.0	3.8	2.6	2.7
29	4.0	11	381	162	---	233	129	31	8.7	3.6	2.5	2.6
30	3.9	9.8	443	535	---	175	115	30	8.5	3.4	2.4	2.8
31	3.8	---	484	527	---	150	---	29	---	3.3	2.4	---
TOTAL	176.6	575.1	3124.4	5220	4794	7261	6691	2028	458.7	169.2	102.5	138.5
MEAN	5.70	19.2	101	168	171	234	223	65.4	15.3	5.46	3.31	4.62
MAX	23	65	484	535	794	874	355	103	26	8.6	8.5	19
MIN	3.4	3.6	6.8	48	50	64	115	29	8.5	3.3	2.4	2.1
AC-FT	350	1140	6200	10350	9510	14400	13270	4020	910	336	203	275
CFSM	0.13	0.44	2.30	3.84	3.90	5.34	5.08	1.49	0.35	0.12	0.08	0.11
IN.	0.15	0.49	2.65	4.42	4.06	6.15	5.67	1.72	0.39	0.14	0.09	0.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2003, BY WATER YEAR (WY)

MEAN	25.0	132	224	257	159	183	170	114	57.4	16.3	10.4	13.6
MAX	82.6	429	668	512	311	399	362	258	170	46.8	33.0	73.1
(WY)	1969	1974	1965	1971	1979	1972	1979	1977	1964	1969	1978	1978
MIN	5.70	19.2	16.3	32.1	19.7	57.8	80.4	35.8	14.3	5.46	3.31	3.68
(WY)	2003	2003	1977	1977	1977	1978	1968	1966	1966	2003	2003	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1964 - 2003	
ANNUAL TOTAL	29231.8		30739.0			
ANNUAL MEAN	80.1		84.2		113	
HIGHEST ANNUAL MEAN					182	1972
LOWEST ANNUAL MEAN					57.9	2001
HIGHEST DAILY MEAN	972	Apr 14	874	Mar 26	3130	Dec 22 1964
LOWEST DAILY MEAN	2.5	Sep 14	2.1	Sep 5	2.0	Sep 9 1967
ANNUAL SEVEN-DAY MINIMUM	2.6	Sep 10	2.2	Aug 31	2.2	Aug 30 1967
ANNUAL RUNOFF (AC-FT)	57980		60970		82070	
ANNUAL RUNOFF (CFSM)	1.82		1.92		2.58	
ANNUAL RUNOFF (INCHES)	24.77		26.05		35.06	
10 PERCENT EXCEEDS	210		247		265	
50 PERCENT EXCEEDS	24		22		57	
90 PERCENT EXCEEDS	3.4		3.4		6.2	

e Estimated

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 mi^2.

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 NGVD of 1929 (levels by Corps of Engineers).

REMARKS.--Data for the period Nov. 19 to Dec. 12 and Jan. 31 to Sept. 30 furnished by the U.S. Army Corps of Engineers. 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, May 19, 1991; 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, 118,900 acre-ft May 19, 20, 23-28, elevation, 830.58 ft; minimum contents, 9,590 acre-ft Dec. 24-26, elevation, 727.92.

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	92,750
705	2,850	765	33,770	825	109,200
715	5,200	775	42,580	833	123,200

Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	801.41	760.95	729.44	731.92	763.14	789.38	815.01	827.42	---	825.52	818.70	800.20
2	800.35	758.85	729.44	729.16	766.53	789.79	814.91	827.72	830.11	825.45	818.33	---
3	799.31	756.49	729.44	729.30	768.36	790.61	815.11	828.06	829.94	---	817.91	---
4	798.27	754.13	731.44	---	768.97	791.42	815.63	828.63	829.69	---	817.49	797.70
5	797.19	751.65	731.44	---	768.38	792.19	816.36	829.37	829.47	---	816.95	796.67
6	796.07	749.17	731.44	---	767.78	794.28	---	829.87	829.15	---	816.58	---
7	794.97	746.55	731.44	---	767.52	799.50	817.57	830.38	828.98	824.62	---	---
8	793.95	744.07	730.97	---	767.84	803.57	819.17	830.41	828.53	824.44	---	793.57
9	793.29	742.27	730.78	---	767.89	805.49	819.72	830.28	828.19	824.15	815.06	---
10	792.69	740.93	730.71	---	767.64	806.87	820.01	830.11	827.84	823.95	814.63	791.96
11	792.15	739.71	731.03	---	767.83	807.25	820.50	830.08	827.62	---	814.09	---
12	791.67	737.41	730.34	---	768.29	807.14	820.80	829.89	827.50	---	813.52	789.77
13	791.29	734.63	731.56	---	---	---	821.42	829.94	827.42	---	813.00	788.73
14	791.01	732.23	731.64	---	769.51	---	822.00	829.99	827.20	823.18	812.54	787.57
15	790.69	730.97	731.80	---	770.06	807.02	822.33	830.08	827.15	822.87	811.85	786.46
16	789.41	730.59	731.94	---	771.08	---	822.40	830.28	826.96	822.69	811.35	785.41
17	787.89	731.25	731.36	---	772.35	---	---	830.36	826.86	822.50	810.72	---
18	786.39	731.33	729.94	---	774.18	---	---	---	826.71	822.25	810.05	783.33
19	784.85	731.76	728.76	---	775.82	---	---	---	826.61	822.07	809.51	782.18
20	783.27	731.48	728.22	---	777.60	---	---	---	826.59	821.88	808.84	781.05
21	781.63	731.29	728.88	---	779.52	---	---	830.56	---	821.56	808.27	779.84
22	779.95	731.62	729.14	---	782.03	812.40	824.67	830.53	826.31	821.43	807.61	---
23	778.21	731.44	728.28	---	784.05	814.44	824.77	830.58	826.31	821.16	806.92	777.22
24	776.49	729.67	727.92	---	785.49	814.59	825.43	830.58	826.10	820.92	806.23	775.87
25	774.73	729.11	727.92	---	786.52	815.06	---	830.58	825.95	820.60	805.49	774.41
26	772.91	729.44	728.78	---	787.45	---	---	830.58	825.92	819.98	804.75	773.11
27	770.95	729.47	730.34	---	---	---	---	830.58	825.77	820.13	803.96	771.64
28	769.05	729.50	730.90	---	788.79	817.65	826.05	---	---	819.93	803.20	770.13
29	767.09	729.50	730.04	---	---	817.08	826.39	---	825.68	819.71	802.51	768.85
30	765.09	729.50	731.40	---	---	816.34	826.74	---	825.57	819.49	801.67	767.68
31	763.05	---	733.48	753.92	---	815.55	---	830.11	---	819.14	801.03	---
MAX	801.41	760.95	733.48	---	---	---	---	---	---	---	---	---
MIN	763.05	729.11	727.92	---	---	---	---	---	---	---	---	---
(†)	32200	10340	12420	25370	57330	93620	112200	118000	110100	99380	72390	36000
(‡)	-42020	-21860	+2080	+12950	+31960	+36290	+18580	+5800	-7900	-10720	-26990	-36390

CAL YR 2002 MAX --- MIN --- AC-FT +2120
WTR YR 2003 MAX --- MIN --- AC-FT -38220

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

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 mi^2.

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 and crest-stage gage. Datum of gage is 637.81 ft above NGVD 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 on left bank at present site and datum. Aug. 4, 1950 to Aug. 27, 1982 water-stage recorder. Aug. 27, 1982 gage moved to right bank at present site and datum.

REMARKS.--Records good. Flow regulated since 1966 by Fall Creek Lake (station 14150900). No diversion upstream from station.

AVERAGE DISCHARGE.--68 years (water years 1936-2003), 575 ft^3/s, 41.98 in/yr, 416,600 acre-ft/yr, adjusted for storage in Fall Creek Lake since January 1965.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,700 ft^3/s Dec. 11, 1956, gage height, 18.80 ft, from rating curve extended above 9,700 ft^3/s; minimum discharge, 1.5 ft^3/s Oct. 7, 8, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,540 ft^3/s Mar. 26-28, gage height, 5.97 ft; minimum discharge, 25 ft^3/s Feb. 12.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	790	853	60	2070	195	52	1290	152	210	90	321	538
2	785	845	60	1830	1030	52	945	147	247	90	321	538
3	783	904	60	1740	1040	54	753	139	311	112	365	589
4	780	894	61	1810	1040	53	577	139	311	183	385	639
5	776	881	61	1490	1040	53	578	140	311	201	428	676
6	772	869	60	1300	1040	55	582	139	311	201	427	682
7	768	912	60	983	734	56	697	185	311	200	427	723
8	702	898	60	534	425	90	821	507	500	201	425	720
9	416	885	59	269	394	429	853	608	480	201	424	679
10	391	876	60	264	393	447	890	599	374	201	424	598
11	342	846	61	264	221	961	892	534	232	200	424	698
12	300	846	95	309	138	1100	894	491	207	201	424	702
13	227	906	217	507	49	1110	899	443	206	200	423	699
14	157	711	466	799	49	773	900	248	205	200	442	695
15	238	396	518	791	50	477	903	210	204	200	491	675
16	787	189	789	761	53	390	904	210	181	200	490	651
17	897	188	822	703	53	391	907	210	159	200	489	650
18	890	188	814	695	55	391	906	210	160	200	488	647
19	884	188	682	470	53	393	725	210	160	200	486	644
20	892	188	438	283	53	394	712	210	160	200	484	640
21	916	188	428	152	53	397	714	210	160	201	483	659
22	917	162	668	93	53	676	714	210	160	202	502	704
23	909	101	676	90	53	1050	719	210	160	203	534	699
24	902	101	440	92	52	1380	807	210	159	220	533	695
25	895	101	293	94	52	1970	895	210	159	209	533	690
26	886	73	267	145	52	2200	892	210	158	210	549	691
27	878	61	1040	1130	52	2500	709	210	137	210	548	689
28	880	61	1760	1780	52	2490	575	211	90	e209	547	e625
29	881	61	2010	1550	---	1800	310	210	90	e209	545	e560
30	870	61	2100	817	---	1500	152	213	90	209	534	512
31	861	---	2070	67	---	1490	---	212	---	281	540	---
TOTAL	22372	14433	17255	23882	8524	25174	23115	8047	6603	6044	14436	19607
MEAN	722	481	557	770	304	812	770	260	220	195	466	654
MAX	917	912	2100	2070	1040	2500	1290	608	500	281	549	723
MIN	157	61	59	67	49	52	152	139	90	90	321	512
AC-FT	44370	28630	34230	47370	16910	49930	45850	15960	13100	11990	28630	38890
MEAN†	38.2	114	590	981	880	1402	1083	354	87.4	20.6	26.7	42.0
CFSM†	0.20	0.61	3.17	5.27	4.73	7.54	5.82	1.90	0.47	0.11	0.14	0.22
IN.†	0.24	0.68	3.66	6.08	4.93	8.69	6.50	2.19	0.52	0.13	0.16	0.25
AC-FT†	2350	6770	36310	60320	48870	86220	64430	21760	5200	1270	1640	2500

CAL YR 2002 TOTAL 149966 MEAN 411 MAX 2100 MIN 58 AC-FT 297500 MEAN† 414 CFSM† 2.22 IN.† 30.20 AC-FT† 299620
WTR YR 2003 TOTAL 189492 MEAN 519 MAX 2500 MIN 49 AC-FT 375900 MEAN† 466 CFSM† 2.51 IN.† 34.04 AC-FT† 337680

e Estimated
† Adjusted for change in contents, in Fall Creek Lake.

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

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: August 1950 to September 1997. August 2001 to current year.

INSTRUMENTATION.--Temperature probe and data logger.

REMARKS.--Records good except those for the period Oct. 1 to Mar. 31, which are fair.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 26.0°C July 28, 1958; minimum, 0.0°C Dec. 23, 24, 1990.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 20.5°C July 21; minimum, 6.1°C Feb. 25, Mar. 2.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.9	10.5	10.7	14.3	13.8	14.1	8.5	7.6	7.9	8.2	7.7	7.9
2	11.0	10.6	10.8	14.0	13.5	13.8	8.5	7.4	7.9	8.1	7.7	7.9
3	11.1	10.8	10.9	13.7	13.2	13.5	8.3	7.6	7.9	8.3	7.7	8.0
4	11.2	10.8	11.0	13.4	13.1	13.3	8.6	7.8	8.1	8.7	8.2	8.4
5	11.2	10.9	11.1	13.4	13.0	13.2	8.2	7.7	7.9	9.0	8.3	8.7
6	11.3	10.9	11.1	13.2	12.9	13.0	7.9	7.6	7.8	8.8	8.0	8.4
7	11.3	11.0	11.1	13.2	12.9	13.0	8.3	7.7	7.9	8.2	7.5	7.9
8	12.5	11.1	11.4	13.1	12.7	12.9	8.1	7.7	7.8	7.7	7.3	7.5
9	13.7	12.4	13.2	12.9	12.3	12.6	8.2	7.7	7.9	7.5	7.0	7.2
10	13.5	13.1	13.3	12.4	11.3	11.8	8.2	7.6	7.9	7.3	6.8	7.0
11	14.4	12.9	13.7	11.5	10.8	11.1	8.5	7.8	8.2	7.5	6.8	7.1
12	14.4	14.0	14.2	11.2	10.7	11.0	8.6	7.9	8.2	7.5	7.2	7.4
13	17.4	13.9	15.7	11.5	11.0	11.2	8.4	7.8	8.1	7.6	7.1	7.4
14	17.3	16.6	16.9	11.7	11.2	11.4	8.7	8.1	8.4	7.6	7.2	7.4
15	17.2	11.8	15.4	11.6	11.1	11.4	8.6	8.2	8.4	8.0	7.4	7.7
16	11.9	10.4	11.0	11.3	10.9	11.1	8.7	8.2	8.5	7.8	7.4	7.6
17	10.9	8.9	10	11.1	10.0	10.7	8.6	8.2	8.4	7.8	7.4	7.6
18	9.3	9.0	9.2	10.4	9.9	10.1	8.4	8.0	8.2	7.6	7.2	7.4
19	9.6	9.2	9.4	10.1	9.6	9.9	8.2	7.8	8.0	7.5	7.0	7.2
20	9.9	9.4	9.6	9.9	9.6	9.8	8.0	7.6	7.8	7.5	7.0	7.2
21	10.3	9.7	10	10.1	9.6	9.8	7.8	7.1	7.5	7.7	7.1	7.3
22	10.7	10.0	10.4	10.0	9.6	9.9	7.6	7.2	7.4	7.9	7.1	7.5
23	11.3	10.5	10.9	10.0	9.6	9.8	7.6	7.1	7.3	8.0	7.2	7.5
24	11.9	11.1	11.5	10.0	9.7	9.9	7.3	7.0	7.1	8.0	7.5	7.7
25	12.5	11.7	12.1	10.4	9.5	9.8	7.3	6.8	7.1	8.0	7.6	7.8
26	13.3	12.4	12.8	10.0	8.9	9.5	7.2	6.7	7.0	8.2	7.8	7.9
27	14.0	13.2	13.6	9.2	8.1	8.7	7.1	6.7	6.9	8.8	7.8	8.4
28	14.5	13.9	14.2	8.9	7.8	8.3	7.3	6.8	7.1	9.2	8.6	8.9
29	14.9	14.4	14.7	8.5	7.6	8.0	7.6	6.8	7.2	9.2	8.7	8.9
30	15.0	14.7	14.8	8.5	7.5	7.9	7.7	7.2	7.5	9.0	8.6	8.8
31	14.8	14.3	14.6	---	---	---	7.9	7.3	7.6	9.2	8.8	9.0
MONTH	17.4	8.9	12.2	14.3	7.5	11.0	8.7	6.7	7.8	9.2	6.8	7.8

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

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.5	8.6	9.0	8.0	6.2	6.8	8.0	7.6	7.8	9.7	8.1	8.6
2	9.2	8.8	9.0	7.2	6.1	6.6	8.0	7.7	7.9	11.5	8.1	9.3
3	9.3	8.7	9.0	8.2	6.3	6.9	8.1	7.7	7.9	10.6	9.5	10.1
4	9.0	8.4	8.8	7.3	6.3	6.8	8.1	7.8	7.9	10.6	9.3	9.9
5	8.8	8.1	8.4	7.2	6.6	6.8	8.0	7.7	7.9	11.6	9.4	10.5
6	8.5	8.1	8.3	7.0	6.6	6.8	8.1	7.7	7.9	11.6	9.6	10.3
7	8.3	7.3	7.7	7.2	6.7	6.9	8.1	7.6	7.8	11.0	8.9	9.8
8	7.5	6.9	7.2	8.3	6.8	7.2	8.1	7.7	7.9	9.2	8.6	8.9
9	7.2	6.6	7.0	7.1	6.7	6.9	8.1	7.7	7.8	8.9	8.6	8.8
10	7.1	6.4	6.8	7.3	6.7	7.0	8.0	7.6	7.8	9.3	8.7	9.0
11	7.0	6.3	6.6	7.2	6.9	7.0	8.1	7.7	7.9	9.6	8.9	9.2
12	7.4	6.4	6.7	7.3	6.9	7.1	8.2	7.8	7.9	9.6	8.9	9.3
13	7.1	6.3	6.6	7.5	6.8	7.2	8.2	7.7	8.0	9.9	9.1	9.4
14	7.7	6.3	6.8	7.3	6.9	7.1	8.3	7.8	8.0	10.8	9.4	10.2
15	7.0	6.4	6.6	7.4	6.9	7.1	8.2	7.8	8.0	11.0	9.7	10.3
16	7.1	6.3	6.6	7.5	6.9	7.1	8.2	7.8	8.0	11.7	9.6	10.6
17	7.3	6.4	6.7	7.5	7.0	7.2	8.3	7.8	8.1	11.0	9.8	10.5
18	7.7	6.6	6.9	7.5	7.0	7.2	8.3	7.9	8.1	11.9	10.0	10.9
19	7.4	6.6	6.9	7.3	7.1	7.2	8.4	7.9	8.1	11.4	10.0	10.7
20	7.2	6.7	6.9	7.5	7.1	7.3	8.4	7.9	8.1	11.6	10.0	10.8
21	7.4	6.7	7.0	7.4	7.1	7.3	8.3	8.0	8.2	11.7	10.4	10.9
22	7.7	6.4	6.9	7.5	7.2	7.3	8.3	8.0	8.1	11.4	10.5	11.0
23	8.0	6.2	6.9	7.7	7.3	7.4	8.3	8.0	8.1	11.4	10.8	11.1
24	8.1	6.2	6.8	7.7	7.3	7.5	8.4	8.1	8.2	11.4	10.5	11.0
25	8.0	6.1	6.8	7.8	7.4	7.6	8.4	8.1	8.2	11.5	10.3	11.0
26	7.7	6.3	6.9	7.9	7.5	7.6	8.6	8.1	8.3	11.6	10.6	11.0
27	7.8	6.5	7.0	7.8	7.5	7.7	8.7	8.1	8.3	11.7	10.7	11.3
28	7.2	6.4	6.8	7.8	7.6	7.7	8.5	8.0	8.3	12.0	10.5	11.3
29	---	---	---	8.0	7.6	7.8	8.8	8.1	8.4	12.1	10.9	11.5
30	---	---	---	8.0	7.6	7.9	9.3	8.2	8.6	11.8	10.8	11.3
31	---	---	---	8.0	7.7	7.9	---	---	---	12.2	10.8	11.4
MONTH	9.5	6.1	7.3	8.3	6.1	7.2	9.3	7.6	8.1	12.2	8.1	10.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.9	11.1	11.6	16.4	15.0	15.9	9.9	9.1	9.4	12.8	12.2	12.5
2	12.2	10.5	11.5	16.7	15.6	16.1	9.7	9.1	9.3	13.1	12.4	12.7
3	11.2	10.6	10.9	17.1	14.9	16.3	9.5	9.1	9.3	12.9	12.2	12.5
4	11.4	10.8	11.1	17.4	15.4	16.5	9.9	9.1	9.4	12.8	12.1	12.5
5	11.8	10.9	11.2	17.4	15.6	16.7	9.7	9.0	9.3	12.7	12.3	12.5
6	11.8	11.0	11.3	17.6	15.9	17.0	9.8	9.0	9.3	12.8	12.3	12.5
7	11.8	10.9	11.3	17.9	15.0	16.8	9.9	9.1	9.4	12.7	11.9	12.5
8	11.4	10.1	10.5	18.1	16.1	17.3	9.9	9.1	9.4	12.6	12.2	12.4
9	11.1	10.3	10.6	18.3	16.3	17.6	9.8	9.1	9.4	13.1	12.4	12.7
10	11.9	10.7	11.3	18.4	16.7	17.7	9.9	9.2	9.4	13.4	12.9	13.1
11	13.8	11.7	13.0	18.4	17.0	17.9	9.9	9.1	9.5	13.2	12.3	12.6
12	14.1	12.9	13.4	18.6	16.8	17.9	10.0	9.2	9.6	12.8	12.3	12.5
13	14.2	12.6	13.5	18.7	17.4	18.2	10.1	9.3	9.6	12.8	12.3	12.5
14	14.2	12.8	13.7	19.0	17.5	18.5	10.2	9.3	9.6	12.8	12.3	12.5
15	14.7	13.0	14.0	19.3	17.2	18.4	9.9	9.3	9.6	13.0	12.4	12.6
16	15.0	13.2	14.3	19.2	17.7	18.6	10.1	9.4	9.7	12.7	9.4	10.5
17	15.2	13.1	14.4	19.4	17.9	18.8	10.2	9.5	9.8	10.0	9.5	9.7
18	15.0	13.3	14.2	19.8	18.3	19.1	10.3	9.5	9.9	10.1	9.6	9.8
19	15.0	13.5	14.3	20.0	18.3	19.2	10.4	9.7	10	10.3	9.8	10
20	15.4	13.8	14.4	20.2	18.3	19.5	10.4	9.8	10.1	10.5	9.9	10.2
21	15.1	13.7	14.4	20.5	16.9	18.9	10.6	9.9	10.2	10.8	10.2	10.5
22	15.4	13.7	14.8	18.2	17.4	17.7	10.5	10.1	10.3	11.1	10.5	10.8
23	15.2	14.0	14.6	18.0	9.4	15.5	10.7	10.1	10.4	11.6	10.8	11.3
24	15.4	14.0	14.9	10.3	9.3	9.6	11.0	10.1	10.6	12.1	11.3	11.8
25	16.0	14.4	15.3	10.4	9.2	9.7	11.1	10.5	10.8	12.6	12.0	12.3
26	16.3	14.4	15.6	10.4	9.2	9.7	11.3	10.6	10.9	13.3	12.5	12.9
27	16.4	14.6	15.8	10.5	9.3	9.7	11.5	11.0	11.2	13.8	13.1	13.5
28	17.1	15.0	16.1	10.6	9.3	9.8	11.8	11.2	11.5	14.5	13.6	14.1
29	16.9	14.7	16.0	10.6	9.4	9.8	12.1	11.4	11.8	15.3	14.4	14.8
30	17.2	14.8	16.1	10.6	9.4	9.8	12.4	11.2	12.0	15.9	15.1	15.5
31	---	---	---	10.0	9.2	9.5	12.5	11.9	12.2	---	---	---
MONTH	17.2	10.1	13.5	20.5	9.2	15.6	12.5	9.0	10.1	15.9	9.4	12.2
YEAR	20.5	6.1	10.3									

14152000 MIDDLE FORK WILLAMETTE RIVER AT JASPER, OR

LOCATION.--Lat 43°59'54", long 122°54'17", 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.

DRAINAGE AREA.--1,340 mi^2.

WATER-DISCHARGE RECORDS

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.

REVISED RECORDS.--WSP 1288: 1907-8, 1910-12, 1914-16, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 513.45 ft above NGVD 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.

REMARKS.--No estimated daily discharges. Records good except for the period Dec. 31 to Jan. 17, which are fair. Flow regulated since November 1953 by Lookout Point Lake (station 14149000), since 1961 by Hills Creek Lake (station 14145100), and since 1966 by Fall Creek Lake (station 14150900).

AVERAGE DISCHARGE.--10 years (water years 1906-11, 1914-16, 1953), 3,866 ft^3/s, 2,801,000 acre-ft/yr.
50 years (water years 1954-2003), 4,123 ft^3/s, 2,987,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 94,000 ft^3/s Nov. 23, 1909, gage height, 17.4 ft, datum then in use, from graph based on gage readings, from rating curve extended above 42,000 ft^3/s; minimum discharge, 366 ft^3/s Dec. 5, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11,300 ft^3/s Mar.27, gage height, 7.05 ft; minimum discharge, 1,310 ft^3/s Dec. 10.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3200	2340	1940	10200	5850	1490	8230	2410	4100	2110	2890	2680
2	3170	2330	1970	9600	6230	1450	7810	2340	4410	2120	3160	2670
3	3170	2380	2010	9830	6870	1510	6460	2770	5180	2120	2970	2430
4	2710	2380	2020	9820	7680	1500	5410	3380	5410	2290	2800	2430
5	2370	2370	1850	9350	7550	1500	4740	3500	5340	2320	2840	2490
6	2320	2360	1510	8810	7280	2090	4570	3380	5350	2320	2850	2500
7	2310	2400	1350	9010	5750	3590	4530	3350	5350	2290	2850	2550
8	2290	2440	1350	8010	4620	3590	3910	3670	5490	2530	2860	2550
9	2000	3060	1350	7130	3580	3070	3690	3800	5520	2550	2840	2560
10	1960	3250	1350	6320	3390	2770	3660	3770	5440	2530	2840	2470
11	1940	3170	1400	6270	2670	3020	3620	3710	4820	2550	2800	2540
12	1840	3010	1470	6430	2220	3030	3740	3670	4190	2550	2780	2550
13	1800	3060	1890	6900	1670	2970	4420	3650	3440	2570	2750	2540
14	1710	3470	2560	6630	1560	2560	4980	3850	2700	2540	2810	2550
15	1730	3330	3330	5500	1600	2190	5530	3840	2270	2540	2830	2530
16	2280	3080	4100	4620	1720	2050	5580	4410	2200	2620	2850	2410
17	2410	3210	3950	4370	1940	2040	5680	5060	1790	2670	2850	2410
18	2400	3150	3870	3600	2400	1970	5650	5100	1670	2720	2850	2390
19	2400	3100	3250	2980	2280	1930	5500	5100	1650	2670	2730	2380
20	2410	2610	2340	2620	2100	1990	5360	4470	1640	2660	2760	2380
21	2440	2340	2370	2470	2120	2160	5320	4550	1710	2620	2760	2400
22	2440	2270	2580	2390	2120	3220	5180	4010	1670	2650	2750	2430
23	2430	2190	2380	2390	2030	3790	5290	3480	1860	2760	2780	2430
24	2390	2200	2370	3010	1920	3590	6020	3450	1850	2800	2790	2420
25	2390	2210	2770	4190	1820	4690	5720	3450	1830	2810	2790	2410
26	2380	2180	3050	5410	1690	6950	5180	3420	1830	2810	2690	2410
27	2380	2170	4240	8060	1560	10500	4760	3400	1810	2820	2650	2400
28	2380	2170	6150	9360	1520	10300	3950	4110	2070	2810	2660	2400
29	2380	2170	7970	8700	---	9260	2870	4250	2140	2830	2650	2370
30	2360	1980	9520	7580	---	8490	2440	4300	2150	2700	2650	2150
31	2350	---	10100	4880	---	8420	---	4180	---	2670	2690	---
TOTAL	72740	78380	98360	196440	93740	117680	149800	117830	96880	79550	86770	73830
MEAN	2346	2613	3173	6337	3348	3796	4993	3801	3229	2566	2799	2461
MAX	3200	3470	10100	10200	7680	10500	8230	5100	5520	2830	3160	2680
MIN	1710	1980	1350	2390	1520	1450	2440	2340	1640	2110	2650	2150
AC-FT	144300	155500	195100	389600	185900	233400	297100	233700	192200	157800	172100	146400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2003, BY WATER YEAR (WY)

MEAN	3629	6017	7607	6998	4205	3630	3342	3644	2926	1991	2314	3140
MAX	5688	12730	19100	16940	11630	11290	7314	7264	6746	3141	3395	4823
(WY)	1963	1985	1997	1997	1961	1957	1955	1963	1984	1999	1993	1984
MIN	1235	1961	1517	1327	787	1111	729	844	1187	1238	1222	1830
(WY)	1954	1955	1977	1977	1977	1977	1977	1973	1977	1957	1956	1968

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1954 - 2003	
ANNUAL TOTAL	1153330		1262000			
ANNUAL MEAN	3160		3458		4123	
HIGHEST ANNUAL MEAN					6722	1997
LOWEST ANNUAL MEAN					1877	1977
HIGHEST DAILY MEAN	11300	Jan 21	10500	Mar 27	38600	Dec 27 1964
LOWEST DAILY MEAN	1280	Jun 21	1350	Dec 7	536	Apr 30 1977
ANNUAL SEVEN-DAY MINIMUM	1310	Jun 16	1400	Dec 6	555	Apr 24 1977
ANNUAL RUNOFF (AC-FT)	2288000		2503000		2987000	
10 PERCENT EXCEEDS	5430		6070		8450	
50 PERCENT EXCEEDS	2790		2730		2960	
90 PERCENT EXCEEDS	1660		1880		1530	

14152000 MIDDLE FORK WILLAMETTE RIVER AT JASPER, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Oct. 1953 to Dec. 1962, Oct. 1963 to Sept. 1987, Oct. 2000 to current year.

INSTRUMENTATION.--Temperature probe and data logger.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 21.4°C Aug. 9, 2001; minimum, 1.5°C Jan. 25-27, 1969.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 19.9°C Sept. 2, 4; minimum, 5.4°C Feb. 25, but may have been lower during period of missing record.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.3	14.4	15.1	13.7	11.7	12.5	9.8	9.1	9.4	---	---	---
2	16.4	14.2	14.9	13.4	11.4	12.2	9.6	9.1	9.3	---	---	---
3	15.1	14.3	14.7	13.2	11.4	12.1	9.6	9.0	9.2	---	---	---
4	15.4	14.5	14.9	13.2	11.3	12.1	9.7	9.0	9.3	---	---	---
5	16.0	14.2	14.8	13.5	11.8	12.3	9.4	9.2	9.3	---	---	---
6	16.4	14.1	14.8	12.9	11.6	12.2	9.2	9.0	9.1	---	---	---
7	16.1	14.2	14.9	12.8	12.0	12.3	9.1	8.8	9.0	---	---	---
8	16.3	14.2	14.9	12.3	11.9	12.1	8.9	8.6	8.7	---	---	---
9	17.4	14.6	15.7	11.9	11.5	11.7	8.9	8.4	8.7	---	---	---
10	16.7	14.8	15.5	11.5	11.2	11.3	8.9	8.5	8.7	---	---	---
11	16.8	14.2	15.2	11.6	10.9	11.2	8.8	8.4	8.6	---	---	---
12	16.8	14.1	15.2	12.2	11.2	11.5	9.2	8.5	8.9	---	---	---
13	16.9	14.0	15.2	12.0	11.1	11.4	9.0	8.6	8.8	---	---	---
14	17.0	14.4	15.5	12.3	11.2	11.7	9.5	8.9	9.2	---	---	---
15	17.1	14.3	15.4	11.8	11.0	11.3	9.2	8.8	8.9	---	---	---
16	15.2	13.4	14.2	11.6	10.6	11.1	9.0	8.7	8.9	---	---	---
17	15.2	12.8	13.6	11.5	10.8	11.1	8.8	8.5	8.6	7.5	---	---
18	14.1	12.6	13.1	11.1	10.5	10.8	8.6	8.2	8.4	7.8	7.3	7.6
19	14.7	12.5	13.3	11.8	10.8	11.1	8.5	8.2	8.4	7.6	7.4	7.5
20	13.8	12.7	13.1	11.3	10.7	10.9	8.8	8.1	8.5	7.7	7.5	7.6
21	14.6	12.7	13.2	11.3	10.5	10.9	8.8	8.4	8.6	7.9	7.5	7.7
22	14.6	12.7	13.4	11.1	10.8	11.0	8.5	8.2	8.3	8.0	7.7	7.8
23	14.5	12.6	13.2	11.2	10.8	11.0	8.3	7.8	8.1	8.2	7.9	8.0
24	13.7	13.1	13.3	11.1	10.5	10.9	8.5	7.7	8.1	8.2	8.0	8.1
25	14.7	13.0	13.6	10.8	9.7	10.2	---	---	---	8.4	8.2	8.3
26	14.6	12.9	13.5	10.3	9.5	9.8	---	---	---	---	---	---
27	14.1	12.8	13.4	10.3	9.3	9.6	---	---	---	---	---	---
28	15.0	13.7	14.1	10.3	9.2	9.6	---	---	---	---	---	---
29	14.9	13.2	13.9	9.9	9.2	9.5	---	---	---	---	---	---
30	14.5	12.7	13.4	9.9	9.1	9.4	---	---	---	---	---	---
31	14.0	12.1	12.8	---	---	---	---	---	---	---	---	---
MONTH	17.4	12.1	14.3	13.7	9.1	11.2	---	---	---	---	---	---

14152000 MIDDLE FORK WILLAMETTE RIVER AT JASPER, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	9.5	6.7	7.8	---	---	---	12.7	8.7	10.4
2	---	---	---	7.7	6.2	7.0	---	---	---	13.0	9.2	10.8
3	---	---	---	9.3	7.0	7.8	---	---	---	10.7	9.8	10.1
4	---	---	---	7.9	6.6	7.2	8.9	---	---	10.7	9.4	9.8
5	---	---	---	8.1	7.4	7.7	8.5	7.8	8.1	10.7	9.3	9.8
6	---	---	---	7.7	7.3	7.5	9.1	7.7	8.3	11.7	8.9	10.0
7	---	---	---	8.1	7.5	7.8	9.6	8.2	8.8	10.7	9.2	9.7
8	---	---	---	9.4	7.9	8.5	10.6	8.2	9.2	10.7	9.0	9.6
9	---	---	---	9.6	8.1	8.8	10.6	8.6	9.4	10.0	8.8	9.4
10	---	---	---	9.9	8.6	9.2	9.6	8.8	9.2	10.9	9.1	9.7
11	---	---	---	9.1	8.4	8.7	10.5	8.8	9.4	11.1	9.0	9.8
12	---	---	---	9.1	8.4	8.7	10.1	8.8	9.3	12.0	9.3	10.3
13	---	---	---	9.1	8.4	8.8	10.0	8.7	9.2	12.7	9.0	10.5
14	9.6	---	---	9.8	8.3	9.0	9.9	8.4	9.0	12.4	9.7	10.7
15	8.0	7.2	7.5	10.3	8.7	9.3	9.5	8.5	9.0	11.5	9.6	10.4
16	8.2	7.2	7.6	10.0	8.4	9.1	9.8	8.4	9.0	11.2	9.4	10.1
17	8.2	7.3	7.7	9.6	8.6	9.1	10.1	8.6	9.6	11.0	9.2	9.8
18	8.6	7.4	7.9	9.9	8.3	9.1	10.1	9.0	9.5	11.3	8.8	9.8
19	8.4	7.6	7.9	9.1	8.1	8.5	10.3	7.8	9.0	11.6	9.1	10.0
20	8.2	7.6	7.9	10.1	8.0	8.8	10.1	8.3	9.0	12.1	9.4	10.4
21	9.0	7.8	8.3	9.0	8.1	8.6	9.3	8.6	8.9	12.4	9.6	10.7
22	9.2	7.3	8.2	9.2	8.0	8.7	9.0	8.5	8.7	13.0	10.0	11.1
23	8.6	6.4	7.3	9.4	7.5	8.2	9.5	8.3	8.7	13.8	10.2	11.6
24	8.6	5.8	7.0	9.6	7.1	8.1	9.9	9.2	9.5	12.1	10.7	11.3
25	8.2	5.4	6.6	---	---	---	9.5	9.0	9.3	11.9	10.6	11.0
26	7.6	5.5	6.6	---	---	---	9.6	8.0	8.8	12.7	10.3	11.2
27	8.7	6.7	7.5	---	---	---	9.9	7.9	8.8	13.1	10.2	11.3
28	7.5	6.2	6.9	---	---	---	9.6	8.7	9.1	12.7	10.7	11.4
29	---	---	---	---	---	---	10.9	8.4	9.4	13.0	10.6	11.4
30	---	---	---	---	---	---	12.1	8.8	10.0	11.3	10.5	10.8
31	---	---	---	---	---	---	---	---	---	12.7	10.3	11.2
MONTH	---	---	---	---	---	---	---	---	---	13.8	8.7	10.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.0	10.1	11.3	15.8	13.6	14.5	17.4	14.4	15.7	19.7	16.2	17.5
2	13.2	10.5	11.5	17.6	13.1	14.9	16.8	15.3	15.9	19.9	16.4	17.7
3	13.1	10.6	11.5	17.8	13.1	15.1	17.1	15.5	16.1	19.4	16.3	17.6
4	13.2	10.8	11.7	18.1	13.3	15.3	18.8	15.0	16.5	19.9	16.4	17.6
5	13.5	10.9	11.9	18.2	13.6	15.5	18.0	15.0	16.1	19.7	16.1	17.4
6	13.6	11.1	12.1	18.4	13.9	15.7	18.5	15.2	16.4	19.3	16.3	17.3
7	13.7	11.2	12.2	18.5	13.9	15.7	18.7	15.4	16.6	17.7	16.2	16.8
8	13.5	11.4	12.1	18.3	14.3	15.9	18.7	15.4	16.6	17.5	16.1	16.7
9	13.0	11.2	11.8	18.7	14.3	16.1	18.8	15.6	16.7	17.5	16.2	16.7
10	12.7	11.2	11.7	18.6	14.3	16.0	18.7	15.3	16.6	18.3	16.6	17.2
11	13.4	11.0	11.8	18.6	14.3	16.0	18.5	15.6	16.6	18.4	16.4	17.2
12	12.5	11.4	11.7	18.2	14.5	16.0	18.9	15.5	16.8	18.8	16.0	17.0
13	12.8	11.4	11.9	18.2	15.0	16.1	19.1	15.4	16.8	19.0	15.6	16.8
14	15.1	11.4	12.8	18.6	14.6	16.1	19.1	15.4	16.8	18.8	15.7	16.9
15	16.2	11.3	13.2	18.7	14.7	16.3	18.4	15.6	16.5	18.7	15.9	16.9
16	16.6	11.7	13.7	18.2	15.0	16.2	18.9	15.3	16.6	16.8	15.2	16.0
17	17.6	12.2	14.4	18.7	14.7	16.3	19.3	15.5	17.0	17.7	14.8	15.8
18	14.8	12.4	13.5	18.7	14.7	16.3	19.4	15.8	17.2	17.9	14.5	15.8
19	13.9	12.4	13.1	18.6	14.6	16.2	19.4	16.0	17.2	17.0	15.0	15.7
20	15.8	12.3	13.7	18.6	14.5	16.2	19.1	15.5	16.9	17.8	14.7	15.7
21	16.1	12.6	13.8	19.0	14.8	16.4	19.2	15.9	17.1	18.0	14.5	15.8
22	14.9	12.3	13.5	18.7	15.1	16.5	17.9	16.1	16.7	18.1	14.7	15.9
23	14.4	12.7	13.4	18.6	15.1	16.5	18.9	16.1	17.1	18.4	14.9	16.2
24	17.3	12.7	14.4	17.7	14.5	15.9	19.2	15.7	17.0	18.5	15.1	16.3
25	17.9	12.4	14.8	18.1	14.6	16.0	19.4	15.8	17.1	18.7	15.4	16.6
26	18.4	12.6	15.1	18.2	14.5	16.0	18.6	16.1	16.9	18.9	15.7	16.9
27	18.7	13.0	15.3	18.5	14.6	16.2	19.4	15.7	17.0	19.3	16.1	17.2
28	18.2	13.1	15.2	18.6	14.7	16.3	19.2	15.8	17.1	19.2	16.2	17.3
29	17.9	13.7	15.3	18.7	14.8	16.3	19.5	15.9	17.2	17.7	16.7	17.1
30	17.4	14.0	15.2	18.8	14.6	16.3	19.7	16.2	17.5	19.4	16.3	17.5
31	---	---	---	18.3	14.6	16.1	19.7	16.3	17.5	---	---	---
MONTH	18.7	10.1	13.1	19.0	13.1	16.0	19.7	14.4	16.8	19.9	14.5	16.8

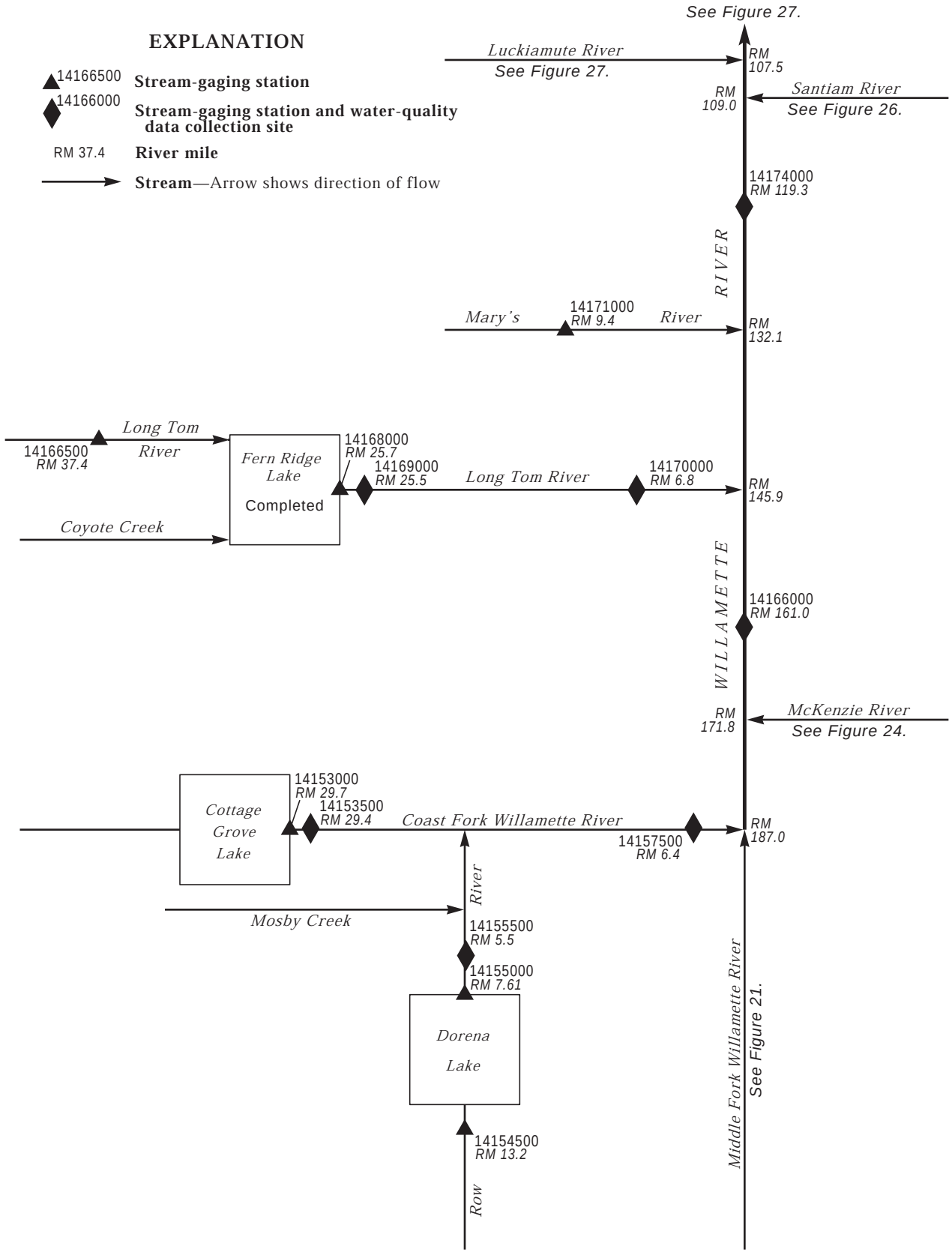


Figure 23. Schematic diagram showing gaging stations in the Long Tom, Coast Fork Willamette and upper Willamette River Basins.

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 mi^2.

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 NGVD 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, 32,150 acre-ft May 18-20, elevation, 790.32 ft; minimum contents, 2,980 acre-ft Jan. 4, elevation, 749.44 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	795	37,690

Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	777.12	755.12	752.22	755.18	767.84	771.29	778.44	787.54	790.01	788.46	785.05	780.31
2	776.55	754.97	752.10	750.97	768.19	771.61	778.80	787.74	789.96	788.38	784.92	780.06
3	776.00	754.81	751.87	750.33	767.54	772.06	779.34	787.92	789.94	788.29	784.80	779.72
4	775.26	754.65	751.76	750.28	766.32	772.50	780.18	788.21	789.93	788.20	784.66	779.38
5	774.41	754.50	751.64	750.55	764.72	772.91	781.30	788.45	789.90	788.10	784.53	779.02
6	773.54	754.34	751.50	750.22	764.16	773.30	782.97	788.62	789.88	788.01	784.41	778.69
7	772.74	754.30	751.36	750.41	763.58	774.73	783.86	788.79	789.84	787.92	784.28	778.36
8	772.07	754.58	751.21	750.12	763.03	775.84	783.74	789.06	789.80	787.82	784.14	778.01
9	771.37	755.08	751.03	750.18	762.45	776.24	783.30	789.28	789.75	787.72	784.01	777.80
10	770.66	754.57	750.99	750.19	762.00	776.20	782.77	789.46	789.72	787.62	783.87	777.59
11	769.94	753.90	751.04	750.17	762.05	775.86	782.43	789.67	789.68	787.52	783.73	777.24
12	769.21	753.32	750.98	750.50	762.36	775.37	782.40	789.86	789.64	787.41	783.59	776.86
13	768.49	752.76	751.51	750.84	762.68	774.94	782.48	790.00	789.62	787.31	783.45	776.46
14	767.75	752.32	751.47	750.90	763.02	775.06	782.78	790.12	789.58	787.21	---	776.08
15	766.99	752.28	752.17	750.69	763.38	775.49	783.19	790.21	789.53	787.10	---	775.70
16	766.22	752.36	752.22	750.83	764.40	776.02	783.52	790.25	789.48	787.00	---	775.32
17	765.45	752.70	750.91	750.78	765.87	776.45	783.93	790.29	789.42	786.90	---	774.94
18	764.66	752.87	750.79	750.55	766.93	776.76	784.28	790.31	789.36	786.78	---	774.55
19	763.85	752.94	750.41	750.71	766.79	776.76	784.52	790.32	789.31	786.68	---	774.17
20	763.01	752.95	750.49	750.74	767.31	776.46	784.73	790.31	789.26	786.55	---	773.76
21	762.10	752.94	750.84	750.67	767.69	776.33	785.09	790.30	789.20	786.43	---	773.32
22	761.17	752.90	750.53	750.64	768.06	776.51	785.10	790.27	789.14	786.32	---	772.85
23	760.21	752.83	750.30	750.78	768.74	776.56	785.36	790.24	789.07	786.20	---	772.36
24	759.22	752.83	750.33	750.95	769.27	776.62	786.77	790.20	789.01	786.07	---	771.85
25	758.23	752.79	750.10	751.72	769.65	777.09	787.05	790.18	788.94	785.96	---	771.27
26	757.51	752.72	750.64	752.85	770.14	778.00	786.98	790.17	788.87	785.84	---	770.70
27	756.74	752.64	751.75	754.39	770.55	778.01	786.76	790.16	788.79	785.72	781.49	770.13
28	756.13	752.55	751.57	753.83	770.93	777.81	786.71	790.14	788.72	785.59	781.27	769.57
29	755.79	752.45	750.08	753.81	---	777.96	786.89	790.11	788.63	785.47	781.04	769.06
30	755.44	752.34	752.87	757.12	---	778.14	787.25	790.08	788.54	785.34	780.80	768.80
31	755.27	---	758.01	762.17	---	778.22	---	790.05	---	785.20	780.56	---
MAX	777.12	755.12	758.01	762.17	770.93	778.22	787.25	790.32	790.01	788.46	---	780.31
MIN	755.27	752.28	750.08	750.12	762.00	771.29	778.44	787.54	788.54	785.20	---	768.80
(†)	4970	3880	6170	8320	13920	19840	28740	31840	30150	26580	21990	12420
(‡)	-14350	-1090	+2290	+2150	+5600	+5920	+8900	+3100	-1690	-3570	-4590	-9570

CAL YR 2002 MAX 787.77 MIN 749.45 AC-FT‡ +2840
WTR YR 2003 MAX --- MIN --- AC-FT‡ -6900

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

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 mi^2.

WATER-DISCHARGE RECORDS

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 NGVD 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 good. Flow regulated since 1942 by Cottage Grove Lake (station 14153000). Small diversions for irrigation upstream from station. Discharges for the periods Feb. 14-19, Mar. 1 to Apr. 30, May 2, 6, computed from data obtained through U.S. Army Corps of Engineers Columbia River Operational Hydromet System (CROHMS) database.

AVERAGE DISCHARGE.--64 years (water years 1940-2003), 264 ft^3/s, 34.47 in/yr, 191,300 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,910 ft^3/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, 1,790 ft^3/s Jan. 2, gage height, 6.91 ft; minimum discharge, 22 ft^3/s Feb. 14-18.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	266	42	43	1470	182	89	220	201	105	76	83	125
2	284	42	43	1440	968	89	163	202	103	76	85	125
3	282	42	43	1040	960	89	134	201	83	76	85	172
4	348	41	43	889	948	89	135	204	78	76	85	170
5	380	40	43	743	933	89	138	204	78	76	85	170
6	377	40	43	605	554	244	142	204	78	76	85	170
7	343	42	43	397	487	435	336	181	78	76	85	178
8	294	43	43	372	438	502	685	113	78	76	85	180
9	293	164	57	273	407	503	769	113	78	76	85	159
10	290	323	52	243	350	569	768	113	78	76	85	127
11	288	296	52	218	198	609	660	113	78	76	85	176
12	287	224	83	193	104	609	511	114	78	76	85	185
13	284	189	151	209	89	535	511	115	78	76	85	184
14	282	149	223	388	76	292	430	115	76	76	85	182
15	280	59	411	387	22	156	296	124	76	76	85	182
16	278	44	865	280	22	107	291	136	76	76	85	182
17	275	45	675	266	22	107	290	136	76	76	85	181
18	273	45	360	257	313	125	290	135	76	76	83	180
19	270	45	319	177	633	262	290	134	76	76	83	180
20	275	45	205	177	319	406	290	134	76	82	83	180
21	284	45	271	177	318	405	371	134	76	78	83	188
22	285	45	354	177	318	568	507	134	76	78	83	206
23	280	45	270	177	173	733	507	134	76	78	83	206
24	275	45	195	177	167	540	628	134	76	78	82	215
25	270	45	199	178	167	451	834	134	76	78	82	229
26	194	45	202	213	96	638	796	113	76	78	81	228
27	190	45	720	582	89	812	711	105	76	78	80	228
28	158	45	1180	680	89	704	529	105	76	78	104	226
29	95	44	1260	443	---	409	329	105	76	78	127	189
30	94	43	950	430	---	293	201	105	76	83	127	110
31	42	---	670	58	---	285	---	105	---	83	126	---
TOTAL	8116	2407	10068	13316	9442	11744	12762	4300	2363	2394	2750	5413
MEAN	262	80.2	325	430	337	379	425	139	78.8	77.2	88.7	180
MAX	380	323	1260	1470	968	812	834	204	105	83	127	229
MIN	42	40	43	58	22	89	134	105	76	76	80	110
AC-FT	16100	4770	19970	26410	18730	23290	25310	8530	4690	4750	5450	10740
MEAN†	28.5	61.9	362	464	437	475	575	189	50.4	19.2	14.0	19.7
CFSM†	0.27	0.60	3.48	4.46	4.20	4.57	5.53	1.82	0.48	0.18	0.13	0.19
IN.†	0.32	0.66	4.01	5.15	4.38	5.27	6.17	2.10	0.54	0.21	0.16	0.21
AC-FT†	1750	3680	22260	28560	24290	29210	34210	11630	3000	1180	860	1170

CAL YR 2002 TOTAL 69868 MEAN 191 MAX 1570 MIN 40 AC-FT 138600 MEAN† 195 CFSM† 1.88 IN.† 25.49 AC-FT† 141400
WTR YR 2003 TOTAL 85075 MEAN 233 MAX 1470 MIN 22 AC-FT 168700 MEAN† 223 CFSM† 2.14 IN.† 29.17 AC-FT† 161800

† Adjusted for change in contents, in Cottage Grove Lake.

14153500 COAST FORK WILLAMETTE RIVER BELOW COTTAGE GROVE DAM, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
WATER TEMPERATURE: August 2001 to current year.

INSTRUMENTATION.--Temperature recorder since September 2001.

REMARKS.--Records excellent except those for the period May 1 to Aug. 26, which are good.

EXTREMES FOR PERIOD OF RECORD.--
WATER TEMPERATURE: Maximum, 22.0°C Aug. 31, Sept. 2, 15, 2001; minimum, 4.8°C Dec. 28, 2001.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 21.0°C Sept. 13, 14; minimum, 6.7°C Jan. 12, but may have been lower during period of missing record.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	19.3	18.5	19.0	---	---	---	8.7	8.3	8.5	8.1	8.0	8.0
2	18.8	18.1	18.4	---	---	---	8.5	8.2	8.3	8.2	7.9	8.0
3	18.2	18.0	18.1	---	---	---	8.6	8.0	8.2	8.8	8.2	---
4	18.0	17.8	17.9	10.8	9.6	10.0	8.5	8.0	8.1	9.5	8.8	9.1
5	17.8	17.6	17.7	---	---	---	8.1	7.9	8.0	9.3	9.0	9.2
6	17.8	17.5	17.6	10.4	9.7	10.0	8.2	7.8	8.0	9.0	8.2	8.8
7	17.8	17.5	17.6	10.4	9.9	10.2	8.1	7.8	7.9	---	---	---
8	17.8	17.4	17.6	10.3	10.0	10.1	7.9	7.6	7.7	---	---	---
9	17.6	17.4	17.5	10.1	9.9	10.0	8.0	7.6	7.7	---	---	---
10	17.6	17.1	17.3	10.0	9.8	9.9	7.9	7.6	7.7	7.2	6.8	7.0
11	17.3	16.0	16.9	9.9	9.6	9.8	7.9	7.5	7.7	6.9	6.8	6.9
12	16.9	16.3	16.6	10.4	9.6	9.9	8.2	7.6	7.9	6.9	6.7	6.8
13	16.4	15.9	16.2	10.1	9.8	9.9	8.0	7.8	8.0	7.3	6.8	7.0
14	16.3	15.4	16.0	10.1	9.7	9.8	8.6	8.0	8.4	7.5	7.0	7.2
15	16.1	15.7	15.9	10.6	9.8	10.2	8.6	8.2	8.4	8.2	7.3	7.8
16	16.0	15.7	15.8	10.4	9.7	10.0	8.3	8.2	8.2	7.9	7.6	7.7
17	16.0	15.5	15.7	10.7	9.8	10.1	8.3	8.0	8.2	8.1	7.7	7.8
18	15.8	15.6	15.7	10.3	9.7	10	8.0	7.5	---	8.0	7.5	7.7
19	16.0	15.2	15.7	10.3	9.3	9.7	7.5	7.0	7.3	7.6	7.3	7.5
20	15.8	15.5	15.6	10.3	9.2	9.7	7.1	6.8	7.0	7.7	7.1	7.3
21	15.8	15.4	15.6	10.4	9.6	9.9	7.0	6.8	6.9	8.2	7.1	---
22	15.9	15.4	15.5	10.0	9.6	9.8	---	---	---	8.1	7.8	7.9
23	15.7	15.4	15.5	10.1	9.7	9.8	---	---	---	8.7	7.8	8.2
24	15.4	15.2	15.3	10.2	9.6	9.9	---	---	---	8.4	8.3	8.3
25	15.3	14.8	15.1	9.9	9.3	9.5	7.1	6.9	7.0	8.7	8.4	8.5
26	---	---	---	9.8	9.0	---	7.0	6.8	6.8	9.5	8.6	9.1
27	---	13.7	---	9.6	8.7	9.0	7.8	6.9	7.4	10.1	9.1	9.6
28	14.2	---	---	9.4	8.6	8.8	7.8	7.4	7.7	---	---	---
29	14.2	13.2	13.7	9.1	8.5	8.7	7.8	7.6	7.7	---	---	---
30	---	---	---	9.0	8.4	8.6	7.9	7.5	7.6	---	---	---
31	---	---	---	---	---	---	8.2	7.9	8.1	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

14153500 COAST FORK WILLAMETTE RIVER BELOW COTTAGE GROVE DAM, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	8.1	7.1	7.4	9.9	9.0	9.3	10.2	9.4	9.7
2	---	---	---	7.9	7.1	7.5	10.0	9.0	9.4	10.3	9.5	---
3	---	---	---	8.3	7.1	7.5	10.3	9.2	9.5	10.1	9.5	9.7
4	---	---	---	8.0	7.1	7.6	9.9	9.1	9.4	10.1	9.5	9.7
5	---	---	---	8.5	7.4	8.0	10.1	9.0	9.4	10.5	9.5	9.8
6	---	---	---	8.4	8.2	8.3	10.0	8.9	9.6	10.4	9.6	9.9
7	---	---	---	8.4	8.2	8.3	9.2	8.8	9.0	10.2	9.7	9.9
8	---	---	---	8.8	8.2	8.5	9.4	8.8	9.1	10.7	9.7	10.1
9	---	---	---	9.0	8.6	8.8	9.7	9.0	9.4	10.3	9.7	9.9
10	---	---	---	9.3	8.7	8.9	9.7	9.2	9.4	10.7	9.8	10.2
11	---	---	---	9.4	8.8	9.1	9.6	9.4	9.5	10.5	9.7	10.0
12	---	---	---	10.3	8.8	9.3	9.8	9.3	9.5	11.3	9.9	10.3
13	---	---	---	10.2	9.4	9.9	9.9	9.2	9.6	11.4	9.8	10.4
14	---	---	---	10.4	9.6	9.9	10.0	9.3	9.6	11.3	9.8	10.4
15	---	---	---	10.8	9.9	10.1	9.9	9.3	9.7	10.6	9.9	10.2
16	---	---	---	10.9	9.9	10.2	9.9	9.4	9.7	10.7	9.9	10.2
17	---	---	---	11.0	9.8	10.1	10.0	9.5	9.7	10.8	9.8	10.2
18	---	---	---	10.6	9.6	9.9	10.2	9.5	9.8	11.1	9.9	10.3
19	8.2	8.0	8.1	9.8	9.6	9.7	10.0	9.5	9.7	11.3	9.9	10.4
20	8.5	8.1	8.3	10.3	9.7	10	10.0	9.6	9.7	11.3	10.1	10.5
21	8.8	8.0	8.4	10.1	9.6	9.8	9.8	9.6	9.7	11.4	10.2	10.6
22	8.7	8.3	8.4	10.5	9.7	10.2	10.0	9.7	9.8	11.6	10.1	10.6
23	8.7	8.0	8.2	10.2	9.8	10.0	10.1	9.8	9.9	11.6	10.2	10.7
24	8.5	7.8	8.0	10.0	9.4	9.8	10.2	9.6	9.9	11.3	10.2	---
25	8.4	7.7	7.9	9.8	9.3	9.5	10.7	9.7	10.1	10.8	10.2	10.4
26	8.3	7.4	7.8	10.2	9.6	10	11.4	9.6	10.3	11.5	10.2	10.6
27	8.0	7.0	7.6	9.8	9.3	9.6	10.3	9.8	10.0	11.7	10.0	10.6
28	7.6	7.0	7.2	9.8	9.0	9.4	10.0	9.3	9.7	11.6	10.2	10.7
29	---	---	---	9.8	9.0	9.3	9.9	9.4	9.6	11.8	10.1	10.7
30	---	---	---	9.5	9.0	9.3	10.1	9.3	9.6	10.8	10.3	10.5
31	---	---	---	9.4	9.0	9.2	---	---	---	11.8	10.2	10.8
MONTH	---	---	---	11.0	7.1	9.2	11.4	8.8	9.6	11.8	9.4	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.9	10.2	10.8	12.5	11.0	11.6	14.3	12.9	13.3	18.9	17.7	18.1
2	12.1	10.2	10.9	13.3	11.0	11.8	13.8	13.1	13.3	19.3	18.0	18.4
3	12.4	10.2	11.0	13.4	11.0	11.8	14.3	13.1	13.4	19.3	18.3	18.7
4	12.7	10.2	11.1	13.5	11.2	12.0	15.0	13.0	13.6	19.8	18.7	19.1
5	12.8	10.3	11.2	13.3	11.2	---	14.8	13.1	13.7	20.0	19.1	19.4
6	12.9	10.4	11.3	13.6	11.3	12.1	14.8	13.2	13.7	20.3	19.3	19.6
7	12.8	10.4	11.2	13.6	11.4	12.1	15.0	13.3	13.8	20.1	19.6	19.8
8	12.7	10.5	11.2	13.4	11.5	12.2	15.2	13.2	13.9	20.5	19.9	20.1
9	12.5	10.4	11.1	13.7	11.5	12.3	15.2	13.5	14.1	20.4	20.1	20.2
10	12.1	10.4	11.0	13.7	11.6	12.3	15.3	13.5	14.1	20.7	20.0	20.2
11	12.5	10.4	11.0	13.6	11.6	12.3	15.4	13.6	14.2	20.8	20.0	20.3
12	11.7	10.5	10.9	13.6	11.6	12.3	15.6	13.6	14.3	20.9	20.2	20.4
13	11.4	10.5	10.9	13.6	11.7	12.4	15.7	13.9	14.4	21.0	20.2	20.5
14	12.4	10.5	11.2	13.8	11.5	12.4	15.9	14.0	14.5	21.0	20.3	20.6
15	12.8	10.5	11.3	13.6	11.7	12.4	15.7	14.2	14.7	20.9	20.3	20.5
16	12.9	10.5	11.4	13.7	11.9	12.5	16.1	14.1	14.8	20.7	20.2	20.3
17	12.9	10.7	11.5	13.9	11.7	12.5	16.3	14.3	14.9	20.6	20.0	20.3
18	11.9	10.7	11.1	13.9	11.9	12.6	16.5	14.6	15.1	20.3	19.5	19.8
19	11.5	10.8	11.1	14.0	12.1	12.7	16.5	14.7	15.3	20.0	19.5	19.7
20	12.2	10.7	11.3	14.0	12.1	12.7	16.6	14.6	15.3	20.0	19.4	19.5
21	12.0	10.7	11.2	14.2	12.3	12.9	16.7	14.9	15.4	19.8	19.1	19.4
22	12.4	10.6	11.2	14.0	12.4	12.9	16.4	15.1	15.5	19.8	19.1	19.3
23	11.8	10.8	11.2	14.1	12.3	12.9	16.9	15.3	15.7	19.8	19.0	19.3
24	12.9	10.7	11.5	13.9	12.2	12.8	17.2	15.2	15.8	19.8	19.1	19.3
25	13.1	10.6	11.6	14.2	12.3	12.9	17.4	15.4	16.0	19.8	19.1	19.3
26	13.3	10.8	11.7	14.2	12.4	13.0	17.2	15.6	16.1	19.9	19.1	19.3
27	13.5	10.9	11.8	14.4	12.5	13.1	17.5	15.8	16.3	19.8	19.2	19.4
28	13.4	10.9	11.9	14.5	12.6	13.2	17.7	15.9	16.5	19.8	19.2	19.4
29	13.4	11.2	11.9	14.5	12.6	13.3	18.0	16.8	17.1	19.6	19.2	19.4
30	13.1	11.2	11.8	14.4	12.8	13.3	18.3	17.1	17.5	20.1	19.1	19.4
31	---	---	---	14.5	12.8	13.4	18.6	17.4	17.8	---	---	---
MONTH	13.5	10.2	11.3	14.5	11.0	---	18.6	12.9	15.0	21.0	17.7	19.6

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 mi^2.

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 NGVD 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 fair. Slight regulation caused by upstream logponds. No diversions upstream from station.

AVERAGE DISCHARGE.--68 years (water years 1936-2003), 592 ft^3/s, 38.09 in/yr, 428,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,100 ft^3/s Dec. 22, 1964, gage height, 18.19 ft, from rating curve extended above 12,000 ft^3/s, on basis of slope-area measurement of peak flow; minimum discharge, 9.7 ft^3/s Sept. 4-6, 2003.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 30	2000	*5,370	*8.27				

Minimum discharge, 9.7 ft^3/s Sept. 4-6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	166	20	48	1820	3300	298	694	532	111	40	15	12
2	65	20	46	1670	2480	269	680	468	101	40	15	11
3	43	20	44	3460	1720	336	679	431	96	40	15	11
4	78	20	44	2360	1150	389	820	475	91	37	16	11
5	69	21	44	2290	817	356	987	548	84	36	21	10
6	46	20	42	1350	616	533	1220	475	80	35	23	10
7	36	21	40	937	484	1840	1330	415	77	34	44	12
8	30	114	39	685	400	2150	1430	408	74	33	41	20
9	27	525	38	531	339	1570	1510	395	71	32	27	68
10	25	481	49	423	297	1520	1330	365	71	31	23	102
11	24	406	73	347	268	1090	1650	350	70	30	21	47
12	22	248	88	332	245	864	1410	370	67	28	18	33
13	21	237	369	422	231	741	1610	342	68	28	17	26
14	20	151	443	708	258	635	1400	333	68	28	17	23
15	19	118	1010	606	244	632	1110	317	64	27	16	21
16	18	93	2060	449	562	600	923	290	61	27	15	22
17	17	219	925	366	794	531	1040	267	58	27	15	40
18	17	219	532	346	955	476	1190	243	57	25	15	36
19	17	139	384	315	838	441	1020	220	58	24	15	27
20	17	104	295	275	856	598	838	204	59	23	14	24
21	18	92	690	243	865	940	784	192	60	22	14	22
22	18	79	830	230	962	2180	786	192	59	22	14	21
23	18	69	504	318	850	2330	833	192	58	21	14	18
24	18	70	358	287	672	1450	1810	191	56	21	15	17
25	18	78	287	656	520	1790	1620	196	53	19	14	17
26	18	68	443	754	424	3720	1180	180	49	18	13	15
27	19	61	3110	2660	356	2330	932	154	47	18	13	15
28	20	57	3070	1330	314	1480	789	142	45	17	13	15
29	21	53	2120	835	---	1050	700	133	41	16	13	14
30	20	51	3150	3140	---	829	611	133	40	16	13	14
31	20	---	3730	3050	---	722	---	126	---	15	12	---
TOTAL	985	3874	24905	33195	21817	34690	32916	9279	1994	830	551	734
MEAN	31.8	129	803	1071	779	1119	1097	299	66.5	26.8	17.8	24.5
MAX	166	525	3730	3460	3300	3720	1810	548	111	40	44	102
MIN	17	20	38	230	231	269	611	126	40	15	12	10
AC-FT	1950	7680	49400	65840	43270	68810	65290	18400	3960	1650	1090	1460
CFSM	0.15	0.61	3.81	5.07	3.69	5.30	5.20	1.42	0.32	0.13	0.08	0.12
IN.	0.17	0.68	4.39	5.85	3.85	6.12	5.80	1.64	0.35	0.15	0.10	0.13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2003, BY WATER YEAR (WY)

MEAN	155	750	1168	1168	1079	991	830	564	265	74.6	36.9	44.6
MAX	1152	2569	4114	2606	2322	2168	2161	1333	847	236	107	259
(WY)	1951	1974	1965	1971	1986	1972	1937	1963	1993	1983	1976	1978
MIN	12.8	19.2	58.0	86.0	81.1	159	290	116	52.1	26.3	15.0	15.4
(WY)	1988	1937	1977	1977	1977	1992	1941	1987	1987	1940	1940	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1936 - 2003	
ANNUAL TOTAL	154014		165770			
ANNUAL MEAN	422		454		592	
HIGHEST ANNUAL MEAN					1008	1974
LOWEST ANNUAL MEAN					233	1977
HIGHEST DAILY MEAN	4690	Apr 14	3730	Dec 31	23800	Dec 22 1964
LOWEST DAILY MEAN	11	Sep 14	10	Sep 5	10	Sep 5 2003
ANNUAL SEVEN-DAY MINIMUM	12	Sep 10	11	Aug 31	11	Oct 21 1987
ANNUAL RUNOFF (AC-FT)	305500		328800		428500	
ANNUAL RUNOFF (CFSM)	2.00		2.15		2.80	
ANNUAL RUNOFF (INCHES)	27.15		29.23		38.09	
10 PERCENT EXCEEDS	1160		1370		1430	
50 PERCENT EXCEEDS	139		111		274	
90 PERCENT EXCEEDS	16		17		27	

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 mi^2.

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 NGVD 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, 70,410 acre-ft May 28, elevation, 831.09 ft; minimum contents, 6,810 acre-ft Dec. 24, elevation, 769.93 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	845	97,580
775	9,540	800	28,490	825	60,060		
780	12,530	805	33,700	830	68,470		

Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	811.74	776.56	774.59	784.62	800.49	801.89	814.28	826.88	831.03	826.17	818.31	810.27
2	810.80	776.28	774.38	781.98	801.98	802.26	814.36	827.02	830.95	825.99	817.97	809.88
3	809.90	776.01	774.17	784.27	801.38	802.86	814.80	827.11	830.76	825.80	817.63	809.34
4	809.05	775.74	773.97	783.51	798.58	803.56	815.72	827.28	830.57	825.60	817.28	808.80
5	808.17	775.45	773.76	782.52	794.88	804.20	816.91	827.49	830.37	825.33	817.06	808.26
6	807.22	775.17	773.53	778.45	791.75	804.99	818.58	827.72	830.15	825.21	816.95	807.71
7	806.25	774.98	773.29	772.60	789.05	807.61	820.13	828.01	829.93	825.00	816.86	807.21
8	805.24	775.14	773.04	770.68	787.21	809.67	821.19	828.36	829.53	824.68	816.75	806.50
9	804.22	776.27	772.82	769.99	786.48	809.77	821.82	828.69	829.47	824.59	816.61	806.28
10	803.17	775.25	772.70	770.30	786.16	809.73	821.97	828.98	829.28	824.39	816.47	806.07
11	802.03	774.27	772.72	770.38	786.55	809.01	822.48	829.26	829.15	824.18	816.32	805.65
12	800.84	773.45	772.66	770.59	786.91	807.18	822.74	829.55	829.01	823.96	816.17	805.20
13	799.63	773.11	773.74	770.93	787.25	805.64	822.75	829.79	828.89	823.75	816.03	804.73
14	798.40	773.11	773.92	771.47	787.66	805.06	822.36	830.02	828.76	823.53	815.82	804.24
15	797.14	773.31	773.77	771.25	788.07	805.98	822.21	830.20	828.61	823.31	815.54	803.75
16	795.87	773.53	776.01	770.86	789.47	806.97	821.99	830.39	828.47	823.10	815.26	803.30
17	794.57	774.43	772.75	770.74	791.44	807.81	822.48	830.54	828.33	822.87	814.98	802.84
18	793.24	775.06	771.49	770.93	793.20	808.53	823.24	830.61	828.19	822.65	814.69	802.38
19	791.90	775.14	770.90	770.89	794.00	809.13	823.44	830.71	828.05	822.42	814.40	801.89
20	790.52	775.28	770.54	770.78	795.49	809.86	823.55	830.77	827.91	822.20	814.12	801.39
21	788.98	775.35	771.96	770.70	796.88	811.08	823.49	830.82	827.78	821.97	813.82	800.84
22	787.44	775.36	772.11	770.56	798.35	814.05	823.61	830.86	827.63	821.73	813.53	800.20
23	785.86	775.31	770.73	770.90	799.52	816.18	824.11	830.90	827.49	821.47	813.24	799.54
24	784.24	775.32	769.98	771.17	800.25	816.22	825.76	830.94	827.34	821.11	812.95	798.83
25	782.52	775.34	770.02	772.78	800.64	815.87	826.34	831.02	827.19	820.82	812.67	798.06
26	781.03	775.28	770.94	773.65	800.79	818.40	826.28	831.07	827.03	820.47	812.37	797.28
27	779.45	775.20	776.27	777.96	800.98	818.65	825.98	831.08	826.79	820.11	812.08	796.50
28	778.14	775.07	776.20	774.63	801.41	817.58	825.83	831.08	826.69	819.76	811.75	795.70
29	777.53	774.93	770.63	772.37	---	816.35	826.27	831.05	826.52	819.36	811.38	795.07
30	777.09	774.77	775.78	782.32	---	815.50	826.65	831.05	826.32	818.94	811.01	795.07
31	776.79	---	785.65	791.74	---	814.71	---	831.05	---	818.67	810.64	---
MAX	811.74	776.56	785.65	791.74	801.98	818.65	826.65	831.08	831.03	826.17	818.31	810.27
MIN	776.79	773.11	769.98	769.99	786.16	801.89	814.28	826.88	826.32	818.67	810.64	795.07
(†)	10580	9410	16310	20990	29910	45240	62740	70340	62200	50590	40150	23840
(‡)	-31570	-1170	+6900	+4680	+8920	+15330	+17500	+7600	-8140	-11610	-10440	-16310

CAL YR 2002 MAX --- MIN --- AC-FT‡ +8630
WTR YR 2003 MAX 831.08 MIN 769.98 AC-FT‡ -18310

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

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 mi^2.

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

AVERAGE DISCHARGE.--64 years (water years 1940-2003), 737 ft^3/s, 37.07 in/yr, 534,000 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,400 ft^3/s Dec. 28, 1945, gage height, 18.20 ft; minimum discharge, 0.20 ft^3/s Sept. 25 to Oct. 7, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,980 ft^3/s Dec. 29, gage height, 8.15 ft; minimum discharge, 48 ft^3/s Nov. 1.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	612	88	110	2630	272	221	1170	e466	166	189	258	235
2	679	104	109	2950	2350	221	810	e462	200	189	258	234
3	658	104	107	2970	2530	225	609	469	301	189	258	329
4	645	103	107	2980	2940	225	486	469	301	199	258	333
5	640	101	107	2960	2870	225	489	469	301	197	174	333
6	635	101	107	2950	2250	473	497	e382	301	197	109	329
7	633	102	107	2760	1790	869	622	282	301	197	107	329
8	627	104	107	1300	1310	1300	951	217	301	197	107	309
9	622	322	107	830	779	2080	1260	217	301	197	107	273
10	618	893	107	523	563	2050	1450	217	263	197	107	242
11	645	770	107	472	258	2000	1480	217	205	197	107	283
12	663	533	169	451	220	2200	1490	217	208	197	106	286
13	656	389	278	532	217	1870	1920	217	208	197	105	285
14	651	210	517	845	218	1150	2040	217	208	197	136	284
15	644	120	1210	874	221	339	1510	214	208	197	201	284
16	636	106	1780	722	223	217	1240	213	198	197	200	284
17	633	107	2010	569	231	218	1020	213	191	196	198	284
18	634	122	1020	459	517	220	1020	213	189	190	195	284
19	628	180	631	459	790	264	1020	213	189	191	193	284
20	633	113	478	418	523	342	1020	211	189	189	193	283
21	643	113	542	371	525	343	1030	211	189	191	193	298
22	656	113	995	369	529	650	825	210	189	199	193	352
23	654	113	941	368	534	1190	849	210	189	197	193	350
24	642	113	642	371	536	1640	1120	211	189	220	192	370
25	651	113	376	474	524	2540	1540	192	189	275	190	406
26	547	112	387	784	523	2580	1550	193	189	275	189	400
27	535	110	2070	1920	436	2590	1400	193	189	275	189	398
28	462	110	3620	2840	222	2570	1100	193	189	275	212	395
29	229	110	4100	1790	---	2150	536	198	189	275	238	328
30	163	110	2400	1000	---	1580	469	184	189	275	238	147
31	119	---	1170	120	---	1400	---	166	---	272	237	---
TOTAL	18093	5789	26518	39061	24901	35942	32523	7956	6619	6625	5641	9231
MEAN	584	193	855	1260	889	1159	1084	257	221	214	182	308
MAX	679	893	4100	2980	2940	2590	2040	469	301	275	258	406
MIN	119	88	107	120	217	217	469	166	166	189	105	147
AC-FT	35890	11480	52600	77480	49390	71290	64510	15780	13130	13140	11190	18310
MEAN†	70.3	173	968	1336	1050	1409	1378	380	83.9	24.9	12.2	33.6
CFSM†	0.26	0.64	3.58	4.95	3.89	5.22	5.10	1.41	0.31	0.09	0.04	0.12
IN.†	0.30	0.72	4.13	5.71	4.05	6.02	5.70	1.62	0.35	0.11	0.05	0.14
AC-FT†	4320	10320	59500	82160	58310	86620	82010	23380	4990	1530	750	2000

CAL YR 2002 TOTAL 194394 MEAN 533 MAX 4100 MIN 88 AC-FT 385600 MEAN† 545 CFSM† 2.02 IN.† 27.38 AC-FT† 394200
WTR YR 2003 TOTAL 218899 MEAN 600 MAX 4100 MIN 88 AC-FT 434200 MEAN† 436 CFSM† 1.62 IN.† 21.94 AC-FT† 315900

e Estimated
† Adjusted for change in contents, in Dorena Lake.

14155500 ROW RIVER NEAR COTTAGE GROVE, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: August 2001 to current year.

INSTRUMENTATION.--Temperature recorder.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--
WATER TEMPERATURE: Maximum, 22.4°C Sept. 10, 11, 13, 2003; minimum, 4.6°C Dec. 27, 2001.

EXTREMES FOR CURRENT PERIOD.--
WATER TEMPERATURE: Maximum, 22.4°C Sept. 10, 11, 13; minimum, 5.7°C Feb. 11.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	19.4	18.4	18.7	12.2	9.5	10.8	8.5	7.7	7.9	7.9	7.6	7.8
2	18.8	17.8	18.3	11.8	9.6	10.5	8.3	7.7	7.9	7.9	7.6	7.7
3	18.0	17.7	17.8	11.6	9.6	10.4	8.2	7.4	7.7	8.3	7.9	8.1
4	18.0	17.6	17.8	11.7	9.5	10.3	8.4	7.5	7.8	8.6	8.3	8.4
5	18.1	17.3	17.7	11.8	9.9	10.6	7.9	7.5	7.7	8.6	8.2	8.4
6	18.1	17.2	17.6	11.3	9.8	10.4	7.8	7.4	7.6	8.2	7.7	8.0
7	17.8	17.2	17.5	11.1	10.1	10.6	7.8	7.3	7.4	7.8	7.2	7.6
8	17.9	17.3	17.5	10.7	10.2	10.4	7.6	7.1	7.3	7.2	6.6	7.0
9	17.9	17.3	17.6	10.5	10.0	10.2	7.7	7.0	7.3	6.7	6.3	6.5
10	17.8	17.1	17.4	10.0	9.8	9.9	7.6	7.1	7.4	6.6	6.3	6.4
11	17.6	16.8	17.1	9.9	9.6	9.7	7.7	7.1	7.4	6.5	6.2	6.4
12	17.4	16.7	16.9	9.8	9.0	9.5	7.9	7.2	7.5	6.7	6.4	6.5
13	17.3	16.4	16.7	9.9	9.1	9.5	7.7	7.3	7.5	7.3	6.6	6.9
14	16.9	16.2	16.5	10.1	9.0	9.4	8.2	7.6	7.9	7.5	7.0	7.3
15	16.8	16.1	16.3	10.0	8.7	9.2	8.3	7.7	8.0	7.9	7.2	7.6
16	16.8	16.0	16.3	10.0	8.3	9.0	8.1	7.8	7.9	7.7	7.3	7.5
17	16.7	15.9	16.2	9.8	8.6	9.2	8.0	7.7	7.8	7.5	7.2	7.3
18	16.4	15.9	16.1	9.6	8.5	8.9	7.7	7.2	7.5	7.4	6.7	7.1
19	16.5	15.8	16.0	9.9	8.8	9.3	7.2	6.5	7.0	7.0	6.6	6.8
20	16.1	15.7	15.8	9.6	8.6	8.9	6.8	6.4	6.6	7.1	6.5	6.7
21	16.1	15.6	15.8	9.5	8.3	8.8	6.8	6.6	6.6	7.4	6.5	6.8
22	16.1	15.6	15.7	9.4	8.8	9.0	6.8	6.6	6.7	7.6	7.1	7.3
23	15.9	15.4	15.6	9.2	8.6	8.9	6.8	6.5	6.6	8.0	7.2	7.6
24	15.6	15.3	15.4	9.6	8.7	9.1	6.7	6.4	6.6	8.6	8.0	8.4
25	15.6	15.0	15.3	9.1	8.3	8.6	6.7	6.2	6.4	8.9	8.5	8.7
26	15.3	14.6	14.9	9.0	8.1	8.4	6.4	6.2	6.3	9.0	8.1	8.7
27	14.7	14.2	14.5	9.0	8.0	8.3	7.4	6.3	6.8	9.5	8.4	9.1
28	14.7	13.7	14.2	9.0	8.0	8.3	7.6	7.3	7.5	9.3	8.6	8.9
29	14.3	12.7	13.7	8.6	7.8	8.2	7.6	7.2	7.3	8.7	8.5	8.6
30	13.6	11.8	12.6	8.6	7.6	8.0	7.4	7.2	7.2	9.0	8.5	8.7
31	12.9	10.9	11.7	---	---	---	7.9	7.3	7.6	9.8	8.9	9.3
MONTH	19.4	10.9	16.2	12.2	7.6	9.4	8.5	6.2	7.3	9.8	6.2	7.7

14155500 ROW RIVER NEAR COTTAGE GROVE, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.7	8.7	9.2	8.3	6.4	7.1	9.3	8.5	8.8	---	---	---
2	9.2	8.9	9.1	7.6	6.4	6.9	9.2	8.5	8.7	---	---	---
3	9.1	8.7	8.9	8.2	6.6	7.2	9.2	8.4	8.7	9.3	8.7	8.9
4	8.8	8.4	8.6	7.8	6.5	7.0	9.3	8.5	8.7	9.8	8.6	9.0
5	8.6	8.1	8.4	7.3	6.7	6.9	8.9	8.2	8.5	9.9	8.8	9.1
6	8.1	7.8	8.0	7.4	6.9	7.2	9.4	8.1	8.5	---	---	---
7	7.9	7.1	7.6	7.4	7.1	7.3	9.1	8.3	8.5	10.3	8.9	9.3
8	7.4	6.8	7.1	7.8	7.2	7.5	8.9	8.1	8.5	11.0	8.7	9.5
9	7.2	6.6	6.8	8.3	7.4	7.9	9.1	8.1	8.6	10.0	9.0	9.3
10	7.4	6.5	6.9	8.1	7.5	7.8	8.8	8.3	8.5	11.1	9.0	9.6
11	7.2	5.7	6.4	8.4	7.6	8.1	9.1	8.5	8.7	10.8	8.8	9.5
12	7.4	5.8	6.4	8.6	8.1	8.2	9.2	8.6	8.9	12.3	9.2	10.1
13	7.1	6.2	6.5	9.3	8.0	8.7	9.0	8.5	8.8	12.6	8.9	10.3
14	7.5	6.2	6.6	9.1	8.4	8.8	9.2	8.8	9.0	12.2	9.0	10.2
15	7.1	6.2	6.6	9.3	7.7	8.4	9.2	8.8	8.9	10.6	9.1	9.7
16	6.8	6.1	6.4	9.6	7.7	8.4	9.2	8.7	8.9	10.7	9.0	9.7
17	7.2	6.4	6.7	9.7	7.8	8.4	9.3	8.6	8.9	11.6	9.0	9.8
18	7.3	6.5	6.9	10.0	7.6	8.4	9.3	8.7	8.9	12.2	8.9	10.1
19	7.4	6.8	7.2	8.7	7.9	8.3	9.7	8.7	9.0	12.6	8.9	10.3
20	7.4	6.6	7.0	9.3	8.3	8.6	9.5	8.7	9.1	12.6	9.2	10.5
21	7.6	6.7	7.3	9.0	8.3	8.6	9.3	8.7	9.0	12.8	9.3	10.6
22	8.1	6.7	7.3	8.8	8.3	8.6	9.2	8.8	9.0	12.8	9.4	10.7
23	8.0	7.2	7.5	9.2	8.5	8.8	9.3	8.8	9.0	13.2	9.5	10.9
24	7.9	6.9	7.2	9.2	8.6	8.8	9.8	8.9	9.2	11.4	9.6	10.4
25	8.0	6.9	7.3	9.0	8.6	8.8	9.3	8.9	9.1	11.1	9.8	10.2
26	7.9	7.0	7.4	9.1	8.5	8.7	9.4	8.9	9.1	12.5	9.6	10.6
27	7.7	6.5	7.3	9.1	8.7	8.9	9.3	8.7	8.9	13.0	9.4	10.7
28	7.6	6.5	6.9	9.1	8.6	8.8	9.2	8.6	8.9	12.9	9.7	10.8
29	---	---	---	9.2	8.5	8.8	9.8	8.5	8.9	13.1	9.6	10.8
30	---	---	---	9.0	8.4	8.7	10.1	8.6	9.1	10.6	9.9	10.1
31	---	---	---	9.0	8.4	8.7	---	---	---	13.5	9.7	11.0
MONTH	9.7	5.7	7.3	10.0	6.4	8.2	10.1	8.1	8.8	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.8	9.5	11.1	13.1	10.8	11.8	15.2	12.9	13.7	19.2	16.4	17.5
2	13.8	9.7	11.0	14.5	10.8	12.2	14.4	13.1	13.6	19.7	16.8	17.9
3	12.6	9.7	10.8	14.8	10.7	12.3	14.7	13.3	13.9	19.6	17.6	18.4
4	12.8	9.8	10.9	14.9	10.8	12.4	16.2	13.2	14.3	20.3	18.1	19.1
5	12.9	9.9	11.0	15.0	10.9	12.5	17.1	13.2	14.6	20.8	18.8	19.6
6	13.0	10.0	11.1	15.1	11.1	12.6	17.5	13.2	14.8	21.3	19.3	20.1
7	12.8	10.0	11.1	15.1	11.1	12.6	17.9	13.4	14.9	21.0	20.0	20.5
8	12.9	10.2	11.1	15.1	11.4	12.8	17.9	13.0	14.9	21.9	20.5	21.0
9	12.7	10.0	10.9	15.4	11.2	12.8	17.9	13.6	15.1	21.6	20.7	21.1
10	12.4	10.2	10.9	15.3	11.4	12.9	17.9	13.2	15.0	22.4	21.0	21.5
11	13.4	10.1	11.1	15.3	11.4	12.9	17.7	13.5	15.1	22.4	20.9	21.4
12	11.7	10.1	10.7	15.3	11.5	12.9	18.1	13.6	15.2	22.1	20.4	21.0
13	11.7	10.2	10.8	14.7	11.8	12.9	18.2	13.3	15.2	22.4	20.3	21.0
14	13.3	10.1	11.3	15.5	11.5	13.0	18.1	13.3	15.0	22.3	20.4	21.1
15	13.8	10.0	11.4	15.6	11.7	13.2	16.8	14.0	14.9	22.2	20.6	21.1
16	14.3	10.1	11.7	15.4	12.0	13.0	17.2	13.8	15.0	21.2	20.4	20.7
17	14.3	10.3	11.8	15.7	11.6	13.2	17.6	14.0	15.3	21.9	20.2	20.8
18	12.2	10.4	11.2	15.7	11.7	13.2	17.7	14.2	15.4	21.7	19.9	20.5
19	11.8	10.5	11.0	15.8	11.8	13.3	17.6	14.4	15.5	21.5	20.0	20.6
20	12.8	10.5	11.3	15.8	11.8	13.4	17.5	14.1	15.4	21.5	19.8	20.3
21	12.8	10.5	11.4	16.2	12.0	13.5	17.8	14.4	15.7	21.4	19.5	20.2
22	12.5	10.3	11.2	15.6	12.1	13.4	16.5	14.7	15.4	21.2	19.6	20.2
23	11.9	10.6	11.1	15.8	12.2	13.5	17.7	15.0	15.9	21.2	19.6	20.2
24	14.1	10.6	11.8	15.2	12.2	13.2	18.1	14.7	15.9	21.3	19.6	20.2
25	14.5	10.3	11.9	15.1	12.3	13.3	18.3	14.9	16.1	21.1	19.7	20.2
26	14.8	10.5	12.2	15.2	12.3	13.4	17.9	15.2	16.1	21.2	19.7	20.2
27	15.0	10.7	12.3	15.5	12.4	13.5	18.4	15.2	16.4	21.2	19.8	20.3
28	15.1	10.6	12.4	15.6	12.5	13.7	18.2	15.3	16.5	21.2	19.8	20.2
29	14.9	11.0	12.4	15.6	12.6	13.8	18.6	15.7	16.8	20.6	19.4	20.1
30	14.2	11.1	12.2	15.8	12.7	13.8	18.8	16.1	17.1	21.4	18.9	19.8
31	---	---	---	15.7	12.8	13.8	19.0	16.3	17.3	---	---	---
MONTH	15.1	9.5	11.4	16.2	10.7	13.1	19.0	12.9	15.4	22.4	16.4	20.2

14157500 COAST FORK WILLAMETTE RIVER NEAR GOSHEN, OR

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 17090002, on right bank at downstream side of bridge on State Highway 58, 2.5 mi southeast of Goshen, and at mile 6.4.

DRAINAGE AREA.--642 mi^2.

WATER-DISCHARGES RECORDS

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

REVISED RECORDS.--WSP 1218: Drainage area. WSP 1248: 1905-12. WSP 1935: 1956.

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

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1942 by Cottage Grove Lake (station 14153000) and since 1949 by Dorena Lake (station 14155000). Several small diversions for logponds and irrigation upstream from station. Continuous water-quality records for the period October 1961 to September 1975 have been collected at this location. Periodic suspended sediment data are available for the period October 1991 to September 1993.

AVERAGE DISCHARGE.--59 years (water years 1906-11, 1951-2003), 1,576 ft^3/s, 1,142,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,500 ft^3/s Nov. 22, 1909, gage height, 19.5 ft, site and datum then in use, from rating curve extended above 15,000 ft^3/s; minimum discharge, 36 ft^3/s Sept. 29, 30, Oct. 11, 12, 1908.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,100 ft^3/s Dec. 31, gage height, 10.66 ft; minimum discharge, 148 ft^3/s Nov. 1.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	932	166	196	6230	5760	809	2320	1330	345	253	297	305
2	1080	159	191	6110	5740	728	1820	1250	333	253	296	302
3	1070	162	190	6820	5320	804	1630	1260	448	250	302	389
4	1080	161	190	6160	5100	826	1690	1280	450	253	301	463
5	1160	160	190	5700	4850	792	1770	1300	444	258	287	463
6	1150	158	189	4970	4010	1310	2370	1180	438	256	183	463
7	1130	159	186	4340	3110	3220	2320	999	436	248	174	480
8	1030	203	183	2880	2580	4100	2730	790	434	246	167	481
9	1020	504	185	2010	1920	3830	3000	728	429	244	165	487
10	1010	1620	214	1470	1550	3820	3130	684	427	241	164	368
11	1020	1560	275	1290	1050	3440	3100	656	324	240	162	401
12	1050	1120	317	1410	765	3600	3110	681	326	239	160	451
13	1040	886	958	2010	669	3370	3670	635	331	240	160	448
14	1030	536	1310	2710	679	2450	3800	601	328	239	159	444
15	1020	365	2740	2480	656	1390	2930	572	316	240	219	439
16	1010	243	4940	2020	1060	1050	2640	580	304	238	235	446
17	1000	310	4380	1670	1870	952	2510	565	286	236	236	444
18	1010	307	2950	1370	2860	856	2470	550	284	230	234	444
19	998	338	1910	1220	3050	919	2290	529	284	231	230	441
20	1000	257	1510	1120	2240	1390	2140	515	285	232	228	438
21	1020	235	2010	990	1880	1460	2690	503	287	232	229	435
22	1030	223	2540	976	1830	2620	2490	489	285	234	229	539
23	1030	215	2150	1080	1620	3780	2550	479	280	235	232	552
24	1010	227	1630	1070	1450	3280	4690	470	278	234	229	550
25	1010	228	1160	1420	1330	4330	4620	464	270	295	227	637
26	881	219	1240	2020	1210	6200	4100	449	268	308	226	629
27	794	212	4460	4270	1110	5540	3380	406	260	313	226	627
28	783	206	7010	4790	754	4740	2860	396	258	309	227	623
29	407	202	8620	3580	---	3870	1910	392	256	305	306	618
30	270	200	6030	4260	---	2940	1430	390	255	304	306	285
31	226	---	7560	3750	---	2500	---	360	---	306	306	---
TOTAL	29301	11541	67614	92196	66023	80916	82160	21483	9949	7942	7102	14092
MEAN	945	385	2181	2974	2358	2610	2739	693	332	256	229	470
MAX	1160	1620	8620	6820	5760	6200	4690	1330	450	313	306	637
MIN	226	158	183	976	656	728	1430	360	255	230	159	285
AC-FT	58120	22890	134100	182900	131000	160500	163000	42610	19730	15750	14090	27950

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 2003, BY WATER YEAR (WY)

MEAN	791	1940	3321	3552	2768	2214	1579	1056	575	251	356	540
MAX	3119	6305	9820	7814	6891	5716	4020	3285	2424	588	1115	1057
(WY)	1951	1974	1965	1909	1961	1957	1963	1963	1993	1957	1955	1978
MIN	147	121	196	200	203	385	460	247	129	90.3	49.7	63.5
(WY)	1911	1953	1977	1977	1977	1992	1987	1987	1987	1910	1910	1910

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1906 - 2003	
ANNUAL TOTAL	341484		490319			
ANNUAL MEAN	936		1343		1576	
HIGHEST ANNUAL MEAN					2701	1956
LOWEST ANNUAL MEAN					512	1977
HIGHEST DAILY MEAN	8620	Dec 29	8620	Dec 29	36500	Jan 4 1907
LOWEST DAILY MEAN	118	Jul 31	158	Nov 6	36	Sep 29 1908
ANNUAL SEVEN-DAY MINIMUM	120	Jul 29	161	Nov 1	42	Aug 28 1911
ANNUAL RUNOFF (AC-FT)	677300		972500		1142000	
10 PERCENT EXCEEDS	2300		3760		4150	
50 PERCENT EXCEEDS	395		656		740	
90 PERCENT EXCEEDS	130		226		172	

14157500 COAST FORK WILLAMETTE RIVER NEAR GOSHEN, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
WATER TEMPERATURE: August 2001 to current year.

INSTRUMENTATION.--Temperature recorder.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--
WATER TEMPERATURE: Maximum, 27.1°C July 11, 2002; minimum, 4.8°C Dec. 26-28, 2001.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 24.8°C July 21; minimum, 5.6°C Nov. 2.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.5	15.8	16.7	9.0	6.3	7.4	7.7	6.8	7.2	8.2	7.9	8.1
2	17.5	15.8	16.8	8.3	5.6	6.9	7.7	7.0	7.4	8.5	8.0	8.2
3	17.1	15.5	16.0	8.6	6.0	7.1	7.8	7.0	7.3	9.0	8.3	8.6
4	17.4	16.4	16.9	8.9	6.4	7.6	8.1	7.2	7.7	9.5	8.9	9.1
5	17.8	16.7	17.2	10.5	7.8	8.8	8.3	7.9	8.1	9.2	8.5	8.9
6	17.8	16.3	17.1	9.9	8.6	9.3	8.2	7.5	7.9	8.5	7.8	8.2
7	18.1	16.3	17.2	10.5	9.3	9.9	7.5	7.2	7.3	7.8	7.3	7.6
8	17.6	16.1	16.9	10.2	9.8	10.0	7.2	6.7	7.0	7.3	7.0	7.1
9	17.4	15.8	16.6	10.3	9.5	10	7.2	6.5	6.8	7.1	6.6	6.9
10	16.9	15.2	16.2	9.9	9.3	9.6	7.7	7.0	7.3	7.0	6.2	6.7
11	16.4	14.6	15.4	10.0	9.5	9.8	8.8	7.4	8.1	7.0	6.6	6.8
12	16.2	14.0	15.2	10.7	9.7	10.2	9.6	8.3	8.9	8.0	7.0	7.5
13	16.1	14.1	15.3	10.4	9.6	10.0	9.1	8.5	8.6	8.0	7.7	7.8
14	15.9	14.0	15.1	11.2	10.0	10.4	9.3	8.5	8.9	8.4	8.0	8.2
15	16.0	14.0	15.2	10.7	9.2	10.0	9.1	8.2	8.5	8.3	7.8	8.1
16	16.0	14.0	15.2	9.2	8.0	8.6	8.5	8.1	8.4	8.2	7.6	8.0
17	16.2	14.3	15.4	10.7	8.7	9.6	8.1	7.7	8.0	7.9	7.1	7.5
18	15.9	14.8	15.5	10.0	9.0	9.6	7.7	7.2	7.4	7.6	6.9	7.3
19	16.2	14.5	15.4	11.3	9.4	10.4	7.3	7.0	7.2	7.3	7.1	7.2
20	15.9	14.7	15.2	10.9	9.9	10.4	7.4	6.7	7.1	7.7	7.0	7.3
21	15.8	15.0	15.4	10.9	10.0	10.4	7.7	7.3	7.5	8.2	7.3	7.8
22	16.1	14.9	15.5	10.4	10.2	10.3	7.4	7.1	7.3	8.6	8.1	8.3
23	15.6	14.1	14.9	10.4	9.9	10.2	7.3	7.0	7.2	9.2	8.5	8.8
24	15.2	14.5	14.7	10.2	9.3	9.9	7.3	6.7	7.0	9.2	8.8	9.0
25	14.8	13.8	14.3	9.3	7.9	8.6	7.3	6.7	7.1	10.0	9.2	9.5
26	14.3	13.0	13.7	8.5	7.1	7.9	7.4	7.2	7.3	10.5	9.8	10.1
27	13.6	12.2	12.7	7.7	6.5	7.0	7.9	7.2	7.7	10.5	9.5	9.9
28	14.2	13.0	13.6	7.7	6.4	7.0	7.9	7.7	7.8	9.5	8.9	9.1
29	14.1	12.4	13.4	7.8	6.6	7.0	7.8	7.4	7.6	9.0	8.7	8.8
30	12.4	9.3	10.7	7.6	6.6	7.0	8.0	7.6	7.7	10.4	8.9	9.7
31	9.6	7.4	8.4	---	---	---	8.6	8.0	8.3	10.7	10.3	10.5
MONTH	18.1	7.4	15.1	11.3	5.6	9.0	9.6	6.5	7.7	10.7	6.2	8.3

14157500 COAST FORK WILLAMETTE RIVER NEAR GOSHEN, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.5	9.4	9.7	9.0	7.1	8.0	10.5	9.0	9.7	13.5	10.3	12.0
2	9.6	9.1	9.3	8.7	7.9	8.2	9.8	8.5	9.1	14.0	11.0	12.7
3	9.3	8.7	9.0	9.4	7.6	8.4	9.3	8.3	8.9	13.6	10.9	11.8
4	8.9	8.2	8.5	8.8	7.8	8.3	9.8	8.5	9.2	11.6	9.9	10.7
5	8.6	7.9	8.2	8.6	8.1	8.3	9.5	8.4	8.8	11.9	10.2	11.1
6	8.2	7.3	7.7	8.3	7.9	8.1	10.1	8.1	9.0	13.0	9.9	11.5
7	7.8	6.7	7.3	8.6	7.9	8.2	11.0	9.0	10	12.6	11.3	11.7
8	7.4	6.2	6.8	9.6	8.1	8.7	11.3	9.2	10.2	12.3	10.5	11.3
9	7.3	5.8	6.6	9.7	8.4	9.1	11.5	9.5	10.4	12.0	10.9	11.5
10	7.7	6.5	7.1	10.0	8.9	9.4	10.5	9.5	9.9	13.5	10.9	12.0
11	7.5	6.3	6.9	9.8	8.9	9.3	10.9	9.3	10.0	13.3	11.7	12.5
12	7.1	5.8	6.6	9.9	9.0	9.4	10.9	9.7	10.2	14.5	11.7	12.9
13	7.8	7.0	7.4	9.7	9.0	9.4	10.4	9.5	10	16.5	12.8	14.4
14	9.6	7.7	8.5	10.6	9.3	9.9	10.5	9.0	9.7	16.4	13.9	15.1
15	9.1	8.4	8.6	10.8	9.7	10.2	10.5	9.3	9.8	15.2	13.1	14.1
16	8.4	7.8	8.1	10.8	9.6	10.2	10.9	9.2	10.0	13.1	11.6	12.4
17	8.5	7.4	7.9	10.7	9.3	10.0	11.2	9.7	10.5	13.5	10.9	12.0
18	8.9	7.7	8.3	10.8	8.8	9.8	11.4	9.2	10.2	13.9	10.4	12.0
19	8.6	8.0	8.3	10.1	8.9	9.4	11.7	8.7	10.2	15.0	11.3	13.1
20	8.5	8.0	8.3	10.3	8.7	9.4	11.3	9.4	10.5	16.0	12.5	14.2
21	9.3	8.4	8.8	10.2	9.5	9.9	10.8	9.8	10.1	17.0	13.3	15.0
22	9.2	8.3	8.8	10.3	9.6	10.0	10.3	9.5	9.9	17.8	14.1	15.9
23	8.6	7.6	8.2	10.0	8.5	9.3	10.3	9.2	9.7	18.8	14.8	16.7
24	8.0	6.5	7.3	10.1	8.5	9.3	10.4	8.9	9.7	17.5	15.6	16.5
25	7.4	5.8	6.7	9.6	9.1	9.3	10.0	8.6	9.2	15.6	14.3	14.8
26	7.5	6.0	6.8	10.0	8.9	9.4	10.4	9.0	9.7	16.0	13.2	14.5
27	8.7	7.2	7.9	10.1	8.6	9.3	11.1	8.9	10	17.7	13.7	15.7
28	8.1	7.1	7.5	10.6	8.7	9.5	10.8	9.8	10.2	18.4	15.2	16.6
29	---	---	---	11.2	8.9	9.9	11.5	9.3	10.4	18.7	15.2	16.9
30	---	---	---	11.8	9.1	10.3	12.3	9.6	11.0	17.6	14.2	15.7
31	---	---	---	10.8	9.6	9.9	---	---	---	17.0	13.0	14.7
MONTH	10.5	5.8	7.9	11.8	7.1	9.3	12.3	8.1	9.9	18.8	9.9	13.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.9	14.3	16.4	19.6	17.1	18.3	20.5	17.8	19.2	20.6	17.3	18.9
2	19.0	15.2	17.0	20.0	15.0	17.3	19.0	17.3	18.2	21.1	17.3	19.1
3	18.3	14.9	16.6	21.2	15.7	18.3	18.5	16.5	17.4	21.0	18.1	19.6
4	18.9	15.0	16.8	21.8	16.4	19.0	21.2	16.3	18.5	21.4	18.5	19.9
5	19.8	15.8	17.7	22.2	17.0	19.5	21.1	17.8	19.2	21.7	19.1	20.3
6	20.4	16.6	18.4	22.8	17.6	20.1	22.1	17.6	19.5	21.2	19.2	20.1
7	20.3	16.8	18.4	22.8	17.7	20.0	23.5	19.2	20.9	19.9	18.7	19.3
8	19.9	16.6	18.0	22.8	17.9	20.0	23.5	19.2	21.0	19.2	18.1	18.6
9	18.0	15.8	16.8	23.3	17.8	20.3	23.6	20.0	21.4	19.1	18.2	18.5
10	17.0	14.9	15.7	23.6	18.2	20.7	23.1	19.3	21.0	20.1	18.2	18.9
11	17.9	14.0	15.6	23.5	18.3	20.8	22.9	19.5	21.1	20.9	18.6	19.7
12	16.4	14.6	15.2	22.3	18.4	20.6	23.4	19.1	21.0	21.0	19.2	20.0
13	15.1	13.7	14.4	22.7	19.0	20.5	23.4	18.9	20.8	20.2	17.7	18.9
14	17.9	13.4	15.4	22.9	17.9	20.2	23.0	18.9	20.9	20.5	17.8	19.1
15	19.9	14.7	17.1	22.7	18.1	20.3	22.4	19.6	20.8	20.4	18.4	19.3
16	20.7	15.4	18.0	22.1	18.6	20.2	22.0	17.4	19.6	19.2	17.6	18.3
17	21.9	16.6	19.0	22.8	17.5	20.0	22.7	17.6	20.0	19.3	16.7	17.8
18	19.8	17.1	18.2	23.2	17.8	20.3	23.2	18.4	20.7	19.5	16.9	18.1
19	17.1	15.2	15.9	23.8	18.4	21.0	23.2	19.1	20.9	19.8	18.2	18.8
20	16.9	14.1	15.4	23.8	18.6	21.1	21.8	17.6	19.7	19.6	17.5	18.4
21	17.7	14.5	15.8	24.8	19.3	21.9	21.7	17.3	19.5	19.5	16.9	18.1
22	16.7	14.2	15.4	24.7	20.1	22.3	20.4	18.3	19.2	19.9	17.4	18.5
23	15.8	14.3	15.0	23.5	19.2	21.3	20.9	17.2	18.9	20.0	17.8	18.9
24	18.4	13.6	15.7	22.8	18.2	20.4	21.6	16.9	19.0	20.2	17.8	19.0
25	20.8	14.9	17.6	21.1	17.2	19.2	22.0	17.2	19.4	20.1	18.2	19.1
26	22.0	16.2	19.0	21.0	16.8	18.7	20.6	18.5	19.4	20.3	18.2	19.3
27	23.3	17.6	20.3	21.5	17.0	19.1	21.1	16.9	18.8	21.0	18.9	20.0
28	23.8	18.1	20.9	22.3	17.5	19.7	21.3	16.9	19.0	20.6	19.0	19.9
29	23.7	19.0	21.2	22.4	17.9	20.0	20.7	17.2	18.9	19.6	18.5	19.2
30	22.1	18.9	20.4	22.6	18.0	20.1	21.1	17.4	19.2	20.0	17.0	18.4
31	---	---	---	22.0	18.1	19.9	21.1	17.8	19.3	---	---	---
MONTH	23.8	13.4	17.2	24.8	15.0	20.0	23.6	16.3	19.8	21.7	16.7	19.1
YEAR	24.8	5.6	13.1									

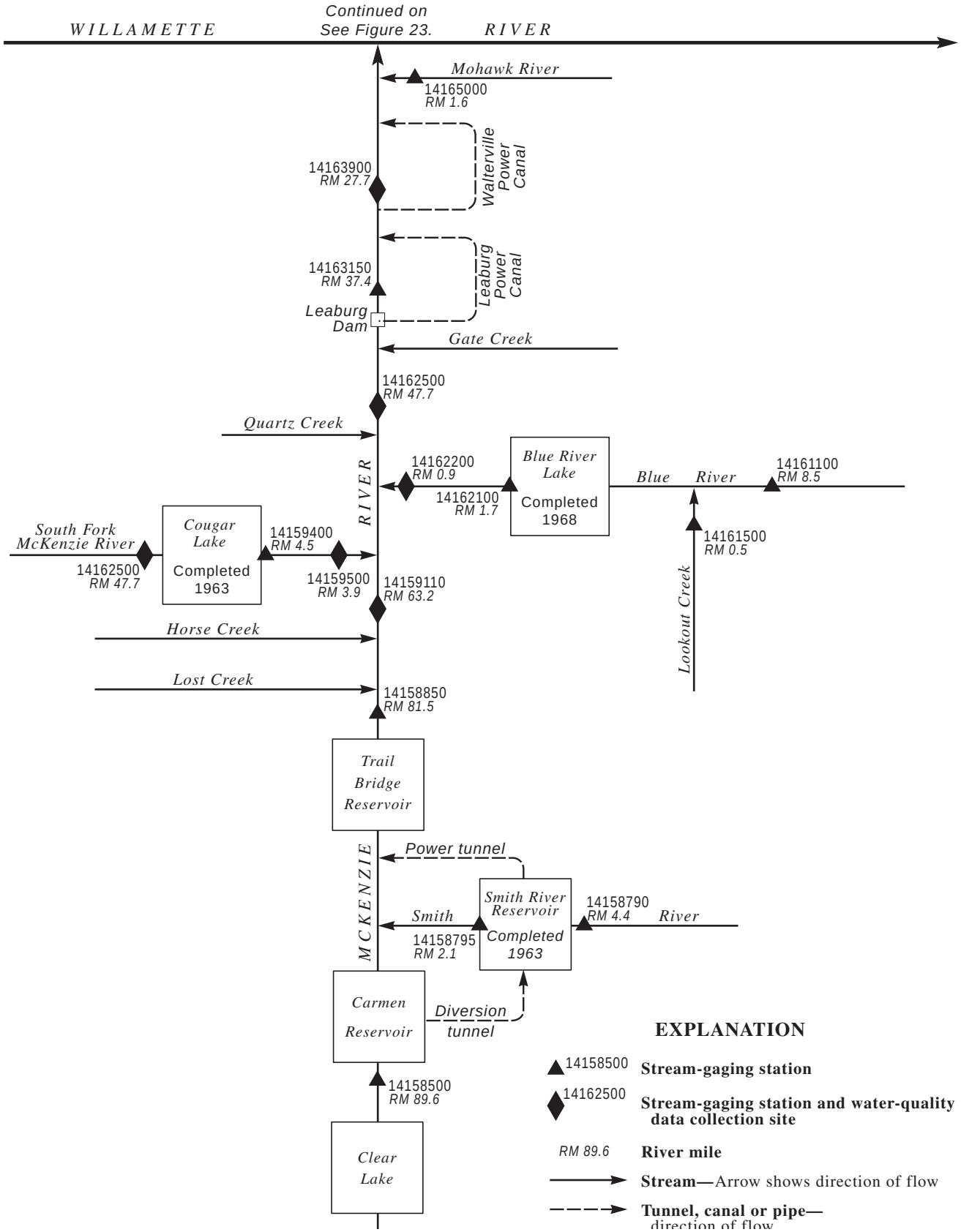


Figure 24. Schematic diagram showing gaging stations and diversions in the McKenzie River Basin.

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 mi^2, 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 NGVD 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.--No estimated daily discharges. 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.--59 years (water years 1913-15, 1948-2003), 456 ft^3/s, 67.10 in/yr, 330,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,300 ft^3/s Dec. 23, 1964, gage height, 8.15 ft; minimum discharge, 116 ft^3/s Oct. 27, 28, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,460 ft^3/s Jan. 31, gage height, 5.00 ft; minimum discharge, 172 ft^3/s Dec. 9, 10.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	232	194	190	329	1200	431	873	523	456	294	246	210
2	230	192	188	345	1050	424	832	518	443	292	246	209
3	230	191	185	388	981	423	792	519	431	288	244	207
4	229	191	183	406	940	416	759	526	422	286	242	207
5	228	190	181	456	903	416	731	524	416	284	242	206
6	228	187	179	532	864	426	711	514	412	284	241	205
7	226	188	177	523	823	432	676	505	410	281	240	205
8	224	195	174	506	782	443	649	502	408	280	238	204
9	224	198	172	498	740	451	641	497	406	278	238	205
10	223	197	176	492	698	466	641	495	401	276	235	202
11	220	197	179	484	657	520	668	497	397	276	235	201
12	219	195	178	490	613	640	675	496	392	274	235	200
13	218	197	182	529	572	711	668	492	389	272	232	198
14	217	198	192	543	539	735	656	495	383	271	231	197
15	216	198	209	529	510	757	641	505	377	269	231	196
16	214	202	239	500	504	762	631	506	372	268	228	199
17	213	207	256	479	495	734	630	496	367	267	228	197
18	212	206	272	468	480	710	628	486	361	265	227	195
19	210	208	280	459	459	698	613	478	355	264	226	195
20	210	208	284	449	446	711	600	472	349	262	224	194
21	209	208	290	439	444	732	595	468	343	261	221	193
22	207	209	281	430	446	960	588	466	338	260	220	193
23	207	210	274	440	445	1060	581	466	330	257	220	192
24	206	210	270	453	446	920	587	479	324	257	218	191
25	204	207	263	499	443	897	576	499	318	255	217	190
26	202	204	263	611	443	1030	566	493	312	253	215	189
27	201	202	278	827	441	973	556	478	308	253	215	188
28	200	199	279	734	437	904	547	472	304	251	214	187
29	199	196	291	666	---	862	537	468	301	249	213	186
30	196	193	314	1070	---	844	531	467	298	249	212	185
31	195	---	324	1380	---	862	---	464	---	247	211	---
TOTAL	6649	5977	7203	16954	17801	21350	19379	15266	11123	8323	7085	5926
MEAN	214	199	232	547	636	689	646	492	371	268	229	198
MAX	232	210	324	1380	1200	1060	873	526	456	294	246	210
MIN	195	187	172	329	437	416	531	464	298	247	211	185
AC-FT	13190	11860	14290	33630	35310	42350	38440	30280	22060	16510	14050	11750
CFSM	2.32	2.16	2.51	5.92	6.88	7.45	6.99	5.33	4.01	2.91	2.47	2.14
IN.	2.68	2.41	2.90	6.83	7.17	8.60	7.80	6.15	4.48	3.35	2.85	2.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2003, BY WATER YEAR (WY)

MEAN	248	368	535	520	530	509	596	677	560	386	300	252
MAX	428	828	1209	1123	1313	1205	873	1178	1202	737	499	392
(WY)	1951	1951	1965	1997	1996	1972	1997	1949	1974	1950	1974	1974
MIN	122	141	209	191	180	224	341	319	203	173	149	132
(WY)	1993	1988	1977	1977	1977	1977	1955	1992	1992	1977	1992	1992

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1913 - 2003	
ANNUAL TOTAL	149656		143036			
ANNUAL MEAN	410		392		456	
HIGHEST ANNUAL MEAN					688	1997
LOWEST ANNUAL MEAN					241	1977
HIGHEST DAILY MEAN	1620	Apr 14	1380	Jan 31	3100	Dec 23 1964
LOWEST DAILY MEAN	172	Dec 9	172	Dec 9	116	Oct 27 1992
ANNUAL SEVEN-DAY MINIMUM	176	Dec 6	176	Dec 6	117	Oct 22 1992
ANNUAL RUNOFF (AC-FT)	296800		283700		330600	
ANNUAL RUNOFF (CFSM)	4.44		4.24		4.94	
ANNUAL RUNOFF (INCHES)	60.25		57.59		67.10	
10 PERCENT EXCEEDS	744		710		796	
50 PERCENT EXCEEDS	343		298		394	
90 PERCENT EXCEEDS	201		195		209	

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 mi^2.

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

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

GAGE.--Water-stage recorder. Datum of gage is 2,610.00 ft above NGVD 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. Eugene Water and Electric Board telemetry at station. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--43 years (water years 1961-2003), 89.4 ft^3/s, 74.97 in/yr, 64,750 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,160 ft^3/s Dec. 22, 1964, gage height, 11.9 ft, from floodmark, from rating curve extended above 560 ft^3/s, on basis of slope-area measurement of peak flow; minimum discharge, 1.2 ft^3/s Oct. 13, 1991, result of log jam.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 30	1100	*937	*8.26	Mar. 22	1130	937	8.26

Minimum discharge, 2.8 ft^3/s Sept. 3-7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.8	4.6	11	157	427	55	194	87	52	8.7	4.4	3.0
2	5.4	4.6	10	223	285	52	160	91	48	8.6	4.3	3.0
3	6.0	4.7	9.7	436	213	50	134	95	44	8.3	4.2	3.0
4	6.1	4.7	11	427	166	48	114	101	40	8.0	4.2	2.9
5	5.5	4.6	9.9	351	133	51	99	103	38	8.0	4.2	2.8
6	5.1	4.6	9.3	224	109	65	90	97	35	7.7	4.3	2.8
7	5.0	5.3	9.0	171	93	77	83	88	33	7.4	4.8	3.6
8	4.7	19	8.7	146	81	163	99	81	30	7.4	4.2	5.2
9	4.6	24	8.4	127	72	236	138	77	28	7.1	4.0	8.4
10	4.7	24	20	108	65	311	169	82	25	6.9	3.9	5.0
11	4.6	28	35	94	59	274	216	94	23	6.8	3.9	4.1
12	4.6	32	53	144	54	333	193	95	21	6.5	3.9	4.5
13	4.6	33	82	232	50	300	182	97	20	6.3	3.8	3.7
14	4.6	30	143	212	49	265	165	110	19	6.1	3.6	3.4
15	4.4	22	141	168	50	274	145	110	18	6.1	3.5	3.3
16	4.4	26	183	134	63	230	134	96	16	6.0	3.4	4.8
17	4.4	49	122	117	63	182	138	84	15	5.8	3.3	5.7
18	4.4	33	89	115	65	149	130	76	14	5.6	3.3	3.9
19	4.4	28	71	112	65	135	118	71	14	5.6	3.3	3.6
20	4.4	27	62	105	72	161	112	70	13	5.6	3.3	3.5
21	4.4	27	64	102	111	229	114	73	14	5.5	3.3	3.3
22	4.4	24	54	126	140	731	113	83	13	5.2	3.3	3.3
23	4.3	20	48	179	111	439	114	97	13	4.9	3.3	3.3
24	4.2	19	43	188	92	269	127	108	12	4.9	3.3	3.2
25	4.2	17	39	222	80	295	109	100	11	4.9	3.3	3.1
26	4.2	15	54	438	72	397	100	84	11	4.9	3.2	3.0
27	4.2	14	242	447	65	257	93	76	10	4.8	3.2	3.0
28	4.5	13	198	264	60	198	89	77	10	4.6	3.1	3.0
29	4.8	12	161	240	---	169	86	74	9.7	4.4	3.0	3.0
30	4.6	12	147	783	---	176	87	71	9.3	4.4	3.0	3.0
31	4.5	---	206	609	---	203	---	60	---	4.4	3.0	---
TOTAL	147.0	581.1	2344.0	7401	2965	6774	3845	2708	659.0	191.4	112.8	111.4
MEAN	4.74	19.4	75.6	239	106	219	128	87.4	22.0	6.17	3.64	3.71
MAX	6.8	49	242	783	427	731	216	110	52	8.7	4.8	8.4
MIN	4.2	4.6	8.4	94	49	48	83	60	9.3	4.4	3.0	2.8
AC-FT	292	1150	4650	14680	5880	13440	7630	5370	1310	380	224	221
CFSM	0.29	1.20	4.67	14.7	6.54	13.5	7.91	5.39	1.36	0.38	0.22	0.23
IN.	0.34	1.33	5.38	16.99	6.81	15.56	8.83	6.22	1.51	0.44	0.26	0.26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2003, BY WATER YEAR (WY)

MEAN	22.6	113	148	138	133	121	147	149	72.9	16.9	6.70	7.10
MAX	95.4	239	404	293	371	321	270	318	260	51.5	12.9	23.5
(WY)	1998	1996	1965	1970	1996	1993	1993	1971	1974	1971	1999	1978
MIN	3.33	4.47	9.88	13.5	12.8	41.2	50.3	28.1	8.63	5.23	3.22	3.71
(WY)	1988	1994	1977	1977	1977	1992	1967	1992	1992	1992	1992	2003

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1961 - 2003	
ANNUAL TOTAL	29752.6		27839.7			
ANNUAL MEAN	81.5		76.3		89.4	
HIGHEST ANNUAL MEAN					136	1974
LOWEST ANNUAL MEAN					37.1	2001
HIGHEST DAILY MEAN	964	Apr 14	783	Jan 30	2590	Dec 22 1964
LOWEST DAILY MEAN	4.2	Oct 24	2.8	Sep 5	2.5	Sep 15 1981
ANNUAL SEVEN-DAY MINIMUM	4.3	Oct 21	2.9	Aug 31	2.6	Sep 12 1981
ANNUAL RUNOFF (AC-FT)	59010		55220		64750	
ANNUAL RUNOFF (CFSM)	5.03		4.71		5.52	
ANNUAL RUNOFF (INCHES)	68.32		63.93		74.97	
10 PERCENT EXCEEDS	189		200		212	
50 PERCENT EXCEEDS	43		32		52	
90 PERCENT EXCEEDS	4.7		3.6		4.9	

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 mi^2.

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

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

GAGE.--Water-stage recorder. Datum of gage is NGVD 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 and are furnished by Eugene Water and Electric Board.

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, 14,560 acre-ft Oct. 1, elevation, 2,602.71 ft; minimum contents, 11,430 acre-ft Nov. 12, elevation, 2,582.79 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	2,601.38	14,330	--
Oct. 31	2,589.44	12,410	-1,920
Nov. 30	2,591.95	12,810	+400
Dec. 31	2,595.18	13,330	+520
CAL YR 2002			+920
Jan. 31	2,594.19	13,170	-160
Feb. 28	2,595.04	13,310	+140
Mar. 31	2,597.14	13,640	+330
Apr. 30	2,596.77	13,580	-60
May 31	2,598.03	13,780	+200
June 30	2,598.86	13,920	+140
July 31	2,599.09	13,950	+30
Aug. 31	2,598.99	13,940	-10
Sept.30	2,598.34	13,830	-110
WTR YR 2003			-500

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 mi^2.

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

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

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1963 by Smith River Reservoir (station 14158795). Diurnal fluctuations by powerplants and by Trail Bridge re-regulation 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. Continuous water-quality records for the period November 1976 to September 1985, July 1992 September 1993 have been collected at this location.

AVERAGE DISCHARGE.--44 years (water years 1960-2003), 1,013 ft^3/s, 74.76 in/yr, 733,900 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,200 ft^3/s Dec. 22, 1964, gage height, 12.45 ft, from rating curve extended above 3,700 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 185 ft^3/s Feb. 3, 1963; minimum daily, 423 ft^3/s Nov. 22, 1993.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,780 ft^3/s Jan. 30, gage height, 8.54 ft; minimum discharge, 533 ft^3/s Dec. 10.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	679	675	621	1020	2100	967	1530	1090	943	737	666	625
2	668	629	599	1120	1860	958	1530	1070	943	724	666	655
3	655	625	593	1420	1710	927	1460	1070	938	719	666	626
4	656	619	601	1370	1590	941	1390	1070	899	717	667	623
5	656	596	605	1400	1510	943	1380	1100	893	716	661	622
6	644	600	593	1280	1490	983	1320	1100	894	718	654	623
7	636	630	592	1250	1400	1020	1290	1090	894	716	651	624
8	636	687	594	1140	1450	1190	1320	1060	881	716	652	618
9	638	733	595	1140	1360	1310	1350	1010	871	708	663	646
10	638	635	588	1120	1270	1410	1360	999	863	705	663	634
11	630	679	648	1020	1240	1370	1410	1060	861	708	651	615
12	631	631	650	1090	1250	1470	1360	1040	821	707	650	610
13	632	637	694	1290	1210	1460	1310	1070	821	706	648	613
14	631	586	800	1240	1170	1390	1320	1070	818	693	649	616
15	630	589	815	1170	1020	1440	1300	1070	821	684	642	628
16	639	591	887	1150	1070	1450	1270	1070	821	684	635	629
17	634	622	866	1080	1060	1380	1260	1060	820	684	635	624
18	635	594	779	1040	1100	1330	1280	1030	819	696	634	624
19	636	589	772	1010	1030	1330	1270	1020	809	690	636	623
20	635	586	771	1040	1020	1330	1240	992	799	687	641	619
21	644	577	823	1040	1020	1400	1210	986	784	675	662	612
22	672	595	782	1030	1090	2000	1220	1020	772	674	650	612
23	677	604	768	1040	1090	1940	1210	1040	773	676	642	612
24	688	603	765	1140	1050	1720	1210	1010	762	677	641	613
25	690	604	751	1220	1050	1640	1210	1010	735	677	636	605
26	690	614	760	1500	1030	1930	1200	1010	730	677	628	585
27	690	631	1000	1630	971	1750	1150	1010	747	664	628	620
28	690	613	1010	1420	970	1670	1090	1000	747	664	628	620
29	690	622	951	1410	---	1590	1090	1000	747	683	627	620
30	690	622	996	2270	---	1520	1120	1000	745	668	634	600
31	690	---	1130	2170	---	1510	---	976	---	654	633	---
TOTAL	20350	18618	23399	39260	35181	43269	38660	32203	24771	21504	20039	18596
MEAN	656	621	755	1266	1256	1396	1289	1039	826	694	646	620
MAX	690	733	1130	2270	2100	2000	1530	1100	943	737	667	655
MIN	630	577	588	1010	970	927	1090	976	730	654	627	585
AC-FT	40360	36930	46410	77870	69780	85820	76680	63870	49130	42650	39750	36890
MEAN†	625	627	763	1264	1259	1401	1288	1042	828	694	646	618
CFSM†	3.40	3.41	4.15	6.87	6.84	7.62	7.00	5.66	4.50	3.77	3.51	3.36
IN.†	3.92	3.80	4.78	7.92	7.13	8.78	7.81	6.53	5.02	4.35	4.05	3.75
AC-FT†	38440	37330	46930	77710	69920	86150	76620	64070	49270	42680	39740	36780

CAL YR 2002 TOTAL 344041 MEAN 943 MAX 3300 MIN 577 AC-FT 682400 MEAN† 944 CFSM† 5.13 IN.† 69.65 AC-FT†683320
WTR YR 2003 TOTAL 335850 MEAN 920 MAX 2270 MIN 577 AC-FT 666200 MEAN† 920 CFSM† 5.00 IN.† 67.85 AC-FT†665700

† Adjusted for change in contents in Smith River Reservoir.

14159110 MCKENZIE RIVER ABOVE SOUTH FORK, NEAR RAINBOW, OR

LOCATION.--Lat 44°10'00", long 122°15'19", in NW 1/4 sec.19 T.16 S., R.5 E., Lane County, Hydrologic Unit 17090004, in Willamette National Forest, on right bank 0.6 mi downstream from Mill Creek, and at mile 62.3.

DRAINAGE AREA.--526 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January to September 2003.

GAGE.--Water-stage recorder. Datum of gage is 1,150 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated since 1963 by Smith River Reservoir (14158795). No diversion upstream from station.

EXTREMES FOR PERIOD JANUARY TO SEPTEMBER 2003.--Maximum discharge, 10,700 ft^3/s Jan. 30, gage height, 12.83 ft; minimum discharge, 1,320 ft^3/s Sept. 26, 30.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	6690	2470	4110	2740	2380	1870	1590	1500
2	---	---	---	---	5440	2430	3940	2690	2350	1840	1590	1550
3	---	---	---	---	4730	2400	3740	2710	2330	1830	1590	1500
4	---	---	---	---	4200	2380	3550	2790	2270	1820	1580	1500
5	---	---	---	---	3840	2390	3470	2870	2250	1810	1580	1490
6	---	---	---	---	3660	2670	3400	2810	2250	1810	1580	1480
7	---	---	---	---	3400	3260	3300	2740	2250	1800	1590	1490
8	---	---	---	---	3360	4160	3390	2690	2230	1790	1570	1560
9	---	---	---	---	3160	4270	3530	2620	2190	1780	1570	1640
10	---	---	---	---	2980	4650	3540	2560	2150	1770	1570	1600
11	---	---	---	---	2880	4310	3750	2680	2120	1760	1550	1530
12	---	---	---	---	2840	4380	3600	2670	2060	1750	1540	1510
13	---	---	---	---	2770	e4400	3490	2690	2040	1730	1540	1500
14	---	---	---	---	2710	e4100	3400	2720	2050	1730	1550	1490
15	---	---	---	---	2540	3990	3310	2720	2030	1710	1520	1480
16	---	---	---	---	2710	3900	3220	2700	2030	1700	1510	1490
17	---	---	---	---	2750	3640	3240	2650	2030	1700	1510	1540
18	---	---	---	---	2850	3410	3240	2570	2030	1710	1510	1500
19	---	---	---	---	2730	3320	3150	2520	2000	1700	1530	1470
20	---	---	---	---	2740	3360	3080	2480	1980	1690	1560	1470
21	---	---	---	---	2870	3810	3030	2460	1960	1670	1570	1450
22	---	---	---	---	3150	e6200	3020	2540	1950	1670	1550	1460
23	---	---	---	---	3020	e6000	3000	2610	1930	1660	1540	1450
24	---	---	---	---	2850	e5000	3070	2650	1920	1650	1540	1450
25	---	---	---	---	2760	e5200	3000	2670	1880	1650	1550	1440
26	---	---	---	---	2680	e7400	2950	2630	1880	1650	1520	1400
27	---	---	---	---	2560	5620	2860	2570	1890	1640	1510	1440
28	---	---	---	---	2510	4950	2760	2590	1890	1630	1510	1440
29	---	---	---	---	---	4460	2720	2560	1890	1640	1520	1410
30	---	---	---	8110	---	4200	2820	2580	1880	1630	1520	1410
31	---	---	---	7940	---	4130	---	2490	---	1590	1520	---
TOTAL	---	---	---	---	91380	126860	98680	81970	62090	53380	47980	44640
MEAN	---	---	---	---	3264	4092	3289	2644	2070	1722	1548	1488
MAX	---	---	---	---	6690	7400	4110	2870	2380	1870	1590	1640
MIN	---	---	---	---	2510	2380	2720	2460	1880	1590	1510	1400
AC-FT	---	---	---	---	181300	251600	195700	162600	123200	105900	95170	88540
CFSM	---	---	---	---	6.20	7.78	6.25	5.03	3.94	3.27	2.94	2.83
IN.	---	---	---	---	6.46	8.97	6.98	5.80	4.39	3.78	3.39	3.16

e Estimated

14159110 MCKENZIE RIVER ABOVE SOUTH FORK, NEAR RAINBOW, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: February to September 2003.
TURBIDITY: January to September 2003.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Water temperature records excellent, turbidity records fair.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 14.2°C July 22, 31; minimum, 4.0°C Feb. 25.
TURBIDITY: Maximum, 57 NTU Jan. 30, but may have been higher during period of missing record; minimum, <1 on many days.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.6	5.9	6.1	6.2	4.7	5.3	7.0	5.9	6.4	9.5	6.5	7.7
2	6.4	5.9	6.1	6.0	4.5	5.2	6.4	5.5	5.8	9.6	6.7	7.9
3	6.2	5.7	5.9	6.4	5.1	5.7	6.2	5.2	5.7	8.0	7.1	7.5
4	5.9	5.1	5.6	6.2	5.2	5.6	7.0	5.5	6.0	7.3	6.6	6.9
5	5.5	4.7	5.1	6.1	5.5	5.8	6.3	5.4	5.8	8.2	6.4	7.1
6	5.5	4.7	5.0	5.7	5.0	5.4	6.7	5.0	5.7	8.5	6.6	7.4
7	5.4	4.5	4.8	5.6	5.0	5.3	7.3	5.6	6.3	7.9	6.7	7.1
8	5.5	4.5	4.9	6.5	5.5	5.9	8.4	5.8	6.8	7.9	6.3	7.0
9	5.5	4.4	4.9	6.8	5.9	6.3	8.0	6.4	7.0	7.0	6.5	6.7
10	5.6	4.6	4.9	6.9	6.0	6.4	7.9	6.4	7.0	8.0	6.6	7.2
11	5.7	4.4	4.9	6.8	6.2	6.4	8.0	6.5	7.1	8.5	6.8	7.5
12	5.8	4.5	5.0	7.0	6.1	6.5	7.8	6.6	7.0	9.4	7.0	7.8
13	5.9	5.3	5.6	---	---	---	7.3	6.3	6.8	10.3	6.7	8.2
14	6.3	5.5	5.8	---	---	---	7.8	6.2	6.8	10.1	7.3	8.4
15	6.0	5.2	5.6	6.9	6.1	6.5	7.5	6.2	6.7	8.1	7.1	7.7
16	5.9	5.5	5.7	7.0	5.8	6.2	7.6	6.2	6.8	8.4	6.5	7.3
17	6.0	5.2	5.6	6.9	5.9	6.3	7.5	6.4	6.8	8.0	6.4	6.9
18	6.1	5.2	5.6	7.2	5.5	6.2	7.6	6.0	6.6	9.3	6.2	7.4
19	6.2	5.3	5.6	6.5	5.4	6.0	8.5	5.6	6.8	9.8	6.1	7.7
20	5.9	5.5	5.7	7.2	6.2	6.5	8.1	6.4	7.2	10.1	6.9	8.2
21	6.3	5.7	6.0	6.4	6.0	6.2	7.5	6.8	7.1	10.7	7.3	8.7
22	6.3	5.5	5.8	---	---	---	8.1	6.7	7.2	11.0	7.7	9.0
23	6.0	4.8	5.4	---	---	---	7.3	6.3	6.8	11.4	7.9	9.3
24	5.3	4.1	4.7	---	---	---	7.3	6.3	6.7	10.0	8.3	9.1
25	5.5	4.0	4.6	---	---	---	7.1	5.8	6.4	9.6	8.2	8.7
26	5.5	4.2	4.8	---	---	---	7.2	6.0	6.5	10.2	7.9	8.8
27	6.1	4.9	5.3	6.9	5.6	6.1	7.8	5.7	6.7	10.9	8.0	9.3
28	5.2	4.6	4.9	7.3	5.5	6.3	7.5	6.5	6.9	11.2	8.5	9.6
29	---	---	---	7.9	5.8	6.7	8.2	6.1	7.0	11.5	8.4	9.7
30	---	---	---	8.2	6.2	7.1	9.0	6.6	7.5	9.4	8.6	9.0
31	---	---	---	7.1	6.6	6.8	---	---	---	11.1	8.3	9.4
MONTH	6.6	4.0	5.4	---	---	---	9.0	5.0	6.7	11.5	6.1	8.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.6	8.1	9.6	11.2	9.0	9.9	12.9	9.9	11.3	12.3	9.2	10.6
2	11.8	8.5	9.9	12.2	8.6	10.2	11.6	10.2	10.8	12.7	9.3	10.8
3	12.0	8.5	10	12.5	8.5	10.3	12.8	10.0	11.2	12.5	9.8	11.1
4	12.2	8.6	10.1	12.6	8.6	10.4	13.3	9.9	11.3	12.8	9.9	11.2
5	12.3	8.7	10.2	12.9	8.8	10.6	12.0	9.9	10.8	12.3	9.2	10.6
6	12.8	9.0	10.5	13.1	9.1	10.9	13.0	9.8	11.2	12.5	9.4	10.8
7	12.9	9.2	10.8	13.0	9.1	10.8	13.1	10.1	11.4	10.5	9.6	10
8	12.9	9.3	10.8	13.1	9.5	10.9	13.1	9.9	11.3	10.5	9.2	9.8
9	12.3	9.0	10.4	13.3	9.2	11.0	13.0	9.9	11.2	10.0	9.1	9.5
10	12.3	8.9	10.3	13.7	9.6	11.4	13.2	9.8	11.3	10.8	9.2	9.8
11	12.3	8.7	10.3	13.6	9.8	11.5	13.1	10.0	11.3	11.0	9.1	9.9
12	11.8	8.9	10.1	13.4	9.7	11.4	12.8	9.8	11.1	11.3	9.1	10
13	10.6	9.0	9.6	13.1	10.1	11.3	13.0	9.5	11.1	10.8	8.2	9.4
14	11.2	8.9	9.9	13.2	9.5	11.1	12.9	9.6	11.1	10.8	8.2	9.4
15	12.6	8.7	10.3	13.6	9.6	11.4	13.2	10.0	11.4	11.0	8.9	9.7
16	13.0	8.9	10.6	13.3	10.2	11.4	12.8	9.6	11.0	9.4	8.6	8.9
17	13.1	9.2	10.9	13.4	9.6	11.3	13.1	9.5	11.1	10.4	8.4	9.2
18	11.8	9.5	10.4	13.7	9.8	11.5	13.5	9.9	11.5	10.2	7.8	8.9
19	10.8	9.3	9.9	13.9	9.9	11.6	13.3	9.9	11.5	11.0	8.4	9.4
20	10.2	8.8	9.4	13.9	9.8	11.6	12.2	9.5	10.7	10.7	8.4	9.4
21	10.6	8.6	9.4	14.1	10.1	11.9	12.1	9.5	10.7	10.5	8.2	9.2
22	10.6	8.4	9.2	14.2	10.3	12.0	10.9	9.9	10.3	10.6	8.1	9.3
23	10.2	8.3	9.1	14.1	10.3	12.0	12.6	9.6	10.9	10.6	8.3	9.3
24	12.1	8.3	9.9	13.6	10.1	11.6	12.5	9.3	10.8	10.5	8.2	9.3
25	12.5	8.4	10.2	13.4	9.9	11.5	12.6	9.4	10.8	10.5	8.3	9.3
26	12.9	8.8	10.6	13.7	9.8	11.5	12.3	9.5	10.8	10.9	8.7	9.7
27	13.0	9.0	10.7	13.9	10.0	11.7	12.7	9.6	11.0	11.0	8.7	9.7
28	13.1	9.1	10.8	14.1	10.2	11.8	12.3	9.2	10.6	10.7	8.7	9.6
29	13.2	9.4	11.0	13.9	10.1	11.8	12.5	9.3	10.8	9.8	8.9	9.3
30	12.7	9.6	10.9	13.9	10.2	11.8	12.4	9.3	10.7	10.4	8.3	9.2
31	---	---	---	14.2	10.0	11.8	12.3	9.5	10.7	---	---	---
MONTH	13.2	8.1	10.2	14.2	8.5	11.3	13.5	9.2	11.0	12.8	7.8	9.7
YEAR	14.2	4.0	8.6									

14159110 MCKENZIE RIVER ABOVE SOUTH FORK, NEAR RAINBOW, OR--Continued

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	57	2	28
31	---	---	---	---	---	---	---	---	---	27	7	11
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10	4	5	<1	<1	<1	3	<1	<1	1	<1	<1
2	9	2	3	2	<1	<1	2	<1	<1	2	<1	<1
3	5	1	2	1	<1	<1	1	<1	<1	2	<1	<1
4	4	<1	1	<1	<1	<1	3	<1	<1	3	<1	<1
5	3	<1	<1	2	<1	<1	2	<1	<1	2	<1	<1
6	1	<1	<1	2	<1	<1	2	<1	<1	1	<1	<1
7	4	<1	<1	4	<1	<1	2	<1	<1	1	<1	<1
8	2	<1	<1	7	<1	1	1	<1	<1	1	<1	<1
9	1	<1	<1	3	<1	1	2	<1	<1	3	<1	<1
10	1	<1	<1	7	1	2	2	<1	<1	2	<1	<1
11	1	<1	<1	2	<1	<1	2	<1	<1	1	<1	<1
12	3	<1	<1	3	<1	<1	3	<1	<1	3	<1	<1
13	3	<1	<1	---	---	---	2	<1	<1	1	<1	<1
14	2	<1	<1	---	---	---	2	<1	<1	3	<1	<1
15	2	<1	<1	---	---	---	2	<1	<1	2	<1	<1
16	4	<1	<1	---	---	---	1	<1	<1	3	<1	<1
17	2	<1	<1	---	---	---	1	<1	<1	<1	<1	<1
18	3	<1	<1	---	---	---	1	<1	<1	2	<1	<1
19	3	<1	<1	---	<1	<1	3	<1	<1	2	<1	<1
20	2	<1	<1	1	<1	<1	2	<1	<1	2	<1	<1
21	5	<1	<1	2	<1	<1	2	<1	<1	1	<1	<1
22	2	<1	<1	---	2	---	2	<1	<1	1	<1	<1
23	3	<1	<1	---	---	---	1	<1	<1	2	<1	<1
24	2	<1	<1	---	---	---	1	<1	<1	3	<1	<1
25	2	<1	<1	---	---	---	2	<1	<1	2	<1	<1
26	<1	<1	<1	---	2	---	1	<1	<1	2	<1	<1
27	2	<1	<1	5	1	2	1	<1	<1	1	<1	<1
28	<1	<1	<1	3	<1	1	<1	<1	<1	2	<1	<1
29	---	---	---	2	<1	<1	2	<1	<1	2	<1	<1
30	---	---	---	2	<1	<1	<1	<1	<1	2	<1	<1
31	---	---	---	2	<1	<1	---	---	---	3	<1	<1
MAX	10	4	5	---	---	---	3	<1	<1	3	<1	<1
MIN	<1	<1	<1	---	---	---	<1	<1	<1	<1	<1	<1

14159110 MCKENZIE RIVER ABOVE SOUTH FORK, NEAR RAINBOW, OR--Continued

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	3	<1	<1	1	<1	<1	2	<1	<1	1	<1	<1
2	2	<1	<1	2	<1	<1	2	<1	<1	1	<1	<1
3	2	<1	<1	1	<1	<1	2	<1	<1	1	<1	<1
4	2	<1	<1	1	<1	<1	1	<1	<1	2	<1	<1
5	<1	<1	<1	2	<1	<1	2	<1	<1	2	<1	<1
6	1	<1	<1	2	<1	<1	2	<1	<1	1	<1	<1
7	3	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1
8	4	<1	<1	<1	<1	<1	2	<1	<1	2	<1	<1
9	3	<1	<1	2	<1	<1	2	<1	<1	2	<1	<1
10	1	<1	<1	2	<1	<1	2	<1	<1	<1	<1	<1
11	1	<1	<1	1	<1	<1	<1	<1	<1	1	<1	<1
12	3	<1	<1	<1	<1	<1	1	<1	<1	1	<1	<1
13	1	<1	<1	2	<1	<1	1	<1	<1	1	<1	<1
14	6	<1	<1	1	<1	<1	1	<1	<1	2	<1	<1
15	1	<1	<1	<1	<1	<1	2	<1	<1	1	<1	<1
16	1	<1	<1	1	<1	<1	1	<1	<1	2	<1	<1
17	20	<1	<1	2	<1	<1	<1	<1	<1	2	<1	<1
18	3	<1	<1	2	<1	<1	1	<1	<1	<1	<1	<1
19	1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1
20	3	<1	<1	1	<1	<1	<1	<1	<1	3	<1	<1
21	3	<1	<1	2	<1	<1	<1	<1	<1	1	<1	<1
22	1	<1	<1	2	<1	<1	<1	<1	<1	2	<1	<1
23	2	<1	<1	2	<1	<1	<1	<1	<1	1	<1	<1
24	2	<1	<1	2	<1	<1	2	<1	<1	1	<1	<1
25	1	<1	<1	2	<1	<1	<1	<1	<1	1	<1	<1
26	2	<1	<1	2	<1	<1	2	<1	<1	2	<1	<1
27	2	<1	<1	2	<1	<1	2	<1	<1	2	<1	<1
28	3	<1	<1	2	<1	<1	1	<1	<1	3	<1	<1
29	2	<1	<1	1	<1	<1	1	<1	<1	<1	<1	<1
30	<1	<1	<1	2	<1	<1	1	<1	<1	2	<1	<1
31	---	---	---	1	<1	<1	1	<1	<1	---	---	---
MAX	20	<1	<1	2	<1	<1	2	<1	<1	3	<1	<1
MIN	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

14159200 SOUTH FORK MCKENZIE RIVER ABOVE COUGAR LAKE, NEAR RAINBOW, OR

LOCATION.--Lat 44°02'50", long 122°13'00", in T.17 S., R.5 E., (unsurveyed), Lane County, Hydrologic Unit 17090004, in Willamette National Forest, on right bank 100 ft upstream from Tipsoo Creek, 8.0 mi south of Rainbow, 9.0 mi southeast of town of Blue River, and at mile 10.4.

DRAINAGE AREA.--160 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1957 to September 1987, October 2000 to current year. Prior to October 1971 published as South Fork McKenzie River above Cougar Lake Reservoir.

REVISED RECORDS.--WSP 1638: Drainage area. WSP 1935: 1958(M).

GAGE.--Water-stage recorder. Datum of gage is 1,709.52 ft above NGVD of 1929 (Corps of Engineers bench mark).

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

AVERAGE DISCHARGE.--33 years (water years 1958-87, 2001-03), 627 ft^3/s, 53.21 in/yr, 453,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,400 ft^3/s Dec. 22, 1964, gage height, 20.06 ft, from floodmark, from rating curve extended above 7,600 ft^3/s, on basis of slope-area measurement of peak flow; minimum discharge, 170 ft^3/s Oct. 5, 2001.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 30	1700	*5,590	*10.64	Mar. 26	0500	3,540	8.75
Mar. 22	1800	2,860	8.04				

Minimum discharge, 173 ft^3/s Sept. 25-30.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	234	190	209	909	2650	497	1300	595	495	227	189	180
2	212	191	207	916	1880	473	1150	600	460	226	189	179
3	216	191	205	1780	1480	475	1020	627	436	223	190	178
4	224	191	208	1710	1210	456	937	716	415	220	192	178
5	212	190	207	1710	1020	456	878	751	395	218	197	179
6	208	189	203	1210	889	591	873	718	378	216	201	179
7	204	193	200	958	782	1020	850	681	362	215	213	184
8	201	257	198	813	707	1380	926	653	348	213	198	220
9	200	348	198	718	642	1310	1090	625	335	211	194	249
10	198	385	226	637	589	1450	1160	604	323	209	193	230
11	198	373	309	575	554	1400	1340	615	312	208	191	198
12	197	319	312	582	522	1390	1210	638	305	209	190	191
13	195	300	377	632	510	1380	1150	645	299	208	190	186
14	195	276	405	706	505	1290	1040	693	294	208	189	183
15	194	256	404	655	496	1300	948	716	285	207	189	182
16	194	253	543	592	583	1210	891	681	277	206	189	197
17	194	331	462	553	603	1060	889	641	270	205	189	245
18	193	288	385	544	642	943	859	600	265	204	188	201
19	193	265	346	535	627	875	798	567	263	202	187	191
20	193	257	321	514	641	882	759	552	261	201	186	186
21	194	254	369	494	718	1170	750	558	262	200	185	184
22	193	246	354	504	894	2400	736	591	262	199	188	182
23	193	238	320	565	816	2200	729	640	255	199	188	180
24	192	243	300	609	723	1620	773	702	250	198	186	179
25	191	235	284	867	648	1940	731	718	245	198	184	178
26	192	226	415	1170	594	3190	698	673	240	197	183	177
27	192	221	938	1820	553	2240	661	625	235	195	183	176
28	193	217	1050	1340	525	1680	636	610	231	193	183	175
29	194	214	883	1150	---	1390	616	591	228	191	182	175
30	193	212	1170	4130	---	1280	614	593	228	190	181	176
31	192	---	1270	3740	---	1310	---	545	---	189	180	---
TOTAL	6174	7549	13278	33638	23003	40258	27012	19764	9214	6385	5867	5698
MEAN	199	252	428	1085	822	1299	900	638	307	206	189	190
MAX	234	385	1270	4130	2650	3190	1340	751	495	227	213	249
MIN	191	189	198	494	496	456	614	545	228	189	180	175
AC-FT	12250	14970	26340	66720	45630	79850	53580	39200	18280	12660	11640	11300
CFSM	1.24	1.57	2.68	6.78	5.13	8.12	5.63	3.98	1.92	1.29	1.18	1.19
IN.	1.44	1.76	3.09	7.82	5.35	9.36	6.28	4.60	2.14	1.48	1.36	1.32

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2003, BY WATER YEAR (WY)

MEAN	285	605	946	922	895	782	843	895	594	297	239	234
MAX	475	1305	2915	1827	1778	2065	1421	1383	1418	457	338	304
(WY)	1983	1985	1965	1971	1982	1972	2002	1972	1974	1975	1976	1978
MIN	188	252	231	234	232	410	445	426	270	206	189	179
(WY)	1981	2003	1977	1977	1977	1977	1968	1968	1987	2003	2003	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1958 - 2003	
ANNUAL TOTAL	209720		197840			
ANNUAL MEAN	575		542		627	
HIGHEST ANNUAL MEAN					917	1972
LOWEST ANNUAL MEAN					346	1977
HIGHEST DAILY MEAN	5090	Apr 14	4130	Jan 30	14000	Dec 23 1964
LOWEST DAILY MEAN	189	Nov 6	175	Sep 28	173	Sep 24 2001
ANNUAL SEVEN-DAY MINIMUM	191	Oct 31	177	Sep 24	174	Oct 1 2001
ANNUAL RUNOFF (AC-FT)	416000		392400		453900	
ANNUAL RUNOFF (CFSM)	3.59		3.39		3.92	
ANNUAL RUNOFF (INCHES)	48.76		46.00		53.21	
10 PERCENT EXCEEDS	1090		1170		1200	
50 PERCENT EXCEEDS	415		319		473	
90 PERCENT EXCEEDS	199		189		217	

14159200 SOUTH FORK MCKENZIE RIVER ABOVE COUGAR LAKE, NEAR RAINBOW, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: November 1957 to September 1987, December 2000 to current year.
TURBIDITY: November 2000 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Water temperature records good and turbidity records fair. Turbidity sensor calibrated to formazine standards.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 17.0°C July 8, 1968, July 19, 20, 1979; minimum, 0.0°C Dec. 7-11, 1972, Dec. 30, 1978, Jan. 1, 1979, Jan. 4, 1982, Dec. 24, 1983.
TURBIDITY: Maximum, 323 NTU Apr. 14, 2002; minimum, <1 NTU many days every year.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 15.4°C July 21; minimum, 2.9°C Oct. 31, Nov. 2.
TURBIDITY: Maximum, 182 NTU Apr. 5; minimum, <1 NTU many days during year.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.9	7.2	7.9	4.8	3.4	4.0	5.2	4.5	4.8	5.9	5.3	5.6
2	8.2	6.1	7.2	4.4	2.9	3.7	5.0	4.2	4.5	6.2	5.7	6.0
3	8.1	6.9	7.4	5.0	3.3	4.1	4.4	3.8	4.1	6.4	5.7	6.1
4	9.4	7.9	8.5	5.5	4.0	4.7	6.0	4.3	5.2	6.5	6.2	6.3
5	9.8	8.0	8.7	6.3	4.7	5.5	5.8	4.8	5.2	6.2	5.4	5.8
6	9.3	8.2	8.6	6.6	4.9	5.7	5.8	4.9	5.3	5.8	5.2	5.5
7	9.1	7.2	8.1	7.2	6.3	6.9	5.5	4.5	4.8	5.5	5.0	5.2
8	8.7	7.0	7.8	7.0	6.6	6.8	4.9	4.1	4.5	5.0	4.6	4.8
9	8.7	6.8	7.7	6.7	5.8	6.1	5.9	4.7	5.2	5.4	4.7	5.0
10	8.5	7.3	7.9	6.4	5.7	6.0	5.9	5.4	5.6	5.1	4.5	4.8
11	7.7	6.3	6.9	6.7	6.0	6.3	5.9	5.3	5.5	5.8	4.9	5.3
12	7.5	5.2	6.3	7.2	6.4	6.8	6.3	5.5	5.9	6.2	5.7	5.9
13	7.6	5.5	6.5	7.0	6.5	6.8	6.4	6.0	6.2	6.2	5.6	5.9
14	7.7	5.7	6.7	7.1	6.1	6.8	7.2	6.4	6.8	6.2	5.6	6.0
15	7.9	5.8	6.8	6.4	5.2	5.9	6.8	6.1	6.3	5.6	4.8	5.2
16	8.0	6.0	7.0	6.6	5.0	5.8	6.4	5.7	6.2	5.3	4.6	4.9
17	8.1	6.3	7.2	6.9	6.1	6.5	5.8	5.3	5.5	5.6	4.8	5.2
18	7.9	6.4	7.2	6.4	5.2	5.8	5.5	4.9	5.2	5.7	4.9	5.3
19	7.9	6.3	7.1	6.9	6.3	6.5	5.3	4.7	5.0	5.4	4.8	5.1
20	8.2	7.1	7.6	6.8	5.8	6.3	5.5	4.6	5.1	5.5	4.7	5.1
21	8.6	7.6	8.0	7.2	6.1	6.7	5.4	5.0	5.2	6.2	5.2	5.7
22	7.8	6.3	7.1	7.1	6.2	6.7	5.6	5.0	5.3	6.5	5.6	6.0
23	7.6	6.1	6.9	6.8	5.5	6.0	5.3	4.0	4.5	6.5	5.8	6.2
24	7.2	5.9	6.6	7.0	6.1	6.6	4.6	3.9	4.2	6.3	5.6	6.0
25	7.1	6.2	6.7	6.1	4.3	4.8	5.0	4.3	4.6	6.8	6.2	6.5
26	6.9	5.8	6.3	4.5	3.8	4.1	5.2	4.8	5.0	7.2	6.6	6.9
27	6.8	5.1	6.0	4.9	4.1	4.5	5.8	5.0	5.5	6.9	5.8	6.5
28	7.8	6.7	7.2	5.4	4.6	5.0	5.7	5.0	5.4	6.0	5.2	5.6
29	7.2	5.6	6.7	5.5	4.7	5.1	5.6	5.1	5.3	6.3	5.5	5.9
30	5.6	3.7	4.5	5.5	4.8	5.2	5.8	5.2	5.4	6.9	6.3	6.7
31	4.7	2.9	3.7	---	---	---	6.1	5.6	5.9	7.2	6.6	6.9
MONTH	9.8	2.9	7.1	7.2	2.9	5.7	7.2	3.8	5.3	7.2	4.5	5.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.6	5.6	5.8	5.7	4.3	4.9	6.0	4.7	5.5	8.4	5.5	6.9
2	6.0	5.6	5.8	5.4	3.9	4.7	5.2	4.3	4.6	8.3	5.9	7.1
3	5.7	5.2	5.5	5.7	4.4	5.0	4.9	4.0	4.4	7.7	6.6	7.0
4	5.2	4.6	5.0	5.7	4.6	5.1	5.6	4.2	4.8	6.7	5.7	6.1
5	4.6	4.0	4.3	5.9	5.1	5.4	5.3	4.1	4.6	7.1	5.3	6.1
6	4.6	3.9	4.3	5.4	4.6	5.0	5.3	3.7	4.4	7.6	5.5	6.5
7	4.5	3.8	4.1	5.4	4.7	5.0	6.6	4.5	5.4	7.0	6.0	6.4
8	4.5	3.6	4.0	6.5	5.4	5.8	7.4	4.6	5.8	7.2	5.4	6.2
9	4.5	3.6	4.1	6.6	5.7	6.1	7.1	5.5	6.1	6.4	5.8	6.0
10	4.5	3.8	4.1	6.8	5.8	6.2	7.1	5.5	6.2	7.3	5.9	6.5
11	4.6	3.5	4.0	6.7	5.8	6.2	7.1	5.6	6.2	8.0	6.0	6.9
12	5.0	3.7	4.4	7.0	5.7	6.3	7.0	5.8	6.3	9.0	6.4	7.4
13	5.8	4.9	5.4	6.8	5.9	6.3	6.3	5.3	5.9	10.2	6.1	7.9
14	6.1	5.3	5.7	6.9	5.8	6.3	7.1	5.2	6.0	10.0	7.0	8.3
15	6.0	4.9	5.5	6.5	5.4	6.1	6.8	5.6	6.1	8.1	6.5	7.4
16	5.8	5.2	5.5	6.3	5.1	5.6	7.1	5.5	6.2	7.3	5.8	6.4
17	5.7	4.9	5.3	6.0	5.2	5.5	6.9	5.7	6.2	7.0	5.4	6.0
18	5.8	4.8	5.3	6.2	4.6	5.4	6.6	5.0	5.7	8.3	4.9	6.3
19	6.0	5.0	5.4	6.1	4.6	5.4	7.7	4.5	5.9	9.3	4.9	6.9
20	5.8	5.1	5.5	6.6	5.6	6.0	7.6	5.6	6.5	10.1	6.2	8.0
21	6.3	5.5	5.8	6.0	5.3	5.7	7.0	6.1	6.5	10.7	6.9	8.6
22	5.9	5.1	5.5	6.1	5.2	5.8	7.4	6.0	6.6	11.0	7.6	9.1
23	5.2	4.4	4.8	5.8	5.0	5.3	7.0	5.4	6.2	11.8	7.8	9.6
24	4.7	3.8	4.2	6.1	4.5	5.3	6.7	5.4	5.9	10.2	8.6	9.5
25	4.6	3.4	3.9	5.9	5.4	5.6	6.0	4.6	5.3	9.6	8.6	9.0
26	5.2	3.4	4.2	5.7	4.9	5.3	6.7	4.8	5.6	10.8	8.1	9.2
27	5.6	4.6	5.1	6.0	4.9	5.3	7.1	4.8	5.9	11.8	8.2	9.7
28	5.0	4.2	4.6	6.5	4.7	5.5	7.2	5.8	6.4	12.1	9.1	10.3
29	---	---	---	7.2	5.1	6.1	6.9	5.3	6.1	12.5	9.1	10.6
30	---	---	---	7.6	5.6	6.6	8.3	5.8	6.9	10.7	9.8	10.2
31	---	---	---	6.8	6.0	6.4	---	---	---	11.8	9.1	10.2
MONTH	6.6	3.4	4.9	7.6	3.9	5.7	8.3	3.7	5.8	12.5	4.9	7.8

14159200 SOUTH FORK MCKENZIE RIVER ABOVE COUGAR LAKE, NEAR RAINBOW, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	12.4	8.5	10.3	12.2	9.7	11.0	13.9	10.4	12.1	12.7	9.4	11.0
2	12.8	9.1	10.7	13.5	8.9	11.0	12.7	10.7	11.7	12.9	9.6	11.2
3	13.1	9.0	10.8	13.7	8.8	11.1	13.5	10.6	11.9	13.1	9.8	11.4
4	13.5	9.3	11.2	13.8	8.9	11.2	13.8	10.3	12.0	13.2	10.2	11.6
5	13.8	9.1	11.3	14.1	9.1	11.5	12.6	10.2	11.5	12.8	9.9	11.3
6	14.2	9.7	11.7	14.2	9.5	11.8	13.6	10.0	11.6	12.9	9.9	11.3
7	14.4	10.2	12.1	14.2	9.4	11.8	13.6	10.3	11.7	11.3	9.9	10.4
8	14.3	10.3	12.1	14.0	10.1	11.9	13.8	10.1	11.8	10.6	9.4	10
9	13.6	9.6	11.4	14.6	9.6	11.9	13.9	10.2	11.8	10.8	9.3	10
10	13.3	9.1	11.0	15.0	10.1	12.4	13.6	9.9	11.7	11.0	9.6	10.3
11	13.2	8.8	10.9	15.0	10.4	12.5	13.4	10.3	11.7	11.2	9.5	10.3
12	12.6	9.1	10.8	14.5	10.1	12.3	13.4	9.6	11.3	11.5	9.5	10.3
13	11.0	9.2	10.0	14.4	10.8	12.3	13.6	9.4	11.4	11.0	8.2	9.5
14	13.0	9.1	10.7	14.2	9.7	11.9	13.4	9.6	11.5	11.2	8.1	9.6
15	13.4	8.9	11.0	14.4	10.0	12.1	13.9	10.3	12.0	11.4	9.1	10.1
16	14.0	9.2	11.4	14.6	10.8	12.6	13.2	9.5	11.3	9.8	8.6	9.0
17	14.5	9.8	12.0	14.7	9.9	12.2	13.6	9.5	11.4	10.4	8.5	9.2
18	13.1	10.3	11.6	14.9	10.3	12.5	14.0	10.0	11.9	10.4	7.8	9.0
19	11.6	9.9	10.7	15.0	10.4	12.6	13.8	10.1	11.9	11.1	8.5	9.7
20	10.8	9.2	9.9	15.0	10.2	12.5	13.1	9.5	11.3	10.6	8.7	9.6
21	10.9	8.9	9.8	15.4	10.6	12.9	13.4	9.6	11.4	10.7	8.2	9.3
22	11.2	8.5	9.7	15.1	11.1	13.0	11.9	10.3	11.0	10.8	8.2	9.5
23	10.5	8.6	9.5	15.3	11.0	13.0	13.2	9.9	11.4	10.8	8.5	9.6
24	13.3	8.1	10.6	14.6	10.6	12.5	13.2	9.5	11.3	10.7	8.3	9.5
25	13.8	8.9	11.2	14.3	10.3	12.2	13.4	9.6	11.4	10.7	8.3	9.4
26	14.3	9.3	11.6	14.7	10.1	12.3	13.0	9.7	11.3	11.0	8.7	9.8
27	14.6	9.8	12.0	14.9	10.3	12.5	13.2	10.0	11.5	11.4	9.1	10.2
28	15.0	9.8	12.2	15.1	10.6	12.8	12.8	9.4	11.1	11.3	9.2	10.2
29	14.7	10.4	12.4	15.2	10.5	12.7	13.0	9.6	11.2	10.5	9.3	9.9
30	14.4	10.6	12.4	15.1	10.6	12.8	13.0	9.6	11.2	10.5	8.7	9.6
31	---	---	---	14.9	10.4	12.6	12.6	9.8	11.2	---	---	---
MONTH	15.0	8.1	11.1	15.4	8.8	12.2	14.0	9.4	11.5	13.2	7.8	10.1
YEAR	15.4	2.9	7.8									

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	<1	<1	<1	<1	<1	<1	<1	<1	<1	4	<1	<1
2	<1	<1	<1	<1	<1	<1	2	<1	<1	5	<1	<1
3	2	<1	<1	<1	<1	<1	<1	<1	<1	20	2	5
4	<1	<1	<1	1	<1	<1	<1	<1	<1	10	1	3
5	<1	<1	<1	<1	<1	<1	1	<1	<1	6	1	2
6	3	<1	<1	<1	<1	<1	<1	<1	<1	4	<1	<1
7	<1	<1	<1	<1	<1	<1	2	<1	<1	2	<1	<1
8	<1	<1	<1	3	<1	<1	<1	<1	<1	2	<1	<1
9	<1	<1	<1	4	<1	<1	<1	<1	<1	2	<1	<1
10	<1	<1	<1	3	<1	<1	1	<1	<1	3	<1	<1
11	<1	<1	<1	1	<1	<1	2	<1	<1	1	<1	<1
12	<1	<1	<1	<1	<1	<1	2	<1	<1	2	<1	<1
13	<1	<1	<1	1	<1	<1	1	<1	<1	1	<1	<1
14	<1	<1	<1	<1	<1	<1	1	<1	<1	4	<1	<1
15	1	<1	<1	<1	<1	<1	1	<1	<1	1	<1	<1
16	2	<1	<1	<1	<1	<1	5	<1	1	<1	<1	<1
17	<1	<1	<1	<1	<1	<1	4	<1	<1	3	<1	<1
18	<1	<1	<1	1	<1	<1	3	<1	<1	3	<1	<1
19	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1
20	1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1
21	<1	<1	<1	<1	<1	<1	3	<1	<1	4	<1	<1
22	<1	<1	<1	<1	<1	<1	3	<1	<1	1	<1	<1
23	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1
24	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1
25	<1	<1	<1	<1	<1	<1	2	<1	<1	5	<1	<1
26	<1	<1	<1	1	<1	<1	8	<1	<1	8	<1	1
27	2	<1	<1	2	<1	<1	16	<1	4	14	1	4
28	<1	<1	<1	<1	<1	<1	8	<1	2	6	<1	<1
29	1	<1	<1	<1	<1	<1	2	<1	<1	7	<1	<1
30	<1	<1	<1	1	<1	<1	10	<1	2	73	2	43
31	<1	<1	<1	---	---	---	5	<1	2	37	7	13
MAX	3	<1	<1	4	<1	<1	16	<1	4	73	7	43
MIN	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

14159200 SOUTH FORK MCKENZIE RIVER ABOVE COUGAR LAKE, NEAR RAINBOW, OR--Continued

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	16	3	5	<1	<1	<1	4	<1	<1	2	<1	<1
2	5	1	2	2	<1	<1	2	<1	<1	1	<1	<1
3	5	<1	1	2	<1	<1	2	<1	<1	2	<1	<1
4	2	<1	<1	2	<1	<1	1	<1	<1	1	<1	<1
5	2	<1	<1	<1	<1	<1	182	<1	3	2	<1	<1
6	3	<1	<1	2	<1	<1	28	1	4	3	<1	<1
7	3	<1	<1	17	<1	2	31	<1	1	3	<1	<1
8	1	<1	<1	13	<1	2	14	<1	<1	4	<1	<1
9	4	<1	<1	4	<1	<1	28	<1	2	<1	<1	<1
10	2	<1	<1	3	<1	1	23	<1	2	1	<1	<1
11	1	<1	<1	2	<1	<1	10	<1	2	3	<1	<1
12	1	<1	<1	2	<1	<1	1	<1	<1	2	<1	<1
13	2	<1	<1	2	<1	<1	2	<1	<1	2	<1	<1
14	3	<1	<1	4	<1	<1	1	<1	<1	1	<1	<1
15	4	<1	<1	4	<1	<1	<1	<1	<1	3	<1	<1
16	3	<1	<1	4	<1	<1	1	<1	<1	2	<1	<1
17	<1	<1	<1	2	<1	<1	1	<1	<1	2	<1	<1
18	3	<1	<1	2	<1	<1	2	<1	<1	1	<1	<1
19	3	<1	<1	2	<1	<1	2	<1	<1	<1	<1	<1
20	3	<1	<1	1	<1	<1	<1	<1	<1	1	<1	<1
21	3	<1	<1	6	<1	<1	1	<1	<1	2	<1	<1
22	8	<1	<1	12	3	6	1	<1	<1	2	<1	<1
23	2	<1	<1	6	1	2	2	<1	<1	1	<1	<1
24	2	<1	<1	8	<1	<1	1	<1	<1	2	<1	<1
25	1	<1	<1	11	<1	1	<1	<1	<1	1	<1	<1
26	1	<1	<1	16	3	6	2	<1	<1	2	<1	<1
27	3	<1	<1	5	1	2	2	<1	<1	3	<1	<1
28	<1	<1	<1	8	<1	<1	<1	<1	<1	<1	<1	<1
29	---	---	---	3	<1	<1	1	<1	<1	1	<1	<1
30	---	---	---	2	<1	<1	1	<1	<1	1	<1	<1
31	---	---	---	5	<1	<1	---	---	---	3	<1	<1
MAX	16	3	5	17	3	6	182	1	4	4	<1	<1
MIN	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2	2	<1	<1	1	<1	<1	1	<1	<1	<1	<1	<1
3	1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1
4	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
5	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
6	2	<1	<1	1	<1	<1	---	<1	<1	<1	<1	<1
7	2	<1	<1	<1	<1	<1	2	<1	<1	3	<1	<1
8	<1	<1	<1	<1	<1	<1	2	<1	<1	3	<1	<1
9	2	<1	<1	<1	<1	<1	2	<1	<1	1	<1	<1
10	1	<1	<1	1	<1	<1	1	<1	<1	<1	<1	<1
11	<1	<1	<1	1	<1	<1	2	<1	<1	<1	<1	<1
12	<1	<1	<1	1	<1	<1	1	<1	<1	<1	<1	<1
13	1	<1	<1	2	<1	<1	2	<1	<1	<1	<1	<1
14	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1
15	2	<1	<1	1	<1	<1	1	<1	<1	<1	<1	<1
16	<1	<1	<1	2	<1	<1	1	<1	<1	<1	<1	<1
17	1	<1	<1	1	<1	<1	1	<1	<1	<1	<1	<1
18	1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1
19	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
20	1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1
21	1	<1	<1	2	<1	<1	<1	<1	<1	1	<1	<1
22	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1
23	1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1
24	1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1
25	1	<1	<1	2	<1	<1	1	<1	<1	<1	<1	<1
26	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
27	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1
28	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
29	<1	<1	<1	1	<1	<1	1	<1	<1	<1	<1	<1
30	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1
31	---	---	---	<1	<1	<1	<1	<1	<1	---	---	---
MAX	2	<1	<1	2	<1	<1	---	<1	<1	3	<1	<1
MIN	<1	<1	<1	<1	<1	<1	---	<1	<1	<1	<1	<1

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 mi^2.

PERIOD OF RECORD.--October 1963 to September 2003 (discontinued). Prior to October 1971, published as Cougar Reservoir near Rainbow.

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

REMARKS.--The 2400 hour elevations were furnished by the Corps of Engineers. Lake is formed by earthfill dam with concrete spillway completed in 1963 by the Corps of Engineers; storage began September 1963. Total capacity is 200,000 acre-ft at elevation 1,699 ft, maximum pool, and usable capacity is 156,500 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, 215,900 acre-ft Apr. 28, 1990, elevation, 1,696.51 ft; minimum contents, 5,850 acre-ft Nov. 15, 2002, elevation, 1,398.42 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 23,400 acre-ft Mar. 27, elevation, 1,469.70 ft; minimum contents, 5,850 acre-ft Nov. 15, elevation, 1,398.42 ft.

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

1,300	0.0	1,600	97,800
1,400	6,060	1,650	144,100
1,500	35,700	1,699	200,000

Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1399.21	1399.42	1399.60	1401.20	1465.88	1450.83	1454.50	1450.35	1450.77	1450.15	1450.91	1450.65
2	1399.41	1399.26	1399.60	1402.29	1464.85	1450.94	1452.40	1450.70	1450.25	1450.20	1450.91	1450.60
3	1399.68	1399.32	1399.60	1407.58	1460.45	1451.20	1450.20	1451.25	1450.60	1450.15	1450.77	1450.55
4	1399.60	1399.30	1399.78	1410.62	1455.30	1451.50	1450.42	1451.83	1451.20	1450.28	1450.60	1450.80
5	1399.53	1399.30	1400.05	1412.24	1450.75	1451.50	1450.14	1451.58	1451.26	1450.45	1450.50	1450.55
6	1399.60	1399.35	1400.05	1406.90	1450.66	1450.90	1450.52	1450.48	1451.01	1450.53	1450.50	1450.54
7	1399.60	1399.40	1400.11	1402.10	1450.57	1452.90	1450.60	1450.30	1451.07	1450.55	1450.50	1450.58
8	1399.80	1400.07	1400.11	1400.60	1450.01	1452.40	1450.80	1450.40	1451.07	1450.70	1450.76	1450.70
9	1399.80	1400.38	1400.10	1400.60	1450.55	1450.84	1452.50	1450.29	1451.05	1450.84	1450.70	1451.20
10	1399.80	1400.75	1400.30	1400.60	1450.50	1451.20	1453.07	1450.79	1450.80	1450.80	1450.69	1451.60
11	1399.71	1400.38	1401.30	1400.00	1450.30	1451.00	1453.00	1451.14	1450.65	1451.18	1450.65	1451.50
12	1399.71	1400.03	1400.93	1400.11	1450.40	1450.10	1451.19	1450.90	1450.42	1451.18	1450.64	1451.32
13	1399.60	1400.03	1400.78	1400.25	1450.65	1450.00	1451.03	1450.70	1450.50	1451.34	1450.63	1451.13
14	1399.52	1399.00	1400.75	1401.90	1450.84	1449.84	1450.80	1450.70	1450.60	1451.30	1450.63	1450.95
15	1399.40	1398.42	1400.84	1402.20	1450.74	1450.20	1450.00	1450.90	1450.53	1451.40	1450.55	1450.60
16	1399.30	1399.32	1402.30	1401.00	1451.47	1449.90	1450.15	1450.74	1450.40	1451.45	1450.54	1450.45
17	1399.30	1399.69	1401.60	1400.10	1451.47	1450.00	1450.90	1450.86	1450.20	1451.60	1450.50	1450.67
18	1399.30	1399.70	1400.45	1400.22	1451.40	1450.00	1450.45	1450.89	1450.20	1451.65	1450.40	1450.60
19	1399.30	1399.85	1400.45	1400.18	1450.90	1450.30	1451.50	1450.50	1450.20	1451.65	1450.35	1450.48
20	1399.30	1399.85	1400.45	1401.03	1450.40	1450.60	1450.62	1450.50	1450.29	1451.65	1450.20	1450.48
21	1399.30	1400.10	1400.45	1400.80	1451.50	1451.58	1450.30	1450.50	1450.46	1451.71	1450.25	1450.57
22	1399.30	1400.20	1400.23	1401.16	1452.84	1456.52	1450.35	1451.20	1450.58	1451.60	1450.30	1450.69
23	1399.51	1400.25	1400.30	1401.40	1453.08	1458.75	1450.50	1452.61	1450.60	1451.50	1450.30	1450.78
24	1399.36	1400.51	1400.56	1401.70	1452.36	1456.40	1450.60	1453.68	1450.70	1451.50	1450.43	1450.75
25	1399.36	1400.40	1400.35	1403.60	1450.60	1454.00	1450.57	1453.18	1450.65	1451.50	1450.37	1450.75
26	1399.49	1400.40	1401.13	1406.00	1450.98	1468.60	1450.92	1452.36	1450.65	1451.46	1450.45	1450.96
27	1399.49	1400.35	1403.45	1411.60	1451.10	1469.70	1451.00	1451.50	1450.65	1451.37	1450.51	1451.00
28	1399.49	1400.35	1401.84	1405.90	1451.00	1466.83	1450.80	1450.60	1450.65	1451.25	1450.55	1451.05
29	1399.49	1399.60	1400.41	1402.00	---	1461.60	1450.30	1450.10	1450.66	1451.15	1450.55	1451.05
30	1399.70	1399.60	1405.40	1444.00	---	1456.53	1450.30	1450.10	1450.20	1451.20	1450.55	1450.98
31	1399.70	---	1409.40	1460.66	---	1455.30	---	1450.77	---	1451.00	1450.55	---
MAX	1399.80	1400.75	1409.40	1460.66	1465.88	1469.70	1454.50	1453.68	1451.26	1451.71	1450.91	1451.60
MIN	1399.21	1398.42	1399.60	1400.00	1450.01	1449.84	1450.00	1450.10	1450.20	1450.15	1450.20	1450.45
(†)	6020	6010	7520	20300	17300	18600	17100	17300	17100	17300	17200	17300
(‡)	+20	-10	+1510	+12780	-3000	+1300	-1500	+200	-200	+200	-100	+100

CAL YR 2002 MAX 1565.79 MIN 1398.42 AC-FT‡ +28800
WTR YR 2003 MAX 1469.70 MIN 1398.42 AC-FT‡ +11300

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

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 mi^2.

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 NGVD 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. Records good except for the period Oct. 1-21, which are poor. Discharge for periods Nov. 22-25, Apr. 8, 9, 26, 27, Aug. 21-25, 27, 28, computed from data obtained through U.S. Army Corps of Engineers Columbia River Operational Hydromet System (CROHMS) database. Flow regulated since 1963 by Cougar Lake (station 14159400), usable capacity, 164,800 acre-ft. No diversion upstream from station.

AVERAGE DISCHARGE.--56 years (water years 1948-2003), 848 ft^3/s, 55.36 in/yr, 614,400 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,600 ft^3/s Dec. 11, 1956, gage height, 8.66 ft, from rating curve extended above 8,100 ft^3/s; maximum gage height, 8.90 ft Dec. 22, 1955 (backwater from debris); minimum discharge, 17 ft^3/s Nov. 18, 1965; minimum daily, 85 ft^3/s Apr. 26-28, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 24,500 ft^3/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, 2,700 ft^3/s Mar. 27, gage height, 3.62 ft; minimum discharge, 159 ft^3/s Aug. 28.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	312	209	215	1920	2660	645	1840	786	596	239	221	187
2	211	206	215	1190	2670	567	1830	757	553	239	223	189
3	223	192	217	2140	2620	511	1450	761	399	239	218	187
4	261	193	220	2230	2420	525	1190	891	430	220	221	190
5	246	197	221	2260	1870	579	1170	1070	450	213	219	189
6	217	197	218	2080	1100	938	1100	1120	452	215	214	188
7	217	195	224	1770	1000	1300	1100	948	398	214	218	190
8	228	203	212	1110	929	2030	1070	875	375	219	209	191
9	233	278	218	978	732	2020	1220	847	375	220	212	219
10	231	503	227	824	736	1890	1450	727	375	204	213	232
11	248	791	294	802	699	1990	1760	764	375	210	208	229
12	253	514	485	788	569	2010	1820	889	355	214	212	228
13	249	315	527	847	576	1820	1550	893	320	212	202	229
14	282	307	569	847	603	1690	1470	891	320	209	203	231
15	240	275	585	895	619	1620	1290	941	320	208	206	231
16	225	236	687	958	664	1590	1140	923	320	208	210	232
17	217	434	791	778	824	1370	1140	816	320	209	208	238
18	229	369	585	717	873	1150	1230	777	297	211	205	243
19	219	302	488	706	926	1060	1040	782	271	211	201	223
20	223	290	395	632	926	1060	1070	764	264	210	204	205
21	193	282	535	583	929	1440	1060	649	264	212	197	196
22	200	282	520	628	934	2490	971	648	264	214	186	198
23	208	262	398	723	1060	2620	958	664	265	217	183	196
24	208	247	364	766	1260	2610	1030	750	263	216	186	194
25	189	254	382	1040	910	2590	998	978	264	217	186	193
26	186	255	472	1460	690	2660	890	978	264	217	186	190
27	186	248	1110	2060	696	2700	897	968	264	216	185	189
28	186	254	1620	2280	698	2690	908	883	264	216	185	189
29	186	274	1390	1710	---	2650	903	799	264	217	186	189
30	193	223	1250	1230	---	2470	856	720	264	215	186	189
31	215	---	1760	2550	---	1840	---	621	---	218	187	---
TOTAL	6914	8787	17394	39502	31193	53125	36401	25880	10205	6699	6280	6174
MEAN	223	293	561	1274	1114	1714	1213	835	340	216	203	206
MAX	312	791	1760	2550	2670	2700	1840	1120	596	239	223	243
MIN	186	192	212	583	569	511	856	621	263	204	183	187
AC-FT	13710	17430	34500	78350	61870	105400	72200	51330	20240	13290	12460	12250
MEAN†	223	293	586	1482	1060	1735	1188	838	337	219	201	208
CFSM†	1.07	1.41	2.82	7.12	5.10	8.34	5.71	4.03	1.62	1.06	1.00	1.00
IN.†	1.24	1.57	3.25	8.22	5.31	9.62	6.38	4.65	1.81	1.22	1.11	1.11
AC-FT†	13730	17420	36010	91130	58870	106700	70700	51530	20040	13490	12360	12350

CAL YR 2002 TOTAL 291233 MEAN 798 MAX 4590 MIN 186 AC-FT 577700 MEAN† 838 CFSM† 4.03 IN.† 54.69 AC-FT† 606500
WTR YR 2003 TOTAL 248554 MEAN 681 MAX 2700 MIN 183 AC-FT 493000 MEAN† 697 CFSM† 3.35 IN.† 45.47 AC-FT† 504300

† Adjusted for change in contents, in Cougar Lake.

14159500 SOUTH FORK MCKENZIE RIVER NEAR RAINBOW, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: July 1955 to November 1999, December 2000 to current year.
DISSOLVED OXYGEN: December 2000 to current year.
TURBIDITY: December 2000 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--
WATER TEMPERATURE: Records excellent.
DISSOLVED OXYGEN: Records fair.
TURBIDITY: Records fair. The probe was checked using a formazie standard. Water-quality data collected at this site may not always provide a representative value of the total stream due to inadequate mixing of the flow between the dam (0.6 mi upstream) and the gage.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 20.0°C July 28, 1958; minimum, 0.5°C Jan. 20-23, 1962.
DISSOLVED OXYGEN:Maximum, 14.5 mg/L Feb. 23, 2002, due to Cougar Lake tunnel tap; minimum, 7.4 mg/L Sept. 15, 2001.
TURBIDITY: Maximum, 1,410 NTU Feb. 23, 2002, due to Cougar Lake tunnel tap; minimum, <1 many days each year.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum recorded, 18.3°C Aug. 18, but may have been higher during periods of missing record Aug. 22-24, 27; minimum, 4.7°C Dec. 26.
DISSOLVED OXYGEN: Maximum, 12.8 mg/L Mar. 27-29; minimum, 8.0 mg/L Aug. 9, 13, 14, but may have been lower during period of missing record.
TURBIDITY: Maximum, 1,020 NTU Jan. 30, due to collapse of Rush Creek diversion pipe into Cougar Lake; minimum, <1 on many days.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.1	11.1	11.5	7.7	6.6	7.1	6.0	5.6	5.8	6.0	5.6	5.8
2	12.2	10.8	11.2	7.3	6.3	6.7	6.0	5.6	5.8	6.0	5.7	5.8
3	11.2	10.8	10.9	7.0	6.1	6.5	5.8	5.4	5.6	6.2	5.8	6.0
4	11.6	10.8	11.0	6.9	6.1	6.4	5.6	5.2	5.4	6.5	6.1	6.3
5	11.4	10.5	11.0	6.9	6.3	6.5	5.7	5.2	5.4	6.6	6.3	6.4
6	12.1	11.0	11.3	6.8	6.3	6.5	5.7	5.3	5.5	6.4	5.8	6.1
7	12.1	10.8	11.2	7.1	6.5	6.8	5.7	5.4	5.5	6.1	5.7	5.9
8	11.9	10.5	11.0	7.2	6.8	7.0	5.8	5.4	5.6	5.9	5.2	5.6
9	11.8	10.4	10.8	7.3	6.9	7.0	5.5	5.2	5.4	5.6	5.0	5.3
10	11.2	10.5	10.7	7.1	6.8	7.0	5.7	5.2	5.4	5.4	5.0	5.2
11	11.5	10.2	10.6	7.1	6.9	7.0	5.7	5.3	5.5	5.4	5.0	5.2
12	11.1	9.7	10.2	7.1	6.9	7.0	5.8	5.6	5.7	5.3	5.1	5.2
13	10.7	9.6	9.9	7.3	6.9	7.1	5.9	5.6	5.8	5.5	5.1	5.3
14	10.7	9.5	9.8	7.3	7.0	7.1	6.0	5.7	5.9	5.8	5.3	5.5
15	10.5	9.4	9.7	7.6	6.8	7.3	6.2	5.9	6.0	6.0	5.5	5.7
16	10.4	9.3	9.6	7.0	6.5	6.8	6.4	6.0	6.2	5.9	5.6	5.8
17	10.3	9.3	9.6	6.9	6.6	6.7	6.5	6.2	6.4	5.8	5.5	5.6
18	10.0	9.3	9.6	7.0	6.6	6.9	6.3	5.8	6.1	5.8	5.4	5.6
19	10.3	9.3	9.6	7.0	6.5	6.7	6.1	5.6	5.9	5.7	5.4	5.6
20	9.7	9.3	9.5	7.1	6.7	6.9	5.9	5.4	5.7	5.8	5.4	5.6
21	10.1	9.4	9.6	7.1	6.7	6.9	5.9	5.3	5.6	5.7	5.4	5.5
22	10.3	9.3	9.6	7.2	6.8	---	5.8	5.5	5.7	5.9	5.5	5.7
23	10.1	9.0	9.4	---	---	---	5.8	5.4	5.6	6.0	5.6	5.8
24	9.7	9.0	9.2	---	---	---	5.7	5.0	5.4	6.0	5.8	5.9
25	9.7	8.9	9.2	7.3	---	---	5.3	4.9	5.1	6.4	5.9	6.2
26	9.4	8.6	9.0	6.8	5.7	6.4	5.1	4.7	4.9	6.8	6.3	6.5
27	9.0	8.4	8.7	6.1	5.6	5.8	5.4	4.9	5.2	7.2	6.5	7.0
28	8.8	8.4	8.6	6.1	5.5	5.8	5.5	5.2	5.4	7.3	6.2	6.9
29	9.1	8.3	8.6	6.1	5.7	5.9	5.5	5.3	5.4	6.7	6.4	6.5
30	9.0	7.6	8.2	6.1	5.7	5.9	5.6	5.4	5.5	7.6	6.4	7.0
31	8.1	6.8	7.4	---	---	---	5.7	5.5	5.6	7.4	7.1	7.3
MONTH	12.2	6.8	9.9	---	---	---	6.5	4.7	5.6	7.6	5.0	5.9

14159500 SOUTH FORK MCKENZIE RIVER NEAR RAINBOW, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.4	7.2	7.3	5.7	5.2	5.4	6.9	6.5	6.8	7.6	7.0	7.2
2	7.3	6.7	7.0	5.6	5.2	5.4	7.0	6.3	6.7	7.7	7.0	7.2
3	7.0	6.7	6.8	5.7	5.3	5.5	6.5	6.0	6.3	7.4	7.1	7.3
4	6.9	6.4	6.6	5.6	5.3	5.5	6.2	5.9	6.0	7.6	7.2	7.3
5	6.6	5.7	6.2	5.8	5.4	5.6	6.2	5.9	6.0	7.8	7.3	7.5
6	5.8	5.5	5.6	6.0	5.6	5.8	6.2	5.7	5.9	7.8	7.4	7.5
7	5.7	5.3	5.5	6.0	5.7	5.9	6.1	5.8	5.9	7.8	7.5	7.6
8	5.5	5.0	5.3	6.0	5.6	5.8	6.3	---	---	7.9	7.5	7.7
9	5.3	4.9	5.1	6.0	5.6	5.8	6.3	---	---	7.8	7.6	7.7
10	5.2	4.9	5.1	6.0	5.7	5.9	6.5	6.1	6.3	7.9	7.6	7.8
11	5.5	4.8	5.1	---	5.8	---	6.9	6.4	6.7	8.0	7.6	7.8
12	5.3	4.8	5.0	6.5	6.1	6.3	7.1	6.8	7.0	8.2	7.6	7.8
13	5.1	4.9	5.0	---	6.2	---	7.3	7.0	7.1	8.3	7.7	7.9
14	5.4	5.0	5.2	6.8	6.4	6.6	7.3	6.8	7.0	8.3	7.8	8.0
15	5.4	5.1	5.2	---	6.6	---	7.2	6.9	7.0	8.2	7.8	8.0
16	5.4	5.2	5.3	6.9	6.4	6.7	7.2	6.9	7.0	8.4	7.9	8.1
17	5.5	5.2	5.4	---	6.4	---	7.3	6.9	7.0	8.6	8.0	8.2
18	5.8	5.3	5.5	6.8	6.0	6.5	7.3	6.8	7.0	8.8	8.0	8.3
19	5.9	5.6	5.8	6.5	6.1	6.3	7.2	6.5	6.8	8.7	8.0	8.3
20	6.0	5.6	5.8	6.5	6.2	6.4	7.0	6.5	6.8	8.8	8.1	8.4
21	6.1	5.8	5.9	6.8	6.4	6.6	7.2	6.7	6.9	9.0	8.2	8.5
22	6.2	5.7	6.0	6.8	6.6	6.7	7.3	7.0	7.1	9.1	8.4	8.6
23	6.3	5.8	6.0	6.8	6.2	6.6	7.4	7.1	7.2	9.2	8.4	8.7
24	6.2	5.8	6.0	6.5	6.1	6.3	7.6	7.1	7.3	9.0	8.6	8.8
25	6.0	5.4	5.7	6.6	6.1	6.4	7.4	6.9	7.2	9.2	8.7	8.9
26	5.6	5.2	5.4	6.6	6.2	6.5	7.1	6.7	6.9	9.4	8.9	9.2
27	5.5	5.2	5.3	6.3	5.9	6.1	7.1	6.6	6.8	9.8	9.2	9.5
28	5.5	5.2	5.3	6.3	6.0	6.1	7.0	6.7	6.9	10.4	9.6	9.9
29	---	---	---	6.2	6.1	6.2	7.2	6.8	7.0	10.7	9.9	10.3
30	---	---	---	6.4	6.1	6.3	7.4	6.9	7.1	10.6	10.2	10.5
31	---	---	---	6.6	6.3	6.5	---	---	---	11.2	10.4	10.7
MONTH	7.4	4.8	5.7	---	5.2	---	7.6	---	---	11.2	7.0	8.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.4	10.6	10.9	14.7	13.9	14.2	17.1	15.6	16.0	18.0	16.3	16.8
2	11.7	10.8	11.1	15.3	13.9	14.3	16.5	15.7	16.0	18.0	16.3	16.8
3	12.0	10.9	11.3	15.5	13.9	14.4	16.7	15.8	16.1	18.0	16.3	16.8
4	12.0	11.1	11.4	15.6	13.9	14.4	17.6	15.8	16.3	18.1	16.4	16.8
5	12.2	11.2	11.5	15.6	13.9	14.4	17.1	15.9	16.2	18.1	16.4	16.8
6	12.3	11.3	11.6	15.7	14.0	14.5	17.4	16.0	16.4	18.0	16.4	16.8
7	12.5	11.5	11.8	15.7	14.0	14.5	17.6	16.0	16.5	16.9	16.3	16.5
8	12.7	11.7	12.0	15.7	14.1	14.6	17.7	16.1	16.6	17.2	16.1	16.5
9	12.8	11.7	12.1	15.9	14.1	14.6	17.7	16.2	16.6	16.4	16.0	16.1
10	12.8	11.9	12.2	16.0	14.2	14.7	17.8	16.2	16.7	16.4	15.8	16.0
11	12.9	11.9	12.3	16.0	14.3	14.7	17.8	16.4	16.7	16.5	15.8	16.0
12	13.0	12.0	12.3	15.9	14.3	14.7	17.9	16.4	16.8	16.8	15.6	15.9
13	12.7	12.2	12.4	15.8	14.4	14.8	18.0	16.3	16.8	16.8	15.4	15.8
14	13.2	12.3	12.6	15.9	14.3	14.8	18.0	16.4	16.8	16.7	15.3	15.6
15	13.6	12.3	12.8	16.1	14.4	14.9	18.1	16.5	16.9	16.4	15.3	15.6
16	13.8	12.5	12.9	16.0	14.5	14.9	18.1	16.4	16.9	16.0	15.2	15.4
17	13.9	12.7	13.1	16.2	14.5	15.0	18.2	16.5	16.9	16.1	14.8	15.3
18	13.9	12.9	13.2	16.2	14.6	15.0	18.3	16.6	17.0	16.0	14.6	15.0
19	13.7	13.1	13.3	16.3	14.5	15.1	18.2	16.5	16.9	15.8	14.6	14.9
20	14.0	13.2	13.5	16.4	14.6	15.2	18.1	16.4	16.9	16.0	14.6	15.0
21	14.2	13.3	13.6	16.5	14.8	15.3	18.2	16.5	---	16.1	14.5	14.9
22	14.5	13.4	13.7	16.3	14.9	15.3	---	---	---	16.0	14.4	14.9
23	14.3	13.5	13.8	16.6	14.8	15.4	---	---	---	15.9	14.4	14.8
24	15.0	13.6	14.0	16.5	14.8	15.3	---	---	---	15.8	14.3	14.8
25	15.2	13.7	14.1	16.5	14.9	15.4	18.2	---	---	15.7	14.2	14.7
26	15.3	13.8	14.2	16.7	14.9	15.5	17.9	16.5	16.8	15.8	14.3	14.7
27	15.3	13.9	14.3	16.9	15.1	15.6	---	---	---	15.7	14.3	14.7
28	15.3	13.8	14.2	16.9	15.2	15.7	18.2	---	---	15.7	14.3	14.7
29	15.3	13.9	14.3	17.1	15.2	15.8	18.2	16.4	16.9	14.8	14.4	14.6
30	15.2	14.0	14.3	17.2	15.4	15.9	18.1	16.4	16.8	15.7	14.3	14.7
31	---	---	---	17.2	15.5	16.0	17.9	16.4	16.8	---	---	---
MONTH	15.3	10.6	12.8	17.2	13.9	15.0	---	---	---	18.1	14.2	15.6

14159500 SOUTH FORK MCKENZIE RIVER NEAR RAINBOW, OR--Continued

Dissolved oxygen, water, unfiltered, milligrams per liter
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.4	10.1	10.2	11.8	11.4	11.6	12.1	11.7	11.9	12.3	12.0	12.2
2	10.3	10.1	10.2	12.0	11.6	11.7	12.1	11.7	11.8	12.0	11.8	11.9
3	10.4	10.1	10.2	12.1	11.7	11.8	12.0	11.6	11.8	12.2	11.9	12.1
4	10.4	10.1	10.2	12.1	11.7	11.8	12.3	11.7	11.9	12.1	12.0	12.0
5	10.4	10.1	10.2	12.2	11.7	11.8	12.2	11.7	11.9	12.1	12.1	12.1
6	10.3	10.0	10.1	12.1	11.4	11.7	12.2	11.6	11.8	12.2	12.1	12.1
7	10.2	10.0	10.1	11.6	11.2	11.3	12.0	11.6	11.8	12.2	12.1	12.2
8	10.3	10.0	10.1	11.6	11.1	11.3	12.2	11.6	11.8	12.2	11.9	12.0
9	10.4	10.1	10.2	11.5	11.1	11.3	12.2	11.6	11.8	12.1	11.9	12.0
10	10.4	10.0	10.2	11.7	11.4	11.6	11.9	11.6	11.7	12.1	11.8	12.0
11	10.5	10.1	10.3	12.0	11.6	11.8	11.8	11.6	11.7	12.0	11.9	12.0
12	10.6	10.3	10.4	11.8	11.6	11.7	11.7	11.5	11.6	12.1	11.9	12.0
13	10.7	10.4	10.5	11.8	11.6	11.7	11.7	11.4	11.5	12.2	12.0	12.0
14	10.8	10.5	10.6	11.9	11.5	11.6	11.4	11.2	11.3	12.0	11.9	12.0
15	10.8	10.5	10.6	11.7	11.3	11.5	11.4	11.1	11.3	12.0	11.9	12.0
16	10.8	10.5	10.6	11.5	11.3	11.4	11.6	11.0	11.3	12.0	12.0	12.0
17	10.8	10.5	10.6	11.9	11.5	11.7	11.6	11.5	11.6	12.0	11.9	11.9
18	10.9	10.5	10.6	11.8	11.6	11.7	11.9	11.6	11.7	12.0	11.9	11.9
19	10.9	10.5	10.6	11.9	11.6	11.7	11.8	11.6	11.7	11.9	11.8	11.9
20	10.9	10.5	10.6	11.7	11.5	11.6	11.8	11.6	11.7	11.9	11.7	11.8
21	10.8	10.4	10.5	11.8	11.4	11.5	12.0	11.7	11.8	11.8	11.7	11.7
22	10.8	10.4	10.5	11.8	---	---	12.1	11.9	11.9	11.7	11.6	11.6
23	10.8	10.5	10.6	---	---	---	11.9	11.7	11.8	11.8	11.7	11.8
24	11.3	10.6	10.9	---	---	---	12.0	11.7	11.9	11.8	11.7	11.7
25	11.5	10.9	11.1	11.7	---	---	12.2	11.9	12.0	11.8	11.6	11.7
26	11.5	10.9	11.1	11.9	11.5	11.7	12.1	11.9	12.0	11.8	11.7	11.7
27	11.6	11.1	11.3	12.1	11.8	11.9	12.3	11.9	12.1	11.7	11.6	11.7
28	11.7	11.0	11.3	12.1	11.8	11.9	12.2	12.0	12.0	11.9	11.7	11.8
29	11.4	11.0	11.1	12.2	11.8	11.9	12.1	11.9	12.0	11.9	11.8	11.8
30	11.5	11.0	11.2	12.1	11.7	11.8	11.9	11.8	11.9	11.8	10.7	11.3
31	11.8	11.3	11.5	---	---	---	12.2	11.9	12.0	11.7	11.2	11.6
MONTH	11.8	10.0	10.6	---	---	---	12.3	11.0	11.8	12.3	10.7	11.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11.7	11.6	11.7	12.2	12.1	12.1	12.3	12.1	12.2	11.9	11.8	11.9
2	12.0	11.7	11.9	12.2	12.1	12.2	12.3	12.1	12.2	11.8	11.7	11.8
3	12.0	12.0	12.0	12.2	12.0	12.1	12.4	12.2	12.3	11.8	11.7	11.7
4	12.1	12.0	12.0	12.2	12.0	12.1	12.4	12.2	12.3	12.0	11.7	11.9
5	12.1	12.0	12.0	12.1	11.9	12.0	12.4	12.3	12.4	12.0	11.9	12.0
6	12.2	12.0	12.1	12.2	11.9	12.1	12.4	12.3	12.4	11.9	11.8	11.9
7	12.2	12.0	12.1	12.2	12.1	12.1	12.5	12.3	12.4	11.8	11.7	11.8
8	12.1	12.1	12.1	12.5	12.2	12.4	12.4	---	---	11.8	11.7	11.7
9	12.2	12.1	12.1	12.5	12.3	12.4	12.4	---	---	11.8	11.7	11.8
10	12.2	12.0	12.1	12.5	12.3	12.4	12.3	12.2	12.3	11.8	11.7	11.7
11	12.1	12.0	12.0	12.4	12.3	12.4	12.4	12.2	12.3	11.8	11.7	11.7
12	12.1	11.9	12.0	12.3	12.0	12.2	12.3	12.0	12.2	11.8	11.7	11.8
13	12.0	11.9	12.0	12.0	11.9	12.0	12.1	12.0	12.1	11.8	11.7	11.7
14	12.1	11.9	12.0	11.9	11.8	11.9	12.2	12.1	12.2	11.8	11.7	11.7
15	12.0	11.8	11.9	11.8	11.7	11.8	12.2	12.1	12.1	11.8	11.6	11.8
16	12.2	11.8	12.0	12.0	11.8	11.9	12.1	12.0	12.1	11.8	11.7	11.8
17	12.2	12.0	12.2	12.0	11.9	12.0	12.1	12.0	12.0	11.8	11.6	11.7
18	12.2	12.0	12.1	12.1	11.9	12.0	12.2	12.0	12.2	11.7	11.6	11.7
19	12.1	12.0	12.0	12.0	11.9	12.0	12.2	12.0	12.1	11.7	11.6	11.7
20	12.1	12.0	12.0	12.1	11.9	12.0	12.2	12.0	12.1	11.7	11.5	11.6
21	12.1	12.0	12.0	12.2	11.9	12.1	12.1	11.9	12.0	11.6	11.5	11.6
22	12.1	11.9	12.0	12.3	12.2	12.2	12.0	11.9	11.9	11.6	11.5	11.6
23	12.0	11.9	11.9	12.6	12.3	12.4	11.9	11.8	11.8	11.6	11.4	11.5
24	12.1	11.9	12.0	12.6	12.5	12.6	11.9	11.8	11.9	11.5	11.4	11.4
25	12.1	11.9	12.0	12.6	12.4	12.5	11.9	11.8	11.9	11.6	11.5	11.6
26	12.1	11.9	12.0	12.6	12.4	12.5	12.0	11.9	12.0	11.6	11.5	11.5
27	12.2	12.0	12.1	12.8	12.6	12.8	12.0	11.9	12.0	11.5	11.3	11.4
28	12.2	12.1	12.2	12.8	12.7	12.8	12.0	11.9	11.9	11.3	11.1	11.2
29	---	---	---	12.8	12.7	12.7	12.0	11.9	11.9	11.1	10.9	11.0
30	---	---	---	12.7	12.4	12.6	12.0	11.9	12.0	11.0	10.9	10.9
31	---	---	---	12.4	12.2	12.3	---	---	---	11.0	10.8	10.9
MONTH	12.2	11.6	12.0	12.8	11.7	12.2	12.5	---	---	12.0	10.8	11.6

14159500 SOUTH FORK MCKENZIE RIVER NEAR RAINBOW, OR--Continued

Dissolved oxygen, water, unfiltered, milligrams per liter
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.0	10.8	10.9	10.2	9.7	9.9	9.2	8.4	8.7	9.2	8.5	8.7
2	11.0	10.8	10.9	10.2	9.7	9.9	9.0	8.3	8.6	9.2	8.5	8.7
3	10.9	10.7	10.8	10.2	9.7	9.9	9.2	8.4	8.7	9.3	8.5	8.8
4	10.9	10.7	10.8	10.2	9.6	9.9	9.1	8.3	8.6	9.2	8.5	8.7
5	10.8	10.6	10.7	10.3	9.6	9.8	9.1	8.3	8.6	9.2	8.4	8.7
6	10.8	10.6	10.7	10.3	9.5	9.8	9.0	8.2	8.5	9.2	8.3	8.7
7	10.7	10.5	10.6	10.3	9.5	9.8	8.9	8.2	8.5	9.1	8.5	8.7
8	10.7	10.5	10.6	10.4	9.5	9.8	8.9	8.2	8.4	9.3	8.5	8.8
9	10.7	10.4	10.6	10.4	9.4	9.8	8.9	8.0	8.4	9.1	8.5	8.8
10	10.7	10.4	10.5	10.5	9.4	9.8	8.9	8.1	8.4	9.4	8.7	9.0
11	10.6	10.4	10.5	10.5	9.4	9.8	9.0	8.1	8.5	9.4	8.9	9.1
12	10.6	10.3	10.4	10.5	9.3	9.7	9.0	8.1	8.4	9.4	8.9	9.0
13	10.6	10.3	10.4	10.5	9.3	9.8	9.0	8.0	8.4	9.3	8.9	9.0
14	10.6	10.3	10.4	10.6	9.2	9.7	9.1	8.0	8.5	9.4	8.9	9.0
15	10.5	10.3	10.4	10.5	9.2	9.6	9.2	8.2	8.6	9.4	8.8	9.0
16	10.4	10.2	10.3	10.5	9.2	9.6	9.3	8.3	8.6	9.3	8.8	9.0
17	10.4	10.1	10.2	10.5	9.1	9.6	9.2	8.3	8.6	9.5	8.9	9.2
18	10.3	10.0	10.2	10.4	9.1	9.5	9.1	8.2	8.5	9.6	9.1	9.2
19	10.3	10.0	10.1	10.4	9.1	9.5	9.2	8.3	8.6	9.6	9.0	9.2
20	10.3	9.9	10.1	10.3	9.0	9.4	9.3	8.3	8.6	9.6	9.0	9.2
21	10.2	9.9	10.0	10.1	9.0	9.3	9.3	---	---	9.5	9.0	9.1
22	10.2	9.9	10.0	10.1	8.9	9.3	---	---	---	9.7	8.9	9.1
23	10.2	9.8	10.0	10.0	8.8	9.2	---	---	---	9.5	8.9	9.1
24	10.1	9.9	10	9.8	8.7	9.1	---	---	---	9.6	8.9	9.1
25	10.2	9.9	10	9.7	8.7	9.0	---	---	---	9.7	9.0	9.2
26	10.1	9.8	10	9.6	8.7	9.0	---	---	---	9.6	9.0	9.2
27	10.1	9.8	9.9	9.5	8.6	8.9	---	---	---	9.5	9.0	9.1
28	10.0	9.7	9.9	9.4	8.5	8.8	9.2	---	---	9.6	9.0	9.2
29	10.0	9.7	9.8	9.3	8.5	8.7	9.2	8.4	8.7	9.4	9.0	9.1
30	10.1	9.7	9.9	9.2	8.4	8.7	9.2	8.4	8.7	9.6	9.0	9.2
31	---	---	---	9.2	8.4	8.7	9.3	8.4	8.7	---	---	---
MONTH	11.0	9.7	10.3	10.6	8.4	9.5	---	---	---	9.7	8.3	9.0

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	4	1	2	7	<1	1	3	2	2	72	52	56
2	3	<1	1	2	<1	<1	2	2	2	53	38	48
3	2	<1	1	3	<1	<1	2	1	2	113	36	83
4	3	1	1	5	<1	<1	2	1	2	83	59	65
5	2	1	1	2	<1	<1	2	1	2	105	59	92
6	2	1	1	1	<1	<1	3	1	2	76	46	60
7	4	<1	1	6	<1	2	2	1	2	50	36	45
8	5	<1	1	10	2	2	2	1	1	37	26	33
9	5	<1	1	18	2	7	2	<1	1	27	17	26
10	4	<1	1	23	9	14	4	<1	1	23	17	19
11	3	<1	1	21	9	17	4	1	2	18	13	14
12	3	<1	1	17	11	12	9	3	4	14	10	11
13	3	<1	1	17	11	13	6	3	4	12	7	8
14	2	<1	1	14	10	11	5	3	4	9	7	7
15	2	<1	1	13	8	10	8	3	4	8	6	7
16	3	<1	1	10	7	8	9	4	6	7	5	6
17	2	<1	1	44	8	35	14	6	11	6	4	5
18	4	<1	1	36	24	30	14	9	11	5	4	4
19	2	<1	1	24	14	17	12	9	10	5	4	4
20	7	1	2	15	11	12	10	8	9	4	3	4
21	7	1	1	12	9	10	9	7	8	3	3	3
22	2	<1	1	11	---	---	11	7	10	4	3	3
23	2	<1	1	---	---	---	10	7	8	4	2	3
24	3	<1	1	---	---	---	8	4	7	4	2	3
25	2	<1	<1	---	4	4	6	4	5	5	3	3
26	2	<1	<1	4	2	3	7	4	4	8	3	4
27	2	<1	<1	3	2	2	28	5	18	24	8	12
28	2	<1	<1	5	2	2	55	26	40	25	19	21
29	3	<1	<1	3	2	2	37	22	28	19	14	16
30	3	<1	<1	3	2	2	184	20	24	1020	14	44
31	2	<1	<1	---	---	---	195	71	138	442	247	319
MAX	7	1	2	---	---	---	195	71	138	1020	247	319
MIN	2	<1	<1	---	---	---	2	<1	1	3	2	3

14159500 SOUTH FORK MCKENZIE RIVER NEAR RAINBOW, OR--Continued

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	252	202	225	8	4	4	23	7	10	2	1	1
2	203	90	135	10	4	4	13	6	7	3	1	1
3	92	70	78	6	4	4	10	5	8	4	1	1
4	74	42	48	5	4	4	10	6	9	2	1	1
5	43	31	36	6	4	4	8	5	7	2	<1	1
6	40	36	37	7	5	5	14	5	8	2	<1	1
7	37	30	35	8	5	6	9	5	8	1	<1	<1
8	32	26	30	8	5	6	---	---	---	2	<1	<1
9	27	24	25	8	6	8	---	---	---	2	<1	<1
10	26	22	23	7	6	6	6	6	6	2	<1	1
11	27	20	23	9	7	8	16	5	6	2	<1	<1
12	22	18	20	10	8	9	6	4	6	1	<1	<1
13	20	16	18	11	9	9	6	5	6	<1	<1	<1
14	22	17	19	12	9	11	7	4	5	2	<1	<1
15	24	19	21	13	11	12	8	4	4	2	<1	<1
16	23	18	20	11	8	10	5	4	4	<1	<1	<1
17	29	20	22	11	5	8	4	4	4	<1	<1	<1
18	24	21	22	16	4	6	4	3	4	<1	<1	<1
19	22	18	20	6	4	5	5	3	3	<1	<1	<1
20	20	14	16	5	4	5	4	3	3	<1	<1	<1
21	14	11	12	7	5	5	3	2	3	1	<1	<1
22	14	12	13	10	5	5	3	2	3	1	<1	<1
23	13	10	12	22	9	19	3	2	2	1	<1	<1
24	11	6	9	19	8	15	4	2	2	1	<1	<1
25	6	4	6	11	10	10	8	2	2	<1	<1	<1
26	5	4	4	32	9	16	3	2	2	1	<1	<1
27	5	4	5	54	30	35	3	1	2	2	<1	<1
28	7	5	5	33	11	24	2	1	1	<1	<1	<1
29	---	---	---	23	9	16	2	1	1	2	<1	<1
30	---	---	---	15	7	14	2	1	1	2	<1	<1
31	---	---	---	12	8	11	---	---	---	<1	<1	<1
MAX	252	202	225	54	30	35	---	---	---	4	1	1
MIN	5	4	4	5	4	4	---	---	---	<1	<1	<1

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1	<1	<1	1	<1	<1	1	<1	<1	---	---	---
2	1	<1	<1	1	<1	<1	2	<1	<1	---	---	---
3	1	<1	<1	1	<1	<1	3	<1	<1	---	---	---
4	3	1	2	1	<1	<1	3	<1	<1	2	<1	<1
5	5	3	4	1	<1	<1	3	<1	<1	2	<1	<1
6	8	4	6	2	<1	<1	3	<1	<1	2	<1	<1
7	6	1	5	1	<1	<1	3	<1	1	3	<1	<1
8	5	<1	3	1	<1	<1	3	<1	1	2	<1	<1
9	1	<1	<1	1	<1	<1	---	<1	1	2	<1	<1
10	1	<1	<1	2	<1	<1	3	<1	<1	2	<1	<1
11	2	<1	1	2	<1	<1	2	<1	<1	2	<1	1
12	3	1	1	2	<1	<1	2	<1	<1	2	<1	1
13	3	2	2	4	<1	<1	2	<1	<1	1	<1	<1
14	3	<1	1	4	<1	<1	2	<1	1	2	<1	<1
15	4	1	1	3	<1	<1	---	<1	1	1	<1	<1
16	---	1	2	---	<1	<1	1	<1	1	23	<1	<1
17	---	---	---	---	---	---	2	<1	1	4	<1	1
18	---	---	---	3	<1	<1	2	<1	1	2	1	1
19	---	---	---	1	<1	<1	2	<1	1	2	1	1
20	---	<1	---	1	<1	<1	2	<1	1	4	<1	2
21	2	<1	<1	2	<1	<1	---	1	1	1	<1	<1
22	2	<1	1	1	<1	<1	---	---	---	2	<1	<1
23	1	<1	<1	2	<1	<1	---	---	---	2	<1	<1
24	2	<1	<1	3	<1	1	---	---	---	2	<1	1
25	2	<1	<1	---	1	2	---	---	---	2	<1	<1
26	1	<1	<1	3	1	2	---	---	---	2	<1	<1
27	1	<1	<1	4	<1	2	---	---	---	2	<1	1
28	2	<1	<1	2	<1	1	---	<1	1	2	<1	<1
29	<1	<1	<1	2	1	2	2	<1	<1	2	<1	<1
30	2	<1	<1	---	1	2	---	---	---	2	<1	<1
31	---	---	---	3	<1	<1	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

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 mi^2.

PERIOD OF RECORD.--September 1963 to September 2003 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,386.90 ft above NGVD of 1929 (Corps of Engineers bench mark).

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station. Continuous water-quality records for the period September 1963 to September 1987 have been collected at this location. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--40 years (water years 1964-2003), 251 ft^3/s, 74.60 in/yr, 182,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,400 ft^3/s Dec. 22, 1964, gage height, 15.32 ft, from floodmarks, from rating curve extended above 2,800 ft^3/s on basis of slope-area measurement of peak flow; minimum daily discharge, 6.0 ft^3/s Oct. 27-29, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 3	0330	2,020	6.75	Mar. 22	1330	2,320	7.08
Jan. 30	1230	*3,060	*7.79				

Minimum discharge, 9.2 ft^3/s Sept. 5, 6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	15	30	612	1190	180	379	212	86	26	13	10
2	16	15	29	765	811	168	322	209	80	26	13	10
3	17	15	28	1480	594	173	292	210	74	25	13	9.9
4	23	15	29	1210	446	168	278	252	70	25	13	9.9
5	18	15	29	1030	357	185	281	311	67	24	13	9.7
6	17	15	27	616	297	455	291	278	63	24	14	9.7
7	16	16	25	476	251	851	293	243	60	23	16	12
8	15	82	25	398	218	1340	386	220	57	23	14	21
9	15	200	24	343	194	1340	513	199	54	22	13	39
10	14	225	64	285	175	1480	525	191	52	21	13	33
11	14	247	202	247	159	1020	590	198	49	19	13	19
12	13	162	248	419	146	979	499	202	47	19	13	19
13	13	149	313	681	139	785	476	195	47	18	12	16
14	12	129	460	594	135	618	406	202	44	18	12	14
15	12	97	396	442	138	581	355	198	41	18	11	13
16	11	99	588	343	239	519	344	183	39	18	11	17
17	11	268	369	293	366	437	396	173	38	17	11	34
18	11	163	259	275	426	365	430	158	37	17	11	20
19	11	134	210	251	363	328	370	146	36	16	10	16
20	11	118	188	223	379	391	318	139	36	16	10	14
21	11	99	391	205	539	750	287	138	37	15	10	13
22	11	82	284	227	692	2000	263	143	36	15	11	13
23	11	70	211	296	508	1240	261	148	34	15	11	12
24	11	63	171	349	381	740	334	151	32	14	11	11
25	11	48	146	557	305	901	317	144	31	14	11	11
26	12	42	305	1020	257	1390	288	129	30	14	10	11
27	12	39	958	1200	224	869	269	116	29	14	10	10
28	12	36	758	662	201	602	247	111	28	14	10	9.8
29	13	34	579	555	---	461	230	104	27	13	10	9.9
30	13	32	653	2320	---	426	225	101	27	13	10	10
31	14	---	928	1730	---	416	---	94	---	13	9.9	---
TOTAL	424	2724	8927	20104	10130	22158	10465	5498	1388	569	362.9	456.9
MEAN	13.7	90.8	288	649	362	715	349	177	46.3	18.4	11.7	15.2
MAX	23	268	958	2320	1190	2000	590	311	86	26	16	39
MIN	11	15	24	205	135	168	225	94	27	13	9.9	9.7
AC-FT	841	5400	17710	39880	20090	43950	20760	10910	2750	1130	720	906
CFSM	0.30	1.98	6.29	14.2	7.90	15.6	7.62	3.87	1.01	0.40	0.26	0.33
IN.	0.34	2.21	7.25	16.33	8.23	18.00	8.50	4.47	1.13	0.46	0.29	0.37

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2003, BY WATER YEAR (WY)

MEAN	67.4	331	505	495	435	388	350	253	121	38.5	20.5	24.1
MAX	234	731	1471	1033	1066	995	612	521	320	90.9	51.9	82.2
(WY)	1998	1974	1965	1970	1996	1972	2002	1971	1974	1983	1968	1978
MIN	6.42	21.0	33.0	48.3	65.0	84.6	147	70.7	27.3	17.7	9.51	8.62
(WY)	1988	1994	1977	1977	1977	1992	1968	1992	1992	1992	1992	1987

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1964 - 2003	
ANNUAL TOTAL	82568		83206.8			
ANNUAL MEAN	226		228		251	
HIGHEST ANNUAL MEAN					404	1974
LOWEST ANNUAL MEAN					106	1977
HIGHEST DAILY MEAN	2490	Apr 14	2320	Jan 30	10000	Dec 22 1964
LOWEST DAILY MEAN	11	Sep 12	9.7	Sep 5	6.0	Oct 27 1987
ANNUAL SEVEN-DAY MINIMUM	11	Oct 16	9.9	Aug 31	6.1	Oct 23 1987
ANNUAL RUNOFF (AC-FT)	163800		165000		182200	
ANNUAL RUNOFF (CFSM)	4.94		4.98		5.49	
ANNUAL RUNOFF (INCHES)	67.06		67.58		74.60	
10 PERCENT EXCEEDS	572		594		578	
50 PERCENT EXCEEDS	149		99		140	
90 PERCENT EXCEEDS	13		11		15	

14161500 LOOKOUT CREEK NEAR BLUE RIVER, OR

LOCATION.--Lat 44°12'35", long 122°15'20", in T.15, 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 mi^2.

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 NGVD of 1929 (Corps of Engineers bench mark).

REMARKS.--Records good. No regulation or diversion upstream from station. Continuous water-quality records for the period August 1950 to September 1955 and September 1963 to September 1981 have been collected at this location. On Feb. 6, 7, 1996, a series of debris flows from contributing tributaries caused extreme scour and fill throughout the channel.

AVERAGE DISCHARGE.--46 years (water years 1950-55, 1964-2003), 123 ft^3/s, 69.27 in/yr, 89,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,000 ft^3/s Feb. 7, 1996, gage height, 10.03 ft, on basis of slope-area measurement of peak flow; minimum discharge, 4.8 ft^3/s Sept. 16, 17, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 30	1400	*1,420	*5.58	No other peak greater than base discharge.			

Minimum discharge, 8.0 ft^3/s Oct. 16-21, 23, 24.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	9.4	13	285	592	95	216	110	50	19	11	8.8
2	9.5	9.4	12	290	402	87	183	109	47	19	11	8.7
3	10	9.4	12	515	300	85	162	110	44	18	11	8.5
4	11	9.4	12	460	235	78	150	134	41	17	11	8.5
5	9.9	9.4	12	388	190	81	143	146	39	17	11	8.4
6	9.4	9.4	11	268	157	175	153	136	37	17	12	8.4
7	9.1	9.8	11	208	133	450	153	124	35	16	13	9.6
8	8.8	25	11	168	116	654	160	116	34	16	11	14
9	8.8	60	11	140	102	598	184	108	33	16	11	21
10	8.8	75	19	118	91	689	202	102	32	15	11	16
11	8.8	70	63	103	83	539	240	105	31	15	10	11
12	8.5	41	68	135	76	504	220	106	30	15	10	11
13	8.5	32	89	186	73	403	217	106	30	15	10	10
14	8.5	27	122	186	73	322	193	115	29	14	10	9.6
15	8.1	22	114	157	72	294	175	111	27	14	10	9.4
16	8.0	24	147	131	106	259	166	101	27	14	9.9	11
17	8.0	62	116	115	150	223	175	93	26	14	9.8	19
18	8.0	41	88	107	183	191	177	85	25	13	9.7	12
19	8.0	35	75	97	162	176	161	79	25	13	9.6	10
20	8.1	32	69	86	159	194	148	76	24	e13	9.5	10
21	8.3	28	146	79	224	331	143	76	25	e13	9.4	9.7
22	8.3	23	119	83	289	759	135	82	24	e13	9.5	9.5
23	8.0	20	85	106	239	594	133	87	23	e12	9.6	9.3
24	8.1	20	67	136	193	383	156	91	23	e12	9.4	9.2
25	8.3	17	56	209	160	421	142	86	22	12	9.2	9.0
26	8.4	16	107	418	137	670	136	76	21	12	9.1	9.0
27	8.8	15	264	529	119	461	130	70	20	12	9.1	8.9
28	9.1	14	280	320	106	333	123	68	20	12	9.1	8.7
29	9.3	13	236	274	---	262	117	63	19	11	9.0	8.9
30	9.4	13	369	1130	---	240	114	61	19	11	8.9	9.0
31	9.4	---	442	878	---	236	---	55	---	11	8.8	---
TOTAL	275.2	791.2	3246	8305	4922	10787	4907	2987	882	441	312.6	316.1
MEAN	8.88	26.4	105	268	176	348	164	96.4	29.4	14.2	10.1	10.5
MAX	12	75	442	1130	592	759	240	146	50	19	13	21
MIN	8.0	9.4	11	79	72	78	114	55	19	11	8.8	8.4
AC-FT	546	1570	6440	16470	9760	21400	9730	5920	1750	875	620	627
CFSM	0.37	1.09	4.34	11.1	7.29	14.4	6.79	4.00	1.22	0.59	0.42	0.44
IN.	0.42	1.22	5.01	12.82	7.60	16.65	7.57	4.61	1.36	0.68	0.48	0.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2003, BY WATER YEAR (WY)

MEAN	35.9	148	233	240	216	178	169	134	71.7	25.5	14.7	14.8
MAX	179	350	794	591	640	420	300	255	212	46.6	22.2	40.5
(WY)	1951	1997	1965	1953	1996	1972	1993	1950	1950	1983	1976	1978
MIN	5.46	9.36	19.9	25.1	27.0	48.2	69.8	39.2	17.3	12.2	8.26	6.81
(WY)	1988	1994	1977	1977	1977	1992	1968	1992	1992	1992	1992	1987

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1950 - 2003	
ANNUAL TOTAL	35462.5		38172.1			
ANNUAL MEAN	97.2		105		123	
HIGHEST ANNUAL MEAN					207	1997
LOWEST ANNUAL MEAN					49.2	1977
HIGHEST DAILY MEAN	1060	Apr 14	1130	Jan 30	4890	Dec 22 1964
LOWEST DAILY MEAN	8.0	Oct 16	8.0	Oct 16	5.1	Sep 15 1981
ANNUAL SEVEN-DAY MINIMUM	8.1	Oct 15	8.1	Oct 15	5.2	Oct 22 1987
ANNUAL RUNOFF (AC-FT)	70340		75710		89010	
ANNUAL RUNOFF (CFSM)	4.03		4.34		5.10	
ANNUAL RUNOFF (INCHES)	54.74		58.92		69.27	
10 PERCENT EXCEEDS	222		266		277	
50 PERCENT EXCEEDS	62		39		74	
90 PERCENT EXCEEDS	9.1		9.1		11	

e Estimated

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 mi^2.

PERIOD OF RECORD.--October 1968 to September 2003 (discontinued). Prior to October 1971, published as Blue River Reservoir near Blue River.

REVISED RECORDS.--WDR OR-92-1: 1975-77.

GAGE.--Water-stage recorder. Datum of gage is NGVD 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, 86,260 acre-ft Apr. 28, 1990, elevation, 1,353.63 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, 85,000 acre-ft May 22, elevation, 1,352.30 ft; minimum contents, 3,760 acre-ft Jan. 11, elevation, 1,178.35 ft.

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

1,120	156	1,160	1,870	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 above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1311.96	1258.80	1200.39	1180.16	1264.63	1293.38	1323.70	1344.57	1349.14	1342.92	1334.73	1306.85
2	1310.45	1257.37	1199.61	1187.51	1266.79	1294.18	1324.19	1345.29	1348.77	1342.91	1334.41	1305.53
3	1309.00	1255.94	1198.79	1195.30	1264.29	1295.02	1325.03	1346.02	1348.20	1342.83	1334.10	1304.22
4	1307.51	1254.49	1198.02	1193.24	1261.97	1295.77	1325.95	1347.08	1347.63	1342.68	1333.77	1302.88
5	1306.01	1252.51	1197.24	1185.82	1259.97	1296.70	1326.92	1348.26	1347.08	1342.53	1333.36	1301.54
6	1304.46	1250.44	1196.40	1181.85	1257.92	1299.69	1327.98	1349.29	1346.57	1342.37	1332.91	1300.17
7	1302.90	1247.90	1195.52	1180.41	1256.04	1305.91	1329.04	1349.98	1345.95	1342.17	1332.58	1298.85
8	1301.33	1245.82	1194.61	1181.45	1255.40	1313.57	1330.30	1350.01	1345.01	1341.91	1332.24	1297.58
9	1299.73	1243.70	1193.70	1183.30	1254.61	1320.19	1332.01	1349.99	1344.15	1341.64	1331.90	1296.61
10	1298.05	1241.10	1193.60	1179.74	1253.99	1326.43	1333.76	1349.89	1343.50	1341.36	1331.35	1295.38
11	1296.42	1237.79	1197.76	1182.24	1254.51	1328.33	1335.58	1349.87	1343.23	1341.08	1330.61	1293.94
12	1294.83	1232.89	1199.14	1184.77	1255.58	1325.68	1336.76	1349.90	1343.08	1340.79	1329.89	1292.57
13	1293.21	1227.41	1198.82	1183.47	1256.61	1322.68	1337.91	1349.92	1343.05	1340.51	1329.14	1291.30
14	1291.57	1222.76	1201.18	1181.52	1257.56	1320.81	1338.51	1349.97	1342.99	1340.22	1328.13	1289.99
15	1289.92	1219.57	1199.55	1179.91	1258.54	1320.27	1338.45	1350.36	1342.93	1339.92	1327.14	1288.67
16	1288.21	1216.90	1199.82	1180.32	1260.42	1320.33	1338.49	1350.93	1342.88	1339.64	1326.15	1287.43
17	1286.51	1216.98	1196.58	1181.04	1263.50	1320.01	1339.03	1351.46	1342.92	1339.33	1325.11	1286.22
18	1284.75	1215.38	1195.22	1181.20	1267.01	1319.36	1339.67	1351.89	1342.92	1339.04	1324.07	1284.91
19	1282.98	1213.25	1193.92	1180.90	1269.76	1318.55	1340.04	1352.14	1342.92	1338.74	1323.01	1283.57
20	1281.18	1211.56	1192.81	1181.54	1272.54	1318.02	1340.17	1352.24	1342.93	1338.45	1321.90	1282.18
21	1279.29	1210.88	1195.34	1180.76	1276.57	1319.54	1340.29	1352.27	1342.94	1338.15	1320.67	1280.77
22	1277.39	1209.87	1191.15	1181.56	1281.43	1326.04	1340.48	1351.86	1342.95	1337.85	1319.46	1279.29
23	1275.44	1208.63	1183.45	1179.65	1284.77	1328.67	1340.57	1350.55	1342.97	1337.54	1318.22	1277.76
24	1273.44	1207.36	1180.36	1184.25	1287.08	1328.14	1340.89	1350.21	1342.97	1337.23	1316.99	1276.22
25	1271.43	1205.91	1179.95	1192.35	1288.84	1327.30	1341.25	1349.98	1342.97	1336.92	1315.75	1274.64
26	1269.39	1204.31	1182.95	1201.86	1290.26	1329.12	1341.64	1349.82	1342.97	1336.61	1314.50	1273.04
27	1267.23	1203.08	1187.57	1199.04	1291.43	1327.12	1342.04	1349.71	1342.97	1336.31	1313.26	1271.38
28	1265.25	1202.48	1181.67	1189.49	1292.48	1324.22	1342.48	1349.70	1342.97	1336.00	1311.98	1269.69
29	1263.46	1201.83	1181.11	1187.72	---	1322.42	1343.05	1349.68	1342.97	1335.68	1310.72	1268.14
30	1261.65	1201.13	1187.15	1233.15	---	1322.44	1343.83	1349.66	1342.96	1335.36	1309.43	1266.85
31	1260.24	---	1188.35	1253.52	---	1323.15	---	1349.42	---	1335.05	1308.15	---
MAX	1311.96	1258.80	1201.18	1253.52	1292.48	1329.12	1343.83	1352.27	1349.14	1342.92	1334.73	1306.85
MIN	1260.24	1201.13	1179.95	1179.65	1253.99	1293.38	1323.70	1344.57	1342.88	1335.05	1308.15	1266.85
(†)	22860	7230	5150	20440	38410	59680	77130	82280	76340	69410	48580	25480
(‡)	-29460	-15630	-2080	+15290	+17970	+21270	+17450	+5150	-5940	-6930	-20830	-23100

CAL YR 2002 MAX 1351.86 MIN 1179.95 AC-FT‡ +650
WTR YR 2003 MAX 1352.27 MIN 1179.65 AC-FT‡ -26840

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

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 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 1,056.53 ft above NGVD of 1929 (Corps of Engineers bench mark). Prior to Aug. 25, 1966, nonrecording gage at datum 0.80 ft higher.

REMARKS.--Records good except for the period Jan. 9 to Feb. 18 and estimated daily discharges, which are fair. Discharges for periods Jan. 9-15, Feb. 4-7 computed from data obtained through U.S. Army Corps of Engineers Columbia River Operational Hydromet System (CROHMS) database. 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.--37 years (water years 1967-2003), 457 ft^3/s, 330,900 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,270 ft^3/s Feb. 23, 1968, gage height, 8.93 ft; minimum discharge, 0.80 ft^3/s Oct. 8, 10, 11, 1968; minimum daily, 3.7 ft^3/s Oct. 8, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964 reached a stage of 16.5 ft, from floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,930 ft^3/s Jan. 27, gage height, 7.50 ft; minimum discharge, 32 ft^3/s Nov. 27.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	551	310	105	1430	65	53	526	60	280	55	146	453
2	550	309	104	874	996	53	424	60	315	55	146	450
3	547	308	104	1910	1510	54	262	61	389	73	146	449
4	544	306	103	1970	1220	64	213	61	389	104	148	448
5	542	405	102	1990	988	61	214	62	354	104	183	446
6	540	411	102	1190	892	63	216	62	342	104	205	449
7	539	496	101	847	786	78	216	143	387	116	170	463
8	536	502	101	629	517	74	215	405	504	152	150	437
9	533	701	100	499	499	69	215	405	478	152	150	414
10	553	818	100	613	433	307	216	405	378	152	235	427
11	531	889	102	322	172	1070	291	365	210	152	309	458
12	510	872	342	510	44	2550	414	348	146	152	309	e440
13	508	849	552	1050	47	2330	417	348	103	151	314	e390
14	505	686	593	992	53	1660	520	349	103	151	406	e390
15	502	473	740	774	54	1140	693	187	e103	151	405	394
16	501	411	855	558	54	847	616	57	68	151	403	393
17	497	409	811	462	54	847	518	57	55	151	413	391
18	496	408	549	450	59	848	519	79	54	151	417	389
19	494	403	479	424	57	847	519	144	54	150	416	388
20	490	331	411	347	57	846	518	195	55	150	438	386
21	500	209	625	367	60	851	480	231	55	150	470	384
22	501	208	796	331	61	1040	415	438	55	150	468	391
23	497	207	770	544	59	1190	465	820	55	149	467	402
24	495	205	446	409	57	1460	472	425	55	147	465	400
25	491	203	286	564	56	1900	418	371	55	147	463	398
26	488	201	418	1120	56	1910	364	300	55	147	463	402
27	484	164	1230	2220	54	2290	319	251	55	147	461	405
28	456	106	1520	1660	53	2090	269	208	55	146	459	402
29	405	106	1030	1000	---	1460	166	200	55	146	457	347
30	402	105	1100	635	---	752	78	199	54	146	456	e300
31	313	---	1620	59	---	525	---	278	---	146	455	---
TOTAL	15501	12011	16297	26750	9013	29329	11188	7574	5316	4198	10593	12286
MEAN	500	400	526	863	322	946	373	244	177	135	342	410
MAX	553	889	1620	2220	1510	2550	693	820	504	152	470	463
MIN	313	105	100	59	44	53	78	57	54	55	146	300
AC-FT	30750	23820	32330	53060	17880	58170	22190	15020	10540	8330	21010	24370

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2003, BY WATER YEAR (WY)

MEAN	314	654	952	866	449	400	357	341	230	271	368	267
MAX	811	1459	2189	1720	1594	1766	869	699	549	626	765	566
(WY)	1998	1974	1978	1997	1996	1972	2000	1999	1984	1979	1971	1997
MIN	45.7	39.4	63.1	68.1	32.6	12.0	12.0	35.0	49.7	46.6	26.6	27.1
(WY)	1993	1988	1977	1977	1977	1977	1977	1973	2000	1967	1967	1967

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1967 - 2003	
ANNUAL TOTAL	141998		160056			
ANNUAL MEAN	389		439		457	
HIGHEST ANNUAL MEAN					727	1972
LOWEST ANNUAL MEAN					192	1977
HIGHEST DAILY MEAN	2200	Jan 9	2550	Mar 12	5650	Feb 23 1968
LOWEST DAILY MEAN	49	Jul 17	44	Feb 12	3.7	Oct 8 1968
ANNUAL SEVEN-DAY MINIMUM	49	Jul 17	52	Feb 12	7.0	Oct 5 1968
ANNUAL RUNOFF (AC-FT)	281700		317500		330900	
10 PERCENT EXCEEDS	848		873		997	
50 PERCENT EXCEEDS	304		391		290	
90 PERCENT EXCEEDS	55		59		50	

e Estimated

14162200 BLUE RIVER AT BLUE RIVER, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: August 1966 to November 1999, Aug. 2001 to current year.
TURBIDITY: January to September 2003.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--
WATER TEMPERATURE: Records excellent.
TURBIDITY: Records good except those for the periods Jan. 10 to Feb. 18, Feb. 27 to Apr. 15, Aug. 1 to Sept. 17, which are fair.

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, 19.3°C Sept. 30; minimum, 4.8°C Dec. 26, but may have been lower during days of missing record Jan 10-12, 14, 15.
TURBIDITY: Maximum, 46 NTU May 13; minimum, <1 NTU many days in June and July.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.7	10.4	10.5	14.4	13.7	14.0	7.8	7.4	7.5	6.7	6.2	6.4
2	10.9	10.6	10.7	13.7	13.0	13.3	7.9	7.3	7.6	6.5	6.3	6.4
3	11.0	10.8	10.9	13.0	12.4	12.7	7.7	7.2	7.4	6.8	6.5	6.7
4	11.3	11.0	11.2	12.6	12.3	12.4	7.4	7.0	7.2	7.1	6.8	7.0
5	11.5	11.3	11.4	12.6	12.3	12.4	7.3	6.8	7.0	7.2	6.2	6.7
6	11.8	11.5	11.7	12.6	12.4	12.5	7.2	6.9	6.9	6.4	5.5	5.9
7	12.2	11.8	12.0	12.7	12.5	12.6	7.3	6.9	7.0	5.9	5.3	5.7
8	12.5	12.1	12.3	12.7	12.6	12.7	7.3	6.9	7.0	5.5	5.2	5.4
9	12.8	12.4	12.7	12.7	12.0	12.5	7.0	6.7	6.8	---	5.1	---
10	13.2	12.8	13.0	12.0	10.9	11.4	6.7	6.5	6.6	5.4	---	---
11	13.7	13.2	13.5	10.9	10.2	10.5	6.7	6.5	6.6	---	---	---
12	14.2	13.7	14.0	10.4	10.1	10.2	6.5	6.2	6.4	5.8	---	---
13	14.8	14.2	14.5	10.8	10.3	10.6	6.8	6.5	6.6	6.5	5.8	6.3
14	15.5	14.8	15.2	11.1	10.8	10.9	7.0	6.8	6.9	---	---	---
15	16.1	15.5	15.9	11.0	10.6	10.8	7.3	7.0	7.1	---	---	---
16	16.4	16.1	16.2	10.7	10.4	10.6	7.3	7.2	7.2	6.1	5.7	5.9
17	16.4	16.2	16.2	10.5	9.4	10.1	7.2	6.8	7.0	5.7	5.4	5.5
18	16.3	16.1	16.2	9.5	9.2	9.4	6.8	6.3	6.6	5.8	5.4	5.6
19	16.2	16.0	16.1	9.3	9.2	9.2	6.3	5.9	6.1	5.8	5.6	5.7
20	16.2	16.1	16.2	9.5	9.2	9.3	5.9	5.6	5.7	5.8	5.7	5.8
21	16.3	16.1	16.2	9.4	9.2	9.3	5.7	5.5	5.6	6.0	5.7	5.8
22	16.3	16.1	16.2	9.4	9.2	9.3	5.9	5.6	5.8	6.3	6.0	6.2
23	16.3	16.1	16.1	9.5	9.2	9.3	5.9	5.7	5.8	6.9	6.2	6.6
24	16.2	16.0	16.1	9.5	9.3	9.5	5.7	5.3	5.5	7.2	6.9	7.1
25	16.2	15.9	16.0	9.7	9.3	9.4	5.3	4.9	5.1	7.3	7.0	7.1
26	15.9	15.7	15.8	9.3	8.8	9.1	5.0	4.8	4.9	7.9	7.3	7.6
27	15.7	15.6	15.6	8.8	8.0	8.5	6.4	5.0	5.7	8.1	7.9	8.0
28	15.6	15.2	15.4	8.1	7.7	7.8	6.4	6.0	6.2	7.9	7.1	7.5
29	15.2	15.1	15.2	7.8	7.6	7.6	6.3	6.0	6.2	7.1	6.9	7.0
30	15.2	14.9	15.1	7.8	7.5	7.6	6.3	5.9	6.1	8.0	6.9	7.3
31	15.0	14.4	14.7	---	---	---	6.6	5.9	6.2	8.0	7.5	7.7
MONTH	16.4	10.4	14.3	14.4	7.5	10.5	7.9	4.8	6.5	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.8	7.5	7.6	6.3	5.4	5.6	6.6	6.4	6.5	8.0	6.7	7.1
2	7.8	7.5	7.7	5.9	5.3	5.5	6.7	6.4	6.5	8.2	6.7	7.1
3	7.6	7.4	7.6	6.3	5.4	5.6	6.6	6.4	6.5	7.3	6.8	6.9
4	7.5	---	---	5.8	5.4	5.6	6.7	6.4	6.5	7.2	6.8	6.9
5	---	---	---	5.7	5.5	5.6	6.6	6.4	6.5	7.6	6.8	7.0
6	---	---	---	5.9	5.5	5.6	6.8	6.5	6.6	7.7	6.8	7.0
7	6.8	6.5	6.6	6.4	5.9	6.2	6.8	6.5	6.6	7.4	6.8	7.0
8	6.5	6.1	6.3	6.5	6.0	6.2	7.0	6.5	6.6	7.1	6.8	6.9
9	6.2	5.9	6.0	6.2	6.0	6.1	6.8	6.5	6.6	7.0	6.9	7.0
10	6.0	5.7	5.9	6.0	5.8	5.9	6.8	6.5	6.6	7.2	7.0	7.0
11	6.1	5.4	5.7	6.0	5.8	5.9	6.9	6.5	6.6	7.2	7.0	7.1
12	6.2	5.4	5.6	6.2	6.0	6.1	6.8	6.5	6.5	7.3	7.0	7.1
13	5.9	5.6	5.7	6.3	6.2	6.2	6.7	6.4	6.5	7.3	7.0	7.1
14	6.3	5.5	5.7	6.3	6.1	6.2	6.8	6.5	6.6	7.4	7.0	7.1
15	5.8	5.5	5.6	6.3	6.2	6.2	6.7	6.5	6.6	7.5	7.0	7.2
16	5.7	5.6	5.6	6.3	6.2	6.2	6.7	6.5	6.6	7.9	7.0	7.2
17	6.0	5.6	5.7	6.4	6.2	6.3	6.8	6.6	6.6	8.2	6.9	7.2
18	6.2	5.7	5.8	6.4	6.3	6.3	6.9	6.6	6.6	8.3	7.0	7.3
19	6.0	5.7	5.8	6.4	6.3	6.4	6.9	6.6	6.7	7.8	7.0	7.2
20	5.9	5.7	5.8	6.5	6.4	6.4	6.8	6.6	6.7	7.7	7.0	7.2
21	6.0	5.8	5.9	6.5	6.4	6.5	6.8	6.6	6.7	7.6	7.1	7.2
22	6.3	5.8	5.9	6.6	6.4	6.5	6.8	6.6	6.7	7.6	7.1	7.2
23	6.7	5.8	6.0	6.6	6.5	6.5	6.8	6.6	6.7	7.3	7.1	7.2
24	6.8	5.8	6.1	6.6	6.5	6.6	6.9	6.6	6.7	7.4	7.1	7.2
25	6.6	5.7	6.0	6.6	6.6	6.6	6.8	6.7	6.8	7.5	7.2	7.3
26	6.3	5.7	6.0	6.6	6.5	6.6	6.9	6.7	6.8	7.5	7.2	7.3
27	6.5	5.7	6.0	6.7	6.6	6.6	7.1	6.8	6.8	7.6	7.2	7.3
28	5.8	5.5	5.6	6.7	6.6	6.6	6.9	6.7	6.8	7.8	7.2	7.3
29	---	---	---	6.7	6.6	6.6	7.0	6.7	6.8	7.8	7.2	7.4
30	---	---	---	6.7	6.5	6.6	8.1	6.8	7.0	7.4	7.3	7.3
31	---	---	---	6.5	6.5	6.5	---	---	---	7.7	7.3	7.4
MONTH	---	---	---	6.7	5.3	6.2	8.1	6.4	6.6	8.3	6.7	7.2

14162200 BLUE RIVER AT BLUE RIVER, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.7	7.3	7.4	8.5	7.6	7.9	8.5	7.9	8.1	9.8	9.4	9.6
2	7.7	7.3	7.4	9.2	7.6	8.0	8.3	8.0	8.1	10.0	9.6	9.8
3	7.7	7.3	7.4	9.2	7.6	8.0	8.4	8.0	8.1	10.2	9.7	9.9
4	7.7	7.3	7.4	8.6	7.6	7.9	8.6	8.0	8.1	10.4	9.9	10.1
5	7.7	7.3	7.5	8.6	7.6	7.9	8.4	8.0	8.1	10.6	10.1	10.3
6	7.7	7.3	7.4	8.6	7.7	7.9	8.5	8.0	8.1	10.8	10.3	10.5
7	7.7	7.4	7.5	8.6	7.7	8.0	8.6	8.0	8.1	10.8	10.6	10.7
8	7.7	7.4	7.5	8.4	7.7	7.9	8.6	8.0	8.2	11.0	10.7	10.9
9	7.7	7.4	7.5	8.4	7.7	7.9	8.6	8.0	8.2	11.2	10.9	11.1
10	7.7	7.4	7.5	8.4	7.7	7.9	8.4	8.0	8.1	11.5	11.2	11.4
11	8.0	7.4	7.6	8.4	7.7	7.9	8.4	8.0	8.1	11.9	11.5	11.7
12	8.3	7.4	7.7	8.4	7.7	7.9	8.4	8.0	8.1	12.3	11.8	12.1
13	7.9	7.5	7.6	8.4	7.8	7.9	8.4	8.0	8.2	12.6	12.2	12.4
14	8.3	7.5	7.7	8.4	7.7	7.9	8.4	8.1	8.2	13.0	12.6	12.8
15	8.5	7.4	7.7	8.4	7.7	7.9	8.5	8.2	8.3	13.4	12.9	13.2
16	9.1	7.5	7.9	8.4	7.8	8.0	8.5	8.2	8.3	13.8	13.3	13.6
17	9.2	7.5	8.0	8.4	7.7	7.9	8.5	8.2	8.3	14.3	13.8	14.1
18	8.6	7.6	7.9	8.5	7.7	8.0	8.6	8.3	8.4	14.8	14.3	14.6
19	8.2	7.6	7.8	8.5	7.8	8.0	8.6	8.3	8.4	15.3	14.8	15.1
20	8.6	7.6	7.8	8.5	7.8	8.0	8.6	8.3	8.5	15.9	15.3	15.6
21	8.7	7.5	7.9	8.5	7.8	8.0	8.7	8.4	8.5	16.5	15.9	16.2
22	8.2	7.5	7.8	8.5	7.8	8.0	8.7	8.5	8.6	17.2	16.5	16.9
23	8.2	7.5	7.8	8.5	7.8	8.0	8.8	8.5	8.7	18.0	17.2	17.6
24	9.1	7.6	7.9	8.5	7.8	8.0	8.9	8.6	8.7	18.4	18.0	18.2
25	9.2	7.5	8.0	8.5	7.8	8.0	9.0	8.7	8.8	18.8	18.4	18.6
26	9.3	7.6	8.1	8.5	7.8	8.0	9.1	8.8	8.9	19.0	18.7	18.8
27	9.3	7.6	8.1	8.6	7.9	8.1	9.2	8.9	9.0	19.1	18.9	19.0
28	9.3	7.6	8.1	8.6	7.9	8.1	9.3	8.9	9.1	19.2	19.0	19.1
29	9.3	7.7	8.2	8.6	7.9	8.1	9.5	9.1	9.2	19.2	19.0	19.1
30	9.3	7.7	8.1	8.6	7.9	8.1	9.6	9.2	9.3	19.3	19.0	19.1
31	---	---	---	8.6	7.9	8.1	9.7	9.3	9.5	---	---	---
MONTH	9.3	7.3	7.7	9.2	7.6	8.0	9.7	7.9	8.5	19.3	9.4	14.1

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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

14162200 BLUE RIVER AT BLUE RIVER, OR--Continued

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12	5	9	4	3	3	4	4	4	4	2	2
2	25	10	22	4	2	3	4	4	4	2	2	2
3	17	12	15	4	2	3	4	4	4	3	2	2
4	12	---	---	4	2	3	4	4	4	3	2	2
5	---	---	---	4	3	3	4	4	4	3	2	2
6	---	---	---	4	2	3	4	4	4	3	2	2
7	7	6	7	4	3	4	5	4	4	5	2	2
8	7	6	6	4	3	4	4	4	4	16	2	3
9	7	6	7	4	3	4	5	3	4	8	3	3
10	7	6	6	14	3	4	4	3	4	18	3	11
11	6	3	5	20	4	7	6	3	4	31	7	17
12	6	3	4	7	4	5	4	3	3	43	8	21
13	5	3	4	5	4	4	4	3	3	46	5	26
14	5	4	5	5	4	4	4	3	3	27	2	10
15	6	4	5	5	4	4	4	2	3	2	2	2
16	5	4	5	5	4	4	3	2	2	2	2	2
17	5	3	5	5	4	4	3	2	2	3	2	2
18	6	4	5	5	4	4	4	2	2	4	2	2
19	5	4	5	5	4	4	2	2	2	4	2	3
20	6	4	5	5	4	4	3	2	2	4	2	3
21	6	4	5	5	4	4	3	2	2	27	2	3
22	6	4	5	5	4	4	3	2	2	10	2	3
23	5	4	5	5	4	4	2	2	2	4	2	2
24	5	4	4	6	3	4	2	2	2	5	2	2
25	6	4	5	4	3	3	2	2	2	3	2	2
26	6	4	5	5	4	4	3	2	2	7	2	3
27	6	4	5	5	4	4	3	2	2	13	2	4
28	5	3	4	5	4	4	3	2	2	18	2	3
29	---	---	---	5	4	4	3	2	2	4	2	2
30	---	---	---	5	4	4	3	2	2	5	2	3
31	---	---	---	4	4	4	---	---	---	3	2	2
MAX	---	---	---	20	4	7	6	4	4	46	8	26
MIN	---	---	---	4	2	3	2	2	2	2	2	2

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	2	2	2	1	<1	<1	3	1	2	---	5	---
2	3	2	2	1	<1	<1	6	2	2	---	6	---
3	2	1	2	2	<1	<1	10	2	2	---	5	6
4	2	1	2	1	<1	1	7	2	2	---	6	6
5	2	2	2	1	<1	1	5	2	3	8	6	7
6	3	1	2	1	<1	1	10	2	3	---	6	---
7	2	1	1	2	<1	1	8	2	3	---	6	---
8	2	1	2	2	<1	1	10	3	4	---	6	7
9	2	1	2	2	<1	1	6	3	4	---	6	7
10	2	1	2	2	<1	1	12	3	5	---	6	7
11	7	1	1	1	<1	1	7	4	4	10	6	7
12	2	1	1	2	<1	1	8	4	4	8	6	7
13	2	1	1	2	<1	1	9	4	5	8	6	7
14	2	1	1	2	<1	1	22	5	6	10	6	7
15	2	1	1	3	<1	1	10	3	4	---	6	7
16	1	1	1	2	<1	1	7	4	4	---	7	7
17	2	1	1	2	1	1	7	4	5	9	7	8
18	2	1	1	2	1	1	8	3	4	11	8	9
19	1	1	1	2	1	1	6	3	3	10	9	9
20	1	1	1	4	1	1	5	3	4	10	8	10
21	1	1	1	2	1	2	5	3	4	11	9	10
22	1	1	1	2	1	1	5	4	4	11	9	10
23	1	<1	1	2	1	1	---	4	4	12	9	10
24	2	<1	<1	2	1	1	---	4	5	12	9	10
25	1	<1	<1	2	1	1	9	5	6	10	9	9
26	1	<1	<1	2	1	2	7	4	5	10	8	9
27	1	<1	<1	3	1	2	6	4	4	10	8	9
28	1	<1	<1	3	1	2	8	4	4	10	8	8
29	1	<1	<1	2	1	2	8	4	5	9	7	8
30	2	<1	<1	2	1	2	---	5	---	9	8	9
31	---	---	---	4	1	2	---	6	---	---	---	---
MAX	7	2	2	4	1	2	---	6	---	---	9	---
MIN	1	<1	<1	1	<1	<1	---	1	---	---	5	---

14162500 MCKENZIE RIVER NEAR VIDA, OR

LOCATION.--Lat 44°07'30", long 122°28'10", in NE 1/4 NE 1/2 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 mi^2 at cableway 0.4 mi downstream, where all discharge measurement are made.

WATER-DISCHARGE RECORDS

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 (water years 1910-11, 1924-25), published in WSP 1318.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 855.71 ft above NGVD 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 good. 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. Continuous water-quality records for the period June 1961 to September 1985 have been collected at this location. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--38 years (water years 1925-1962), 4,001 ft^3/s, 2,898,000 acre-ft/yr.
41 years (water years 1963-2003), 4,083 ft^3/s, 2,958,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 64,400 ft^3/s Dec. 28, 1945, gage height, 17.70 ft, site and datum then in use, from rating curve extended above 32,000 ft^3/s; minimum discharge, 1,260 ft^3/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 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14,400 ft^3/s Jan. 30, gage height, 5.99 ft; minimum discharge, 1,520 ft^3/s Dec. 7-9.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2330	1870	1580	7240	11100	3250	6740	3560	3050	1950	1790	1990
2	2180	1820	1560	5520	10200	3120	6440	3470	3010	1910	1800	2010
3	2150	1780	1540	9500	9650	3090	5740	3470	2930	1910	1800	1980
4	2220	1770	1550	9310	8500	3070	5160	3820	2880	1920	1800	1980
5	2170	1840	1560	9530	7260	3110	5110	4150	2850	1900	1840	1980
6	2130	1850	1540	7500	6030	4230	5200	4110	2810	1900	1870	1990
7	2100	1970	1530	6210	5390	6730	5000	3860	2830	1910	1860	2020
8	2090	2190	1520	5030	4960	8080	4980	3960	2880	1950	1790	2090
9	2090	2760	1520	4400	4490	7580	5220	3850	2850	1940	1780	2180
10	2100	3110	1610	4250	4220	7880	5490	3620	2700	1910	1860	2180
11	2080	3430	2090	3730	3820	8180	6100	3720	2510	1910	1940	2110
12	2040	3030	2500	3970	3510	9580	6130	3790	2390	1910	1930	2050
13	2040	2740	3050	5280	3430	9040	5910	3800	2280	1900	1920	1990
14	2030	2490	3330	5260	3390	7770	5740	3830	2260	1890	2030	1970
15	2030	2130	3590	4790	3230	7200	5590	3770	2250	1870	2030	1990
16	2030	2020	4040	4380	3550	6720	5210	3570	2220	1870	2010	2030
17	2010	2600	3950	3960	4000	6230	5220	3420	2190	1880	2010	2100
18	2010	2370	3250	3730	4290	5680	5400	3300	2180	1880	2020	2020
19	2000	2150	2940	3610	4120	5440	4990	3280	2130	1870	2010	1990
20	1980	2050	2680	3430	4140	5490	4820	3270	2090	1860	2030	1960
21	2000	1850	3490	3350	4340	6540	4670	3180	2080	1850	2080	1920
22	2050	1830	3580	3360	4740	10900	4430	3380	2070	1840	2080	1910
23	2050	1800	3180	3860	4610	11000	4420	3970	2040	1840	2050	1920
24	2070	1800	2740	3940	4490	9590	4770	3610	2030	1830	2050	1910
25	2040	1790	2450	5080	4040	10300	4590	3810	1980	1830	2040	1900
26	2040	1750	2780	7160	3610	13400	4330	3690	1970	1840	2030	1870
27	2030	1740	5570	10500	3440	11800	4130	3570	1980	1820	2020	1920
28	2010	1640	6950	8550	3360	10500	3970	3470	1990	1810	2010	1930
29	1950	1670	6030	6870	---	9110	3770	3350	1990	1820	2010	1910
30	1950	1610	6740	11900	---	7900	3720	3320	1980	1820	2010	1810
31	1890	---	8200	12100	---	6810	---	3200	---	1780	2010	---
TOTAL	63890	63450	98640	187300	141910	229320	152990	112170	71400	58120	60510	59610
MEAN	2061	2115	3182	6042	5068	7397	5100	3618	2380	1875	1952	1987
MAX	2330	3430	8200	12100	11100	13400	6740	4150	3050	1950	2080	2180
MIN	1890	1610	1520	3350	3230	3070	3720	3180	1970	1780	1780	1810
AC-FT	126700	125900	195700	371500	281500	454900	303500	222500	141600	115300	120000	118200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2003, BY WATER YEAR (WY)

MEAN	2778	4522	6218	6074	4911	4464	4374	4443	3495	2596	2619	2531
MAX	4116	8718	14430	11180	11510	11210	7308	6625	6604	3529	3510	3358
(WY)	1998	1985	1965	1965	1996	1972	2002	1999	1974	1974	1971	1972
MIN	1640	1925	1865	1752	1542	2351	2671	2268	2180	1813	1824	1711
(WY)	1993	1988	1977	1977	1977	1992	1977	1992	1973	1968	1967	1963

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1963 - 2003	
ANNUAL TOTAL	1313830		1299310			
ANNUAL MEAN	3600		3560		4083	
HIGHEST ANNUAL MEAN					6014	1997
LOWEST ANNUAL MEAN					2447	1977
HIGHEST DAILY MEAN	14200	Apr 14	13400	Mar 26	43200	Dec 22 1964
LOWEST DAILY MEAN	1520	Dec 8	1520	Dec 8	1330	Feb 19 1977
ANNUAL SEVEN-DAY MINIMUM	1540	Dec 3	1540	Dec 3	1350	Oct 23 1992
ANNUAL RUNOFF (AC-FT)	2606000		2577000		2958000	
10 PERCENT EXCEEDS	6110		6770		6980	
50 PERCENT EXCEEDS	3140		2700		3220	
90 PERCENT EXCEEDS	1870		1840		2170	

14162500 MCKENZIE RIVER NEAR VIDA, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1976 to September 1985.
WATER TEMPERATURE: June 1961 to September 1985, November 2000 to current year.
TURBIDITY: January to September 2003.

INSTRUMENTATION.--Water-quality monitor and data logger.

REMARKS.--
WATER TEMPERATURE: Records good except those for the period July 7 to Sept. 30, which are fair.
TURBIDITY: Records fair except those for the periods May 17 to June 2, July 16 to Aug. 18, which are poor. Probe checked using formizine standard.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 72 microsiemens Nov. 20, 1980; minimum recorded, 2.4 microsiemens Nov. 25, 1977.
WATER TEMPERATURE: Maximum, 17.0°C July 22, 2003; minimum recorded, 0.5°C Jan. 1, 1979.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 17.0°C July 22; minimum, 4.5°C Dec. 3, Feb. 25, 26.
TURBIDITY: Maximum, 104 NTU Jan. 30; minimum, <1 NTU many days June, July and Aug.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.1	8.9	9.9	7.2	5.3	6.3	6.0	5.4	5.8	6.4	6.1	6.2
2	10.4	8.1	9.4	6.9	5.3	6.2	5.9	5.2	5.7	6.7	6.1	6.4
3	9.9	8.5	9.3	7.2	5.4	6.2	5.4	4.5	5.0	6.8	6.4	6.6
4	11.3	9.4	10.2	7.3	5.5	6.6	6.7	5.0	5.8	7.2	6.6	6.9
5	11.1	9.7	10.3	8.4	6.5	7.4	6.6	5.7	6.1	6.9	6.2	6.6
6	11.7	9.7	10.6	8.4	6.9	7.6	6.2	5.2	5.8	6.4	5.8	6.1
7	11.4	9.3	10.4	9.0	7.8	8.5	6.2	5.2	5.5	6.1	5.5	5.8
8	11.5	9.4	10.5	8.8	8.2	8.6	5.7	4.6	5.2	5.7	5.1	5.4
9	11.2	9.2	10.3	8.5	7.9	8.3	6.2	5.1	5.6	6.0	5.1	5.5
10	10.9	9.4	10.2	8.3	7.6	7.9	6.3	6.0	6.2	5.7	5.0	5.4
11	10.7	8.9	9.7	8.4	7.7	8.0	6.2	5.8	6.0	6.0	5.3	5.6
12	10.4	8.1	9.3	8.6	7.8	8.2	6.6	6.0	6.3	6.4	6.0	6.2
13	10.7	8.4	9.5	8.8	8.2	8.5	7.0	6.4	6.8	6.5	6.2	6.3
14	10.9	8.4	9.7	9.1	7.8	8.6	7.4	6.8	7.1	6.9	6.4	6.6
15	11.2	8.9	10.1	8.0	7.0	7.5	7.2	6.5	6.9	6.4	5.7	6.1
16	11.4	9.3	10.3	7.4	6.4	7.0	7.0	6.5	6.8	6.1	5.3	5.7
17	11.2	9.4	10.3	8.2	7.4	7.7	6.7	6.1	6.5	6.2	5.3	5.7
18	11.0	9.5	10.2	7.5	6.7	7.1	6.3	5.8	6.0	6.2	5.3	5.8
19	11.0	9.1	10.1	8.3	7.3	7.7	6.1	5.2	5.7	6.0	5.3	5.7
20	10.8	9.5	10.2	8.1	7.0	7.5	6.1	5.4	5.7	6.2	5.2	5.7
21	11.5	9.9	10.7	7.8	6.9	7.4	6.2	5.9	6.0	6.5	5.8	6.1
22	10.8	9.3	10.1	7.8	7.0	7.5	6.3	5.7	6.0	6.7	6.1	6.4
23	10.8	8.7	9.8	7.8	7.2	7.5	6.1	5.0	5.5	7.2	6.5	6.7
24	10.2	8.8	9.5	8.1	7.0	7.5	5.3	4.9	5.1	6.7	6.3	6.5
25	10.3	9.1	9.7	7.0	5.4	6.0	5.8	4.8	5.3	7.2	6.7	6.9
26	9.8	8.8	9.3	5.8	4.7	5.4	5.8	5.4	5.6	7.7	7.1	7.3
27	9.3	8.1	8.7	6.2	4.9	5.5	6.4	5.6	6.0	7.7	7.3	7.5
28	10.2	9.0	9.6	6.3	5.1	5.8	6.2	5.9	6.1	7.3	6.8	7.0
29	9.6	8.0	9.1	6.3	5.2	5.8	6.3	5.8	6.1	6.9	6.6	6.7
30	8.0	6.4	7.3	6.2	5.1	5.7	6.3	5.8	6.0	7.7	6.8	7.3
31	7.1	5.5	6.3	---	---	---	6.6	6.1	6.3	7.9	7.4	7.6
MONTH	11.7	5.5	9.7	9.1	4.7	7.2	7.4	4.5	6.0	7.9	5.0	6.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.5	6.9	7.1	7.0	5.4	6.1	7.5	6.6	7.0	10.7	7.1	8.7
2	7.4	6.9	7.1	6.3	4.8	5.6	7.0	6.0	6.5	11.0	7.3	9.0
3	7.2	6.7	6.9	7.2	5.7	6.3	6.8	5.8	6.2	9.2	7.7	8.2
4	6.9	6.1	6.6	6.6	5.6	6.1	7.3	5.8	6.5	8.0	7.2	7.6
5	6.4	5.7	6.0	6.6	6.0	6.3	6.8	5.9	6.4	9.2	7.0	7.9
6	6.2	5.4	5.7	6.3	5.9	6.1	7.4	5.5	6.4	9.8	7.2	8.3
7	6.0	5.0	5.5	6.6	5.8	6.2	8.0	6.0	6.9	8.6	7.2	7.9
8	5.9	4.8	5.3	7.2	6.5	6.7	9.1	6.3	7.6	9.1	6.9	7.9
9	5.9	4.7	5.3	7.3	6.4	6.8	8.6	6.9	7.7	7.9	7.2	7.6
10	6.1	5.0	5.4	7.6	6.6	7.0	8.2	6.9	7.5	9.1	7.3	8.0
11	6.1	4.6	5.3	7.3	6.6	6.9	8.8	7.0	7.7	9.3	7.5	8.4
12	6.2	4.6	5.4	7.3	6.7	7.0	8.3	7.2	7.6	10.4	7.7	8.9
13	6.5	5.8	6.1	7.2	6.7	6.9	8.2	7.0	7.5	11.5	7.4	9.3
14	7.2	6.2	6.6	7.8	6.7	7.1	8.6	6.8	7.6	11.4	8.0	9.6
15	6.5	5.8	6.1	7.6	6.8	7.1	8.0	6.9	7.4	9.7	8.1	8.7
16	6.6	6.2	6.4	7.5	6.4	6.9	8.3	6.8	7.5	9.3	7.3	8.3
17	6.7	5.9	6.3	7.6	6.4	6.9	8.4	7.0	7.6	9.1	7.2	8.0
18	6.9	5.9	6.4	7.8	6.1	6.8	8.5	6.7	7.4	10.8	6.8	8.5
19	6.8	5.9	6.4	6.8	5.9	6.4	9.3	6.2	7.6	11.1	6.9	8.9
20	6.6	6.2	6.4	7.7	6.6	7.0	8.8	6.9	7.8	11.5	7.7	9.5
21	7.1	6.4	6.7	6.9	6.5	6.7	8.1	7.3	7.7	12.2	8.1	10
22	7.2	6.3	6.7	7.2	6.6	6.9	8.3	7.2	7.7	12.4	8.4	10.2
23	6.9	5.6	6.2	7.3	6.3	6.7	7.9	6.8	7.4	12.1	8.3	10.2
24	6.2	4.7	5.4	7.5	6.1	6.8	8.0	6.8	7.4	11.1	9.0	10.2
25	6.2	4.5	5.3	6.9	6.6	6.7	7.7	6.4	7.0	10.5	9.0	9.7
26	6.0	4.5	5.3	6.9	6.4	6.7	7.8	6.5	7.2	11.5	8.6	9.9
27	6.8	5.4	6.0	7.3	6.3	6.7	8.9	6.3	7.5	12.2	8.7	10.4
28	5.8	4.9	5.4	7.6	6.2	6.8	8.2	7.0	7.6	12.8	9.5	11.0
29	---	---	---	8.1	6.4	7.2	8.4	6.8	7.6	13.0	9.4	11.2
30	---	---	---	8.5	6.6	7.5	10.0	7.2	8.4	11.5	9.9	10.2
31	---	---	---	7.5	7.0	7.2	---	---	---	12.8	9.2	10.8
MONTH	7.5	4.5	6.0	8.5	4.8	6.7	10.0	5.5	7.3	13.0	6.8	9.1

14162500 MCKENZIE RIVER NEAR VIDA, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.3	9.1	11.1	14.0	10.7	12.2	15.3	11.6	13.8	14.3	10.6	12.5
2	13.8	9.5	11.5	15.1	10.0	12.4	14.2	12.0	13.3	14.2	10.6	12.5
3	13.8	9.2	11.5	15.4	10.0	12.8	15.3	11.7	13.3	14.3	11.2	12.8
4	13.9	9.5	11.7	15.6	10.3	13.0	16.1	11.6	13.9	14.8	11.4	13.1
5	14.2	9.6	11.9	15.9	10.6	13.3	14.2	11.6	13.0	14.4	10.9	12.8
6	14.6	9.9	12.2	16.2	11.0	13.7	15.6	11.3	13.3	14.6	11.1	12.9
7	14.8	10.2	12.5	16.0	10.8	13.6	16.0	11.8	13.9	13.2	11.2	12.0
8	14.5	10.3	12.4	15.8	11.4	13.6	15.8	11.7	13.8	12.3	10.8	11.5
9	13.9	9.9	11.9	16.3	10.9	13.7	15.4	11.7	13.6	11.7	10.7	11.3
10	13.9	9.8	11.7	16.6	11.3	14.0	15.4	11.4	13.5	12.7	10.9	11.7
11	14.4	9.7	12.0	16.5	11.6	14.2	14.9	11.4	13.2	13.0	11.1	12.1
12	13.7	9.9	11.9	16.4	11.4	14.0	15.2	11.2	13.2	13.8	11.0	12.4
13	12.3	10.2	11.2	15.9	11.9	13.9	15.0	10.7	12.9	13.3	10.0	11.8
14	13.6	10.0	11.7	16.0	11.0	13.5	14.8	10.5	12.9	13.2	10.1	11.8
15	14.8	9.7	12.2	16.4	11.2	13.9	15.0	11.4	13.1	13.5	11.0	12.2
16	15.5	10.2	12.8	15.9	12.0	13.9	14.8	10.7	12.8	12.1	10.8	11.3
17	15.8	10.7	13.3	16.3	11.1	13.8	15.0	10.6	12.9	13.2	10.5	11.7
18	14.2	11.2	12.6	16.5	11.3	14.0	15.4	11.0	13.2	12.9	10.0	11.5
19	12.4	10.8	11.6	16.6	11.5	14.1	15.3	11.1	13.3	13.3	10.7	11.9
20	12.5	10.2	11.3	16.7	11.5	14.2	14.3	10.6	12.6	13.6	10.8	12.3
21	12.8	9.9	11.3	16.8	11.9	14.5	13.9	10.5	12.3	13.7	10.7	12.2
22	12.2	9.7	10.9	17.0	12.2	14.6	12.6	11.0	11.8	13.7	10.7	12.3
23	11.7	9.7	10.8	16.9	12.0	14.6	14.4	10.6	12.3	14.0	11.0	12.6
24	14.7	9.8	12.1	16.2	11.7	14.2	14.3	10.4	12.4	13.9	11.1	12.6
25	15.2	9.9	12.6	16.1	11.5	13.9	14.5	10.4	12.5	14.0	11.2	12.7
26	15.9	10.4	13.2	16.4	11.3	13.9	14.0	10.8	12.5	14.6	11.6	13.1
27	16.2	10.9	13.6	16.8	11.6	14.2	14.6	10.9	12.7	14.6	11.9	13.4
28	16.3	10.9	13.7	16.8	11.8	14.4	14.3	10.4	12.4	14.3	11.8	13.2
29	16.0	11.5	13.8	16.8	11.8	14.4	14.4	10.6	12.5	13.4	12.2	12.7
30	15.6	11.6	13.6	16.8	11.8	14.4	14.2	10.6	12.5	13.5	10.9	12.2
31	---	---	---	16.7	11.8	14.4	14.2	10.8	12.5	---	---	---
MONTH	16.3	9.1	12.2	17.0	10.0	13.8	16.1	10.4	13.0	14.8	10.0	12.3
YEAR	17.0	4.5	9.2									

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	4	3	3
16	---	---	---	---	---	---	---	---	---	4	2	3
17	---	---	---	---	---	---	---	---	---	3	2	2
18	---	---	---	---	---	---	---	---	---	3	2	2
19	---	---	---	---	---	---	---	---	---	2	2	2
20	---	---	---	---	---	---	---	---	---	3	2	2
21	---	---	---	---	---	---	---	---	---	2	1	2
22	---	---	---	---	---	---	---	---	---	3	1	2
23	---	---	---	---	---	---	---	---	---	4	2	2
24	---	---	---	---	---	---	---	---	---	3	2	2
25	---	---	---	---	---	---	---	---	---	4	2	3
26	---	---	---	---	---	---	---	---	---	18	3	4
27	---	---	---	---	---	---	---	---	---	18	10	12
28	---	---	---	---	---	---	---	---	---	12	8	10
29	---	---	---	---	---	---	---	---	---	9	6	6
30	---	---	---	---	---	---	---	---	---	104	6	44
31	---	---	---	---	---	---	---	---	---	95	46	79
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

14162500 MCKENZIE RIVER NEAR VIDA, OR--Continued

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	69	57	60	2	2	2	6	4	4	2	1	1
2	60	33	46	3	2	2	5	3	3	2	1	1
3	35	25	28	3	2	2	9	3	4	2	1	1
4	27	16	23	2	2	2	4	3	3	2	1	2
5	18	10	15	2	2	2	4	2	3	2	1	2
6	11	8	9	6	2	3	4	3	3	2	1	1
7	10	8	8	16	5	8	4	2	3	2	1	1
8	9	6	7	11	5	7	3	2	3	2	1	1
9	8	5	6	7	4	5	3	2	2	2	1	1
10	6	5	6	6	4	5	3	2	3	2	1	1
11	6	5	6	6	4	4	5	3	3	2	1	1
12	5	4	4	8	5	6	4	3	3	2	1	1
13	5	4	4	6	4	5	4	2	3	2	1	1
14	5	4	4	6	4	5	4	2	2	2	1	1
15	5	4	5	5	4	5	4	2	2	2	1	1
16	5	4	4	5	4	4	3	2	2	2	1	1
17	6	5	6	4	3	4	3	2	2	---	1	---
18	7	5	6	4	3	3	3	2	2	---	1	1
19	7	5	6	4	2	3	2	2	2	3	1	2
20	6	4	5	3	2	3	2	2	2	3	1	2
21	5	4	4	8	2	3	2	2	2	4	1	2
22	5	4	4	16	6	9	3	1	2	5	1	2
23	5	3	4	11	8	9	2	1	2	---	2	---
24	6	3	4	8	6	7	3	1	2	---	2	---
25	4	2	2	10	5	6	2	1	2	---	2	---
26	2	2	2	62	10	12	2	1	2	---	2	---
27	2	2	2	25	11	13	2	1	1	---	2	---
28	4	2	2	13	8	9	2	1	1	---	2	---
29	---	---	---	9	6	7	2	1	1	---	2	---
30	---	---	---	8	6	6	2	1	1	---	2	---
31	---	---	---	7	4	4	---	---	---	---	2	---
MAX	69	57	60	62	11	13	9	4	4	---	2	---
MIN	2	2	2	2	2	2	2	1	1	---	1	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	2	---	2	<1	1	3	<1	1	3	2	2
2	---	1	---	2	<1	1	2	<1	1	3	2	2
3	2	1	1	2	<1	1	2	<1	1	4	2	2
4	2	1	1	2	<1	1	3	1	1	4	2	2
5	2	1	1	3	<1	1	3	<1	1	4	2	2
6	2	1	1	3	<1	1	3	<1	1	3	2	2
7	2	1	1	3	<1	1	6	1	1	11	2	2
8	2	1	1	3	<1	1	2	1	1	11	2	2
9	2	1	1	2	<1	<1	3	1	1	6	2	2
10	2	1	1	3	<1	1	3	1	2	3	2	2
11	3	1	1	3	<1	1	2	1	2	4	2	2
12	2	<1	1	4	<1	1	3	1	2	4	2	2
13	2	<1	1	2	<1	1	4	1	2	4	2	2
14	2	<1	1	2	<1	1	8	1	2	4	2	2
15	2	<1	1	3	<1	1	5	1	2	4	2	2
16	2	1	1	4	<1	1	3	1	2	4	2	2
17	2	<1	1	3	<1	1	4	1	2	4	2	2
18	2	<1	1	3	<1	1	2	<1	1	6	2	2
19	2	1	1	2	<1	1	3	<1	1	4	2	2
20	2	<1	1	3	<1	1	3	<1	1	4	2	2
21	2	<1	1	2	<1	1	3	1	1	4	2	3
22	3	<1	1	2	<1	1	3	1	1	4	2	3
23	2	<1	1	2	<1	1	2	1	1	4	2	3
24	2	<1	<1	2	<1	1	2	1	2	4	2	3
25	2	<1	1	2	<1	1	3	1	2	4	2	3
26	2	<1	1	2	<1	1	2	1	2	4	2	2
27	2	<1	1	2	<1	1	3	1	2	4	2	3
28	2	<1	1	2	<1	1	3	1	2	4	2	3
29	3	<1	1	2	<1	1	3	1	2	3	2	2
30	2	<1	1	2	<1	1	3	1	2	4	2	2
31	---	---	---	2	<1	1	3	1	2	---	---	---
MAX	---	2	---	4	<1	1	8	1	2	11	2	3
MIN	---	<1	---	2	<1	<1	2	<1	1	3	2	2

14163150 MCKENZIE RIVER BELOW LEABURG DAM, NEAR LEABURG, OR

LOCATION.--Lat 44°07'26", long 122°37'35", in NE 1/4 NE 1/4 sec.1, T.17 S., R.1 E., Lane County, Hydrologic Unit 17090004, on right bank 1.4 mi downstream from Leaburg Dam, 3.0 mi northeast of Leaburg, and at mile 37.4.

DRAINAGE AREA.--1,030 mi^2.

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 710 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1963 by Smith River Reservoir (station 14158795) and Cougar Lake (station 14159400), and since 1968 by Blue River Lake (station 14162100). Diversion upstream from station through the Leaburg Power canal. Continuous water temperature records for the period June 1992 to September 1993 have been collected at this location.

AVERAGE DISCHARGE.--14 years (water years 1990-2003), 2,658 ft^3/s, 1,926,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,900 ft^3/s Feb. 7, 1996, gage height, 17.95 ft; minimum discharge, 457 ft^3/s Aug. 29, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16,200 ft^3/s Jan. 30, gage height, 10.63 ft; minimum discharge, 933 ft^3/s Oct. 11, 25.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1110	1050	1010	6430	11700	1520	6150	2010	1120	1900	1750	1900
2	1040	1030	1010	4370	9950	1350	5150	1870	1070	1860	1760	1900
3	1070	1020	1010	8600	8950	1290	4550	1880	1070	1840	1780	1900
4	1040	1360	1030	8430	7350	1250	4060	2400	1040	1870	1770	1880
5	1020	1410	1040	8660	5940	1290	3980	2830	1040	1830	1780	1890
6	1030	1040	1030	6370	4600	3150	4250	2710	1040	1840	1830	1880
7	1030	1290	1020	4840	3840	7310	4030	2330	1080	1830	1860	1920
8	1030	1460	1020	3580	3400	8480	3930	2450	1090	1840	1750	2040
9	1020	1760	1030	2800	2880	7170	4080	2290	1070	1840	1740	2090
10	999	2230	1070	2610	2550	7280	4300	2030	1060	1830	1790	2150
11	989	2550	1190	2050	2120	7210	4890	2090	1070	1900	1890	2010
12	993	2030	1450	2250	1730	8470	4950	2160	1110	1900	1880	1980
13	992	1660	2380	3790	1630	7880	4930	2160	1140	1890	1870	1880
14	990	1430	2250	3840	1580	6450	4710	2160	1120	1890	1940	1890
15	995	1060	2260	3280	1420	5760	4500	2110	1090	1900	1960	1900
16	1010	1130	2730	2810	1840	5210	4070	1890	1080	1890	1950	1920
17	1070	1750	2550	2320	2570	4680	4060	1750	1070	1890	1930	2030
18	1060	1350	1580	2000	3070	4120	4290	1580	1070	1880	1940	1920
19	1050	1100	1200	1870	2750	3860	3810	1550	1060	1870	1930	1910
20	1030	1040	1070	1650	2740	3920	3540	1490	1080	1870	1940	1870
21	1040	1040	2220	1550	3020	5160	3330	1370	1070	1840	1980	1830
22	1090	1230	2160	1590	3520	10500	3020	1450	1070	1840	2000	1810
23	1040	1030	1510	2070	3270	10600	3020	2230	1070	1840	1960	1830
24	1290	1040	1140	2190	3020	8610	3550	1790	1070	1830	1950	1820
25	993	1030	1030	3470	2520	9350	3350	2010	1050	1830	1940	1830
26	989	1030	1250	5760	2000	13600	3070	1890	1040	1820	1930	1760
27	989	1050	4200	9970	1760	11500	2780	1750	1040	1810	1920	1820
28	990	1020	5860	7600	1640	9700	2590	1630	1050	1790	1920	1820
29	1010	1050	4950	5570	---	8020	2320	1450	1630	1790	1910	1820
30	1070	1030	6190	12300	---	6730	2210	1420	1930	1800	1910	1720
31	1060	---	7960	12800	---	5990	---	1310	---	1760	1910	---
TOTAL	32129	39300	67400	147420	103360	197410	117470	60040	33590	57310	58370	56920
MEAN	1036	1310	2174	4755	3691	6368	3916	1937	1120	1849	1883	1897
MAX	1290	2550	7960	12800	11700	13600	6150	2830	1930	1900	2000	2150
MIN	989	1020	1010	1550	1420	1250	2210	1310	1040	1760	1740	1720
AC-FT	63730	77950	133700	292400	205000	391600	233000	119100	66630	113700	115800	112900

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2003, BY WATER YEAR (WY)

MEAN	1169	2974	4758	4768	3585	3173	3287	3023	1856	1143	1121	1080
MAX	2361	7467	12250	9241	11880	6368	6042	5410	3632	1849	1883	1897
(WY)	1998	1997	1997	1997	1996	2003	1993	1993	1999	2003	2003	2003
MIN	610	741	1269	1036	1066	897	1595	1099	1072	946	907	525
(WY)	1990	1990	1990	2001	2001	1992	1998	1994	2001	1993	1991	1990

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1990 - 2003	
ANNUAL TOTAL	875425		970719			
ANNUAL MEAN	2398		2660		2658	
HIGHEST ANNUAL MEAN					4550	1997
LOWEST ANNUAL MEAN					1321	2001
HIGHEST DAILY MEAN	14800	Apr 14	13600	Mar 26	42700	Feb 7 1996
LOWEST DAILY MEAN	951	Jul 31	989	Oct 11	478	Dec 29 1989
ANNUAL SEVEN-DAY MINIMUM	964	Jul 29	995	Oct 10	486	Dec 24 1989
ANNUAL RUNOFF (AC-FT)	1736000		1925000		1926000	
10 PERCENT EXCEEDS	4650		5800		5700	
50 PERCENT EXCEEDS	1460		1880		1520	
90 PERCENT EXCEEDS	983		1040		963	

14163900 MCKENZIE RIVER NEAR WALTERVILLE, OR

LOCATION.--Lat 44°04'12", long 122°46'12", in NW 1/4 NE 1/4 sec.26, T.17 S., R.1 W., Lane County, Hydrologic Unit 17090004, on right bank 0.8 mi downstream from Walterville Power Canal Diversion, 1.7 mi east of Walterville, and at mile 27.7.

DRAINAGE AREA.--1,081 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 600 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1963 by Smith River Reservoir (station 14158795) and Cougar Lake (station 14159400), and since 1968 by Blue River Lake (station 14162100). Diversion upstream from station through the Walterville Power Canal. Continuous water-quality records for period June 1992 to September 1993 have been collected at this location.

AVERAGE DISCHARGE.--14 years (water years 1990-2003), 2,996 ft^3/s, 2,170,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,100 ft^3/s Feb. 7, 1996, gage height, 16.18 ft; minimum discharge, 420 ft^3/s Nov. 8, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18,000 ft^3/s Jan. 30, gage height, 9.95 ft; minimum discharge, 1,020 ft^3/s July 2.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2310	1800	1620	9090	14600	1320	5410	1860	1230	1180	1530	1390
2	2120	1770	1600	6530	12500	1200	6100	1660	1200	1170	1700	1380
3	2110	1720	1570	10500	11400	1210	6770	1630	1260	1150	1720	1400
4	2170	1690	1570	10400	9500	1180	6240	2080	1450	1180	1800	1370
5	2120	1790	1580	10700	7290	1210	6190	2590	1490	1140	1820	1380
6	2070	1790	1570	8420	5490	2870	6570	2510	1710	1160	1810	1370
7	2020	1860	1550	6830	4670	7410	6340	2110	2140	1160	1740	1400
8	2010	2240	1540	5870	4210	8980	6150	2220	2140	1190	1350	1540
9	2020	2880	1550	4360	3560	7470	6270	2050	2140	1170	1140	1590
10	2020	3390	1660	4210	3250	7510	6370	1790	2040	1130	1230	1670
11	2020	3700	2070	3720	2890	7350	5810	1840	1490	1110	1180	1520
12	1970	3230	2580	3710	2220	8500	4930	1890	1290	1130	1310	1470
13	1970	2810	3280	5020	1420	10100	4890	1880	1310	1160	1760	1380
14	1960	2600	3550	4730	1380	8630	4790	2610	1300	1190	1930	1380
15	1960	2200	3890	4690	1340	6540	4470	4120	1290	1160	1970	1380
16	1930	2020	4460	4210	1550	5240	4010	3940	1230	1140	1940	1410
17	1950	2700	4430	3910	2350	4710	3940	3800	1190	1130	1920	1540
18	1930	2490	3690	3410	3100	4050	4160	3670	1170	1130	1920	1410
19	1930	2260	3330	3350	2820	3710	3690	3620	1190	1130	1480	1390
20	1910	2160	2990	3020	2640	3770	3360	3590	1210	1130	1410	1360
21	1920	1880	4160	3060	2920	4800	3160	3470	1190	1170	1460	1320
22	1960	1850	4320	2520	3420	10300	2820	3520	1210	1180	1490	1230
23	1990	1850	3660	2770	3210	11000	2790	4270	1140	1130	1460	1100
24	2000	1860	3180	3380	2940	8770	3470	3230	1100	1120	1430	1110
25	1980	1840	2750	4250	2440	9310	3320	2510	1120	1120	1430	1120
26	1960	1790	2910	6300	1860	13900	3030	2200	1130	1110	1410	1150
27	1970	1780	5910	10800	1670	12000	2700	1680	1120	1100	1410	1150
28	1970	1690	7930	8610	1470	10300	2490	1340	1110	1090	1400	1100
29	1890	1680	7310	7260	---	8540	2200	1210	1650	1100	1400	1100
30	1850	1670	8290	13800	---	7770	2060	1230	1210	1170	1390	1120
31	1840	---	10600	15400	---	6720	---	1230	---	1350	1400	---
TOTAL	61830	64990	111100	194830	118110	206370	134500	77350	41450	35680	48340	40230
MEAN	1995	2166	3584	6285	4218	6657	4483	2495	1382	1151	1559	1341
MAX	2310	3700	10600	15400	14600	13900	6770	4270	2140	1350	1970	1670
MIN	1840	1670	1540	2520	1340	1180	2060	1210	1100	1090	1140	1100
AC-FT	122600	128900	220400	386400	234300	409300	266800	153400	82220	70770	95880	79800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2003, BY WATER YEAR (WY)

MEAN	1434	3443	5178	5154	4043	3774	4082	3237	1886	1275	1284	1209
MAX	2756	7816	13640	10030	12560	7079	7133	5157	3658	2231	2295	1834
(WY)	1998	1997	1997	1997	1996	1997	1993	2002	2002	2002	1995	2002
MIN	683	1363	1249	1071	1216	1408	2359	1420	1117	1076	964	648
(WY)	1990	1990	1990	2001	1993	1992	1998	1994	1994	1993	1990	1990

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1990 - 2003	
ANNUAL TOTAL	1284100		1134780			
ANNUAL MEAN	3518		3109		2996	
HIGHEST ANNUAL MEAN					5034	1997
LOWEST ANNUAL MEAN					1471	2001
HIGHEST DAILY MEAN	15100	Apr 14	15400	Jan 31	44600	Feb 7 1996
LOWEST DAILY MEAN	1540	Dec 8	1090	Jul 28	499	Dec 22 1989
ANNUAL SEVEN-DAY MINIMUM	1560	Dec 3	1110	Jul 23	516	Dec 22 1989
ANNUAL RUNOFF (AC-FT)	2547000		2251000		2170000	
10 PERCENT EXCEEDS	5920		7000		6430	
50 PERCENT EXCEEDS	2810		1970		1740	
90 PERCENT EXCEEDS	1790		1170		1060	

14163900 MCKENZIE RIVER NEAR WALTERVILLE, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATRURE: June 1992 to September 1993. August 2001 to September 2003 (discontinued).

INSTRUMENTATION.--Temperature probe and data logger.

REMARKS.-- Records excellent.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 19.5°C Aug. 11, 14, 18, 1992; minimum, 2.0°C Feb. 17, 1993.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 19.3°C July 21, 22, 28, 30; minimum, 4.6°C Dec. 9.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.3	9.9	10.4	6.9	5.6	6.1	6.5	5.3	5.9	6.9	6.2	6.6
2	11.2	9.8	10.5	7.2	5.6	6.2	6.2	5.3	5.8	7.2	6.6	6.9
3	10.3	9.5	10	7.0	5.4	6.2	6.0	5.0	5.5	7.4	7.0	7.2
4	11.4	9.7	10.6	7.5	5.8	6.5	6.2	4.8	5.5	7.6	7.2	7.4
5	11.9	10.9	11.4	8.0	6.5	7.2	6.9	5.8	6.4	7.5	6.7	7.0
6	12.7	10.9	11.6	8.4	7.2	7.8	6.4	5.7	6.1	6.7	6.1	6.4
7	12.8	11.1	11.9	8.9	7.6	8.3	6.2	5.6	5.9	6.5	5.8	6.1
8	12.5	11.0	11.5	9.3	8.6	9.0	5.7	4.9	5.3	6.0	5.4	5.7
9	12.3	10.8	11.4	9.0	8.3	8.6	5.7	4.6	5.3	6.0	5.3	5.6
10	11.7	10.2	11.0	8.4	7.9	8.2	6.6	5.6	6.1	6.1	5.4	5.7
11	10.9	9.7	10.2	8.5	8.1	8.3	6.7	6.1	6.3	6.2	5.7	5.9
12	10.8	9.3	10	9.1	8.4	8.7	6.8	6.0	6.4	6.9	6.2	6.6
13	11.1	9.3	10	9.2	8.6	8.9	7.3	6.7	7.0	6.9	6.6	6.8
14	11.2	9.5	10.2	9.6	8.8	9.2	7.9	7.2	7.5	7.3	6.8	7.1
15	11.6	9.8	10.5	8.9	7.4	8.3	7.7	7.1	7.4	7.2	6.3	6.6
16	11.9	10.1	10.8	7.6	7.0	7.4	7.5	7.0	7.2	6.5	5.8	6.1
17	12.0	10.6	11.1	8.5	7.2	7.8	7.1	6.4	6.8	6.0	5.7	5.9
18	11.6	10.5	11.0	8.1	7.4	7.7	6.6	5.8	6.2	6.2	5.8	6.0
19	11.8	10.4	10.9	8.6	7.4	8.0	6.2	5.7	5.9	6.2	5.9	6.0
20	11.3	10.4	10.8	8.6	7.9	8.2	6.3	5.7	5.9	6.3	5.7	6.0
21	12.1	10.3	11.2	8.3	7.6	8.0	6.8	6.1	6.4	6.7	6.1	6.4
22	11.9	10.5	11.3	8.5	7.7	8.1	6.6	6.2	6.4	7.0	6.6	6.8
23	11.1	9.9	10.5	8.6	7.9	8.2	6.5	5.2	5.9	7.6	7.0	7.2
24	10.5	10.0	10.3	8.4	7.7	8.1	5.6	4.9	5.3	7.3	6.9	7.1
25	10.9	9.6	10.1	7.8	5.7	7.0	5.8	4.9	5.4	7.7	7.1	7.4
26	10.3	9.3	9.7	5.9	4.8	5.4	6.3	5.5	5.9	8.3	7.7	7.9
27	9.4	8.8	9.1	6.0	4.8	5.3	6.8	5.9	6.3	8.3	7.8	8.1
28	10.2	8.8	9.6	6.3	5.1	5.7	6.7	5.9	6.3	7.9	7.2	7.4
29	10.7	8.9	10	6.4	5.3	5.8	6.7	6.0	6.3	7.4	6.9	7.1
30	9.0	6.7	8.0	6.3	5.3	5.7	6.8	6.1	6.4	8.4	7.2	7.8
31	7.3	5.8	6.6	---	---	---	7.0	6.6	6.9	8.5	8.1	8.3
MONTH	12.8	5.8	10.4	9.6	4.8	7.5	7.9	4.6	6.2	8.5	5.3	6.7

14163900 MCKENZIE RIVER NEAR WALTERVILLE, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.3	7.5	7.8	7.0	5.7	6.2	8.0	7.2	7.6	10.6	9.0	9.9
2	7.8	7.3	7.6	6.6	5.7	6.1	7.5	6.5	6.9	11.1	9.6	10.4
3	7.5	7.0	7.3	7.3	6.0	6.7	7.0	6.2	6.6	11.1	8.6	9.7
4	7.3	6.6	7.0	6.9	6.3	6.5	7.4	6.2	6.9	8.8	8.2	8.6
5	6.7	5.7	6.2	7.0	6.5	6.7	7.4	6.5	6.9	9.3	7.8	8.5
6	6.2	5.3	5.9	6.8	6.5	6.7	7.7	6.1	6.9	9.7	8.3	9.1
7	6.0	5.0	5.6	7.3	6.5	6.8	8.3	6.8	7.5	9.8	8.3	8.9
8	5.8	5.0	5.4	7.9	7.2	7.5	9.4	7.3	8.3	9.2	7.8	8.4
9	5.7	4.9	5.4	8.1	7.2	7.6	9.4	8.0	8.8	9.3	8.1	8.5
10	6.0	5.3	5.6	8.2	7.5	7.9	9.0	7.8	8.3	9.2	8.0	8.6
11	5.8	4.9	5.4	8.1	7.4	7.7	9.2	7.8	8.5	9.8	8.7	9.3
12	5.8	5.1	5.5	8.0	7.3	7.7	9.2	7.8	8.4	10.5	9.1	9.8
13	6.8	5.8	6.3	7.8	7.3	7.6	8.7	7.8	8.3	11.3	9.5	10.5
14	7.6	6.7	7.1	8.2	7.1	7.7	8.9	7.4	8.1	11.5	10.4	11.0
15	7.2	6.4	6.7	8.1	7.4	7.8	8.8	7.5	8.1	11.5	9.3	10.3
16	7.2	6.6	6.8	7.8	6.9	7.4	8.8	7.4	8.2	9.5	8.5	9.1
17	7.0	6.5	6.7	7.9	6.8	7.5	8.7	7.8	8.3	9.2	8.6	8.9
18	7.2	6.6	6.9	7.9	6.6	7.4	8.8	7.4	8.1	10.0	8.1	9.0
19	7.2	6.6	6.9	7.8	6.6	6.9	9.3	6.8	8.1	10.4	9.3	10
20	7.2	6.8	7.0	8.0	7.0	7.5	9.3	7.8	8.6	11.2	10.1	10.7
21	7.6	7.0	7.2	8.0	7.1	7.3	9.0	8.1	8.5	11.8	10.6	11.3
22	7.8	7.2	7.4	7.8	7.3	7.5	8.4	7.8	8.1	12.4	11.5	12.0
23	7.3	6.1	6.7	7.7	6.8	7.2	8.2	7.6	7.9	12.6	10.9	11.9
24	6.6	5.3	5.8	8.0	6.5	7.2	8.2	7.5	7.9	12.6	11.4	11.9
25	5.9	4.8	5.4	7.6	7.0	7.2	8.0	7.0	7.4	11.8	10.4	11.0
26	5.8	5.1	5.4	7.5	6.9	7.3	8.2	7.3	7.8	11.5	10.2	10.9
27	6.6	5.8	6.2	7.8	6.6	7.2	9.0	7.0	8.0	12.4	10.9	11.7
28	6.3	5.5	5.9	8.1	6.6	7.4	9.1	8.0	8.4	13.2	12.0	12.5
29	---	---	---	8.8	6.9	7.8	8.8	7.8	8.4	13.4	12.3	12.8
30	---	---	---	9.1	7.3	8.2	9.8	8.4	9.0	13.2	10.7	12.0
31	---	---	---	8.9	7.7	8.0	---	---	---	12.9	10.5	11.6
MONTH	8.3	4.8	6.4	9.1	5.7	7.3	9.8	6.1	8.0	13.4	7.8	10.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.5	12.1	12.8	15.7	13.0	14.7	18.0	15.1	16.5	15.9	13.7	14.5
2	13.8	12.6	13.2	15.7	12.6	13.9	16.8	14.4	15.5	16.0	13.6	14.6
3	14.0	12.8	13.3	16.6	13.4	14.8	16.6	14.4	15.3	15.9	13.8	14.7
4	14.5	13.2	13.7	17.0	13.7	15.1	18.2	14.7	16.2	16.6	14.1	15.1
5	14.8	13.3	14.0	17.3	14.0	15.5	17.3	14.5	16.2	16.4	14.2	15.1
6	15.1	13.8	14.4	17.9	14.5	15.9	16.9	14.3	15.3	16.0	14.0	14.8
7	15.3	14.2	14.7	18.0	14.6	16.0	17.8	14.8	16.2	14.9	12.9	14.3
8	15.2	14.3	14.7	17.7	14.6	16.0	18.3	15.3	16.5	13.4	12.6	13.0
9	14.4	13.2	13.8	18.0	14.9	16.1	18.1	15.3	16.4	13.1	12.1	12.6
10	13.6	12.3	13.1	18.3	15.0	16.4	17.8	14.9	16.0	13.6	12.1	12.7
11	14.9	12.4	13.7	18.4	15.2	16.6	17.3	14.8	15.8	14.2	12.7	13.4
12	14.2	12.9	13.6	18.4	15.4	16.7	17.2	14.6	15.5	15.0	13.2	13.8
13	13.6	12.1	13.1	18.2	15.3	16.6	16.7	14.2	15.2	14.7	12.7	13.6
14	14.5	12.0	13.1	17.7	14.9	16.1	16.8	14.1	15.2	14.5	12.7	13.3
15	15.3	13.1	13.9	18.1	14.8	16.2	16.2	14.1	15.2	14.8	12.8	13.6
16	16.5	13.4	14.8	17.9	14.9	16.4	16.7	14.1	15.2	13.4	11.9	13.0
17	17.4	14.2	15.7	17.9	14.5	15.9	16.6	14.1	15.2	13.5	11.7	12.4
18	15.9	13.5	15.0	18.3	14.9	16.4	17.0	14.3	15.5	13.9	12.2	12.9
19	14.0	12.3	13.4	18.7	15.2	16.7	17.3	14.6	15.7	13.7	12.2	12.8
20	13.6	12.2	12.7	18.7	15.3	16.8	16.4	13.7	15.1	14.7	12.3	13.4
21	14.0	12.0	12.7	19.3	15.6	17.2	15.9	13.7	14.6	14.8	12.9	13.5
22	13.3	11.6	12.6	19.3	16.0	17.4	14.6	13.1	14.1	15.0	12.9	13.7
23	12.9	11.5	12.2	19.2	15.9	17.3	15.0	12.9	13.7	15.2	13.0	13.8
24	15.0	11.3	12.9	18.3	15.4	16.8	15.9	13.5	14.5	15.4	13.3	14.1
25	16.6	13.0	14.7	18.2	15.2	16.4	15.9	13.6	14.5	15.5	13.5	14.2
26	17.5	13.7	15.4	18.1	15.0	16.3	16.0	13.7	14.7	15.7	13.5	14.4
27	18.3	14.4	16.2	18.8	15.1	16.7	15.9	13.7	14.5	16.4	14.0	15.0
28	18.5	14.8	16.4	19.3	15.6	17.2	15.7	13.2	14.4	16.0	14.2	14.9
29	18.2	15.1	16.5	19.2	15.8	17.2	15.9	13.2	14.4	14.8	13.3	14.3
30	17.7	14.6	16.2	19.3	15.7	17.2	16.0	13.7	14.7	14.5	12.7	13.4
31	---	---	---	19.1	15.7	17.1	16.0	13.7	14.6	---	---	---
MONTH	18.5	11.3	14.1	19.3	12.6	16.3	18.3	12.9	15.2	16.6	11.7	13.8
YEAR	19.3	4.6	10.2									

14164700 CEDAR CREEK AT SPRINGFIELD, OR

LOCATION.--Lat 44°03'34", long 122°55'07", in land grant parcel number 75, T.17 S., R.2 W, Lane County, Hydrologic Unit 17090004, on left bank, and at mile 0.8.

DRAINAGE AREA.--9.62 mi^2.

PERIOD OF RECORD.--October 2001 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 490 ft above NGVD of 1929, from topographic map.

AVERAGE DISCHARGE.--2 years (water years 2002-03), 36.7 ft^3/s, 51.86 in/yr, 26,600 ac-ft/yr.

REMARKS.--No estimated daily discharges. Records fair. Flow from the McKenzie River can be diverted to Cedar Creek at a point upstream from gage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 283 ft^3/s Feb. 1, 2003, gage height, 3.89 ft; minimum discharge, 6.1 ft^3/s July 7, 8, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 283 ft^3/s Feb. 1, gage height, 3.89 ft; minimum discharge, 6.1 ft^3/s July 7, 8.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	20	13	95	238	17	43	36	20	13	27	31
2	31	19	13	79	148	15	40	32	19	13	30	30
3	32	18	13	86	104	16	42	29	18	13	30	30
4	32	18	13	80	79	15	50	29	19	15	30	30
5	32	18	13	76	62	15	46	29	20	14	31	30
6	30	22	12	60	50	30	70	27	19	13	37	29
7	29	20	12	49	41	56	61	25	24	12	37	32
8	29	25	13	40	34	55	50	23	25	21	34	34
9	29	27	12	34	29	49	43	26	25	25	25	40
10	29	26	16	29	25	46	38	35	24	25	27	37
11	29	19	18	25	22	41	34	34	21	25	28	35
12	27	15	27	32	20	38	47	34	17	25	25	32
13	27	22	47	46	18	35	71	33	17	25	33	31
14	27	22	42	58	18	32	65	32	17	26	37	27
15	27	23	45	47	16	31	60	42	16	25	38	25
16	27	22	62	39	22	30	58	40	15	23	37	32
17	26	25	54	33	33	28	74	39	14	22	36	32
18	26	19	58	28	56	25	73	37	14	25	35	31
19	26	15	50	25	48	25	63	35	13	24	32	29
20	25	18	41	22	44	26	55	34	15	24	27	29
21	25	18	64	20	41	33	57	34	14	24	28	27
22	25	17	58	19	38	71	50	33	15	24	28	26
23	25	17	46	19	34	78	57	33	14	24	28	22
24	24	21	41	21	30	62	124	31	13	24	28	21
25	25	18	35	29	26	78	98	28	13	24	27	20
26	24	17	48	49	23	133	81	25	13	24	27	19
27	25	15	81	86	20	108	66	22	13	24	27	17
28	25	15	95	62	18	82	57	21	12	24	25	16
29	25	14	115	56	---	64	49	20	17	23	26	23
30	23	14	119	141	---	52	41	20	15	23	30	24
31	22	---	138	176	---	46	---	20	---	26	30	---
TOTAL	840	579	1414	1661	1337	1432	1763	938	511	672	940	841
MEAN	27.1	19.3	45.6	53.6	47.8	46.2	58.8	30.3	17.0	21.7	30.3	28.0
MAX	32	27	138	176	238	133	124	42	25	26	38	40
MIN	22	14	12	19	16	15	34	20	12	12	25	16
AC-FT	1670	1150	2800	3290	2650	2840	3500	1860	1010	1330	1860	1670
CFSM	2.82	2.01	4.74	5.57	4.96	4.80	6.11	3.15	1.77	2.25	3.15	2.91
IN.	3.25	2.24	5.47	6.42	5.17	5.54	6.82	3.63	1.98	2.60	3.63	3.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

MEAN	21.8	31.2	56.5	57.0	46.1	42.0	53.0	31.7	22.7	25.2	27.4	26.5
MAX	27.1	43.1	67.4	60.4	47.8	46.2	58.8	33.2	28.4	28.7	30.3	28.0
(WY)	2003	2002	2002	2002	2003	2003	2003	2002	2002	2002	2003	2003
MIN	16.5	19.3	45.6	53.6	44.5	37.8	47.1	30.3	17.0	21.7	24.5	24.9
(WY)	2002	2003	2003	2003	2002	2002	2002	2003	2003	2003	2002	2002

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2002 - 2003	
ANNUAL TOTAL	12816		12928			
ANNUAL MEAN	35.1		35.4		36.7	
HIGHEST ANNUAL MEAN					38.0	2002
LOWEST ANNUAL MEAN					35.4	2003
HIGHEST DAILY MEAN	158	Jan 21	238	Feb 1	238	Feb 1 2003
LOWEST DAILY MEAN	12	Dec 6	12	Dec 6	12	Oct 21 2001
ANNUAL SEVEN-DAY MINIMUM	13	Dec 3	13	Dec 3	13	Dec 3 2002
ANNUAL RUNOFF (AC-FT)	25420		25640		26600	
ANNUAL RUNOFF (CFSM)	3.65		3.68		3.82	
ANNUAL RUNOFF (INCHES)	49.56		49.99		51.86	
10 PERCENT EXCEEDS	61		62		70	
50 PERCENT EXCEEDS	28		28		29	
90 PERCENT EXCEEDS	20		15		17	

14165000 MOHAWK RIVER NEAR SPRINGFIELD, OR

LOCATION.--(Revised) Lat 44°05'35", long 122°57'22", 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 mi^2.

PERIOD OF RECORD.--September 1935 to September 1952, October 1963 to September 1997. October 1998 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 NGVD 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. Continuous water-quality records for the periods October 1963 to September 1969 and April 1983 to September 1984 have been collected at this location.

AVERAGE DISCHARGE.--57 years (water years 1936-52, 1963-97, 1999-2003), 529 ft^3/s, 40.62 in/yr, 383,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,500 ft^3/s Feb. 7, 1996, gage height, 23.11 ft; minimum discharge, 8.2 ft^3/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 ft^3/s.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 31	0930	4,460	12.19	Mar. 8	0830	3,600	10.74
Feb. 1	0930	*4,540	*12.32				

Minimum discharge, 12 ft^3/s Sept. 5, 6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	27	60	2320	4030	531	941	686	189	72	23	15
2	34	27	58	1610	2920	484	919	629	181	71	24	14
3	32	26	57	2280	2150	504	926	584	175	68	28	14
4	57	27	58	1930	1660	476	965	655	169	65	30	13
5	45	27	61	1840	1320	480	938	646	162	63	27	13
6	39	27	57	1370	1080	919	1310	584	152	62	26	14
7	34	28	55	1070	919	2150	1210	540	146	59	28	16
8	30	75	53	873	807	3230	1050	527	142	56	32	33
9	28	218	52	747	715	2270	971	487	139	55	26	54
10	27	276	79	655	642	1970	889	459	139	52	24	60
11	27	249	146	588	588	1630	845	434	138	50	23	39
12	26	138	166	719	539	1460	876	422	134	49	22	33
13	26	109	437	962	505	1280	1000	397	144	48	22	28
14	25	92	402	997	496	1070	983	374	144	47	21	26
15	24	83	596	852	466	964	911	358	128	45	20	24
16	24	73	1220	740	579	866	874	348	119	45	21	25
17	23	137	854	659	803	783	940	348	113	46	22	39
18	23	129	802	595	1210	702	937	336	109	42	20	35
19	23	122	688	540	1020	671	849	313	112	39	18	29
20	25	110	527	498	922	716	773	293	111	37	17	28
21	26	93	963	465	874	854	788	280	108	35	17	27
22	26	82	940	448	865	1930	740	269	108	34	17	24
23	25	76	673	480	809	2170	795	257	104	32	18	23
24	25	91	548	505	747	1580	1420	249	101	30	19	21
25	25	96	458	712	677	1640	1260	258	94	30	17	21
26	25	81	538	925	622	2550	1200	247	88	31	16	20
27	25	75	1100	1570	572	2180	1060	228	82	31	17	19
28	26	70	1270	1180	536	1700	942	218	78	29	17	19
29	28	66	1490	966	---	1360	852	209	74	25	17	18
30	27	63	1950	2480	---	1120	760	206	70	24	17	21
31	26	---	3900	3130	---	983	---	204	---	24	16	---
TOTAL	896	2793	20258	34706	29073	41223	28924	12045	3753	1396	662	765
MEAN	28.9	93.1	653	1120	1038	1330	964	389	125	45.0	21.4	25.5
MAX	57	276	3900	3130	4030	3230	1420	686	189	72	32	60
MIN	23	26	52	448	466	476	740	204	70	24	16	13
AC-FT	1780	5540	40180	68840	57670	81770	57370	23890	7440	2770	1310	1520
CFSM	0.16	0.53	3.69	6.33	5.87	7.51	5.45	2.20	0.71	0.25	0.12	0.14
IN.	0.19	0.59	4.26	7.29	6.11	8.66	6.08	2.53	0.79	0.29	0.14	0.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2003, BY WATER YEAR (WY)

MEAN	107	600	1136	1231	1114	876	599	364	199	75.9	38.2	39.6
MAX	719	1653	3235	2464	2480	1975	1545	762	752	190	91.4	112
(WY)	1951	1951	1997	1965	1996	1972	1937	1996	1984	1983	1968	1968
MIN	19.2	26.5	52.6	84.0	126	281	242	118	54.3	34.3	14.7	18.9
(WY)	1988	1937	1977	1977	1977	1965	1942	1966	1966	1940	1966	1967

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1936 - 2003	
ANNUAL TOTAL	153255		176494			
ANNUAL MEAN	420		484		529	
HIGHEST ANNUAL MEAN					883	1997
LOWEST ANNUAL MEAN					164	1977
HIGHEST DAILY MEAN	4530	Jan 26	4030	Feb 1	11500	Dec 22 1964
LOWEST DAILY MEAN	14	Sep 13	13	Sep 4	9.6	Aug 18 1966
ANNUAL SEVEN-DAY MINIMUM	16	Sep 9	14	Aug 31	11	Aug 15 1966
ANNUAL RUNOFF (AC-FT)	304000		350100		383400	
ANNUAL RUNOFF (CFSM)	2.37		2.73		2.99	
ANNUAL RUNOFF (INCHES)	32.21		37.09		40.62	
10 PERCENT EXCEEDS	1140		1240		1350	
50 PERCENT EXCEEDS	125		144		250	
90 PERCENT EXCEEDS	21		23		30	

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 mi^2, approximately.

WATER-DISCHARGE RECORDS

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 NGVD 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 except for estimated daily discharges, which are fair. Flow regulated by 8 reservoirs upstream from station. Many small diversions upstream from station for irrigation. Continuous water-quality records for the period June 1961 to September 1987 have been collected at this location. Periodic suspended sediment data are available for the period October 1991 to September 1993.

AVERAGE DISCHARGE.--24 years (water years 1945-68), 12,320 ft^3/s, 8,927,000 acre-ft/yr.
35 years (water years 1969-2003), 11,320 ft^3/s, 8,200,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 210,000 ft^3/s Dec. 29, 1945, gage height, 19.69 ft, from rating curve extended above 115,000 ft^3/s; minimum discharge, 1,990 ft^3/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, 40,100 ft^3/s Dec. 31, gage height, 10.40 ft; minimum discharge, 3,100 ft^3/s Dec. 8, 9.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5890	4430	3870	32000	34900	e7000	21200	9140	7640	4550	4630	4690
2	5940	4360	3840	27300	32200	e6650	19800	8620	7680	4520	4940	4620
3	5850	4370	3840	30500	29900	e6550	18300	8600	8100	4490	4970	4550
4	5770	4330	3880	32000	27700	e6800	16300	9230	8500	4570	4740	4520
5	5430	4350	3850	31800	25100	6680	15200	10400	8430	4640	4770	4560
6	5250	4410	3520	27600	22100	8030	16000	10200	8350	4590	4740	4590
7	5180	4440	3180	23700	18400	16500	16100	9490	8300	4570	4700	4690
8	5110	4850	3140	20300	15700	24300	15300	9480	8440	e4550	4730	4800
9	4930	5740	3130	16500	13200	21200	15000	9380	8610	e4750	4630	5020
10	4820	7630	3330	14400	11600	20000	15200	9080	8460	4710	4610	4960
11	4830	8110	3700	13400	10200	19300	15400	8880	7940	4690	4660	4820
12	4750	7390	4360	13000	8640	19700	16100	8840	7160	4710	4640	4840
13	4710	6610	5590	16300	7690	19800	17600	8750	6530	4710	4580	4750
14	4610	6370	7060	17600	7270	17200	18100	8760	5910	4710	4640	4710
15	4540	5910	e9000	16000	6990	14300	17600	8700	5360	4690	4760	4670
16	4800	5340	e16000	13900	7580	12700	16900	8890	5140	4720	4810	4660
17	5020	5640	14400	12300	9600	12000	16400	9330	4880	4760	4820	4710
18	5030	e5600	12200	10800	12200	11000	16900	9360	4600	4790	4820	e4680
19	5030	e5300	9680	9720	12900	10300	16000	9220	4550	4750	4750	e4640
20	5040	e5000	7990	8730	11600	10800	15000	8770	4480	4710	4700	4590
21	5050	4740	8010	8140	11000	11400	15300	8560	4550	4660	4770	4550
22	5100	4490	10800	7880	11300	17900	14700	8190	4500	4630	4760	4580
23	5130	4420	9210	8270	11100	26100	14300	8180	4550	4650	4810	4610
24	5080	4470	7970	8730	e10500	21700	18800	7940	4540	4740	4770	4570
25	5110	4430	7000	11200	e9520	22400	19400	7990	4470	4750	4770	4610
26	5010	4360	7090	14100	8680	32100	17900	7930	4410	4780	4710	4580
27	4940	4260	12400	24700	7990	36900	15500	7750	4390	4800	4660	4570
28	4930	4220	21300	27700	e7500	33800	14000	7880	4460	4790	4650	4590
29	4800	4150	26700	23600	---	29700	11600	8080	4490	4750	4680	4560
30	4590	4050	24500	26000	---	25000	9790	8070	4610	4670	4700	4360
31	4520	---	36600	34000	---	21900	---	7960	---	4560	4710	---
TOTAL	156790	153770	297140	582170	403060	549710	485690	271650	184030	144960	146630	139650
MEAN	5058	5126	9585	18780	14400	17730	16190	8763	6134	4676	4730	4655
MAX	5940	8110	36600	34000	34900	36900	21200	10400	8610	4800	4970	5020
MIN	4520	4050	3130	7880	6990	6550	9790	7750	4390	4490	4580	4360
AC-FT	311000	305000	589400	1155000	799500	1090000	963400	538800	365000	287500	290800	277000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2003, BY WATER YEAR (WY)

MEAN	7562	14080	21090	20640	14440	12780	11050	10090	7508	4859	5241	6575
MAX	10970	30850	48480	36750	33520	36070	21680	17120	16150	6283	7117	8986
(WY)	1985	1985	1997	1971	1996	1972	1993	1996	1984	1969	1971	1972
MIN	4203	4924	3848	3695	2859	5156	4823	4009	3658	3267	3795	4305
(WY)	1993	1988	1977	1977	1977	2001	1977	1987	1987	2001	2001	1992

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1969 - 2003	
ANNUAL TOTAL	3152300		3515250			
ANNUAL MEAN	8636		9631		11320	
HIGHEST ANNUAL MEAN					17800	1972
LOWEST ANNUAL MEAN					5233	1977
HIGHEST DAILY MEAN	37800	Jan 26	36900	Mar 27	72400	Nov 20 1996
LOWEST DAILY MEAN	3130	Dec 9	3130	Dec 9	2340	Feb 19 1977
ANNUAL SEVEN-DAY MINIMUM	3410	Dec 5	3410	Dec 5	2410	Feb 15 1977
ANNUAL RUNOFF (AC-FT)	6253000		6972000		8200000	
10 PERCENT EXCEEDS	15500		19900		24200	
50 PERCENT EXCEEDS	6330		6650		7820	
90 PERCENT EXCEEDS	4430		4500		4550	

e Estimated

14166000 WILLAMETTE RIVER AT HARRISBURG, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--June 1961 to September 1987, October 2000 to current year.

INSTRUMENTATION.--Temperature probe and data logger.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF DAILY RECORD.--Maximum, 24.0°C Aug. 12, 1973; minimum, 0.0°C Jan. 8, 9, 1973.

EXTREMES FOR CURRENT YEAR.--Maximum, 21.5°C July 21, 22; minimum, 5.7°C Feb. 25.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	14.4	13.5	14.0	9.2	8.2	8.6	7.9	7.2	7.5	8.0	7.6	7.8
2	14.7	13.4	14.1	9.1	8.1	8.6	8.1	7.9	8.0	8.3	7.8	8.0
3	14.5	13.5	13.9	9.4	8.4	8.9	8.0	7.7	7.9	8.3	8.2	8.3
4	14.4	13.7	14.1	9.6	8.6	9.1	7.8	7.7	7.8	8.8	8.3	8.5
5	15.0	14.3	14.6	10.6	9.3	9.9	8.4	7.8	8.1	8.6	8.0	8.2
6	15.2	14.4	14.7	10.3	9.9	10.1	8.2	7.7	7.9	8.1	7.3	7.6
7	15.6	14.5	15.0	10.7	10.1	10.4	7.7	7.3	7.4	7.3	7.0	7.1
8	15.3	14.6	14.9	10.7	10.5	10.6	7.3	7.0	7.2	7.0	6.6	6.8
9	15.1	14.4	14.7	10.5	10.2	10.3	7.2	6.7	7.0	6.9	6.4	6.7
10	14.6	13.9	14.3	10.2	9.9	10.0	7.7	7.2	7.5	6.9	6.3	6.7
11	13.9	13.0	13.5	10.1	9.7	9.9	8.1	7.5	7.8	7.0	6.5	6.7
12	13.5	12.4	13.0	10.9	10.0	10.4	8.2	7.8	8.0	7.8	7.0	7.4
13	13.7	12.6	13.2	10.6	10.3	10.5	8.3	8.0	8.1	7.8	7.6	7.7
14	13.8	12.6	13.2	11.2	10.5	10.9	9.1	8.3	8.8	8.1	7.7	7.9
15	14.0	12.8	13.4	10.9	10.1	10.5	8.9	8.4	8.5	8.1	7.7	7.8
16	14.4	13.1	13.7	10.1	9.4	9.7	8.5	8.2	8.4	7.7	7.2	7.5
17	14.2	13.2	13.7	10.3	9.6	9.9	8.2	7.8	8.0	7.3	6.5	7.0
18	13.7	13.4	13.6	---	---	---	7.8	7.3	7.5	7.2	6.4	6.9
19	13.8	13.3	13.5	---	---	---	7.3	7.0	7.2	7.0	6.6	6.8
20	13.7	13.3	13.5	---	---	---	7.4	7.0	7.2	7.2	6.7	6.9
21	13.6	13.3	13.4	10.3	10.1	10.2	7.9	7.4	7.6	7.8	7.0	7.4
22	14.1	13.5	13.8	10.3	10.1	10.2	7.4	7.2	7.3	8.1	7.6	7.9
23	13.9	13.0	13.4	10.2	9.9	10.2	7.4	7.0	7.3	8.7	7.8	8.3
24	13.1	12.5	12.8	10.1	9.7	10	7.0	6.5	6.8	8.7	8.4	8.6
25	13.0	12.2	12.6	9.7	8.4	9.1	7.1	6.6	6.8	8.9	8.4	8.6
26	12.5	11.8	12.2	8.4	7.5	8.0	7.3	7.1	7.2	9.1	8.9	9.0
27	12.1	11.2	11.5	7.7	7.0	7.4	7.7	7.3	7.5	9.2	8.9	9.1
28	12.3	11.4	11.9	7.9	7.1	7.5	7.6	7.4	7.4	8.9	8.3	8.4
29	12.6	11.7	12.2	8.0	7.4	7.6	7.5	7.2	7.4	8.3	8.1	8.2
30	11.7	9.5	10.6	7.9	7.2	7.5	7.6	7.4	7.5	9.3	8.3	8.7
31	9.5	8.5	9.1	---	---	---	8.0	7.6	7.8	9.5	9.3	9.4
MONTH	15.6	8.5	13.3	---	---	---	9.1	6.5	7.6	9.5	6.3	7.8

14166000 WILLAMETTE RIVER AT HARRISBURG, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.4	8.9	9.2	8.4	6.8	7.5	9.4	8.7	9.0	13.2	10.7	11.8
2	8.9	8.6	8.8	8.0	7.3	7.6	9.0	8.1	8.4	13.9	11.6	12.8
3	8.7	8.2	8.4	8.5	7.1	7.7	8.5	7.7	8.1	13.5	11.3	12.3
4	8.3	7.7	7.9	8.3	7.7	8.0	8.8	7.8	8.3	11.4	10.1	10.8
5	7.9	7.2	7.4	8.0	7.5	7.8	8.7	8.0	8.3	11.3	9.8	10.6
6	7.4	6.6	7.0	8.0	7.8	7.9	9.4	7.8	8.5	12.2	9.9	11.0
7	7.2	6.3	6.8	8.0	7.5	7.8	10.1	8.7	9.3	12.0	10.6	11.2
8	6.8	6.0	6.5	8.9	8.0	8.4	10.9	9.2	10	11.2	9.7	10.5
9	6.9	5.9	6.5	9.4	8.7	9.0	11.3	10.1	10.7	11.2	10.0	10.6
10	7.2	6.4	6.9	9.7	9.0	9.4	10.8	9.9	10.2	12.1	9.8	10.8
11	7.0	6.3	6.5	9.5	9.1	9.3	10.7	9.5	10.1	12.0	10.4	11.3
12	6.9	5.8	6.3	9.2	8.9	9.1	10.6	10.0	10.3	13.1	10.8	11.9
13	7.4	6.7	7.0	9.0	8.8	8.9	10.6	9.6	10.1	14.1	11.4	12.7
14	8.9	7.3	8.1	9.5	8.6	9.0	10.0	9.1	9.7	13.8	12.2	13.2
15	8.7	8.2	8.4	9.8	9.1	9.4	10.0	9.3	9.7	13.6	12.0	12.7
16	8.2	7.7	8.0	9.6	8.7	9.1	10.4	9.2	9.8	12.2	10.7	11.3
17	8.1	7.7	7.9	9.5	8.4	8.9	10.8	9.6	10.1	11.8	10.1	11.0
18	8.5	7.7	8.1	9.4	8.3	8.8	10.7	9.2	10	12.3	9.6	11.1
19	8.6	8.2	8.3	8.8	8.0	8.5	10.8	8.9	10	13.3	10.2	11.8
20	8.2	8.0	8.1	9.3	7.8	8.5	11.0	9.7	10.4	13.9	11.1	12.6
21	8.8	8.0	8.4	9.2	8.7	9.0	10.6	9.7	10.1	14.6	11.8	13.2
22	9.2	8.3	8.7	9.2	8.5	8.8	10.3	9.3	9.7	15.3	12.7	14.1
23	8.5	7.4	8.0	8.7	8.1	8.4	9.7	9.0	9.3	16.2	13.3	14.8
24	7.4	6.4	7.0	8.7	7.9	8.4	9.9	8.9	9.4	15.6	13.8	14.5
25	7.1	5.7	6.4	8.8	8.6	8.7	9.6	8.7	9.1	14.5	12.9	13.5
26	6.9	6.0	6.5	9.1	8.4	8.7	10.1	8.7	9.2	13.9	12.0	13.0
27	8.1	6.6	7.3	8.9	8.0	8.5	10.8	8.8	9.8	15.1	12.5	13.8
28	7.6	7.0	7.2	9.4	8.2	8.9	10.6	9.8	10.2	15.0	13.5	14.3
29	---	---	---	10.1	8.6	9.4	11.2	9.4	10.3	15.8	13.5	14.7
30	---	---	---	10.5	9.2	9.9	12.1	10.0	10.9	15.5	13.1	13.9
31	---	---	---	10.4	9.2	9.7	---	---	---	14.8	11.9	13.3
MONTH	9.4	5.7	7.6	10.5	6.8	8.7	12.1	7.7	9.6	16.2	9.6	12.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15.7	13.1	14.4	18.8	17.4	18.0	20.0	19.0	19.4	18.9	17.5	18.3
2	15.8	13.3	14.7	18.3	16.1	17.2	19.0	17.8	18.4	19.2	17.9	18.5
3	16.0	13.4	14.8	18.9	16.6	17.7	19.0	17.5	18.1	19.3	18.5	18.8
4	16.5	13.5	15.1	19.4	17.3	18.3	19.9	17.6	18.6	19.9	18.1	18.9
5	17.0	14.0	15.6	19.6	17.8	18.7	19.5	18.7	19.1	19.9	18.6	19.3
6	17.3	14.4	16.0	20.1	18.2	19.1	19.6	18.1	18.8	19.2	17.7	18.4
7	17.3	14.5	16.1	20.2	18.4	19.2	20.1	18.5	19.2	18.1	17.2	17.8
8	17.1	14.6	16.1	19.8	18.4	19.1	20.0	18.7	19.3	17.3	16.4	16.9
9	16.7	14.0	15.1	20.3	18.4	19.3	20.4	19.0	19.6	16.8	16.1	16.4
10	15.4	13.3	14.5	20.7	19.0	19.8	20.1	18.8	19.4	16.8	16.3	16.6
11	15.5	13.3	14.4	20.5	18.8	19.6	19.9	18.5	19.1	17.8	16.8	17.2
12	15.4	13.6	14.2	20.7	19.1	19.8	19.8	18.1	18.9	17.9	16.8	17.4
13	14.6	13.5	14.1	20.1	19.1	19.6	19.7	18.2	19.0	17.6	16.3	17.0
14	16.1	13.8	14.8	20.2	18.4	19.3	19.8	18.4	19.1	17.8	16.8	17.3
15	17.2	15.1	16.1	20.3	18.9	19.6	19.4	18.5	18.9	17.6	16.4	17.0
16	18.0	16.2	17.1	20.0	19.0	19.5	19.3	17.7	18.5	16.9	16.0	16.4
17	19.2	17.2	18.2	20.0	18.0	19.0	19.9	18.5	19.2	16.5	15.1	15.8
18	18.6	17.0	17.8	20.4	18.7	19.5	20.2	18.9	19.5	16.7	15.2	16.0
19	17.0	15.6	16.2	20.8	19.0	19.8	20.1	18.9	19.5	17.0	16.3	16.6
20	16.3	14.9	15.6	20.8	19.1	19.9	19.4	18.0	18.7	16.8	15.4	16.1
21	16.2	15.1	15.7	21.5	19.7	20.5	19.6	18.1	18.8	16.9	15.6	16.3
22	16.2	15.3	15.7	21.5	20.0	20.7	18.9	17.4	18.2	17.4	16.0	16.6
23	15.3	14.6	14.9	20.6	19.5	20.1	18.6	16.9	17.7	17.6	16.3	16.9
24	17.1	14.1	15.4	19.9	18.6	19.3	18.8	17.1	18.0	17.9	16.6	17.2
25	18.6	15.8	17.1	20.0	18.3	19.1	19.3	17.7	18.4	17.9	16.7	17.3
26	20.0	17.4	18.6	20.0	18.3	19.1	18.7	17.7	18.2	18.4	17.0	17.7
27	20.9	18.4	19.5	20.3	18.5	19.3	18.9	17.2	18.0	18.9	17.5	18.1
28	21.2	18.7	19.9	20.9	19.1	19.9	18.8	17.6	18.2	18.7	17.6	18.1
29	20.9	19.3	20.0	21.1	19.4	20.2	18.9	17.7	18.3	17.9	16.8	17.5
30	19.7	18.6	19.1	21.3	19.6	20.4	19.2	18.1	18.6	17.2	16.4	16.8
31	---	---	---	20.9	19.4	20.2	19.3	18.0	18.6	---	---	---
MONTH	21.2	13.1	16.2	21.5	16.1	19.4	20.4	16.9	18.8	19.9	15.1	17.3

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 mi^2.

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 NGVD 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 except those for the periods Dec. 18, 19, Jan. 6, 30, Feb. 2, Mar. 9, which are fair. Slight regulation caused by logpond upstream from Noti. No diversion upstream from station.

AVERAGE DISCHARGE.--68 years (water years 1936-2003), 229 ft^3/s, 34.90 in/yr, 166,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,990 ft^3/s Dec. 22, 1955, gage height, 20.17 ft; minimum discharge, 0.04 ft^3/s Aug. 13, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	1800	2,470	14.34	Dec. 31	1300	*4,160	*17.08

Minimum discharge, 8.5 ft^3/s Sept. 2, 3.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	18	34	1870	1270	219	369	234	91	42	16	11
2	19	19	30	942	1030	203	372	217	87	42	17	9.5
3	17	20	29	1060	727	211	371	206	83	41	19	9.2
4	19	21	29	935	574	199	472	234	81	40	19	11
5	19	21	35	925	479	189	454	252	77	38	18	9.8
6	18	22	34	686	415	226	681	223	74	34	19	11
7	16	24	31	542	365	556	642	205	73	32	17	14
8	15	66	30	447	329	944	504	197	71	32	16	17
9	15	113	31	383	299	829	423	185	69	30	18	26
10	15	130	44	333	274	845	380	175	68	30	17	31
11	14	98	92	300	255	658	351	170	67	27	16	23
12	14	72	159	365	240	533	355	267	83	27	15	20
13	14	66	300	628	228	457	377	212	80	28	15	18
14	14	59	339	599	216	420	330	186	75	27	14	17
15	14	53	744	497	212	407	301	172	71	26	13	15
16	14	48	1980	420	256	379	285	162	63	25	13	15
17	13	51	1230	364	371	334	280	155	61	27	13	20
18	14	57	654	321	707	298	257	146	58	26	12	18
19	14	53	510	287	575	284	233	138	57	25	12	14
20	15	48	379	262	434	336	222	132	57	25	11	14
21	17	43	458	243	377	411	223	127	57	24	12	13
22	16	36	428	239	344	1170	214	122	58	24	11	13
23	16	33	341	268	312	1300	231	117	58	23	13	12
24	18	37	276	263	287	824	386	114	56	21	13	11
25	20	41	232	323	260	668	357	113	52	21	13	11
26	19	36	273	425	243	778	346	109	50	20	11	10
27	18	35	1110	645	230	730	315	104	48	20	11	9.9
28	17	33	1130	496	216	599	285	101	46	19	11	11
29	20	32	967	413	---	499	265	99	44	19	11	11
30	20	34	1110	952	---	438	268	96	44	17	11	13
31	19	---	3520	1110	---	396	---	95	---	17	11	---
TOTAL	515	1419	16559	17543	11525	16340	10549	5065	1959	849	438	438.4
MEAN	16.6	47.3	534	566	412	527	352	163	65.3	27.4	14.1	14.6
MAX	22	130	3520	1870	1270	1300	681	267	91	42	19	31
MIN	13	18	29	239	212	189	214	95	44	17	11	9.2
AC-FT	1020	2810	32840	34800	22860	32410	20920	10050	3890	1680	869	870
CFSM	0.19	0.53	5.98	6.34	4.61	5.90	3.94	1.83	0.73	0.31	0.16	0.16
IN.	0.21	0.59	6.90	7.31	4.80	6.81	4.39	2.11	0.82	0.35	0.18	0.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2003, BY WATER YEAR (WY)

MEAN	39.2	202	472	584	554	411	250	128	65.8	30.5	16.8	17.4
MAX	300	708	1425	1260	1283	923	684	340	164	65.2	35.5	34.5
(WY)	1948	1974	1956	1956	1996	1938	1937	1963	1937	1937	1993	1997
MIN	8.00	16.6	23.8	25.2	62.5	89.3	57.2	51.5	24.7	6.20	3.61	7.25
(WY)	1988	1937	1977	1977	1977	2001	1977	2001	1977	1977	1977	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1936 - 2003	
ANNUAL TOTAL	79873.1		83199.4			
ANNUAL MEAN	219		228		229	
HIGHEST ANNUAL MEAN					424	1974
LOWEST ANNUAL MEAN					45.5	1977
HIGHEST DAILY MEAN	3520	Dec 31	3520	Dec 31	5850	Dec 22 1964
LOWEST DAILY MEAN	8.4	Sep 13	9.2	Sep 3	0.04	Aug 13 1977
ANNUAL SEVEN-DAY MINIMUM	9.6	Sep 9	10	Aug 30	0.06	Aug 8 1977
ANNUAL RUNOFF (AC-FT)	158400		165000		166200	
ANNUAL RUNOFF (CFSM)	2.45		2.55		2.57	
ANNUAL RUNOFF (INCHES)	33.27		34.66		34.90	
10 PERCENT EXCEEDS	574		599		581	
50 PERCENT EXCEEDS	59		75		91	
90 PERCENT EXCEEDS	13		14		15	

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 mi^2, 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 NGVD of 1929 (levels by Corps of Engineers).

REMARKS.--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 (new capacity table put into use Oct. 1, 1992 based on Dec. 1992 resurvey), 107,400 acre-ft at elevation 375.1 ft, maximum pool elevation. Usable capacity, 93,350 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 mi^2.

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, 93,440 acre-ft May 11, elevation, 373.51 ft; minimum contents, 2,650 acre-ft Jan. 18, elevation, 352.66 ft.

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

349	439	356	6,810	364	30,560	372	81,180
350	835	358	10,680	366	40,480	374	97,590
352	2,090	360	15,830	368	52,350	375	106,400
354	4,030	362	22,410	370	65,980		

Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	370.77	361.51	354.87	363.73	360.88	366.53	371.72	373.34	373.49	373.16	372.38	371.43
2	370.60	361.17	354.85	363.89	361.49	366.68	371.83	373.35	373.46	373.14	372.36	371.41
3	370.35	360.84	354.82	364.31	361.62	366.83	372.00	373.35	373.46	373.13	372.32	371.38
4	370.09	360.50	354.84	364.34	361.41	366.97	372.24	373.35	373.44	373.11	372.30	371.36
5	369.83	360.16	354.83	364.09	361.04	367.11	372.51	373.36	373.45	373.10	372.28	371.34
6	369.55	359.81	354.82	363.50	360.89	367.34	372.81	373.36	373.45	373.08	372.25	371.30
7	369.27	359.56	354.79	362.68	360.84	367.84	373.03	373.38	373.43	373.07	372.23	371.28
8	368.99	359.54	354.77	361.63	361.01	368.43	373.13	373.40	373.42	373.03	372.20	371.27
9	368.69	359.60	354.78	360.33	361.14	369.05	373.15	373.42	373.41	373.02	372.16	371.30
10	368.41	359.36	354.98	358.76	361.28	369.49	373.13	373.43	373.40	372.99	372.13	371.29
11	368.14	358.86	355.20	357.33	361.47	369.61	373.13	373.44	373.40	372.96	372.10	371.26
12	367.89	358.36	355.59	356.19	361.68	369.62	373.30	373.47	373.39	372.93	372.07	371.22
13	367.63	357.77	355.78	355.40	361.90	369.63	373.40	373.49	373.39	372.90	372.04	371.21
14	367.36	357.26	355.90	354.88	362.10	369.75	373.35	373.48	373.39	372.89	372.03	371.17
15	367.10	356.84	356.57	354.10	362.35	369.81	373.31	373.46	373.38	372.86	371.98	371.15
16	366.84	356.44	358.44	353.43	362.72	369.94	373.28	373.43	373.38	372.84	371.95	371.15
17	366.57	356.04	359.27	352.86	363.41	370.05	373.30	373.43	373.36	372.82	371.92	371.13
18	366.28	355.58	359.02	352.78	364.12	370.12	373.29	373.38	373.35	372.79	371.89	371.11
19	366.01	355.39	358.11	353.10	364.43	370.22	373.27	373.37	373.34	372.77	371.85	371.08
20	365.70	355.26	356.88	353.43	364.70	370.31	373.28	373.36	373.33	372.74	371.82	371.04
21	365.38	355.20	355.80	353.64	364.92	370.50	373.37	373.37	373.33	372.72	371.79	371.02
22	365.06	355.13	354.54	353.96	365.21	371.00	373.40	373.38	373.32	372.69	371.76	371.00
23	364.72	355.07	353.67	354.07	365.42	371.44	373.48	373.42	373.31	372.64	371.72	370.97
24	364.38	355.15	353.11	354.30	365.66	371.64	373.46	373.43	373.30	372.62	371.69	370.96
25	364.03	355.10	353.09	354.42	365.87	371.68	373.47	373.44	373.28	372.59	371.66	370.93
26	363.66	355.04	353.70	354.65	366.04	371.78	373.34	373.45	373.26	372.56	371.62	370.91
27	363.29	354.97	354.92	354.77	366.20	371.81	373.23	373.47	373.24	372.53	371.59	370.89
28	362.90	354.94	356.07	354.31	366.36	371.75	373.26	373.47	373.23	372.50	371.56	370.86
29	362.48	354.91	356.45	354.56	---	371.70	373.31	373.48	373.21	372.48	371.53	370.83
30	362.15	354.89	358.41	356.38	---	371.69	373.33	373.48	373.17	372.44	371.50	370.69
31	361.82	---	362.45	358.68	---	371.67	---	373.49	---	372.41	371.46	---
MAX	370.77	361.51	362.45	364.34	366.36	371.81	373.48	373.49	373.49	373.16	372.38	371.43
MIN	361.82	354.89	353.09	352.78	360.84	366.53	371.72	373.34	373.17	372.41	371.46	370.69
(†)	21750	5150	24100	12280	42470	78600	91930	93270	90600	84420	76970	71080
(‡)	-50390	-16600	+18950	-11820	+30190	+36130	+13330	+1340	-2670	-6180	-7450	-5890

CAL YR 2002 MAX 373.51 MIN 353.09 AC-FT‡ +20300
WTR YR 2003 MAX 373.49 MIN 352.78 AC-FT‡ -1060

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

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 mi^2, not including Amazon Creek basin.

WATER-DISCHARGE RECORDS

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 NGVD 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 ft^3/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. Drainage area at point of diversion 21.3 mi^2.

AVERAGE DISCHARGE.--60 years (water years 1944-2003), 519 ft^3/s, 376,000 acre-ft/yr, (river only).
18 years (water years 1986-2003), 480 ft^3/s, 347,700 acre-ft/yr, not adjusted for diversions into or out of Fern Ridge Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft^3/s Jan. 1, 1943, gage height, 15.12 ft, site and datum then in use; minimum daily discharge, 2 ft^3/s Aug. 7, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,840 ft^3/s Jan. 2, gage height, 7.96 ft; minimum discharge, 33 ft^3/s July 1-7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	206	505	54	2550	252	54	620	448	82	35	60	56
2	527	501	54	3200	1670	54	294	450	81	33	60	56
3	845	496	54	2110	1700	54	104	447	68	33	60	56
4	852	490	55	3100	1700	54	104	446	58	33	60	56
5	846	484	54	3250	1680	54	104	446	61	33	60	60
6	841	478	54	3410	1140	54	104	390	69	33	60	63
7	833	473	54	3390	888	54	371	289	69	39	60	61
8	824	477	54	3400	424	54	649	265	62	62	60	61
9	815	479	54	3440	377	55	743	265	56	59	60	61
10	805	647	56	3450	293	316	821	265	56	51	60	60
11	718	773	57	2800	176	1070	755	265	56	50	60	61
12	680	760	102	2710	63	1090	547	265	55	49	60	61
13	668	739	430	2760	52	1010	878	266	54	50	60	61
14	661	634	683	2430	51	756	1060	268	54	48	60	61
15	656	484	1320	1940	52	506	893	323	55	42	70	61
16	648	478	2110	1350	53	331	883	356	55	43	63	61
17	650	473	2450	1080	53	331	754	331	55	49	63	61
18	648	466	2800	782	524	337	640	325	54	48	63	61
19	646	229	2900	556	1050	372	637	315	55	48	63	60
20	677	163	2730	457	662	420	543	228	55	49	63	60
21	700	101	2360	456	499	421	518	143	56	49	63	60
22	698	101	2200	463	114	538	584	61	56	49	69	60
23	688	99	1270	637	56	669	828	60	56	50	77	60
24	678	101	943	715	54	1000	1710	60	56	55	77	60
25	682	99	568	845	54	1600	1370	60	56	58	77	60
26	678	98	772	970	54	1580	1430	60	56	58	77	64
27	665	96	1910	1330	54	1580	1260	60	56	58	77	69
28	668	68	2470	1460	54	1580	639	60	56	58	77	69
29	646	55	3030	1050	---	1210	477	60	55	58	77	69
30	579	54	2190	991	---	958	451	80	55	58	77	532
31	509	---	309	61	---	900	---	82	---	59	62	---
TOTAL	21237	11101	34147	57143	13799	19062	20771	7439	1768	1497	2035	2301
MEAN	685	370	1102	1843	493	615	692	240	58.9	48.3	65.6	76.7
MAX	852	773	3030	3450	1700	1600	1710	450	82	62	77	532
MIN	206	54	54	61	51	54	104	60	54	33	60	56
AC-FT	42120	22020	67730	113300	27370	37810	41200	14760	3510	2970	4040	4560

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2003, BY WATER YEAR (WY)

MEAN	750	713	978	1393	854	403	190	192	91.1	58.4	56.6	84.8
MAX	1007	1475	2851	2973	3148	1136	895	497	469	150	73.6	293
(WY)	1998	1997	1997	1997	1996	1999	1993	1996	1993	1993	1993	1999
MIN	148	218	103	101	53.5	21.3	24.5	20.8	34.7	39.1	40.5	38.3
(WY)	2002	1994	1990	2001	2001	1988	1988	1987	1990	1986	1986	1990

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1986 - 2003	
ANNUAL TOTAL	150739		192300			
ANNUAL MEAN	413		527		480	
HIGHEST ANNUAL MEAN					907	1999
LOWEST ANNUAL MEAN					183	2001
HIGHEST DAILY MEAN	3030	Dec 29	3450	Jan 10	5570	Jan 5 1997
LOWEST DAILY MEAN	38	Jul 1	33	Jul 2	16	Mar 3 1988
ANNUAL SEVEN-DAY MINIMUM	38	Jul 1	34	Jul 1	17	Apr 30 1990
ANNUAL RUNOFF (AC-FT)	299000		381400		347700	
10 PERCENT EXCEEDS	1030		1440		1260	
50 PERCENT EXCEEDS	60		176		71	
90 PERCENT EXCEEDS	48		54		39	

14169000 LONG TOM RIVER NEAR ALVADORE, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: August 2001 to current year.

INSTRUMENTATION.--Temperature probe and data logger.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--
WATER TEMPERATURE: Maximum, 25.2°C Aug. 15, 2002; minimum, 4.2°C Dec. 27, 28, 2001.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 22.0°C June 7, but may have been higher during period of missing record; minimum, 5.8°C Dec. 9.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.9	17.4	17.6	10.1	8.3	9.2	7.2	6.8	7.0	8.4	8.1	8.1
2	17.4	17.1	17.2	8.5	7.8	8.0	7.1	6.7	6.9	8.6	8.1	8.3
3	17.3	16.9	17.1	8.1	7.5	7.8	7.1	6.6	6.8	8.7	8.3	8.5
4	16.9	16.7	16.8	8.0	7.6	7.8	6.9	6.7	6.8	9.5	8.4	8.9
5	17.0	16.4	16.6	8.2	7.6	7.8	7.0	6.7	6.8	9.4	8.8	9.0
6	16.7	16.2	16.4	8.5	8.0	8.2	6.8	6.4	6.6	8.8	8.5	8.6
7	16.9	16.5	16.7	9.2	8.3	8.6	6.4	6.1	6.3	8.7	8.6	8.6
8	16.9	16.7	16.8	9.6	9.1	9.4	6.4	6.1	6.3	8.6	8.2	8.4
9	16.9	16.8	16.8	9.7	9.0	9.4	6.4	5.8	6.1	8.2	7.9	8.1
10	16.9	16.3	16.6	9.3	8.9	9.1	6.8	6.2	6.5	7.9	6.8	7.4
11	16.3	15.9	16.1	9.2	9.1	9.2	7.7	6.5	7.0	6.8	6.6	6.8
12	15.9	15.5	15.7	10.2	9.1	9.5	8.2	7.2	7.8	7.1	6.6	6.7
13	15.6	15.2	15.3	10.3	10.0	10.2	8.0	7.5	7.8	7.3	6.6	7.0
14	15.3	14.9	15.1	10.7	9.8	10.2	9.2	7.7	8.6	8.3	7.3	7.9
15	15.1	14.7	14.9	10.2	9.7	9.9	8.9	7.8	8.0	8.6	8.1	8.3
16	14.8	14.6	14.7	10.0	9.4	9.7	8.3	7.9	8.2	8.4	7.7	8.1
17	15.6	14.6	15.0	10.4	9.8	10.0	8.1	7.6	7.9	7.8	6.7	7.5
18	15.7	14.9	15.4	9.9	9.5	9.7	7.6	7.4	7.5	7.6	6.7	7.1
19	16.0	15.1	15.4	10.0	9.5	9.6	7.4	7.0	7.2	6.8	6.0	6.3
20	15.9	15.3	15.6	10.3	9.6	9.9	7.0	6.8	6.9	6.5	5.9	6.2
21	15.8	15.3	15.4	10.4	10.0	10.2	7.2	6.7	6.9	7.3	6.1	6.6
22	15.5	15.2	15.3	10.6	10.4	10.5	7.2	6.9	7.0	8.0	6.9	7.3
23	15.8	15.0	15.3	10.7	10.4	10.6	8.0	7.2	7.6	9.2	7.9	8.6
24	15.5	14.9	15.1	10.5	10.0	10.4	7.7	7.3	7.5	9.5	8.9	9.2
25	14.9	14.4	14.7	10.0	9.1	9.6	7.7	7.1	7.4	9.9	9.5	9.6
26	14.7	14.0	14.3	9.1	8.4	8.8	7.7	7.1	7.2	10.9	9.9	10.5
27	14.0	13.5	13.7	8.4	7.9	8.2	8.4	7.1	8.0	10.9	10.6	10.7
28	13.5	12.8	13.2	8.3	7.6	7.9	8.1	7.9	8.0	10.8	10.2	10.4
29	13.1	12.5	12.9	7.7	7.3	7.5	8.0	7.4	7.8	10.2	9.4	9.6
30	12.5	11.6	12.2	7.6	6.8	7.2	7.8	7.4	7.6	10.6	9.4	9.8
31	11.6	9.8	10.6	---	---	---	8.2	7.6	7.9	12.1	10.6	11.5
MONTH	17.9	9.8	15.3	10.7	6.8	9.1	9.2	5.8	7.3	12.1	5.9	8.4

14169000 LONG TOM RIVER NEAR ALVADORE, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11.1	10.6	10.9	7.9	7.3	7.5	13.5	12.6	13.1	14.1	13.2	13.7
2	10.6	10.1	10.3	7.9	7.3	7.6	13.1	11.9	12.4	13.8	13.5	13.6
3	10.3	9.6	10.0	8.5	7.7	8.0	11.9	10.9	11.4	14.7	13.8	14.5
4	9.8	9.5	9.6	8.3	7.5	7.9	11.5	10.8	11.0	14.8	14.2	14.6
5	9.6	8.6	9.3	8.8	8.3	8.5	11.2	10.5	10.8	15.0	14.2	14.6
6	8.6	7.4	8.2	8.9	8.4	8.6	11.1	10.1	10.6	14.8	14.0	14.3
7	7.5	6.9	7.2	9.1	8.6	8.9	11.5	10.9	11.2	14.4	14.0	14.2
8	7.5	6.9	7.1	9.7	9.0	9.3	12.2	11.2	11.6	14.8	14.4	14.6
9	7.8	7.0	7.3	10.5	9.3	9.9	12.7	12.0	12.3	14.6	14.2	14.3
10	7.6	7.0	7.3	10.8	9.8	10.1	12.7	11.7	12.0	14.7	14.1	14.4
11	7.6	7.2	7.4	11.0	10.1	10.7	13.1	12.6	12.8	14.9	14.3	14.5
12	7.6	7.0	7.2	11.5	10.8	11.1	13.0	12.0	12.5	15.3	14.6	14.8
13	7.6	7.2	7.4	12.1	11.0	11.5	13.3	11.9	12.7	15.2	14.5	14.8
14	8.1	7.4	7.6	11.7	11.1	11.4	13.8	13.1	13.5	16.0	14.4	15.4
15	8.6	7.4	7.7	11.7	11.2	11.4	13.5	13.0	13.3	16.4	15.3	15.9
16	9.0	8.3	8.7	11.8	11.3	11.5	13.6	12.7	13.1	16.6	15.9	16.3
17	8.7	8.2	8.4	12.1	11.2	11.5	13.6	12.7	13.2	16.1	15.8	15.9
18	8.9	8.3	8.6	12.1	11.5	11.8	13.6	13.1	13.4	15.8	15.3	15.6
19	9.1	8.6	8.8	11.6	11.4	11.5	13.8	12.8	13.2	16.0	15.3	15.5
20	9.6	9.0	9.3	11.6	11.0	11.3	14.1	13.3	13.8	16.0	15.2	15.5
21	9.3	8.8	9.0	11.3	11.0	11.1	14.2	13.6	14.0	15.9	15.2	15.5
22	9.6	8.9	9.2	11.4	11.0	11.1	13.9	13.3	13.6	17.1	15.2	16.0
23	9.4	8.7	9.0	11.4	10.8	11.1	13.8	13.6	13.8	16.5	15.3	15.9
24	8.7	7.8	8.2	11.6	11.0	11.2	13.6	13.2	13.4	17.3	15.3	16.3
25	7.9	7.3	7.6	11.5	11.1	11.3	13.5	13.1	13.2	16.8	15.3	15.8
26	7.7	6.9	7.4	11.3	11.2	11.3	13.1	12.5	12.8	16.6	15.3	15.7
27	7.6	6.7	7.1	11.3	10.7	11.0	12.8	12.4	12.6	16.6	15.4	16.1
28	7.4	6.9	7.2	11.3	10.7	11.0	12.9	12.6	12.7	17.1	15.5	16.4
29	---	---	---	12.1	10.8	11.2	13.5	12.6	12.9	16.5	15.5	15.9
30	---	---	---	12.3	11.0	11.5	13.5	13.0	13.2	18.4	16.0	17.5
31	---	---	---	13.2	11.5	12.5	---	---	---	18.4	16.4	17.5
MONTH	11.1	6.7	8.3	13.2	7.3	10.5	14.2	10.1	12.7	18.4	13.2	15.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	17.6	16.2	16.8	---	---	---	---	---	---	---	---	---
2	17.6	16.4	17.0	---	---	---	---	---	---	---	---	---
3	18.2	16.4	17.2	---	---	---	---	---	---	---	---	---
4	18.4	16.6	17.5	---	---	---	---	---	---	---	---	---
5	19.6	17.2	18.5	---	---	---	---	---	---	---	---	---
6	20.7	18.2	19.5	---	---	---	---	---	---	---	---	---
7	22.0	19.3	20.7	---	---	---	---	---	---	---	---	---
8	21.9	19.0	20.5	---	---	---	---	---	---	---	---	---
9	20.7	19.0	19.9	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

14170000 LONG TOM RIVER AT MONROE, OR

LOCATION.--Lat 44°18'47", long 123°17'43", in NE 1/4 sec.33, T.14 S., R.5 W., Benton County, Hydrologic Unit 17090003, on left bank 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 mi^2.

WATER-DISCHARGE RECORDS

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 NGVD 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.--Records good except for estimated daily discharges, which are fair. Flow regulated since Nov. 1941 by Fern Ridge Lake (station 14168000). Several small diversions upstream from station. Periodic suspended sediment data are available for the period October 1991 to September 1994.

AVERAGE DISCHARGE.--18 years (water years 1922-25, 1928-1941), 689 ft^3/s, 499,200 acre-ft/yr.
62 years (water years 1942-2003), 772 ft^3/s, 559,400 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,300 ft^3/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 ft^3/s Sept. 29, Oct. 1, 1939.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,160 ft^3/s Dec. 31, gage height, 8.71 ft; minimum discharge, 17 ft^3/s July 7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	591	79	3330	1750	280	992	631	123	51	37	44
2	394	577	79	3830	2270	262	655	611	109	38	41	38
3	836	573	76	3500	2290	253	396	596	102	30	45	37
4	937	568	81	3950	2170	245	639	594	94	28	48	35
5	951	561	83	3820	2080	231	575	595	87	28	47	38
6	943	556	83	3600	1720	276	881	557	86	26	44	42
7	944	547	83	3450	1160	673	763	465	85	22	43	49
8	938	553	80	3340	819	1040	1030	389	92	27	40	51
9	936	611	79	3290	610	854	986	384	88	47	41	59
10	941	732	85	3260	563	1050	1230	380	74	44	42	66
11	889	964	102	2960	387	1460	1210	377	68	37	39	70
12	803	910	157	3050	302	1550	1050	396	66	34	38	65
13	797	876	498	3530	241	1460	1500	334	71	40	37	64
14	788	832	893	3240	237	1130	1750	363	74	40	37	64
15	779	564	1670	2580	242	957	1310	370	75	38	41	60
16	771	550	3770	1930	314	657	1280	444	71	30	49	58
17	762	539	3330	1620	652	603	1210	407	67	27	51	58
18	755	539	3280	1220	1330	575	932	395	64	30	48	58
19	755	376	3330	806	1700	570	890	380	63	30	40	59
20	762	226	3080	702	1160	750	801	321	63	33	40	62
21	797	133	2880	643	955	822	882	249	66	33	40	64
22	807	124	2640	659	508	1790	861	162	72	28	e41	58
23	797	124	1960	842	377	1790	1050	126	71	26	e46	54
24	788	124	1550	976	320	1430	2570	122	65	26	e58	53
25	781	125	913	1230	289	2230	2160	120	62	29	57	53
26	780	124	1010	1510	273	2540	1950	118	57	34	51	54
27	777	116	3130	1830	257	2330	1930	114	54	43	50	89
28	769	109	3450	1980	244	2170	1050	106	51	43	55	73
29	783	78	3990	1490	---	1870	732	104	55	36	56	69
30	677	79	4260	2270	---	1410	655	104	55	34	56	237
31	620	---	4770	1360	---	1180	---	119	---	33	60	---
TOTAL	24132	13381	51471	71798	25220	34438	33920	10433	2230	1045	1418	1881
MEAN	778	446	1660	2316	901	1111	1131	337	74.3	33.7	45.7	62.7
MAX	951	964	4770	3950	2290	2540	2570	631	123	51	60	237
MIN	75	78	76	643	237	231	396	104	51	22	37	35
AC-FT	47870	26540	102100	142400	50020	68310	67280	20690	4420	2070	2810	3730

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2003, BY WATER YEAR (WY)

MEAN	757	944	1777	2167	1620	908	468	254	96.5	43.9	71.1	190
MAX	1895	3437	5355	6222	4683	2761	2277	1193	697	148	524	960
(WY)	1948	1951	1956	1956	1996	1957	1963	1963	1993	1993	1951	1955
MIN	27.1	91.5	55.5	43.5	44.1	136	54.5	50.3	28.6	23.0	20.0	12.4
(WY)	1942	1953	1977	1977	1977	1978	1977	1987	1987	1965	1944	1943

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1942 - 2003	
ANNUAL TOTAL	235891		271367			
ANNUAL MEAN	646		743		772	
HIGHEST ANNUAL MEAN					1517	1956
LOWEST ANNUAL MEAN					177	1977
HIGHEST DAILY MEAN	4770	Dec 31	4770	Dec 31	16400	Jan 2 1943
LOWEST DAILY MEAN	26	Sep 26	22	Jul 7	0.00	Oct 20 1944
ANNUAL SEVEN-DAY MINIMUM	30	Sep 23	28	Jul 2	8.4	Oct 17 1944
ANNUAL RUNOFF (AC-FT)	467900		538300		559400	
10 PERCENT EXCEEDS	2010		2160		2400	
50 PERCENT EXCEEDS	168		384		233	
90 PERCENT EXCEEDS	33		40		37	

e Estimated

14170000 LONG TOM RIVER AT MONROE, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--August 2001 to current year.

INSTRUMENTATION.--Temperature probe and data logger.

REMARKS.--Records fair except for temperatures at and above 23°C, which are poor. Recorded temperatures during low flow periods may not necessarily represent the average temperature of the cross-section.

EXTREMES FOR PERIOD OF DAILY RECORD.--Maximum, 27.2°C July 23, 2003; minimum, 4.8°C Dec. 28, 2001.

EXTREMES FOR CURRENT YEAR--Maximum, 27.2°C July 23; minimum, 5.1°C Dec. 9.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.8	15.6	16.1	9.8	8.6	9.1	6.3	5.5	5.9	8.8	8.3	8.4
2	17.0	14.9	16.0	9.0	7.7	8.1	6.6	6.1	6.4	8.7	8.2	8.4
3	17.0	16.0	16.5	7.9	7.2	7.7	6.6	6.3	6.5	9.1	8.7	8.9
4	17.0	16.6	16.7	8.1	7.1	7.7	6.9	6.6	6.7	9.6	8.7	9.2
5	16.8	16.3	16.6	8.4	7.6	8.1	7.3	6.8	7.0	9.5	8.9	9.2
6	17.0	16.1	16.6	8.4	7.9	8.2	7.1	6.3	6.6	8.9	8.3	8.6
7	17.2	15.9	16.6	9.0	8.3	8.7	6.3	5.8	6.1	8.5	8.2	8.3
8	17.1	16.2	16.6	9.4	8.9	9.1	6.0	5.5	5.7	8.3	7.9	8.2
9	17.4	16.2	16.8	9.6	9.3	9.5	5.6	5.1	5.3	8.0	7.7	7.8
10	16.9	15.8	16.3	9.6	9.1	9.4	6.3	5.6	5.9	7.9	7.3	7.6
11	16.2	15.0	15.6	9.5	9.1	9.3	7.3	6.2	6.7	7.3	6.7	6.8
12	15.7	14.4	15.2	9.8	9.3	9.5	8.0	7.3	7.6	7.4	6.8	7.0
13	15.5	14.2	15.0	10.5	9.6	10.0	8.2	7.8	8.0	7.6	7.3	7.5
14	15.3	13.9	14.7	10.7	10.1	10.4	9.0	8.1	8.5	8.4	7.6	8.0
15	15.2	14.0	14.7	10.5	9.8	10.1	9.1	8.1	8.5	8.6	8.3	8.5
16	15.1	13.7	14.6	9.9	9.3	9.7	8.4	8.1	8.3	8.5	7.9	8.2
17	15.1	13.7	14.6	10.2	9.4	9.9	8.3	7.9	8.0	8.1	7.4	7.7
18	15.8	14.5	15.0	9.9	9.6	9.7	7.9	7.3	7.5	7.7	6.7	7.1
19	15.8	14.9	15.4	10.5	9.8	10.1	7.4	7.1	7.2	7.1	6.7	6.9
20	15.8	14.9	15.4	10.8	10.0	10.4	7.1	6.9	7.0	6.7	6.3	6.5
21	15.8	15.4	15.6	10.6	9.9	10.2	7.3	7.0	7.1	7.3	6.4	6.8
22	15.6	15.0	15.3	10.6	10.4	10.5	7.3	7.0	7.1	8.0	7.2	7.6
23	15.4	14.2	14.9	10.7	10.5	10.6	7.8	7.1	7.4	9.0	7.9	8.5
24	15.1	14.6	14.9	10.6	10.2	10.4	7.8	7.4	7.6	9.7	9.0	9.3
25	14.9	14.2	14.5	10.2	8.9	9.3	7.8	7.3	7.6	10.3	9.6	10
26	14.4	13.3	13.9	8.9	7.4	7.9	7.6	7.3	7.5	11.3	10.3	10.8
27	14.0	12.9	13.3	7.5	6.7	6.9	8.4	7.3	7.9	11.3	10.6	10.9
28	13.4	12.9	13.2	7.0	6.5	6.7	8.4	8.0	8.2	10.7	10.2	10.4
29	13.2	12.2	12.7	6.7	6.3	6.5	8.0	7.7	7.8	10.3	9.7	9.9
30	12.2	11.0	11.4	6.3	5.6	6.0	8.0	7.6	7.8	11.0	9.7	10.2
31	11.0	9.8	10.3	---	---	---	8.9	8.0	8.3	11.8	11.0	11.4
MONTH	17.4	9.8	15.0	10.8	5.6	9.0	9.1	5.1	7.2	11.8	6.3	8.5

14170000 LONG TOM RIVER AT MONROE, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11.5	10.2	10.6	9.2	7.7	8.4	13.1	11.9	12.6	15.6	13.5	14.6
2	10.5	10.0	10.3	9.0	8.1	8.6	12.5	11.3	11.8	16.1	14.3	15.4
3	10.2	9.6	9.9	9.3	8.0	8.6	11.4	10.2	10.7	15.9	14.2	14.7
4	9.8	9.1	9.4	9.6	8.4	9.0	10.8	9.9	10.3	15.2	13.6	14.4
5	9.1	8.7	8.9	9.5	8.7	9.1	10.5	9.4	10.1	15.1	14.0	14.6
6	8.7	7.8	8.2	9.3	8.8	9.0	10.7	9.1	9.7	15.2	13.8	14.6
7	8.0	7.0	7.3	10.0	8.9	9.3	12.2	10.7	11.4	15.0	13.8	14.4
8	7.2	6.4	6.9	10.5	9.8	10.1	13.1	11.4	12.2	14.5	13.7	14.0
9	7.3	6.3	6.8	11.0	10.4	10.7	13.7	12.2	13.0	14.7	13.9	14.3
10	7.9	7.1	7.4	11.8	10.8	11.3	13.4	12.3	12.6	15.7	14.0	14.6
11	7.6	7.0	7.3	11.6	10.6	11.2	14.1	12.2	13.1	16.5	14.9	15.5
12	7.5	6.4	6.9	11.7	11.0	11.3	13.7	12.8	13.3	16.6	15.1	15.7
13	7.8	6.7	7.2	11.7	11.2	11.4	13.6	12.2	12.9	18.1	15.7	16.7
14	9.3	7.7	8.5	11.9	11.0	11.5	13.7	12.4	13.1	18.3	15.8	17.0
15	9.8	8.7	9.3	11.9	11.2	11.6	13.6	12.5	13.1	17.7	15.2	16.3
16	9.6	8.8	9.2	11.9	10.9	11.5	13.9	12.5	13.3	16.2	15.2	15.6
17	8.8	8.5	8.7	11.4	10.7	11.1	14.0	12.6	13.3	16.0	14.9	15.5
18	9.1	8.1	8.6	11.6	10.6	11.1	14.2	12.6	13.5	16.6	14.4	15.4
19	9.4	8.8	9.1	11.4	10.7	11.0	14.5	12.3	13.5	17.5	14.8	16.1
20	9.5	8.9	9.2	11.5	10.3	10.9	14.5	12.9	13.9	18.8	15.7	17.1
21	9.9	9.1	9.5	11.3	10.8	11.1	14.5	13.4	13.9	20.0	15.8	17.7
22	10.0	9.3	9.6	11.4	10.6	11.0	14.2	13.0	13.6	20.1	17.1	18.3
23	9.5	8.3	9.0	11.3	10.1	10.7	14.0	13.0	13.3	21.5	19.3	20.0
24	8.3	6.9	7.5	11.3	10.0	10.6	13.4	12.3	12.9	21.5	20.4	20.7
25	7.2	5.8	6.6	11.4	10.9	11.2	13.2	12.5	12.9	20.7	19.7	20.0
26	7.2	5.9	6.6	11.7	10.9	11.4	13.2	12.4	12.8	19.9	18.4	19.0
27	8.5	6.9	7.6	11.5	10.7	11.1	13.7	12.1	12.9	20.4	18.4	19.0
28	8.5	7.7	8.1	12.0	10.6	11.2	13.3	12.7	13.0	20.8	19.7	20.1
29	---	---	---	12.6	11.1	11.9	14.0	12.3	13.2	21.6	19.4	20.4
30	---	---	---	13.2	11.5	12.4	14.6	12.8	13.8	21.5	19.1	20.3
31	---	---	---	13.1	11.9	12.6	---	---	---	20.8	18.2	19.0
MONTH	11.5	5.8	8.4	13.2	7.7	10.7	14.6	9.1	12.7	21.6	13.5	16.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.7	18.8	19.6	24.5	22.5	23.2	26.1	25.5	25.7	22.7	21.6	22.1
2	21.3	19.6	20.2	22.8	22.0	22.4	25.6	24.5	25.1	21.9	21.4	21.7
3	21.5	19.4	20.3	22.4	22.0	22.2	24.5	22.9	23.3	22.0	21.4	21.7
4	22.4	20.0	20.9	22.8	22.4	22.5	23.4	22.8	23.1	21.9	21.6	21.8
5	23.1	20.8	21.8	23.4	22.6	23.0	23.8	23.0	23.2	22.4	21.9	22.2
6	23.6	22.0	22.7	23.8	23.0	23.4	23.3	22.8	23.0	22.6	22.2	22.5
7	24.0	22.8	23.5	24.4	23.7	23.9	23.3	22.7	23.0	22.2	20.8	21.4
8	24.9	23.0	23.9	24.9	23.9	24.4	23.7	23.0	23.4	20.8	19.9	20.2
9	24.7	22.4	23.1	24.4	23.4	23.8	24.0	23.5	23.8	20.1	19.1	19.6
10	23.2	20.9	21.7	24.6	23.7	24.1	24.1	23.7	23.9	19.4	18.9	19.2
11	21.9	20.5	21.1	24.9	24.1	24.6	24.2	23.7	23.9	19.9	19.1	19.4
12	21.6	20.2	20.8	26.0	24.7	25.3	23.9	23.2	23.5	20.0	18.7	19.4
13	20.5	19.1	19.7	25.8	25.2	25.4	23.8	23.3	23.6	19.8	18.1	19.1
14	20.2	18.9	19.6	25.3	23.9	24.4	23.6	23.3	23.5	19.8	18.1	18.8
15	21.2	19.3	20.3	24.8	24.3	24.6	24.0	23.5	23.7	19.8	18.2	18.8
16	21.8	20.1	21.1	25.2	24.8	25.0	24.0	22.8	23.2	18.8	17.5	18.2
17	22.5	21.3	21.9	25.1	24.3	24.6	23.5	22.9	23.2	17.5	17.1	17.3
18	23.3	21.9	22.5	24.8	24.2	24.5	24.1	23.2	23.7	17.7	17.2	17.4
19	22.6	20.6	21.4	24.9	24.4	24.7	24.3	23.6	24.0	18.4	17.2	17.9
20	21.2	19.9	20.4	25.3	24.9	25.1	24.1	23.1	23.6	18.3	17.4	17.9
21	20.4	19.0	19.7	26.3	25.2	25.9	23.2	22.4	22.8	18.8	17.4	18.1
22	20.1	19.0	19.6	27.0	26.3	26.6	22.8	22.4	22.6	18.8	17.4	18.2
23	20.0	18.6	19.1	27.2	26.6	26.9	22.6	21.7	22.1	18.8	17.9	18.3
24	19.8	18.2	18.9	27.0	25.3	26.1	22.2	20.9	21.5	18.7	18.1	18.3
25	22.0	19.2	20.3	25.8	24.7	25.1	22.2	21.0	21.5	19.0	18.1	18.5
26	22.3	20.9	21.6	25.0	24.4	24.7	22.4	21.2	21.7	19.6	18.6	19.1
27	23.2	21.9	22.5	25.3	24.3	24.7	22.5	21.2	21.7	21.7	19.0	19.9
28	24.4	23.0	23.6	25.1	24.4	24.7	22.1	21.1	21.6	21.2	19.5	19.8
29	25.0	23.8	24.3	25.4	24.6	25.0	22.0	21.1	21.5	20.0	19.1	19.6
30	25.7	23.7	24.8	25.8	25.3	25.5	22.1	21.2	21.7	19.4	17.7	18.6
31	---	---	---	26.2	25.7	26.0	22.6	21.4	22.0	---	---	---
MONTH	25.7	18.2	21.4	27.2	22.0	24.6	26.1	20.9	23.0	22.7	17.1	19.5
YEAR	27.2	5.1	14.8									

14171000 MARYS RIVER NEAR PHILOMATH, OR

LOCATION.--Lat 44°31'35", long 123°20'00", in NE 1/4 SE 1/4 sec.18, T.12 S., R.5 W., Benton County, Hydrologic Unit 17090003, on right bank 15 ft downstream from bridge on Bellfountain Road, 0.6 mi downstream from Newton Creek, 2.0 mi southeast of Philomath, and at mile 9.4.

DRAINAGE AREA.--159 mi^2, including drainage area of Evergreen Creek upstream from Bellfountain Road, 1.4 mi south of station.

PERIOD OF RECORD.--October 1940 to September 1985, October 2000 to current year.

REVISED RECORDS.--WSP 1218: Drainage area. WSP 1935: 1956(M).

GAGE.--Water-stage recorder. Datum of gage is 224.01 ft above NGVD of 1929 (levels by Corps of Engineers). Prior to Oct. 1 1961, nonrecording gage at bridge 50 ft upstream at same datum. October 1, 1961 to Sept. 30, 1985, gage on left bank, 35 ft downstream at same datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Records include flow of Evergreen Creek at Bellfountain Road crossing 1.4 mi south of station, with which overflow from Marys River may at times be mingled. Slight regulation by small storage reservoir on Rock Creek from which municipal supply is diverted for city of Corvallis. Other small diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--48 years (water years 1941-85, 2001-03), 453 ft^3/s, 38.68 in/yr, 327,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft^3/s Dec. 22, 1964, gage height, 20.72 ft; maximum gage height, 20.91 ft Jan. 15, 1974; minimum discharge, 0.60 ft^3/s Aug. 23, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	1100	3,230	17.09	Feb. 1	0600	3,380	17.45
Dec. 31	0230	*3,490	*17.69				

Minimum discharge, 6.6 ft^3/s Sept. 5.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	28	30	1810	3160	344	535	341	106	44	16	11
2	13	29	29	1330	2370	316	528	314	101	43	16	9.4
3	17	26	29	1620	1590	328	637	291	97	42	17	9.4
4	21	e26	31	e1800	1110	312	843	326	93	41	18	8.8
5	18	e28	34	e1600	869	301	804	398	89	41	19	8.0
6	19	e28	34	e1100	712	368	1200	364	84	39	21	8.5
7	18	29	33	879	600	919	1150	328	80	38	19	12
8	16	e90	30	702	520	2220	938	307	80	38	18	18
9	15	e100	29	589	460	2030	771	284	79	38	18	23
10	14	e110	43	506	417	1450	657	263	78	36	17	25
11	13	e80	103	468	383	1050	575	254	76	35	16	28
12	13	e80	220	617	350	861	574	253	76	33	15	28
13	13	e90	464	1040	325	775	776	227	77	33	13	24
14	13	e80	741	903	302	857	638	211	76	32	13	22
15	13	e65	1100	725	311	1000	552	199	73	32	12	20
16	12	e60	2540	e620	352	871	513	196	69	31	12	21
17	12	e80	1540	e530	608	734	480	192	65	29	14	26
18	12	e70	1150	475	1090	625	445	183	63	28	11	21
19	12	e85	847	427	790	580	410	171	65	26	10	22
20	13	e80	672	387	636	675	380	162	63	25	11	21
21	14	e65	1000	359	576	839	400	156	63	23	11	18
22	15	e55	845	383	557	2010	363	149	63	22	9.5	15
23	15	e42	682	e420	525	2120	416	143	62	22	12	13
24	16	e42	559	e400	484	1570	544	138	61	21	12	12
25	16	e44	476	390	e460	1230	517	136	57	21	11	12
26	17	e40	471	602	e400	e1080	499	e130	54	21	13	11
27	17	e38	1200	697	e380	e980	460	124	51	20	12	11
28	21	36	1110	574	e360	884	422	120	48	18	12	10
29	23	34	1030	537	---	765	394	116	46	17	12	9.7
30	25	32	1470	1380	---	665	372	114	45	17	12	12
31	27	---	2880	2050	---	586	---	112	---	16	12	---
TOTAL	497	1692	21422	25920	20697	29345	17793	6702	2140	922	434.5	489.8
MEAN	16.0	56.4	691	836	739	947	593	216	71.3	29.7	14.0	16.3
MAX	27	110	2880	2050	3160	2220	1200	398	106	44	21	28
MIN	12	26	29	359	302	301	363	112	45	16	9.5	8.0
AC-FT	986	3360	42490	51410	41050	58210	35290	13290	4240	1830	862	972
CFSM	0.10	0.35	4.35	5.26	4.65	5.95	3.73	1.36	0.45	0.19	0.09	0.10
IN.	0.12	0.40	5.01	6.06	4.84	6.87	4.16	1.57	0.50	0.22	0.10	0.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2003, BY WATER YEAR (WY)

MEAN	69.4	464	1057	1190	1044	789	460	218	93.4	35.6	17.8	19.5
MAX	568	1897	2360	2455	2398	1736	1133	660	295	89.6	35.8	51.9
(WY)	1948	1974	1982	1970	1949	1961	1963	1963	1984	1984	1968	1941
MIN	8.24	21.9	29.9	37.6	83.2	190	160	90.9	43.1	16.4	4.89	6.02
(WY)	1953	1953	1977	1977	1977	1941	1977	1966	1966	1973	1967	1967

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1941 - 2003	
ANNUAL TOTAL	132598.9		128054.3			
ANNUAL MEAN	363		351		453	
HIGHEST ANNUAL MEAN					816	1974
LOWEST ANNUAL MEAN					104	1977
HIGHEST DAILY MEAN	3490	Jan 26	3160	Feb 1	11300	Dec 22 1964
LOWEST DAILY MEAN	6.4	Sep 5	8.0	Sep 5	1.4	Aug 29 1967
ANNUAL SEVEN-DAY MINIMUM	7.2	Sep 1	9.6	Aug 31	2.4	Aug 26 1967
ANNUAL RUNOFF (AC-FT)	263000		254000		327900	
ANNUAL RUNOFF (CFSM)	2.28		2.21		2.85	
ANNUAL RUNOFF (INCHES)	31.02		29.96		38.68	
10 PERCENT EXCEEDS	1110		988		1250	
50 PERCENT EXCEEDS	80		84		157	
90 PERCENT EXCEEDS	10		13		15	

e Estimated

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 mi^2, approximately.

WATER-DISCHARGE RECORDS

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 NGVD 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 good. Flow regulated by nine reservoirs upstream from station. 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.--47 years (water years 1894, 1896-1941), 13,530 ft^3/s, 38.00 in/yr, 9,805,000 acre-ft/yr.
62 years (water years 1942-2003), 14,700 ft^3/s, 41.28 in/yr, 10,650,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 266,000 ft^3/s Jan. 14, 1881, gage height, 37.8 ft, present datum; minimum discharge, 1,840 ft^3/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 ft^3/s, from rating curve extended above 220,000 ft^3/s. Flood of Feb. 4, 1890, reached a stage of 38.9 ft, discharge, 291,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 53,000 ft^3/s Jan. 1, gage height, 18.55 ft; minimum discharge, 3,740 ft^3/s Dec. 8-10.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6060	5350	4430	52000	45600	9050	23600	12300	8510	4460	4450	4670
2	6230	5200	4310	44400	47800	8770	22400	11500	8280	4410	4650	4630
3	6490	5070	4270	38900	42000	8540	21100	10800	8350	4340	4970	4570
4	6870	5000	4300	41900	35500	8550	20600	11000	8890	4340	4820	4480
5	7050	4940	4310	42800	31500	8310	19800	12100	8940	4500	4710	4490
6	6870	4910	4220	39100	28000	8580	20000	12500	8850	4530	4720	4520
7	6670	4910	3930	33000	23900	14000	21400	11900	8730	4490	4610	4630
8	6520	5020	3750	28700	20000	27500	19700	11300	8770	4450	4650	4790
9	6380	5390	3740	24200	17000	31400	18500	11200	8920	4660	4600	5050
10	6180	7540	3760	21000	14600	27500	18300	11000	8910	4660	4520	5140
11	6000	9380	3950	19000	13200	25500	18300	10600	8660	4610	4530	4970
12	5880	9530	4530	18200	11400	24100	19100	10600	7960	4580	4600	4940
13	5730	8600	5930	22600	10100	24100	23100	10400	7350	4600	4490	4890
14	5620	7950	8360	25900	9200	22600	24300	10200	6590	4620	4500	4800
15	5500	7670	10700	24500	8880	19800	22400	10100	5890	4560	4580	4760
16	5400	6930	18500	20700	9070	17300	20700	10100	5420	4530	4700	4750
17	5520	6540	24700	17600	12400	15500	19700	10500	5210	4570	4760	4710
18	5730	7200	22300	15600	18400	14300	20000	10700	4740	4610	4760	4750
19	5870	7030	19100	13500	19600	13100	19500	10600	4560	4640	4700	4660
20	5920	6500	16000	12100	17500	13600	17900	10300	4460	4590	4590	4620
21	5960	5860	16200	11000	15500	14400	17700	9750	4450	4580	4620	4560
22	6020	5290	18100	10600	14700	19900	18400	9520	4450	4470	4650	4540
23	6060	5080	16700	11100	14300	31300	17600	9050	4420	4440	4700	4600
24	6100	5030	13700	11600	13200	32300	21700	9060	4480	4530	4730	4580
25	6100	5050	11600	13200	12200	27900	26400	8770	4420	4570	4730	4600
26	6100	4970	10500	16600	11200	31100	24000	8860	4310	4620	4700	4650
27	6060	4850	16300	22900	10200	38800	21600	8660	4250	4680	4600	4590
28	5960	4770	25900	30200	9500	39300	18900	8470	4200	4690	4550	4660
29	5900	4670	32700	29200	---	35200	16200	8810	4360	4630	4560	4660
30	5780	4580	35900	29800	---	30100	13600	8740	4430	4590	4620	4600
31	5530	---	44500	40200	---	25800	---	8740	---	4460	4630	---
TOTAL	188060	180810	417190	782100	536450	668200	606500	318130	191760	141010	144000	140860
MEAN	6066	6027	13460	25230	19160	21550	20220	10260	6392	4549	4645	4695
MAX	7050	9530	44500	52000	47800	39300	26400	12500	8940	4690	4970	5140
MIN	5400	4580	3740	10600	8880	8310	13600	8470	4200	4340	4450	4480
AC-FT	373000	358600	827500	1551000	1064000	1325000	1203000	631000	380400	279700	285600	279400
CFSM	1.25	1.25	2.78	5.21	3.96	4.45	4.18	2.12	1.32	0.94	0.96	0.97
IN.	1.45	1.39	3.21	6.01	4.12	5.14	4.66	2.45	1.47	1.08	1.11	1.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2003, BY WATER YEAR (WY)

MEAN	8109	16820	27780	28790	23790	18770	15210	12600	8885	5271	4993	5860
MAX	17070	46180	69630	61230	51960	43890	29610	24830	18460	7333	7313	8985
(WY)	1948	1951	1956	1956	1961	1957	1955	1963	1993	1969	1971	1972
MIN	2629	3196	4150	3901	3208	6571	5630	4733	4091	3281	2485	2623
(WY)	1943	1953	1977	1977	1977	2001	1977	1973	1987	1944	1944	1944

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1942 - 2003	
ANNUAL TOTAL	4011140		4315070			
ANNUAL MEAN	10990		11820		14700	
HIGHEST ANNUAL MEAN					24080	1956
LOWEST ANNUAL MEAN					5831	1977
HIGHEST DAILY MEAN	52900	Jan 27	52000	Jan 1	210000	Jan 2 1943
LOWEST DAILY MEAN	3740	Dec 9	3740	Dec 9	2130	Sep 12 1944
ANNUAL SEVEN-DAY MINIMUM	3950	Dec 5	3950	Dec 5	2180	Sep 8 1944
ANNUAL RUNOFF (AC-FT)	7956000		8559000		10650000	
ANNUAL RUNOFF (CFSM)	2.27		2.44		3.04	
ANNUAL RUNOFF (INCHES)	30.83		33.17		41.28	
10 PERCENT EXCEEDS	22100		25600		33100	
50 PERCENT EXCEEDS	7590		8280		9350	
90 PERCENT EXCEEDS	4820		4500		4550	

PERIOD OF DAILY RECORD.--August 2001 to current year.

INSTRUMENTATION.--Temperature probe and data logger.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--
WATER TEMPERATURE: Maximum, 23.4°C July 22, 2003; minimum, 4.9°C Jan. 27, 28, 2002.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 23.4°C July 22; minimum, 5.8°C Feb. 9.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.1	14.1	14.5	8.3	7.8	8.1	7.5	7.0	7.2	8.1	8.0	8.1
2	14.3	13.2	13.8	8.2	7.5	7.9	8.0	7.5	7.7	8.5	8.0	8.2
3	14.3	13.6	14.0	8.5	7.9	8.2	7.9	7.8	7.9	9.1	8.5	8.8
4	14.6	13.9	14.2	8.7	8.1	8.4	7.8	7.6	7.7	9.4	8.8	9.1
5	15.1	14.3	14.7	9.6	8.7	9.1	8.1	7.7	7.9	9.5	8.2	9.0
6	15.8	14.9	15.3	10.0	9.4	9.8	7.9	7.5	7.7	8.2	7.6	8.0
7	15.7	14.7	15.3	10.4	9.9	10.1	7.5	7.1	7.2	7.6	7.0	7.3
8	15.9	15.1	15.5	10.5	10.3	10.4	7.2	6.8	7.0	7.1	6.6	6.9
9	15.7	15.0	15.4	10.4	10.2	10.3	6.9	6.7	6.8	6.6	6.3	6.4
10	15.5	14.4	14.9	10.2	9.8	10	7.4	6.8	7.2	6.8	6.3	6.6
11	14.4	13.5	13.9	9.9	9.6	9.8	8.1	7.4	7.7	6.8	6.6	6.7
12	13.7	12.8	13.2	10.5	9.6	10.1	8.6	8.1	8.3	7.2	6.6	6.9
13	13.5	12.5	13.0	10.6	10.1	10.4	8.6	8.2	8.3	7.9	7.2	7.7
14	13.6	12.8	13.2	10.9	10.4	10.7	9.1	8.4	8.7	8.3	7.8	8.0
15	13.7	12.8	13.3	10.8	10.4	10.7	9.0	8.8	8.9	8.3	8.0	8.1
16	14.2	13.1	13.7	10.4	9.7	9.9	8.8	8.3	8.6	8.0	7.4	7.7
17	14.2	13.5	13.9	10.1	9.6	9.9	8.3	7.8	8.1	7.6	7.0	7.3
18	14.1	13.6	13.9	10.1	9.6	9.8	7.8	6.9	7.4	7.0	6.6	6.8
19	14.4	13.8	14.1	10.3	9.6	9.9	7.0	6.8	6.9	6.8	6.3	6.6
20	14.4	13.9	14.2	10.9	10.1	10.5	7.2	6.8	7.0	7.0	6.5	6.7
21	14.3	13.9	14.0	10.8	10.4	10.5	7.6	7.2	7.4	7.4	6.7	7.0
22	14.1	13.7	13.9	10.6	10.5	10.5	7.6	7.4	7.5	8.1	7.3	7.7
23	14.0	13.4	13.8	10.6	10.5	10.5	7.6	7.3	7.4	8.7	7.9	8.3
24	13.8	12.7	13.0	10.5	9.9	10.4	7.4	7.0	7.2	9.4	8.6	9.0
25	13.0	12.5	12.8	9.9	8.8	9.3	7.1	6.8	7.0	9.9	9.3	9.6
26	12.7	12.0	12.3	8.8	7.9	8.3	7.3	7.1	7.2	11.0	9.8	10.4
27	12.3	11.5	11.7	7.9	7.3	7.5	8.0	7.1	7.5	11.0	10.1	10.6
28	11.7	11.2	11.5	7.5	7.0	7.3	8.1	7.8	8.0	10.2	8.9	9.5
29	12.3	11.5	11.9	7.5	7.0	7.3	7.8	7.4	7.6	8.9	8.7	8.7
30	11.8	9.9	10.7	7.4	7.0	7.2	7.7	7.4	7.5	10.7	8.7	9.6
31	9.9	8.3	9.0	---	---	---	8.1	7.6	7.9	11.0	10.4	10.8
MONTH	15.9	8.3	13.5	10.9	7.0	9.4	9.1	6.7	7.6	11.0	6.3	8.1

14174000 WILLAMETTE RIVER AT ALBANY, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.9	9.7	10.3	8.5	7.3	7.8	11.0	10.3	10.6	14.4	11.9	13.1
2	9.8	9.3	9.5	8.3	7.6	7.9	10.3	9.3	9.8	15.5	12.8	14.1
3	9.4	8.6	9.1	8.3	7.6	7.9	9.3	8.5	9.0	14.6	13.5	14.0
4	8.6	8.0	8.4	8.6	7.6	8.1	9.2	8.4	8.7	13.6	12.4	12.8
5	8.0	7.3	7.8	8.7	8.2	8.5	9.2	8.6	9.0	12.6	11.7	12.1
6	7.3	6.8	7.1	8.7	8.3	8.5	9.4	8.5	8.8	12.7	11.1	11.9
7	7.1	6.5	6.8	8.6	8.1	8.2	10.5	8.9	9.9	13.0	11.5	12.2
8	6.8	6.1	6.4	9.1	8.2	8.8	11.7	10.2	10.9	12.4	11.5	11.9
9	6.7	5.8	6.3	9.6	9.1	9.5	12.6	11.2	11.8	12.3	11.1	11.7
10	7.2	6.2	6.7	10.4	9.6	10.1	12.2	11.6	11.9	12.9	11.4	12.1
11	7.2	6.5	6.8	10.4	10.1	10.2	12.3	11.1	11.7	13.7	11.8	12.7
12	6.8	6.1	6.5	10.2	10.0	10.1	12.6	11.7	12.1	14.7	12.5	13.4
13	7.3	6.3	6.8	10.3	9.9	10.1	12.1	11.7	11.9	15.7	13.1	14.4
14	8.6	7.3	7.9	10.4	9.7	10.0	11.9	10.6	11.4	15.6	14.1	15.0
15	9.2	8.3	8.7	10.9	10.1	10.5	11.3	10.5	10.9	15.4	14.1	14.7
16	9.1	8.6	8.9	11.0	10.1	10.5	11.9	10.7	11.2	14.8	13.0	13.7
17	8.6	7.8	8.2	10.3	9.6	9.9	11.9	11.1	11.5	13.0	11.9	12.5
18	8.2	7.8	8.0	10.2	9.4	9.7	11.9	11.0	11.4	13.5	11.4	12.4
19	9.0	8.2	8.7	9.5	9.1	9.3	12.0	10.8	11.3	14.2	11.9	13.0
20	8.8	8.6	8.7	10.0	9.0	9.5	12.3	10.9	11.6	14.9	12.9	13.9
21	9.1	8.6	8.8	10.3	9.6	9.9	11.9	11.3	11.6	16.1	13.6	14.8
22	9.4	8.8	9.1	10.0	9.7	9.8	11.9	11.0	11.4	17.0	14.8	15.8
23	9.1	8.0	8.7	9.9	9.0	9.5	11.3	10.8	11.0	18.3	15.6	16.9
24	8.0	6.6	7.3	9.2	8.6	8.9	10.9	10.4	10.7	17.7	16.5	17.1
25	7.0	6.0	6.4	9.6	8.6	9.2	10.8	9.8	10.5	16.8	15.7	16.1
26	6.8	5.9	6.3	9.9	9.3	9.6	10.4	9.6	10	15.9	14.4	15.3
27	7.6	6.4	7.0	9.5	8.9	9.2	11.6	9.9	10.7	16.9	14.6	15.7
28	7.8	7.2	7.5	9.8	8.9	9.3	11.7	10.9	11.3	17.7	15.6	16.6
29	---	---	---	10.6	9.5	10.0	12.6	11.0	11.7	17.7	15.4	16.6
30	---	---	---	11.5	10.3	10.9	13.5	11.6	12.4	17.3	15.7	16.4
31	---	---	---	11.7	11.0	11.3	---	---	---	16.4	14.3	15.4
MONTH	10.9	5.8	7.8	11.7	7.3	9.4	13.5	8.4	10.9	18.3	11.1	14.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	17.4	14.8	16.1	21.2	19.5	20.1	22.2	21.0	21.5	19.9	18.8	19.4
2	17.9	15.6	16.7	20.0	18.3	19.2	21.4	19.3	20.3	19.9	18.7	19.4
3	18.1	15.7	16.9	20.1	18.1	19.1	19.3	18.4	18.9	20.3	19.4	19.8
4	18.6	16.0	17.3	20.7	18.7	19.7	20.6	18.8	19.6	20.5	19.5	20.0
5	19.4	16.7	18.0	21.1	19.3	20.2	20.6	19.2	20.0	21.0	19.5	20.3
6	20.0	17.3	18.6	21.7	19.9	20.8	20.6	19.4	20.0	20.8	19.5	19.9
7	19.9	17.3	18.6	21.7	20.1	20.9	21.2	19.6	20.4	19.5	18.3	18.8
8	19.7	17.3	18.5	21.1	20.1	20.5	21.4	19.8	20.6	18.3	17.7	17.9
9	18.7	16.9	17.5	21.7	19.8	20.8	21.5	20.2	20.9	17.7	16.9	17.2
10	17.3	15.6	16.5	22.3	20.6	21.4	21.5	20.2	20.9	17.5	16.9	17.1
11	17.4	15.4	16.4	22.4	20.7	21.6	21.0	20.0	20.5	17.8	17.3	17.5
12	16.9	15.6	16.1	22.3	20.8	21.6	21.0	19.6	20.2	18.4	17.2	17.8
13	16.2	14.8	15.5	21.8	21.1	21.4	21.0	19.5	20.3	18.1	17.1	17.7
14	17.1	14.9	16.0	21.9	20.1	21.0	21.1	19.7	20.4	18.1	17.1	17.7
15	18.5	16.0	17.2	22.1	20.4	21.3	20.9	19.9	20.4	18.0	17.1	17.6
16	19.5	17.4	18.4	21.9	20.5	21.2	20.4	19.3	20.0	17.7	16.8	17.1
17	20.5	18.6	19.5	21.5	20.2	20.9	21.1	19.5	20.3	17.0	16.1	16.6
18	20.2	18.9	19.3	22.0	20.1	21.0	21.6	20.3	21.0	16.9	15.8	16.5
19	18.9	17.8	18.1	22.4	20.7	21.5	21.4	20.3	20.9	17.5	16.6	17.0
20	17.8	16.8	17.2	22.5	20.8	21.7	20.9	19.5	20.2	17.2	16.4	16.9
21	17.3	16.2	16.8	23.2	21.6	22.4	20.4	19.1	19.8	17.1	16.2	16.7
22	17.0	16.3	16.7	23.4	22.1	22.8	20.2	19.3	19.7	17.5	16.3	16.9
23	16.7	16.2	16.5	22.9	21.5	22.2	19.5	18.4	18.9	17.9	16.8	17.4
24	17.6	15.4	16.5	22.0	20.5	21.2	19.7	17.9	18.8	18.2	17.1	17.7
25	19.3	16.6	17.9	21.4	19.8	20.7	20.1	18.5	19.3	18.4	17.5	18.0
26	21.1	18.5	19.8	21.4	19.7	20.6	20.0	19.1	19.6	18.8	17.7	18.3
27	22.4	20.2	21.3	21.7	20.0	20.8	19.8	18.8	19.3	19.2	18.1	18.7
28	22.9	20.9	21.9	22.4	20.6	21.5	19.9	18.6	19.3	19.1	18.1	18.7
29	23.1	21.4	22.2	22.8	21.2	22.0	19.9	18.6	19.3	18.7	17.8	18.2
30	22.2	21.1	21.6	23.1	21.6	22.4	20.1	18.9	19.6	17.8	17.0	17.3
31	---	---	---	22.7	21.4	22.1	20.2	19.0	19.7	---	---	---
MONTH	23.1	14.8	18.0	23.4	18.1	21.1	22.2	17.9	20.0	21.0	15.8	18.0
YEAR	23.4	5.8	13.2									

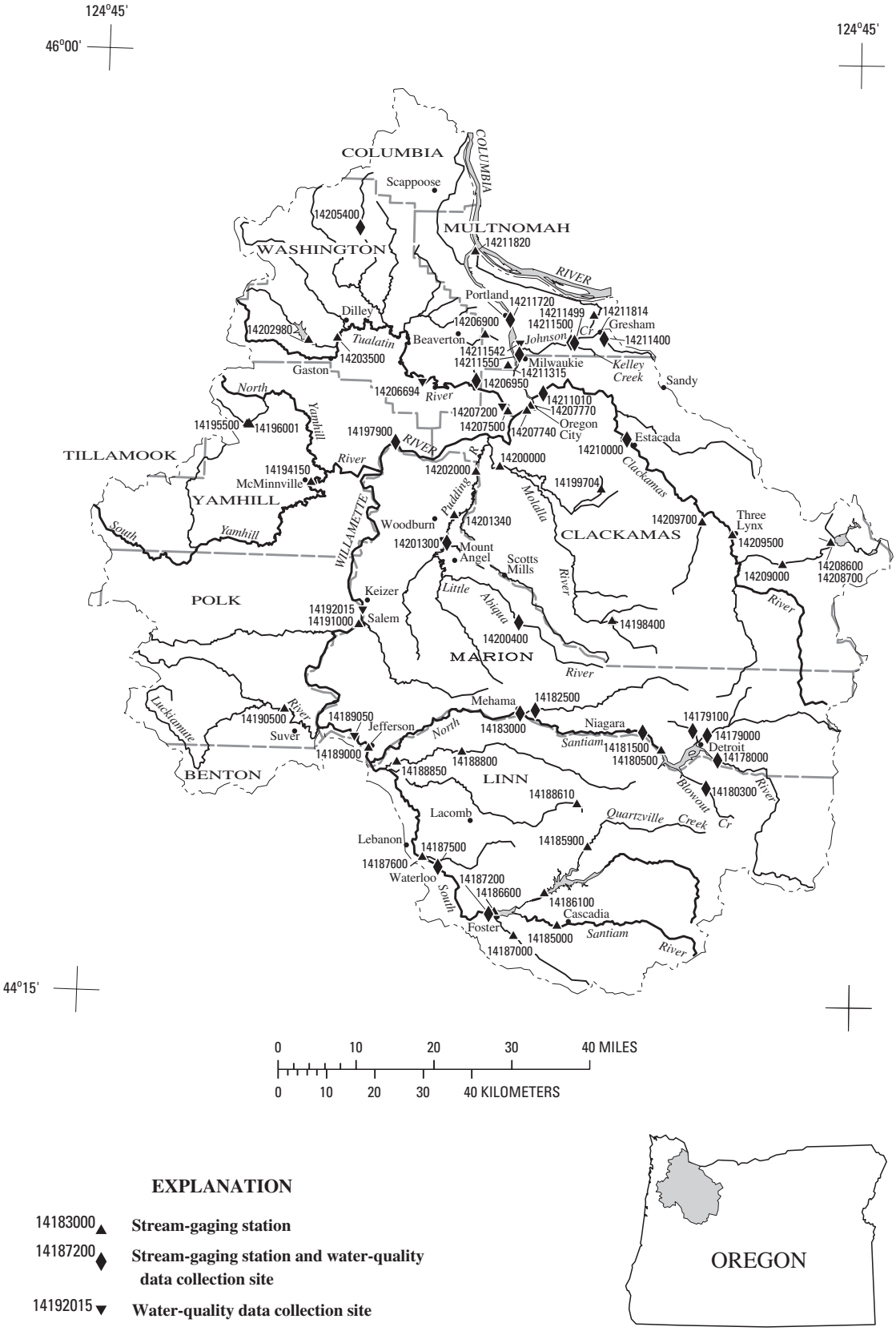


Figure 25. Location of surface-water and water-quality stations in the Willamette River Basin, downstream from the Luckiamute River.

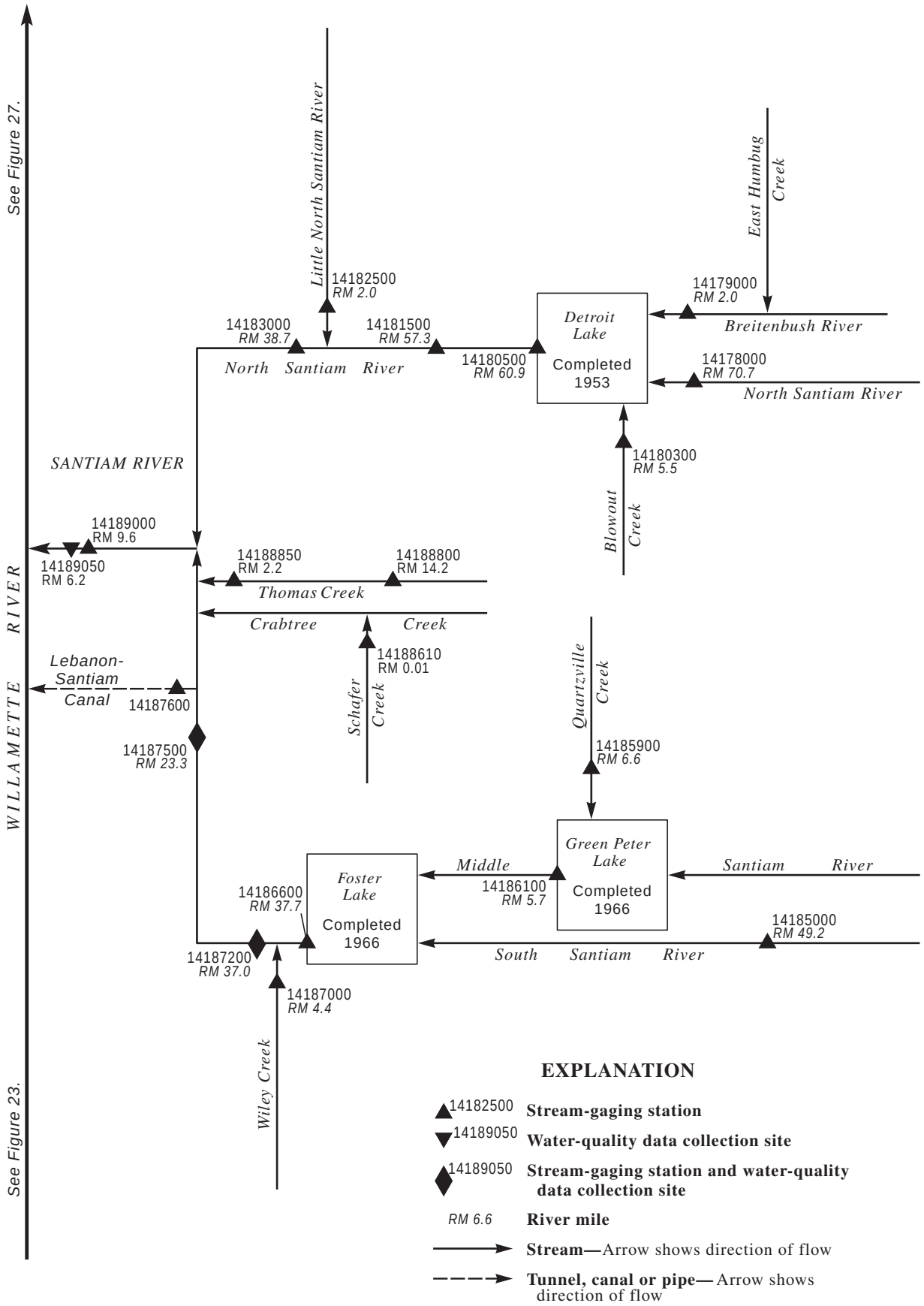


Figure 26. Schematic diagram showing gaging stations and diversions in the Santiam River Basin.

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 mi^2.

PERIOD OF RECORD.--January 1907 to October 1910, 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. WDR OR-85-2: 1982-82(P).

GAGE.--Water-stage recorder. Datum of gage is 1,590.07 ft above NGVD of 1929. See WSP 1738 for history of changes prior to Oct. 1, 1952.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station. Continuous water-quality records for the period April 1951 to September 1987 and October 1998 to current year have been collected at this location.

AVERAGE DISCHARGE.--77 years (water years 1908, 1909, 1929-2003), 1,006 ft^3/s, 63.29 in/yr, 728,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,700 ft^3/s Dec. 22, 1964, on basis of slope-area measurement of peak flow, gage height, 13.76 ft, temporary backwater from debris; minimum discharge, 250 ft^3/s Sept. 13, 1909.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 26	2230	4,140	6.05	Mar. 22	1430	5,130	6.54
Jan. 30	2130	*6,720	*7.22				

Minimum discharge, 342 ft^3/s Sept. 24-28, 30.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	452	356	385	1420	4440	860	2030	1160	966	534	416	372
2	417	354	380	1530	3070	828	1800	1140	925	513	415	371
3	424	355	377	2780	2390	824	1620	1150	891	504	415	374
4	435	356	391	2790	1970	791	1490	1220	872	499	415	375
5	415	356	393	2710	1670	798	1390	1310	885	497	419	378
6	408	356	383	1990	1460	988	1350	1230	893	497	415	375
7	399	360	377	1630	1300	1520	1270	1160	888	491	432	382
8	394	458	373	1380	1190	2300	1270	1100	869	489	416	398
9	390	573	371	1210	1090	2410	1390	1050	820	488	412	426
10	389	552	439	1080	1020	2640	1500	1010	768	484	410	423
11	386	526	584	995	960	2380	1780	1010	730	485	406	402
12	384	511	673	1280	907	2670	1710	1030	706	486	400	400
13	380	554	747	1710	874	2520	1670	1020	690	483	397	374
14	378	555	913	1670	853	2270	1570	1070	670	474	396	364
15	375	481	959	1460	839	2300	1450	1110	648	469	399	363
16	374	474	1350	1280	937	2100	1380	1080	639	466	398	388
17	371	661	1030	1150	992	1840	1410	1030	640	458	393	420
18	371	543	849	1080	1020	1600	1360	974	646	456	395	376
19	370	520	744	1030	990	1470	1270	927	623	459	397	365
20	370	500	680	980	1020	1490	1230	903	604	460	392	360
21	370	484	745	949	1210	1730	1250	909	606	457	385	355
22	368	465	680	1030	1470	4180	1250	960	613	456	394	352
23	365	447	634	1400	1320	3550	1250	1040	585	455	391	350
24	364	448	600	1460	1180	2630	1330	1160	564	445	383	348
25	363	430	571	1910	1080	2530	1240	1170	550	436	383	346
26	361	415	657	2890	1010	3190	1180	1110	544	434	386	347
27	361	406	1180	3240	949	2590	1130	1040	546	434	381	350
28	365	399	1220	2260	902	2190	1130	1080	550	431	375	349
29	364	394	1120	2010	---	1920	1200	1090	553	431	372	351
30	357	389	1290	5210	---	1850	1170	1160	552	426	372	350
31	355	---	1740	5330	---	2010	---	1080	---	421	372	---
TOTAL	11875	13678	22835	58844	38113	62969	42070	33483	21036	14518	12332	11184
MEAN	383	456	737	1898	1361	2031	1402	1080	701	468	398	373
MAX	452	661	1740	5330	4440	4180	2030	1310	966	534	432	426
MIN	355	354	371	949	839	791	1130	903	544	421	372	346
AC-FT	23550	27130	45290	116700	75600	124900	83450	66410	41720	28800	24460	22180
CFSM	1.77	2.11	3.41	8.79	6.30	9.40	6.49	5.00	3.25	2.17	1.84	1.73
IN.	2.05	2.36	3.93	10.13	6.56	10.84	7.25	5.77	3.62	2.50	2.12	1.93

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1908 - 2003, BY WATER YEAR (WY)

MEAN	506	981	1374	1327	1299	1204	1364	1416	1087	626	473	435
MAX	1215	2167	3840	2991	3552	2865	2241	2762	2759	1101	723	595
(WY)	1951	1951	1965	1953	1996	1972	2002	1949	1933	1950	1999	1971
MIN	312	335	432	383	404	616	610	600	412	363	319	302
(WY)	1981	1994	1977	1937	1977	1941	1941	1992	1992	1992	1992	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1908 - 2003	
ANNUAL TOTAL	360276		342937			
ANNUAL MEAN	987		940		1006	
HIGHEST ANNUAL MEAN					1506	1974
LOWEST ANNUAL MEAN					569	1977
HIGHEST DAILY MEAN	7330	Apr 14	5330	Jan 31	19400	Dec 22 1964
LOWEST DAILY MEAN	354	Nov 2	346	Sep 25	250	Sep 13 1909
ANNUAL SEVEN-DAY MINIMUM	355	Oct 31	349	Sep 23	273	Sep 7 1909
ANNUAL RUNOFF (AC-FT)	714600		680200		728900	
ANNUAL RUNOFF (CFSM)	4.57		4.35		4.66	
ANNUAL RUNOFF (INCHES)	62.05		59.06		63.29	
10 PERCENT EXCEEDS	1680		1820		1800	
50 PERCENT EXCEEDS	764		657		785	
90 PERCENT EXCEEDS	389		371		401	

14179000 BREITENBUSH RIVER ABOVE FRENCH CREEK, NEAR DETROIT, OR

LOCATION.--Lat 44°45'10", long 122°07'40", in SE 1/4 NE 1/4 sec.36, T.9 S., R.5 E., Marion County, Hydrologic Unit 17090005, in Willamette National Forest, on left bank 600 ft upstream from Canyon Creek, 1.5 mi northeast of Detroit, and at mile 2.0.

DRAINAGE AREA.--108 mi^2, at cableway, 0.2 mi downstream from gage.

PERIOD OF RECORD.--June 1932 to September 1987, October 1998 to current year. Monthly discharge only June 1932, published in WSP 1318. Published as "above Canyon Creek, near Detroit" from October 1952 to September 1984.

GAGE.--Water-stage recorder. Datum of gage is 1,573.95 ft above NGVD of 1929. Prior to Oct. 1, 1952, at site 0.2 mi downstream at datum 13.46 ft lower.

REMARKS.--No estimated daily discharges. Records good except those above 1,000 ft^3/s, which are fair. No regulation or diversion upstream from station. All records given herein are for measuring site 0.2 mi downstream from gage.

AVERAGE DISCHARGE.--60 years, (water years 1933-87, 1999-2003), 573 ft^3/s, 72.07 in/yr, 415,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,900 ft^3/s Dec. 22, 1964, gage height, 14.55 ft; minimum discharge, 87 ft^3/s Sept. 2, 1940, Sept. 24, 2001.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 30	1800	*5,270	*8.50	Mar. 22	1300	4,120	7.64
Jan. 31	2100	4,480	7.92				

Minimum discharge, 110 ft^3/s Oct. 31, Nov. 1, 6, 7, Sept. 3-7, 27-29.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	158	112	144	917	2820	416	1150	651	549	265	142	117
2	139	112	141	1110	1710	393	978	636	532	241	142	116
3	144	112	137	1930	1260	384	869	645	497	232	144	115
4	149	113	147	1870	990	367	784	676	484	227	143	113
5	144	113	148	1670	818	391	734	739	528	224	142	112
6	143	112	140	1140	706	710	725	675	542	224	144	112
7	137	115	136	878	623	1210	695	621	534	217	155	117
8	133	168	133	734	560	1840	745	575	509	215	146	193
9	129	261	131	637	506	1670	888	529	481	211	142	176
10	128	256	182	553	466	1680	942	499	426	203	140	161
11	126	272	320	498	434	1450	1110	495	392	198	138	149
12	124	249	429	734	407	1690	1040	499	373	196	136	147
13	122	325	461	1050	389	1620	991	514	365	194	135	134
14	121	337	629	998	375	1410	908	590	348	187	133	128
15	120	253	749	829	368	1320	828	633	334	182	132	125
16	118	237	930	699	427	1160	779	583	332	179	131	141
17	118	319	658	612	516	970	777	534	343	175	130	165
18	117	261	505	560	576	824	757	486	356	170	129	139
19	117	268	420	531	559	741	700	457	330	166	129	133
20	117	267	369	497	621	757	668	446	303	164	128	129
21	117	256	448	477	914	1080	676	466	290	162	126	125
22	116	234	388	556	1060	3240	670	551	283	159	125	121
23	114	213	341	806	846	2220	666	659	268	156	127	119
24	114	198	312	813	698	1520	715	802	258	153	124	118
25	114	181	287	1150	604	1390	661	794	257	151	122	116
26	114	169	365	2090	541	1730	628	708	264	150	121	115
27	114	161	1100	1910	487	1430	595	650	271	148	122	113
28	115	155	931	1210	449	1180	591	726	281	145	121	112
29	115	151	751	1110	---	1030	655	718	286	145	119	114
30	113	147	799	3740	---	1030	670	777	283	145	118	116
31	112	---	1210	3790	---	1190	---	655	---	143	118	---
TOTAL	3862	6127	13841	36099	20730	38043	23595	18989	11299	5727	4104	3891
MEAN	125	204	446	1164	740	1227	786	613	377	185	132	130
MAX	158	337	1210	3790	2820	3240	1150	802	549	265	155	193
MIN	112	112	131	477	368	367	591	446	257	143	118	112
AC-FT	7660	12150	27450	71600	41120	75460	46800	37660	22410	11360	8140	7720
CFSM	1.15	1.89	4.13	10.8	6.86	11.4	7.28	5.67	3.49	1.71	1.23	1.20
IN.	1.33	2.11	4.77	12.43	7.14	13.10	8.13	6.54	3.89	1.97	1.41	1.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2003, BY WATER YEAR (WY)

MEAN	254	654	914	841	800	685	778	782	572	284	171	156
MAX	827	1504	2385	2135	1867	1874	1280	1627	1564	532	288	267
(WY)	1948	1943	1965	1953	1982	1972	1949	1949	1933	1933	1999	1971
MIN	104	106	163	142	176	289	295	344	202	129	98.4	97.6
(WY)	1946	1937	1977	1937	1977	1941	1941	1934	1934	1940	1940	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1933 - 2003	
ANNUAL TOTAL	187747		186307			
ANNUAL MEAN	514		510		573	
HIGHEST ANNUAL MEAN					892	1974
LOWEST ANNUAL MEAN					276	1977
HIGHEST DAILY MEAN	4730	Apr 14	3790	Jan 31	12800	Dec 22 1964
LOWEST DAILY MEAN	112	Oct 31	112	Oct 31	89	Aug 31 1940
ANNUAL SEVEN-DAY MINIMUM	112	Oct 31	112	Oct 31	91	Oct 23 1944
ANNUAL RUNOFF (AC-FT)	372400		369500		415000	
ANNUAL RUNOFF (CFSM)	4.76		4.73		5.30	
ANNUAL RUNOFF (INCHES)	64.67		64.17		72.07	
10 PERCENT EXCEEDS	981		1100		1130	
50 PERCENT EXCEEDS	388		348		408	
90 PERCENT EXCEEDS	127		118		137	

14179100 FRENCH CREEK, NEAR DETROIT, OR

LOCATION.--Lat 44°45'38", long 122°10'02", in NW 1/4 SW 1/4 sec.26, T.9 S., R.5 E. Marion County, Hydrologic Unit 17090005, on right bank 25 ft upstream from bridge over French Creek, 1.9 northeast of Detroit, and at mile 1.7.

DRAINAGE AREA.--9.9 mi^2.

PERIOD OF RECORD.--October 2001 to current year.

GAGE.--Water-stage recorder. Datum of gage is approximately 1,800 ft above NGVD of 1929, from topographic map.

REMARKS.--Records poor. No regulation or diversion upstream from station. Water-quality records are available in the Environmental Quality Section of the Oregon District Office.

AVERAGE DISCHARGE.--2 years (water years 2002-03), 75.5 ft^3/s, 103.61 in/yr, 54,690 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,230 ft^3/s Apr. 14, 2002, gage height, 5.76 ft; minimum discharge, 2.7 ft^3/s Sept. 25, 26, 2002.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 26	2130	738	4.50	Jan. 31	1730	830	4.62
Jan. 30	1430	*1,470	*5.25	Mar. 22	1200	688	4.43

Minimum discharge, 3.6 ft^3/s Oct. 19, 24.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	4.9	12	115	462	33	173	108	50	9.3	5.6	4.6
2	6.0	4.9	12	161	248	31	121	110	e47	8.8	5.5	4.5
3	5.8	4.9	11	315	161	29	89	111	e42	8.6	5.7	4.4
4	6.8	4.9	12	320	111	28	71	102	e39	8.3	5.6	4.3
5	5.9	4.9	12	283	79	38	62	120	36	8.2	5.5	4.3
6	5.3	4.8	11	149	60	130	57	102	32	8.0	5.6	4.3
7	4.9	5.0	10	106	48	314	54	84	30	7.8	5.7	4.6
8	4.5	e9.9	9.8	83	42	469	74	71	27	7.7	5.5	16
9	4.3	e21	9.6	67	37	356	130	61	24	7.5	5.4	14
10	4.2	e25	15	54	33	348	155	54	20	7.3	5.3	13
11	4.1	e35	45	46	30	262	189	54	19	7.2	5.2	13
12	4.0	e42	86	89	27	316	170	58	17	7.2	5.2	19
13	3.9	53	108	159	26	270	153	66	17	7.2	5.1	12
14	3.8	74	135	157	25	210	130	86	16	7.1	5.1	9.4
15	3.8	46	146	116	25	182	104	88	15	7.0	5.0	8.2
16	3.8	45	183	83	31	150	94	70	14	6.9	5.0	9.6
17	3.7	71	125	63	37	118	99	e60	13	6.9	5.0	11
18	3.7	48	83	57	42	89	94	53	13	6.8	4.9	9.5
19	3.7	73	59	57	45	77	83	51	13	6.7	4.9	8.5
20	3.7	67	48	52	72	88	79	54	13	6.6	5.0	7.8
21	3.7	51	51	50	166	169	82	64	13	6.6	5.0	7.4
22	3.7	39	44	73	198	521	81	89	16	6.4	5.0	7.0
23	3.7	31	37	112	143	339	82	114	13	6.3	4.9	6.7
24	3.7	27	32	124	93	204	106	138	12	6.2	4.9	6.5
25	3.7	22	28	204	65	187	87	109	12	6.2	4.8	6.2
26	3.7	20	35	455	51	314	74	81	11	6.1	4.8	6.1
27	3.8	17	137	316	42	217	64	72	10	6.1	4.8	5.9
28	4.0	16	127	147	37	151	69	83	10	5.9	4.8	5.8
29	4.4	15	102	145	---	127	95	81	9.7	5.8	4.7	5.8
30	4.9	13	98	909	---	149	117	83	9.6	5.7	4.7	5.8
31	4.9	---	148	672	---	191	---	61	---	5.6	4.6	---
TOTAL	139.1	895.2	1971.4	5739	2436	6107	3038	2538	613.3	218.0	158.8	245.2
MEAN	4.49	29.8	63.6	185	87.0	197	101	81.9	20.4	7.03	5.12	8.17
MAX	9.0	74	183	909	462	521	189	138	50	9.3	5.7	19
MIN	3.7	4.8	9.6	46	25	28	54	51	9.6	5.6	4.6	4.3
AC-FT	276	1780	3910	11380	4830	12110	6030	5030	1220	432	315	486
CFSM	0.45	3.01	6.42	18.7	8.79	19.9	10.2	8.27	2.06	0.71	0.52	0.83
IN.	0.52	3.36	7.41	21.56	9.15	22.95	11.42	9.54	2.30	0.82	0.60	0.92

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

MEAN	19.2	69.0	109	144	78.8	140	156	106	62.6	10.8	4.69	5.93
MAX	33.9	108	154	185	87.0	197	210	131	105	14.6	5.12	8.17
(WY)	2002	2002	2002	2003	2003	2003	2002	2002	2002	2002	2003	2003
MIN	4.49	29.8	63.6	103	70.5	83.8	101	81.9	20.4	7.03	4.25	3.68
(WY)	2003	2003	2003	2002	2002	2002	2003	2003	2003	2003	2002	2002

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2002 - 2003	
ANNUAL TOTAL	24961.5		24099.0			
ANNUAL MEAN	68.4		66.0		75.5	
HIGHEST ANNUAL MEAN					85.0	2002
LOWEST ANNUAL MEAN					66.0	2003
HIGHEST DAILY MEAN	1280	Apr 14	909	Jan 30	1280	Apr 14 2002
LOWEST DAILY MEAN	2.8	Sep 26	3.7	Oct 17	2.1	Oct 3 2001
ANNUAL SEVEN-DAY MINIMUM	2.9	Sep 22	3.7	Oct 17	2.2	Oct 1 2001
ANNUAL RUNOFF (AC-FT)	49510		47800		54690	
ANNUAL RUNOFF (CFSM)	6.91		6.67		7.63	
ANNUAL RUNOFF (INCHES)	93.79		90.55		103.61	
10 PERCENT EXCEEDS	147		158		174	
50 PERCENT EXCEEDS	42		31		44	
90 PERCENT EXCEEDS	3.7		4.8		4.1	

e Estimated

14180300 BLOWOUT CREEK NEAR DETROIT, OR

LOCATION.--44°39'11", long 122°07'47", in NW 1/4 sec.6, T.11 S., R.6 E., Marion County, Hydrologic Unit 17090005, on left bank, 6.0 mi south of Detroit, and at mile 5.5.

DRAINAGE AREA.--26.0 mi^2.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,840 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except those below 10 ft^3/s and estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--5 years (water years 1999-2003), 113 ft^3/s, 59.19 in/yr, 82,050 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,400 ft^3/s Dec. 28, 1998, gage height, 7.38 ft; minimum daily discharge, 2.1 ft^3/s Sept. 3-5, 2003.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s and maximum (*):

		Discharge	Gage height			Discharge	Gage height
Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 30	2000	1,240	5.86	Mar. 22	1200	*1,530	*6.13

Minimum daily discharge, 2.1 ft^3/s Sept. 3-5.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.9	e4.0	13	302	757	88	216	108	49	13	e3.5	e2.2
2	5.5	e4.0	12	363	475	84	186	104	45	12	e3.4	e2.2
3	5.8	e4.0	12	685	328	82	163	103	42	11	e3.3	e2.1
4	6.2	e4.0	13	588	248	76	148	121	39	11	e3.3	e2.1
5	5.4	e4.0	13	484	198	77	140	150	36	10	e3.2	e2.1
6	5.1	e4.0	12	305	165	138	141	135	34	10	e3.3	e2.4
7	5.0	e5.0	11	220	143	469	137	122	32	9.5	e4.0	2.8
8	e4.9	e16	10	173	126	674	145	110	30	8.9	e3.5	4.3
9	e4.8	57	11	144	112	564	176	99	28	8.8	e3.3	7.0
10	e4.7	56	33	123	101	565	203	92	27	8.2	e3.2	6.7
11	e4.6	53	95	109	92	420	246	89	26	e7.7	e3.1	5.1
12	e4.6	41	104	189	87	429	227	88	24	e7.3	e3.0	4.8
13	e4.5	48	134	268	81	376	205	87	24	e7.0	e2.9	3.9
14	e4.5	44	174	240	77	326	179	89	23	e6.7	e2.8	3.4
15	e4.4	29	214	197	77	301	157	90	22	e6.3	e2.8	3.1
16	e4.4	35	283	163	95	263	144	89	20	e6.1	e2.7	4.8
17	e4.4	81	179	141	126	221	146	84	20	e5.8	e2.7	7.4
18	e4.3	48	132	125	145	186	142	77	19	e5.6	e2.6	5.4
19	e4.3	41	105	113	139	167	130	72	19	e5.3	e2.6	4.4
20	e4.2	33	91	103	143	177	120	68	19	e5.2	e2.5	3.8
21	e4.2	28	119	97	170	265	117	68	20	e5.0	e2.5	3.6
22	e4.2	24	101	114	203	1110	112	71	20	e4.8	e2.4	3.3
23	e4.1	21	90	172	176	695	114	75	18	e4.6	e2.4	2.9
24	e4.1	21	81	187	151	404	134	82	17	e4.5	e2.4	2.8
25	e4.1	18	73	254	132	350	125	83	16	e4.3	e2.3	2.7
26	e4.0	16	104	474	117	487	119	74	15	e4.2	e2.3	2.7
27	e4.0	15	339	520	104	383	114	67	14	e4.1	e2.3	2.6
28	e4.0	15	285	322	95	291	113	64	14	e3.9	e2.2	2.4
29	e4.0	14	218	283	---	234	116	61	13	e3.8	e2.2	2.7
30	e4.0	13	320	943	---	207	111	60	13	e3.7	e2.2	2.9
31	e4.0	---	498	939	---	217	---	54	---	e3.6	e2.2	---
TOTAL	143.2	796.0	3879	9340	4863	10326	4526	2736	738	211.9	87.1	108.6
MEAN	4.62	26.5	125	301	174	333	151	88.3	24.6	6.84	2.81	3.62
MAX	6.9	81	498	943	757	1110	246	150	49	13	4.0	7.4
MIN	4.0	4.0	10	97	77	76	111	54	13	3.6	2.2	2.1
AC-FT	284	1580	7690	18530	9650	20480	8980	5430	1460	420	173	215
CFSM	0.18	1.02	4.81	11.6	6.68	12.8	5.80	3.39	0.95	0.26	0.11	0.14
IN.	0.20	1.14	5.55	13.36	6.96	14.77	6.48	3.91	1.06	0.30	0.12	0.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

MEAN	9.88	124	235	204	199	189	174	137	65.1	17.1	6.75	4.63
MAX	15.6	226	425	301	308	333	311	222	135	33.9	11.5	5.73
(WY)	2002	1999	1999	2003	2000	2003	2002	1999	1999	1999	1999	2000
MIN	4.62	22.6	81.4	53.5	59.6	90.0	100	88.3	24.6	6.84	2.81	3.62
(WY)	2003	2001	2001	2001	2001	2001	2001	2003	2003	2003	2003	2003

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	39077.5		37754.8			
ANNUAL MEAN	107		103		113	
HIGHEST ANNUAL MEAN					162	1999
LOWEST ANNUAL MEAN					48.3	2001
HIGHEST DAILY MEAN	1410	Apr 14	1110	Mar 22	2440	Dec 28 1998
LOWEST DAILY MEAN	3.6	Sep 26	2.1	Sep 3	2.1	Sep 3 2003
ANNUAL SEVEN-DAY MINIMUM	3.7	Sep 22	2.2	Aug 30	2.2	Aug 30 2003
ANNUAL RUNOFF (AC-FT)	77510		74890		82050	
ANNUAL RUNOFF (CFSM)	4.12		3.98		4.36	
ANNUAL RUNOFF (INCHES)	55.91		54.02		59.19	
10 PERCENT EXCEEDS	248		274		261	
50 PERCENT EXCEEDS	72		41		65	
90 PERCENT EXCEEDS	4.3		3.1		4.7	

e Estimated

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 mi^2.

PERIOD OF RECORD.--January 1953 to September 2003 (discontinued). Prior to October 1971, published as Detroit Reservoir near Detroit.

GAGE.--Water-stage recorder. Datum of gage is NGVD 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, 442,700 acre-ft June 10, elevation, 1,565.43 ft; minimum contents, 154,600 acre-ft Dec. 26, elevation, 1,450.10 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 above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1536.41	1499.79	1456.01	1459.55	1505.73	1514.74	1543.26	1563.28	1564.51	1562.65	1556.95	1550.78
2	1535.29	1498.53	1455.34	1459.38	1509.17	1515.33	1543.38	1563.26	1564.33	1562.44	1556.78	1550.31
3	1534.28	1497.18	1454.77	1462.67	1509.74	1515.89	1543.76	1563.46	1564.32	1562.27	1556.67	1549.75
4	1533.18	1495.89	1454.37	1465.15	1509.46	1516.39	1544.61	1563.82	1564.46	1562.01	1556.51	1549.18
5	1532.04	1494.58	1453.83	1466.94	1508.61	1516.96	1545.45	1563.92	1564.65	1561.73	1556.35	1548.61
6	1530.96	1493.25	1453.39	1466.39	1507.33	1518.41	1546.30	1563.58	1564.85	1561.51	1556.20	1547.99
7	1529.78	1492.00	1452.91	1464.73	1505.78	1522.46	1546.98	1563.52	1565.03	1561.26	1556.07	1547.49
8	1528.63	1491.01	1452.40	1462.53	1503.97	1528.28	1547.80	1563.62	1565.15	1560.99	1555.96	1546.99
9	1527.40	1490.16	1451.91	1460.27	1501.97	1532.99	1548.94	1563.56	1565.27	1560.76	1555.78	1546.53
10	1526.23	1489.24	1451.69	1458.15	1499.79	1537.44	1550.30	1563.48	1565.25	1560.44	1555.61	1546.03
11	1525.04	1488.33	1452.32	1456.52	1497.84	1540.48	1552.02	1563.38	1565.09	1560.24	1555.44	1545.34
12	1523.83	1487.25	1453.06	1456.60	1496.88	1542.94	1553.48	1563.44	1565.00	1559.98	1555.27	1544.65
13	1522.66	1485.88	1453.77	1457.96	1496.45	1543.36	1554.87	1563.44	1564.99	1559.66	1555.09	1543.92
14	1521.44	1484.59	1453.92	1459.21	1496.46	1543.03	1555.89	1563.62	1564.97	1559.44	1554.89	1543.14
15	1520.17	1482.84	1454.07	1459.61	1496.89	1542.76	1556.21	1564.00	1564.91	1559.20	1554.70	1542.32
16	1518.95	1481.18	1456.16	1459.63	1497.67	1542.52	1556.38	1564.33	1564.81	1559.11	1554.57	1541.65
17	1517.64	1480.02	1456.56	1459.15	1498.92	1542.28	1556.56	1564.33	1564.72	1558.96	1554.44	1540.95
18	1516.46	1478.40	1456.16	1459.01	1500.11	1542.07	1556.76	1564.23	1564.66	1558.84	1554.25	1540.13
19	1515.34	1476.50	1455.33	1459.22	1501.23	1541.70	1556.81	1564.16	1564.54	1558.73	1554.05	1539.30
20	1514.20	1474.46	1454.29	1459.42	1502.59	1541.45	1557.08	1564.15	1564.45	1558.62	1553.83	1538.40
21	1513.07	1472.30	1454.22	1459.54	1504.67	1541.84	1557.69	1564.22	1564.34	1558.50	1553.62	1537.50
22	1512.08	1469.98	1453.94	1460.00	1507.28	1548.31	1558.30	1564.40	1564.23	1558.38	1553.38	1536.57
23	1510.89	1467.65	1453.22	1461.37	1509.20	1551.11	1558.90	1564.52	1564.06	1558.25	1553.15	1535.64
24	1509.69	1465.25	1452.04	1462.37	1510.53	1550.77	1559.68	1564.57	1563.92	1558.11	1552.91	1534.61
25	1508.48	1462.67	1450.65	1464.06	1511.61	1548.86	1560.28	1564.54	1563.76	1557.98	1552.64	1533.66
26	1507.25	1460.58	1450.29	1468.48	1512.59	1548.50	1560.83	1564.33	1563.60	1557.85	1552.44	1532.71
27	1505.94	1458.98	1454.07	1471.84	1513.44	1546.71	1561.30	1564.25	1563.40	1557.72	1552.25	1531.72
28	1504.72	1457.90	1456.30	1471.74	1514.19	1544.28	1561.84	1564.42	1563.26	1557.57	1551.99	1530.71
29	1503.62	1457.29	1456.73	1471.25	---	1542.98	1562.41	1564.72	1563.08	1557.42	1551.74	1529.71
30	1502.30	1456.64	1457.41	1483.65	---	1542.64	1562.89	1565.02	1562.87	1557.27	1551.42	1528.77
31	1501.07	---	1459.69	1496.53	---	1542.72	---	1564.76	---	1557.11	1551.29	---
MAX	1536.41	1499.79	1459.69	1496.53	1514.19	1551.11	1562.89	1565.02	1565.27	1562.65	1556.95	1550.78
MIN	1501.07	1456.64	1450.29	1456.52	1496.45	1514.74	1543.26	1563.26	1562.87	1557.11	1551.29	1528.77
(†)	257100	166100	171700	246600	289300	368400	433900	440400	433800	414200	395000	328100
(‡)	-95200	-91000	+5600	+74900	+42700	+79100	+65500	+6500	-6600	-19600	-19200	-66900

CAL YR 2002 MAX 1564.68 MIN 1447.30 AC-FT‡ +22200
WTR YR 2003 MAX 1565.27 MIN 1450.29 AC-FT‡ -24200

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

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 mi^2.

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 NGVD of 1929 (Federal Highway Administration bench mark). See WSP 1738 for history of changes prior to Oct. 1, 1952.

REMARKS.--Records good except for estimated daily discharges, which are fair. 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.--75 years (water years 1910-19, 1939-2003), 2,321 ft^3/s, 69.58 in/yr, 1,682,000 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 63,200 ft^3/s Nov. 22, 1909, gage height, 16.4 ft, from floodmark, site and datum then in use, from rating curve extended above 35,000 ft^3/s; minimum discharge, 19 ft^3/s Aug. 21, 1963; minimum daily, 395 ft^3/s Mar. 25, 26, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,560 ft^3/s Mar. 24, gage height, 7.40 ft; minimum discharge, 669 ft^3/s Dec. 10.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2150	2040	1180	4060	1180	973	3690	1850	2190	1190	847	993
2	2360	2050	1170	4720	3290	980	3580	2450	2000	1190	843	1410
3	2370	2040	1100	5130	4730	971	2900	2150	1570	1190	851	1470
4	2360	2040	974	5530	4660	973	1720	2150	1280	1180	852	1470
5	2340	2030	975	5340	4600	975	1600	2910	1210	1190	847	1480
6	2350	2020	977	5190	4580	983	1640	3290	1200	1180	848	1490
7	2340	2040	975	5130	4570	995	1600	2660	1190	1190	855	1490
8	2350	2100	976	5090	4560	1020	1610	2080	1190	1190	851	1490
9	2340	2280	975	4550	4580	1010	1600	2290	1200	1200	850	1480
10	2350	2270	968	4220	4600	1010	1600	2150	1270	1190	850	1470
11	2330	2290	985	3570	4090	1760	1600	2160	1490	1180	854	1760
12	2300	2270	1130	3190	2950	3150	1600	1970	1300	1180	856	1780
13	2300	2770	1360	3040	2260	5590	1650	1950	1200	1180	849	1780
14	2290	2800	2560	3000	1670	6060	1860	1790	1190	1180	848	1780
15	2300	2790	2840	2890	1130	5610	2760	1610	1190	1030	843	1780
16	2280	2820	2390	2950	1100	4990	2770	1570	1190	902	845	1800
17	2270	2820	2480	2910	1080	4330	2790	2060	1190	898	844	1800
18	e2200	2790	2530	2390	1110	3740	2760	2080	1190	870	851	1890
19	e2100	3130	2520	2020	1110	3720	2770	1960	1190	849	853	1870
20	e2100	3180	2530	1890	1110	3720	2090	1710	1200	846	902	1940
21	e2100	3170	2060	1870	1120	4150	1590	1670	1200	849	949	1970
22	e1900	3170	2030	1840	1120	3700	1580	1600	1200	848	942	1980
23	e2050	3170	2050	1850	1110	4850	1580	1870	1200	844	941	1990
24	e2050	3140	2410	2380	1100	6790	1570	2260	1200	847	940	1990
25	e2050	3140	2480	3180	1080	9160	1660	2530	1200	849	939	1990
26	2060	2640	2110	3870	974	8500	1540	2570	1190	850	907	1980
27	2050	2140	1440	4750	967	9070	1540	2250	1190	848	901	1980
28	2050	1630	1840	5010	973	8820	1550	1770	1190	846	923	1990
29	2050	1200	2880	5100	---	6190	1550	1550	1190	842	950	1990
30	2050	1170	3370	2670	---	4540	1830	1700	1190	841	997	1980
31	2040	---	3350	1090	---	4310	---	2410	---	847	999	---
TOTAL	68230	73140	57615	110420	67404	122640	60180	65020	38580	31316	27427	52263
MEAN	2201	2438	1859	3562	2407	3956	2006	2097	1286	1010	885	1742
MAX	2370	3180	3370	5530	4730	9160	3690	3290	2190	1200	999	1990
MIN	1900	1170	968	1090	967	971	1540	1550	1190	841	843	993
AC-FT	135300	145100	114300	219000	133700	243300	119400	129000	76520	62120	54400	103700
MEAN†	652	909	1950	4779	3177	5242	3108	2203	1175	691	572	619
CFSM†	1.44	2.01	4.30	10.5	7.01	11.6	6.86	4.86	2.59	1.52	1.26	1.37
IN.†	1.66	2.24	4.96	12.16	7.30	13.34	7.65	5.61	2.89	1.76	1.46	1.52
AC-FT†	40100	54100	119900	293900	176400	322400	184900	135500	69920	42520	35200	36800

CAL YR 2002 TOTAL 764676 MEAN 2095 MAX 10100 MIN 876 AC-FT 1517000 MEAN† 2125 CFSM† 4.69 IN.† 63.70 AC-FT† 1539000
WTR YR 2003 TOTAL 774235 MEAN 2121 MAX 9160 MIN 841 AC-FT 1536000 MEAN† 2299 CFSM† 5.08 IN.† 68.91 AC-FT† 1665000

e Estimated
† Adjusted for change in contents, in Detroit Lake.

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 mi^2 at cableway 1.2 mi downstream.

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 as a result of differences 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 NGVD of 1929. Prior to June 12, 1948, nonrecording gage at about same site and datum.

REMARKS.--Records good. No regulation or diversion upstream from station. All records given herein are for measuring site 1.2 mi downstream from gage. Continuous water-quality records for the period May 1985 to September 1986 have been collected at this location.

AVERAGE DISCHARGE.--72 years (water years 1932-2003), 747 ft^3/s, 90.63 in/yr, 541,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,000 ft^3/s Dec. 22, 1964, gage height, 16.73 ft, from rating curve extended above 17,000 ft^3/s; minimum discharge, 13 ft^3/s Aug. 30, 1961.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 8,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	2100	*9,900	*10.20	No other peak above base discharge.			

Minimum discharge, 26 ft^3/s Sept. 5, 6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	130	58	116	1540	4370	507	1260	902	315	75	40	28
2	88	58	108	1660	2250	468	1060	810	289	73	39	28
3	83	58	102	2330	1640	527	970	769	266	70	40	28
4	110	59	99	2230	1250	506	916	907	246	68	40	28
5	98	59	104	2050	1010	676	894	1280	235	66	39	27
6	86	59	96	1260	846	2050	972	1050	224	64	40	27
7	79	60	91	996	725	4690	967	875	210	62	e42	28
8	74	97	88	846	640	5090	1030	759	197	61	42	73
9	70	515	85	732	568	3330	1380	662	181	60	39	103
10	68	684	97	629	509	2940	1390	595	168	58	38	117
11	67	731	366	554	464	1980	1560	565	157	57	38	99
12	65	508	973	896	425	2340	1360	551	148	55	37	130
13	63	744	1070	1330	395	1800	1310	546	148	54	37	92
14	63	765	926	1250	381	1440	1200	593	149	e55	36	71
15	61	525	1270	955	365	1270	1050	586	133	e53	35	61
16	60	372	1840	756	422	1160	991	546	124	52	35	58
17	59	690	1190	638	657	1000	1110	523	118	51	35	91
18	59	554	882	584	901	865	1220	489	113	50	34	72
19	59	609	767	552	804	764	1060	466	110	48	34	62
20	59	538	648	499	1030	798	924	448	108	47	34	57
21	60	407	1070	458	1720	1700	864	449	112	46	34	53
22	60	324	874	475	1950	4990	819	505	131	45	34	50
23	59	267	710	652	1350	2610	803	558	114	44	35	48
24	58	234	604	684	1010	1620	1100	626	107	44	35	46
25	58	203	530	1370	823	1470	973	584	98	43	34	44
26	58	179	666	3100	702	2290	892	489	92	43	33	42
27	59	161	1580	2330	614	1770	874	420	88	43	32	41
28	60	146	1380	1310	558	1380	823	438	83	43	32	39
29	60	135	1180	1240	---	1150	949	420	79	41	32	39
30	59	125	1600	6730	---	1130	984	420	76	41	e31	39
31	58	---	2400	6820	---	1270	---	372	---	40	e29	---
TOTAL	2150	9924	23512	47456	28379	55581	31705	19203	4619	1652	1115	1721
MEAN	69.4	331	758	1531	1014	1793	1057	619	154	53.3	36.0	57.4
MAX	130	765	2400	6820	4370	5090	1560	1280	315	75	42	130
MIN	58	58	85	458	365	468	803	372	76	40	29	27
AC-FT	4260	19680	46640	94130	56290	110200	62890	38090	9160	3280	2210	3410
CFSM	0.62	2.95	6.77	13.7	9.05	16.0	9.44	5.53	1.37	0.48	0.32	0.51
IN.	0.71	3.30	7.81	15.76	9.43	18.46	10.53	6.38	1.53	0.55	0.37	0.57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2003, BY WATER YEAR (WY)

MEAN	387	1129	1436	1317	1194	1028	974	783	449	131	62.3	103
MAX	1594	3121	3680	3615	3533	2645	1712	1439	1684	547	432	490
(WY)	1948	1943	1965	1953	1996	1932	1937	1949	1933	1983	1968	1959
MIN	17.3	25.7	193	218	260	226	268	211	53.5	32.3	19.2	24.3
(WY)	1988	1937	1977	1937	1977	1992	1941	1992	1992	1992	1961	1987

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1932 - 2003	
ANNUAL TOTAL	213600		227017			
ANNUAL MEAN	585		622		747	
HIGHEST ANNUAL MEAN					1146	1974
LOWEST ANNUAL MEAN					400	1977
HIGHEST DAILY MEAN	6320	Apr 14	6820	Jan 31	31400	Feb 7 1996
LOWEST DAILY MEAN	39	Sep 14	27	Sep 5	13	Aug 30 1961
ANNUAL SEVEN-DAY MINIMUM	40	Sep 8	28	Sep 1	15	Aug 24 1961
ANNUAL RUNOFF (AC-FT)	423700		450300		541300	
ANNUAL RUNOFF (CFSM)	5.23		5.55		6.67	
ANNUAL RUNOFF (INCHES)	70.95		75.40		90.63	
10 PERCENT EXCEEDS	1260		1380		1670	
50 PERCENT EXCEEDS	515		372		465	
90 PERCENT EXCEEDS	55		40		42	

e Estimated

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 mi^2.

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 NGVD of 1929. Prior to June 15, 1933, nonrecording gage at site 100 ft upstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. 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.--36 years (water years 1906, 1911-14, 1922-1952), 3,251 ft^3/s, 2,355,000 acre-ft/yr.
51 years (water years 1953-2003), 3,449 ft^3/s, 2,499,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,600 ft^3/s Dec. 28, 1945, gage height, 15.37 ft, from rating curve extended above 36,000 ft^3/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 ft^3/s Aug. 3, 1970; minimum daily, 420 ft^3/s Sept. 18, 1924.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16,400 ft^3/s Jan. 31, gage height, 8.46 ft; minimum discharge, 785 ft^3/s Aug. 11.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2170	2130	1380	6800	9870	1820	5920	3430	2770	1370	854	1010
2	2340	2140	1370	7500	7550	1760	5450	3790	2540	1360	843	1370
3	2390	2130	1330	9060	7710	1860	4730	3530	2140	1360	853	1580
4	2410	2130	1130	9380	7000	1810	3610	3720	1820	1350	858	1570
5	2380	2140	1140	8980	6420	1990	3220	4890	1650	1350	848	e1580
6	2380	2130	1120	7420	6040	3980	3500	5120	1620	1340	848	e1600
7	2350	2160	1120	6860	5800	8320	3390	4230	1600	1340	871	e1600
8	2360	2270	1110	6500	5620	10300	3410	3480	1580	1340	856	e1640
9	2360	2940	1100	5870	5510	6930	3960	3430	1560	1340	852	e1660
10	2350	3120	1140	5310	5440	6210	3940	3240	1600	1350	850	e1670
11	2340	3180	1490	4560	5010	5050	4210	3140	1790	1320	840	e1980
12	2310	2890	2410	4640	3700	6900	3910	2990	1670	1320	845	2030
13	2320	3580	2800	5070	3000	8320	3950	2860	1550	1320	837	1990
14	2300	3740	3910	4990	2400	8480	3930	2790	1520	1310	835	1960
15	2300	3440	4850	4450	1860	7760	4550	2620	1490	1200	827	1950
16	2300	3290	5680	4190	1860	7020	4550	2510	1480	963	828	1970
17	2290	3670	4430	3940	2320	6030	4900	2840	1450	951	831	2010
18	2210	3500	4120	3390	2840	5230	5100	3000	1440	932	825	2060
19	2120	3870	3860	2950	2600	5000	4760	2770	1440	882	834	2030
20	2120	3870	3640	2690	2890	5030	3900	2550	1450	875	873	2070
21	2120	3710	4180	2600	3840	6550	3250	2460	1470	878	958	2110
22	1900	3620	3690	2600	4300	12100	3070	2420	1500	870	954	2100
23	2120	3560	3300	2840	3360	9510	3050	2680	1460	867	957	2100
24	2120	3500	3400	3300	2780	9350	3640	3150	1440	866	953	2110
25	2140	3470	3370	5080	2440	11900	3480	3400	1430	869	948	2110
26	2130	3010	3360	8400	2170	12800	3260	3330	1410	866	915	2100
27	2120	2490	4350	8630	1990	12500	3160	3040	1400	868	895	2090
28	2120	2000	4220	7210	1900	11500	3140	2520	1390	859	910	2090
29	2130	1530	4880	7170	---	8730	3410	2260	1380	852	958	2080
30	2120	1390	6270	13600	---	6620	3590	2330	1370	846	1000	2090
31	2120	---	7880	12000	---	6470	---	2910	---	845	1020	---
TOTAL	69240	86600	98030	187980	118220	217830	117940	97430	48410	34059	27376	56310
MEAN	2234	2887	3162	6064	4222	7027	3931	3143	1614	1099	883	1877
MAX	2410	3870	7880	13600	9870	12800	5920	5120	2770	1370	1020	2110
MIN	1900	1390	1100	2600	1860	1760	3050	2260	1370	845	825	1010
AC-FT	137300	171800	194400	372900	234500	432100	233900	193300	96020	67560	54300	111700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2003, BY WATER YEAR (WY)

MEAN	2882	5139	6213	5689	4220	3351	3334	3538	2544	1382	1217	1922
MAX	5109	9857	14300	11700	12360	10890	6128	5897	5521	2528	1833	2800
(WY)	1960	1974	1978	1953	1996	1972	1993	1960	1955	1983	1968	1959
MIN	656	690	1183	1212	1048	1467	1624	1136	956	757	699	916
(WY)	1953	1953	1977	1977	1977	1992	1973	1973	1992	1992	1992	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1953 - 2003	
ANNUAL TOTAL	1102946		1159425			
ANNUAL MEAN	3022		3177		3449	
HIGHEST ANNUAL MEAN					5255	1974
LOWEST ANNUAL MEAN					1743	1977
HIGHEST DAILY MEAN	17200	Apr 14	13600	Jan 30	46700	Feb 7 1996
LOWEST DAILY MEAN	912	Sep 1	825	Aug 18	626	Oct 28 1952
ANNUAL SEVEN-DAY MINIMUM	918	Aug 28	831	Aug 13	636	Nov 4 1952
ANNUAL RUNOFF (AC-FT)	2188000		2300000		2499000	
10 PERCENT EXCEEDS	5440		6520		6960	
50 PERCENT EXCEEDS	2460		2380		2450	
90 PERCENT EXCEEDS	1120		925		1150	

e Estimated

14185000 SOUTH SANTIAM RIVER BELOW CASCADIA, OR

LOCATION.--Lat 44°23'31", long 122°29'47", in NW 1/4 SW 1/4 sec.31, T.13 S., R.3 E., Linn County, Hydrologic Unit 17090006, on left bank, 0.2 mi upstream from Mouse Creek, 0.8 mi southwest of Cascadia, and at mile 49.2.

DRAINAGE AREA.--174 mi^2.

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 775 ft above NGVD of 1929, from topographic map. Prior to Sept. 26, 1989, at site 0.7 mi downstream at datum 759.88 above NGVD of 1929. Prior to Nov. 1, 1935, nonrecording gage at site 0.7 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station. Continuous water-quality records for the period June 1962 to September 1967 and February 1969 to September 1987 have been collected at this location.

AVERAGE DISCHARGE.--68 years (water years 1936-2003), 816 ft^3/s, 63.69 in/yr, 590,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,700 ft^3/s Feb. 7, 1996, gage height, 18.11 ft, from rating curve extended above 10,000 ft^3/s; minimum discharge, 23 ft^3/s Dec. 1, 2, 1936, at site then in use.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,700 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 30	1130	*11,000	*10.49	Mar. 22	1430	7,150	8.62

Minimum discharge, 27 ft^3/s Sept. 5-7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	31	87	2070	4660	578	1400	850	309	94	44	30
2	60	31	83	1800	3020	527	1270	804	290	92	44	29
3	56	31	80	3220	2240	566	1160	783	269	89	46	29
4	68	31	81	2790	1670	541	1150	872	253	86	46	28
5	60	31	84	2610	1310	588	1150	1030	236	84	44	28
6	52	31	78	1780	1060	1330	1330	952	222	82	44	27
7	47	34	73	1390	895	3200	1350	844	210	80	52	31
8	45	127	70	1150	777	4270	1370	789	199	78	47	46
9	43	422	68	991	678	2860	1580	722	190	76	44	66
10	42	496	133	864	602	3070	1590	675	184	74	43	91
11	41	681	364	768	545	2460	1870	693	176	71	41	59
12	39	336	452	956	497	2590	1710	693	169	70	41	60
13	37	276	764	1400	465	2200	1840	660	169	69	40	50
14	36	257	982	1460	459	1820	1700	675	168	68	39	43
15	35	207	1190	1210	440	1710	1460	663	155	66	38	39
16	34	189	2130	1000	634	1520	1340	635	148	65	38	47
17	33	557	1190	871	897	1320	1510	609	142	64	37	86
18	33	358	825	808	1070	1130	1690	557	136	62	36	66
19	33	301	689	743	977	1030	1460	514	138	60	36	50
20	33	264	570	668	1100	1150	1230	484	136	58	35	44
21	34	227	1110	615	1470	2010	1130	473	139	57	35	41
22	34	191	1000	645	1840	5760	1070	486	146	56	35	39
23	33	163	742	862	1510	3950	1090	500	135	54	35	37
24	33	156	599	959	1170	2410	1570	518	128	53	35	35
25	32	141	514	1470	955	2570	1400	513	120	52	33	34
26	32	124	746	2190	814	4030	1220	460	115	51	33	33
27	32	113	2070	2980	705	2810	1080	417	109	51	32	32
28	33	105	1940	1820	638	2030	970	403	104	49	32	31
29	33	97	1700	1600	---	1580	895	382	98	47	31	30
30	32	92	2290	7610	---	1380	924	379	95	46	31	31
31	31	---	3250	5620	---	1380	---	344	---	45	30	---
TOTAL	1274	6100	25954	54920	33098	64370	40509	19379	5088	2049	1197	1292
MEAN	41.1	203	837	1772	1182	2076	1350	625	170	66.1	38.6	43.1
MAX	88	681	3250	7610	4660	5760	1870	1030	309	94	52	91
MIN	31	31	68	615	440	527	895	344	95	45	30	27
AC-FT	2530	12100	51480	108900	65650	127700	80350	38440	10090	4060	2370	2560
CFSM	0.24	1.17	4.81	10.2	6.79	11.9	7.76	3.59	0.97	0.38	0.22	0.25
IN.	0.27	1.30	5.55	11.74	7.08	13.76	8.66	4.14	1.09	0.44	0.26	0.28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2003, BY WATER YEAR (WY)

MEAN	288	1095	1526	1449	1371	1180	1142	924	511	166	79.3	92.6
MAX	1296	2442	4319	3278	3326	2913	2052	1639	1261	466	222	318
(WY)	1951	1943	1965	1953	1996	1972	1937	1960	1937	1983	1968	1959
MIN	31.6	27.6	82.3	107	130	324	356	282	101	54.2	35.9	40.9
(WY)	1988	1937	1977	1977	1977	1941	1941	1987	1992	1940	1992	1987

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1936 - 2003	
ANNUAL TOTAL	244747		255230			
ANNUAL MEAN	671		699		816	
HIGHEST ANNUAL MEAN					1280	1972
LOWEST ANNUAL MEAN					359	1977
HIGHEST DAILY MEAN	8080	Apr 14	7610	Jan 30	23200	Feb 7 1996
LOWEST DAILY MEAN	31	Oct 31	27	Sep 6	23	Dec 1 1936
ANNUAL SEVEN-DAY MINIMUM	31	Oct 31	29	Aug 31	24	Nov 25 1936
ANNUAL RUNOFF (AC-FT)	485500		506200		590900	
ANNUAL RUNOFF (CFSM)	3.85		4.02		4.69	
ANNUAL RUNOFF (INCHES)	52.33		54.57		63.69	
10 PERCENT EXCEEDS	1520		1810		1810	
50 PERCENT EXCEEDS	422		269		502	
90 PERCENT EXCEEDS	37		33		60	

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 mi^2.

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 above NGVD of 1929, from topographic map. Aug. 13, 1963 to Dec. 22, 1964, water-stage recorder on left bank at present datum.

REMARKS.--Records fair. No regulation or diversion upstream from station. Continuous water-quality records for the period August 1963 to September 1987 have been collected at this location.

AVERAGE DISCHARGE.--39 years (water years 1964, 1966-2003), 652 ft^3/s, 89.33 in/yr, 472,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,700 ft^3/s Feb. 7, 1996, gage height, 20.54 ft, from rating curve extended above 8,000 ft^3/s on the basis of slope-area measurement of peak flow; minimum discharge, 14 ft^3/s Aug. 19-23, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 36,500 ft^3/s Dec. 22, 1964, from slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 3	0130	4,760	10.01	Mar. 8	0130	6,100	10.97
Jan. 26	1800	4,580	9.87	Mar. 22	1100	*7,360	*11.78
Jan. 30	1130	6,340	11.13				

Minimum discharge, 21 ft^3/s Oct. 31 to Nov. 7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53	22	52	1650	3800	411	1010	599	188	61	35	32
2	34	22	50	2020	2170	380	880	560	175	61	35	32
3	32	22	48	3300	1510	401	787	543	161	59	37	32
4	41	21	51	2860	1100	388	738	828	150	57	37	31
5	35	21	52	2270	854	498	760	1290	141	56	36	31
6	33	21	48	1380	698	1800	796	966	134	54	36	31
7	31	22	45	1040	589	4650	815	763	126	54	39	32
8	30	101	43	842	511	4790	1080	651	120	52	38	43
9	29	492	42	714	449	3630	1620	565	115	51	36	56
10	28	553	94	597	401	3350	1590	513	110	51	36	62
11	27	650	619	523	365	2250	1790	508	107	50	36	50
12	27	331	813	1140	334	2410	1490	502	102	48	35	50
13	26	365	1040	1540	311	1840	1450	481	104	48	35	44
14	26	311	1190	1330	299	1420	1310	497	102	47	34	40
15	25	199	1590	990	292	1250	1080	477	95	46	34	38
16	25	171	2040	758	482	1110	1010	445	90	46	34	45
17	24	511	1140	625	1050	923	1040	431	87	44	34	61
18	24	300	799	567	1160	764	1000	406	85	43	34	50
19	24	342	650	514	927	703	851	381	84	42	34	44
20	24	267	547	451	1210	908	736	361	83	41	33	41
21	24	185	1200	410	2050	2140	691	355	87	40	33	40
22	24	138	829	462	2070	5840	648	371	91	39	33	e39
23	24	111	612	727	1330	3060	677	375	83	39	33	e38
24	23	95	492	916	938	1790	1040	380	78	38	33	e38
25	23	82	422	1760	728	1940	861	367	73	38	33	37
26	23	73	725	3160	604	2950	799	312	70	38	33	36
27	23	67	2870	2620	515	1960	850	276	68	38	33	36
28	23	61	1910	1380	461	1380	743	269	66	38	33	35
29	23	58	1380	1280	---	1060	697	248	64	37	32	36
30	22	55	1860	5460	---	960	642	241	62	36	32	36
31	22	---	2980	4800	---	1020	---	214	---	36	32	---
TOTAL	852	5669	26233	48086	27208	57976	29481	15175	3101	1428	1068	1216
MEAN	27.5	189	846	1551	972	1870	983	490	103	46.1	34.5	40.5
MAX	53	650	2980	5460	3800	5840	1790	1290	188	61	39	62
MIN	22	21	42	410	292	380	642	214	62	36	32	31
AC-FT	1690	11240	52030	95380	53970	115000	58480	30100	6150	2830	2120	2410
CFSM	0.28	1.90	8.53	15.6	9.80	18.9	9.91	4.93	1.04	0.46	0.35	0.41
IN.	0.32	2.13	9.84	18.03	10.20	21.74	11.06	5.69	1.16	0.54	0.40	0.46

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2003, BY WATER YEAR (WY)

MEAN	249	986	1276	1257	1094	967	856	610	314	99.2	56.5	81.7
MAX	786	2224	2897	2450	2441	2018	1600	1147	817	336	240	268
(WY)	1998	1974	1974	1970	1982	1972	1993	1999	1984	1983	1968	1971
MIN	20.8	57.6	110	157	208	204	382	182	63.1	36.8	20.9	27.8
(WY)	1988	1994	1977	1977	1977	1992	1968	1992	1992	1992	1992	2002

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1964 - 2003	
ANNUAL TOTAL	196094		217493			
ANNUAL MEAN	537		596		652	
HIGHEST ANNUAL MEAN					1113	1974
LOWEST ANNUAL MEAN					311	1977
HIGHEST DAILY MEAN	5660	Apr 14	5840	Mar 22	16000	Feb 7 1996
LOWEST DAILY MEAN	21	Nov 4	21	Nov 4	14	Aug 19 1973
ANNUAL SEVEN-DAY MINIMUM	22	Oct 31	22	Oct 31	14	Aug 17 1973
ANNUAL RUNOFF (AC-FT)	389000		431400		472500	
ANNUAL RUNOFF (CFSM)	5.42		6.01		6.57	
ANNUAL RUNOFF (INCHES)	73.54		81.56		89.33	
10 PERCENT EXCEEDS	1270		1600		1510	
50 PERCENT EXCEEDS	346		199		365	
90 PERCENT EXCEEDS	25		32		39	

e Estimated

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 mi^2.

PERIOD OF RECORD.--October 1966 to September 2003 (discontinued). Prior to October 1971, published as Green Peter Reservoir near Foster.

GAGE.--Water-stage recorder. Datum of gage is NGVD 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.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 426,700 acre-ft April 29, 1990, elevation, 1,014.61 ft; minimum contents, 116,900 acre-ft Dec. 15, 1972, elevation, 899.20 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 412,900 acre-ft May 15, elevation, 1,010.86 ft; minimum contents, 162,500 acre-ft Jan. 12, elevation, 923.29 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	1,015	428,100

Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	960.88	949.42	941.08	930.82	959.65	973.45	993.94	1006.30	992.32	961.78	950.56	938.53
2	960.49	949.15	940.48	931.66	961.99	974.02	993.64	1006.45	990.49	961.45	950.56	938.14
3	960.19	948.88	939.88	933.91	961.96	974.56	994.00	1006.69	988.03	961.09	950.56	937.72
4	959.77	948.61	939.43	935.32	961.21	975.04	994.30	1007.29	985.42	960.76	949.12	937.33
5	959.38	948.28	938.98	935.92	959.98	975.67	994.51	1008.28	982.84	960.40	948.76	936.94
6	958.96	947.95	938.50	934.93	958.45	978.34	994.99	1008.91	980.41	960.04	948.37	936.55
7	958.57	947.68	938.05	933.22	956.68	985.12	995.74	1009.39	977.92	959.68	947.95	936.16
8	958.18	947.68	937.60	931.09	955.30	992.20	996.58	1009.72	975.40	959.35	947.56	935.83
9	957.76	948.28	937.12	928.60	955.21	997.03	998.02	1009.96	973.12	959.05	947.23	935.56
10	957.34	949.06	936.85	925.81	954.22	999.97	999.40	1010.14	971.80	958.69	946.87	935.23
11	956.95	949.87	937.60	923.68	953.50	999.91	1001.02	1010.32	971.05	958.39	946.54	934.93
12	956.53	950.05	938.05	923.53	952.99	998.74	1002.52	1010.47	970.60	958.06	946.15	934.57
13	956.08	949.84	938.59	924.07	952.87	996.22	1004.02	1010.59	970.21	957.73	945.73	934.18
14	955.66	949.57	939.16	925.03	952.90	994.27	1004.77	1010.71	969.64	957.40	945.31	933.76
15	955.30	949.12	939.13	925.36	953.20	992.74	1005.10	1010.80	969.19	957.07	944.95	933.37
16	954.88	948.64	939.49	925.27	953.92	991.33	1004.89	1009.45	968.74	956.80	944.38	933.04
17	954.43	948.82	937.81	925.24	955.45	990.25	1004.77	1008.01	968.23	956.47	943.96	932.74
18	954.07	948.70	935.56	925.33	957.16	989.68	1004.62	1006.45	967.75	956.14	943.54	932.32
19	953.71	948.43	932.95	925.60	958.54	989.17	1004.26	1004.56	967.27	955.78	943.54	931.96
20	953.26	947.95	930.64	925.75	960.28	988.75	1003.75	1003.90	966.85	955.45	943.48	931.57
21	952.90	947.53	930.49	925.81	962.98	989.74	1003.18	1003.27	966.43	955.09	942.88	931.21
22	952.57	946.99	930.76	925.93	965.80	995.50	1003.12	1002.70	966.01	954.70	942.31	930.79
23	952.27	946.42	930.58	926.50	967.78	997.15	1003.18	1002.01	965.59	954.28	941.95	930.40
24	951.88	945.79	929.80	927.49	969.25	996.85	1003.57	1001.41	965.11	953.86	941.59	930.01
25	951.58	945.10	928.42	928.42	970.39	996.19	1004.08	1001.11	964.66	953.41	941.17	929.56
26	951.25	944.38	927.22	932.08	971.38	997.42	1004.62	1000.93	964.18	952.96	940.81	929.17
27	950.92	943.66	929.53	934.48	972.19	996.91	1005.10	1000.21	963.73	952.54	940.45	928.75
28	950.62	942.88	930.31	933.67	972.91	995.62	1005.49	998.95	963.22	952.12	940.06	928.33
29	950.29	942.19	928.96	932.68	---	994.45	1005.85	997.36	962.71	951.67	939.67	928.09
30	949.96	941.62	929.05	943.72	---	994.06	1006.09	995.41	962.20	951.22	939.31	927.82
31	949.69	---	931.36	953.11	---	993.94	---	993.88	---	950.74	938.92	---
MAX	960.88	950.05	941.08	953.11	972.91	999.97	1006.09	1010.80	992.32	961.78	950.56	938.53
MIN	949.69	941.62	927.22	923.53	952.87	973.45	993.64	993.88	962.20	950.74	938.92	927.82
(†)	223800	203800	180000	232600	288200	354400	359900	354200	257200	226500	197300	172200
(‡)	-30700	-20000	-23800	+52600	+55600	+66200	+41500	-41700	-97000	-30700	-29200	-25100

CAL YR 2002 MAX 1010.02 MIN 922.57 AC-FT‡ +19900
WTR YR 2003 MAX 1010.80 MIN 923.53 AC-FT‡ -82300

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

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 mi^2.

PERIOD OF RECORD.--December 1966 to September 2003 (discontinued). Prior to October 1971, published as Foster Reservoir at Foster.

GAGE.--Water-stage recorder. Datum of gage is NGVD 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.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 60,350 acre-ft Apr. 28, 1990, elevation, 640.66 ft; minimum contents, 26,590 acre-ft Nov. 15, 16, 1971, elevation, 607.85 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 57,220 acre-ft May 21-23, elevation, 638.12 ft; minimum contents, 30,010 acre-ft Jan. 12, elevation, 611.81 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 above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	637.13	620.89	613.30	613.45	612.55	622.89	628.19	614.03	636.68	636.51	636.33	635.64
2	637.13	620.23	613.27	613.19	615.64	623.04	628.13	614.06	636.35	636.47	636.36	635.61
3	637.22	619.60	613.39	614.21	614.92	623.43	626.99	614.24	636.26	636.40	636.33	635.58
4	637.43	618.97	613.48	614.39	614.98	623.70	625.76	614.30	636.32	636.36	636.30	635.55
5	637.46	618.40	613.48	613.94	615.16	623.22	624.68	614.03	636.53	636.30	636.30	635.52
6	637.55	617.80	613.46	613.85	616.33	623.59	623.39	614.21	636.53	636.26	636.33	635.49
7	637.55	617.26	613.43	613.73	616.03	628.03	622.01	614.33	636.56	636.28	636.36	635.52
8	637.54	616.96	613.43	613.82	617.99	630.88	620.75	614.33	636.62	636.31	636.45	635.55
9	637.54	616.46	613.40	614.03	616.28	624.07	618.92	614.18	636.80	636.27	636.39	635.67
10	637.54	616.22	613.52	614.06	618.44	624.46	617.87	613.91	636.74	636.26	636.33	635.76
11	637.51	615.74	613.43	614.36	617.69	624.91	617.39	613.82	636.65	636.26	636.27	635.85
12	637.48	614.45	613.07	615.02	617.39	625.06	616.19	614.21	636.53	636.22	636.36	635.91
13	637.45	613.73	613.85	614.28	617.84	625.27	618.53	614.42	636.53	636.18	636.45	635.94
14	637.42	613.64	613.67	614.40	618.08	625.36	615.80	614.18	636.80	636.18	636.57	635.94
15	636.28	613.82	614.64	614.40	618.23	625.33	613.64	614.27	636.77	636.14	636.66	635.97
16	635.10	613.85	614.43	614.43	618.74	625.84	613.73	619.91	636.74	636.10	636.78	636.06
17	633.84	614.18	613.77	614.10	619.19	625.96	613.91	625.52	636.74	636.04	636.90	636.15
18	632.73	614.13	613.89	614.01	619.22	626.17	614.00	630.68	636.65	635.97	636.99	636.21
19	631.62	613.77	613.74	614.16	619.37	626.32	613.82	636.56	636.89	635.87	636.15	636.24
20	630.63	613.44	613.89	614.07	619.58	626.66	613.85	637.88	636.76	635.81	635.31	636.21
21	629.31	613.35	614.94	614.61	620.10	626.87	613.82	638.12	636.78	635.71	635.76	636.21
22	628.05	613.35	614.67	615.33	621.27	627.35	613.85	637.97	636.81	635.76	636.15	636.18
23	626.73	613.35	614.40	615.78	621.75	627.23	614.03	638.06	636.80	635.82	636.09	636.18
24	625.40	613.35	614.56	615.27	621.69	627.65	614.24	637.88	636.76	635.88	636.03	636.15
25	624.83	613.38	614.47	614.64	621.72	628.07	614.15	637.43	636.76	635.97	635.97	636.18
26	624.32	613.38	614.32	614.29	621.96	628.52	614.18	636.86	636.75	636.06	635.91	636.18
27	623.69	613.42	615.64	613.69	622.26	628.04	613.82	636.89	636.71	636.09	635.88	636.15
28	623.21	613.42	614.59	613.27	622.47	628.19	614.06	636.53	636.71	636.15	635.85	636.15
29	622.70	613.39	613.66	614.41	---	628.22	614.21	636.14	636.67	636.18	635.79	635.82
30	622.16	613.36	614.08	619.42	---	628.04	614.51	636.77	636.63	636.21	635.73	635.49
31	621.53	---	613.45	617.32	---	628.07	---	636.83	---	636.30	635.67	---
MEAN	632.13	615.24	613.91	614.51	618.46	626.14	617.61	624.92	636.66	636.14	636.22	635.90
MAX	637.55	620.89	615.64	619.42	622.47	630.88	628.19	638.12	636.89	636.51	636.99	636.24
MIN	621.53	613.35	613.07	613.19	612.55	622.89	613.64	613.82	636.26	635.71	635.31	635.49
(†)	39060	31390	31470	35020	39990	45770	32430	55670	55430	55040	54300	54080
(‡)	-16910	-7670	+80	+3550	+4970	+5780	-13340	+23240	-240	-390	-740	-220

CAL YR 2002 MEAN 625.93 MAX 637.74 MIN 613.07 AC-FT‡ -650
WTR YR 2003 MEAN 625.71 MAX 638.12 MIN 612.55 AC-FT‡ -1890

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

14187000 WILEY CREEK NEAR FOSTER, OR

LOCATION.--Lat 44°22'20", long 122°37'20", in NE 1/4 NE 1/4 sec.12, T.14 S., R.1 E., Linn County, Hydrologic Unit 17090006, on right bank 0.5 mi downstream from Little Wiley Creek, 3.5 mi southeast of Foster, and at mile 4.4.

DRAINAGE AREA.--51.8 mi^2.

PERIOD OF RECORD.--October 1947 to July 1973, July 1988 to current year.

REVISED RECORDS.--WDR OR-90-2: 1989 (M), WDR OR-93-1: 1992.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 720 ft above NGVD of 1929, from topographic map. Prior to April 6, 1965, water-stage recorder at present site at datum of 718.08 ft above NGVD of 1929 (Corps of Engineers bench mark). Apr. 6, 1965, to July 1973, water-stage recorder at present site at datum 2.00 ft lower than previous datum.

REMARKS.--Records good except those below 20 ft^3/s and estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--40 years (water years 1948-72, 1989-2003), 214 ft^3/s, 56.08 in/yr, 154,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,640 ft^3/s Jan. 21, 1972, gage height, 9.28 ft, datum then in use, from rating curve extended above 3,700 ft^3/s; maximum gage height, 9.80 ft, Dec. 21, 1964 (backwater from debris), datum then in use; minimum discharge, 2.9 ft^3/s August 28-31, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 1	0130	*1,780	*5.20				

Minimum discharge, 3.3 ft^3/s Sept. 4-7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	5.4	15	724	1480	145	325	223	46	16	5.5	3.9
2	7.4	5.4	15	590	1010	131	326	195	43	15	5.5	3.9
3	8.2	5.5	14	878	722	146	317	176	41	15	6.3	3.7
4	12	5.5	15	775	519	138	328	248	39	14	6.4	3.5
5	9.3	5.5	16	702	380	140	334	262	36	13	6.0	3.4
6	7.8	5.5	14	470	286	387	450	222	34	13	6.0	3.4
7	7.0	6.4	13	325	229	1190	413	193	32	13	9.7	4.3
8	6.5	43	13	242	191	1310	386	182	31	12	8.1	7.5
9	6.2	129	12	195	164	908	446	162	30	12	6.8	e12
10	6.0	153	38	164	145	891	448	148	30	11	6.4	e14
11	5.7	157	77	145	131	671	452	140	29	11	6.0	9.4
12	5.5	68	80	185	118	561	443	137	29	10	5.8	9.1
13	5.3	46	186	239	112	455	635	124	30	10	5.6	7.5
14	5.0	41	186	286	113	364	608	114	29	10	5.4	6.4
15	4.8	32	324	233	107	334	496	108	26	10	5.1	5.7
16	4.6	34	618	188	188	313	426	109	25	9.9	5.1	6.7
17	4.5	104	306	159	372	317	474	109	24	10	5.0	15
18	4.4	67	203	141	477	269	517	101	23	9.3	4.8	10
19	4.5	57	167	125	361	263	430	92	24	8.7	4.7	8.0
20	4.7	44	136	112	329	317	350	85	24	8.2	4.7	7.6
21	5.1	35	472	102	334	536	323	80	24	7.9	4.7	6.9
22	5.0	29	364	108	377	1320	301	75	25	7.6	4.6	6.5
23	5.0	25	221	133	334	1040	326	71	23	7.4	4.8	6.0
24	4.8	29	164	156	271	666	541	68	23	7.2	4.6	5.7
25	4.8	26	132	225	219	649	492	71	21	7.1	4.4	5.4
26	4.8	22	237	402	186	909	460	65	19	7.0	4.3	5.4
27	4.9	20	682	650	162	736	393	59	18	7.0	4.4	5.3
28	5.2	19	634	396	151	564	330	55	17	6.7	4.4	5.1
29	5.6	17	620	320	---	438	280	52	16	6.2	4.3	5.0
30	5.4	16	880	1310	---	348	264	53	15	5.9	4.3	5.2
31	5.3	---	1210	1330	---	318	---	50	---	5.6	4.0	---
TOTAL	186.3	1252.2	8064	12010	9468	16774	12314	3829	826	306.7	167.7	201.5
MEAN	6.01	41.7	260	387	338	541	410	124	27.5	9.89	5.41	6.72
MAX	12	157	1210	1330	1480	1320	635	262	46	16	9.7	15
MIN	4.4	5.4	12	102	107	131	264	50	15	5.6	4.0	3.4
AC-FT	370	2480	15990	23820	18780	33270	24420	7590	1640	608	333	400
CFSM	0.12	0.81	5.02	7.48	6.53	10.4	7.92	2.38	0.53	0.19	0.10	0.13
IN.	0.13	0.90	5.79	8.62	6.80	12.05	8.84	2.75	0.59	0.22	0.12	0.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2003, BY WATER YEAR (WY)

MEAN	77.4	267	412	446	388	345	272	190	85.1	30.7	15.9	17.4
MAX	397	620	1107	842	944	625	490	353	286	75.9	53.4	67.8
(WY)	1951	1951	1965	1953	1961	1972	1955	1963	1993	1969	1968	1968
MIN	6.01	15.7	109	82.1	92.5	85.0	133	62.8	20.2	9.89	4.40	5.15
(WY)	2003	1953	1960	1963	2001	1992	1968	1973	1992	2003	1992	1992

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1948 - 2003	
ANNUAL TOTAL	57954.4		65399.4			
ANNUAL MEAN	159		179		214	
HIGHEST ANNUAL MEAN					318	1956
LOWEST ANNUAL MEAN					80.3	2001
HIGHEST DAILY MEAN	1400	Apr 14	1480	Feb 1	6410	Dec 22 1964
LOWEST DAILY MEAN	3.7	Sep 27	3.4	Sep 5	2.9	Aug 28 1992
ANNUAL SEVEN-DAY MINIMUM	4.2	Sep 23	3.7	Aug 31	3.0	Aug 26 1992
ANNUAL RUNOFF (AC-FT)	115000		129700		154900	
ANNUAL RUNOFF (CFSM)	3.07		3.46		4.13	
ANNUAL RUNOFF (INCHES)	41.62		46.97		56.08	
10 PERCENT EXCEEDS	447		504		501	
50 PERCENT EXCEEDS	45		43		118	
90 PERCENT EXCEEDS	4.8		5.1		11	

e Estimated

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 mi^2.

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 530 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. 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. Continuous water-quality records for the period July 1973 to September 1997 have been collected at this location.

AVERAGE DISCHARGE.--30 years (water years 1974-2003), 2,841 ft^3/s, 69.27 in/yr, 2,058,000 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,700 ft^3/s Feb. 7, 1996, gage height, 18.74 ft, from rating curve extended above 16,000 ft^3/s; minimum discharge, 343 ft^3/s July 18, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 12,800 ft^3/s Mar. 12, gage height, 15.42 ft; minimum discharge, 427 ft^3/s July 16.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	765	809	1070	8260	10700	1080	4960	2620	3680	981	670	618
2	766	811	1060	6490	6340	1070	4900	2300	4110	831	654	614
3	755	810	1050	9130	8290	1100	4350	2120	4980	827	656	609
4	766	810	880	8800	7070	1130	4200	2320	5120	824	655	606
5	762	838	922	8910	6370	1700	4400	2670	4920	817	655	606
6	761	861	916	7370	5490	1930	4730	2330	4610	810	653	602
7	759	856	871	6760	5870	3080	4110	2210	4620	754	651	602
8	758	883	854	6180	3910	5300	3980	2200	4630	712	623	608
9	756	1350	859	5920	3450	8560	4370	2180	4170	712	601	603
10	759	1350	892	5780	2530	7050	3970	2130	2720	709	599	609
11	759	1680	971	4690	3370	9270	3950	2020	1850	697	603	601
12	761	1680	1910	3670	2670	11700	4000	1850	1330	692	595	600
13	760	1870	2180	4930	1730	12400	2580	1870	1280	683	601	600
14	760	1560	2780	3970	1540	9720	5960	2030	1270	684	598	600
15	1300	1400	4010	3690	1110	8540	5620	1890	1260	689	593	602
16	1430	1430	6900	3360	1140	7300	5040	1800	1260	613	600	603
17	1460	1650	6680	2950	1410	6240	5230	1770	1250	704	602	610
18	1290	1620	5780	2430	2060	4670	5600	1790	1240	702	604	634
19	1280	1890	5690	1950	1740	4370	5290	1780	1250	705	614	617
20	1290	1870	4730	1930	1790	4400	4860	2050	1190	702	620	609
21	1420	1530	4180	1620	2020	6100	4740	2580	1120	702	618	608
22	1270	1420	3270	1520	2160	11100	3560	2660	1130	701	616	607
23	1280	1400	2880	1920	2120	10800	3490	2790	1130	701	613	606
24	1270	1450	2920	2470	1950	8810	4310	2810	1140	699	617	601
25	905	1420	3330	4800	1540	10200	3690	2510	1120	689	616	603
26	856	1400	4220	5620	1220	11000	3170	2090	1100	686	610	602
27	855	1380	5030	8110	1110	10700	3110	2580	1110	705	606	601
28	856	1380	6620	7460	1100	9270	2650	3680	1090	710	610	602
29	865	1270	8130	6330	---	7570	2420	4150	1080	714	615	600
30	861	1130	8200	9670	---	5640	2420	4190	1100	715	616	599
31	809	---	10200	9890	---	4970	---	3740	---	720	618	---
TOTAL	29944	39808	109985	166580	91800	206770	125660	75710	67860	22590	19202	18182
MEAN	966	1327	3548	5374	3279	6670	4189	2442	2262	729	619	606
MAX	1460	1890	10200	9890	10700	12400	5960	4190	5120	981	670	634
MIN	755	809	854	1520	1100	1070	2420	1770	1080	613	593	599
AC-FT	5390	78960	218200	330400	182100	410100	249200	150200	134600	44810	38090	36060
MEAN†	192	862	3163	6286	4369	7840	4661	2142	628	223	132	180
CFSM†	0.34	1.55	5.68	11.3	7.84	14.1	8.37	3.85	1.13	0.40	0.24	0.32
IN.†	0.40	1.73	6.55	13.00	8.17	16.23	9.34	4.44	1.26	0.46	0.27	0.36
AC-FT†	11780	51290	194500	386600	242700	482100	277400	131700	37360	13720	8150	10740

CAL YR 2002 TOTAL 845549 MEAN 2317 MAX 12800 MIN 689 AC-FT 1677000 MEAN† 2343 CFSM† 4.21 IN.† 57.11 AC-FT† 1696000
WTR YR 2003 TOTAL 974091 MEAN 2669 MAX 12400 MIN 593 AC-FT 1932000 MEAN† 2552 CFSM† 4.58 IN.† 62.22 AC-FT† 1848000

† Adjusted for change in contents, in Green Peter Lake and Foster Lake.

14187200 SOUTH SANTIAM RIVER NEAR FOSTER, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--July 1973 to September 1997, August 2001 to current year.

INSTRUMENTATION.--Temperature probe and data logger.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF DAILY RECORD.--Maximum, 15.5°C at times in 1975, 1978, 1981, 1987, 1990, 1993; minimum, 2.5°C Dec. 30, 31, 1978, Feb. 1, 1980, Feb. 7, 1985.

EXTREMES FOR CURENT YEAR.--Maximum, 13.9°C Aug. 21; minimum, 5.5°C Feb. 25, 26.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.0	11.3	11.6	10.6	9.8	10.2	9.7	9.1	9.4	8.1	7.6	7.8
2	11.9	11.1	11.6	10.2	9.7	9.9	9.6	9.1	9.4	8.5	8.0	8.2
3	11.9	11.4	11.7	10.1	9.5	9.8	9.4	9.0	9.2	8.5	7.9	8.2
4	12.1	11.5	11.7	10.2	9.4	9.7	9.5	9.0	9.2	8.7	7.9	8.4
5	12.0	11.3	11.6	10.3	9.6	9.9	9.3	9.0	9.1	7.9	7.4	7.7
6	11.8	11.3	11.6	10.3	9.6	9.9	9.2	8.9	9.1	7.6	7.1	7.3
7	12.0	11.2	11.5	10.2	9.8	9.9	9.4	8.8	9.1	7.3	7.0	7.2
8	11.8	11.2	11.5	10.0	9.6	9.8	9.1	8.8	9.0	7.2	6.9	7.0
9	11.8	11.2	11.5	9.7	9.3	9.5	9.1	8.8	9.0	7.3	6.8	7.1
10	11.9	11.1	11.5	9.5	9.1	9.3	9.1	8.5	8.9	7.3	6.9	7.1
11	11.9	10.8	11.4	9.7	8.9	9.3	9.0	8.5	8.7	7.5	6.9	7.1
12	11.8	11.1	11.4	9.9	9.3	9.5	9.3	8.8	9.0	7.9	7.4	7.6
13	11.7	10.9	11.3	9.7	9.2	9.5	9.1	8.6	8.9	7.9	7.4	7.6
14	11.6	11.1	11.3	10.1	9.4	9.7	9.6	9.0	9.3	8.0	7.6	7.8
15	12.1	11.3	11.8	9.6	9.1	9.4	9.0	8.6	8.8	7.6	7.0	7.3
16	12.4	11.5	11.9	9.3	8.8	9.1	9.0	8.6	8.9	7.4	6.8	7.1
17	12.4	11.7	12.0	9.4	8.9	9.2	9.0	8.5	8.7	7.3	6.8	7.0
18	12.4	11.6	12.0	9.3	8.7	9.1	8.8	8.5	8.7	7.3	6.7	7.0
19	12.6	11.4	12.1	9.8	9.2	9.5	8.8	8.4	8.5	7.2	6.8	7.0
20	12.5	11.8	12.0	9.6	9.2	9.4	8.8	8.3	8.5	7.2	6.7	7.0
21	12.3	11.7	12.0	9.7	9.2	9.4	8.6	7.9	8.2	7.5	6.8	7.1
22	12.4	11.4	12.0	9.9	9.5	9.7	8.4	7.8	8.1	7.7	7.2	7.5
23	12.2	11.4	11.8	9.9	9.6	9.7	8.2	7.5	7.8	8.0	7.5	7.7
24	12.6	11.3	12.1	10.3	9.8	10	8.0	7.4	7.7	8.0	7.4	7.8
25	12.5	10.9	11.8	9.9	9.1	9.6	8.1	7.5	7.8	8.3	7.9	8.1
26	12.1	11.2	11.7	9.4	9.0	9.2	8.0	7.5	7.9	9.0	8.2	8.5
27	12.1	11.3	11.7	9.3	8.9	9.1	8.3	7.5	8.0	8.8	8.0	8.5
28	11.8	11.1	11.5	9.5	8.9	9.2	8.1	7.6	7.8	8.2	7.6	7.9
29	11.8	11.1	11.4	9.6	9.1	9.3	7.8	7.6	7.7	8.0	7.7	7.8
30	11.6	10.8	11.2	9.5	9.1	9.3	8.1	7.6	7.8	9.1	7.9	8.7
31	10.9	10.3	10.6	---	---	---	8.2	7.7	8.0	9.4	8.8	9.2
MONTH	12.6	10.3	11.6	10.6	8.7	9.5	9.7	7.4	8.6	9.4	6.7	7.7

14187200 SOUTH SANTIAM RIVER NEAR FOSTER, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.8	8.2	8.4	7.4	6.0	6.6	8.1	7.3	7.8	10.3	8.3	9.1
2	8.5	8.0	8.3	6.6	5.9	6.4	8.1	7.1	7.5	10.7	8.4	9.5
3	8.1	7.5	7.8	7.1	6.1	6.5	7.6	6.8	7.2	9.8	8.8	9.2
4	7.8	7.1	7.5	6.7	5.9	6.3	7.8	7.0	7.3	9.2	8.3	8.8
5	7.2	6.6	6.9	6.8	6.3	6.6	7.4	6.7	7.1	9.8	8.2	8.9
6	7.1	6.2	6.7	6.6	6.2	6.4	8.3	6.8	7.4	9.8	8.4	9.0
7	6.9	6.3	6.6	7.2	6.4	6.8	8.7	7.2	7.9	9.6	8.3	8.8
8	6.8	6.0	6.3	7.8	7.0	7.3	9.0	7.3	8.2	9.3	8.3	8.8
9	6.8	6.0	6.4	8.0	7.1	7.5	9.3	7.6	8.3	9.4	8.2	8.9
10	7.2	6.3	6.6	8.4	7.5	7.9	8.9	8.2	8.6	9.3	8.7	8.9
11	6.8	6.0	6.4	8.2	7.7	7.9	9.7	8.2	8.8	10.1	8.8	9.4
12	6.8	6.0	6.4	8.1	7.6	7.9	9.5	8.2	8.7	10.7	8.7	9.6
13	7.1	6.4	6.8	7.9	7.4	7.7	9.4	8.0	8.6	11.0	9.1	10.1
14	7.8	6.9	7.3	8.1	7.4	7.7	8.7	7.7	8.2	10.8	9.3	10.3
15	7.6	7.2	7.5	8.0	7.4	7.8	8.7	7.8	8.2	10.4	8.8	9.8
16	7.6	6.8	7.3	8.0	7.1	7.5	8.9	7.8	8.3	10.6	8.9	9.9
17	7.5	6.6	7.1	7.8	7.0	7.4	8.4	7.7	8.0	9.7	8.5	9.0
18	7.8	6.7	7.2	8.0	6.7	7.4	8.9	7.3	8.0	10.3	8.5	9.3
19	7.8	7.0	7.4	7.6	7.0	7.4	9.2	7.2	8.1	10.0	8.3	9.2
20	7.4	7.0	7.2	8.1	7.2	7.5	9.0	7.6	8.3	10.1	8.6	9.4
21	8.0	7.3	7.6	7.8	7.1	7.4	8.4	7.8	8.1	10.2	8.8	9.6
22	7.7	7.0	7.3	8.1	7.3	7.8	8.5	7.7	8.0	10.3	9.0	9.8
23	7.4	6.3	6.8	7.9	7.0	7.4	8.8	7.8	8.3	10.5	9.4	10
24	6.9	5.6	6.2	7.7	6.4	7.1	8.5	7.4	8.0	10.5	9.4	9.9
25	6.7	5.5	6.0	7.8	7.3	7.5	8.3	6.8	7.6	10.3	9.3	9.7
26	6.6	5.5	6.1	7.7	7.0	7.4	8.7	7.2	7.8	9.8	9.1	9.5
27	7.2	6.2	6.6	7.7	6.8	7.3	9.0	6.9	7.9	10.5	9.4	9.9
28	6.6	5.9	6.3	8.1	6.8	7.4	8.7	8.0	8.3	10.4	9.6	10
29	---	---	---	8.8	7.2	8.0	9.1	7.7	8.4	10.6	9.5	10.0
30	---	---	---	9.6	7.9	8.6	9.5	8.1	8.7	10.5	9.3	9.7
31	---	---	---	8.6	8.0	8.3	---	---	---	10.1	9.2	9.6
MONTH	8.8	5.5	7.0	9.6	5.9	7.4	9.7	6.7	8.1	11.0	8.2	9.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.8	9.3	9.7	11.2	10.4	10.9	13.0	11.4	12.2	13.5	12.3	12.9
2	10.8	9.2	9.9	11.5	10.2	10.8	12.9	11.4	12.1	13.5	12.2	12.9
3	10.8	9.4	9.9	11.7	10.1	10.9	13.0	11.5	12.2	13.7	12.3	13.0
4	10.7	9.4	9.9	11.8	10.2	11.1	13.2	11.5	12.3	13.6	12.3	13.0
5	10.7	9.3	9.8	11.8	10.3	11.1	13.2	11.7	12.3	13.7	12.3	13.0
6	10.4	9.5	9.8	11.8	10.3	11.2	13.1	11.6	12.3	13.7	12.1	12.9
7	10.3	9.4	9.8	12.1	10.4	11.3	13.2	11.8	12.5	13.4	12.4	12.9
8	10.3	9.5	9.8	12.0	10.5	11.2	13.2	11.9	12.5	13.4	12.3	12.9
9	10.4	9.3	9.7	12.4	10.7	11.4	13.3	12.0	12.5	13.1	12.4	12.8
10	10.2	9.3	9.7	12.8	10.5	11.5	13.3	11.8	12.4	13.4	12.6	12.9
11	10.3	9.3	9.9	12.5	10.6	11.5	13.4	11.8	12.7	13.4	12.6	12.9
12	10.3	9.5	9.9	12.4	10.8	11.6	13.6	12.1	12.9	13.2	12.4	12.8
13	10.1	9.5	9.8	12.2	10.6	11.6	13.6	11.9	12.8	13.2	12.1	12.8
14	10.4	9.6	10.0	12.4	11.0	11.7	13.7	11.8	12.8	13.2	12.2	12.8
15	10.7	9.6	10.2	12.7	11.1	11.8	13.4	12.0	12.7	13.2	12.4	12.7
16	10.9	9.7	10.3	12.7	11.1	11.8	13.6	12.3	12.9	13.2	12.3	12.7
17	11.0	9.9	10.4	12.8	11.2	12.0	13.6	12.0	12.9	13.3	12.3	12.7
18	10.8	9.9	10.3	12.9	10.9	12.1	13.5	12.0	12.8	13.1	12.3	12.8
19	10.6	9.7	10.1	13.1	11.1	12.1	13.7	12.1	12.8	13.0	12.4	12.7
20	10.7	9.6	10.1	13.2	11.2	12.2	13.5	12.2	12.8	13.1	12.2	12.6
21	10.7	9.7	10.1	13.3	11.3	12.3	13.9	12.3	13.1	13.1	12.1	12.6
22	10.5	9.7	10.1	13.4	11.4	12.4	13.6	12.5	12.9	13.1	12.2	12.6
23	10.6	9.8	10.2	13.1	11.5	12.3	13.7	12.4	12.9	13.1	12.3	12.7
24	11.0	9.8	10.4	13.0	11.4	12.3	13.7	11.9	12.9	13.1	12.2	12.7
25	11.2	9.9	10.6	12.9	11.4	12.1	13.7	12.1	12.9	13.1	12.4	12.8
26	11.2	10.1	10.7	12.9	11.2	12.0	13.3	12.2	12.9	13.2	12.4	12.8
27	11.4	10.1	10.8	13.0	11.2	12.1	13.6	12.3	12.9	13.4	12.3	12.8
28	11.4	10.1	10.9	13.1	11.3	12.2	13.5	12.1	12.9	13.3	12.3	12.8
29	11.6	10.2	10.9	12.9	11.4	12.2	13.7	12.2	12.9	13.2	12.5	12.8
30	11.5	10.3	10.9	13.1	11.3	12.2	13.6	12.2	12.9	13.3	12.3	12.8
31	---	---	---	13.0	11.4	12.2	13.6	12.2	13.0	---	---	---
MONTH	11.6	9.2	10.2	13.4	10.1	11.7	13.9	11.4	12.7	13.7	12.1	12.8
YEAR	13.9	5.5	9.7									

14187500 SOUTH SANTIAM RIVER AT WATERLOO, OR

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.

DRAINAGE AREA.--640 mi^2.

WATER-DISCHARGE RECORDS

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.

REVISED RECORDS.--WSP 1248: 1907, 1924-30, 1932.

GAGE.--Water-stage recorder. Datum of gage is 370.39 ft above NGVD 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.

REMARKS.--No estimated daily discharges. Records fair. Flow regulated since October 1966 by Green Peter Lake (station 14186100) and since December 1966 by Foster Lake (station 14186600). Some diversion upstream from station. Continuous water-quality records for the period October 1963 to September 1987 have been collected at this location.

AVERAGE DISCHARGE.--44 years (water years 1906, 1924-1966), 2,896 ft^3/s, 2,098,000 acre-ft/yr.
37 years (water years 1967-2003), 3,005 ft^3/s, 2,177,000 acre-ft/yr (regulated period).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,200 ft^3/s Dec. 22, 1964, gage height, 24.50 ft; minimum discharge, 61 ft^3/s Oct. 12, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13,800 ft^3/s Feb. 1, gage height, 8.62 ft; minimum discharge, 389 ft^3/s July 16.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	729	760	1090	9090	12500	1230	5380	2890	3850	1070	700	588
2	721	763	1070	7170	7370	1170	5360	2580	4250	847	653	581
3	718	761	1080	9510	9010	1270	4960	2330	5100	841	661	572
4	732	758	885	9350	7780	1280	4740	2530	5340	828	657	571
5	721	776	906	9610	6960	1880	4930	2960	5220	824	657	572
6	712	812	910	7900	5970	2220	5390	2570	4830	829	669	571
7	706	822	866	7200	6430	3840	4780	2400	4850	791	665	571
8	708	874	836	6610	4540	5910	4400	2380	4900	724	643	573
9	704	1340	832	6310	3820	9320	4830	2320	4530	716	597	593
10	708	1460	872	6220	2910	7560	4430	2260	2980	708	585	583
11	711	1780	967	5100	3530	9450	4290	2140	2090	693	587	581
12	715	1760	1880	4230	3120	11700	4770	1960	1440	689	585	585
13	714	1990	2320	5280	2000	12400	2640	1930	1310	681	585	584
14	711	1730	2990	4700	1740	10200	6250	2110	1310	675	577	582
15	1170	1470	4140	4150	1320	8920	6300	2010	1300	671	575	581
16	1460	1480	7360	3780	1270	7700	5510	1880	1280	597	579	590
17	1480	1750	7250	3350	1640	6670	5850	1870	1270	703	581	593
18	1340	1730	6330	2790	2470	5120	6170	1880	1270	705	576	621
19	1300	1960	6170	2230	2120	4700	5900	1900	1270	713	589	606
20	1300	2010	5180	2080	2050	4710	5430	2040	1240	713	596	593
21	1440	1670	4990	1860	2260	6130	5300	2660	1150	710	595	591
22	1310	1500	3910	1660	2460	11600	4150	2780	1160	708	589	585
23	1300	1450	3380	2030	2400	11400	3930	2930	1150	705	589	583
24	1290	1510	3160	2430	2220	9490	5040	2970	1160	708	593	575
25	962	1510	3600	5090	1800	10500	4480	2680	1150	700	596	577
26	816	1470	4550	5910	1420	11500	3760	2270	1130	702	587	573
27	814	1440	5430	8660	1240	11100	3660	2510	1120	713	580	574
28	811	1440	7340	8020	1220	9760	3120	3820	1130	723	583	571
29	822	1360	8820	6750	---	8100	2850	4300	1130	728	587	568
30	822	1170	9040	11000	---	6260	2670	4420	1120	724	587	579
31	771	---	11500	11200	---	5430	---	4010	---	739	587	---
TOTAL	29218	41306	119654	181270	103570	218520	141270	80290	71030	22878	18790	17467
MEAN	943	1377	3860	5847	3699	7049	4709	2590	2368	738	606	582
MAX	1480	2010	11500	11200	12500	12400	6300	4420	5340	1070	700	621
MIN	704	758	832	1660	1220	1170	2640	1870	1120	597	575	568
AC-FT	57950	81930	237300	359500	205400	433400	280200	159300	140900	45380	37270	34650

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2003, BY WATER YEAR (WY)

MEAN	2046	4670	6528	5750	3781	3398	3065	2384	1623	789	767	1287
MAX	5530	9509	12910	9978	10430	9649	6529	4384	4300	1526	1239	2769
(WY)	1969	1985	1978	1999	1996	1972	1993	1999	1984	1983	1969	1968
MIN	666	827	1126	713	597	865	1059	792	616	470	475	473
(WY)	1967	1988	1977	1977	1977	1992	1968	1987	1992	1967	1967	1967

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1967 - 2003	
ANNUAL TOTAL	922215		1045263			
ANNUAL MEAN	2527		2864		3005	
HIGHEST ANNUAL MEAN					4666	1974
LOWEST ANNUAL MEAN					1407	1977
HIGHEST DAILY MEAN	13400	Apr 15	12500	Feb 1	26000	Feb 9 1996
LOWEST DAILY MEAN	656	Jul 31	568	Sep 29	67	Oct 8 1966
ANNUAL SEVEN-DAY MINIMUM	677	Aug 5	573	Sep 2	75	Oct 7 1966
ANNUAL RUNOFF (AC-FT)	1829000		2073000		2177000	
10 PERCENT EXCEEDS	6230		7180		7020	
50 PERCENT EXCEEDS	1590		1510		1830	
90 PERCENT EXCEEDS	707		587		701	

14187500 SOUTH SANTIAM RIVER AT WATERLOO, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--October 1963 to September 1987, August 2001 to September 2003 (discontinued).

INSTRUMENTATION.--Temperature probe and data logger.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF DAILY RECORD.--Maximum, 26.0°C Aug. 4, 1966; minimum, 1.5°C Dec. 18-20, 1965, Feb. 1, 2, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum, 18.7°C July 21; minimum, 5.0°C Feb. 25.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.9	11.1	12.0	9.1	7.4	8.3	9.2	8.0	8.5	8.0	7.7	7.8
2	13.3	10.7	12.0	8.9	7.3	8.2	9.2	8.7	9.0	8.4	8.0	8.2
3	12.7	11.3	12.0	9.0	7.5	8.3	8.7	8.3	8.5	8.3	8.1	8.2
4	12.8	12.0	12.4	9.2	7.6	8.5	8.8	8.3	8.6	8.5	8.1	8.3
5	13.1	12.0	12.5	10.0	8.6	9.3	8.9	8.5	8.7	8.2	7.7	7.9
6	12.9	11.8	12.4	9.9	8.6	9.3	8.6	8.1	8.3	7.9	7.2	7.6
7	13.8	11.7	12.6	9.8	9.2	9.5	8.4	7.8	8.2	7.6	7.1	7.3
8	13.4	11.7	12.6	9.8	9.3	9.4	8.3	7.9	8.1	7.4	7.0	7.2
9	12.9	11.3	12.1	9.3	9.0	9.2	8.4	7.6	8.0	7.5	7.0	7.2
10	12.3	10.7	11.5	9.2	8.8	9.0	8.6	8.2	8.4	7.5	7.0	7.2
11	12.0	10.1	11.1	9.4	8.7	9.1	8.8	8.2	8.4	7.3	7.0	7.1
12	12.3	9.7	11.0	9.9	9.1	9.4	9.1	8.4	8.8	7.8	7.3	7.6
13	12.2	9.9	11.2	9.5	8.6	9.1	9.0	8.7	8.8	7.8	7.4	7.6
14	12.3	10.1	11.3	9.9	9.0	9.4	9.5	9.0	9.2	7.9	7.7	7.8
15	12.8	9.9	11.5	9.3	8.4	8.9	9.0	8.5	8.7	7.7	7.3	7.5
16	13.1	10.6	11.9	9.1	8.1	8.6	9.1	8.8	8.9	7.6	7.0	7.4
17	13.3	10.9	12.1	9.5	8.6	8.9	9.1	8.6	8.8	7.5	6.8	7.1
18	12.6	10.9	11.8	9.0	8.3	8.7	9.0	8.6	8.8	7.4	6.5	6.9
19	13.3	11.2	12.2	9.8	8.9	9.3	8.8	8.6	8.7	7.2	6.5	6.8
20	12.6	11.0	11.8	9.6	8.9	9.2	8.8	8.5	8.6	7.5	6.8	7.1
21	12.6	11.3	12.0	9.4	8.9	9.1	8.7	8.2	8.5	7.8	6.9	7.2
22	13.0	11.6	12.2	9.6	9.2	9.4	8.4	8.2	8.3	7.9	7.2	7.6
23	12.6	10.4	11.6	9.5	9.2	9.4	8.3	7.6	8.0	8.4	7.4	7.8
24	12.4	10.5	11.5	9.9	9.2	9.5	8.1	7.5	7.8	8.1	7.6	7.8
25	12.2	10.8	11.5	9.4	8.3	8.7	8.1	7.6	7.8	8.1	7.8	8.0
26	11.6	9.8	10.8	8.7	7.6	8.2	8.0	7.8	7.9	8.5	8.1	8.3
27	11.2	9.4	10.4	8.9	7.6	8.2	8.3	7.8	8.0	8.6	8.1	8.3
28	11.5	10.8	11.2	8.9	7.7	8.3	7.9	7.8	7.9	8.3	7.8	8.0
29	11.5	10.2	10.9	9.3	8.0	8.6	7.9	7.6	7.8	7.9	7.8	7.8
30	10.2	8.5	9.4	8.9	7.8	8.4	8.0	7.8	7.9	8.6	7.9	8.3
31	9.2	7.7	8.6	---	---	---	8.0	7.8	7.9	9.0	8.4	8.8
MONTH	13.8	7.7	11.6	10.0	7.3	8.9	9.5	7.5	8.4	9.0	6.5	7.7

14187500 SOUTH SANTIAM RIVER AT WATERLOO, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.9	8.4	8.6	8.1	6.0	7.0	8.5	7.6	7.9	12.1	8.1	9.9
2	8.6	8.1	8.3	7.4	5.8	6.5	8.5	7.2	7.7	12.8	8.1	10.2
3	8.2	7.8	8.0	7.7	6.4	7.0	8.0	7.0	7.4	10.7	8.9	9.6
4	8.1	7.4	7.7	7.0	5.9	6.6	8.2	7.2	7.6	10.4	8.8	9.5
5	7.4	6.8	7.1	7.5	6.5	6.9	7.8	7.0	7.3	10.8	8.2	9.4
6	7.5	6.5	6.9	6.6	6.5	6.5	8.4	7.0	7.6	11.7	8.4	9.9
7	7.4	6.4	6.8	7.3	6.5	6.9	8.8	7.5	8.1	10.1	8.2	9.2
8	7.2	6.1	6.5	7.9	6.9	7.3	9.7	7.6	8.4	10.6	8.5	9.4
9	7.4	6.0	6.6	7.6	6.9	7.2	9.5	7.6	8.4	10.5	8.4	9.3
10	7.7	6.5	7.0	8.2	7.2	7.6	9.3	8.2	8.7	10.5	9.0	9.6
11	7.3	6.0	6.5	8.1	7.4	7.7	10.4	8.2	9.1	12.2	8.5	10.2
12	7.4	6.1	6.7	7.8	7.4	7.6	9.6	8.2	8.8	12.8	9.1	10.6
13	7.4	6.5	6.9	7.6	7.4	7.5	10.3	8.7	9.4	14.2	8.6	11.3
14	8.6	7.1	7.7	8.0	7.3	7.5	9.6	8.0	8.7	13.6	9.2	11.4
15	8.0	7.1	7.6	8.2	7.3	7.6	9.2	7.9	8.5	12.0	9.0	10.4
16	8.0	7.5	7.7	8.0	7.2	7.5	9.7	8.0	8.7	12.1	8.5	10.3
17	7.6	6.9	7.3	8.0	7.0	7.4	9.0	7.9	8.3	11.5	8.7	10
18	8.0	6.9	7.4	8.2	6.9	7.5	9.5	7.6	8.3	12.6	7.9	10.2
19	7.9	7.1	7.5	7.6	7.1	7.4	9.9	7.7	8.6	13.0	7.8	10.3
20	7.6	7.2	7.4	8.4	7.2	7.6	9.7	7.6	8.5	12.5	8.3	10.4
21	8.3	7.4	7.7	7.6	7.1	7.4	8.5	7.8	8.2	12.9	8.5	10.5
22	7.9	7.1	7.5	7.9	7.3	7.6	8.9	7.9	8.3	13.0	8.7	10.6
23	8.0	6.6	7.2	7.7	7.1	7.3	9.0	8.1	8.5	13.3	8.8	10.9
24	7.3	5.6	6.5	8.1	6.8	7.3	8.9	8.0	8.5	11.3	9.0	10.2
25	7.0	5.0	6.1	7.6	7.3	7.4	8.8	7.4	8.1	10.9	9.4	10.1
26	6.8	5.1	6.1	7.7	7.1	7.4	9.4	7.6	8.4	11.6	9.4	10.4
27	7.9	6.2	6.9	7.7	7.0	7.3	9.9	7.2	8.4	12.9	9.0	10.6
28	7.0	5.9	6.3	8.2	6.9	7.4	9.0	8.1	8.5	11.6	9.7	10.5
29	---	---	---	8.9	7.2	7.9	10.5	7.9	9.1	11.8	9.4	10.4
30	---	---	---	9.6	7.6	8.5	10.7	8.3	9.3	10.1	9.5	9.7
31	---	---	---	8.4	7.9	8.1	---	---	---	11.7	9.3	10.3
MONTH	8.9	5.0	7.2	9.6	5.8	7.4	10.7	7.0	8.4	14.2	7.8	10.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	12.2	9.1	10.4	14.6	11.1	12.9	17.1	14.6	15.9	16.9	15.0	16.0
2	12.2	9.1	10.4	15.5	11.5	13.5	16.3	14.8	15.5	17.2	14.9	16.0
3	11.8	8.9	10.4	15.9	12.1	14.1	16.1	13.8	14.9	16.8	15.4	16.1
4	12.0	9.4	10.6	16.3	12.4	14.5	17.7	14.5	15.9	17.7	15.5	16.5
5	11.8	9.6	10.6	16.5	12.7	14.7	17.3	15.2	16.3	17.6	15.6	16.5
6	11.9	9.5	10.5	16.8	13.1	15.0	17.5	14.6	16.1	17.1	15.6	16.3
7	12.0	9.5	10.5	16.8	12.9	15.0	18.0	15.5	16.7	16.4	15.2	15.6
8	11.9	9.4	10.4	16.2	13.7	15.1	17.9	15.5	16.7	15.2	14.0	14.6
9	11.4	9.1	10.1	17.3	13.6	15.2	17.6	15.9	16.7	14.5	13.8	14.1
10	11.6	9.2	10.3	17.3	14.2	15.8	17.4	15.4	16.4	14.8	13.7	14.2
11	13.5	9.4	11.2	17.3	14.4	15.8	16.9	15.6	16.3	15.0	14.3	14.6
12	12.2	9.6	10.9	17.3	14.5	15.9	18.0	15.6	16.7	16.1	14.2	15.0
13	12.2	10.2	11.1	16.5	14.4	15.6	17.7	15.2	16.5	15.8	13.5	14.6
14	14.1	10.0	11.9	17.3	13.8	15.5	18.0	15.5	16.7	15.8	14.0	14.9
15	14.8	9.9	12.3	17.5	14.5	16.1	17.6	15.6	16.6	15.6	13.8	14.8
16	15.1	10.2	12.7	17.5	14.9	16.2	17.9	15.4	16.5	15.1	13.5	14.1
17	15.4	10.7	13.1	17.5	14.0	15.6	18.2	15.7	16.9	15.2	12.9	13.9
18	14.1	10.7	12.2	17.7	14.4	16.1	18.3	15.9	17.1	15.3	13.4	14.3
19	12.4	10.5	11.5	17.8	14.8	16.3	17.7	16.0	16.9	15.0	13.9	14.4
20	12.1	10.4	11.4	18.1	14.8	16.4	16.9	14.9	15.8	15.1	12.8	13.9
21	12.8	10.5	11.7	18.7	15.6	17.1	17.5	14.9	16.1	15.4	13.3	14.3
22	12.5	10.3	11.6	18.5	15.8	17.2	17.1	15.2	16.0	15.7	13.5	14.5
23	12.3	10.4	11.5	17.8	15.4	16.7	16.9	14.4	15.6	15.7	13.8	14.7
24	14.7	10.5	12.4	17.4	14.7	16.1	17.0	14.6	15.8	15.7	13.8	14.8
25	15.4	10.7	13.2	17.5	14.6	16.1	17.4	15.0	16.1	15.8	14.0	14.9
26	16.1	11.1	13.6	17.4	14.4	16.0	16.8	15.2	15.7	16.2	14.2	15.1
27	16.2	11.4	14.1	17.6	14.7	16.2	17.1	14.3	15.6	16.3	14.5	15.4
28	16.4	11.5	14.2	18.0	14.8	16.5	16.9	14.7	15.8	16.0	14.5	15.2
29	16.0	12.0	14.3	18.0	14.8	16.5	16.9	15.1	16.0	15.4	14.0	14.5
30	15.2	11.9	13.6	18.1	14.9	16.6	16.7	15.0	15.9	15.1	12.9	14.0
31	---	---	---	17.7	15.0	16.5	17.3	14.9	16.0	---	---	---
MONTH	16.4	8.9	11.8	18.7	11.1	15.7	18.3	13.8	16.2	17.7	12.8	14.9
YEAR	18.7	5.0	10.7									

14187600 LEBANON SANTIAM CANAL NEAR LEBANON, OR

LOCATION.--Lat 44°30'54", long 122°51'49", in SW 1/4 NW 1/4 sec.19, T.12 S., R.1 W., Linn County, Hydrologic Unit 17090006, near right bank, on downstream side of bridge on Headgate Road, 2.2 mi east of Lebanon.

PERIOD OF RECORD.--May 1992 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 370 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good except those for the period July 25 to Sept. 30, which are fair. Flow completely regulated.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 191 ft^3/s Mar. 8, 1994; minimum daily discharge, 25 ft^3/s Jan. 18, 1994.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91	92	90	52	52	64	68	80	51	81	94	85
2	90	92	93	47	44	63	73	78	53	71	93	86
3	90	91	97	51	60	66	78	75	56	70	93	85
4	91	91	95	51	70	67	77	77	57	70	93	85
5	91	91	95	51	74	67	77	82	54	70	94	86
6	91	90	95	58	78	60	80	78	70	70	94	87
7	90	88	94	74	79	62	77	76	70	69	94	88
8	89	84	94	71	71	59	75	76	70	66	93	88
9	88	92	93	70	67	66	76	75	68	66	93	88
10	89	95	94	69	61	62	75	75	58	66	92	85
11	90	97	88	64	75	66	74	74	75	66	95	79
12	90	97	80	61	81	57	76	72	74	66	100	78
13	90	99	77	69	69	49	64	71	71	66	99	83
14	90	97	80	76	66	56	84	73	71	66	99	85
15	86	94	79	79	60	67	84	77	70	66	100	84
16	81	95	79	77	59	64	80	84	75	85	100	85
17	81	97	76	73	65	72	82	84	83	96	100	84
18	79	96	76	70	65	77	83	84	84	96	100	85
19	77	97	81	65	67	75	82	84	84	95	100	84
20	77	98	75	62	65	75	80	86	83	95	94	84
21	78	95	65	61	66	73	78	96	79	95	84	84
22	79	93	60	58	68	57	83	98	79	95	84	84
23	82	92	57	62	68	68	88	99	82	95	84	84
24	82	92	55	62	66	72	97	99	85	95	84	83
25	78	92	56	71	66	74	93	97	84	95	84	82
26	74	93	59	73	68	76	88	90	84	95	83	82
27	73	96	63	78	64	76	87	95	84	95	83	82
28	73	95	69	76	63	72	82	105	83	96	83	82
29	82	94	72	66	---	68	80	76	83	96	83	82
30	92	91	66	52	---	63	77	57	83	96	83	82
31	93	---	40	46	---	64	---	54	---	95	83	---
TOTAL	2627	2806	2393	1995	1857	2057	2398	2527	2203	2544	2838	2521
MEAN	84.7	93.5	77.2	64.4	66.3	66.4	79.9	81.5	73.4	82.1	91.5	84.0
MAX	93	99	97	79	81	77	97	105	85	96	100	88
MIN	73	84	40	46	44	49	64	54	51	66	83	78
AC-FT	5210	5570	4750	3960	3680	4080	4760	5010	4370	5050	5630	5000

CAL YR 2002 TOTAL 29172 MEAN 79.9 MAX 101 MIN 36 AC-FT 57860
WTR YR 2003 TOTAL 28766 MEAN 78.8 MAX 105 MIN 40 AC-FT 57060

14188610 SCHAFER CREEK NEAR LACOMB, OR

LOCATION.--Lat 44°37'11", long 122°27'53", in NE 1/4 SE 1/4 sec.8, T.11 S., R.3 E., Linn County, Hydrologic Unit 17090006, on right bank, 40 ft upstream from Crabtree Creek, and 8.0 mi east of LaComb.

DRAINAGE AREA.--1.03 mi^2.

PERIOD OF RECORD.--July 1993 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,900 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except those below 2.0 ft^3/s and estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--10 years (water years 1994-2003), 7.57 ft^3/s, 99.86 in/yr, 5,480 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 400 ft^3/s Feb. 7, 1996, gage height, 7.93 ft, from rating curve extended above 110 ft^3/s, on basis of slope-area measurement of peak flow; minimum discharge, 0.01 ft^3/s Sept. 30, Oct. 1-5, 1999, Sept. 24, 25, 2001, Sept. 6, 7, 2003.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 130 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 30	0830	*102	*5.90				

Minimum discharge, 0.01 ft^3/s Sept. 6, 7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.87	0.19	1.2	16	37	4.1	11	7.1	2.9	0.25	0.05	0.02
2	0.55	0.19	1.1	22	17	3.8	8.2	7.3	2.5	0.24	0.05	0.02
3	0.59	0.18	1.1	35	12	3.8	6.5	7.3	2.3	0.22	0.05	0.02
4	0.61	0.18	1.1	36	9.0	3.8	5.4	9.8	2.1	0.21	0.05	0.02
5	0.59	0.18	1.1	25	7.2	6.8	4.6	13	1.9	0.20	0.05	0.02
6	0.55	0.18	1.0	13	6.0	20	4.2	10	1.7	0.19	0.05	0.02
7	0.47	0.31	0.97	9.9	5.1	58	4.5	8.1	1.5	0.18	0.09	e0.08
8	0.40	2.6	0.89	8.6	4.5	61	6.0	6.9	1.3	0.17	0.06	e1.7
9	0.38	9.0	0.83	7.6	4.0	39	12	6.0	1.1	0.16	0.05	e1.5
10	0.34	11	1.9	6.1	3.6	41	15	5.4	0.98	0.15	0.05	e1.3
11	0.30	14	4.7	5.3	3.2	25	17	5.5	0.86	0.14	0.05	e1.3
12	0.29	8.1	7.6	14	2.9	31	15	6.4	0.79	0.14	0.04	e2.2
13	0.27	6.2	14	17	2.8	21	14	6.8	1.0	0.13	0.04	e1.2
14	0.25	7.9	15	16	2.9	16	12	7.5	0.98	0.12	0.04	e0.80
15	0.23	5.1	22	10	3.2	15	10	6.8	0.82	0.12	0.04	e0.70
16	0.21	6.0	29	7.6	5.7	13	10	5.9	0.73	0.11	0.04	e0.90
17	0.20	11	13	6.8	8.1	11	12	5.3	0.64	0.11	0.03	e1.1
18	0.20	7.4	8.2	7.3	9.2	8.7	10	4.8	0.58	0.10	0.03	e0.90
19	0.19	11	6.4	6.3	9.1	8.4	8.3	4.4	0.54	0.10	0.03	e0.80
20	0.20	6.9	5.8	5.3	15	12	7.5	4.6	0.53	0.09	0.03	e0.70
21	0.22	4.8	8.5	4.8	29	26	8.1	5.3	0.58	0.09	0.03	e0.60
22	0.21	3.7	6.7	6.7	25	59	8.9	6.4	0.58	0.09	0.03	e0.60
23	0.21	3.0	5.4	9.1	13	27	13	6.9	0.52	0.08	0.03	e0.50
24	0.20	2.6	4.6	12	9.4	13	17	7.0	0.47	0.07	0.03	e0.50
25	0.20	2.2	4.3	24	7.3	22	11	6.5	0.43	0.07	0.03	e0.50
26	0.20	2.0	7.3	44	6.0	37	8.8	5.2	0.39	0.07	0.03	e0.40
27	0.20	1.7	35	30	5.2	16	7.9	4.7	0.35	0.07	0.03	e0.40
28	0.21	1.5	22	13	4.6	11	7.6	4.7	0.33	0.06	0.03	e0.40
29	0.21	1.4	13	14	---	9.0	8.2	4.3	0.30	0.06	0.03	e0.40
30	0.20	1.3	20	79	---	11	7.7	4.0	0.27	0.06	0.02	e0.40
31	0.20	---	36	61	---	13	---	3.3	---	0.05	0.02	---
TOTAL	9.95	131.81	299.69	572.4	267.0	646.4	291.4	197.2	29.97	3.90	1.23	20.00
MEAN	0.32	4.39	9.67	18.5	9.54	20.9	9.71	6.36	1.00	0.13	0.040	0.67
MAX	0.87	14	36	79	37	61	17	13	2.9	0.25	0.09	2.2
MIN	0.19	0.18	0.83	4.8	2.8	3.8	4.2	3.3	0.27	0.05	0.02	0.02
AC-FT	20	261	594	1140	530	1280	578	391	59	7.7	2.4	40
CFSM	0.31	4.27	9.39	17.9	9.26	20.2	9.43	6.18	0.97	0.12	0.04	0.65
IN.	0.36	4.76	10.82	20.67	9.64	23.35	10.52	7.12	1.08	0.14	0.04	0.72

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2003, BY WATER YEAR (WY)

MEAN	4.49	11.4	14.3	13.3	11.7	11.0	10.8	8.18	4.14	0.80	0.19	0.70
MAX	9.18	28.8	24.2	20.5	23.7	20.9	17.6	16.4	7.78	1.89	0.41	2.38
(WY)	1997	1996	1997	1995	1996	2003	2002	1999	1999	1997	1995	1997
MIN	0.32	0.97	4.44	4.42	4.33	7.25	5.95	3.84	1.00	0.13	0.040	0.043
(WY)	2003	1994	1998	2001	2001	1996	1998	1994	2003	2003	2003	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1994 - 2003	
ANNUAL TOTAL	2429.10		2470.95			
ANNUAL MEAN	6.66		6.77		7.57	
HIGHEST ANNUAL MEAN					10.5	1996
LOWEST ANNUAL MEAN					4.20	2001
HIGHEST DAILY MEAN	87	Apr 14	79	Jan 30	152	Feb 7 1996
LOWEST DAILY MEAN	0.09	Sep 13	0.02	Aug 30	0.01	Oct 3 1999
ANNUAL SEVEN-DAY MINIMUM	0.10	Sep 9	0.02	Aug 30	0.02	Sep 29 1999
ANNUAL RUNOFF (AC-FT)	4820		4900		5480	
ANNUAL RUNOFF (CFSM)	6.46		6.57		7.35	
ANNUAL RUNOFF (INCHES)	87.73		89.24		99.86	
10 PERCENT EXCEEDS	15		16		18	
50 PERCENT EXCEEDS	4.3		3.2		3.7	
90 PERCENT EXCEEDS	0.18		0.06		0.15	

e Estimated

14188800 THOMAS CREEK NEAR SCIO, OR

LOCATION.--Lat 44°42'44", long 122°46'08", in NW 1/4 SE 1/4 sec.11, T.10 S., R.1 W., Linn County, Hydrologic Unit 17090006, on right bank, at State Highway 226, 13 mi upstream from Mill Creek, 3.9 mi east of Scio, and at mile 14.2

DRAINAGE AREA.--109.73 mi^2.

PERIOD OF RECORD.--October 1962 to 1986, October 2002 to September 2003.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 370 ft above NGVD of 1929, from topographic map. October 1962 to 1986, at site 0.4 mi upstream, on left bank, at 380.84 ft above NGVD of 1929.

REMARKS.--Records fair except for estimated daily discharges for the period Oct. 1 to Dec. 10, which are poor. No regulation. Several small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--25 years (water years 1963-1986, 2003), 495 ft^3/s, 61.34 in/yr, 358,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,400 ft^3/s Dec. 22, 1964, gage height, 18.44 ft, datum then in use, from rating curve extended above 7,200 ft^3/s, on basis of slope-area measurement of peak flow; maximum gage height, 19.58 ft, Jan. 21, 1972, (backwater from debris), datum then in use; minimum discharge, 3.4 ft^3/s Sept. 6, 2003.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 31	0300	4,850	11.52	Mar. 7	2100	9,910	14.47
Jan. 30	1200	6,140	12.39	Mar. 22	1530	4,440	11.23
Jan. 31	2230	*10,400	*14.69				

Minimum discharge, 3.4 ft^3/s Sept. 6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e50	e17	e49	1920	4910	416	723	550	119	35	12	6.3
2	e33	e17	e47	1420	2460	375	711	487	110	35	13	5.6
3	e31	e17	e45	1900	1630	457	804	437	104	34	14	5.3
4	e38	e17	e46	1760	1200	417	870	635	99	32	15	5.0
5	e33	e17	e48	1600	930	425	822	789	91	31	14	4.7
6	e29	e17	e44	1060	759	1020	1070	653	85	31	13	4.5
7	e26	e19	e41	798	641	4780	933	558	82	29	15	6.9
8	e25	e76	e40	642	556	6160	846	510	78	27	18	11
9	e24	e277	e38	535	490	3090	994	445	76	27	15	20
10	e23	e326	e78	460	437	2440	946	399	75	25	14	31
11	e23	e445	181	408	394	1590	959	368	73	24	12	23
12	e22	e214	301	616	358	1430	944	346	70	24	12	19
13	e21	e182	606	824	328	1160	1180	314	79	24	11	15
14	e20	e167	555	932	313	954	1190	292	86	24	11	12
15	e20	e129	872	736	306	852	1020	274	70	23	9.6	9.5
16	e19	e116	e1600	590	439	752	965	278	64	22	9.7	13
17	e19	e359	e1200	498	969	646	1250	278	60	22	10	22
18	e18	e224	e900	440	1390	558	1230	260	57	21	9.1	18
19	e18	e195	697	392	1010	527	965	237	60	20	8.2	14
20	e19	e168	546	350	1010	585	783	220	60	18	8.3	14
21	e19	e139	1490	317	1210	1130	756	207	62	18	8.3	13
22	e19	e115	986	332	1310	3700	708	195	71	18	8.2	11
23	e19	e96	696	404	968	2420	759	185	62	17	9.6	9.8
24	e18	e91	552	399	762	1460	1250	177	57	16	9.9	8.8
25	e18	e81	465	751	630	1340	1050	186	51	16	8.4	9.0
26	e18	e71	633	1740	544	1950	967	170	47	16	7.5	7.7
27	e18	e65	1820	1840	478	1480	843	154	43	15	7.5	7.6
28	e18	e60	1420	1050	442	1120	748	144	40	15	7.4	7.0
29	e18	e55	1330	998	---	871	724	135	38	13	7.3	6.5
30	e18	e52	2440	4400	---	721	625	132	36	12	7.5	7.1
31	e17	---	3760	5380	---	711	---	130	---	12	6.7	---
TOTAL	711	3824	23526	35492	26874	45537	27635	10145	2105	696	332.2	347.3
MEAN	22.9	127	759	1145	960	1469	921	327	70.2	22.5	10.7	11.6
MAX	50	445	3760	5380	4910	6160	1250	789	119	35	18	31
MIN	17	17	38	317	306	375	625	130	36	12	6.7	4.5
AC-FT	1410	7580	46660	70400	53300	90320	54810	20120	4180	1380	659	689
CFSM	0.21	1.16	6.92	10.4	8.75	13.4	8.39	2.98	0.64	0.20	0.10	0.11
IN.	0.24	1.30	7.98	12.03	9.11	15.44	9.37	3.44	0.71	0.24	0.11	0.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2003, BY WATER YEAR (WY)

MEAN	171	703	1078	1067	870	740	574	377	200	77.4	41.5	65.0
MAX	633	1898	2310	1836	1666	1504	921	744	682	407	203	251
(WY)	1969	1974	1965	1972	1986	1972	2003	1963	1984	1983	1968	1968
MIN	22.9	127	104	144	176	245	298	168	70.2	22.5	10.7	11.6
(WY)	2003	2003	1977	1977	1977	1965	1968	1973	2003	2003	2003	2003

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 1963 - 2003	
ANNUAL TOTAL	177224.5			
ANNUAL MEAN	486		495	
HIGHEST ANNUAL MEAN			760	1974
LOWEST ANNUAL MEAN			229	1977
HIGHEST DAILY MEAN	6160	Mar 8	11400	Dec 22 1964
LOWEST DAILY MEAN	4.5	Sep 6	4.5	Sep 6 2003
ANNUAL SEVEN-DAY MINIMUM	5.4	Aug 31	5.4	Aug 31 2003
ANNUAL RUNOFF (AC-FT)	351500		358900	
ANNUAL RUNOFF (CFSM)	4.42		4.51	
ANNUAL RUNOFF (INCHES)	60.08		61.34	
10 PERCENT EXCEEDS	1220		1160	
50 PERCENT EXCEEDS	130		284	
90 PERCENT EXCEEDS	11		27	

e Estimated

14188850 THOMAS CREEK NEAR CRABTREE, OR

LOCATION.--Lat 44°41'26", long 122°56'20", in SW 1/4 SE 1/4 sec.63, T.10 S., R.2 W., Linn County, Hydrologic Unit 17090006, on right bank, 4.2 mi northwest of Crabtree, and at mile 2.2.

DRAINAGE AREA.--142.68 mi^2.

PERIOD OF RECORD.--October 2002 to September 2003, gage heights only.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 247 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair. No regulation. Diversion for irrigation upstream from station.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 14.53 ft Feb. 1; minimum gage height, 4.52 ft Sept. 6.

Gage height, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	5.53	9.23	12.10	6.80	7.57	7.15	5.67	5.05	4.73	4.65
2	---	---	5.51	8.62	9.61	6.67	7.56	7.00	5.60	5.04	4.72	4.70
3	---	---	5.50	9.22	8.74	6.91	7.81	6.89	5.57	5.05	4.76	4.66
4	---	---	5.50	9.09	8.18	6.78	7.96	7.20	5.54	5.03	4.81	4.64
5	---	---	5.52	8.89	7.79	6.75	7.83	7.57	5.50	5.01	4.81	4.63
6	---	---	5.51	8.17	7.51	7.65	8.33	7.33	5.45	5.00	4.80	4.64
7	---	---	5.49	7.78	7.29	10.66	7.98	7.12	5.41	5.00	4.80	4.66
8	---	---	5.47	7.51	7.12	12.62	7.79	7.02	5.39	4.98	4.82	4.66
9	---	6.38	5.46	7.29	6.97	10.17	7.94	6.88	5.38	4.98	4.82	4.88
10	---	6.73	5.45	7.12	6.85	9.60	7.88	6.76	5.36	4.95	4.83	5.07
11	---	6.54	5.86	6.99	6.74	8.77	7.89	6.67	5.36	4.93	4.79	5.07
12	---	6.19	6.55	7.37	6.65	8.58	7.94	6.60	5.34	4.90	4.74	5.02
13	---	6.21	7.27	7.86	6.56	8.27	8.51	6.51	5.39	4.91	4.73	5.00
14	---	6.13	7.23	8.02	6.52	7.98	8.34	6.44	5.47	4.90	4.70	4.95
15	---	6.04	7.73	7.66	6.49	7.81	8.04	6.37	5.37	4.87	4.67	4.89
16	---	5.87	9.28	7.39	6.82	7.64	7.92	6.38	5.31	4.85	4.67	4.87
17	---	6.27	8.21	7.19	7.74	7.45	8.25	6.38	5.27	4.86	4.69	4.97
18	---	6.19	8.11	7.04	8.43	7.26	8.23	6.32	5.25	4.87	4.70	5.01
19	---	6.24	7.66	6.93	7.83	7.17	7.89	6.23	5.25	4.83	4.71	4.92
20	---	6.17	7.37	6.81	7.79	7.33	7.61	6.16	5.27	4.82	4.67	4.88
21	---	6.00	9.04	6.72	8.00	7.86	7.61	6.09	5.28	4.81	4.69	4.88
22	---	5.89	8.20	6.77	8.16	10.70	7.50	6.05	5.35	4.77	4.64	4.85
23	---	5.80	7.67	7.01	7.71	9.72	7.56	6.00	5.30	4.78	4.69	4.82
24	---	5.76	7.37	6.91	7.41	8.66	8.44	5.97	5.27	4.78	4.73	4.79
25	---	5.72	7.16	7.52	7.19	8.48	8.10	6.00	5.22	4.79	4.75	4.79
26	---	5.67	7.41	8.60	7.03	9.20	8.04	5.96	5.19	4.79	4.68	4.80
27	---	5.62	9.25	9.00	6.89	8.68	7.78	5.88	5.16	4.80	4.69	4.78
28	---	5.59	8.75	8.07	6.80	8.20	7.58	5.82	5.11	4.80	4.67	4.78
29	---	5.56	8.71	7.96	---	7.83	7.57	5.78	5.08	4.76	4.66	4.78
30	---	5.55	9.67	11.57	---	7.56	7.32	5.75	5.06	4.74	4.63	4.78
31	---	---	11.29	11.47	---	7.54	---	5.74	---	4.75	4.64	---
TOTAL	---	---	224.73	247.78	212.92	257.30	236.77	200.02	160.17	151.40	146.44	144.82
MEAN	---	---	7.25	7.99	7.60	8.30	7.89	6.45	5.34	4.88	4.72	4.83
MAX	---	---	11.29	11.57	12.10	12.62	8.51	7.57	5.67	5.05	4.83	5.07
MIN	---	---	5.45	6.72	6.49	6.67	7.32	5.74	5.06	4.74	4.63	4.63

14189000 SANTIAM RIVER AT JEFFERSON, OR

LOCATION.--Lat 44°42'55", long 123°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 mi^2, 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, WDR OR-93-1: 1974.

GAGE.--Water-stage recorder. Datum of gage is 199.63 ft above NGVD 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 good except for the period Apr. 15 to June 12, which is fair. 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. Continuous water-quality records for the period October 1963 to September 1987 have been collected at this location. Water temperature data for the period October 2000 to June 2001 available in the files of the Portland Field Office. Periodic suspended sediment data are available for the period October 1991 to September 1993.

AVERAGE DISCHARGE.--22 years (water years 1908-16, 1940-1952), 7,587 ft^3/s, 5,497,000 acre-ft/yr.
51 years (water years 1953-2003), 7,803 ft^3/s, 5,653,000 acre-ft/yr (regulated period).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 197,000 ft^3/s Dec. 22, 1964, gage height, 24.22 ft; minimum discharge observed, 260 ft^3/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 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 44,100 ft^3/s Feb. 1, gage height, 14.38 ft; minimum discharge, 960 ft^3/s Aug. 16.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2600	2780	2620	21900	38800	4820	14300	7850	6450	2020	1120	1140
2	2850	2770	2550	18400	24100	4380	13700	7590	6340	1820	1060	1220
3	2960	2780	2520	20300	21900	4980	13100	7210	6490	1760	1100	1520
4	3030	2780	2270	22700	19700	4780	12300	7010	6700	1750	1100	1530
5	2990	2780	2150	24400	17200	4850	11400	8020	6620	1750	1110	1550
6	2980	2820	2140	19600	15300	8270	12600	8980	6080	1760	1110	1580
7	2940	2860	2090	17200	14600	16400	12000	8210	5880	1730	1100	1620
8	2950	3080	2030	15700	13100	28900	10700	7340	5830	1640	1100	1670
9	2930	4170	2020	14500	11500	23600	11300	6800	5770	1630	1070	1810
10	2950	5140	2040	13500	10700	20700	11300	6520	4710	1600	1050	1810
11	2960	5270	2340	11800	10100	18800	11100	6150	3820	1570	1050	1920
12	2900	5010	4060	11200	8980	21600	11300	5980	3000	1560	1050	2080
13	2930	5580	5870	13000	7010	23600	11300	5410	2630	1560	1030	2070
14	2890	5780	7320	13600	5840	22600	11700	5390	2570	1560	1010	2020
15	3010	5340	9590	11700	4900	20100	13200	5350	2490	1520	986	2000
16	3500	4970	16100	10500	4730	18200	12800	5020	2400	1290	984	2040
17	3500	5590	14600	9560	6750	15600	13100	4920	2350	1240	1000	2100
18	3430	5720	13300	8410	9760	13100	14100	5140	2310	1250	1000	2130
19	3200	5970	12000	7180	8490	11800	13700	5080	2310	1200	989	2150
20	3200	6280	10600	6380	8110	12000	12100	4800	2320	1180	998	2130
21	3300	5830	13700	6030	9260	13400	11000	4900	2250	1180	1070	2170
22	3090	5410	11600	5680	10500	28200	9950	5170	2300	1150	1090	2180
23	3190	5210	9320	6460	9180	27900	8900	5310	2270	1130	1110	2170
24	3200	5160	8300	6790	7850	23300	10200	5620	2220	1130	1110	2150
25	3100	5130	8350	11200	6710	26100	11200	5960	2150	1140	1110	2150
26	2820	4760	9190	15700	5790	28800	10600	5930	2110	1140	1090	2130
27	2800	4220	13500	22600	5040	28400	9750	5470	2060	1140	1060	2120
28	2800	3700	15200	19100	4710	25500	8680	5600	2040	1140	1040	2120
29	2810	3230	16900	16800	---	21400	8510	5960	2020	1100	1080	2140
30	2820	2750	18800	31200	---	16500	7930	6150	2020	1090	1110	2130
31	2800	---	28700	33400	---	14600	---	6350	---	1110	1150	---
TOTAL	93430	132870	271770	466490	320610	553180	343820	191190	108510	43840	33037	57550
MEAN	3014	4429	8767	15050	11450	17840	11460	6167	3617	1414	1066	1918
MAX	3500	6280	28700	33400	38800	28900	14300	8980	6700	2020	1150	2180
MIN	2600	2750	2020	5680	4710	4380	7930	4800	2020	1090	984	1140
AC-FT	185300	263500	539100	925300	635900	1097000	682000	379200	215200	86960	65530	114200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2003, BY WATER YEAR (WY)

MEAN	4759	11380	15950	14910	11440	9406	8405	7120	4476	1858	1433	2669
MAX	11890	26850	37880	30310	32350	25700	16150	14180	11150	4825	2883	5325
(WY)	1969	1974	1965	1953	1996	1972	1993	1960	1984	1983	1968	1968
MIN	432	622	2420	2178	1897	3245	3874	2115	1287	944	747	887
(WY)	1953	1953	1977	1977	1977	1992	1968	1973	1992	1965	1966	1953

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1953 - 2003	
ANNUAL TOTAL	2336690		2616297			
ANNUAL MEAN	6402		7168		7803	
HIGHEST ANNUAL MEAN					12310	1974
LOWEST ANNUAL MEAN					3512	1977
HIGHEST DAILY MEAN	31800	Apr 14	38800	Feb 1	143000	Dec 23 1964
LOWEST DAILY MEAN	1200	Aug 18	984	Aug 16	396	Oct 7 1952
ANNUAL SEVEN-DAY MINIMUM	1210	Aug 27	995	Aug 14	406	Oct 15 1952
ANNUAL RUNOFF (AC-FT)	4635000		5189000		5653000	
10 PERCENT EXCEEDS	14100		16800		17600	
50 PERCENT EXCEEDS	5340		5010		5110	
90 PERCENT EXCEEDS	1570		1140		1430	

14189050 SANTIAM RIVER NEAR JEFFERSON, OR

WATER-QUALITY RECORDS

LOCATION.--Lat. 44°44'20", long 123°02'55", in SW 1/4 sec. 34, T.9 S., R.3 W., Marion County, Hydrologic Unit 17090005, on right bank 0.1 mi upstream from Interstate 5 bridge in east side of Santiam Safety Rest Area, and at mile 6.2.

DRAINAGE AREA.--1,790 mi^2 approximately, at site (14189000) 3.4 mi upstream.

PERIOD OF DAILY RECORD.--May 2001 to current year.

INSTRUMENTATION.--Temperature probe and data logger.

REMARKS.--Records good except those for the period Nov. 1 to June 24, which are fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum recorded, 23.2°C July 21,22, 2003; minimum recorded, 4.8°C Jan. 27, 2002.

EXTREMES FOR CURRENT YEAR.--Maximum recorded, 23.2°C July 21, 22; minimum recorded, 5.9°C Feb. 9, but may have been lower during periods of missing record.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	13.8	12.4	13.2	9.6	8.4	9.0	---	---	---	---	---	---
2	13.7	12.1	13.0	9.6	8.3	9.0	---	---	---	---	---	---
3	13.6	12.7	13.0	9.9	8.6	9.2	---	---	---	---	---	---
4	14.0	13.1	13.5	10.2	8.9	9.6	---	---	---	8.8	8.2	8.4
5	14.4	13.6	13.9	11.1	9.9	10.4	---	---	---	8.3	7.4	7.6
6	15.3	13.9	14.5	11.1	10.4	10.7	---	---	---	7.4	7.1	7.2
7	15.2	13.6	14.4	11.4	10.8	11.1	---	---	---	7.1	6.6	6.8
8	14.9	13.7	14.3	11.4	10.9	11.1	---	---	---	6.9	6.5	6.6
9	14.6	13.3	14.2	10.9	10.2	10.5	---	---	---	6.8	6.1	6.5
10	14.2	12.8	13.4	10.2	9.7	10.1	---	---	---	7.0	6.5	6.8
11	13.2	11.8	12.5	10.4	9.6	10.1	---	---	---	6.9	6.6	6.7
12	13.0	11.5	12.3	11.3	10.0	10.7	---	---	---	7.8	6.9	7.4
13	13.2	11.7	12.5	11.0	10.5	10.8	---	---	---	7.9	7.6	7.7
14	13.4	11.8	12.7	11.3	10.6	10.9	---	---	---	8.2	7.9	8.0
15	13.7	12.1	13.0	10.7	9.4	10.1	---	---	---	7.9	6.9	7.6
16	14.1	12.2	13.2	9.9	9.1	9.6	---	---	---	7.5	6.6	7.1
17	14.1	12.6	13.4	10.5	9.7	10.1	---	---	---	7.1	6.3	6.7
18	13.7	12.8	13.2	10.1	9.2	9.7	---	---	---	6.8	6.1	---
19	14.4	13.0	13.6	10.9	---	---	---	---	---	6.8	6.0	6.5
20	14.1	13.3	13.7	10.7	10.4	10.5	---	---	---	---	6.2	---
21	13.8	13.1	13.4	10.7	10.2	10.4	---	---	---	---	---	---
22	14.3	13.2	13.6	10.7	10.4	10.6	---	---	---	---	---	---
23	13.8	12.5	13.1	10.7	---	---	---	---	---	---	---	---
24	13.0	12.1	12.4	---	10.2	---	---	---	---	---	---	---
25	13.1	11.8	12.4	10.1	8.7	9.2	---	---	---	---	---	---
26	12.6	11.2	11.9	8.8	8.0	8.4	---	---	---	9.4	8.7	9.1
27	12.0	10.8	11.2	8.7	7.6	8.2	---	---	---	9.1	8.5	8.7
28	12.3	11.4	11.8	8.7	7.7	8.3	---	---	---	8.7	8.0	8.2
29	12.8	11.5	12.2	8.4	7.7	8.1	---	---	---	8.2	7.9	8.0
30	11.5	9.5	10.2	8.2	7.4	7.8	---	---	---	9.6	8.2	9.0
31	9.5	8.3	9.0	---	---	---	---	---	---	9.9	9.6	9.7
MONTH	15.3	8.3	12.9	---	---	---	---	---	---	---	---	---

14189050 SANTIAM RIVER NEAR JEFFERSON, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.6	8.8	9.1	8.4	---	---	9.2	8.3	8.7	12.4	---	---
2	9.0	8.7	8.8	7.9	---	---	8.6	7.3	8.0	12.8	10.8	11.9
3	8.7	7.9	8.2	---	---	---	8.3	7.3	7.8	---	---	---
4	8.2	7.6	7.8	---	---	---	8.7	7.3	8.0	---	---	---
5	7.6	6.8	7.1	---	7.2	---	8.4	7.8	8.1	---	9.0	---
6	7.3	6.3	6.9	8.1	7.0	7.6	9.3	7.5	8.3	---	8.8	---
7	7.3	6.2	6.8	7.6	7.2	7.4	9.6	8.4	9.1	---	---	---
8	7.0	6.0	6.6	8.6	7.6	8.1	10.7	8.6	9.5	---	---	---
9	7.1	5.9	6.6	9.0	8.0	8.5	10.8	9.6	10.3	---	---	---
10	7.5	6.5	6.9	9.3	8.3	8.8	10.6	9.3	9.8	---	---	---
11	7.0	6.6	6.7	9.2	8.4	8.9	10.9	9.2	10	11.8	9.9	10.9
12	---	---	---	9.0	8.4	8.7	10.7	9.5	10.2	---	---	---
13	---	---	---	8.6	8.3	8.4	10.7	9.5	10.1	14.1	11.5	12.8
14	9.1	---	---	8.7	8.0	8.3	10.1	8.7	9.5	---	---	---
15	---	---	---	9.0	8.1	8.5	9.9	8.6	9.3	---	11.9	---
16	8.8	---	---	8.9	7.6	8.3	10.4	8.7	9.7	11.5	---	---
17	---	---	---	8.7	7.5	8.1	10.3	9.0	9.6	---	---	---
18	---	---	---	8.4	7.2	7.9	10.1	8.3	9.3	---	---	---
19	---	---	---	8.1	7.5	7.8	10.4	8.1	9.3	13.2	10.3	11.8
20	---	---	---	9.0	7.6	8.3	10.4	8.9	9.8	---	11.6	---
21	---	---	---	8.7	8.0	8.3	10.4	9.2	9.5	14.1	---	---
22	8.4	7.8	---	8.6	8.0	8.2	8.8	---	---	---	---	---
23	8.2	---	---	8.1	7.5	7.9	---	---	---	15.4	13.3	14.3
24	---	---	---	8.4	7.0	7.7	10.1	8.9	9.4	15.2	13.1	13.8
25	6.6	---	---	8.3	7.6	8.0	9.5	8.0	8.8	13.2	11.7	12.3
26	---	---	---	8.4	7.8	8.1	---	---	---	13.2	10.8	11.7
27	8.0	---	---	8.3	7.2	7.7	10.9	---	---	14.6	11.4	13.0
28	---	---	---	8.9	7.2	8.0	---	---	---	14.2	12.3	13.4
29	---	---	---	9.9	7.6	8.8	11.6	---	---	14.7	12.3	13.4
30	---	---	---	10.4	8.4	9.5	11.5	---	---	14.3	11.5	12.5
31	---	---	---	10.3	9.0	9.4	---	---	---	13.8	10.6	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	11.8	---	17.8	15.2	16.4	22.0	19.4	20.6	19.4	17.0	18.4
2	---	11.8	---	18.0	14.0	16.0	20.9	18.3	19.2	19.6	17.2	18.5
3	14.7	---	---	19.0	15.2	17.0	18.3	17.0	17.7	19.2	16.5	17.9
4	15.4	11.7	14.0	19.7	15.9	17.8	20.4	16.7	18.4	19.3	16.5	17.9
5	15.7	12.0	14.0	20.1	16.4	18.2	20.4	17.9	19.2	19.5	16.8	18.1
6	15.8	12.4	14.3	20.4	16.9	18.7	20.3	17.9	19.2	18.8	16.6	17.5
7	15.7	12.6	14.3	20.2	16.9	18.6	21.2	18.5	19.9	17.3	16.1	16.6
8	15.2	12.5	14.1	19.5	16.7	18.1	21.6	18.9	20.4	16.3	14.7	15.4
9	14.7	12.0	13.0	20.4	16.4	18.3	21.4	19.5	20.6	15.4	14.0	14.6
10	---	---	---	21.1	17.4	19.2	21.2	18.8	20.0	15.0	14.1	14.6
11	15.8	12.8	---	21.1	17.7	19.5	20.6	18.7	19.7	15.5	14.6	15.0
12	15.2	14.0	---	20.6	17.8	19.4	20.9	18.3	19.7	16.0	14.0	15.0
13	---	14.5	---	20.1	17.9	19.0	20.8	18.3	19.7	16.2	13.9	15.1
14	16.6	---	---	20.3	16.7	18.5	21.4	18.6	20.0	16.2	14.3	15.4
15	18.1	14.1	16.1	20.6	17.5	19.1	21.3	19.0	20.0	15.9	14.0	15.0
16	19.0	14.9	16.8	20.6	18.1	19.4	20.9	18.2	19.6	15.3	14.0	14.5
17	19.9	15.6	17.7	21.3	17.8	19.5	21.7	19.0	20.4	15.3	12.8	14.1
18	18.7	---	---	21.6	18.3	20.0	22.0	19.7	21.0	15.4	13.3	14.4
19	16.1	---	---	22.0	18.9	20.6	21.8	19.7	20.9	15.6	14.4	15.0
20	15.3	---	---	22.4	19.3	20.9	21.2	18.6	19.8	15.6	13.4	14.5
21	15.3	---	---	23.2	20.1	21.7	20.3	18.1	19.4	15.5	13.8	14.7
22	14.7	---	---	23.2	20.5	22.0	20.2	18.0	18.8	16.0	13.9	15.0
23	---	---	---	22.7	20.0	21.3	19.2	16.9	18.2	16.3	14.2	15.3
24	16.9	---	---	21.6	18.7	20.2	19.6	16.8	18.2	16.3	14.6	15.5
25	---	---	---	21.1	18.4	19.9	20.1	17.3	18.8	16.5	14.7	15.7
26	19.9	15.6	17.6	21.3	18.4	19.9	19.9	17.7	18.6	17.1	15.2	16.2
27	20.7	16.6	18.6	21.8	18.7	---	19.5	17.3	18.4	17.3	15.5	16.5
28	20.9	16.8	18.8	22.6	19.4	21.0	19.6	17.3	18.5	17.0	15.5	16.4
29	20.8	17.4	19.1	22.9	19.9	21.5	19.8	17.5	18.8	16.4	15.0	15.5
30	19.6	16.7	18.1	22.8	20.2	21.7	20.0	17.8	19.0	16.1	14.3	15.1
31	---	---	---	22.6	20.0	21.4	19.8	17.4	18.8	---	---	---
MONTH	---	---	---	23.2	14.0	---	22.0	16.7	19.4	19.6	12.8	15.8

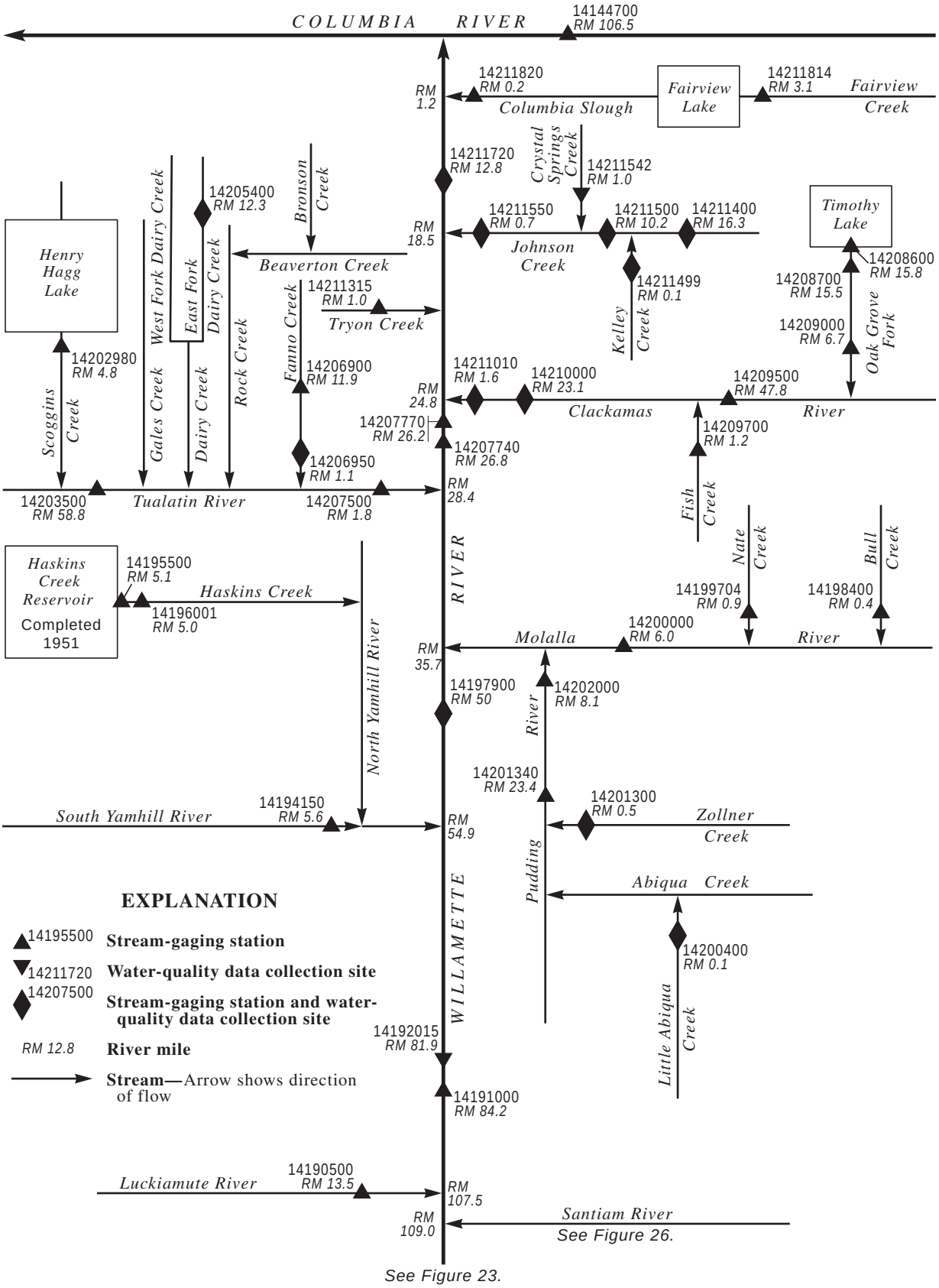


Figure 27. Schematic diagram showing gaging stations in the Willamette River Basin, from the Luckiamute River downstream to the mouth.

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 mi^2.

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 NGVD 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.--No estimated daily discharges. Records fair. Some diurnal fluctuation during periods of low flow caused by millpond upstream from station. A few small diversions for irrigation upstream from station. Continuous water-quality records for the period October 1963 to September 1987 have been collected at this location.

AVERAGE DISCHARGE.--69 years (water years 1906-11, 1941-2003), 886 ft^3/s, 50.18 in/yr, 642,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,900 ft^3/s Dec. 22, 1964, gage height, 34.52 ft; minimum discharge, 0.65 ft^3/s Aug. 13, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 1	1530	*7,350	*27.11	No other peak greater than base discharge.			

Minimum discharge, 12 ft^3/s Aug. 30, Sept. 5.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	31	85	3680	6910	673	1100	929	234	95	35	20
2	42	32	82	2440	5230	613	1050	840	226	93	35	18
3	38	32	80	2970	3110	608	1160	767	214	90	38	16
4	37	34	81	2860	2120	566	1430	827	204	88	41	15
5	40	35	110	3010	1680	532	1390	1040	192	85	39	14
6	38	37	113	2230	1410	667	1900	947	180	85	42	15
7	36	36	96	1710	1210	1820	1930	868	174	83	41	18
8	34	59	88	1390	1060	3840	1680	795	175	81	37	27
9	32	135	85	1170	935	3600	1480	730	169	80	35	41
10	30	190	96	1010	840	3120	1320	677	162	79	35	73
11	27	179	285	894	762	2340	1210	623	160	73	34	70
12	25	160	898	1260	697	1970	1170	598	154	71	31	59
13	24	231	1160	2210	644	1870	1480	548	153	74	30	52
14	26	288	1340	2100	596	1780	1290	507	154	73	29	45
15	24	255	1940	1640	576	1900	1160	475	151	69	28	39
16	22	168	2520	1370	648	1710	1060	465	144	67	26	35
17	23	189	2590	1180	949	1490	978	463	133	66	27	40
18	23	183	1890	1030	2020	1320	910	434	131	63	30	54
19	22	225	1650	913	1590	1210	828	404	131	62	25	44
20	24	365	1330	821	1320	1310	763	381	129	61	22	37
21	29	244	1740	748	1280	1770	793	360	129	57	21	35
22	29	188	1450	776	1310	4040	745	345	127	51	24	34
23	30	157	1240	898	1190	4620	738	327	128	49	25	29
24	29	139	1050	864	1060	3220	1120	313	123	49	28	26
25	28	129	962	1130	934	2350	1090	304	116	48	29	25
26	28	115	895	1500	845	2090	1090	295	111	46	22	24
27	30	105	1780	2100	766	1910	1070	282	104	45	18	22
28	30	98	2090	1590	701	1710	976	270	98	45	15	23
29	31	92	1970	1380	---	1500	1020	260	95	38	14	26
30	32	87	2120	3150	---	1330	1040	248	93	36	14	23
31	32	---	4070	5060	---	1200	---	244	---	35	17	---
TOTAL	928	4218	35886	55084	42393	58679	34971	16566	4494	2037	887	999
MEAN	29.9	141	1158	1777	1514	1893	1166	534	150	65.7	28.6	33.3
MAX	42	365	4070	5060	6910	4620	1930	1040	234	95	42	73
MIN	22	31	80	748	576	532	738	244	93	35	14	14
AC-FT	1840	8370	71180	109300	84090	116400	69360	32860	8910	4040	1760	1980
CFSM	0.12	0.59	4.82	7.40	6.31	7.89	4.86	2.23	0.62	0.27	0.12	0.14
IN.	0.14	0.65	5.56	8.54	6.57	9.10	5.42	2.57	0.70	0.32	0.14	0.15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 2003, BY WATER YEAR (WY)

MEAN	177	1065	2093	2234	2044	1428	851	424	203	80.8	42.6	52.4
MAX	1241	4574	5112	4727	4769	3002	1847	1026	512	184	85.0	190
(WY)	1948	1910	1965	1956	1949	1961	1955	1963	1984	1906	1906	1959
MIN	20.2	49.4	106	151	253	391	312	190	74.3	30.0	9.45	17.0
(WY)	1953	1994	1977	1977	1977	1941	1977	1966	1992	1967	1967	1967

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1906 - 2003	
ANNUAL TOTAL	243098		257142			
ANNUAL MEAN	666		704		886	
HIGHEST ANNUAL MEAN					1464	1974
LOWEST ANNUAL MEAN					230	1977
HIGHEST DAILY MEAN	6960	Jan 26	6910	Feb 1	25200	Dec 23 1964
LOWEST DAILY MEAN	14	Sep 25	14	Aug 29	2.6	Aug 20 1967
ANNUAL SEVEN-DAY MINIMUM	18	Sep 24	16	Aug 28	4.3	Aug 17 1967
ANNUAL RUNOFF (AC-FT)	482200		510000		642100	
ANNUAL RUNOFF (CFSM)	2.78		2.94		3.69	
ANNUAL RUNOFF (INCHES)	37.68		39.86		50.18	
10 PERCENT EXCEEDS	1840		1900		2350	
50 PERCENT EXCEEDS	183		192		350	
90 PERCENT EXCEEDS	27		27		36	

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 mi^2, 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 NGVD 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.--No estimated daily discharges. Records good. 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. Periodic suspended sediment data are available for the period October 1991 to September 1993.

AVERAGE DISCHARGE.--36 years (water years 1910-16, 1924-1952), 22,590 ft^3/s, 42.14 in/yr, 16,370,000 acre-ft/yr.
51 years (water years 1953-2003) 23,940 ft^3/s, 44.68 in/yr, 17,340,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 348,000 ft^3/s Jan. 8, 1923, gage height, 38.3 ft, present datum; minimum discharge, 2,470 ft^3/s Aug. 27, 1940, gage height, 3.55 ft, present datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 500,000 ft^3/s Dec. 4, 1861, gage height, about 47 ft present datum, from rating curve extended above 250,000 ft^3/s in 1916. Floods of Jan. 16, 1881 and Feb. 5, 1890, reached stages of 44.3 ft, discharge, 428,000 ft^3/s, and 45.1 ft, discharge, 448,000 ft^3/s, respectively, from floodmarks and information by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 96,200 ft^3/s Feb. 1, gage height, 22.02 ft; minimum discharge, 5,810 ft^3/s Dec. 9.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8170	7610	6970	83600	92300	14900	42300	22600	15200	7090	5980	6240
2	8630	7490	6760	75500	90400	14300	40400	21100	14700	6940	6020	6220
3	9140	7430	6660	68800	76300	14200	38700	19800	14900	6790	6330	6430
4	9590	7400	6640	71300	64800	14300	37800	19300	15500	6710	6430	6450
5	9550	7370	6460	74800	55700	13800	36200	21700	15400	6780	6220	6450
6	9220	7420	6440	68600	49600	15500	36800	23700	15000	6860	6250	6500
7	9000	7480	6180	58200	44100	27100	39500	22100	14700	6820	6200	6640
8	8880	7900	5920	50800	39000	55900	36000	20200	14600	6670	6150	6810
9	8760	9050	5840	44900	32800	64100	33900	19200	14700	6710	6150	7140
10	8510	11500	5870	39700	28700	57900	33600	18600	14100	6800	6050	7350
11	8420	13500	6340	35700	25300	50900	32900	17800	13100	6720	6030	7330
12	8260	14400	8020	33500	23000	49100	33900	17600	12000	6640	6050	7380
13	8110	13600	12000	39700	19000	51100	39700	16800	10800	6650	6010	7380
14	8010	13500	16000	45600	16500	50900	42300	16300	10100	6680	5940	7260
15	7890	13000	21600	43000	15100	46200	42100	16200	9390	6600	5960	7160
16	8240	11700	35700	37400	14800	41600	38800	15700	8720	6450	6070	7150
17	8620	11300	46400	31900	19000	36500	37400	15900	8300	6260	6150	7160
18	8900	12200	43000	27800	31700	31900	38300	16500	7930	6310	6190	7180
19	8720	12400	38000	23700	33900	28000	37400	16200	7600	6300	6120	7210
20	8690	12600	32100	20600	30300	27900	33800	15700	7480	6270	6030	7120
21	8750	11700	35000	18800	28000	29800	31600	15200	7400	6250	6030	7110
22	8840	10500	36500	17600	28100	46900	31700	15200	7440	6150	6120	7080
23	8650	9890	31700	18800	26800	64700	29300	14800	7410	6060	6160	7080
24	8830	9690	26000	19600	23900	65600	36000	15000	7380	6070	6230	7070
25	8790	9620	22900	23900	21200	58400	42600	15100	7310	6150	6240	7050
26	8510	9370	21100	32800	19000	61100	40200	15000	7140	6170	6200	7090
27	8360	8780	30900	46400	16900	68600	36800	14500	6990	6220	6150	7060
28	8260	8220	45100	52200	15500	69900	32200	14500	6880	6260	6060	7040
29	8240	7730	52800	50800	---	63700	29000	15000	6920	6200	6050	7100
30	8080	7230	59200	59100	---	53500	24900	15100	7000	6120	6120	7080
31	7760	---	74800	80100	---	45600	---	15300	---	6060	6200	---
TOTAL	266380	301580	758900	1395200	981700	1333900	1086100	537700	316090	200760	189890	209320
MEAN	8593	10050	24480	45010	35060	43030	36200	17350	10540	6476	6125	6977
MAX	9590	14400	74800	83600	92300	69900	42600	23700	15500	7090	6430	7380
MIN	7760	7230	5840	17600	14800	13800	24900	14500	6880	6060	5940	6220
AC-FT	528400	598200	1505000	2767000	1947000	2646000	2154000	1067000	627000	398200	376600	415200
CFSM	1.18	1.38	3.36	6.18	4.82	5.91	4.97	2.38	1.45	0.89	0.84	0.96
IN.	1.36	1.54	3.88	7.13	5.02	6.82	5.55	2.75	1.62	1.03	0.97	1.07

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2003, BY WATER YEAR (WY)

MEAN	12980	28720	47450	48360	38100	30550	24760	20000	13580	7438	6911	9063
MAX	24390	70400	116700	95930	91350	73670	46440	38610	30910	12410	9540	13340
(WY)	1969	1974	1965	1965	1961	1972	1993	1963	1984	1983	1971	1978
MIN	4422	3993	6780	6377	5313	11180	10260	7701	5657	5415	5342	5958
(WY)	1953	1953	1977	1977	2001	1977	1973	1992	1966	1966	1966	1953

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1953 - 2003	
ANNUAL TOTAL	6855520		7577520			
ANNUAL MEAN	18780		20760		23940	
HIGHEST ANNUAL MEAN					37960	1974
LOWEST ANNUAL MEAN					9792	1977
HIGHEST DAILY MEAN	86100	Jan 27	92300	Feb 1	304000	Dec 24 1964
LOWEST DAILY MEAN	5840	Dec 9	5840	Dec 9	3500	Nov 29 1952
ANNUAL SEVEN-DAY MINIMUM	6150	Dec 5	6020	Aug 10	3560	Nov 25 1952
ANNUAL RUNOFF (AC-FT)	13600000		15030000		17340000	
ANNUAL RUNOFF (CFSM)	2.58		2.85		3.29	
ANNUAL RUNOFF (INCHES)	35.03		38.72		44.68	
10 PERCENT EXCEEDS	42400		47800		55300	
50 PERCENT EXCEEDS	12800		13500		15100	
90 PERCENT EXCEEDS	6620		6200		6560	

14192015 WILLAMETTE RIVER AT KEIZER, OR

WATER-QUALITY RECORDS

LOCATION.--Lat. 44°58'26", long 123°02'10", Marion County, Hydrologic Unit 17090007, downstream of Mill Creek, and approximately at mile 82.2.

DRAINAGE AREA.--Approximately 7,390 mi^2 .

PERIOD OF DAILY RECORD.--October 2000 to current year.

INSTRUMENTATION.--Temperature probe and data logger.

REMARKS.--Records fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum, 24.5°C Aug. 12, 2001, but may have been higher during period of missing record, July 22, 2003; minimum, 5.4°C Jan. 18, 2001, Jan. 27, 28, 2002.

EXTREMES FOR CURRENT YEAR.--Maximum, 24.5°C July 22; minimum, 6.2°C Feb. 25, 26.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.1	14.0	14.6	8.5	7.7	8.1	7.3	6.8	7.1	8.4	8.1	8.2
2	14.5	13.3	14.0	8.3	7.4	7.8	8.0	7.0	7.4	8.6	8.1	8.3
3	14.2	13.3	13.7	8.5	7.3	8.0	7.9	7.4	7.6	8.9	8.5	8.7
4	14.3	13.4	13.8	8.7	7.7	8.3	7.8	7.5	7.7	9.1	8.5	8.8
5	14.7	13.9	14.3	9.4	8.3	8.9	8.0	7.4	7.7	9.0	8.2	8.6
6	15.8	14.5	15.0	9.8	9.0	9.5	7.8	7.3	7.5	8.4	7.7	8.0
7	15.9	14.7	15.4	10.6	9.6	10.1	7.4	6.8	7.1	7.8	7.0	7.4
8	15.8	14.9	15.4	10.8	10.2	10.5	6.9	6.5	6.7	7.2	6.7	7.0
9	15.9	15.0	15.5	10.7	10.1	10.4	7.0	6.3	6.6	6.8	6.4	6.6
10	15.5	14.5	15.0	10.5	9.7	10.1	7.5	6.5	7.0	7.0	6.5	6.7
11	14.7	13.5	14.0	10.5	9.8	10.1	8.3	6.9	7.7	6.9	6.7	6.8
12	13.8	12.7	13.2	10.6	9.9	10.3	8.8	8.2	8.5	7.4	6.8	7.0
13	13.4	12.1	12.9	10.9	10.3	10.6	9.0	8.6	8.8	7.9	7.3	7.6
14	13.4	12.2	12.9	11.2	10.5	10.7	9.4	8.7	9.0	8.1	7.8	7.9
15	13.6	12.4	13.2	10.9	10.2	10.6	9.3	9.0	9.2	8.0	7.7	7.9
16	14.1	13.0	13.5	10.3	9.7	10.0	9.1	8.6	8.9	8.0	7.4	7.6
17	14.3	13.2	13.8	10.4	9.5	9.8	8.8	8.3	8.5	7.6	7.1	7.4
18	14.2	13.2	13.7	10.1	9.6	9.8	8.3	7.8	8.0	7.2	6.8	7.0
19	14.4	13.5	14.0	10.5	9.7	10.0	7.9	7.5	7.7	6.9	6.5	6.7
20	14.6	14.0	14.2	10.8	10.0	10.5	7.9	7.5	7.7	7.0	6.7	6.8
21	14.4	13.8	14.1	11.0	10.3	10.6	8.1	7.7	7.9	7.2	6.7	6.9
22	14.2	13.7	13.9	10.9	10.3	10.6	8.0	7.8	7.9	7.9	7.0	7.5
23	14.0	13.3	13.7	10.9	10.4	10.6	8.0	7.4	7.8	8.5	7.7	8.1
24	13.6	12.8	13.3	10.7	10.2	10.5	7.7	7.3	7.5	9.0	8.3	8.7
25	13.0	12.0	12.5	10.2	8.9	9.6	7.6	7.3	7.5	9.2	8.9	9.0
26	12.6	11.7	12.2	8.9	8.0	8.4	7.8	7.5	7.6	9.9	9.0	9.5
27	12.1	11.2	11.5	8.1	7.5	7.8	8.1	7.7	7.9	9.7	9.1	9.4
28	11.7	11.0	11.4	7.8	7.3	7.6	8.2	8.0	8.1	9.3	8.7	9.1
29	11.8	10.9	11.4	7.7	7.0	7.4	8.1	7.7	7.9	8.8	8.3	8.6
30	11.4	9.9	10.7	7.4	6.8	7.2	8.0	7.6	7.8	9.5	8.5	8.9
31	10.1	8.3	9.2	---	---	---	8.3	7.8	8.0	10.2	9.4	9.8
MONTH	15.9	8.3	13.4	11.2	6.8	9.5	9.4	6.3	7.8	10.2	6.4	8.0

14192015 WILLAMETTE RIVER AT KEIZER, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.1	9.2	9.6	8.5	7.4	7.9	11.0	9.8	10.4	13.8	11.7	12.6
2	9.5	9.0	9.2	8.4	8.0	8.1	10.2	9.0	9.5	14.4	12.6	13.5
3	9.1	8.5	8.8	8.4	7.8	8.1	9.6	8.4	9.0	14.1	12.6	13.6
4	8.6	8.0	8.3	8.3	7.8	8.1	9.6	8.2	8.7	13.2	12.0	12.5
5	8.0	7.3	7.6	8.8	8.1	8.4	9.7	8.4	9.0	12.5	11.2	11.9
6	7.5	6.9	7.1	8.7	8.3	8.5	9.6	8.0	8.9	12.1	10.9	11.6
7	7.1	6.7	6.9	8.6	8.1	8.3	10.5	8.9	9.6	12.1	11.2	11.8
8	6.9	6.5	6.7	8.9	8.0	8.3	11.5	9.8	10.4	11.8	11.5	11.7
9	6.8	6.4	6.6	9.4	8.7	9.0	12.0	10.7	11.3	12.0	11.4	11.7
10	7.2	6.6	6.9	10.0	9.1	9.4	11.9	10.9	11.5	12.3	11.5	11.8
11	7.2	6.8	7.0	10.0	9.6	9.9	11.8	10.7	11.2	13.3	11.9	12.6
12	7.0	6.6	6.8	10.0	9.3	9.7	12.0	11.1	11.5	14.0	12.9	13.4
13	7.3	6.6	7.0	9.6	9.2	9.4	12.0	11.0	11.5	14.9	13.3	14.0
14	8.4	7.2	7.8	9.5	9.0	9.2	11.6	10.4	11.1	15.1	14.3	14.7
15	9.0	8.2	8.6	9.9	9.3	9.6	11.1	10.0	10.6	14.9	14.2	14.6
16	9.0	8.4	8.8	9.9	9.4	9.6	11.5	10.4	10.8	14.2	13.1	13.8
17	8.8	8.2	8.4	9.7	9.1	9.3	11.4	10.5	11.0	13.2	12.4	12.8
18	8.4	7.9	8.2	9.3	8.8	9.1	11.3	10.3	10.9	13.2	11.7	12.5
19	8.7	8.1	8.4	9.2	8.7	9.0	11.6	10.4	10.9	13.9	12.4	13.1
20	8.8	8.3	8.6	9.5	8.7	9.0	11.7	10.7	11.3	14.4	13.4	13.9
21	9.1	8.3	8.7	9.7	9.1	9.4	12.0	10.8	11.3	15.4	14.0	14.7
22	9.1	8.6	8.9	9.6	9.1	9.3	11.7	10.1	11.0	16.6	15.0	15.7
23	8.9	8.2	8.6	9.2	8.9	9.1	11.5	10.2	10.9	17.5	15.7	16.6
24	8.4	6.9	7.6	9.0	8.4	8.7	11.1	9.9	10.5	17.5	16.5	17.0
25	7.0	6.2	6.7	9.3	8.4	8.9	11.2	9.3	10.3	16.6	15.2	15.9
26	6.9	6.2	6.6	9.8	8.4	9.1	10.8	9.3	10.1	15.4	14.5	14.9
27	7.7	6.7	7.2	9.6	8.2	8.9	11.7	9.6	10.6	16.0	14.4	15.2
28	7.8	7.4	7.6	9.7	8.3	9.0	12.0	10.9	11.4	17.1	15.5	16.2
29	---	---	---	10.4	9.0	9.6	12.4	10.4	11.4	17.3	15.5	16.3
30	---	---	---	11.2	10.0	10.5	13.1	11.7	12.2	16.5	15.0	16.0
31	---	---	---	11.5	10.6	11.1	---	---	---	15.6	14.5	15.0
MONTH	10.1	6.2	7.8	11.5	7.4	9.1	13.1	8.0	10.6	17.5	10.9	13.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	16.0	14.8	15.4	21.3	19.9	20.6	23.5	22.1	22.8	20.5	19.4	20.0
2	17.5	14.6	16.0	20.3	18.7	19.5	22.7	20.9	21.8	20.6	19.4	20.0
3	18.3	14.7	16.5	20.5	18.5	19.5	21.1	19.8	20.4	20.8	19.7	20.3
4	17.4	15.2	16.6	20.9	18.8	19.8	20.6	18.9	19.8	21.2	19.7	20.4
5	18.2	16.7	17.3	21.4	19.4	20.3	20.7	19.7	20.2	21.6	20.0	20.7
6	19.0	17.3	18.1	22.1	20.0	20.9	21.1	19.8	20.4	21.0	20.0	20.5
7	19.4	17.7	18.3	22.3	20.3	21.2	21.8	20.2	21.0	20.3	19.0	19.6
8	19.0	17.5	18.2	21.6	20.3	20.9	22.2	20.7	21.4	19.0	17.8	18.4
9	17.8	16.5	17.4	21.8	19.7	20.7	22.5	21.2	21.7	17.9	17.1	17.4
10	17.1	15.9	16.5	22.7	20.6	21.6	22.4	21.0	21.6	17.4	16.6	17.0
11	18.6	15.3	16.8	23.0	21.1	22.0	22.0	20.8	21.4	17.8	16.8	17.2
12	18.1	15.8	16.7	22.9	21.4	22.1	22.0	20.7	21.3	17.9	16.8	17.4
13	17.0	14.7	16.0	22.2	21.1	21.6	22.0	20.5	21.2	18.1	16.6	17.4
14	16.4	14.9	15.7	22.4	20.7	21.5	22.3	20.6	21.4	18.1	17.0	17.5
15	17.9	15.7	16.8	22.8	20.8	21.7	21.8	20.9	21.4	17.7	16.7	17.3
16	19.3	16.9	18.1	22.6	21.2	21.8	21.9	20.4	21.1	17.2	16.6	16.9
17	21.0	18.4	19.4	22.4	20.8	21.6	22.2	20.7	21.4	16.9	16.0	16.5
18	20.1	18.9	19.5	22.9	21.0	22.0	22.6	21.1	21.8	17.0	15.8	16.5
19	18.9	17.4	18.0	23.2	21.4	22.3	22.8	21.3	21.9	17.2	16.5	16.8
20	17.6	16.7	17.1	23.6	21.9	22.7	21.8	20.6	21.2	17.4	16.2	16.8
21	17.3	16.1	16.6	24.2	22.5	23.3	21.9	20.3	21.1	17.4	16.2	16.8
22	16.6	15.8	16.2	24.5	23.0	23.7	21.0	19.8	20.4	17.6	16.2	17.0
23	16.5	15.0	15.8	24.1	22.6	23.3	20.4	19.1	19.7	17.9	16.6	17.3
24	17.5	15.0	16.3	23.2	21.7	22.4	20.4	18.9	19.6	18.4	17.0	17.7
25	18.9	16.4	17.6	22.6	21.2	21.8	20.6	19.0	19.8	18.5	17.4	18.0
26	20.6	18.0	19.2	22.3	20.9	21.5	20.6	19.8	20.1	19.0	17.6	18.3
27	22.3	19.7	20.9	22.6	20.8	21.7	20.6	19.6	20.0	19.2	18.0	18.7
28	22.9	20.7	21.8	23.2	21.6	22.4	20.6	19.3	20.0	19.4	18.2	18.7
29	23.3	21.4	22.3	24.1	22.1	23.1	21.0	19.4	20.1	18.8	17.6	18.1
30	22.7	21.2	21.9	24.4	22.6	23.5	21.0	19.7	20.3	18.0	17.0	17.5
31	---	---	---	24.3	22.6	23.4	20.9	19.6	20.3	---	---	---
MONTH	23.3	14.6	17.8	24.5	18.5	21.8	23.5	18.9	20.9	21.6	15.8	18.1
YEAR	24.5	6.2	13.3									

14194150 SOUTH YAMHILL RIVER AT MCMINNVILLE, OR

LOCATION.--Lat 45°12'21", long 123°10'53", in SE 1/4 sec. 21, T.4 S., R.4 W., Yamhill County, Hydrologic Unit 17090008, on left bank 0.3 mi downstream from Cozine Creek, at Highway 18 McMinnville Spur bridge, in McMinnville, and at mile 5.6.

DRAINAGE AREA.--528 mi^2.

PERIOD OF RECORD.--October 1994 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 50 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--9 years (water years 1995-2003), 1,957 ft^3/s, 50.35 in/yr, 1,418,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,100 ft^3/s Feb. 9, 1996, gage height, 59.33; minimum discharge, 0.58 ft^3/s Sept. 4, 2003.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 13,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 2	0500	*14,100	*42.79	No other peak greater than base discharge.			

Minimum discharge, 0.58 ft^3/s Sept. 4.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	53	132	9070	12700	1340	2270	1470	228	73	22	3.2
2	43	51	127	7360	13700	1220	2120	1290	210	74	23	3.5
3	63	51	122	7160	10800	1120	2430	1120	200	75	27	3.3
4	53	54	122	7420	6880	1070	3120	1100	189	75	31	1.4
5	50	56	128	8120	4300	969	3270	1540	177	71	39	3.0
6	56	61	153	6930	3180	1070	3740	1430	166	74	42	3.8
7	52	64	140	4910	2550	3270	4400	1260	154	72	40	9.4
8	48	70	128	3500	2130	8130	4000	1130	149	66	43	16
9	44	200	121	2680	1830	8570	3420	1020	146	62	40	25
10	45	290	144	2160	1570	8010	2930	911	144	61	42	36
11	42	309	619	1810	1380	6210	2470	817	143	59	42	62
12	41	340	2460	2280	1220	4580	2260	763	140	54	37	56
13	42	334	3150	4820	1100	5030	3030	693	137	52	33	49
14	40	664	3560	4920	988	4930	3280	628	139	53	28	48
15	37	638	6850	4070	917	5120	2760	569	138	50	30	39
16	39	383	7750	3170	1060	4850	2300	573	132	46	32	34
17	41	310	8550	2530	1680	4000	1980	575	119	42	32	30
18	44	384	6830	2110	5990	3220	1780	563	113	39	33	29
19	42	318	5390	1810	5900	2820	1580	523	109	37	31	33
20	45	726	4100	1560	4260	3020	1380	472	110	38	23	34
21	49	536	3340	1370	3340	4070	1280	429	111	38	24	32
22	51	370	2800	1310	2960	7810	1250	397	115	30	16	29
23	49	280	2580	2140	2790	10300	1170	369	116	32	11	26
24	50	234	2260	2250	2410	9780	1790	337	111	36	17	26
25	51	214	2000	2540	2050	7010	2140	321	104	34	16	21
26	50	192	1840	3260	1790	5280	2180	308	98	34	17	20
27	53	170	3060	5550	1580	4910	2120	287	93	42	13	18
28	54	157	5390	4590	1400	4520	1900	255	87	43	9.2	19
29	55	147	4660	3620	---	3760	1810	239	82	39	12	19
30	53	139	4340	5910	---	3130	1670	242	78	35	10	19
31	53	---	7800	9470	---	2630	---	237	---	26	9.7	---
TOTAL	1469	7795	90646	130400	102455	141749	71830	21868	4038	1562	824.9	747.6
MEAN	47.4	260	2924	4206	3659	4573	2394	705	135	50.4	26.6	24.9
MAX	63	726	8550	9470	13700	10300	4400	1540	228	75	43	62
MIN	34	51	121	1310	917	969	1170	237	78	26	9.2	1.4
AC-FT	2910	15460	179800	258600	203200	281200	142500	43380	8010	3100	1640	1480
CFSM	0.09	0.49	5.54	7.97	6.93	8.66	4.53	1.34	0.25	0.10	0.05	0.05
IN.	0.10	0.55	6.39	9.19	7.22	9.99	5.06	1.54	0.28	0.11	0.06	0.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2003, BY WATER YEAR (WY)

MEAN	353	2416	5309	4882	4579	3007	1678	828	339	103	42.6	71.8
MAX	1491	3683	9904	6162	9541	4573	3832	1669	530	163	68.5	281
(WY)	1998	1997	1997	1999	1996	2003	1996	1996	1997	1997	2001	1997
MIN	47.4	222	1250	784	1082	854	660	425	135	50.4	26.4	24.9
(WY)	2003	2001	2001	2001	2001	2001	2000	2002	2003	2003	1996	2003

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1995 - 2003	
ANNUAL TOTAL	514365		575384.5			
ANNUAL MEAN	1409		1576		1957	
HIGHEST ANNUAL MEAN					2796	1996
LOWEST ANNUAL MEAN					515	2001
HIGHEST DAILY MEAN	15700	Jan 9	13700	Feb 2	40300	Feb 9 1996
LOWEST DAILY MEAN	15	Sep 6	1.4	Sep 4	1.4	Sep 4 2003
ANNUAL SEVEN-DAY MINIMUM	17	Sep 1	3.9	Sep 1	3.9	Sep 1 2003
ANNUAL RUNOFF (AC-FT)	1020000		1141000		1418000	
ANNUAL RUNOFF (CFSM)	2.67		2.99		3.71	
ANNUAL RUNOFF (INCHES)	36.24		40.54		50.35	
10 PERCENT EXCEEDS	4120		4910		5720	
50 PERCENT EXCEEDS	305		255		687	
90 PERCENT EXCEEDS	30		30		38	

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 mi^2.

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 NGVD 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 815.0 ft elevation. Capacity of reservoir (based on May 1992 resurvey, new capacity table put into use Oct. 1, 1991), 721 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 ft^3/s each and remaining two siphons 350 ft^3/s each. Water is used for municipal supply of city of McMinnville.

COOPERATION.--Elevation and capacity table furnished by City of McMinnville Water and Light Department. Elevations based on once-daily staff gage readings.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed contents, 748 acre-ft Nov. 17, 1954, elevation, 815.65 ft, present datum; no contents at times during winter months.

EXTREMES FOR CURRENT YEAR.--Maximum observed contents, 729 acre-ft Feb. 10, elevation, 815.3 ft; no contents, Mar. 5-8.

MONTHEND ELEVATIONS AND CONTENTS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	808.7	580	
Oct. 31	811.6	640	+60
Nov. 30	812.1	651	+11
Dec. 31	812.5	660	+9
CAL YR 2002	-	-	+624
Jan. 31	814.0	695	+35
Feb. 28	781.2	182	-513
Mar. 31	812.2	654	+472
Apr. 30	809.5	596	-58
May 31	810.3	613	+17
June 30	811.7	643	+30
July 31	799.6	417	-226
Aug. 31	800.7	435	+18
Sept.30	805.8	524	+89
WTR YR 2003	-	-	-56

14196001 HASKINS CREEK BELOW RESERVOIR, NEAR MCMINNVILLE, OR

LOCATION.--Lat 45°18'40", long 123°20'55", 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 mi^2.

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 NGVD of 1929, topographic survey of 1955. Prior to Aug. 5, 1952, water-stage recorder at site 600 ft upstream at different datum.

REMARKS.--No estimated daily discharges. Records 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.--52 years (water years 1952-2003), 31.1 ft^3/s, 61.21 in/yr, 22,530 acre-ft/yr, adjusted for storage and diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,050 ft^3/s Feb. 8, 1996, gage height, 6.01 ft, from floodmark, from rating curve extended above 140 ft^3/s on basis of slope-area measurement of peak flow; maximum daily discharge, 615 ft^3/s Feb. 8, 1996; minimum daily, 0.10 ft^3/s Oct. 27, 28, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 225 ft^3/s Feb. 1; minimum daily, 5.0 ft^3/s Dec. 9.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	6.1	5.6	87	225	43	51	23	28	9.6	14	14
2	7.1	6.1	5.5	85	124	39	51	23	27	13	13	14
3	6.7	6.0	5.5	90	85	35	51	23	24	14	13	14
4	6.5	6.2	5.5	132	73	53	51	29	18	13	13	14
5	5.9	6.1	5.4	115	70	24	51	37	15	11	12	14
6	6.0	6.1	5.5	82	70	37	50	36	16	11	11	14
7	6.2	6.1	5.2	58	57	129	58	21	16	14	11	12
8	6.1	6.2	5.1	44	52	94	60	25	16	14	12	9.7
9	6.3	6.0	5.0	53	50	72	43	29	12	13	14	8.9
10	6.7	5.3	5.2	53	41	44	45	24	11	14	14	9.4
11	6.6	5.5	32	52	40	22	51	23	11	14	14	10
12	6.9	6.5	83	64	43	15	48	23	11	12	14	10
13	8.1	5.5	79	69	38	44	45	17	11	12	14	9.6
14	8.1	5.9	129	47	33	73	45	11	10	14	14	9.3
15	7.8	6.7	144	41	40	81	45	17	11	14	14	9.8
16	7.7	6.8	161	49	39	76	47	22	13	14	15	10
17	7.8	6.9	103	45	56	65	50	17	14	15	15	9.1
18	7.7	7.0	78	42	76	50	49	13	12	16	15	8.6
19	7.7	7.1	72	42	60	49	49	13	10	15	15	8.9
20	8.0	12	60	33	50	55	35	14	9.1	15	15	9.6
21	7.9	14	46	27	52	106	17	14	8.5	15	14	10
22	7.9	14	42	34	53	202	21	15	9.2	16	13	11
23	7.4	13	46	45	52	168	40	16	9.1	15	12	11
24	6.8	13	45	45	52	122	52	16	9.9	13	13	11
25	6.8	8.2	45	40	46	92	41	15	13	15	15	11
26	6.8	5.6	40	56	40	92	25	14	14	15	15	11
27	6.5	5.5	39	69	39	81	17	15	14	14	10	11
28	6.3	5.6	51	62	41	70	20	17	14	14	12	11
29	6.2	5.4	62	57	---	64	36	17	14	17	13	10
30	5.6	5.4	70	102	---	54	33	18	10	18	14	9.3
31	6.0	---	86	223	---	52	---	18	---	16	14	---
TOTAL	215.6	219.8	1566.5	2043	1697	2203	1277	615	410.8	435.6	417	325.2
MEAN	6.95	7.33	50.5	65.9	60.6	71.1	42.6	19.8	13.7	14.1	13.5	10.8
MAX	8.1	14	161	223	225	202	60	37	28	18	15	14
MIN	5.6	5.3	5.0	27	33	15	17	11	8.5	9.6	10	8.6
AC-FT	428	436	3110	4050	3370	4370	2530	1220	815	864	827	645
MEAN†	1.90	6.79	50.7	66.4	51.4	78.7	41.5	20.1	8.07	2.36	1.40	0.92
CFSM†	0.28	0.98	7.35	9.63	7.46	11.4	6.02	2.91	1.17	0.34	0.20	0.13
IN.†	0.32	1.10	8.48	11.10	7.77	13.20	6.72	3.36	1.30	0.39	0.23	0.15
AC-FT†	117	404	3119	4085	2857	4842	2472	1237	480	145	86	55

CAL YR 2002 TOTAL 10661.1 MEAN 29.2 MAX 308 MIN 5.0 AC-FT 21150 MEAN† 27.1 CFSM† 3.93 IN.† 53.38 AC-FT† 19640
WTR YR 2003 TOTAL 11425.5 MEAN 31.3 MAX 225 MIN 5.0 AC-FT 22660 MEAN† 27.5 CFSM† 3.98 IN.† 54.07 AC-FT† 19890

† Adjusted for change in contents in Haskins Creek Reservoir and diversion from McQuire Lake.

14197900 WILLAMETTE RIVER AT NEWBERG, OR

LOCATION.--45°17'01", long 122°57'38", in sec.68, T.3 S., R.2 W., Yamhill County, Hydrologic Unit 17090007, on left bank at Newberg, and at mile 50.

DRAINAGE AREA.--Approximately 8,350 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 2001 to current year.

GAGE.--Acoustic velocity meter with water-stage and velocity-index recorder. Datum of gage is NGVD of 1929.

REMARKS.--Records good, except for estimated daily discharges, which are fair. Flow regulated by many reservoirs upstream. Gage pool elevations possibly affected by U. S. Army Corps of Engineers Willamette Falls locks operations during summer months.

AVERAGE DISCHARGE.--2 years (2002-03), 24,250 ft^3/s, 17,570,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 109,000 ft^3/s Feb. 2, 2003, gage height, 76.31 ft; minimum daily discharge, 5,700 ft^3/s Aug. 23, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 109,000 ft^3/s Feb. 2, gage height, 76.31 ft; minimum daily discharge, 5,700 ft^3/s Aug. 23.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8760	8720	8220	e102000	103000	18700	45500	26800	15900	7230	6040	5970
2	9120	8380	7840	e90000	107000	17900	42800	24800	15500	7190	6000	6100
3	9620	8210	7540	e82500	99000	17200	40900	23200	15300	7040	5980	6140
4	10200	8090	7430	e85500	82400	17300	40400	22000	15600	6990	6350	6330
5	10600	8110	7370	e90500	67400	16800	39800	23100	15900	6940	5890	6310
6	10300	8140	7260	e82000	57600	17400	39000	25700	15600	7210	6270	6360
7	10100	8300	7120	68500	50200	28200	42600	25200	15000	7230	6240	6470
8	9870	8670	6720	57700	44100	57500	41300	23300	14800	6850	6250	6350
9	9740	9630	6100	50100	37700	75000	38100	21800	14800	7060	6180	6810
10	9530	12000	5920	43500	33000	73800	37000	21000	14700	6800	6180	7280
11	9320	14200	7340	38500	29200	64100	36000	20100	13700	6700	5990	7720
12	9300	15600	10800	35700	26700	57100	36200	19800	12900	6760	6020	7830
13	9070	15500	16000	40400	23400	57200	41100	19400	11800	6710	5980	7700
14	8960	15500	20400	48200	20400	57800	45800	18500	11100	6650	5940	7630
15	8870	15600	27800	48200	18600	54500	46100	17900	10500	6840	5890	7550
16	8890	14100	37800	42500	18200	49400	42900	17600	9830	6750	5850	7310
17	9220	13100	51200	36600	20900	43500	39500	17500	e8910	6500	6200	7600
18	9600	13500	50400	32000	35400	38300	39300	17800	e8550	6520	6120	7480
19	9680	14000	45000	28100	42000	33600	39000	18000	e8230	6470	5950	7470
20	9530	14400	38900	24800	38200	32000	36400	17400	e8020	6370	5950	7480
21	9550	14100	35600	e21500	34300	33700	33500	16900	8270	6450	5970	7350
22	9670	13300	38800	e20500	33100	47200	33200	16600	8100	6170	6000	7470
23	9610	11700	36300	21900	32600	70300	31900	16300	8420	5860	5700	7350
24	9650	11200	31400	23700	29900	76300	34500	16000	8250	5770	6230	7440
25	9700	11000	27300	25400	26700	69800	42700	16200	8280	5810	6210	7330
26	9540	10900	24700	32700	24000	65100	43500	16100	8070	5930	6210	7320
27	9290	10500	29100	46000	21700	68400	40300	15700	7830	6200	6090	7330
28	9140	9910	44700	54300	19800	72200	36400	15200	7590	6380	6110	7280
29	9210	9330	52700	54700	---	69300	32900	15500	7500	6230	5910	7210
30	9270	8770	e67500	60500	---	61000	29900	15800	7410	6130	6040	7160
31	8980	---	e90000	83900	---	51200	---	15800	---	5970	5940	---
TOTAL	293890	344460	855260	1572400	1176500	1511800	1168500	597000	336360	203710	187680	213130
MEAN	9480	11480	27590	50720	42020	48770	38950	19260	11210	6571	6054	7104
MAX	10600	15600	90000	102000	107000	76300	46100	26800	15900	7230	6350	7830
MIN	8760	8090	5920	20500	18200	16800	29900	15200	7410	5770	5700	5970
AC-FT	582900	683200	1696000	3119000	2334000	2999000	2318000	1184000	667200	404100	372300	422700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

MEAN	8545	16900	48020	53270	37790	41280	35260	17910	11550	6968	6594	7435
MAX	9480	22320	68450	55820	42020	48770	38950	19260	11890	7364	7135	7766
(WY)	2003	2002	2002	2002	2003	2003	2003	2003	2002	2002	2002	2002
MIN	7610	11480	27590	50720	33560	33800	31560	16570	11210	6571	6054	7104
(WY)	2002	2003	2003	2003	2002	2002	2002	2002	2003	2003	2003	2003

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2002 - 2003	
ANNUAL TOTAL	7711180		8460690			
ANNUAL MEAN	21130		23180		24250	
HIGHEST ANNUAL MEAN					25330	2002
LOWEST ANNUAL MEAN					23180	2003
HIGHEST DAILY MEAN	97500	Jan 27	107000	Feb 2	107000	Feb 2 2003
LOWEST DAILY MEAN	5920	Dec 10	5700	Aug 23	5700	Aug 23 2003
ANNUAL SEVEN-DAY MINIMUM	6830	Dec 5	5980	Aug 10	5980	Aug 10 2003
ANNUAL RUNOFF (AC-FT)	15300000		16780000		17570000	
10 PERCENT EXCEEDS	46900		53300		57500	
50 PERCENT EXCEEDS	14000		14800		15800	
90 PERCENT EXCEEDS	7080		6200		6720	

e Estimated

14197900 WILLAMETTE RIVER AT NEWBERG, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--October 2001 to current year.

INSTRUMENTATION.--Temperature probe and data logger.

REMARKS.--Records poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum, 25.3°C July 22, 2003; minimum, 4.6°C Jan. 29, 2002, but may have been lower during periods of missing record.

EXTREMES FOR CURRENT YEAR.--Maximum, 25.3°C July 22; minimum, 6.0°C Feb. 26, but may have been lower during periods of missing record.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.3	15.4	15.7	9.1	8.0	8.5	7.1	6.7	6.9	---	---	---
2	15.5	14.6	15.0	8.1	7.6	7.8	7.2	6.7	6.9	---	---	---
3	15.0	14.2	14.6	7.8	7.5	7.6	7.2	6.9	7.1	---	---	---
4	14.4	13.9	14.1	8.1	7.8	7.8	7.4	6.9	7.1	---	---	---
5	14.9	14.1	14.4	8.6	8.0	8.3	7.6	7.4	7.5	---	---	---
6	15.3	14.7	14.9	9.1	8.6	8.8	7.6	7.2	7.3	---	---	---
7	15.8	15.1	15.4	9.7	9.1	9.4	7.3	7.0	7.2	7.7	7.0	7.3
8	16.1	15.6	15.8	10.3	9.7	10.0	7.1	6.6	6.8	7.0	6.5	6.7
9	16.1	15.7	15.9	10.4	10.3	10.3	6.6	6.3	6.4	6.6	6.2	6.4
10	16.1	15.4	15.7	10.3	10.0	10.1	6.7	6.4	6.5	6.5	6.1	6.2
11	15.5	14.5	14.8	10.2	10.0	10.1	7.1	6.7	6.9	6.6	6.3	6.4
12	14.6	13.5	13.9	10.4	10.1	10.2	7.8	7.1	7.4	6.8	6.4	6.6
13	13.7	13.1	13.3	10.6	10.3	10.5	8.5	7.8	8.2	7.5	6.6	7.1
14	13.4	12.9	13.1	10.7	10.5	10.6	8.9	8.4	8.7	---	---	---
15	13.5	13.0	13.2	10.7	10.5	10.6	9.1	8.7	8.9	7.8	7.6	7.7
16	14.0	13.4	13.6	10.6	10.0	10.3	9.1	8.6	8.8	7.7	7.3	7.5
17	14.1	13.7	13.9	10.1	9.8	10	8.6	8.2	8.4	7.4	7.0	7.2
18	14.1	13.7	13.9	9.9	9.7	9.8	8.2	7.8	7.9	7.2	6.6	6.9
19	14.5	13.9	14.1	10.1	9.8	9.9	7.8	7.2	7.5	6.8	6.3	6.5
20	14.6	14.4	14.5	10.6	10.0	10.2	7.4	7.1	7.2	6.6	6.3	6.5
21	14.6	14.5	14.6	10.6	10.4	10.5	7.5	7.2	7.3	---	---	---
22	14.6	14.1	14.3	10.6	10.5	10.6	7.6	7.4	7.5	---	---	---
23	14.4	13.8	14.0	10.8	10.5	10.7	7.5	7.3	7.4	---	---	---
24	14.1	13.3	13.7	10.8	10.3	10.6	7.3	7.0	7.2	8.6	7.9	8.2
25	13.4	12.9	13.0	10.4	9.6	9.9	7.2	6.9	7.1	---	---	---
26	12.9	12.1	12.4	9.6	8.5	9.0	7.2	6.8	7.1	---	---	---
27	12.4	11.6	11.9	8.5	8.0	8.2	7.6	6.9	7.3	9.7	9.4	9.6
28	11.6	11.3	11.5	8.0	7.6	7.8	---	---	---	9.5	8.9	9.2
29	11.6	11.3	11.4	7.6	7.2	7.4	---	---	---	9.0	8.5	8.7
30	11.4	10.1	10.6	7.3	7.0	7.1	---	---	---	9.0	8.5	8.6
31	10.1	9.1	9.6	---	---	---	---	---	---	9.9	8.9	9.5
MONTH	16.3	9.1	13.8	10.8	7.0	9.4	---	---	---	---	---	---

14197900 WILLAMETTE RIVER AT NEWBERG, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.0	9.5	9.8	8.2	7.0	7.6	10.9	10.2	10.6	13.2	11.8	12.4
2	9.6	9.1	9.3	8.2	7.6	7.9	10.2	9.2	9.6	14.1	12.5	13.2
3	9.2	8.8	9.0	8.1	7.8	8.0	9.2	8.6	8.9	14.0	13.2	13.5
4	8.8	8.1	8.4	8.2	7.7	7.9	8.7	8.2	8.4	13.4	12.5	12.9
5	8.1	7.5	7.8	8.4	7.9	8.1	8.6	8.2	8.4	12.8	11.8	12.3
6	7.5	6.9	7.2	8.6	8.2	8.4	---	---	---	12.3	11.2	11.7
7	7.0	6.6	6.8	8.6	8.2	8.4	9.6	8.6	9.0	11.8	10.9	11.4
8	6.8	6.4	6.7	8.5	8.0	8.2	---	---	---	11.8	11.1	11.4
9	6.7	6.2	6.5	---	---	---	11.5	10.3	10.8	11.9	10.9	11.4
10	7.0	6.3	6.6	---	---	---	11.5	11.1	11.3	11.8	11.2	11.5
11	7.2	6.5	6.8	10.2	9.4	9.8	11.4	10.9	11.2	12.7	11.3	11.9
12	7.1	6.5	6.8	10.0	9.7	9.8	11.7	10.8	11.3	13.7	12.3	12.9
13	7.2	6.7	6.9	9.8	9.4	9.5	11.7	11.1	11.4	14.6	13.0	13.6
14	8.0	7.1	7.4	9.5	9.2	9.4	11.5	11.0	11.1	15.1	13.9	14.4
15	8.6	7.9	8.1	9.7	9.2	9.5	11.0	10.3	10.6	15.0	14.1	14.5
16	8.8	8.6	8.7	9.9	9.5	9.7	11.0	10.1	10.5	14.6	13.5	13.9
17	8.8	8.4	8.6	9.8	9.2	9.4	11.4	10.4	10.8	13.8	12.6	13.1
18	---	---	---	9.4	8.9	9.1	11.1	10.4	10.7	13.0	11.8	12.5
19	8.5	8.1	8.3	9.1	8.7	8.9	11.2	10.2	10.7	13.6	12.0	12.7
20	8.7	8.3	8.5	9.3	8.6	8.9	11.5	10.5	11.0	14.1	12.8	13.4
21	---	---	---	9.5	8.8	9.2	11.3	10.8	11.0	15.2	13.5	14.2
22	---	---	---	9.4	9.1	9.3	11.1	10.5	10.8	16.2	14.7	15.2
23	---	---	---	9.2	8.8	9.0	10.9	10.5	10.7	17.3	15.7	16.3
24	8.4	7.3	7.8	8.9	8.5	8.6	10.6	9.9	10.3	17.3	16.8	17.1
25	7.3	6.4	6.7	---	---	---	10.2	9.7	10	17.2	16.3	16.8
26	6.6	6.0	6.3	9.1	8.6	8.8	10.0	9.5	9.8	16.3	15.3	15.6
27	7.2	6.2	6.6	9.0	8.6	8.8	---	---	---	16.1	14.6	15.2
28	7.4	6.9	7.1	8.9	8.4	8.7	11.4	10.4	10.9	16.9	15.5	16.1
29	---	---	---	---	---	---	11.7	10.8	11.2	17.2	16.4	16.7
30	---	---	---	10.6	9.5	10.1	12.8	11.2	11.8	17.2	16.0	16.5
31	---	---	---	11.2	10.4	10.8	---	---	---	16.3	15.2	15.8
MONTH	---	---	---	---	---	---	---	---	---	17.3	10.9	13.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	16.3	14.9	15.6	23.7	22.8	23.2	24.8	24.3	24.6	21.3	20.9	21.1
2	16.7	15.4	16.0	22.8	21.7	22.1	24.3	23.3	24.0	21.2	20.7	21.0
3	17.3	16.1	16.6	22.0	21.3	21.6	23.3	22.0	22.6	21.5	20.7	21.1
4	17.6	16.4	17.0	21.8	21.4	21.6	22.2	21.6	21.9	21.7	21.1	21.4
5	18.4	16.7	17.4	22.0	21.7	21.9	21.8	20.5	21.3	21.9	21.4	21.7
6	19.3	17.5	18.2	22.7	22.0	22.3	21.4	20.4	20.9	21.9	21.4	21.7
7	19.4	18.2	18.8	23.0	22.6	22.8	22.4	21.3	21.8	21.5	20.7	21.2
8	19.4	18.1	18.8	23.1	22.2	22.7	22.5	21.9	22.2	20.8	19.5	20.1
9	19.2	17.2	17.9	22.8	22.1	22.4	23.2	22.2	22.7	19.7	18.4	19.0
10	17.5	16.5	16.9	23.1	22.7	22.9	23.1	22.6	22.8	18.5	17.8	18.1
11	17.1	16.3	16.7	23.7	23.1	23.5	22.8	22.3	22.6	17.9	17.6	17.8
12	17.2	16.6	16.9	24.0	23.5	23.7	22.5	22.1	22.3	17.9	17.6	17.8
13	16.8	16.4	16.5	23.8	23.3	23.6	22.5	22.2	22.3	18.1	17.9	18.0
14	16.6	16.0	16.3	23.3	22.8	23.0	22.8	22.2	22.4	18.3	18.0	18.1
15	17.9	16.3	16.8	23.8	23.1	23.5	22.9	22.2	22.6	18.2	17.7	18.0
16	19.2	17.7	18.2	23.7	23.1	23.4	22.2	21.6	21.9	17.9	17.3	17.7
17	---	---	---	23.3	23.1	23.2	22.6	22.0	22.3	17.4	17.1	17.2
18	---	---	---	23.7	23.2	23.5	23.1	22.5	22.8	17.4	16.9	17.1
19	---	---	---	24.1	23.5	23.9	23.4	22.7	23.0	17.5	17.2	17.3
20	---	---	---	24.3	23.8	24.1	22.8	22.2	22.6	17.4	17.0	17.1
21	19.0	18.5	18.7	24.9	24.0	24.6	22.7	22.1	22.3	17.5	17.2	17.4
22	18.7	18.1	18.3	25.3	24.8	25.1	22.2	21.2	22.0	17.6	17.4	17.5
23	18.3	17.7	17.9	25.2	24.7	25.0	21.2	20.6	20.9	17.8	17.5	17.6
24	18.4	17.3	17.8	24.7	24.1	24.3	21.0	20.4	20.7	18.1	17.8	17.9
25	19.6	18.4	18.8	24.1	23.4	23.8	21.3	20.7	21.0	18.5	18.0	18.3
26	21.1	19.6	20.2	23.5	23.0	23.3	21.2	20.8	21.0	18.9	18.5	18.6
27	22.6	21.1	21.7	23.4	23.0	23.2	21.1	20.7	20.9	19.2	18.8	19.0
28	23.5	22.6	22.9	23.9	23.1	23.6	21.0	20.6	20.8	19.4	19.0	19.2
29	24.1	23.5	23.8	24.6	23.8	24.2	21.4	20.8	21.1	19.2	18.4	18.9
30	24.2	23.3	23.7	25.2	24.3	24.8	21.8	21.1	21.4	18.5	17.8	18.2
31	---	---	---	25.2	24.7	25.0	21.7	21.2	21.5	---	---	---
MONTH	---	---	---	25.3	21.3	23.4	24.8	20.4	22.0	21.9	16.9	18.8

14198400 BULL CREEK NEAR WILHOIT, OR

LOCATION.--Lat 44°57'42", long 122°22'59", in NW 1/4 SE 1/4 sec.13, T.7 S., R.3 E., Clackamas County, Hydrologic Unit 17090009, on left bank 0.5 mi upstream from mouth, 11 mi southeast of Wilhoit, and at mile 0.43.

DRAINAGE AREA.--0.66 mi^2.

PERIOD OF RECORD.--April 1993 to current year.

REVISED RECORDS.--WDR OR-97-1. Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,680 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records poor. No regulation or diversion.

AVERAGE DISCHARGE.--10 years (water years 1994-2003), 2.05 ft^3/s, 42.27 in/yr, 1,490 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 250 ft^3/s Feb. 7, 1996, gage height, 7.55 ft, from rating curve extended above 70 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 0.02 ft^3/s Sept. 25-28, 1994, Sept. 21-24, 1995, Sept. 28-30, Oct. 1-4, 7-12, 1996, Sept. 15-17, 1998, Oct. 4, 21-23, 1999, Oct. 4-6, 2001, Sept. 2-6, 27-29, 2003.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 18 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 1	0030	*46	*6.10	Mar. 22	1930	31	5.67
Mar. 8	0645	45	6.07				

Minimum discharge, 0.02 ft^3/s Sept. 2-6, 27-29.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.11	0.08	0.19	5.5	32	0.96	1.7	1.4	0.42	0.16	0.06	0.03
2	0.08	0.08	0.18	3.8	12	0.90	1.7	1.3	0.39	0.15	0.07	0.03
3	0.21	0.08	0.18	5.2	8.1	0.96	1.7	1.2	0.37	0.14	0.08	0.02
4	0.22	0.08	0.20	5.9	4.5	0.96	1.9	1.4	0.35	0.13	0.07	0.02
5	0.15	0.07	0.20	6.6	2.9	1.1	2.2	2.2	0.33	0.13	0.07	0.02
6	0.12	0.07	0.18	3.5	2.2	3.8	2.4	2.6	0.32	0.13	0.07	0.02
7	0.10	0.18	0.16	2.4	1.6	24	2.4	2.2	0.29	0.12	0.08	0.05
8	0.10	0.71	0.15	1.7	1.3	38	2.8	1.9	0.28	0.12	0.07	0.08
9	0.10	0.96	0.16	1.4	1.1	15	3.6	1.6	0.27	0.12	0.06	0.08
10	0.10	0.51	0.41	1.2	1.0	8.6	3.2	1.4	0.26	0.12	0.06	0.06
11	0.09	0.38	0.44	1.1	0.93	5.2	2.5	1.3	0.25	0.12	0.06	0.06
12	0.08	0.66	0.69	1.2	0.86	3.5	2.2	1.2	0.25	0.11	0.06	0.06
13	0.08	0.75	1.4	1.2	0.79	3.2	2.1	1.1	0.29	0.12	0.05	0.05
14	0.07	0.60	1.8	1.5	0.74	3.1	2.0	1.0	0.26	0.12	0.05	0.04
15	0.07	0.43	2.6	1.5	0.71	2.9	1.8	0.98	0.23	0.12	0.05	0.04
16	0.07	0.51	4.9	1.4	0.78	2.6	1.7	0.97	0.21	0.11	0.06	0.10
17	0.07	0.53	2.9	1.2	1.1	2.3	2.5	0.97	0.20	0.11	0.05	0.07
18	0.07	0.44	2.3	1.1	2.0	1.9	3.3	0.95	0.20	0.11	0.05	0.05
19	0.07	0.43	2.0	1.0	1.9	1.7	2.9	0.91	0.21	0.11	0.05	0.05
20	0.07	0.36	1.8	0.92	2.3	1.6	2.3	0.89	0.21	0.10	0.04	0.04
21	0.08	0.32	3.4	0.84	2.6	2.2	2.0	0.83	0.30	0.10	0.04	0.04
22	0.08	0.30	3.3	0.93	2.6	20	2.1	0.79	0.25	0.10	0.04	0.03
23	0.07	0.28	2.5	0.92	2.6	14	2.3	0.75	0.23	0.10	0.04	0.03
24	0.07	0.30	2.0	0.89	2.1	6.4	2.9	0.71	0.20	0.10	0.04	0.03
25	0.07	0.27	1.8	1.0	1.7	3.7	2.9	0.69	0.19	0.10	0.03	0.03
26	0.07	0.24	2.2	2.1	1.4	3.1	2.6	0.63	0.17	0.09	0.03	0.03
27	0.08	0.23	7.5	3.1	1.2	2.8	2.3	0.58	0.16	0.09	0.04	0.03
28	0.08	0.22	4.8	2.5	1.1	2.7	2.0	0.53	0.15	0.08	0.04	0.02
29	0.09	0.21	3.3	2.3	---	2.4	1.7	0.51	0.16	0.07	0.03	0.03
30	0.08	0.20	4.0	14	---	1.9	1.5	0.50	0.16	0.07	0.03	0.03
31	0.08	---	9.8	22	---	1.7	---	0.46	---	0.07	0.03	---
TOTAL	2.88	10.48	67.44	99.90	94.11	183.18	69.2	34.45	7.56	3.42	1.60	1.27
MEAN	0.093	0.35	2.18	3.22	3.36	5.91	2.31	1.11	0.25	0.11	0.052	0.042
MAX	0.22	0.96	9.8	22	32	38	3.6	2.6	0.42	0.16	0.08	0.10
MIN	0.07	0.07	0.15	0.84	0.71	0.90	1.5	0.46	0.15	0.07	0.03	0.02
AC-FT	5.7	21	134	198	187	363	137	68	15	6.8	3.2	2.5
CFSM	0.14	0.53	3.30	4.88	5.09	8.95	3.49	1.68	0.38	0.17	0.08	0.06
IN.	0.16	0.59	3.80	5.63	5.30	10.32	3.90	1.94	0.43	0.19	0.09	0.07

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2003, BY WATER YEAR (WY)

MEAN	0.46	2.71	5.17	4.27	4.69	3.19	1.90	1.49	0.52	0.21	0.085	0.081
MAX	1.73	5.85	12.0	6.28	10.8	6.49	3.11	3.63	0.96	0.30	0.10	0.25
(WY)	1998	1997	1997	1998	1996	1997	1996	1998	1998	1998	1999	1997
MIN	0.087	0.13	0.91	0.48	0.53	0.87	0.78	0.32	0.25	0.11	0.052	0.041
(WY)	1994	1994	1994	2001	2001	2001	2000	1994	2003	2003	1994	1999

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1994 - 2003	
ANNUAL TOTAL	594.07		575.49			
ANNUAL MEAN	1.63		1.58		2.05	
HIGHEST ANNUAL MEAN					3.10	1996
LOWEST ANNUAL MEAN					0.53	2001
HIGHEST DAILY MEAN	37	Jan 25	38	Mar 8	100	Feb 7 1996
LOWEST DAILY MEAN	0.04	Sep 14	0.02	Sep 3	0.02	Sep 26 1994
ANNUAL SEVEN-DAY MINIMUM	0.05	Sep 9	0.02	Aug 31	0.02	Sep 27 1996
ANNUAL RUNOFF (AC-FT)	1180		1140		1490	
ANNUAL RUNOFF (CFSM)	2.47		2.39		3.11	
ANNUAL RUNOFF (INCHES)	33.48		32.44		42.27	
10 PERCENT EXCEEDS	3.6		3.1		4.6	
50 PERCENT EXCEEDS	0.38		0.43		0.62	
90 PERCENT EXCEEDS	0.07		0.05		0.06	

14199704 NATE CREEK TRIBUTARY NEAR COLTON, OR

LOCATION.--Lat 45°12'19", long 122°24'38", in SW 1/4 SW 1/4, sec.23, T.4 S, R.3 E, Clackamas County, Hydrologic Unit 17090009, on left bank at south Unger Road, 0.9 upstream from mouth, 2.5 mi northeast of Colton.

DRAINAGE AREA.--0.61 mi^2.

PERIOD OF RECORD.--June 2002 to September 2003.

GAGE.--Water-stage recorder. Datum of gage is 950 ft above NGVD of 1929.

REMARKS.--Records poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 33 ft^3/s Feb. 1, gage height, 3.59 ft, but may have been higher Jan. 31, during period of backwater, when debris clogged culvert, maximum gage height, 5.41 ft Jan. 31 (backwater from debris clogged culvert); minimum discharge, 0.07 ft^3/s Oct. 13-15, Dec. 1-5.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.12	0.28	0.11	2.4	e32	1.4	3.3	2.2	0.51	0.28	0.19	0.14
2	0.09	0.27	0.11	2.1	10	1.4	3.5	2.0	0.48	0.26	0.18	0.14
3	0.14	0.28	e0.12	2.1	7.0	1.5	3.4	1.9	0.46	0.26	0.18	0.14
4	0.17	0.30	e0.13	2.8	5.3	1.4	3.4	1.8	0.45	0.24	0.17	0.14
5	0.14	0.33	e0.12	3.3	4.5	1.4	3.2	1.7	0.43	0.23	0.18	0.16
6	0.14	0.33	e0.11	2.7	3.7	2.4	3.3	1.6	0.42	0.26	0.17	0.17
7	0.12	0.38	e0.10	2.4	3.2	12	2.9	1.5	0.38	0.26	0.17	0.20
8	0.12	0.51	e0.10	2.1	2.7	17	2.7	1.4	0.38	0.26	0.18	0.19
9	0.12	0.64	e0.10	1.9	2.5	10	2.8	1.3	0.41	0.26	0.18	0.20
10	0.10	0.43	e0.15	1.7	2.4	6.9	2.6	1.3	0.41	0.26	0.17	0.18
11	0.09	0.45	e0.25	1.6	2.2	5.4	2.5	1.2	0.41	0.26	0.17	0.18
12	0.09	0.55	e0.28	1.6	2.0	4.6	2.7	1.2	0.41	0.27	0.17	0.17
13	0.08	0.51	0.31	1.5	1.9	4.2	3.7	1.0	0.41	0.29	0.17	0.17
14	0.07	0.62	0.24	1.5	1.7	3.7	3.4	0.97	0.33	0.29	0.17	0.16
15	0.08	0.49	0.23	1.5	1.6	3.3	3.0	e0.80	0.29	0.29	0.17	0.14
16	0.10	0.71	0.62	1.4	1.6	2.8	2.7	e0.79	0.29	0.28	0.17	0.16
17	0.10	0.84	0.53	1.4	1.8	2.6	3.3	e0.78	0.29	0.26	0.17	0.17
18	0.12	0.68	0.54	1.3	2.0	2.4	3.5	e0.76	0.29	0.26	0.17	0.15
19	0.14	0.77	0.51	1.1	1.9	2.3	3.2	e0.75	0.33	0.26	0.18	0.16
20	0.16	0.61	0.40	0.94	2.0	2.2	2.9	e0.71	0.35	0.26	0.17	0.17
21	0.16	0.54	0.68	0.89	2.1	2.2	2.9	e0.68	0.38	0.26	0.17	0.16
22	0.14	0.51	0.74	1.0	2.1	3.5	2.8	e0.62	0.34	0.26	0.19	0.16
23	0.15	0.46	0.66	0.97	2.0	4.1	2.9	e0.58	0.33	0.24	0.18	0.16
24	0.15	0.36	0.62	1.1	1.9	3.7	3.6	e0.57	0.29	0.23	0.17	0.17
25	0.16	0.29	0.57	1.3	1.8	3.4	3.6	e0.56	0.26	0.22	0.18	0.17
26	0.19	0.23	0.73	2.0	1.7	3.4	3.4	e0.56	0.26	0.22	0.20	0.17
27	0.21	0.21	1.3	2.4	1.6	3.1	3.1	e0.55	0.26	0.20	0.19	0.19
28	0.26	0.18	1.3	2.4	1.5	2.8	2.9	e0.55	0.29	0.20	0.17	0.20
29	0.28	0.14	1.5	2.8	---	2.6	2.6	e0.55	0.29	0.20	0.14	0.22
30	0.28	0.11	1.7	14	---	2.5	2.4	0.55	0.29	0.20	0.14	0.20
31	0.26	---	2.9	e22	---	2.6	---	0.54	---	0.20	0.14	---
TOTAL	4.53	13.01	17.76	88.20	106.7	122.8	92.2	31.97	10.72	7.72	5.35	5.09
MEAN	0.15	0.43	0.57	2.85	3.81	3.96	3.07	1.03	0.36	0.25	0.17	0.17
MAX	0.28	0.84	2.9	22	32	17	3.7	2.2	0.51	0.29	0.20	0.22
MIN	0.07	0.11	0.10	0.89	1.5	1.4	2.4	0.54	0.26	0.20	0.14	0.14
AC-FT	9.0	26	35	175	212	244	183	63	21	15	11	10
CFSM	0.24	0.71	0.94	4.66	6.25	6.49	5.04	1.69	0.59	0.41	0.28	0.28
IN.	0.28	0.79	1.08	5.38	6.51	7.49	5.62	1.95	0.65	0.47	0.33	0.31

WTR YR 2003 TOTAL 506.05 MEAN 1.39 MAX 32 MIN 0.07 AC-FT 1000 CFSM 2.27 IN. 30.86

e Estimated

14200000 MOLALLA RIVER NEAR CANBY, OR

LOCATION--Lat 45°14'40", long 122°41'10", in NW 1/4 NE 1/4 sec.9, T.4 S., R.1 E, Clackamas County, Hydrologic Unit 17090009, on left bank, at upstream side of Goods bridge, 1.5 mi south of Canby, and at mile 6.01.

DRAINAGE AREA.--323 mi^2.

PERIOD OF RECORD.--August 1928 to September 1959, October 1963 to September 1978, October 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 94 ft above NGVD of 1929. Prior to Oct. 24, 1933 nonrecording gage and Oct. 24, 1933 to Sept. 26, 1955, water-stage recorder at present site and datum 11.00 ft higher. Sept. 27, 1955 to June 3, 1956, water-stage recorder at site 145 ft downstream at datum 10 ft higher. June 4, 1956 to Sept. 30, 1959, water-stage recorder at site 0.3 mi downstream at datum 8.02 ft higher. Oct. 1, 1963 to Sept. 30, 1978, Oct. 1, 2000 to Oct. 31 2001 water-stage recorder at present site and at datum 10 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation. Numerous small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--49 years (water years 1929-59, 1964-78, 2001-03), 1,146 ft^3/s, 48.21 in/yr, 830,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,600 ft^3/s Dec. 22, 1964, gage height, 26.76 ft, at current datum; minimum discharge, 20 ft^3/s Aug. 24, 1959.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,200 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 1	0230	*16,500	*20.06	Mar. 22	1630	7,800	16.67
Mar. 7	2330	11,000	18.01				

Minimum discharge, 25 ft^3/s Sept. 4, 5.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e110	56	117	3090	12500	876	1990	1230	354	112	41	30
2	e90	58	113	2540	6140	783	2040	1100	327	112	42	29
3	83	59	110	3910	4260	829	1890	1020	306	108	46	29
4	113	60	109	3700	3190	791	1770	1060	288	104	49	28
5	128	61	113	4040	2490	801	1690	1540	269	102	46	26
6	e100	63	114	2660	2010	1950	1730	1420	249	100	45	27
7	e90	63	107	1930	1670	6950	1660	1250	237	98	45	30
8	e80	81	103	1530	1430	10200	1640	1130	230	94	46	40
9	e75	299	101	1270	1240	7150	2010	996	222	92	44	66
10	e70	473	115	1070	1090	5550	2080	884	220	89	43	72
11	e70	368	197	928	973	3950	2320	814	212	84	45	69
12	68	313	538	1090	883	3570	2270	839	203	81	44	63
13	66	447	948	1650	807	3520	2540	777	210	79	43	62
14	63	449	1010	1790	755	3030	2490	742	228	71	40	52
15	61	363	1560	1610	712	2610	2060	723	201	71	39	47
16	58	266	2790	1340	783	2270	1790	732	187	67	38	47
17	57	364	2010	1130	1130	1910	1970	782	176	67	39	58
18	56	349	1340	991	1820	1620	2240	815	166	64	36	70
19	57	327	1040	884	1600	1430	1990	764	168	61	32	58
20	59	331	839	788	1700	1490	1710	715	171	58	32	54
21	59	272	1290	714	2040	1800	1610	670	178	56	31	52
22	60	229	1370	729	2520	5780	1670	636	217	55	31	48
23	59	202	1080	1060	2070	5300	1710	618	196	54	33	45
24	58	182	869	988	1670	3590	2430	609	175	51	34	43
25	57	167	734	1310	1390	2850	2380	609	159	51	32	42
26	57	152	758	2600	1210	3100	2160	570	148	52	31	40
27	58	142	2610	3460	1060	2890	1920	504	141	52	31	39
28	60	134	2630	2410	937	2410	1680	459	130	51	32	38
29	60	127	2310	2050	---	2000	1570	432	123	47	31	37
30	59	122	2250	6830	---	1740	1380	405	116	44	31	38
31	56	---	4330	9990	---	1770	---	392	---	42	30	---
TOTAL	2197	6579	33605	70082	60080	94510	58390	25237	6207	2269	1182	1379
MEAN	70.9	219	1084	2261	2146	3049	1946	814	207	73.2	38.1	46.0
MAX	128	473	4330	9990	12500	10200	2540	1540	354	112	49	72
MIN	56	56	101	714	712	783	1380	392	116	42	30	26
AC-FT	4360	13050	66660	139000	119200	187500	115800	50060	12310	4500	2340	2740
CFSM	0.22	0.68	3.36	7.00	6.64	9.44	6.03	2.52	0.64	0.23	0.12	0.14
IN.	0.25	0.76	3.87	8.07	6.92	10.88	6.72	2.91	0.71	0.26	0.14	0.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2003, BY WATER YEAR (WY)

MEAN	428	1455	2252	2389	1893	1725	1482	1093	608	203	101	136
MAX	2201	3864	5835	5124	4265	3559	2954	2376	1687	491	378	555
(WY)	1948	1974	1965	1953	1949	1972	1937	1945	1933	1952	1968	1978
MIN	59.9	52.7	211	303	271	505	383	275	164	73.2	38.1	46.0
(WY)	1953	1937	1977	1977	1977	1941	1941	1931	1940	2003	2003	2003

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1929 - 2003	
ANNUAL TOTAL	333449		361717			
ANNUAL MEAN	914		991		1146	
HIGHEST ANNUAL MEAN					1822	1956
LOWEST ANNUAL MEAN					511	2001
HIGHEST DAILY MEAN	6600	Apr 14	12500	Feb 1	34100	Dec 22 1964
LOWEST DAILY MEAN	44	Sep 13	26	Sep 5	22	Aug 27 1959
ANNUAL SEVEN-DAY MINIMUM	47	Sep 9	28	Aug 31	28	Aug 31 2003
ANNUAL RUNOFF (AC-FT)	661400		717500		830300	
ANNUAL RUNOFF (CFSM)	2.83		3.07		3.55	
ANNUAL RUNOFF (INCHES)	38.40		41.66		48.21	
10 PERCENT EXCEEDS	2300		2490		2660	
50 PERCENT EXCEEDS	530		313		682	
90 PERCENT EXCEEDS	57		43		80	

e Estimated

14200400 LITTLE ABIQUA CREEK NEAR SCOTTS MILLS, OR

LOCATION.--Lat 44°57'21", long 122°37'38", in SW 1/4 SE 1/4 sec.13, T.7 S., R.1 E, Marion County, Hydrologic Unit 17090009, on left bank, 4 mi south of Scotts Mills, and 0.1 mi upstream from mouth.

DRAINAGE AREA.--9.81 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1993 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 800 ft above NGVD of 1929, from topographic map.

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

AVERAGE DISCHARGE.--10 years (water years 1994-2003), 37.3 ft^3/s, 51.71 in/yr, 27,050 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,500 ft^3/s Feb. 7, 1996, gage height, 6.19 ft from rating curve extended above 340 ft^3/s on basis of slope-area measurement of peak flow, maximum gage height, 6.57 ft Feb. 7, 1996, from crest-stage gage; minimum discharge, 1.3 ft^3/s Sept. 26, 2002.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	2130	*652	*4.89	Mar. 8	0400	352	4.17

Minimum discharge, 1.6 ft^3/s Oct. 16, 17, Sept. 3-6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	4.4	7.3	150	424	35	76	43	11	4.6	2.3	1.8
2	2.0	4.4	7.2	129	267	32	69	40	11	4.6	2.4	1.7
3	3.4	4.5	6.9	116	175	36	76	37	11	4.4	2.6	1.7
4	4.2	4.5	7.5	135	123	31	80	52	10	4.3	2.5	1.7
5	3.1	4.5	7.4	121	92	38	85	54	9.4	4.1	2.4	1.6
6	2.8	4.4	6.8	102	70	108	109	47	8.7	4.1	2.4	1.6
7	2.3	6.3	6.6	81	59	265	101	44	8.3	4.0	2.6	2.0
8	2.2	23	6.3	66	52	297	90	44	8.1	3.9	2.5	3.5
9	2.1	31	6.4	57	45	235	86	39	8.1	3.8	2.4	4.3
10	2.0	19	10	49	38	175	74	36	8.1	3.6	2.3	3.6
11	2.0	13	16	44	34	135	69	34	7.8	3.5	2.2	3.2
12	1.9	16	26	52	30	114	71	32	7.7	3.4	2.2	2.9
13	1.8	21	51	57	27	95	84	29	10	3.4	2.2	2.4
14	1.7	19	38	57	27	79	75	27	8.7	3.3	2.1	2.2
15	1.7	13	65	49	27	68	68	26	7.5	3.3	2.1	2.1
16	1.7	16	150	44	35	60	64	26	7.0	3.3	2.2	3.1
17	1.6	19	80	40	56	53	67	27	6.8	3.1	2.1	3.2
18	1.7	15	67	37	69	47	63	25	6.8	3.1	2.0	2.5
19	1.7	20	56	34	57	45	57	22	7.2	3.0	2.0	2.3
20	1.7	14	49	31	57	48	52	20	6.9	3.0	2.0	2.4
21	1.8	12	107	28	60	59	56	19	7.5	2.9	2.0	2.2
22	1.9	11	85	36	63	116	54	18	8.0	2.8	2.0	2.1
23	1.9	10	65	35	61	120	57	17	6.9	2.8	2.0	2.0
24	1.8	10	54	32	60	105	74	16	6.6	2.7	2.0	2.0
25	1.8	9.4	43	37	52	98	69	18	5.9	2.8	1.9	2.0
26	2.0	8.7	59	102	46	102	71	16	5.5	2.7	1.9	1.9
27	2.3	8.4	104	99	40	97	64	14	5.2	2.7	2.0	1.9
28	2.7	8.0	95	82	38	85	60	14	4.9	2.5	2.0	1.8
29	3.2	7.8	107	85	---	71	56	13	4.7	2.4	1.9	1.9
30	4.2	7.6	132	220	---	63	48	13	4.6	2.4	1.8	2.1
31	4.5	---	200	375	---	63	---	12	---	2.3	1.8	---
TOTAL	72.2	364.9	1721.4	2582	2184	2975	2125	874	229.9	102.8	66.8	69.7
MEAN	2.33	12.2	55.5	83.3	78.0	96.0	70.8	28.2	7.66	3.32	2.15	2.32
MAX	4.5	31	200	375	424	297	109	54	11	4.6	2.6	4.3
MIN	1.6	4.4	6.3	28	27	31	48	12	4.6	2.3	1.8	1.6
AC-FT	143	724	3410	5120	4330	5900	4210	1730	456	204	132	138
CFSM	0.24	1.24	5.66	8.49	7.95	9.78	7.22	2.87	0.78	0.34	0.22	0.24
IN.	0.27	1.38	6.53	9.79	8.28	11.28	8.06	3.31	0.87	0.39	0.25	0.26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2003, BY WATER YEAR (WY)

MEAN	13.4	46.7	79.5	74.1	77.0	61.1	42.4	29.6	13.5	5.82	3.36	3.59
MAX	43.0	89.1	141	94.3	143	96.0	70.8	46.1	19.5	7.34	4.61	7.18
(WY)	1998	1996	1997	1998	1996	2003	2003	1998	1998	1999	1999	1997
MIN	2.33	5.09	27.4	23.1	21.6	29.3	20.1	12.7	7.66	3.32	2.15	2.08
(WY)	2003	1994	1994	2001	2001	2001	2000	1994	2003	2003	2003	2002

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1994 - 2003	
ANNUAL TOTAL	11744.0		13367.7			
ANNUAL MEAN	32.2		36.6		37.3	
HIGHEST ANNUAL MEAN					50.5	1996
LOWEST ANNUAL MEAN					18.1	2001
HIGHEST DAILY MEAN	293	Jan 25	424	Feb 1	850	Feb 7 1996
LOWEST DAILY MEAN	1.4	Sep 26	1.6	Oct 17	1.4	Sep 26 2002
ANNUAL SEVEN-DAY MINIMUM	1.5	Sep 22	1.7	Oct 14	1.5	Sep 22 2002
ANNUAL RUNOFF (AC-FT)	23290		26510		27050	
ANNUAL RUNOFF (CFSM)	3.28		3.73		3.81	
ANNUAL RUNOFF (INCHES)	44.53		50.69		51.71	
10 PERCENT EXCEEDS	89		95		96	
50 PERCENT EXCEEDS	11		13		19	
90 PERCENT EXCEEDS	2.0		2.0		3.0	

14200400 LITTLE ABIQUA CREEK NEAR SCOTTS MILLS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1993 to Sept. 1997, January 2002 to current year.
WATER TEMPERATUE: July 1993 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--
SPECIFIC CONDUCTANCE: Records fair.
WATER TEMPERATURE: Records fair.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 71 microsiemens Mar. 7, 2003; minimum recorded, 8 microsiemens Feb. 5-7, 1996.
WATER TEMPERATURE: Maximum, 19.0°C July 23, 1994, minimum, 0.0°C Nov. 24-26, 1993.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 71 microsiemens Mar. 7, but may have been greater during periods of missing record; minimum, 15 microsiemens Mar. 8, but may have been less during periods of missing record.
WATER TEMPERATURE: Maximum recorded, 17.2°C July 21, 30, but may have been higher during period of missing record; minimum, 3.0°C Nov. 2.

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	52	45	50	51	49	50	48	46	46	28	27	28
2	53	51	52	50	49	50	48	46	47	28	27	28
3	53	47	51	50	49	50	48	45	46	29	27	28
4	50	48	49	50	49	50	47	45	46	29	27	28
5	51	49	50	51	50	50	48	44	46	30	28	29
6	52	49	51	52	50	51	46	44	45	30	28	29
7	52	50	51	58	52	54	46	44	45	30	28	29
8	52	50	51	58	50	53	46	44	45	30	28	29
9	52	51	52	50	47	49	46	44	45	30	29	30
10	52	51	51	51	48	50	45	43	44	31	30	30
11	51	50	50	51	49	50	43	39	41	32	31	31
12	50	49	50	51	46	50	41	36	40	31	30	30
13	52	49	50	46	45	46	39	36	39	31	30	30
14	51	50	50	47	45	46	39	36	38	31	30	30
15	51	49	50	47	46	46	---	---	---	31	30	30
16	51	50	50	47	44	46	---	---	---	31	30	30
17	51	50	51	46	44	45	---	---	---	31	30	30
18	51	50	51	46	45	45	---	---	---	32	30	31
19	51	50	50	45	42	44	44	39	40	32	31	31
20	51	50	51	46	45	46	42	40	41	32	31	32
21	52	50	51	47	45	46	43	38	40	32	30	31
22	51	49	50	47	45	46	41	38	40	31	29	30
23	56	49	51	47	46	47	43	40	42	32	30	31
24	52	51	52	47	45	46	44	40	42	33	32	32
25	52	51	52	46	45	46	43	40	42	32	25	30
26	52	51	51	46	45	45	42	38	40	---	---	---
27	52	50	51	46	45	46	41	36	38	---	---	---
28	52	51	52	46	45	46	40	37	39	---	---	---
29	52	51	52	46	45	46	38	35	36	---	---	---
30	52	50	51	47	46	46	41	26	35	---	---	---
31	51	50	50	---	---	---	28	26	27	---	---	---
MONTH	56	45	51	58	42	48	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	29	27	28	31	28	30
2	---	---	---	---	---	---	29	28	28	31	29	30
3	---	---	---	---	---	---	28	28	28	31	30	31
4	---	---	---	---	---	---	29	28	28	31	27	28
5	---	---	---	31	26	29	28	26	28	29	27	28
6	29	28	29	26	24	25	28	26	27	29	28	28
7	31	29	30	71	24	32	28	27	28	29	28	28
8	30	29	30	32	15	25	29	28	28	29	27	28
9	31	30	30	26	24	25	29	27	28	30	28	29
10	30	30	30	27	25	26	29	28	28	30	29	30
11	31	30	30	27	26	27	29	27	28	31	29	30
12	31	30	30	28	26	27	29	27	28	31	30	30
13	32	31	32	28	27	28	29	27	28	31	30	31
14	32	31	32	29	28	28	29	28	28	32	30	31
15	32	30	31	29	28	28	29	28	28	32	30	31
16	31	29	30	30	29	29	29	28	29	31	30	30
17	31	26	29	30	29	30	29	27	28	31	30	30
18	30	27	29	30	30	30	29	28	28	31	29	30
19	30	29	30	30	29	30	29	28	29	32	30	31
20	30	28	29	30	29	30	30	28	29	33	31	32
21	29	28	28	30	26	29	29	28	29	34	32	33
22	33	28	30	27	25	26	29	28	29	34	32	33
23	---	---	---	27	26	26	29	27	28	35	33	34
24	---	---	---	27	26	27	29	27	28	35	33	34
25	---	---	---	28	27	27	29	28	28	34	32	33
26	---	---	---	27	26	27	29	27	28	35	33	34
27	---	---	---	28	26	27	29	28	28	36	34	35
28	---	---	---	28	27	28	29	28	28	37	35	36
29	---	---	---	29	28	28	29	28	28	37	35	36
30	---	---	---	30	29	29	30	29	29	38	36	36
31	---	---	---	30	28	29	---	---	---	37	35	36
MONTH	---	---	---	---	---	---	30	26	28	38	27	31

14200400 LITTLE ABIQUA CREEK NEAR SCOTTS MILLS, OR--Continued

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	38	35	36	45	43	44	53	52	53	56	54	55
2	38	36	37	45	44	44	54	53	54	56	54	55
3	38	36	37	45	44	45	54	51	52	---	---	---
4	39	37	38	46	44	45	53	51	52	---	---	---
5	39	38	38	46	45	46	54	52	53	---	---	---
6	40	38	39	46	45	46	53	51	52	---	---	---
7	40	39	40	46	46	46	54	52	53	---	---	---
8	40	39	40	48	46	47	54	51	53	---	---	---
9	40	39	40	49	47	47	54	52	53	---	---	---
10	40	39	39	51	49	49	53	52	52	---	---	---
11	40	39	40	52	50	51	54	52	53	---	---	---
12	41	39	40	52	48	51	54	53	53	---	---	---
13	41	36	39	50	49	50	54	52	53	---	---	---
14	40	38	39	50	49	50	54	52	53	---	---	---
15	41	40	40	52	50	50	54	53	53	---	---	---
16	41	40	41	53	48	50	54	52	53	---	---	---
17	42	41	41	50	48	49	54	53	53	---	---	---
18	42	41	41	50	49	49	54	53	54	---	---	---
19	42	40	41	50	49	50	55	54	54	---	---	---
20	42	40	41	52	50	51	56	54	55	53	52	52
21	42	39	40	52	50	51	58	55	56	54	52	53
22	40	38	39	52	50	51	56	54	55	54	53	54
23	41	40	41	52	51	51	56	54	55	55	54	54
24	42	41	41	52	51	51	57	55	56	56	54	55
25	43	42	42	52	50	51	58	56	56	56	55	56
26	43	42	43	52	51	51	59	56	57	57	56	56
27	44	43	43	52	51	51	61	58	59	58	56	57
28	45	43	44	52	51	51	60	58	58	58	57	58
29	45	44	45	53	51	52	62	58	59	59	57	58
30	46	44	45	54	52	52	62	58	60	58	55	56
31	---	---	---	54	52	53	61	54	58	---	---	---
MONTH	46	35	40	54	43	49	62	51	55	---	---	---

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.6	9.2	9.9	5.2	3.2	4.1	5.7	3.9	4.9	8.1	7.4	7.7
2	9.9	7.8	8.9	4.9	3.0	3.8	5.9	4.6	5.5	8.7	7.9	8.3
3	10.4	9.5	10	5.2	3.3	4.2	4.6	4.0	4.2	8.8	7.7	8.3
4	11.0	10.4	10.6	6.0	3.9	4.9	5.5	4.1	4.9	9.0	7.3	8.5
5	11.6	10.6	11.0	7.2	5.2	6.2	6.3	5.3	5.8	7.3	6.6	6.9
6	11.7	10.7	11.3	7.6	5.8	6.7	5.8	4.7	5.1	6.9	6.1	6.5
7	12.0	10.4	11.0	8.2	6.9	7.7	4.7	3.9	4.2	6.7	5.9	6.2
8	11.6	10.0	10.7	8.0	7.6	7.8	4.6	3.6	4.0	6.2	5.6	5.8
9	11.5	9.9	10.6	7.7	7.3	7.6	5.5	3.7	4.5	6.5	5.3	5.8
10	10.4	8.9	9.6	7.9	7.0	7.5	6.1	5.3	5.7	6.4	5.7	6.0
11	9.4	7.8	8.5	8.4	7.5	8.0	7.1	5.9	6.4	7.3	5.7	6.6
12	9.0	6.5	7.7	9.1	8.2	8.7	7.7	6.8	7.3	8.1	7.3	7.8
13	9.1	7.0	8.0	9.2	8.6	8.9	7.8	6.6	7.2	8.1	7.4	7.8
14	9.1	6.7	7.9	9.3	7.7	8.8	8.9	7.8	8.4	8.2	6.3	7.7
15	9.5	7.2	8.3	7.8	6.7	7.2	8.2	7.3	7.5	7.1	5.7	6.4
16	10.1	7.8	8.9	7.7	6.2	7.0	8.0	6.6	7.6	6.9	5.5	6.2
17	10.0	8.1	9.0	8.5	7.5	8.0	6.9	6.3	6.6	6.7	5.5	6.0
18	10.1	8.8	9.4	8.1	6.9	7.6	6.7	5.9	6.3	6.7	5.4	6.0
19	10.8	9.4	10.0	9.4	8.1	8.8	7.0	6.1	6.5	6.2	5.2	5.7
20	10.8	10.1	10.4	8.6	7.7	8.2	7.3	6.0	6.6	7.0	5.2	6.1
21	10.9	10.3	10.6	8.7	7.5	8.1	7.0	6.5	6.7	7.6	6.3	6.8
22	11.2	9.8	10.6	8.5	7.9	8.3	7.2	6.6	6.9	8.5	6.8	7.7
23	10.2	8.6	9.4	8.8	8.2	8.5	6.6	5.3	5.7	8.3	7.0	7.6
24	9.2	7.6	8.4	8.6	6.7	8.0	6.6	5.3	6.0	8.7	7.3	8.1
25	8.7	7.3	8.0	6.7	4.6	5.5	7.2	6.0	6.6	9.4	8.4	8.9
26	8.3	6.8	7.5	4.8	3.9	4.3	7.0	6.2	6.7	9.9	8.6	9.4
27	8.2	6.3	7.3	4.9	3.9	4.3	7.9	6.3	7.4	8.8	8.1	8.4
28	9.1	8.0	8.5	5.2	4.1	4.5	7.7	7.0	7.3	8.4	7.4	7.9
29	8.5	6.6	7.9	5.5	4.1	4.7	7.0	6.3	6.7	8.5	7.8	8.1
30	6.6	4.5	5.6	5.1	4.0	4.5	7.6	6.7	7.3	9.3	8.5	9.0
31	5.4	3.4	4.3	---	---	---	7.7	7.3	7.5	9.4	8.3	9.1
MONTH	12.0	3.4	9.0	9.4	3.0	6.7	8.9	3.6	6.3	9.9	5.2	7.3

14200400 LITTLE ABIQUA CREEK NEAR SCOTTS MILLS, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.4	8.1	8.2	7.7	5.5	6.5	8.2	6.4	7.5	11.8	7.1	9.2
2	8.4	7.8	8.1	6.7	5.1	6.0	7.5	6.0	6.7	12.1	7.6	9.6
3	8.2	7.4	7.7	7.3	5.7	6.5	6.9	5.7	6.3	9.8	8.2	8.8
4	7.5	6.4	7.1	7.3	5.4	6.4	7.8	6.2	6.9	8.6	7.8	8.1
5	6.8	5.8	6.3	7.4	6.8	7.1	7.2	6.3	6.7	9.2	7.5	8.2
6	6.7	5.4	5.9	7.0	6.6	6.8	8.3	6.3	7.1	9.6	6.9	8.2
7	6.4	5.0	5.6	7.6	7.0	7.3	9.2	7.0	8.0	8.7	7.2	7.9
8	6.3	4.9	5.5	8.3	7.4	7.8	10.4	7.3	8.7	8.8	7.1	7.9
9	6.6	4.9	5.6	8.8	7.8	8.2	9.9	7.8	8.7	9.1	7.8	8.4
10	7.2	5.5	6.3	9.1	8.1	8.6	9.4	8.2	8.8	10.0	8.2	9.0
11	6.5	4.7	5.5	9.0	8.2	8.6	10.4	8.3	9.1	10.0	8.4	9.2
12	6.8	4.9	5.8	9.4	8.5	8.9	10.5	8.3	9.2	10.9	8.9	9.6
13	7.9	6.2	7.1	9.3	8.5	8.9	9.5	7.6	8.3	12.3	7.8	9.9
14	8.6	7.1	7.8	9.7	8.2	8.8	9.4	7.0	8.0	11.3	8.9	10.1
15	8.2	6.9	7.5	9.3	7.9	8.6	9.7	7.5	8.3	10.1	8.6	9.3
16	7.6	6.8	7.2	9.1	7.5	8.1	10.2	7.6	8.6	8.7	7.5	8.1
17	7.3	6.6	6.9	9.0	6.9	7.8	9.1	7.8	8.3	8.6	7.0	7.6
18	7.8	6.7	7.1	8.8	6.4	7.6	9.1	7.2	8.0	9.7	6.2	7.8
19	8.3	7.0	7.6	8.3	6.7	7.6	10.7	6.4	8.3	11.0	6.5	8.7
20	7.7	7.2	7.5	8.7	7.6	8.0	10.1	7.5	8.7	10.8	8.2	9.5
21	8.6	7.7	8.1	8.6	7.3	8.0	8.9	8.2	8.4	12.5	9.0	10.7
22	8.1	6.9	7.6	8.3	7.3	8.0	9.0	7.7	8.2	13.0	10.2	11.6
23	7.2	5.5	6.3	7.9	6.8	7.3	9.0	7.4	8.1	14.2	10.6	12.3
24	6.5	4.7	5.4	8.6	5.9	7.2	8.9	6.7	7.6	13.2	11.6	12.3
25	6.4	4.0	5.0	8.6	7.5	8.1	8.3	6.0	7.1	12.1	10.8	11.3
26	6.9	4.6	5.7	8.3	6.4	7.5	8.8	6.6	7.5	12.1	9.9	11.0
27	7.4	5.6	6.4	8.1	6.3	7.3	10.0	6.1	7.9	13.6	10.2	11.8
28	6.5	5.4	6.0	9.4	6.2	7.7	9.6	7.9	8.6	13.8	12.1	12.9
29	---	---	---	10.8	6.9	8.6	10.6	6.9	8.6	14.0	11.2	12.7
30	---	---	---	11.4	7.9	9.5	10.5	8.2	9.1	13.2	11.4	12.0
31	---	---	---	9.4	8.2	9.0	---	---	---	13.0	10.6	11.7
MONTH	8.6	4.0	6.7	11.4	5.1	7.8	10.7	5.7	8.0	14.2	6.2	9.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.4	10.7	12.0	13.8	12.2	13.0	16.1	13.3	14.7	14.5	11.7	13.2
2	13.0	10.7	11.9	13.8	10.8	12.4	14.8	14.0	14.4	15.0	11.9	13.5
3	13.3	10.1	11.7	14.0	10.8	12.4	15.4	13.8	14.5	---	---	---
4	14.2	10.6	12.4	14.4	11.2	12.8	15.8	12.4	14.1	---	---	---
5	15.0	11.4	13.2	14.7	11.7	13.2	15.4	13.4	14.3	---	---	---
6	15.5	12.3	13.9	15.1	12.4	13.7	15.5	12.9	14.2	---	---	---
7	15.8	13.4	14.5	15.2	12.2	13.6	15.8	13.6	14.6	---	---	---
8	15.2	13.0	14.2	14.7	12.8	13.7	15.8	13.9	14.8	---	---	---
9	13.6	12.1	12.7	15.5	12.2	13.8	15.6	13.9	14.6	---	---	---
10	13.0	11.3	12.1	15.9	12.7	14.3	15.9	13.5	14.5	---	---	---
11	13.4	11.2	12.2	16.0	13.1	14.5	15.7	13.4	14.4	---	---	---
12	12.8	11.2	12.0	16.0	13.2	14.5	15.7	13.1	14.3	---	---	---
13	12.2	11.7	11.9	15.5	13.8	14.6	15.4	12.2	13.8	---	---	---
14	12.7	10.7	11.7	15.7	12.7	14.2	15.7	12.3	14.0	---	---	---
15	13.4	10.4	11.9	15.8	13.2	14.5	15.5	14.1	14.6	---	---	---
16	14.0	10.8	12.4	15.6	13.8	14.6	15.8	13.2	14.4	---	---	---
17	14.8	11.9	13.3	15.6	12.2	13.9	16.1	12.9	14.4	---	---	---
18	13.4	12.4	12.9	15.9	12.3	14.1	16.2	13.1	14.6	---	---	---
19	12.5	11.5	11.9	16.2	12.9	14.5	16.0	13.5	14.6	---	---	---
20	12.2	11.1	11.6	16.4	13.1	14.7	14.8	11.6	13.3	12.4	10.2	11.3
21	11.9	10.7	11.2	17.2	13.9	15.5	15.6	12.4	14.0	12.3	9.9	11.1
22	11.4	10.3	10.9	17.1	14.1	15.6	14.8	13.4	14.1	12.6	9.9	11.3
23	11.3	10.6	11.0	16.6	13.9	15.2	14.9	13.0	13.8	12.8	10.4	11.6
24	13.1	10.7	11.8	15.8	13.1	14.5	14.7	11.5	13.1	12.9	10.3	11.7
25	13.6	10.6	12.1	15.7	12.6	14.1	15.1	11.8	13.4	13.3	11.1	12.2
26	14.7	11.5	13.1	15.8	12.6	14.1	14.6	12.7	13.6	13.7	11.3	12.5
27	15.6	12.5	14.0	15.9	12.3	14.1	15.1	12.7	13.7	14.6	11.9	13.2
28	16.0	12.8	14.4	16.7	13.1	14.8	14.4	11.6	13.1	14.1	12.2	13.2
29	16.5	13.8	14.9	17.1	13.4	15.1	15.1	12.2	13.6	13.2	12.6	12.9
30	15.4	13.6	14.4	17.2	13.6	15.4	15.3	12.4	13.8	13.2	11.3	12.3
31	---	---	---	16.9	14.0	15.4	15.1	12.3	13.8	---	---	---
MONTH	16.5	10.1	12.6	17.2	10.8	14.2	16.2	11.5	14.1	---	---	---

14201300 ZOLLNER CREEK NEAR MOUNT ANGEL, OR

LOCATION.--Lat 45°06'02", long 122°49'14", in SW 1/4 SW 1/4 sec. 28, T.5 S., R.1 W., Marion County, Hydrologic Unit 17090009, on left bank downstream corner of Monitor-McKee Road bridge, 2.3 mi north-northwest of Mount Angel, and at mile 0.4.

DRAINAGE AREA.--15.0 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1993 to current year.

REVISED RECORD.--WDR OR-96-1: 1994 (M).

GAGE.--Water-stage recorder and velocity meter. Elevation of gage is 120 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flows subject to backwater from the Pudding River. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--10 years (water years 1994-2003), 24.4 ft^3/s, 22.09 in/yr, 17,670 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,890 ft^3/s Nov. 19, 1996, gage height 16.93 ft; maximum gage height, 21.33 ft, Feb. 8, 1996, from floodmark (backwater from Pudding River); minimum discharge, 0.02 ft^3/s Sept. 22, 1994.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	2330	*365	14.84	Feb. 2	0600	(a)	*16.38

Minimum discharge, 0.09 ft^3/s July 15.
a Backwater from Pudding River.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	0.64	0.80	77	199	12	16	16	1.6	0.40	0.64	0.49
2	4.7	0.66	0.81	57	111	11	19	15	2.4	0.33	0.77	0.39
3	1.6	0.71	0.92	68	91	12	26	14	2.8	0.53	0.69	0.44
4	0.99	0.82	0.96	76	64	12	41	8.3	2.6	0.58	0.55	0.52
5	0.60	0.77	0.97	80	45	11	28	6.9	2.2	0.31	1.2	0.51
6	0.45	0.59	0.86	51	34	48	48	6.4	1.00	0.28	0.79	0.40
7	0.41	0.71	0.84	37	25	206	46	6.0	1.8	0.26	0.54	0.32
8	0.39	2.3	0.80	26	e20	162	28	8.6	1.9	0.25	1.4	0.28
9	0.47	2.2	0.87	e25	e15	120	20	8.7	2.1	0.22	0.92	1.6
10	0.50	2.6	2.9	26	11	91	19	7.9	2.1	0.23	0.74	1.3
11	0.46	2.2	5.6	25	11	67	18	8.1	2.9	0.30	0.61	1.0
12	0.42	2.5	7.6	39	10	47	46	16	1.7	0.27	0.57	0.76
13	0.41	2.5	48	79	9.6	42	118	10	2.3	0.25	0.88	0.53
14	0.35	1.9	e40	71	9.0	39	109	9.1	2.5	0.17	0.50	0.48
15	0.47	1.7	31	62	9.2	35	51	8.0	1.9	0.15	0.49	0.52
16	0.59	1.4	138	36	15	e29	e40	8.2	1.6	0.18	0.53	1.4
17	0.60	2.2	64	31	e25	25	26	8.2	1.5	0.31	0.65	3.6
18	0.51	2.3	42	28	87	19	19	7.7	1.1	0.41	0.55	0.69
19	0.86	2.7	e30	25	68	18	16	6.7	0.82	0.25	0.56	0.46
20	0.80	2.0	15	24	40	17	15	5.9	0.90	0.19	0.57	0.43
21	0.37	1.6	e50	23	28	17	19	5.2	1.2	0.70	0.57	0.37
22	0.37	1.3	62	27	e24	85	19	4.9	1.8	0.79	0.38	0.34
23	0.40	1.2	62	60	e20	103	26	5.0	1.7	1.6	0.35	0.42
24	0.46	1.4	20	40	17	85	96	5.5	1.7	0.64	0.33	0.45
25	0.42	1.3	11	42	15	53	88	5.2	1.4	0.78	0.41	0.37
26	0.39	1.2	14	e70	13	46	57	5.5	0.90	0.95	0.31	0.33
27	0.46	1.1	99	83	12	42	40	7.0	0.68	1.2	0.26	0.46
28	2.0	0.97	66	44	11	31	22	6.6	0.53	2.3	0.43	0.62
29	0.87	0.91	e75	e55	---	e27	20	4.6	0.71	0.94	0.31	0.42
30	0.61	0.86	60	233	---	20	18	4.4	0.61	0.59	0.33	0.67
31	0.70	---	133	201	---	16	---	4.4	---	0.64	0.45	---
TOTAL	24.73	45.24	1083.93	1821	1038.8	1548	1154	244.0	48.95	17.00	18.28	20.57
MEAN	0.80	1.51	35.0	58.7	37.1	49.9	38.5	7.87	1.63	0.55	0.59	0.69
MAX	4.7	2.7	138	233	199	206	118	16	2.9	2.3	1.4	3.6
MIN	0.35	0.59	0.80	23	9.0	11	15	4.4	0.53	0.15	0.26	0.28
AC-FT	49	90	2150	3610	2060	3070	2290	484	97	34	36	41
CFSM	0.05	0.10	2.33	3.92	2.47	3.33	2.56	0.52	0.11	0.04	0.04	0.05
IN.	0.06	0.11	2.69	4.52	2.58	3.84	2.86	0.61	0.12	0.04	0.05	0.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2003, BY WATER YEAR (WY)

MEAN	7.18	42.6	67.0	59.6	54.2	37.0	14.4	6.91	3.03	0.88	0.48	0.90
MAX	23.1	121	187	103	114	91.5	38.5	21.8	6.60	1.66	0.93	2.54
(WY)	1997	1997	1997	1996	1996	1997	2003	1996	1997	1997	1997	1997
MIN	0.80	1.51	10.9	7.47	9.28	10.4	5.80	2.05	0.95	0.24	0.14	0.19
(WY)	2003	2003	2001	2001	2001	2001	2000	1994	2002	1994	2001	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1994 - 2003	
ANNUAL TOTAL	5716.29		7064.50			
ANNUAL MEAN	15.7		19.4		24.4	
HIGHEST ANNUAL MEAN					48.8	1997
LOWEST ANNUAL MEAN					4.83	2001
HIGHEST DAILY MEAN	209	Jan 25	233	Jan 30	1510	Nov 19 1996
LOWEST DAILY MEAN	0.08	Aug 12	0.15	Jul 15	0.03	Sep 11 2001
ANNUAL SEVEN-DAY MINIMUM	0.09	Aug 7	0.22	Jul 10	0.05	Sep 14 2001
ANNUAL RUNOFF (AC-FT)	11340		14010		17670	
ANNUAL RUNOFF (CFSM)	1.04		1.29		1.63	
ANNUAL RUNOFF (INCHES)	14.18		17.52		22.09	
10 PERCENT EXCEEDS	52		62		70	
50 PERCENT EXCEEDS	2.1		2.5		5.5	
90 PERCENT EXCEEDS	0.34		0.40		0.39	

e Estimated

14201300 ZOLLNER CREEK NEAR MOUNT ANGEL, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1993 to September 1997, Sept. 2002 to Oct. 2003.
WATER TEMPERATURE: July 1993 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Specific conductance records fair. Water temperature records good except for the period Oct. 1 to July 9, which are fair.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 825 microsiemens Oct. 3, 2002; minimum recorded, 77 microsiemens Feb. 6, 1996, but may have been lower during periods of missing record.
WATER TEMPERATURE: Maximum, 24.5°C July 21-23, 1994, July 26, 1996, July 28, 1998, but may have been higher during periods of missing record during the 1996 water year; minimum, 0.5°C Nov. 25, 26, 1993, Dec. 22, 23, 1998.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 825 microsiemens Oct. 3; minimum, 181 microsiemens Feb. 1.
WATER TEMPERATURE: Maximum, 22.7°C July 30; minimum, 2.9°C Nov. 3, 4.

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	424	359	394	---	---	---	441	438	441	363	331	352
2	786	415	631	---	---	---	439	434	436	368	298	353
3	825	707	793	---	---	---	434	431	432	356	306	342
4	802	723	783	---	---	---	---	---	---	353	312	335
5	803	724	765	---	---	---	---	---	---	335	316	326
6	727	724	726	---	---	---	---	---	---	349	334	340
7	725	701	716	---	---	---	---	---	---	362	349	357
8	706	682	698	465	356	442	---	---	---	---	---	---
9	696	643	685	456	360	401	---	---	---	---	---	---
10	679	672	676	453	384	414	---	---	---	373	371	372
11	685	651	680	421	387	403	---	---	---	371	355	367
12	693	655	685	421	388	412	424	381	403	355	314	341
13	681	661	673	414	383	396	518	331	460	357	321	346
14	661	650	654	431	382	409	545	456	507	358	337	354
15	655	623	651	452	431	442	568	530	552	372	354	363
16	642	626	632	459	436	454	530	390	492	377	371	374
17	635	602	621	454	399	441	519	458	490	377	364	375
18	604	571	588	445	414	438	497	481	490	373	364	372
19	571	512	542	455	405	441	506	496	502	373	371	372
20	695	444	552	464	443	454	508	369	480	372	371	371
21	750	695	731	468	451	462	500	419	465	372	369	371
22	750	675	735	471	449	465	457	444	452	371	294	349
23	684	549	613	473	466	470	466	453	461	377	311	364
24	549	486	518	469	435	460	468	464	466	360	347	355
25	504	497	501	467	449	464	469	456	466	360	348	356
26	501	444	492	461	441	452	464	406	448	360	303	338
27	496	479	493	455	444	453	431	363	396	330	324	327
28	520	484	497	456	453	456	404	388	395	338	326	333
29	513	500	507	453	429	445	407	397	404	346	286	325
30	514	465	505	441	432	440	406	301	392	289	194	232
31	509	493	497	---	---	---	334	299	323	219	195	207
MONTH	825	359	620	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	213	181	192	319	313	315	295	290	293	313	302	306
2	249	213	234	318	308	315	305	291	299	317	308	312
3	270	249	261	312	305	309	301	278	290	321	285	299
4	281	268	272	318	307	310	304	296	301	348	287	325
5	293	281	289	328	297	311	298	292	297	352	345	349
6	299	293	296	297	230	275	299	279	293	357	351	354
7	302	299	300	283	204	230	300	298	299	361	357	359
8	302	301	302	219	205	212	305	298	300	384	320	359
9	304	300	302	236	219	229	308	289	299	330	304	317
10	304	301	303	263	236	250	308	298	302	353	307	326
11	310	304	307	269	260	264	304	299	302	314	259	301
12	313	309	311	275	268	272	320	284	302	312	241	283
13	314	312	313	284	268	279	294	213	253	313	299	305
14	317	309	312	290	284	286	242	214	235	343	300	324
15	311	293	307	294	289	292	254	241	247	324	311	316
16	308	258	285	299	293	296	271	252	261	351	311	328
17	319	248	291	308	295	302	269	254	265	331	320	327
18	375	257	312	312	300	303	273	265	270	329	320	324
19	349	317	331	311	302	308	281	273	276	333	324	328
20	353	318	339	309	273	300	280	271	279	345	330	338
21	333	306	324	273	255	263	282	262	272	355	341	344
22	365	304	327	304	235	279	286	273	280	369	348	359
23	335	324	331	269	207	254	278	248	269	350	340	344
24	329	324	326	261	249	253	285	263	272	359	332	344
25	328	325	326	276	258	267	270	261	266	354	322	336
26	329	311	327	280	268	275	273	260	268	341	335	339
27	332	323	327	288	279	284	280	270	275	426	339	374
28	323	310	317	291	286	289	285	278	282	428	406	417
29	---	---	---	304	291	296	293	277	284	420	395	410
30	---	---	---	310	302	304	303	292	298	402	358	384
31	---	---	---	310	286	295	---	---	---	365	335	354
MONTH	375	181	302	328	204	281	320	213	281	428	241	338

14201300 ZOLLNER CREEK NEAR MOUNT ANGEL, OR--Continued

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	352	332	345	369	350	361	494	483	488	497	473	490
2	360	336	348	364	325	359	489	468	481	498	490	494
3	357	347	351	373	331	362	490	468	478	498	487	494
4	375	357	366	367	339	356	508	490	501	491	484	488
5	396	368	376	379	363	373	515	503	508	495	486	490
6	396	367	383	390	379	383	564	512	539	501	492	498
7	406	363	379	385	367	379	570	542	561	506	500	503
8	422	406	413	372	333	354	542	397	492	504	469	491
9	428	409	419	359	333	349	496	465	485	495	377	460
10	436	424	432	354	349	352	465	437	445	517	428	488
11	433	375	405	357	350	353	448	444	446	472	427	455
12	375	351	365	353	349	350	454	443	449	460	444	449
13	373	339	357	362	348	356	457	449	452	479	451	468
14	412	373	388	366	362	363	475	457	467	482	471	479
15	428	409	417	375	366	370	475	454	468	471	450	461
16	434	420	427	377	368	375	456	442	450	450	383	433
17	420	408	412	375	370	373	447	441	445	383	281	318
18	414	403	411	379	367	372	450	444	447	286	281	284
19	403	383	392	412	379	397	459	450	455	292	285	288
20	387	367	377	425	388	415	457	441	454	325	292	300
21	370	338	365	428	396	414	465	453	460	424	324	385
22	380	338	366	451	399	422	460	455	459	432	419	428
23	428	346	386	500	451	472	457	452	455	442	424	437
24	428	394	410	507	499	505	452	431	443	445	439	441
25	399	382	389	499	473	484	453	434	443	448	445	446
26	383	378	380	494	472	481	470	447	456	447	437	442
27	381	355	368	494	486	490	481	470	474	437	419	429
28	364	339	358	567	492	540	481	472	477	426	421	423
29	369	346	361	567	553	563	490	473	480	421	415	418
30	353	339	349	553	523	538	514	490	500	421	409	417
31	---	---	---	523	489	503	514	441	483	---	---	---
MONTH	436	332	383	567	325	412	570	397	472	517	281	437

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.7	11.4	11.8	5.0	3.9	4.5	4.0	3.6	3.8	8.7	8.4	8.5
2	12.9	11.6	12.2	4.3	3.5	3.9	5.0	4.0	4.5	9.6	8.6	9.0
3	12.9	12.6	12.8	4.0	2.9	3.4	5.1	4.6	4.9	9.6	9.2	9.4
4	13.6	12.9	13.3	4.2	2.9	3.6	5.1	4.9	4.9	9.9	9.3	9.6
5	13.9	13.4	13.6	5.1	3.7	4.4	---	---	---	9.3	8.5	8.8
6	14.4	13.7	14.0	---	4.7	---	---	---	---	8.5	7.6	8.0
7	14.1	13.0	13.6	---	---	---	---	---	---	8.0	7.0	7.3
8	13.7	12.9	13.3	8.1	6.8	7.8	---	---	---	---	---	---
9	13.7	13.0	13.3	8.8	8.1	8.5	---	---	---	---	---	---
10	13.2	12.2	12.7	9.1	8.4	8.7	---	---	---	6.5	6.2	6.3
11	12.2	10.5	11.2	9.5	9.0	9.3	---	---	---	6.5	6.2	6.3
12	10.5	9.1	9.8	10.4	9.5	10	8.7	7.8	8.2	7.4	6.5	6.9
13	9.7	8.4	9.1	10.4	10.1	10.3	8.8	7.8	8.2	8.1	7.3	7.6
14	9.4	8.0	8.8	10.6	10.1	10.4	9.3	8.4	8.9	8.4	7.7	8.2
15	9.6	8.1	8.9	10.1	9.0	9.5	9.1	8.8	8.9	7.8	7.2	7.5
16	10.3	8.5	9.4	9.0	8.4	8.6	9.1	8.6	8.9	7.6	6.9	7.3
17	10.5	9.1	9.8	9.1	8.4	8.8	8.6	8.2	8.4	7.4	6.4	6.9
18	10.5	9.5	9.9	8.9	8.4	8.6	8.3	7.7	8.0	6.9	6.0	6.5
19	11.5	10.1	10.7	10.2	8.9	9.6	8.1	7.7	7.9	6.5	5.8	6.2
20	12.7	11.5	12.2	10.3	9.7	10	8.1	7.5	7.8	6.6	6.1	6.4
21	13.1	12.6	12.8	9.9	9.7	9.8	8.3	7.9	8.1	7.0	6.4	6.7
22	13.1	12.6	12.8	10.1	9.9	10.0	8.3	8.0	8.2	7.7	6.6	7.0
23	12.6	11.2	11.7	10.5	10.1	10.3	8.3	7.4	7.7	8.2	7.3	7.7
24	11.2	9.8	10.4	10.2	9.1	9.9	7.8	7.2	7.5	9.1	8.1	8.6
25	9.8	8.8	9.2	9.1	6.4	7.8	7.9	7.4	7.7	10.0	9.1	9.4
26	8.8	7.9	8.3	6.4	5.0	5.7	7.9	7.6	7.7	10.8	10.0	10.4
27	8.0	7.1	7.5	5.0	4.5	4.8	8.4	7.6	8.1	10.2	9.7	9.9
28	9.2	7.6	8.2	4.8	4.2	4.5	8.6	8.3	8.4	9.9	9.6	9.7
29	9.2	8.2	8.9	4.5	3.9	4.2	8.6	8.2	8.4	9.7	9.3	9.4
30	8.2	6.3	7.4	4.4	3.8	4.1	8.6	8.1	8.3	10.7	9.6	10
31	6.3	4.7	5.2	---	---	---	8.8	8.2	8.5	11.3	10.6	11.0
MONTH	14.4	4.7	10.7	---	---	---	---	---	---	---	---	---

14201300 ZOLLNER CREEK NEAR MOUNT ANGEL, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.6	9.8	10.1	8.8	7.4	8.0	12.1	10.6	11.2	14.8	11.8	13.4
2	9.8	9.4	9.6	8.0	7.0	7.5	10.8	9.7	10.3	15.1	12.3	13.9
3	9.8	9.0	9.3	8.4	7.4	7.9	9.9	8.8	9.4	14.9	12.7	13.3
4	9.3	8.5	8.7	8.6	7.2	7.8	9.9	9.1	9.4	12.7	11.6	12.0
5	8.5	7.5	8.0	9.2	8.4	8.8	9.4	8.8	9.1	13.2	11.1	12.0
6	8.1	7.2	7.6	9.0	8.1	8.5	10.3	8.6	9.4	13.4	10.9	12.1
7	7.6	6.4	6.9	9.0	8.2	8.5	11.0	9.6	10.2	12.5	11.2	11.9
8	6.9	6.1	6.5	9.6	8.4	8.9	12.6	10.0	11.1	11.7	11.1	11.4
9	6.7	5.8	6.3	10.3	9.1	9.6	12.8	10.8	11.9	13.2	11.6	12.3
10	7.6	6.6	7.1	10.8	9.6	10.2	12.6	11.4	12.1	13.9	12.7	13.3
11	7.1	6.0	6.5	10.9	10.1	10.5	13.8	11.8	12.7	14.6	12.9	13.6
12	6.9	5.6	6.3	10.9	10.4	10.7	13.4	11.9	12.8	14.9	13.1	14.0
13	8.4	6.7	7.5	10.9	10.5	10.7	13.1	11.3	12.0	15.7	12.8	14.5
14	9.3	8.3	8.7	11.5	10.1	10.8	12.2	10.8	11.5	15.6	14.3	15.1
15	9.1	8.1	8.6	11.4	10.6	11.0	12.3	10.7	11.4	15.1	13.4	14.2
16	9.1	8.4	8.7	11.4	10.2	10.8	13.1	10.8	11.9	13.4	12.1	12.7
17	8.5	8.0	8.3	10.8	9.5	10.2	12.9	11.2	12.1	12.7	11.5	12.0
18	9.1	8.0	8.5	10.8	9.4	10.1	12.6	10.7	11.7	13.3	10.9	12.0
19	9.2	8.6	8.8	10.4	9.5	9.9	13.4	10.5	12.0	14.6	11.4	13.0
20	9.0	8.6	8.8	11.0	9.6	10.3	13.8	11.8	12.9	15.2	12.9	14.0
21	9.8	8.9	9.3	10.6	9.6	10.2	13.3	11.6	12.2	16.7	13.3	14.9
22	9.6	8.6	9.1	10.4	9.7	10.2	13.0	11.6	12.2	17.5	14.6	16.0
23	9.0	8.0	8.5	10.0	9.3	9.6	12.5	11.2	11.6	19.0	15.1	17.0
24	8.1	6.6	7.2	10.3	8.5	9.3	11.9	10.9	11.4	18.1	16.8	17.5
25	6.8	5.7	6.4	10.3	9.5	9.8	11.4	10.1	10.8	17.2	15.9	16.4
26	7.2	6.0	6.6	10.4	9.4	9.9	11.6	10.2	10.8	16.4	14.9	15.7
27	8.3	7.0	7.5	10.6	9.2	9.8	13.0	9.8	11.3	17.6	14.9	16.2
28	7.7	7.0	7.4	11.1	9.1	10.1	12.6	11.1	11.9	19.0	17.1	17.9
29	---	---	---	12.1	9.5	10.8	13.6	11.2	12.3	19.5	16.8	18.1
30	---	---	---	13.0	10.7	11.9	14.2	12.2	13.2	18.4	16.0	16.9
31	---	---	---	12.7	11.6	12.2	---	---	---	17.0	14.7	15.8
MONTH	10.6	5.6	8.0	13.0	7.0	9.8	14.2	8.6	11.4	19.5	10.9	14.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	17.5	14.9	16.3	19.3	17.3	18.3	21.3	18.6	20.0	18.3	15.7	17.1
2	17.4	14.5	16.2	19.3	15.6	17.5	20.0	18.8	19.2	18.1	15.6	16.9
3	17.9	14.8	16.4	19.1	15.3	17.3	19.1	17.8	18.5	17.9	16.1	17.1
4	19.0	15.4	17.2	19.4	15.6	17.4	19.8	16.7	18.2	18.9	16.5	17.7
5	20.0	16.6	18.4	20.0	16.0	18.0	18.7	17.4	17.9	19.3	16.7	18.0
6	21.2	17.5	19.4	20.6	16.6	18.6	19.0	17.0	17.9	19.0	16.9	17.9
7	20.8	17.9	19.5	20.7	16.6	18.6	20.3	17.5	18.7	18.1	17.0	17.6
8	20.1	17.7	19.1	19.3	17.1	18.2	19.3	17.9	18.6	17.2	16.2	16.7
9	19.1	16.8	17.4	20.8	16.2	18.4	19.9	18.4	19.0	16.4	15.4	15.7
10	17.7	15.8	16.8	21.0	16.7	18.9	20.0	18.0	18.9	16.2	15.5	15.8
11	18.3	16.1	17.1	21.1	17.4	19.3	19.5	17.5	18.6	16.9	16.0	16.4
12	17.3	15.6	16.1	21.1	17.6	19.4	19.9	17.2	18.5	17.3	15.8	16.5
13	16.4	15.1	15.7	20.7	18.5	19.6	19.3	16.8	18.1	16.8	14.5	15.7
14	17.2	15.1	16.1	21.5	17.4	19.4	20.2	16.7	18.4	16.2	14.2	15.3
15	18.0	14.7	16.4	21.6	17.8	19.8	19.6	18.0	18.8	15.4	13.7	14.7
16	18.6	15.0	16.9	21.1	18.7	19.8	19.6	17.0	18.3	14.7	13.7	14.2
17	19.8	15.9	17.9	20.9	17.4	19.2	19.9	17.1	18.5	16.3	13.5	15.0
18	18.5	16.6	17.1	20.8	17.0	18.9	20.5	17.5	19.0	16.6	14.8	15.8
19	16.6	15.2	15.8	21.3	17.3	19.3	20.5	18.0	19.2	16.4	15.4	15.9
20	15.8	14.6	15.2	21.7	17.8	19.8	19.5	16.9	18.3	16.2	14.3	15.3
21	15.7	14.0	14.9	21.9	19.1	20.5	19.1	16.5	17.9	15.7	13.5	14.6
22	15.1	13.8	14.5	22.4	19.7	20.9	18.1	16.9	17.6	15.8	13.2	14.5
23	14.9	13.8	14.4	21.5	19.2	20.5	18.5	16.1	17.3	15.6	13.0	14.3
24	16.9	13.8	15.2	21.4	18.8	20.0	18.4	15.3	16.9	15.6	13.2	14.4
25	18.0	14.3	16.2	20.6	17.6	19.0	18.4	15.6	17.0	15.8	13.3	14.6
26	19.9	15.7	17.7	19.9	17.4	18.6	18.1	16.3	17.2	16.3	13.8	15.0
27	21.2	17.2	19.1	20.1	17.4	18.7	18.6	16.6	17.5	16.5	14.0	15.3
28	21.8	17.3	19.5	20.6	18.0	19.4	18.4	15.7	17.1	16.6	14.8	15.7
29	21.9	18.5	20.1	22.0	18.8	20.4	18.6	15.8	17.2	15.8	15.2	15.5
30	20.9	18.3	19.5	22.7	19.0	20.8	18.7	16.1	17.4	15.8	14.5	15.1
31	---	---	---	22.1	19.1	20.6	19.1	16.2	17.6	---	---	---
MONTH	21.9	13.8	17.1	22.7	15.3	19.2	21.3	15.3	18.2	19.3	13.0	15.8

14201340 PUDDING RIVER NEAR WOODBURN, OR

LOCATION.--Lat 45°09'05", long 122°48'11", in NW 1/4 SW 1/4 sec. 10, T.5 S., R.1 W., Marion County, Hydrologic Unit 17090009, on left bank 1.0 mile east of Woodburn, and at mile 23.4.

DRAINAGE AREA.--314 mi^2.

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 130 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--6 years (water years 1998-2003), 815 ft^3/s, 35.26 in/yr, 590,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,500 ft^3/s Dec. 29, 1998, gage height, 29.05 ft; minimum discharge, 5.5 ft^3/s Aug. 24, 2003.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 8, 1996 reached a stage of 32.76 ft, from floodmark, discharge about 29,000 ft^3/s, on basis of runoff comparison with nearby station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 2	1230	*5,960	*27.71	Mar. 10	0700	4,600	26.39

Minimum discharge, 5.5 ft^3/s Aug. 24.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	25	102	3110	4590	947	1420	1310	261	69	12	14
2	46	28	95	2970	5790	894	1460	1150	241	66	12	13
3	46	36	92	2880	5210	874	1450	1030	224	64	13	14
4	43	34	88	2850	4060	911	1550	963	209	58	16	15
5	44	33	85	2950	3310	859	1580	1170	192	55	19	12
6	49	34	87	e2780	2810	1090	1640	1210	175	53	20	11
7	45	37	86	2490	2410	2280	1800	1090	161	52	16	15
8	41	49	79	2170	2080	3570	1750	1000	154	49	20	15
9	35	84	76	1840	1760	4220	1660	939	149	48	24	21
10	29	217	88	1520	1430	4520	1650	849	145	39	22	31
11	25	266	134	1190	1140	3970	1620	779	146	31	20	35
12	25	236	234	1070	1010	3250	1660	883	143	28	16	33
13	25	223	585	1490	923	2870	2020	857	142	30	11	33
14	25	287	873	1720	851	2550	2410	731	164	35	11	30
15	23	315	1010	1680	810	2250	2300	646	177	44	10	27
16	23	300	1490	1470	866	2020	1940	604	147	42	14	27
17	21	294	2030	1230	1150	1770	1720	594	130	33	15	26
18	20	332	1970	1050	1710	1510	1660	598	115	26	14	32
19	20	300	1780	915	1910	1290	1530	570	103	26	12	33
20	20	331	1510	815	1810	1230	1360	525	112	26	13	30
21	24	296	1490	734	1730	1250	1280	480	108	26	11	28
22	22	248	1890	690	1810	1910	1330	440	120	24	7.7	28
23	22	212	1880	888	1810	2760	1280	414	152	23	6.5	26
24	21	180	1650	973	1650	2700	1690	392	139	18	6.0	25
25	21	168	1360	986	1430	2420	1960	370	118	15	11	23
26	22	152	1130	1240	1240	2260	1870	398	103	14	14	21
27	21	134	1520	2020	1110	2210	1810	366	86	13	14	19
28	24	125	2150	2060	1000	2100	1670	331	85	15	10	20
29	26	117	2260	1880	---	1930	1560	302	77	19	9.3	22
30	25	109	2280	2410	---	1710	1480	280	75	16	8.1	22
31	25	---	2710	3480	---	1500	---	266	---	14	11	---
TOTAL	883	5202	32814	55551	57410	65625	50110	21537	4353	1071	418.6	701
MEAN	28.5	173	1059	1792	2050	2117	1670	695	145	34.5	13.5	23.4
MAX	49	332	2710	3480	5790	4520	2410	1310	261	69	24	35
MIN	20	25	76	690	810	859	1280	266	75	13	6.0	11
AC-FT	1750	10320	65090	110200	113900	130200	99390	42720	8630	2120	830	1390
CFSM	0.09	0.55	3.37	5.71	6.53	6.74	5.32	2.21	0.46	0.11	0.04	0.07
IN.	0.10	0.62	3.89	6.58	6.80	7.77	5.94	2.55	0.52	0.13	0.05	0.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

MEAN	172	753	1696	1895	1781	1563	923	636	268	77.6	29.8	30.2
MAX	600	1394	2845	2842	2835	2117	1670	846	459	112	52.9	43.5
(WY)	1998	1999	1999	1999	1999	2003	2003	1998	1998	1998	1999	1998
MIN	28.5	173	717	478	460	582	504	354	145	34.5	13.5	19.9
(WY)	2003	2003	2001	2001	2001	2001	2000	2002	2003	2003	2003	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	254789.4		295675.6			
ANNUAL MEAN	698		810		815	
HIGHEST ANNUAL MEAN					1191	1999
LOWEST ANNUAL MEAN					334	2001
HIGHEST DAILY MEAN	4400	Jan 28	5790	Feb 2	7210	Dec 30 1998
LOWEST DAILY MEAN	7.6	Sep 27	6.0	Aug 24	6.0	Aug 24 2003
ANNUAL SEVEN-DAY MINIMUM	13	Aug 13	9.6	Aug 19	9.6	Aug 19 2003
ANNUAL RUNOFF (AC-FT)	505400		586500		590300	
ANNUAL RUNOFF (CFSM)	2.22		2.58		2.59	
ANNUAL RUNOFF (INCHES)	30.19		35.03		35.26	
10 PERCENT EXCEEDS	2120		2160		2260	
50 PERCENT EXCEEDS	257		236		419	
90 PERCENT EXCEEDS	21		16		28	

e Estimated

14202000 PUDDING RIVER AT AURORA, OR

LOCATION.--Lat 45°14'00", long 122°44'56", in SW 1/4 SE 1/4 sec.12, T.4 S., R.1 W., Clackamas County, Hydrologic Unit 17090009, upstream side of bridge on U.S. Highway 99E at Aurora, 0.9 mi upstream from Mill Creek and at mile 8.11.

DRAINAGE AREA.--479 mi^2.

PERIOD OF RECORD.--October 1928 to September 1964, October 1993 to October 1997, October 2002 to September 2003.

REVISED RECORDS.--WDR OR-95-1: 1994(M). WDR OR-96-1: 1938(M), 1949(M).

GAGE.--Water-stage recorder except Oct. 1 to Dec. 10, wire weight gage read once daily. Datum of gage is 72.23 ft above sea level. Prior to Sept. 30, 1961 staff or wire-weight gage at same site at datum 5.00 ft higher. All gage heights given herein are at present datum.

REMARKS.--Records fair except for discharges below 50 ft^3/s and estimated daily discharges, which are poor. Many diversions for irrigation upstream from station. Additional data for period July to September 2002 available in files of the Portland Field Office.

AVERAGE DISCHARGE.--41 years (water years 1929-64, 1994-97, 2003), 1,246 ft^3/s, 35.35 in/yr, 902,800 acre-ft/yr.

EXTREMES FOR PERIOD RECORD.--Maximum discharge, 43,700 ft^3/s Feb. 8, 1996, gage height, 30.72 ft, from rating curve extended above 23,000 ft^3/s; minimum daily discharge, 3.5 ft^3/s Aug. 6, 20, 28, 1994, but may have been lower during period of missing record.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 7, 1923 reached a stage of 30.0 ft, present datum, from floodmarks, discharge, 37,000 ft^3/s (revised), from rating curve extended above 23,000 ft^3/s. Flood of Dec. 23, 1964 reached a stage of 29.57 ft, discharge, 34,000 ft^3/s, from rating curve extended above 23,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,040 ft^3/s Feb. 1, gage height, 24.05 ft; minimum daily discharge, 8.0 ft^3/s Aug. 24.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79	e75	183	4360	7620	1260	1970	1850	489	150	10	9.1
2	90	e78	181	4270	8680	1200	2040	1650	468	134	8.7	14
3	132	e90	187	4080	7780	1150	2040	1470	441	125	9.0	14
4	132	e84	178	4060	6330	1190	2150	1350	417	115	9.3	13
5	115	e83	173	4230	5170	1150	2220	1480	390	104	12	17
6	109	99	171	4110	4230	1320	2240	1650	359	99	14	16
7	108	114	164	3570	3440	3010	2430	1520	331	99	15	13
8	112	134	157	3020	2880	5510	2380	1390	311	93	15	20
9	110	162	157	2530	2430	6590	2240	1310	303	84	19	35
10	99	269	171	2110	2030	6710	2220	1210	291	77	27	67
11	99	381	231	1740	1660	6140	2200	1120	291	53	25	91
12	95	365	306	1510	1420	5230	2270	1170	286	36	20	91
13	82	352	629	1910	1290	4450	2790	1200	285	30	13	83
14	81	378	1020	2380	1210	3850	3460	1080	297	36	e11	85
15	80	387	1200	2380	1140	3320	3520	981	339	48	e11	74
16	78	393	1710	2100	1150	2960	2920	930	315	61	e14	74
17	75	379	2610	1810	1430	2610	2450	919	273	56	e16	80
18	73	400	2560	1560	2320	2240	2310	923	249	36	16	73
19	e65	405	2290	1370	2700	1930	2140	898	219	27	13	114
20	e65	391	1960	1230	2500	1790	1930	846	217	26	e13	112
21	e73	377	1810	1130	2330	1800	1800	797	220	26	9.6	76
22	e70	357	2380	1060	2370	2410	1850	750	225	21	12	72
23	e73	296	2440	1270	2400	4000	1820	713	271	20	e9.0	65
24	e71	271	2150	1500	2220	4270	2320	685	291	18	e8.0	56
25	e71	255	1800	1480	1950	3790	2850	656	254	14	e11	52
26	e72	245	1480	1710	1700	3340	2710	659	224	10	e13	48
27	e70	231	1830	2760	1510	3220	2540	647	194	9.6	13	39
28	e75	222	2900	2940	1360	2990	2340	602	179	9.3	13	35
29	e80	197	3080	2650	---	2700	2150	563	164	10	10	35
30	e75	191	3150	3290	---	2380	2050	531	161	12	8.1	39
31	e75	---	3630	5390	---	2100	---	506	---	11	8.4	---
TOTAL	2684	7661	42888	79510	83250	96610	70350	32056	8754	1649.9	406.1	1612.1
MEAN	86.6	255	1383	2565	2973	3116	2345	1034	292	53.2	13.1	53.7
MAX	132	405	3630	5390	8680	6710	3520	1850	489	150	27	114
MIN	65	75	157	1060	1140	1150	1800	506	161	9.3	8.0	9.1
AC-FT	5320	15200	85070	157700	165100	191600	139500	63580	17360	3270	805	3200
CFSM	0.18	0.53	2.89	5.35	6.21	6.51	4.90	2.16	0.61	0.11	0.03	0.11
IN.	0.21	0.59	3.33	6.17	6.47	7.50	5.46	2.49	0.68	0.13	0.03	0.13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2003, BY WATER YEAR (WY)

MEAN	338	1426	2455	2759	2753	2136	1567	884	417	150	68.9	90.9
MAX	1774	4643	6090	5722	6948	4235	3355	2192	1101	364	120	213
(WY)	1948	1951	1997	1956	1996	1961	1963	1963	1933	1952	1943	1941
MIN	63.8	78.9	436	766	832	599	456	242	158	53.2	11.3	32.8
(WY)	1953	1937	1945	1937	1941	1941	1941	1939	1940	2003	1994	1994

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 1929 - 2003	
ANNUAL TOTAL	427431.1			
ANNUAL MEAN	1171		1246	
HIGHEST ANNUAL MEAN			2037	1997
LOWEST ANNUAL MEAN			695	1941
HIGHEST DAILY MEAN	8680	Feb 2	36100	Feb 8 1996
LOWEST DAILY MEAN	8.0	Aug 24	3.5	Aug 6 1994
ANNUAL SEVEN-DAY MINIMUM	10	Jul 28	6.4	Aug 17 1994
ANNUAL RUNOFF (AC-FT)	847800		902800	
ANNUAL RUNOFF (CFSM)	2.44		2.60	
ANNUAL RUNOFF (INCHES)	33.20		35.35	
10 PERCENT EXCEEDS	3000		3470	
50 PERCENT EXCEEDS	378		636	
90 PERCENT EXCEEDS	15		65	

e Estimated

14202980 SCOGGINS CREEK BELOW HENRY HAGG LAKE, NEAR GASTON, OR

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 48.

DRAINAGE AREA.--38.8 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 187.48 ft above NGVD of 1929.

REMARKS.--No estimated daily discharges. Records good. 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.--28 years (water years 1976-2003), 114 ft^3/s, 82,590 acre-ft, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,210 ft^3/s Apr. 23, 1996, gage height, 16.88 ft; minimum discharge, 0.72 ft^3/s Nov. 4, 5, 1996, Dec. 16, 1997.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,120 ft^3/s Mar. 24, gage height, 12.37 ft; minimum discharge, 6.4 ft^3/s Dec. 12.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	96	45	9.0	13	9.9	203	66	30	119	206	161
2	74	91	38	9.4	13	10	203	80	47	128	198	161
3	101	91	33	9.2	13	10	174	81	83	141	198	161
4	114	91	33	9.7	419	10	151	82	97	141	198	160
5	122	91	29	9.2	759	10	151	88	100	141	204	162
6	122	90	28	9.2	566	169	152	101	104	141	207	162
7	122	90	31	9.2	177	395	152	101	110	143	191	162
8	122	62	31	9.2	105	411	129	101	113	149	185	154
9	121	29	31	9.2	105	201	96	94	106	148	189	132
10	124	29	22	9.2	104	193	126	87	100	157	188	120
11	136	29	8.8	9.4	105	526	127	87	100	163	185	104
12	146	26	8.1	9.9	104	609	131	68	109	160	180	88
13	145	24	9.0	11	104	217	131	54	115	159	178	83
14	142	24	9.9	13	104	249	131	54	115	159	172	83
15	142	24	9.5	13	104	199	131	55	115	151	168	98
16	143	24	10	13	104	199	131	55	115	149	166	111
17	145	24	9.5	13	106	171	131	55	121	162	165	115
18	145	24	9.6	13	106	151	119	55	125	169	163	121
19	144	24	9.5	14	90	185	101	55	108	169	162	121
20	144	24	9.7	14	79	331	101	55	100	169	167	122
21	143	24	9.9	22	63	324	102	54	100	168	168	133
22	140	23	9.9	32	52	124	86	64	100	174	173	141
23	136	22	9.1	32	52	281	71	69	100	172	177	154
24	135	22	8.5	42	32	891	92	64	100	169	177	164
25	134	29	8.5	59	13	1000	105	64	107	176	177	174
26	134	43	8.6	59	10	613	106	63	133	182	169	177
27	133	46	8.8	150	9.9	339	106	42	153	182	161	176
28	133	46	8.6	322	10	273	107	31	152	181	164	176
29	127	45	8.6	287	---	185	78	30	152	195	167	169
30	117	45	9.6	13	---	131	45	30	141	210	164	171
31	106	---	9.1	14	---	156	---	30	---	209	162	---
TOTAL	3956	1352	513.8	1247.8	3521.9	8572.9	3669	2015	3251	5036	5529	4216
MEAN	128	45.1	16.6	40.3	126	277	122	65.0	108	162	178	141
MAX	146	96	45	322	759	1000	203	101	153	210	207	177
MIN	64	22	8.1	9.0	9.9	9.9	45	30	30	119	161	83
AC-FT	7850	2680	1020	2480	6990	17000	7280	4000	6450	9990	10970	8360

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2003, BY WATER YEAR (WY)

MEAN	94.7	63.5	154	178	135	131	81.0	57.6	63.6	126	152	131
MAX	155	233	571	700	720	326	272	122	121	201	216	206
(WY)	1980	1985	1996	1997	1999	1983	1996	1996	1992	1994	1996	1993
MIN	26.2	16.7	10.2	9.69	9.50	9.98	9.91	19.9	14.3	52.3	83.4	72.9
(WY)	1978	1988	2001	2001	1977	2001	2001	1977	1977	1993	1977	1977

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1976 - 2003	
ANNUAL TOTAL	44591.5		42880.4			
ANNUAL MEAN	122		117		114	
HIGHEST ANNUAL MEAN					217	1999
LOWEST ANNUAL MEAN					40.4	1977
HIGHEST DAILY MEAN	859	Jan 14	1000	Mar 25	1940	Jan 3 1997
LOWEST DAILY MEAN	8.1	Dec 12	8.1	Dec 12	3.4	Dec 2 2001
ANNUAL SEVEN-DAY MINIMUM	8.7	Dec 23	8.7	Dec 23	5.5	Dec 1 2001
ANNUAL RUNOFF (AC-FT)	88450		85050		82590	
10 PERCENT EXCEEDS	186		188		215	
50 PERCENT EXCEEDS	117		106		79	
90 PERCENT EXCEEDS	9.9		10		12	

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 right bank 5 ft upstream from highway bridge, 1.0 mi south of Dilley, 1.2 mi downstream from Scoggins Creek, and at mile 58.8.

DRAINAGE AREA.--125 mi^2.

PERIOD OF RECORD.--October 1939 to current year.

REVISED RECORDS.--WSP 1935: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 147.57 ft above NGVD 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 fair. 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. Continuous water-quality records for the period November 1963 to September 1968 have been collected at this location. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--35 years (water years 1940-1974), 415 ft^3/s, 300,800 acre-ft/yr.
29 years (water years 1975-2003), 364 ft^3/s, 263,700 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,100 ft^3/s Dec. 22, 1964, gage height, 19.34 ft, from rating curve extended above 6,000 ft^3/s; minimum discharge, 0.08 ft^3/s Sept. 3, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,400 ft^3/s Feb. 1, gage height, 17.83 ft; minimum discharge, 46 ft^3/s Dec. 6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	135	140	66	970	2870	246	584	264	85	166	239	211
2	125	132	62	915	1940	222	562	264	87	164	240	210
3	148	133	53	1240	1240	210	546	249	134	182	242	213
4	163	134	54	1360	980	195	530	253	151	183	242	210
5	170	134	58	1470	1450	183	519	266	161	184	248	214
6	169	135	48	1040	1380	309	540	261	162	183	256	213
7	168	138	51	755	858	711	563	248	167	180	242	218
8	171	164	49	610	593	1290	564	237	169	185	230	214
9	172	122	49	487	495	1370	510	222	159	186	239	204
10	173	130	63	391	427	1240	497	203	148	193	235	189
11	178	117	188	333	382	1220	468	195	148	204	231	175
12	186	104	327	447	349	1500	471	187	152	198	224	157
13	186	125	317	537	324	1300	537	160	162	199	223	166
14	183	116	442	536	302	1140	577	153	162	200	225	164
15	184	90	703	493	306	1030	559	148	162	192	222	163
16	185	69	899	439	335	935	527	159	158	182	221	162
17	186	85	913	385	488	799	488	160	158	201	220	163
18	184	82	711	336	860	690	442	150	166	208	218	159
19	186	125	626	296	837	650	382	144	161	206	213	155
20	187	135	521	264	709	734	354	140	152	206	217	155
21	187	90	420	240	636	1030	344	136	151	205	222	163
22	190	71	340	271	573	1730	315	136	151	206	223	166
23	185	62	313	354	521	1950	297	142	150	208	233	181
24	185	55	283	375	437	1970	364	134	148	204	233	191
25	186	52	257	425	352	2060	379	132	149	208	230	203
26	177	67	254	561	305	1830	375	130	169	216	225	206
27	171	72	385	725	272	1330	364	119	196	218	212	205
28	170	71	458	775	249	1020	347	96	196	216	213	205
29	167	69	422	824	---	809	328	92	194	219	220	202
30	159	67	514	891	---	659	272	89	188	239	214	198
31	149	---	957	2090	---	592	---	88	---	240	212	---
TOTAL	5365	3086	10803	20835	20470	30954	13605	5357	4696	6181	7064	5635
MEAN	173	103	348	672	731	999	454	173	157	199	228	188
MAX	190	164	957	2090	2870	2060	584	266	196	240	256	218
MIN	125	52	48	240	249	183	272	88	85	164	212	155
AC-FT	10640	6120	21430	41330	40600	61400	26990	10630	9310	12260	14010	11180

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2003, BY WATER YEAR (WY)

MEAN	145	314	740	793	723	554	332	170	119	150	176	167
MAX	320	882	2062	1615	2250	1086	974	424	189	211	269	370
(WY)	1998	1985	1996	1999	1999	1983	1991	1996	2000	2000	1975	1975
MIN	6.03	47.2	41.1	31.8	62.0	125	99.8	80.8	65.9	91.0	93.0	82.6
(WY)	1975	1988	1977	1977	1977	2001	1977	1977	1979	1977	1977	1985

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1975 - 2003	
ANNUAL TOTAL	138280		134051			
ANNUAL MEAN	379		367		364	
HIGHEST ANNUAL MEAN					695	1999
LOWEST ANNUAL MEAN					104	1977
HIGHEST DAILY MEAN	3480	Jan 8	2870	Feb 1	8620	Feb 8 1996
LOWEST DAILY MEAN	48	Dec 6	48	Dec 6	3.3	Oct 20 1974
ANNUAL SEVEN-DAY MINIMUM	52	Dec 3	52	Dec 3	3.9	Oct 17 1974
ANNUAL RUNOFF (AC-FT)	274300		265900		263700	
10 PERCENT EXCEEDS	1010		845		904	
50 PERCENT EXCEEDS	211		213		187	
90 PERCENT EXCEEDS	112		125		86	

14205400 EAST FORK DAIRY CREEK NEAR MEACHAM, OR

LOCATION.--Lat 45°40'51", long 123°04'12", in SW 1/4 SW 1/4 sec.4, T.2 N., R.3 W., Washington County, Hydrologic Unit 17090010, on right bank of private drive, 0.9 mi downstream from Murtaugh Creek, and at mile 12.3.

DRAINAGE AREA.-- 32.92 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 2002 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 320 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR CURRENT YEAR.---Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	0700	478	6.71	Jan. 31	1400	*1,580	*7.88
Jan. 4	1330	435	6.64	Mar. 22	1200	665	6.98

Minimum discharge, 7.3 ft^3/s Oct. 16.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e11	10	11	222	1010	89	151	86	38	23	14	10
2	e10	11	11	242	608	83	146	82	37	22	14	10
3	11	11	11	303	403	79	152	87	36	21	14	9.9
4	11	11	11	369	283	75	137	95	35	21	14	9.8
5	9.9	11	11	315	228	73	130	86	34	21	15	9.7
6	9.5	11	10	223	187	75	137	82	33	21	15	9.7
7	9.3	13	10	159	158	140	133	81	32	20	14	11
8	9.2	17	10	122	138	139	132	78	32	21	15	11
9	9.0	24	10	99	121	281	128	73	32	20	14	15
10	e10	17	22	83	109	304	123	70	32	19	14	13
11	e9.0	15	42	77	99	249	116	67	31	19	14	12
12	8.5	16	44	106	91	238	137	65	31	19	13	11
13	8.3	17	43	94	85	225	187	62	31	19	13	10
14	8.3	20	113	96	79	214	175	60	30	19	13	10
15	7.8	14	88	91	96	222	164	59	29	18	13	10
16	7.7	14	270	85	106	201	148	60	28	18	13	10
17	8.8	15	122	78	239	180	136	57	27	18	13	10
18	e8.0	13	114	71	335	162	121	55	27	17	12	10
19	7.9	15	98	65	276	163	110	52	28	17	12	10
20	8.1	14	77	61	224	169	103	50	27	17	12	9.9
21	8.4	13	61	57	191	264	102	49	27	16	12	9.8
22	8.4	12	51	69	166	593	92	48	27	16	12	9.2
23	9.3	12	47	69	146	516	105	46	26	16	12	9.1
24	8.0	12	43	75	132	385	107	46	26	16	12	9.2
25	8.0	11	40	86	120	317	98	45	24	16	11	8.9
26	8.0	11	41	222	111	283	98	44	24	15	11	8.7
27	8.1	11	62	241	102	241	94	43	23	15	11	8.6
28	8.3	11	59	183	95	217	92	41	22	15	11	8.7
29	8.5	11	57	167	---	193	95	40	22	15	11	8.8
30	9.1	11	136	237	---	174	90	40	23	14	11	9.2
31	10	---	302	1140	---	161	---	39	---	14	10	---
TOTAL	276.4	404	2027	5507	5938	6705	3739	1888	874	558	395	302.2
MEAN	8.92	13.5	65.4	178	212	216	125	60.9	29.1	18.0	12.7	10.1
MAX	11	24	302	1140	1010	593	187	95	38	23	15	15
MIN	7.7	10	10	57	79	73	90	39	22	14	10	8.6
AC-FT	548	801	4020	10920	11780	13300	7420	3740	1730	1110	783	599
CFSM	0.27	0.41	1.99	5.40	6.44	6.57	3.79	1.85	0.88	0.55	0.39	0.31
IN.	0.31	0.46	2.29	6.22	6.71	7.58	4.23	2.13	0.99	0.63	0.45	0.34

WTR YR 2003 TOTAL 28613.6 MEAN 78.4 MAX 1140 MIN 7.7 AC-FT 56760 CFSM 2.38 IN. 32.33

e Estimated

14205400 EAST FORK DAIRY CREEK NEAR MEACHAM, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: September 2002 to September 2003.
WATER TEMPERATURE: September 2002 to September 2003.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--
SPECIFIC CONDUCTANCE: Records good, except for the periods Feb. 4 to May 12, Sept. 16-29, which are poor.
WATER TEMPERATURE: Records fair.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 108 microsiemens Sept. 16, 2002; minimum, 36 microsiemens Jan. 31, 2003.
WATER TEMPERATURE: Maximum, 20.4°C July 30, 2003; minimum, 1.2°C Nov. 1, 2002.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 96 microsiemens Sept. 30; minimum, 36 microsiemens Jan. 31.
WATER TEMPERATURE: Maximum, 20.4°C July 30; minimum, 1.2°C Nov. 1.

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	69	67	68	68	66	67	69	68	68	41	40	40
2	69	67	68	68	66	67	69	68	69	41	39	40
3	68	66	67	68	66	67	69	67	68	40	40	40
4	70	68	69	68	66	67	69	67	68	40	39	39
5	70	68	69	68	66	68	69	68	68	40	39	40
6	70	68	70	70	68	69	69	67	68	41	40	40
7	70	68	69	75	70	71	68	67	68	42	41	42
8	72	68	69	78	75	76	68	66	67	44	42	43
9	70	68	69	76	72	74	68	66	67	44	43	44
10	71	68	69	74	72	74	68	64	66	45	44	44
11	71	68	69	73	72	73	68	60	64	45	44	45
12	69	67	68	74	71	72	65	59	63	45	43	44
13	69	67	68	73	72	72	62	59	61	46	45	45
14	70	66	68	72	70	71	59	52	54	46	45	45
15	71	66	68	72	71	71	52	48	51	46	45	45
16	69	67	68	71	69	70	49	44	46	46	45	45
17	70	66	68	70	69	70	45	44	45	46	45	45
18	70	66	68	71	70	70	45	44	45	46	45	45
19	70	66	68	71	70	70	44	44	44	46	45	45
20	70	68	69	71	70	71	45	43	44	47	46	46
21	70	68	69	71	70	71	46	44	45	48	47	47
22	70	68	69	71	70	71	47	46	46	48	45	46
23	71	67	69	72	70	71	47	46	46	48	46	47
24	70	67	68	72	70	71	48	46	47	48	46	47
25	69	67	68	71	69	70	48	47	47	48	44	47
26	68	66	67	69	68	69	48	46	47	45	42	44
27	68	66	67	69	68	69	47	45	46	43	42	42
28	68	66	67	69	68	68	47	45	46	43	42	42
29	68	67	68	69	67	68	45	44	45	43	42	43
30	68	66	67	69	67	68	45	41	43	43	41	42
31	68	67	67	---	---	---	41	40	40	41	36	37
MONTH	72	66	68	78	66	70	69	40	55	48	36	43

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	39	37	38	48	47	47	46	45	46	50	48	49
2	40	39	40	48	47	47	46	44	45	54	48	49
3	42	40	41	48	47	48	46	44	45	50	46	48
4	43	41	42	49	48	48	47	45	46	49	46	47
5	43	42	43	49	48	49	46	46	46	49	48	48
6	44	43	43	49	48	48	47	45	45	50	48	49
7	45	44	44	48	44	45	47	45	46	50	48	49
8	45	44	44	46	44	45	47	46	46	50	48	49
9	45	44	44	45	42	42	47	46	46	51	48	50
10	46	44	45	42	42	42	48	46	47	51	49	50
11	47	45	46	43	42	42	48	46	47	51	50	50
12	47	46	46	43	42	42	47	45	46	52	50	50
13	48	47	47	43	43	43	46	43	44	52	50	51
14	49	48	48	44	43	43	45	44	44	52	50	51
15	49	45	47	44	43	43	47	44	45	52	50	51
16	47	45	47	44	43	44	46	44	45	52	50	51
17	45	42	44	44	43	44	46	45	46	52	50	51
18	43	42	43	44	43	43	47	45	46	53	51	52
19	43	42	43	44	43	44	52	46	47	54	51	52
20	44	42	43	44	43	44	48	46	47	54	52	53
21	44	42	44	44	41	43	48	46	47	55	53	54
22	44	44	44	42	39	40	49	47	48	55	53	54
23	46	44	45	41	40	40	49	46	47	56	54	54
24	45	44	44	42	41	41	48	46	47	55	54	54
25	45	44	44	42	41	42	48	47	47	56	53	54
26	46	44	45	43	42	42	48	46	47	55	54	54
27	48	45	46	44	43	43	50	47	48	56	54	54
28	47	46	46	44	42	43	49	47	48	56	54	55
29	---	---	---	45	44	44	49	47	48	56	54	55
30	---	---	---	46	44	45	49	47	48	57	54	56
31	---	---	---	46	44	46	---	---	---	56	54	55
MONTH	49	37	44	49	39	44	52	43	46	57	46	52

14205400 EAST FORK DAIRY CREEK NEAR MEACHAM CORNER, OR--Continued

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	56	54	55	62	60	61	66	64	65	69	66	68
2	57	55	56	62	60	61	66	64	65	69	66	68
3	58	55	56	62	60	61	66	64	65	69	67	68
4	58	56	57	62	60	61	66	64	65	70	67	69
5	59	57	58	62	60	61	66	64	65	70	68	69
6	59	57	58	63	61	62	67	65	66	70	67	68
7	60	58	59	63	61	62	67	64	66	70	66	69
8	60	57	58	63	61	62	67	64	66	70	66	68
9	59	57	58	63	62	62	68	65	66	70	67	68
10	59	57	58	64	62	63	67	64	66	70	68	69
11	59	57	58	64	62	63	67	64	66	71	68	70
12	59	57	58	64	62	63	67	64	66	70	68	69
13	59	57	58	64	62	63	67	65	66	72	69	70
14	59	57	58	64	62	63	69	65	67	72	67	69
15	60	58	59	64	62	63	68	66	67	70	68	69
16	60	58	59	64	62	63	68	65	67	71	68	70
17	60	59	60	64	62	63	68	66	67	72	69	70
18	60	58	59	64	63	64	68	66	67	74	72	73
19	60	58	59	65	63	64	68	66	67	77	74	75
20	60	58	59	65	63	64	68	65	67	78	75	77
21	60	58	59	66	64	65	68	66	67	78	76	77
22	60	58	59	67	64	65	68	65	67	78	75	76
23	60	58	59	66	64	65	68	65	67	78	75	76
24	60	59	60	65	63	64	68	66	67	81	77	78
25	61	59	60	65	63	64	69	66	67	84	81	83
26	62	60	61	65	63	64	68	65	67	85	80	82
27	62	60	61	66	64	65	68	65	67	90	72	86
28	62	60	61	66	64	65	68	66	67	94	90	92
29	63	61	62	67	65	66	68	65	67	95	93	94
30	62	60	61	67	65	66	69	66	68	96	68	78
31	---	---	---	67	65	66	69	67	68	---	---	---
MONTH	63	54	59	67	60	63	69	64	66	96	66	74
YEAR	96	36	57									

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.6	8.2	9.4	3.6	1.2	2.5	4.5	3.3	3.8	7.7	7.2	7.4
2	10.6	8.0	9.4	3.4	1.4	2.5	5.7	4.5	5.1	8.5	7.6	8.0
3	10.6	10.2	10.4	3.9	1.7	2.8	4.9	3.4	4.2	8.4	7.5	8.1
4	12.1	10.5	11.2	4.6	2.7	3.7	5.3	4.6	4.9	8.8	7.5	8.4
5	11.8	11.1	11.5	6.2	4.3	5.3	6.3	4.8	5.6	7.7	6.7	7.1
6	13.6	11.4	12.3	6.6	5.5	6.0	4.8	3.8	4.3	7.2	6.1	6.6
7	12.8	11.1	11.9	7.3	6.3	6.7	4.0	2.8	3.4	6.5	5.6	6.0
8	13.4	11.2	12.2	8.0	7.3	7.7	3.5	2.1	2.9	6.0	5.1	5.5
9	13.2	11.3	12.4	7.9	7.7	7.8	4.4	2.8	3.5	5.7	4.6	5.1
10	11.4	9.7	10.6	8.2	7.8	7.9	5.9	4.4	5.1	6.1	5.3	5.6
11	9.7	7.8	8.8	8.8	8.2	8.5	7.1	5.1	5.9	6.3	5.2	5.7
12	9.6	7.0	8.3	9.2	8.5	8.8	7.7	7.1	7.5	7.4	6.3	6.9
13	9.5	7.0	8.3	9.3	8.7	9.0	7.6	7.3	7.4	7.9	7.3	7.6
14	10.0	7.4	8.7	9.3	7.8	8.8	8.8	7.6	8.3	7.9	5.9	7.0
15	10.5	7.8	9.2	7.8	6.8	7.3	8.3	7.6	7.8	7.0	5.8	6.3
16	11.2	8.6	9.9	6.9	5.8	6.4	8.0	7.1	7.6	7.1	5.6	6.2
17	11.0	8.8	10.0	7.8	6.7	7.2	7.2	6.7	7.1	6.6	5.2	5.8
18	10.3	9.0	9.6	7.7	6.8	7.2	6.7	6.2	6.5	6.2	4.7	5.4
19	11.4	9.8	10.5	8.8	7.7	8.3	6.6	6.2	6.4	6.4	4.8	5.4
20	12.1	11.0	11.4	9.2	7.7	8.5	6.7	5.8	6.2	6.9	5.3	6.2
21	11.6	10.4	11.0	8.9	7.8	8.4	6.9	6.4	6.6	6.9	6.2	6.5
22	11.0	9.2	10.2	8.8	8.0	8.4	6.9	6.4	6.7	7.5	6.3	6.9
23	10.6	8.9	9.8	9.8	8.5	9.1	6.8	5.0	6.2	8.3	7.1	7.6
24	9.3	7.2	8.2	8.7	6.6	8.1	5.9	4.9	5.3	8.3	7.4	7.9
25	8.1	6.1	7.1	6.6	4.4	5.2	6.4	5.4	5.9	9.2	8.3	8.6
26	8.0	6.2	7.0	4.7	3.3	4.0	6.4	5.6	6.0	9.7	8.4	9.3
27	7.0	6.1	6.6	4.9	3.2	4.1	7.1	6.0	6.5	8.6	7.3	8.1
28	8.2	6.6	7.3	5.1	3.6	4.4	7.0	6.5	6.8	8.0	6.6	7.2
29	8.3	6.3	7.3	4.6	3.4	4.1	6.8	5.4	6.0	8.0	7.3	7.7
30	6.3	3.2	4.6	4.8	3.2	4.0	7.1	6.0	6.6	9.0	8.0	8.3
31	3.6	1.7	2.7	---	---	---	7.4	6.6	7.0	9.1	8.2	8.8
MONTH	13.6	1.7	9.3	9.8	1.2	6.4	8.8	2.1	5.9	9.7	4.6	7.0

14205400 EAST FORK DAIRY CREEK NEAR MEACHAM CORNER, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.4	8.0	8.2	8.4	6.2	7.2	8.8	7.2	8.1	11.8	7.9	9.8
2	8.4	7.4	8.0	6.7	5.0	5.9	7.5	6.5	6.9	12.7	8.6	10.5
3	8.1	6.9	7.3	7.3	5.6	6.5	7.4	6.2	6.7	10.2	8.6	9.2
4	7.4	6.1	6.6	6.8	5.2	6.0	8.4	6.4	7.2	10.1	8.3	9.1
5	7.1	5.6	6.2	8.2	6.6	7.2	7.1	5.8	6.5	10.1	7.6	8.9
6	6.9	5.5	6.0	7.9	6.3	7.0	9.0	6.3	7.4	10.6	7.4	9.0
7	6.8	5.0	5.7	7.9	6.6	7.1	8.8	7.3	7.9	9.1	7.2	8.3
8	6.8	4.8	5.7	7.4	6.6	7.0	11.0	7.7	9.1	9.2	7.6	8.4
9	6.5	4.7	5.7	8.7	7.4	7.9	10.3	7.2	8.8	9.8	7.2	8.5
10	7.2	5.6	6.5	9.1	7.9	8.4	10.2	8.0	8.9	9.7	7.7	8.8
11	7.2	4.7	5.8	9.1	8.0	8.5	10.3	8.5	9.2	10.5	8.7	9.6
12	7.2	4.6	5.8	9.2	8.5	8.8	10.9	8.5	9.5	10.8	8.8	9.7
13	7.8	5.8	6.8	8.9	8.6	8.7	10.6	8.4	9.3	12.7	8.2	10.4
14	8.2	7.0	7.5	9.2	8.1	8.6	9.0	7.3	8.3	11.1	9.0	10.1
15	7.9	6.6	7.2	9.3	8.0	8.7	9.6	7.9	8.7	10.0	7.8	8.8
16	7.7	7.2	7.5	9.1	7.2	8.2	9.9	8.1	8.8	9.1	7.1	8.1
17	7.2	6.9	7.1	8.7	6.1	7.3	9.9	7.8	8.7	9.3	6.6	7.9
18	7.9	6.9	7.3	8.3	6.5	7.4	9.0	6.4	7.8	9.7	5.9	7.8
19	8.0	7.2	7.6	8.1	7.4	7.8	10.6	7.1	8.7	11.3	7.0	9.2
20	7.9	7.2	7.5	9.6	7.9	8.5	10.7	7.9	9.2	10.8	8.7	9.8
21	9.0	7.5	8.2	8.6	7.6	8.1	9.4	8.5	8.9	13.2	9.6	11.2
22	8.3	6.8	7.4	9.0	7.5	8.4	10.0	7.9	8.9	12.9	10.7	11.8
23	7.4	5.2	6.5	8.7	6.6	7.7	8.7	7.6	8.1	14.8	10.7	12.6
24	5.7	3.9	4.7	8.2	6.0	7.1	8.9	7.4	8.0	13.4	11.9	12.6
25	6.0	3.3	4.5	8.8	7.5	8.0	9.2	6.3	7.8	12.3	11.0	11.7
26	6.5	4.1	5.2	9.1	7.0	8.0	9.3	7.5	8.2	13.0	10.0	11.5
27	7.6	5.2	6.2	8.8	6.6	7.5	11.2	6.9	8.9	14.3	10.3	12.2
28	6.7	5.7	6.2	9.5	6.5	7.9	10.8	7.9	9.4	14.7	12.0	13.2
29	---	---	---	10.6	7.1	8.7	11.7	9.0	10.1	14.7	11.1	12.9
30	---	---	---	11.4	8.0	9.6	10.8	9.3	9.9	13.6	11.6	12.4
31	---	---	---	10.5	8.5	9.5	---	---	---	14.0	10.8	12.2
MONTH	9.0	3.3	6.6	11.4	5.0	7.8	11.7	5.8	8.5	14.8	5.9	10.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.6	11.2	12.3	15.2	12.4	13.7	18.6	14.7	16.7	17.2	13.8	15.5
2	14.3	10.6	12.3	15.4	11.2	13.3	17.8	15.3	16.5	17.8	14.3	16.1
3	14.9	10.8	12.8	15.9	11.8	13.8	17.2	14.8	15.9	18.6	15.2	16.9
4	16.1	11.7	13.8	16.4	12.3	14.3	17.6	13.7	15.6	19.1	15.9	17.5
5	16.9	12.3	14.6	15.1	12.8	13.9	16.1	14.3	14.9	18.9	15.6	17.3
6	17.6	13.2	15.4	16.8	12.5	14.5	17.1	13.2	15.1	18.0	15.2	16.7
7	17.9	13.9	15.9	16.8	12.8	14.7	18.0	14.9	16.3	16.5	14.7	15.7
8	16.5	13.2	14.8	15.3	13.8	14.5	16.8	14.4	15.6	14.7	12.8	13.7
9	14.2	12.4	12.9	17.1	12.6	14.8	16.5	14.7	15.6	13.6	12.8	13.1
10	13.8	11.8	12.6	18.1	13.5	15.7	17.7	14.5	15.9	14.3	13.1	13.6
11	14.6	11.6	12.9	18.1	14.4	16.2	15.9	13.9	15.1	15.5	13.6	14.4
12	13.2	11.2	12.0	17.5	14.3	15.9	16.6	13.2	14.9	15.0	12.7	13.8
13	13.3	11.4	12.2	16.5	14.4	15.4	17.3	13.5	15.4	14.9	11.8	13.4
14	13.2	11.0	12.1	17.3	13.3	15.2	18.5	14.3	16.3	14.7	12.1	13.4
15	15.1	11.0	12.9	16.9	14.1	15.5	17.1	15.2	16.2	13.3	11.1	12.2
16	15.8	11.5	13.6	16.5	14.4	15.3	16.9	14.0	15.3	13.4	11.3	12.2
17	16.9	12.5	14.6	17.4	13.1	15.2	18.4	14.3	16.3	13.0	10.5	11.8
18	14.8	12.7	13.8	18.0	13.6	15.8	18.9	15.3	17.0	13.6	11.0	12.3
19	12.7	10.8	11.6	18.3	14.1	16.2	18.4	15.2	16.6	13.9	12.7	13.2
20	13.1	10.7	11.7	19.0	14.7	16.8	17.4	13.5	15.5	14.0	11.2	12.7
21	11.9	10.0	11.0	20.1	16.1	18.0	18.1	14.5	16.3	14.2	11.2	12.7
22	11.4	9.5	10.5	20.1	16.1	18.0	16.9	15.0	15.9	15.8	12.5	14.0
23	12.0	10.3	11.1	18.6	15.0	16.8	16.1	12.9	14.6	15.7	12.9	14.3
24	13.6	9.8	11.6	17.9	14.2	16.0	16.4	12.8	14.7	15.9	13.0	14.5
25	15.6	10.8	13.2	17.6	13.5	15.6	17.4	13.5	15.4	15.6	12.8	14.3
26	17.6	12.9	15.1	17.8	13.9	15.8	17.2	14.7	15.7	16.9	13.9	15.3
27	18.1	13.8	15.9	18.7	14.2	16.4	15.7	14.3	15.0	17.2	14.4	15.8
28	18.3	13.5	16.0	19.6	15.0	17.3	17.2	13.3	15.2	16.5	14.2	15.4
29	18.5	14.9	16.5	20.2	15.9	18.0	17.6	14.0	15.8	15.5	14.3	14.7
30	16.1	13.8	14.9	20.4	16.3	18.3	18.4	15.0	16.6	15.4	13.1	14.2
31	---	---	---	19.4	15.9	17.6	18.1	14.7	16.3	---	---	---
MONTH	18.5	9.5	13.4	20.4	11.2	15.8	18.9	12.8	15.7	19.1	10.5	14.4
YEAR	20.4	1.2	10.1									

14206900 FANNO CREEK AT 56TH AVENUE, PORTLAND, OR

LOCATION.--Lat 45°29'17", long 122°44'01", in NE 1/4 NW 1/4 sec.18, T.1 S., R.1 E., Multnomah County, Hydrologic Unit 17090010, on bridge at SW 56th Ave., in Portland, and at mile 11.9.

DRAINAGE AREA.--2.37 mi^2.

PERIOD OF RECORD.--Annual maximums, 1975-77. October 1990 to current year.

REVISED RECORDS.--WDR OR-92-1: 1991, 1991(m).

GAGE.--Water-stage recorder. Elevation of gage is 250 ft above NGVD of 1929, from topographic map.

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

AVERAGE DISCHARGE.--13 years (water years 1991-2003), 3.33 ft^3/s, 19.06 in/yr, 2,410 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD--Maximum discharge, 733 ft^3/s Feb. 8, 1996, gage height, 13.2 ft, from floodmark, from rating curve extended above 200 ft^3/s; minimum discharge, 0.01 ft^3/s Sept. 4, 2001.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 30	2015	152	10.98	Feb. 17	1815	153	10.99
Jan. 31	0615	*240	*11.49	Apr. 13	0030	227	11.42

Minimum discharge, 0.14 ft^3/s Oct. 14, 31, Sept. 25, 27, 28.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.36	0.17	0.36	4.5	14	1.1	2.9	3.0	0.98	0.35	0.22	0.24
2	0.24	0.19	0.40	18	6.0	1.4	2.7	2.6	1.0	0.38	0.23	0.22
3	1.7	0.19	0.40	8.9	4.6	1.3	3.7	2.9	0.99	0.40	0.24	0.26
4	0.38	0.20	0.74	17	3.7	0.92	1.8	3.7	0.93	0.37	0.25	0.29
5	0.23	0.23	0.49	4.2	3.1	0.98	3.8	2.3	0.87	0.33	0.26	0.24
6	0.21	0.27	0.57	3.0	2.6	3.0	6.5	1.9	0.80	0.35	0.21	0.24
7	0.21	2.5	0.60	2.4	2.4	28	5.9	4.5	0.77	0.41	0.21	2.2
8	0.21	0.89	0.67	2.0	2.2	9.3	2.3	5.3	0.71	0.48	0.29	0.62
9	0.21	3.5	1.5	2.0	2.0	17	3.3	2.0	0.74	0.41	0.39	5.9
10	0.21	0.75	4.7	1.7	1.9	4.6	3.2	1.7	0.75	0.41	0.25	0.31
11	0.18	0.68	7.0	3.1	2.1	2.8	1.8	1.6	0.75	0.48	0.23	0.23
12	0.17	3.6	11	11	1.7	8.2	18	1.5	0.70	0.48	0.22	0.22
13	0.17	2.4	4.0	8.5	1.7	7.2	32	1.4	1.5	0.39	0.23	0.21
14	0.17	1.5	11	4.8	1.6	6.5	6.4	1.3	0.71	0.30	0.22	0.21
15	0.17	0.33	6.7	2.8	7.9	4.1	4.2	1.5	0.66	0.32	0.21	0.21
16	0.20	1.5	19	2.3	10	3.6	3.6	3.8	0.68	0.32	0.25	1.3
17	0.18	0.49	3.8	2.0	42	2.2	13	7.1	0.58	0.30	0.26	0.23
18	0.23	1.5	2.9	1.8	12	1.9	3.8	2.5	e0.50	0.27	0.33	0.19
19	0.22	0.69	1.4	1.6	6.7	4.7	3.1	1.7	e0.40	0.26	0.33	0.23
20	0.21	0.41	1.5	1.5	4.3	1.9	2.7	1.6	0.59	0.24	0.27	0.20
21	0.27	0.42	3.3	1.4	3.8	8.1	5.3	1.5	0.87	0.27	0.27	0.19
22	0.28	0.39	1.8	7.9	2.8	12	2.5	1.4	0.55	0.24	0.32	0.21
23	0.24	0.38	1.0	2.1	2.3	5.8	13	1.4	0.48	0.22	0.26	0.19
24	0.23	0.35	1.8	3.6	1.9	2.9	6.9	1.5	0.37	0.20	0.25	0.20
25	0.27	0.34	0.88	4.4	1.7	2.9	6.3	1.3	0.36	0.23	0.24	0.16
26	0.31	0.35	7.4	12	1.7	11	4.9	1.2	0.35	0.23	0.26	0.19
27	0.21	0.39	15	3.9	1.2	2.9	3.2	1.1	0.34	0.23	0.29	0.18
28	0.25	0.39	8.5	2.6	1.4	2.3	3.2	1.1	0.30	0.23	0.28	0.16
29	0.24	0.38	6.0	20	---	2.0	5.2	1.3	0.30	0.24	0.28	0.20
30	0.19	0.40	37	33	---	1.8	10	1.3	0.31	0.21	0.25	0.20
31	0.18	---	18	95	---	2.1	---	1.00	---	0.21	0.25	---
TOTAL	8.53	25.78	179.41	289.0	149.3	164.50	185.2	68.00	19.84	9.76	8.05	15.63
MEAN	0.28	0.86	5.79	9.32	5.33	5.31	6.17	2.19	0.66	0.31	0.26	0.52
MAX	1.7	3.6	37	95	42	28	32	7.1	1.5	0.48	0.39	5.9
MIN	0.17	0.17	0.36	1.4	1.2	0.92	1.8	1.0	0.30	0.20	0.21	0.16
AC-FT	17	51	356	573	296	326	367	135	39	19	16	31
CFSM	0.12	0.36	2.44	3.93	2.25	2.24	2.60	0.93	0.28	0.13	0.11	0.22
IN.	0.13	0.40	2.82	4.54	2.34	2.58	2.91	1.07	0.31	0.15	0.13	0.25
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2003, BY WATER YEAR (WY)												
MEAN	1.71	5.10	6.85	7.20	6.90	4.53	3.13	2.16	1.12	0.52	0.38	0.51
MAX	4.11	14.3	20.1	11.8	16.6	9.47	6.17	4.79	1.94	0.89	1.07	1.18
(WY)	1995	1997	1997	1999	1996	1997	2003	1998	1997	1997	1997	1996
MIN	0.28	0.86	2.67	1.06	1.22	1.73	1.31	0.73	0.31	0.29	0.13	0.12
(WY)	2003	2003	2001	2001	2001	1994	1998	1994	1992	1992	1992	1999

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1991 - 2003	
ANNUAL TOTAL	954.98		1123.00			
ANNUAL MEAN	2.62		3.08		3.33	
HIGHEST ANNUAL MEAN					5.95	1997
LOWEST ANNUAL MEAN					1.21	2001
HIGHEST DAILY MEAN	56	Jan 7	95	Jan 31	202	Nov 19 1996
LOWEST DAILY MEAN	0.12	Aug 17	0.16	Sep 25	0.06	Sep 12 1999
ANNUAL SEVEN-DAY MINIMUM	0.13	Aug 27	0.18	Oct 11	0.07	Oct 1 1991
ANNUAL RUNOFF (AC-FT)	1890		2230		2410	
ANNUAL RUNOFF (CFSM)	1.10		1.30		1.40	
ANNUAL RUNOFF (INCHES)	14.99		17.63		19.06	
10 PERCENT EXCEEDS	6.0		7.1		7.8	
50 PERCENT EXCEEDS	0.65		1.0		1.2	
90 PERCENT EXCEEDS	0.15		0.21		0.20	

e Estimated

14206950 FANNO CREEK AT DURHAM, OR

LOCATION.--Lat 45°24'13", long 122°45'13", in NE 1/4 NW 1/4 sec.13, T.2 S., R.1 W., Washington County, Hydrologic Unit 17090010, on right bank under Durham Road bridge, at Durham, and at mile 1.13.

DRAINAGE AREA.--31.5 mi^2.

PERIOD OF RECORD.--September to November 1966, September 1972 to September 1977 (discharge measurements only), October 1993 to February 1996, October 2000 to current year.

GAGE.--Water-stage recorder. Datum of gage is 116.83 ft above NGVD of 1929 (levels by Corps of Engineers).

REMARKS.--Records good except for those above 100 ft^3/s, which are fair and estimated daily discharges, which are poor. No regulation or diversion upstream from station.

COOPERATION.--Gage height record collected and low-flow discharge measurements made by Oregon Water Resources Department.

AVERAGE DISCHARGE.--5 years (water years 1994-95, 2002-03), 41.6 ft^3s, 17.94 in/yr, 30,130 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,090 ft^3/s Feb. 6, 1996, gage height, 9.45 ft (from outside high-water mark); minimum discharge, 1.0 ft^3, Sept. 13, 2001.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 31	0730	730	7.65	Jan. 31	1900	*1,180	*9.86

Minimum discharge, 2.3 ft^3/s Sept. 1, 2, 5, 6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	3.8	5.2	137	e600	33	47	72	e12	6.1	5.1	2.8
2	10	3.6	5.3	158	138	24	51	49	14	7.0	5.6	2.5
3	37	4.1	5.1	275	88	40	83	42	14	6.6	5.7	2.6
4	20	3.9	9.3	231	63	24	62	70	12	6.4	5.6	2.7
5	9.1	5.8	10	108	50	21	48	38	9.6	6.3	6.2	2.5
6	7.4	4.5	7.9	61	41	37	104	29	8.6	6.3	6.3	2.7
7	6.6	19	6.3	45	35	339	63	28	8.1	6.2	5.9	12
8	5.6	47	5.6	34	30	207	50	71	7.9	6.1	53	33
9	5.1	52	7.1	28	27	249	58	28	8.6	5.9	13	103
10	4.4	35	95	23	24	122	53	23	9.8	5.9	8.6	19
11	3.9	26	131	28	22	76	41	21	9.5	5.9	6.9	9.2
12	3.6	e35	128	150	22	106	224	20	9.0	5.7	5.5	6.8
13	3.6	e35	200	108	19	135	350	18	15	5.4	5.3	5.5
14	3.8	44	260	104	18	133	155	16	14	5.3	4.4	4.7
15	3.1	14	127	49	52	93	79	16	9.7	5.2	4.4	4.4
16	3.2	25	431	35	119	88	60	50	9.0	5.1	4.6	11
17	3.6	22	140	29	332	71	118	64	8.5	4.9	4.4	11
18	5.0	16	83	25	356	52	63	52	7.6	5.0	4.3	5.2
19	4.7	25	65	22	121	69	44	23	7.9	5.4	3.9	4.4
20	3.9	12	42	19	80	70	37	19	15	5.0	3.9	3.9
21	4.2	9.3	68	18	67	e80	83	18	15	4.7	3.3	3.7
22	4.0	7.6	49	92	54	e170	39	17	12	4.8	4.1	3.3
23	3.4	7.7	50	53	41	e120	89	16	11	5.6	3.8	3.4
24	3.4	6.5	38	58	35	70	148	15	9.9	5.5	3.6	3.3
25	3.5	5.7	28	48	31	56	79	16	8.1	6.2	4.0	3.2
26	3.7	4.9	55	163	27	111	93	14	7.1	5.2	3.9	e3.2
27	4.5	5.7	233	69	25	80	55	13	6.6	5.2	4.5	e3.8
28	4.1	5.9	143	45	30	58	44	13	6.6	5.3	e5.5	2.7
29	3.9	5.7	128	140	---	41	67	14	6.5	6.1	3.6	3.0
30	4.5	5.2	268	413	---	36	226	15	6.2	6.1	3.3	3.4
31	4.0	---	544	841	---	36	---	13	---	5.1	3.2	---
TOTAL	205.8	496.9	3367.8	3609	2547	2847	2713	913	298.8	175.5	205.4	281.9
MEAN	6.64	16.6	109	116	91.0	91.8	90.4	29.5	9.96	5.66	6.63	9.40
MAX	37	52	544	841	600	339	350	72	15	7.0	53	103
MIN	3.1	3.6	5.1	18	18	21	37	13	6.2	4.7	3.2	2.5
AC-FT	408	986	6680	7160	5050	5650	5380	1810	593	348	407	559
CFSM	0.21	0.53	3.45	3.70	2.89	2.92	2.87	0.93	0.32	0.18	0.21	0.30
IN.	0.24	0.59	3.98	4.26	3.01	3.36	3.20	1.08	0.35	0.21	0.24	0.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2003, BY WATER YEAR (WY)

MEAN	23.1	55.6	101	98.6	80.7	63.1	45.9	20.9	14.3	7.58	6.68	8.48
MAX	49.8	115	153	147	111	91.8	90.4	29.5	22.6	12.6	9.63	9.67
(WY)	1995	1996	2002	2002	1995	2003	2003	2003	1995	1995	2001	1995
MIN	6.64	10.3	40.0	17.1	21.5	27.6	24.6	13.5	9.96	4.20	3.83	7.00
(WY)	2003	1994	2001	2001	2001	2001	2001	1994	2003	1994	1994	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1994 - 2003	
ANNUAL TOTAL	16263.2		17661.1			
ANNUAL MEAN	44.6		48.4		41.6	
HIGHEST ANNUAL MEAN					56.2	1995
LOWEST ANNUAL MEAN					19.3	2001
HIGHEST DAILY MEAN	757	Jan 7	841	Jan 31	841	Jan 31 2003
LOWEST DAILY MEAN	2.6	Aug 28	2.5	Sep 2	1.3	Oct 1 1993
ANNUAL SEVEN-DAY MINIMUM	3.1	Aug 26	2.7	Aug 31	1.9	Aug 24 1994
ANNUAL RUNOFF (AC-FT)	32260		35030		30130	
ANNUAL RUNOFF (CFSM)	1.41		1.54		1.32	
ANNUAL RUNOFF (INCHES)	19.21		20.86		17.94	
10 PERCENT EXCEEDS	109		124		99	
50 PERCENT EXCEEDS	13		16		15	
90 PERCENT EXCEEDS	3.8		3.9		3.8	

e Estimated

14206950 FANNO CREEK AT DURHAM, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1993 to February 1996, September 2002 to September 2003.
WATER TEMPERATURE: October 1993 to February 1996, September 2002 to September 2003.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Specific conductance records good; water temperature records for the period Jan. 10 to June 25 rated excellent, those for the periods Oct. 1, 2002 to Jan. 9, 2003 and June 26, to Sept. 30, 2003 rated good.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 448 microsiemens Aug. 31, 2003; minimum, 47 microsiemens Dec. 1, 1994.
WATER TEMPERATUE: Maximum, 24.0°C July 19, 20, 1995; minimum, 0.0°C Jan. 31 to Feb. 3, 1996.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 448 microsiemens Aug. 31; minimum, 57 microsiemens Feb. 17.
WATER TEMPERATURE: Maximum, 23.7°C July 30; minimum, 3.9°C Nov. 3.

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	166	131	154	286	269	274	243	236	239	140	112	133
2	188	166	177	280	266	272	250	243	247	153	70	128
3	196	104	152	271	266	268	252	243	246	122	74	96
4	158	119	138	272	269	271	258	239	245	121	91	104
5	182	158	168	269	266	268	249	238	243	155	109	137
6	196	182	190	278	267	270	238	224	230	174	155	166
7	206	196	200	287	150	254	233	227	231	182	174	178
8	212	206	209	191	144	164	237	229	234	187	182	185
9	219	212	215	174	103	143	241	201	234	192	186	189
10	225	219	223	141	119	132	217	97	132	197	192	194
11	230	225	228	142	121	131	134	82	101	208	158	196
12	237	230	234	146	71	109	110	63	90	158	91	108
13	244	237	241	124	100	114	102	62	82	123	97	109
14	258	243	247	123	104	116	105	65	79	137	97	115
15	272	255	260	156	123	143	127	75	108	164	137	153
16	267	255	259	170	115	150	92	59	69	178	164	171
17	259	255	257	156	128	142	132	92	114	186	178	181
18	269	255	258	177	146	161	137	121	129	192	186	189
19	268	253	259	169	139	148	155	125	137	193	192	193
20	253	246	250	173	139	156	170	141	164	198	193	196
21	246	242	243	193	173	183	156	128	140	202	197	200
22	252	243	248	209	193	202	154	137	146	202	101	152
23	260	252	256	239	203	213	162	121	140	151	110	129
24	267	260	264	225	211	220	170	154	165	151	132	140
25	270	264	267	228	225	227	180	161	170	164	143	154
26	269	267	268	239	228	232	179	94	152	145	97	113
27	268	266	267	242	236	239	105	75	86	161	118	144
28	269	265	267	247	242	246	123	99	111	175	161	169
29	323	264	274	245	240	241	145	100	121	177	90	145
30	315	263	270	242	236	239	131	58	89	96	87	91
31	269	264	267	---	---	---	112	58	77	98	65	76
MONTH	323	104	233	287	71	198	258	58	153	208	65	149

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	131	73	102	184	169	174	192	168	179	164	126	150
2	152	131	144	197	176	190	174	150	169	186	163	176
3	163	151	158	181	151	165	150	127	138	190	185	188
4	174	163	169	192	172	184	157	129	144	186	113	160
5	---	---	---	197	187	193	169	153	161	182	157	171
6	---	---	---	199	139	183	164	118	130	192	178	185
7	190	187	189	139	63	82	161	138	153	194	188	192
8	194	190	192	116	85	102	171	143	155	191	133	148
9	197	194	196	116	86	98	175	153	163	186	151	169
10	201	197	199	153	111	136	172	157	165	200	186	194
11	205	201	203	166	153	161	180	159	173	205	200	203
12	206	202	204	169	116	149	178	96	111	207	205	206
13	202	196	199	133	111	121	112	79	92	216	205	211
14	208	198	204	132	114	122	148	106	127	217	213	214
15	210	112	178	147	132	141	169	148	160	226	213	217
16	122	102	110	155	122	147	184	169	174	222	129	186
17	105	57	75	159	126	148	174	119	139	166	129	145
18	125	65	92	168	158	162	168	131	153	172	128	150
19	144	125	137	172	143	164	183	168	176	194	172	182
20	156	144	152	159	140	148	189	183	186	216	194	208
21	160	155	157	160	119	143	186	142	153	222	216	219
22	171	158	165	120	85	100	181	155	168	227	222	224
23	183	171	178	153	108	136	185	102	167	234	226	229
24	188	183	186	167	153	160	138	99	113	237	234	235
25	199	188	197	178	167	174	157	128	146	235	229	231
26	197	194	195	174	119	139	140	128	133	232	228	230
27	199	186	195	163	117	145	166	140	154	238	232	217
28	199	177	192	172	138	160	178	160	173	241	238	240
29	---	---	---	184	172	178	163	126	156	245	237	240
30	---	---	---	191	184	188	126	74	98	249	231	238
31	---	---	---	192	188	191	---	---	---	235	226	230
MONTH	---	---	---	199	63	151	192	74	150	249	113	200

14206950 FANNO CREEK AT DURHAM, OR--Continued

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	251	235	246	256	252	254	361	344	355	399	376	390
2	263	251	256	256	249	252	344	301	316	395	391	394
3	269	259	264	258	255	256	332	307	324	395	360	377
4	274	268	272	259	255	257	338	323	333	360	336	353
5	280	265	268	259	252	255	341	321	333	340	319	334
6	284	267	274	256	251	254	330	296	316	322	311	318
7	268	259	265	254	250	252	296	291	293	315	200	291
8	267	257	261	253	248	251	291	184	226	331	187	245
9	263	253	257	308	248	262	203	189	198	330	103	180
10	262	254	258	252	247	250	218	203	213	183	164	173
11	260	253	258	---	240	---	223	210	215	196	183	189
12	260	252	255	251	243	248	226	223	224	214	196	206
13	263	247	256	254	243	249	226	224	225	224	214	219
14	250	217	230	249	246	247	---	226	---	233	224	230
15	251	233	243	248	243	246	242	231	238	234	229	231
16	255	250	252	249	245	247	241	236	239	234	189	214
17	257	253	255	251	247	249	241	237	239	211	195	205
18	259	254	256	261	250	255	245	240	240	210	194	200
19	260	252	255	255	250	252	247	244	246	231	206	216
20	267	164	239	254	250	252	247	244	246	226	218	222
21	243	221	234	259	252	256	249	241	247	232	226	229
22	245	235	242	258	253	256	257	241	251	236	231	233
23	245	234	242	253	250	252	252	243	249	242	236	239
24	246	242	244	252	244	247	245	241	243	245	239	242
25	246	---	---	270	252	261	260	244	255	250	244	245
26	248	244	245	299	257	278	265	257	260	257	250	256
27	257	248	251	327	293	305	280	255	260	257	250	252
28	255	247	250	339	326	333	303	280	297	263	256	260
29	252	248	250	333	291	314	351	303	338	259	248	254
30	253	248	251	339	297	314	436	337	390	248	242	244
31	---	---	---	350	315	325	448	378	424	---	---	---
MONTH	284	---	---	---	240	---	---	184	---	399	103	255

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	13.6	12.7	13.2	5.0	4.5	4.8	5.9	5.0	5.4	8.4	7.9	8.1
2	13.2	11.7	12.4	4.9	4.1	4.5	6.4	5.6	5.9	9.9	8.4	9.0
3	13.2	12.5	12.8	4.8	3.9	4.3	5.8	4.6	5.1	9.8	9.3	9.6
4	14.0	13.1	13.6	5.1	4.3	4.7	5.8	4.9	5.3	10.1	9.7	9.9
5	14.4	13.6	13.9	6.4	4.9	5.7	5.8	5.3	5.6	9.8	8.4	8.7
6	14.4	13.6	14.0	7.2	6.1	6.5	5.6	5.1	5.4	8.4	7.5	7.8
7	14.2	12.9	13.6	9.8	7.2	7.9	5.3	4.7	5.1	7.6	6.7	7.0
8	14.4	13.1	13.7	9.6	9.3	9.5	5.2	4.5	4.9	6.7	5.7	6.3
9	14.5	13.8	14.2	10.2	9.5	9.7	6.0	4.9	5.3	5.8	5.4	5.7
10	14.0	12.7	13.2	9.8	9.2	9.5	7.2	6.0	6.8	5.9	5.4	5.6
11	12.8	11.2	11.7	10.1	9.4	9.7	8.2	7.0	7.4	6.4	5.5	5.9
12	11.5	10.2	10.8	11.6	9.9	10.6	9.8	8.2	8.8	7.4	6.4	6.8
13	11.2	10.0	10.7	10.9	10.6	10.8	9.3	9.0	9.1	8.5	7.4	7.8
14	10.9	9.8	10.5	11.0	10.1	10.6	10.0	9.2	9.6	8.8	8.3	8.6
15	11.7	10.7	11.2	10.1	9.0	9.6	9.9	8.9	9.4	8.3	7.6	7.9
16	12.4	11.4	11.9	9.6	8.5	8.9	8.9	8.3	8.6	7.7	7.2	7.5
17	12.2	11.5	12.0	9.6	8.9	9.2	8.3	7.7	7.9	7.2	6.6	7.0
18	12.3	11.4	11.9	9.6	8.7	9.0	7.8	7.2	7.4	6.8	6.2	6.5
19	13.1	11.7	12.4	10.1	9.2	9.7	7.5	6.9	7.2	6.2	5.4	5.8
20	13.5	13.0	13.2	10.4	9.6	10	7.0	6.7	6.8	6.3	5.4	5.9
21	13.5	13.0	13.3	10.1	9.6	9.9	7.3	6.9	7.1	6.9	6.2	6.5
22	13.5	12.9	13.2	10.3	9.9	10.1	7.8	7.3	7.5	7.4	6.5	6.9
23	13.1	11.8	12.4	10.8	10.1	10.4	7.6	6.1	6.9	7.9	7.2	7.5
24	11.8	11.0	11.5	10.1	8.7	9.6	6.4	6.1	6.2	9.3	7.8	8.6
25	11.0	9.4	10.1	8.7	7.2	7.8	6.9	6.4	6.6	10.4	9.3	9.7
26	9.4	8.9	9.2	7.2	6.0	6.4	7.3	6.8	7.1	11.7	10.4	11.3
27	9.1	8.3	8.7	6.3	5.7	6.1	8.0	6.8	7.4	11.3	10.1	10.4
28	9.7	8.9	9.3	6.3	5.7	6.0	8.1	7.8	7.9	10.1	9.2	9.6
29	9.4	8.2	9.0	6.1	5.4	5.8	8.0	7.4	7.6	9.3	8.8	9.1
30	8.2	6.2	7.0	6.3	5.6	5.9	7.9	6.9	7.3	10.6	9.3	9.9
31	6.2	4.9	5.4	---	---	---	8.0	7.3	7.6	11.6	10.6	11.3
MONTH	14.5	4.9	11.6	11.6	3.9	8.1	10.0	4.5	7.0	11.7	5.4	8.0

14206950 FANNO CREEK AT DURHAM, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.9	10.0	10.3	8.8	7.6	8.1	12.7	11.1	11.8	15.2	12.2	13.5
2	10.2	9.7	9.9	8.2	7.6	7.9	11.1	8.8	10	15.2	13.5	14.5
3	9.9	9.2	9.4	8.0	7.5	7.7	9.2	7.6	8.5	15.3	12.9	14.1
4	9.3	7.9	8.4	7.8	7.2	7.5	9.6	8.7	9.2	13.0	11.9	12.4
5	---	---	---	8.8	7.7	8.2	9.6	8.9	9.2	13.2	12.2	12.7
6	---	---	---	8.8	8.4	8.6	10.1	8.1	9.1	13.6	12.6	13.0
7	6.7	6.2	6.5	8.9	8.2	8.6	11.2	9.9	10.4	12.7	11.7	12.4
8	6.7	6.1	6.4	9.1	8.3	8.6	12.7	10.6	11.6	11.7	10.5	11.1
9	6.5	5.9	6.1	10.5	8.9	9.5	13.0	11.8	12.5	12.3	11.4	11.8
10	7.4	6.2	6.8	11.1	10.0	10.5	12.9	12.3	12.6	12.6	11.6	12.1
11	7.1	6.1	6.6	11.3	10.5	10.9	13.3	12.0	12.7	13.6	11.6	12.6
12	7.2	5.9	6.5	11.4	10.8	11.1	13.0	11.5	12.2	14.4	12.8	13.5
13	8.2	6.8	7.5	11.4	10.9	11.1	13.1	11.3	12.2	15.6	12.4	14.0
14	9.3	8.1	8.6	11.2	10.2	10.8	12.7	11.2	11.8	15.7	13.7	14.8
15	9.4	8.5	8.9	11.5	10.8	11.2	12.6	10.9	11.6	14.8	13.3	13.9
16	9.4	8.7	9.0	11.3	9.7	10.8	12.9	11.7	12.4	13.2	11.6	12.2
17	8.7	7.8	8.1	10.3	9.3	9.9	12.8	11.6	12.2	12.1	10.1	11.5
18	9.0	7.8	8.3	10.3	9.3	9.6	12.5	11.1	11.9	12.0	9.7	10.8
19	9.4	8.8	9.1	9.7	9.2	9.5	12.8	11.6	12.3	14.6	11.4	13.0
20	9.3	8.8	8.9	10.7	9.2	9.9	13.4	12.6	13.0	15.3	12.9	14.1
21	9.9	9.0	9.5	10.9	9.9	10.5	13.1	11.7	12.2	17.2	13.7	15.4
22	9.9	9.1	9.4	10.8	10.2	10.5	12.4	11.1	11.8	18.7	15.5	17.0
23	9.3	7.4	8.6	10.5	9.6	9.9	12.4	11.8	12.1	20.1	16.4	18.2
24	7.4	5.0	6.1	10.1	8.2	9.1	12.3	10.9	11.5	19.5	17.9	18.8
25	5.6	4.7	5.1	10.5	9.6	10.0	11.9	10.6	11.3	18.7	17.1	17.8
26	6.3	5.0	5.7	10.6	9.7	10.1	11.9	10.6	11.2	17.8	15.8	16.8
27	7.8	6.1	6.9	10.3	9.4	9.9	12.8	10.4	11.6	19.2	15.7	17.5
28	7.9	7.0	7.4	10.9	9.6	10.3	13.2	12.8	13.0	20.3	17.5	18.8
29	---	---	---	12.0	10.3	11.2	---	12.3	---	20.6	17.6	19.1
30	---	---	---	13.1	11.8	12.5	14.2	11.6	12.7	19.5	17.4	18.1
31	---	---	---	13.6	12.7	13.2	---	---	---	18.4	16.1	17.2
MONTH	---	---	---	13.6	7.2	9.9	---	7.6	---	20.6	9.7	14.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.6	16.8	17.8	20.2	18.3	19.0	22.6	20.1	21.5	19.1	17.0	18.2
2	18.8	16.3	17.7	19.5	16.6	18.1	22.3	19.9	20.6	19.0	17.1	18.2
3	19.8	16.1	17.9	19.8	16.8	18.4	20.4	18.9	19.8	20.0	18.0	19.1
4	20.6	16.9	18.6	20.3	17.3	18.9	20.8	18.0	19.5	20.6	---	---
5	21.1	18.4	19.8	20.3	17.8	19.1	20.6	18.6	19.4	20.6	19.0	20.0
6	22.4	19.3	20.8	20.5	17.9	19.3	20.4	18.4	19.4	20.3	18.9	19.7
7	23.1	19.8	21.4	20.9	18.1	19.7	21.1	18.9	20.0	19.7	18.5	19.0
8	22.1	19.7	21.0	20.6	18.4	19.3	20.9	19.1	20.1	18.5	17.6	18.0
9	20.9	18.2	19.0	21.0	17.8	19.4	22.0	19.6	20.7	17.6	15.5	16.5
10	18.2	17.3	17.7	21.8	18.5	20.3	21.1	19.4	20.3	16.9	16.2	16.5
11	18.8	16.8	17.7	22.1	---	---	21.1	19.1	20.1	17.9	16.6	17.1
12	18.2	16.9	17.4	22.2	19.9	21.2	20.6	18.4	19.7	17.7	16.5	17.1
13	17.5	16.4	16.9	21.5	19.9	20.6	20.6	18.1	19.5	17.3	15.2	16.4
14	18.3	16.0	17.2	21.4	18.6	20.1	21.4	18.3	19.8	17.1	15.1	16.2
15	19.0	16.1	17.6	21.5	19.2	20.5	21.4	19.7	20.3	16.6	14.6	15.4
16	20.0	16.9	18.4	21.0	19.4	20.3	20.5	18.4	19.5	15.8	14.5	15.2
17	21.3	17.8	19.5	21.2	18.4	20.0	21.1	18.6	20.0	15.5	14.2	14.9
18	20.2	18.1	18.9	21.7	18.7	20.4	21.4	19.2	20.3	16.0	13.9	15.0
19	18.1	16.5	17.0	22.2	19.3	20.9	21.2	19.1	20.1	16.2	15.1	15.7
20	17.4	15.6	16.3	22.6	19.8	21.3	20.0	17.7	19.0	15.8	14.2	15.1
21	17.4	15.4	16.4	23.5	20.9	22.3	20.2	17.9	19.3	15.8	14.0	15.1
22	16.5	15.1	15.6	23.4	21.1	22.5	20.2	18.3	19.0	16.1	14.4	15.4
23	15.6	14.9	15.2	23.3	20.5	21.9	18.8	16.9	18.0	16.2	14.7	15.6
24	17.1	14.4	15.7	22.1	19.5	20.8	18.8	16.6	17.9	16.4	15.2	16.0
25	18.8	15.1	17.0	21.4	18.8	20.3	19.6	17.0	18.4	16.6	15.3	16.2
26	20.8	16.6	18.6	21.1	18.8	20.2	19.6	17.9	18.6	17.2	16.0	16.7
27	21.7	18.3	20.1	21.6	18.7	20.3	18.9	17.8	18.4	17.8	15.9	17.0
28	22.2	18.8	20.7	22.5	19.5	21.1	19.2	16.8	18.1	17.8	16.7	17.3
29	22.5	19.9	21.3	23.3	20.2	21.8	19.5	17.2	18.5	17.2	16.6	16.9
30	21.6	19.5	20.4	23.7	20.8	22.3	19.9	17.8	19.1	16.7	16.0	16.4
31	---	---	---	23.3	20.9	22.2	19.8	17.8	18.9	---	---	---
MONTH	23.1	14.4	18.3	23.7	---	---	22.6	16.6	19.5	20.6	---	---

14207500 TUALATIN RIVER AT WEST LINN, OR

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 mi^2.

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 NGVD of 1929 (levels by Corps of Engineers). Prior to June 12, 1941, nonrecording gage at datum 1.02 ft higher.

REMARKS.--No estimated daily discharges. 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. Adjustment for diversion to Lake Oswego are published for the 1971-95 water years. 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. U.S. Geological Survey satellite telemeter at station. Periodic suspended sediment data are available for the period October 1974 to September 1995.

AVERAGE DISCHARGE.--28 years (water years 1976-2003), 1,453 ft^3/s, 1,052,000 acre-ft/yr, river only, not adjusted for diversion to Oswego Canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,400 ft^3/s Feb. 10, 1996, gage height, 18.32 ft, does not include an estimated 3,600 ft^3/s flowing in Oswego Canal; minimum daily discharge, 0.20 ft^3/s July 30 to Aug. 2, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,420 ft^3/s Feb. 4, gage height, 10.19 ft; minimum discharge, 135 ft^3/s July 31.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	311	198	157	4460	6840	1580	3970	2110	378	208	140	172
2	301	198	153	4380	6650	1450	3490	1810	364	214	146	179
3	267	195	147	4700	7050	1380	3090	1500	352	198	155	192
4	289	189	150	4830	7380	1280	2750	1400	330	185	173	260
5	297	190	160	4880	7280	1180	2560	1340	327	182	196	219
6	285	220	165	4830	6840	1120	2500	1260	320	183	200	178
7	275	212	166	4790	6260	1860	2400	1160	314	196	212	177
8	259	318	159	4710	5650	2910	2400	1140	310	200	261	218
9	236	422	155	4500	5060	3900	2380	1070	311	193	330	321
10	219	532	281	4130	4410	4190	2290	1010	328	180	340	403
11	216	506	534	3580	3610	4140	2140	933	311	171	296	398
12	216	537	882	3250	2790	4090	2390	869	301	173	269	335
13	215	535	1500	3180	2110	4220	3300	833	313	177	245	285
14	228	486	1880	3340	1700	4380	3850	766	322	182	219	247
15	225	475	2200	3230	1510	4410	3760	717	336	192	202	234
16	216	444	3350	2970	1630	4360	3360	708	331	187	194	234
17	209	379	3680	2640	2370	4250	3070	766	313	175	189	240
18	207	292	3610	2270	3980	4060	2740	799	281	164	176	242
19	211	284	3410	1940	4350	3870	2340	724	256	162	158	231
20	221	267	3170	1680	4260	3740	1990	663	264	165	172	221
21	233	288	2930	1480	4130	3600	1840	607	283	168	170	207
22	238	307	2500	1440	3940	4080	1730	570	275	165	171	196
23	234	260	2020	1560	3680	4390	1640	539	278	159	173	197
24	235	219	1650	1870	3360	4490	1890	522	292	150	175	196
25	229	197	1420	2050	2920	4660	2110	508	275	150	187	195
26	224	172	1300	2480	2440	4970	2160	494	245	147	195	196
27	225	160	1610	2850	2010	5100	2010	491	219	146	191	198
28	225	154	2080	3120	1740	5140	1840	456	196	154	188	197
29	218	156	2450	3350	---	5010	1760	416	199	157	181	203
30	210	155	2740	4390	---	4750	2030	377	205	148	174	212
31	202	---	4240	6030	---	4420	---	384	---	139	168	---
TOTAL	7376	8947	50849	104910	115950	112980	75780	26942	8829	5370	6246	6983
MEAN	238	298	1640	3384	4141	3645	2526	869	294	173	201	233
MAX	311	537	4240	6030	7380	5140	3970	2110	378	214	340	403
MIN	202	154	147	1440	1510	1120	1640	377	196	139	140	172
AC-FT	14630	17750	100900	208100	230000	224100	150300	53440	17510	10650	12390	13850

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2003, BY WATER YEAR (WY)

MEAN	290	1133	3174	3470	3575	2681	1566	732	366	186	158	207
MAX	995	3062	7035	7845	9490	5625	3758	2437	762	292	254	420
(WY)	1998	1984	1997	1997	1996	1999	1991	1996	1984	1998	1997	1997
MIN	71.7	130	158	163	180	638	354	229	147	59.9	79.9	79.1
(WY)	1988	1988	1977	1977	1977	2001	1977	1977	1992	1977	1986	1987

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1976 - 2003	
ANNUAL TOTAL	475869		531162			
ANNUAL MEAN	1304		1455		1453	
HIGHEST ANNUAL MEAN					2787	1999
LOWEST ANNUAL MEAN					278	1977
HIGHEST DAILY MEAN	7050	Jan 12	7380	Feb 4	25900	Feb 10 1996
LOWEST DAILY MEAN	141	Aug 19	139	Jul 31	18	Jul 1 1977
ANNUAL SEVEN-DAY MINIMUM	151	Aug 15	147	Jul 27	24	Jun 29 1977
ANNUAL RUNOFF (AC-FT)	943900		1054000		1052000	
10 PERCENT EXCEEDS	4140		4240		4190	
50 PERCENT EXCEEDS	422		378		540	
90 PERCENT EXCEEDS	167		172		127	

14207740 WILLAMETTE RIVER ABOVE FALLS, AT OREGON CITY, OR

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, 1.6 mi downstream from Tualatin River, and at mile 26.8.

DRAINAGE AREA.--10,000 mi^2, approximately.

PERIOD OF RECORD.--October 1976 to current year (gage heights only).

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929.

REMARKS.--Flow regulated by many reservoirs upstream. Gage height elevations possibly affected by Portland General Electric powerplant operations throughout the year and by Army Corps of Engineers locks operation during summer months.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 69.47 ft Feb. 9, 1996; minimum, 52.51 ft July 12, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 62.06 ft Feb. 2; minimum, 53.29 ft June 29, July 4.

Gage height, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55.12	55.10	55.04	60.56	61.87	55.24	57.88	56.18	54.73	53.36	53.85	54.33
2	55.18	55.07	54.96	60.65	62.00	55.13	57.65	55.97	54.67	53.38	53.79	54.35
3	55.28	55.03	54.90	60.26	61.55	55.04	57.47	55.78	54.64	53.35	53.84	54.35
4	55.37	55.00	54.86	60.11	60.59	55.06	57.40	55.63	54.67	53.31	54.05	54.56
5	55.44	55.00	54.85	60.31	59.67	55.01	57.35	55.74	54.72	53.34	54.47	54.67
6	55.40	55.01	54.82	60.21	58.92	55.07	57.27	56.01	54.68	53.38	54.79	54.65
7	55.36	55.05	54.78	59.63	58.35	56.34	57.55	55.97	54.59	53.39	54.81	54.65
8	55.33	55.13	54.64	58.87	57.85	58.75	57.48	55.76	54.56	53.36	54.63	54.73
9	55.30	55.31	54.41	58.31	57.31	60.00	57.22	55.58	54.56	53.38	54.51	54.85
10	55.27	55.68	54.36	57.77	56.88	59.93	57.11	55.47	54.55	53.71	54.45	54.96
11	55.23	55.97	54.85	57.34	56.51	59.28	57.02	55.37	54.41	54.62	54.32	54.97
12	55.20	56.14	55.53	57.08	56.22	58.77	57.05	55.32	54.28	54.75	54.16	54.96
13	55.18	56.14	56.25	57.45	55.83	58.75	57.48	55.28	54.11	54.76	54.03	54.97
14	55.15	56.14	56.65	58.07	55.44	58.77	57.92	55.15	53.99	54.95	53.92	54.95
15	55.13	56.21	57.27	58.11	55.20	58.54	57.94	55.08	53.87	54.68	53.90	54.92
16	55.13	55.96	58.02	57.67	55.18	58.18	57.68	55.02	53.73	54.46	53.83	54.91
17	55.21	55.84	58.76	57.16	55.52	57.73	57.38	55.02	53.63	54.20	53.84	54.91
18	55.28	55.88	58.61	56.73	57.02	57.36	57.31	55.06	53.53	53.94	53.96	54.92
19	55.30	55.95	58.15	56.34	57.65	56.91	57.27	55.07	53.48	53.83	54.15	54.93
20	55.27	55.98	57.71	56.00	57.35	56.75	57.04	55.00	53.41	53.77	54.11	54.92
21	55.28	55.96	57.34	55.73	57.02	56.88	56.80	54.91	53.40	53.86	54.15	54.90
22	55.30	55.93	57.58	55.56	56.90	57.94	56.76	54.86	53.40	53.89	54.16	54.90
23	55.28	55.63	57.38	55.66	56.82	59.61	56.65	54.81	53.44	53.83	54.21	54.88
24	55.29	55.54	56.96	55.90	56.56	60.02	56.86	54.77	53.49	53.79	54.30	54.89
25	55.30	55.51	56.56	56.08	56.25	59.62	57.55	54.80	53.45	53.94	54.41	54.87
26	55.27	55.50	56.31	56.80	55.95	59.32	57.65	54.79	53.44	54.04	54.41	54.87
27	55.24	55.46	56.71	57.89	55.67	59.51	57.38	54.74	53.36	54.10	54.34	54.89
28	55.21	55.36	57.98	58.51	55.42	59.78	57.05	54.65	53.32	54.07	54.25	54.91
29	55.21	55.26	58.57	58.56	---	59.56	56.74	54.68	53.32	54.15	54.14	54.90
30	55.21	55.15	58.99	59.05	---	59.00	56.49	54.72	53.36	54.15	54.19	54.89
31	55.15	---	59.91	60.67	---	58.31	---	54.73	---	54.03	54.26	---
MEAN	55.25	55.56	56.57	58.03	57.41	57.94	57.28	55.22	53.96	53.93	54.20	54.81
MAX	55.44	56.21	59.91	60.67	62.00	60.02	57.94	56.18	54.73	54.95	54.81	54.97
MIN	55.12	55.00	54.36	55.56	55.18	55.01	56.49	54.65	53.32	53.31	53.79	54.33

CAL YR 2002 MEAN 55.73 MAX 61.28 MIN 53.39
WTR YR 2003 MEAN 55.84 MAX 62.00 MIN 53.31

14207740 WILLAMETTE RIVER ABOVE FALLS, AT OREGON CITY, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: August 2001 to present.

INSTURMENTATION.--Temperature probe and data logger.

REMARKS.--Records poor. Records represent water temperature at the probe and are not necessarily representative of the river cross-section. Periodic cross-section water temperature data available in the files of the Portland Field Office.

EXTREMES FOR PERIOD OF RECORD.--
WATER TEMPERATURE: Maximum, 25.7°C July 23, 2003; minimum, 5.6°C Jan. 29, 2002.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 25.7°C July 23; minimum recorded, 6.4°C Jan. 10, 11, but may have been lower during periods of missing record.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.6	17.1	17.3	10.2	9.8	10	7.7	7.4	7.6	---	---	---
2	17.1	16.7	16.9	9.8	9.3	9.5	7.4	7.2	7.3	---	---	---
3	16.7	15.9	16.3	9.3	8.7	9.0	7.2	6.9	7.1	---	---	---
4	15.9	15.2	15.5	8.8	8.1	8.4	7.0	6.9	6.9	---	---	---
5	15.2	14.9	15.0	8.2	7.8	8.0	6.9	6.8	6.8	---	---	---
6	---	---	---	8.0	7.8	7.9	7.1	6.8	6.9	8.8	8.1	8.4
7	---	---	---	8.2	7.8	8.1	7.0	6.7	6.8	8.1	7.5	7.8
8	---	---	---	8.7	8.2	8.5	7.0	6.8	6.9	7.5	6.9	7.2
9	---	---	---	---	---	---	7.1	6.9	7.0	6.9	6.6	6.8
10	16.1	15.5	15.7	---	---	---	---	---	---	6.6	6.4	6.5
11	15.9	15.6	15.7	---	---	---	---	---	---	6.7	6.4	6.6
12	15.7	15.3	15.4	---	---	---	---	---	---	6.9	6.7	6.8
13	15.3	14.9	15.1	---	---	---	---	---	---	7.3	6.9	7.0
14	14.9	14.2	14.5	---	---	---	---	---	---	---	---	---
15	14.3	13.6	13.9	---	---	---	---	---	---	---	---	---
16	13.8	13.4	13.6	---	---	---	---	---	---	---	---	---
17	13.6	13.3	13.5	---	---	---	---	---	---	---	---	---
18	13.8	13.4	13.6	---	---	---	---	---	---	---	---	---
19	14.2	13.7	13.9	---	---	---	---	---	---	---	---	---
20	14.4	14.0	14.2	---	---	---	---	---	---	---	---	---
21	14.4	14.1	14.2	---	---	---	---	---	---	---	---	---
22	14.6	14.2	14.4	10.6	10.2	10.4	---	---	---	---	---	---
23	14.6	14.3	14.4	10.7	10.6	10.6	---	---	---	---	---	---
24	14.4	14.1	14.3	10.7	10.4	10.6	---	---	---	---	---	---
25	14.1	13.8	13.9	10.4	10.2	10.3	---	---	---	---	---	---
26	13.8	13.4	13.5	10.2	9.8	10.0	---	---	---	---	---	---
27	13.4	12.7	13.0	9.8	9.3	9.6	---	---	---	---	---	---
28	12.7	12.3	12.6	9.4	8.8	9.1	---	---	---	---	---	---
29	12.3	11.8	12.0	8.8	8.1	8.4	---	---	---	---	---	---
30	11.8	10.7	11.3	8.1	7.7	7.9	---	---	---	---	---	---
31	10.7	10.2	10.4	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

14207740 WILLAMETTE RIVER ABOVE FALLS, OT OREGON CITY, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	---	---	---	12.9	11.8	12.2
2	---	---	---	---	---	---	---	---	---	13.4	12.5	12.9
3	---	---	---	---	---	---	---	---	---	13.6	13.1	13.3
4	---	---	---	---	---	---	---	---	---	13.7	13.2	13.4
5	---	---	---	---	---	---	9.0	8.8	8.9	13.2	12.8	13.0
6	---	---	---	---	---	---	9.3	8.8	9.0	12.8	12.3	12.5
7	---	---	---	---	---	---	9.6	9.1	9.4	12.4	11.7	11.9
8	---	---	---	---	---	---	10.4	9.5	9.9	12.0	11.3	11.6
9	---	---	---	---	---	---	11.1	10.3	10.7	11.7	11.4	11.6
10	---	---	---	---	---	---	11.7	11.1	11.4	11.8	11.6	11.7
11	---	---	---	---	---	---	12.0	11.4	11.7	12.0	11.8	11.8
12	---	---	---	---	---	---	11.8	11.4	11.6	12.5	12.0	12.2
13	---	---	---	---	---	---	12.2	11.4	11.7	13.6	12.5	13.1
14	---	---	---	---	---	---	11.8	11.4	11.6	14.2	13.6	14.0
15	---	---	---	---	---	---	11.5	11.1	11.3	14.6	14.0	14.4
16	---	---	---	---	---	---	11.4	10.9	11.2	14.7	14.1	14.4
17	---	---	---	---	---	---	11.5	10.9	11.2	14.2	13.6	14.0
18	---	---	---	---	---	---	11.6	11.0	11.2	13.6	13.2	13.5
19	---	---	---	---	---	---	11.4	11.0	11.1	13.4	13.0	13.2
20	---	---	---	---	---	---	11.6	10.8	11.3	13.6	13.0	13.3
21	---	---	---	---	---	---	11.6	11.1	11.4	14.2	13.2	13.8
22	---	---	---	---	---	---	11.6	11.0	11.3	15.1	14.0	14.7
23	---	---	---	---	---	---	11.3	11.0	11.2	16.2	14.9	15.7
24	---	---	---	---	---	---	11.1	10.8	10.9	16.9	16.0	16.5
25	---	---	---	---	---	---	10.8	10.2	10.6	17.4	16.6	17.1
26	---	---	---	---	---	---	10.5	9.9	10.3	17.4	17.0	17.1
27	---	---	---	---	---	---	10.6	9.9	10.2	17.0	16.5	16.7
28	---	---	---	---	---	---	11.2	10.4	10.8	16.7	16.1	16.3
29	---	---	---	---	---	---	11.8	10.9	11.4	17.2	16.0	16.5
30	---	---	---	---	---	---	12.1	11.5	11.8	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	17.2	16.5	16.8	22.9	21.7	22.2	24.8	24.0	24.3	22.6	21.5	21.8
2	17.0	16.2	16.5	23.6	22.3	22.8	24.7	24.3	24.4	22.3	21.5	21.8
3	17.4	16.0	16.6	23.6	22.7	23.1	24.9	24.3	24.5	22.8	21.7	22.0
4	17.9	16.5	17.1	23.7	22.6	23.0	24.6	24.2	24.3	22.6	21.8	22.1
5	18.5	17.2	17.7	23.1	22.2	22.6	24.5	24.0	24.2	22.4	21.8	22.1
6	19.0	17.7	18.3	22.9	21.7	22.1	24.0	23.4	23.6	22.3	21.8	22.0
7	19.9	18.2	18.9	22.6	21.5	21.9	23.4	22.6	22.9	22.2	21.7	21.9
8	20.0	18.8	19.4	22.3	21.7	21.9	22.7	22.2	22.4	21.8	21.6	21.7
9	19.7	19.1	19.4	23.1	21.7	22.2	22.4	21.8	22.0	21.6	21.4	21.4
10	19.1	18.5	18.8	23.5	22.3	22.8	22.4	21.7	22.0	21.4	20.8	21.1
11	18.5	17.7	18.0	23.7	22.6	23.0	22.9	22.1	22.5	20.8	19.9	20.4
12	17.9	17.3	17.5	23.2	22.8	23.0	23.1	22.5	22.7	20.0	19.2	19.6
13	17.5	17.0	17.2	23.4	22.7	23.0	23.5	22.8	23.1	19.4	18.7	19.0
14	17.9	17.3	17.5	23.7	22.8	23.0	23.4	22.9	23.1	18.9	18.2	18.5
15	18.4	17.3	17.7	24.4	23.2	23.5	23.2	22.8	23.0	18.6	18.1	18.3
16	18.7	17.3	17.9	24.6	23.4	23.7	23.0	22.6	22.8	18.4	18.1	18.2
17	18.9	17.8	18.2	24.4	23.2	23.6	23.2	22.6	22.9	18.4	17.9	18.1
18	19.1	18.3	18.7	24.7	23.1	23.8	23.8	22.8	23.2	18.6	17.9	18.2
19	19.5	18.8	19.2	24.5	23.4	23.9	23.8	23.0	23.3	18.3	18.0	18.1
20	19.9	19.3	19.6	25.5	23.5	24.2	23.5	22.5	22.9	18.6	17.7	17.9
21	19.8	19.4	19.6	25.3	23.9	24.5	24.1	22.6	23.1	18.6	17.6	17.9
22	19.4	18.8	19.1	25.3	24.1	24.7	23.6	22.8	23.1	18.4	17.4	17.8
23	18.8	18.0	18.4	25.7	24.3	24.8	23.4	22.8	23.0	18.7	17.7	18.1
24	18.7	17.7	18.1	25.3	24.2	24.7	23.3	22.5	22.8	18.4	17.8	18.1
25	19.0	17.7	18.2	25.4	24.4	24.8	23.3	22.3	22.7	18.8	18.0	18.3
26	19.7	18.0	18.6	25.6	24.6	25.0	22.9	22.0	22.4	19.2	18.2	18.5
27	20.2	18.4	19.1	25.4	24.6	24.9	22.1	21.5	21.8	19.2	18.4	18.7
28	21.4	19.1	20.0	25.4	24.4	24.7	22.1	21.2	21.5	19.6	18.7	19.0
29	21.3	20.2	20.6	25.1	24.2	24.6	22.4	21.3	21.7	19.3	19.0	19.1
30	22.2	21.0	21.5	25.6	24.2	24.5	22.6	21.6	21.9	20.0	19.0	19.3
31	---	---	---	25.0	24.0	24.5	22.3	21.6	21.9	---	---	---
MONTH	22.2	16.0	18.5	25.7	21.5	23.6	24.9	21.2	22.9	22.8	17.4	19.6

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 mi^2, approximately.

PERIOD OF RECORD.--November 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (Oregon State Highway Division bench mark).

REMARKS.--Flow regulated by many reservoirs upstream. Gage out of operation during period October 1993 to January 1994 and July to September 1994.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 46.04 ft Feb. 9, 1996, from high-water mark; minimum, 1.24 ft July 14, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 24.87 ft Feb. 1; minimum, 1.41 ft Sept. 21.

Gage height, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	5.36	2.19	3.52	5.67	2.93	4.16	7.25	3.66	5.22	18.91	17.60	18.34
2	5.29	2.03	3.64	6.70	3.25	4.85	7.68	3.76	5.42	19.01	18.31	18.61
3	5.61	2.40	3.98	7.03	3.64	5.10	7.88	4.08	5.60	18.49	17.94	18.19
4	6.63	3.02	4.87	7.32	3.41	5.19	7.83	4.04	5.57	18.35	17.52	17.86
5	7.13	3.36	4.98	7.66	3.79	5.46	7.86	3.92	5.53	18.52	18.09	18.32
6	6.15	2.84	4.45	7.92	3.94	5.69	7.77	3.96	5.51	18.26	17.03	17.65
7	6.73	3.01	4.64	8.24	4.20	6.01	7.49	3.86	5.35	17.03	15.07	15.97
8	6.66	3.27	4.92	8.44	4.47	6.32	6.85	3.64	4.98	15.07	13.59	14.16
9	7.28	3.51	5.09	7.89	4.79	6.17	6.40	3.35	4.78	13.67	12.27	12.89
10	7.21	3.93	5.40	7.21	4.95	5.97	6.37	3.35	4.92	12.27	10.93	11.53
11	6.64	3.64	4.90	6.53	4.51	5.56	6.22	3.39	4.84	10.99	9.94	10.52
12	5.56	3.05	4.25	7.11	4.69	5.82	7.05	3.96	5.50	10.73	9.66	10.10
13	5.06	2.29	3.50	6.99	4.98	5.84	7.97	5.27	6.41	11.69	9.98	10.94
14	5.06	2.22	3.53	7.12	4.85	5.79	9.23	6.43	7.59	12.98	11.45	12.28
15	5.32	2.64	3.93	7.20	4.29	5.57	10.13	7.61	8.92	12.70	11.70	12.30
16	5.63	2.38	3.90	7.54	4.47	5.80	12.70	9.10	11.19	11.80	10.65	11.39
17	5.87	2.63	4.27	7.49	4.67	5.81	13.97	12.35	13.27	10.97	9.75	10.35
18	6.03	2.93	4.37	7.54	4.58	5.76	13.64	12.38	13.12	10.56	9.00	9.59
19	5.86	2.80	4.20	7.88	4.82	6.07	12.61	11.51	12.16	10.00	8.25	8.94
20	5.66	2.59	4.01	7.90	4.78	6.02	12.06	10.63	11.33	9.51	7.52	8.29
21	6.42	2.70	4.33	7.90	4.80	6.03	11.60	9.95	10.59	9.13	7.09	7.90
22	6.29	3.07	4.47	7.76	4.62	5.83	11.45	10.35	10.75	8.98	6.87	7.72
23	6.65	3.11	4.56	7.42	4.41	5.60	10.70	9.66	10.16	9.18	6.95	7.98
24	6.63	3.47	4.73	7.00	4.08	5.27	9.91	8.60	9.20	9.37	7.32	8.17
25	6.70	3.40	4.74	6.33	3.84	4.86	9.26	7.86	8.50	9.67	7.55	8.48
26	6.51	3.60	4.73	5.89	3.59	4.67	9.08	7.36	8.05	11.49	8.93	10.22
27	5.66	3.06	4.10	5.88	3.83	4.76	10.77	7.51	9.09	13.48	11.49	12.69
28	5.60	2.61	3.94	6.24	3.43	4.65	12.76	10.77	11.81	14.43	13.41	13.89
29	5.07	2.87	4.00	6.58	3.34	4.72	13.88	12.51	13.14	14.59	13.89	14.18
30	5.09	2.56	3.79	6.98	3.50	5.02	15.06	13.30	14.23	18.40	14.38	16.26
31	5.27	2.67	3.77	---	---	---	17.75	14.97	16.69	24.04	18.40	20.77
MONTH	7.28	2.03	4.31	8.44	2.93	5.48	17.75	3.35	8.69	24.04	6.87	12.79

14207770 WILLAMETTE RIVER BELOW FALLS, AT OREGON CITY, OR--Continued

Gage height, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	24.87	24.04	24.55	8.65	6.35	7.19	13.55	12.81	13.18	11.27	10.18	10.69
2	24.44	23.37	23.95	8.52	6.16	7.04	13.15	12.37	12.76	10.94	9.60	10.26
3	23.51	21.06	22.28	8.46	5.92	6.94	13.07	12.15	12.55	10.33	8.90	9.61
4	21.07	18.57	19.87	8.50	6.18	7.13	12.60	11.72	12.11	10.20	8.76	9.37
5	18.57	15.98	17.11	8.69	6.19	7.33	12.15	11.33	11.73	9.96	8.83	9.26
6	15.98	14.14	14.91	8.83	6.76	7.76	12.24	11.49	11.77	10.21	9.21	9.73
7	14.15	12.89	13.44	13.19	7.78	10.28	12.38	11.84	12.07	10.58	9.85	10.15
8	12.95	11.52	12.22	17.64	13.19	15.60	12.37	11.44	11.95	10.27	8.66	9.50
9	11.58	10.00	10.79	18.42	17.44	18.05	11.76	11.04	11.47	9.22	8.72	8.94
10	10.09	9.02	9.61	18.38	16.97	17.73	11.53	11.08	11.33	9.26	8.02	8.70
11	9.39	8.16	8.88	17.00	15.08	15.97	11.48	10.83	11.20	8.89	7.40	8.24
12	9.06	7.56	8.33	15.08	14.21	14.64	11.57	10.83	11.30	8.64	7.40	8.00
13	8.96	6.99	7.90	15.12	14.24	14.72	12.86	11.18	12.21	9.09	7.49	8.11
14	8.78	6.73	7.45	15.25	14.66	14.93	13.53	12.64	13.13	9.64	7.48	8.68
15	9.07	6.42	7.40	14.90	14.10	14.54	13.78	12.95	13.33	10.64	8.77	9.48
16	9.10	6.37	7.48	14.31	13.33	13.84	13.73	12.76	13.16	10.70	8.89	9.60
17	9.88	6.54	8.02	13.43	12.44	12.97	13.39	12.33	12.77	10.83	8.88	9.63
18	12.16	8.94	10.57	12.67	11.74	12.19	13.67	12.47	13.09	10.25	8.79	9.36
19	12.47	11.36	11.83	12.20	11.05	11.62	13.55	12.18	12.83	9.97	8.44	9.08
20	12.15	10.76	11.40	12.02	10.83	11.31	12.89	11.37	12.10	9.46	7.77	8.61
21	11.58	10.18	10.73	11.99	10.72	11.29	11.82	10.66	11.22	8.68	7.44	8.04
22	11.45	10.04	10.54	16.55	11.76	14.06	11.31	10.59	10.91	8.68	7.76	8.24
23	10.91	9.48	10.03	17.80	16.55	17.37	11.26	10.65	10.93	8.90	7.96	8.46
24	10.16	8.55	9.36	17.99	17.14	17.63	11.79	11.03	11.56	9.21	8.20	8.77
25	9.28	7.72	8.54	17.16	15.85	16.51	12.72	11.73	12.47	9.57	8.06	8.79
26	9.16	7.30	8.15	16.35	15.90	16.09	13.09	12.35	12.82	9.32	8.06	8.77
27	8.85	6.69	7.74	17.14	16.11	16.72	13.23	11.95	12.70	9.40	8.33	9.02
28	8.64	6.49	7.25	17.71	17.11	17.46	12.18	11.29	11.73	11.05	9.13	10.51
29	---	---	---	17.51	16.29	17.01	12.00	11.01	11.43	11.21	9.64	10.36
30	---	---	---	16.29	14.65	15.56	11.71	10.70	11.11	11.25	9.87	10.53
31	---	---	---	14.66	13.45	14.17	---	---	---	11.86	11.16	11.54
MONTH	24.87	6.37	11.80	18.42	5.92	13.41	13.78	10.59	12.10	11.86	7.40	9.29

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	12.22	11.60	11.88	7.93	4.63	5.93	6.99	3.35	5.00	6.69	3.08	4.74
2	11.78	10.69	11.25	7.78	4.53	5.88	7.23	3.72	5.32	6.07	2.52	4.21
3	10.85	10.06	10.48	7.32	3.59	5.29	6.50	3.06	4.94	6.13	2.47	3.87
4	10.51	9.52	10.08	6.41	3.01	4.53	6.89	2.92	4.39	6.26	2.55	3.93
5	10.43	9.39	9.93	6.56	3.55	4.79	6.87	2.95	4.50	6.20	2.58	3.98
6	9.89	8.96	9.51	6.44	3.22	4.72	6.60	3.11	4.41	5.96	2.23	4.02
7	9.80	8.87	9.36	6.44	2.69	4.22	6.72	3.09	4.49	6.27	2.30	4.22
8	9.79	8.92	9.24	6.51	2.83	4.41	6.97	3.33	4.82	6.14	2.34	4.16
9	9.95	8.46	9.08	6.60	3.65	4.73	7.01	3.23	4.91	5.95	2.56	4.32
10	9.78	8.50	9.03	7.80	4.79	5.90	7.57	3.63	5.28	6.58	2.84	4.54
11	10.24	8.75	9.61	8.23	4.77	6.02	7.15	3.26	5.03	6.04	2.41	4.19
12	10.99	9.55	10.11	8.42	4.58	6.06	7.65	3.95	5.54	5.67	2.33	3.98
13	11.24	9.09	10.05	8.52	4.42	5.94	8.10	4.25	5.78	5.50	2.24	3.80
14	10.66	8.80	9.49	7.81	4.17	5.81	7.40	3.60	5.32	5.45	2.45	3.79
15	10.86	8.76	9.59	8.58	4.74	6.25	6.94	3.34	4.99	5.35	2.17	3.57
16	9.76	7.51	8.45	7.94	4.07	5.71	6.28	2.74	4.56	5.84	2.23	3.69
17	9.43	7.61	8.44	7.60	4.28	5.65	6.58	3.09	4.50	5.32	2.63	3.72
18	9.31	7.78	8.52	6.82	3.89	5.38	6.21	2.71	4.17	5.05	2.19	3.22
19	8.92	7.61	8.29	5.84	2.62	4.42	6.43	3.50	4.42	5.01	2.16	3.24
20	8.56	5.91	7.25	6.05	2.41	3.79	6.25	3.08	4.03	4.71	1.55	2.90
21	7.11	4.69	5.74	6.31	3.18	4.28	6.09	3.43	4.35	4.58	1.41	2.92
22	6.73	4.51	5.36	6.42	3.21	4.40	6.35	3.28	4.36	4.99	1.78	3.45
23	6.95	4.59	5.49	6.23	3.33	4.33	6.13	3.00	4.32	5.79	2.68	4.18
24	6.85	4.55	5.38	6.54	3.98	4.86	6.39	2.52	4.27	6.40	2.71	4.43
25	6.56	4.10	5.14	6.61	3.67	4.78	6.73	3.03	4.81	6.26	2.53	4.33
26	7.19	4.88	6.10	6.69	2.99	4.45	7.28	3.08	5.13	6.78	3.08	4.72
27	7.99	5.76	6.61	6.76	3.07	4.53	7.76	4.28	5.71	7.30	3.24	5.04
28	7.95	5.25	6.33	6.63	2.92	4.54	7.95	3.85	5.72	7.16	3.48	5.29
29	7.96	5.02	6.23	7.56	3.88	5.35	7.11	3.20	4.98	6.60	3.02	4.72
30	8.09	5.10	6.26	7.83	3.87	5.54	6.83	2.92	4.63	6.72	2.80	4.48
31	---	---	---	7.47	3.57	5.26	6.84	3.18	4.88	---	---	---
MONTH	12.22	4.10	8.28	8.58	2.41	5.09	8.10	2.52	4.82	7.30	1.41	4.05
YEAR	24.87	1.41	8.32									

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 mi^2.

PERIOD OF RECORD.--May 1956 to current year. Prior to October 1957, published as Timothy Meadows Reservoir.

GAGE.--Nonrecording gage. Datum of gage is NGVD 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, 68,300 acre-ft June 29, elevation, 3,191.85 ft; minimum contents observed, 54,850 acre-ft Dec. 20, elevation, 3,181.74 ft.

Monthend Elevation and Contents at 0800
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	3,186.45	60,930	-
Oct. 31	3,183.44	57,010	-3,920
Nov. 30	3,182.12	55,330	-1,680
Dec. 31	3,181.98	55,150	-180
CAL YR 2002	-	-	+2,480
Jan. 31	3,185.10	59,160	+4,010
Feb. 28	3,185.99	60,330	+1,170
Mar. 31	3,190.28	66,100	+5,770
Apr. 30	3,190.40	66,270	+170
May 31	3,191.57	67,900	+1,630
June 30	3,191.84	68,280	+380
July 31	3,191.80	68,230	-50
Aug. 31	3,189.52	65,050	-3,180
Sept.30	3,187.11	61,810	-3,240
WTR YR 2003	-	-	+880

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 mi^2.

PERIOD OF RECORD.--July 1956 to current year.

GAGE.--Water-stage recorder and artificial control. Datum of gage is 3,041.83 ft above NGVD of 1929 (Portland General Electric Co. bench mark).

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1956 by Timothy Lake (station 14208600). No diversion upstream from station.

AVERAGE DISCHARGE.--47 years (water years 1957-2003), 133 ft^3/s, 33.20 in/yr, 96,360 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,110 ft^3/s Dec. 24, 1964, gage height, 3.93 ft, from rating curve extended above 290 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 3.7 ft^3/s Sept. 23, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 277 ft^3/s Sept. 25, gage height, 2.33 ft; minimum discharge, 39 ft^3/s Sept. 22, 23.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	116	124	81	82	54	118	136	196	55	66	110	100
2	124	111	80	82	50	118	136	183	55	65	110	100
3	127	117	80	73	49	118	142	168	55	64	102	100
4	121	75	114	65	47	104	169	168	55	64	102	100
5	123	154	84	48	75	96	179	92	61	63	102	100
6	123	115	84	46	120	144	184	75	72	60	102	100
7	123	136	84	45	152	124	188	75	81	60	102	100
8	123	133	84	45	198	69	178	75	84	60	102	100
9	48	105	84	45	202	64	168	75	76	55	102	100
10	75	82	84	45	144	51	177	75	74	54	102	100
11	131	95	91	45	203	66	157	75	73	54	101	100
12	131	96	102	57	206	63	162	75	73	54	101	100
13	131	96	102	84	206	62	157	74	73	54	101	100
14	131	96	102	84	206	68	156	74	73	54	102	100
15	131	96	102	84	206	75	172	75	73	53	103	100
16	137	96	102	75	202	82	181	75	73	53	106	96
17	140	96	110	66	199	112	177	75	68	54	106	53
18	140	96	100	49	199	143	170	75	66	54	106	119
19	139	96	97	43	199	157	185	75	66	54	106	123
20	137	96	82	43	199	137	164	73	66	54	106	123
21	136	96	81	43	149	106	162	73	66	54	106	123
22	140	95	71	43	122	60	162	73	66	54	106	74
23	140	95	57	43	121	59	151	72	64	54	106	66
24	141	95	75	43	132	57	139	73	66	55	106	141
25	141	95	84	43	141	57	121	73	66	54	104	153
26	140	95	84	45	141	75	159	72	66	54	100	117
27	140	94	85	46	137	110	188	56	66	54	100	120
28	139	93	82	65	118	133	188	51	66	53	100	120
29	139	93	82	69	---	133	189	53	66	53	100	128
30	139	90	82	54	---	133	192	55	66	53	100	133
31	136	---	82	58	---	135	---	55	---	53	100	---
TOTAL	3982	3052	2714	1758	4177	3029	4989	2634	2030	1740	3202	3189
MEAN	128	102	87.5	56.7	149	97.7	166	85.0	67.7	56.1	103	106
MAX	141	154	114	84	206	157	192	196	84	66	110	153
MIN	48	75	57	43	47	51	121	51	55	53	100	53
AC-FT	7900	6050	5380	3490	8290	6010	9900	5220	4030	3450	6350	6330
MEAN†	69.4	94.6	142	141	96.2	134	279	235	142	78.9	64.2	69.4
CFSM†	1.28	1.74	2.61	2.59	1.77	2.46	5.13	4.32	2.61	1.45	1.18	1.28
IN.†	1.47	1.94	3.00	2.98	1.84	2.84	5.72	4.99	2.91	1.67	1.36	1.42
AC-FT†	4270	5630	8720	8650	5340	8230	16590	14480	8440	4850	3950	4130

CAL YR 2002 TOTAL 43224 MEAN 118 MAX 307 MIN 37 AC-FT 85730 MEAN† 82.3 CFSM† 1.51 IN.† 20.53 AC-FT† 59560
WTR YR 2003 TOTAL 36496 MEAN 100 MAX 206 MIN 43 AC-FT 72390 MEAN† 129 CFSM† 2.37 IN.† 32.15 AC-FT† 93280

† Adjusted for change in contents in Timothy Lake.

14209000 OAK GROVE FORK ABOVE POWERPLANT INTAKE, OR

LOCATION.--Lat 45°04'17", long 121°56'22", SW 1/4 SE 1/4 sec 3, T.6 S., R.7 E., Clackamas County, Hydrologic Unit 17090011, Mount Hood National Forest, on left bank 0.8 mi upstream from Spring Creek, 1.3 mi upstream from Kink Creek, 1.7 mi upstream from Portland General Electric Co. diversion dam, 24 mi southeast of Estacada, and at mile 6.7.

DRAINAGE AREA.--124 mi^2.

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.

REVISED RECORDS.--WSP 1248:1909, 1910(M), 1916, 1918, 1923, 1932. WSP 1935: 1914, 1921.

GAGE.--Water-stage recorder. Elevation of gage is 2,100 ft above NGVD of 1929, from topographic map. 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, Dec. 1923 to Sept. 1996, at site 0.6 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records poor. Flow regulated since 1956 by Timothy Lake (station 14208600). Low flows are affected at times by diversion to Stone Creek Hydroelectric Project. Unit value discharges may not be representative of instantaneous flow conditions, however, daily discharge values are representative of the average daily flow rate.

AVERAGE DISCHARGE.--47 years (water years 1910-1956), 511 ft^3/s, 369,900 acre-ft/yr.
47 years (water years 1957-2003), 480 ft^3/s, 347,500 acre-ft/yr (regulated).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft^3/s Jan. 7, 1923, gage height, 5.45 ft, site and datum then in use, from rating curve extended above 2,300 ft^3/s on basis of peak discharge for other stations in Clackamas River basin; minimum discharge, 148 ft^3/s Sept. 3, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,750 ft^3/s Jan. 31, gage height, 7.49 ft; minimum discharge, 181 ft^3/s Sept. 23.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	310	311	241	313	1230	386	730	565	313	262	305	272
2	318	294	241	339	952	381	688	556	310	261	312	272
3	336	305	237	419	782	380	649	536	305	261	298	271
4	324	264	282	491	657	360	659	547	300	260	293	271
5	317	335	245	473	611	355	652	458	301	258	293	271
6	315	315	243	398	602	456	650	426	324	256	293	271
7	316	378	238	360	608	539	638	411	322	255	297	272
8	318	355	238	335	619	570	633	401	322	253	293	283
9	240	330	245	314	603	598	631	389	308	244	292	287
10	247	265	259	300	517	596	649	387	303	242	292	273
11	322	280	279	287	562	593	645	386	299	241	291	277
12	322	293	305	312	554	628	652	392	296	241	291	270
13	327	300	325	356	547	640	649	385	294	239	286	268
14	326	287	359	364	514	625	637	387	292	238	286	269
15	327	280	362	344	514	637	628	387	292	240	287	267
16	336	295	398	322	515	604	633	389	290	239	295	276
17	343	292	340	303	514	605	644	389	283	238	294	217
18	334	278	308	279	509	611	615	380	278	238	293	291
19	332	301	300	268	507	622	622	374	276	237	291	296
20	329	288	285	271	518	613	590	366	276	239	290	294
21	328	289	269	270	510	625	595	371	282	238	293	293
22	330	282	248	294	512	920	581	371	289	238	291	238
23	330	272	225	322	470	824	568	380	274	237	287	212
24	330	265	242	322	452	698	564	385	270	238	286	313
25	329	264	254	390	449	672	513	380	268	235	283	332
26	328	262	269	593	444	759	545	368	268	231	278	290
27	329	261	343	577	427	727	573	342	268	231	277	287
28	332	262	328	513	396	718	569	332	268	231	274	287
29	328	262	299	555	---	685	574	330	267	231	275	290
30	324	257	312	1150	---	680	566	330	265	230	276	299
31	320	---	337	1330	---	722	---	321	---	230	272	---
TOTAL	9947	8722	8856	13164	16095	18829	18542	12421	8703	7512	8964	8309
MEAN	321	291	286	425	575	607	618	401	290	242	289	277
MAX	343	378	398	1330	1230	920	730	565	324	262	312	332
MIN	240	257	225	268	396	355	513	321	265	230	272	212
AC-FT	19730	17300	17570	26110	31920	37350	36780	24640	17260	14900	17780	16480

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2003, BY WATER YEAR (WY)

MEAN	391	499	564	580	586	566	574	581	444	327	306	347
MAX	527	798	1047	1095	1433	1377	1024	1104	1126	595	473	619
(WY)	1997	1996	1965	1997	1996	1972	1997	1971	1974	1996	1996	1996
MIN	236	288	265	255	228	256	297	279	236	228	218	215
(WY)	1982	1988	1994	1977	2001	2001	2001	1994	2001	1994	1994	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1957 - 2003	
ANNUAL TOTAL	154630		140064			
ANNUAL MEAN	424		384		480	
HIGHEST ANNUAL MEAN					739	1996
LOWEST ANNUAL MEAN					286	2001
HIGHEST DAILY MEAN	1430	Apr 14	1330	Jan 31	3940	Feb 7 1996
LOWEST DAILY MEAN	225	Dec 23	212	Sep 23	170	Feb 25 2001
ANNUAL SEVEN-DAY MINIMUM	239	Aug 20	231	Jul 25	193	Mar 5 2001
ANNUAL RUNOFF (AC-FT)	306700		277800		347500	
10 PERCENT EXCEEDS	659		626		686	
50 PERCENT EXCEEDS	334		316		467	
90 PERCENT EXCEEDS	253		245		267	

14209500 CLACKAMAS RIVER ABOVE THREE LYNX CREEK, OR

LOCATION.--Lat 45°07'30", long 122°04'20", in SE 1/4 NE 1/4 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 mi^2.

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 NGVD 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 good. Regulation since May 1956 by Timothy Lake (station 14208600) and by Oak Grove powerhouse.

AVERAGE DISCHARGE.--39 years (water years 1910-13, 1922-1956), 1,942 ft^3/s, 55.08 in/yr, 1,407,000 acre-ft/yr.
47 years (water years 1957-2003), 2,017 ft^3/s, 57.21 in/yr, 1,461,000 acre-ft/yr (regulated period).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 68,200 ft^3/s Dec. 22, 1964, gage height, 21.7 ft, from floodmark, from rating curve extended above 34,100 ft^3/s on basis of slope-area measurement at gage height 15.06 ft; minimum recorded discharge, 260 ft^3/s Oct. 15, 2001; minimum daily, 410 ft^3/s Sept. 4, 1986.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 26	1830	8,230	6.64	Mar. 22	1500	11,500	8.11
Jan. 31	2300	*14,400	*9.24				

Minimum discharge, 294 ft^3/s Aug. 28.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	710	644	648	2680	9950	1510	3570	2110	1420	785	692	638
2	687	645	643	3000	6050	1440	3160	2080	1360	781	695	637
3	707	653	658	5910	4480	1400	2880	2080	1300	771	699	635
4	714	602	662	5730	3570	1370	2690	2170	1240	765	693	629
5	692	619	657	5480	3000	1360	2550	2410	1210	758	688	627
6	679	616	641	3540	2640	2080	2530	2260	1200	750	685	639
7	672	662	633	2680	2380	4380	2420	2100	1170	743	723	639
8	667	744	624	2200	2210	6140	2430	1980	1140	740	696	687
9	562	982	625	1900	2060	5560	2660	1870	1100	727	682	729
10	668	931	701	1690	1860	5520	2810	1770	1070	718	690	721
11	660	914	964	1550	1810	4490	3170	1750	1040	711	681	693
12	636	897	1340	2180	1720	4650	3090	1790	1010	706	678	677
13	665	1240	1530	3280	1650	4670	3020	1760	1000	703	674	662
14	663	1130	1940	3040	1590	4240	2860	1810	992	701	671	651
15	660	952	2390	2590	1550	3990	2640	1880	963	696	669	646
16	663	881	3230	2200	1650	3620	2530	1870	942	691	673	675
17	667	1190	2280	1920	1860	3160	2570	1830	925	686	671	700
18	666	1040	1760	1720	2060	2790	2530	1740	910	680	669	715
19	665	1000	1480	1590	1960	2580	2380	1660	887	675	670	694
20	665	942	1280	1500	1980	2660	2270	1600	890	671	665	685
21	664	886	1320	1460	2260	3110	2270	1580	926	667	663	678
22	664	839	1200	1670	2940	8890	2240	1660	957	662	666	624
23	662	799	1090	2530	2530	7040	2200	1810	908	658	670	605
24	659	764	1030	2370	2170	4890	2390	1970	886	655	663	686
25	657	734	980	3170	2000	4110	2220	1960	867	651	658	682
26	659	715	1130	5940	1850	4880	2180	1800	838	649	650	659
27	659	698	2800	5770	1740	4320	2140	1660	820	647	649	652
28	663	687	2690	3830	1640	3760	2070	1660	816	643	645	650
29	660	678	2180	3370	---	3320	2130	1630	803	637	645	655
30	648	666	2340	8130	---	3190	2120	1620	790	632	642	670
31	645	---	3550	11000	---	3510	---	1540	---	630	639	---
TOTAL	20608	24750	44996	105620	73160	118630	76720	57410	30380	21589	20854	19940
MEAN	665	825	1451	3407	2613	3827	2557	1852	1013	696	673	665
MAX	714	1240	3550	11000	9950	8890	3570	2410	1420	785	723	729
MIN	562	602	624	1460	1550	1360	2070	1540	790	630	639	605
AC-FT	40880	49090	89250	209500	145100	235300	152200	113900	60260	42820	41360	39550
CFSM	1.39	1.72	3.03	7.11	5.45	7.99	5.34	3.87	2.11	1.45	1.40	1.39
IN.	1.60	1.92	3.49	8.20	5.68	9.21	5.96	4.46	2.36	1.68	1.62	1.55

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2003, BY WATER YEAR (WY)

MEAN	1021	2210	3078	3071	3009	2669	2670	2502	1624	899	736	779
MAX	2145	4239	8271	6139	7671	6559	3896	4701	4136	1565	972	1242
(WY)	1998	1996	1965	1970	1996	1972	2002	1971	1974	1974	1974	1959
MIN	593	666	786	751	734	1353	1417	1057	674	592	534	510
(WY)	1993	1988	1977	1977	1977	1992	1967	1992	1992	1992	1992	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1957 - 2003	
ANNUAL TOTAL	670927		614657			
ANNUAL MEAN	1838		1684		2017	
HIGHEST ANNUAL MEAN					3128	1974
LOWEST ANNUAL MEAN					1062	1977
HIGHEST DAILY MEAN	12900	Apr 14	11000	Jan 31	48000	Dec 23 1964
LOWEST DAILY MEAN	562	Oct 9	562	Oct 9	410	Sep 4 1986
ANNUAL SEVEN-DAY MINIMUM	629	Aug 27	632	Oct 31	490	Sep 1 1992
ANNUAL RUNOFF (AC-FT)	1331000		1219000		1461000	
ANNUAL RUNOFF (CFSM)	3.84		3.52		4.21	
ANNUAL RUNOFF (INCHES)	52.11		47.74		57.21	
10 PERCENT EXCEEDS	3260		3250		3680	
50 PERCENT EXCEEDS	1600		1040		1560	
90 PERCENT EXCEEDS	657		650		684	

14209700 FISH CREEK NEAR THREE LYNX, OR

LOCATION.--Lat 45°08'52", long 122°09'07", in NE 1/4 SE 1/4 sec.11, T.5 S., R.5 E., Clackamas County, Hydrologic Unit 17090011, Mount Hood National Forest, on right bank, 0.7 mi upstream from Clackamas River, and at mile 1.15.

DRAINAGE AREA.--45.1 mi^2.

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 940 ft above NGVD of 1929, from topographic map.

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

AVERAGE DISCHARGE.--14 years (water years 1990-2003), 208 ft^3/s, 62.73 in/yr, 150,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,540 ft^3/s Feb. 7, 1996, gage height, 11.83 ft, from rating curve extended above 2,800 ft^3/s on basis of slope-area measurement of peak flow; maximum gage height, 15.40 ft, backwater from debris flow; minimum discharge, 6.0 ft^3/s Sept. 1, 2, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	2030	*2,600	*8.98	No other peak above base discharge.			

Minimum discharge, 7.2 ft^3/s Sept. 3-7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	7.9	19	393	1420	112	317	153	77	23	11	7.9
2	13	8.1	18	421	785	103	279	149	70	23	11	7.7
3	15	8.1	18	722	537	102	244	148	65	22	11	7.4
4	19	8.4	18	809	382	95	223	171	60	22	11	7.3
5	15	8.5	20	740	295	106	217	228	55	21	11	7.2
6	14	8.5	18	433	237	315	241	201	52	21	12	7.2
7	12	9.0	17	300	199	1070	236	178	49	20	12	8.2
8	11	21	16	236	171	1160	250	157	47	20	12	13
9	11	55	16	198	148	824	305	140	44	20	11	15
10	10	54	28	170	132	705	314	128	43	19	11	14
11	10	45	71	152	119	529	349	125	41	18	11	15
12	9.7	51	108	209	107	552	319	132	40	18	10	16
13	9.4	103	191	301	99	601	306	130	40	18	10	13
14	9.0	84	274	334	92	510	270	136	39	17	10	12
15	8.6	57	366	284	87	447	233	142	36	17	9.7	11
16	8.3	51	610	231	99	365	209	142	35	16	9.7	12
17	8.2	83	322	195	151	301	224	153	33	16	9.6	17
18	8.3	60	219	172	206	249	248	159	32	15	9.3	14
19	8.4	74	171	158	190	220	229	150	33	15	9.2	12
20	8.4	64	140	145	207	237	205	140	33	15	9.1	12
21	8.4	51	171	139	303	520	196	134	37	14	8.9	11
22	8.4	43	149	179	404	1360	193	138	42	14	8.8	10
23	8.1	37	129	268	313	903	193	147	37	13	8.9	9.6
24	7.8	32	108	249	232	547	221	155	34	13	8.6	9.3
25	7.8	29	93	382	189	427	208	148	31	13	8.5	9.0
26	7.9	26	130	820	160	522	195	129	29	13	8.4	8.7
27	8.0	24	541	704	139	432	179	113	28	13	8.6	8.3
28	8.4	22	386	439	123	337	166	109	26	12	8.4	7.9
29	8.4	21	298	526	---	276	164	101	25	12	8.3	8.0
30	8.0	20	383	1780	---	254	158	95	24	11	8.0	8.3
31	7.8	---	642	1740	---	297	---	86	---	11	7.9	---
TOTAL	313.3	1165.5	5690	13829	7526	14478	7091	4417	1237	515	303.9	319.0
MEAN	10.1	38.9	184	446	269	467	236	142	41.2	16.6	9.80	10.6
MAX	19	103	642	1780	1420	1360	349	228	77	23	12	17
MIN	7.8	7.9	16	139	87	95	158	86	24	11	7.9	7.2
AC-FT	621	2310	11290	27430	14930	28720	14060	8760	2450	1020	603	633
CFSM	0.22	0.86	4.07	9.89	5.96	10.4	5.24	3.16	0.91	0.37	0.22	0.24
IN.	0.26	0.96	4.69	11.41	6.21	11.94	5.85	3.64	1.02	0.42	0.25	0.26

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2003, BY WATER YEAR (WY)

MEAN	88.5	316	399	376	350	301	292	203	112	35.5	17.2	17.0
MAX	233	756	1006	654	817	564	447	389	236	62.8	31.4	44.0
(WY)	1998	1996	1997	1997	1996	1997	1993	1999	1999	1993	1993	1997
MIN	10.1	26.7	177	98.1	90.0	87.0	181	68.0	20.9	13.6	8.20	9.61
(WY)	2003	1994	2001	2001	2001	1992	1998	1992	1992	1992	1992	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1990 - 2003	
ANNUAL TOTAL	57944.9		56884.7			
ANNUAL MEAN	159		156		208	
HIGHEST ANNUAL MEAN					335	1997
LOWEST ANNUAL MEAN					99.6	2001
HIGHEST DAILY MEAN	1660	Apr 14	1780	Jan 30	5970	Feb 7 1996
LOWEST DAILY MEAN	7.8	Oct 24	7.2	Sep 5	6.1	Sep 2 1992
ANNUAL SEVEN-DAY MINIMUM	8.0	Oct 24	7.5	Aug 31	6.4	Aug 28 1992
ANNUAL RUNOFF (AC-FT)	114900		112800		150900	
ANNUAL RUNOFF (CFSM)	3.52		3.46		4.62	
ANNUAL RUNOFF (INCHES)	47.79		46.92		62.73	
10 PERCENT EXCEEDS	363		384		469	
50 PERCENT EXCEEDS	129		57		127	
90 PERCENT EXCEEDS	9.1		8.5		13	

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 mi^2.

WATER-DISCHARGE RECORDS

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 286.93 ft above NGVD 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 12.00 ft higher. Feb. 17, 1965 to Sept. 30, 1991, water-stage recorder at same site at datum 10 ft higher.

REMARKS.--No estimated daily discharges. Records good. 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). One small diversion upstream from station for city of Estacada municipal water supply.

AVERAGE DISCHARGE.--50 years (water years 1909-1958), 2,689 ft^3/s, 54.44 in/yr, 1,948,000 acre-ft/yr.
45 years (water years 1959-2003), 2,807 ft^3/s, 56.85 in/yr, 2,034,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 86,900 ft^3/s Dec. 22, 1964, gage height, 30.36 ft (present datum); minimum discharge, 50 ft^3/s Mar. 10, 1961, from rating curve extended below 260 ft^3/s; minimum daily, 285 ft^3/s Oct. 4, 5, 1958, caused by filling of North Fork dam forebay.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 15,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	2300	*22,700	*19.90	Mar. 22	1530	16,600	18.27

Minimum discharge, 524 ft^3/s Sept. 5.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	969	837	739	3950	15900	2210	5010	2790	1920	1010	797	739
2	896	807	1040	3870	9230	2160	4440	2730	1820	994	827	734
3	935	831	977	7430	7080	2100	4050	2730	1810	1000	828	734
4	1080	796	651	7060	5560	2040	3700	2820	1780	978	825	724
5	969	771	768	7740	4550	2130	3520	3260	1630	965	823	691
6	929	869	847	4980	3910	3700	3590	3000	1610	954	816	760
7	889	824	828	3740	3420	8260	3450	2810	1570	944	865	758
8	867	980	803	3180	3100	10800	3380	2640	1520	930	825	856
9	826	1270	808	2770	2900	8570	3800	2510	1430	926	809	894
10	819	1270	878	2400	2700	8150	3920	2410	1340	909	813	878
11	831	1220	1220	2210	2570	6690	4460	2380	1320	897	800	868
12	870	1160	1760	2640	2460	6610	4260	2480	1340	893	801	825
13	847	1650	2100	4170	2340	6810	4230	2440	1340	887	790	788
14	873	1540	2500	4060	2270	6170	4070	2420	1320	882	782	792
15	816	1290	3010	3530	2190	5740	3650	2510	1270	875	779	820
16	845	1170	4520	2990	2300	5300	3420	2570	1360	869	797	828
17	842	1630	3130	2680	2640	4480	3680	2560	1300	834	845	914
18	775	1410	2470	2440	2940	3980	3890	2480	1070	846	811	835
19	819	1420	2060	2250	2820	3620	3570	2430	1120	867	760	829
20	847	1310	1790	2100	2930	3660	3290	2330	1150	832	735	810
21	844	1190	1980	2070	3480	4490	3260	2270	1250	825	746	794
22	853	1120	1800	2230	4530	11700	3310	2320	1310	815	766	948
23	823	1070	1630	3300	3990	10000	3270	2450	1220	778	782	736
24	803	1030	1490	3030	3310	7060	3550	2620	1170	756	767	761
25	838	1000	1380	4080	2990	5830	3330	2640	1120	806	766	774
26	838	992	1580	7070	2770	6910	3170	2460	1120	795	748	727
27	841	875	3720	7890	2520	6370	3010	2280	1050	784	762	728
28	850	886	3750	5560	2470	5410	2950	2240	1050	785	762	748
29	868	870	3130	4770	---	4620	3000	2210	1030	760	734	743
30	833	869	3310	13200	---	4270	2830	2160	1010	801	738	747
31	832	---	5340	16600	---	4550	---	2110	---	764	747	---
TOTAL	26767	32957	62009	145990	109870	174390	109060	78060	40350	26961	24446	23783
MEAN	863	1099	2000	4709	3924	5625	3635	2518	1345	870	789	793
MAX	1080	1650	5340	16600	15900	11700	5010	3260	1920	1010	865	948
MIN	775	771	651	2070	2190	2040	2830	2110	1010	756	734	691
AC-FT	53090	65370	123000	289600	217900	345900	216300	154800	80030	53480	48490	47170
CFSM	1.29	1.64	2.98	7.02	5.85	8.38	5.42	3.75	2.00	1.30	1.18	1.18
IN.	1.48	1.83	3.44	8.09	6.09	9.67	6.05	4.33	2.24	1.49	1.36	1.32

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2003, BY WATER YEAR (WY)

MEAN	1345	3248	4470	4499	4249	3719	3658	3403	2194	1159	886	946
MAX	2712	6494	11170	8821	10650	8921	5296	6396	5143	2018	1208	1602
(WY)	1969	1996	1965	1974	1996	1972	1993	1969	1974	1974	1974	1959
MIN	725	806	1030	1036	977	1850	1867	1456	882	763	659	613
(WY)	1989	1988	1977	1977	1977	1992	1967	1992	1992	1992	1992	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1959 - 2003	
ANNUAL TOTAL	898561		854643			
ANNUAL MEAN	2462		2341		2807	
HIGHEST ANNUAL MEAN					4407	1974
LOWEST ANNUAL MEAN					1454	1977
HIGHEST DAILY MEAN	17400	Apr 14	16600	Jan 31	57900	Feb 7 1996
LOWEST DAILY MEAN	651	Dec 4	651	Dec 4	285	Oct 4 1958
ANNUAL SEVEN-DAY MINIMUM	798	Dec 4	730	Aug 30	507	Oct 3 1958
ANNUAL RUNOFF (AC-FT)	1782000		1695000		2034000	
ANNUAL RUNOFF (CFSM)	3.67		3.49		4.18	
ANNUAL RUNOFF (INCHES)	49.82		47.38		56.85	
10 PERCENT EXCEEDS	4310		4540		5300	
50 PERCENT EXCEEDS	2260		1420		2190	
90 PERCENT EXCEEDS	834		779		797	

14210000 CLACKAMAS RIVER AT ESTACADA, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 2001 to current year.
pH: July 2001 to current year.
WATER TEMPERATURE: July 2001 to current year.
DISSOLVED OXYGEN: July 2001 to current year.
TURBIDITY: July 2001 to current year.

INSTRUMENTATION.--Water-quality monitor. Electronic data logger with a 30-minute recording interval.

REMARKS.--
SPECIFIC CONDUCTANCE: Records excellent.
pH: Records excellent.
WATER TEMPERATURE: Records excellent.
DISSOLVED OXYGEN: Records good for the periods Oct. 1 to Nov. 5, Nov. 26 to May 22; fair for the period July 17 to Sept. 30; poor for the periods Nov. 5 to Nov. 26, May 22 to July 17.
TURBIDITY: Records excellent.

EXTREMES FOR PERIOD OF OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 73 microsiemens Aug. 24 2003; minimum recorded, 24 microsiemens Apr. 14, 15, 2002.
pH: Maximum recorded, 7.8 units Sept. 4, 2003; minimum recorded, 7.1 units Apr. 14, 2002, Jan. 28, 29, Feb. 1, 2003.
WATER TEMPERATURE: Maximum recorded, 19.5°C July 31, 2003; minimum recorded, 3.3°C Feb. 27, 2003.
DISSOLVED OXYGEN: Maximum recorded, 13.7 mg/L Jan. 21, 2002; minimum recorded, 8.2 mg/L Aug. 17, 2001.
TURBIDITY: Maximum recorded, 124 NTU Apr. 14, 2002; minimum recorded, <1 many days most years.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 73 microsiemens Aug. 24; minimum recorded, 27 microsiemens Feb. 1.
pH: Maximum recorded, 7.8 units Sept. 4; minimum recorded, 7.1 units Jan. 28, 29, Feb. 1.
WATER TEMPERATURE: Maximum recorded, 19.5°C July 31; minimum recorded, 3.3°C Feb. 27.
DISSOLVED OXYGEN: Maximum recorded, 13.6 mg/L Mar. 7, 8; minimum recorded, 8.6 mg/L Sept. 5, 7, 9.
TURBIDITY: Maximum recorded, 70 NTU Feb. 1; minimum recorded, <1 many days.

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	67	66	67	67	67	67	61	60	60	43	40	42
2	67	60	65	67	67	67	61	60	61	40	39	40
3	64	61	63	67	67	67	62	61	61	41	38	40
4	65	62	64	67	67	67	63	62	62	38	33	35
5	66	65	65	67	67	67	63	62	63	35	32	34
6	66	64	66	67	66	67	63	63	63	34	32	33
7	66	65	65	67	66	67	63	63	63	35	34	34
8	66	63	64	67	67	67	63	63	63	37	35	36
9	68	61	65	67	66	67	64	63	64	39	37	38
10	68	63	66	67	66	66	64	64	64	40	39	40
11	69	65	68	66	66	66	64	64	64	42	40	41
12	69	66	68	66	65	66	64	64	64	43	42	42
13	69	67	68	65	65	65	64	64	64	45	43	44
14	69	67	68	65	64	64	64	59	62	45	41	43
15	69	66	67	64	63	63	59	56	58	41	39	40
16	66	66	66	63	61	62	56	48	52	39	39	39
17	66	66	66	61	60	61	48	42	45	40	39	39
18	66	66	66	60	58	59	42	41	42	41	40	40
19	66	66	66	58	58	58	42	41	41	42	41	41
20	66	66	66	59	58	58	42	42	42	43	42	42
21	67	66	66	58	58	58	44	42	43	45	43	44
22	67	66	67	58	57	57	46	44	45	46	45	45
23	67	66	67	57	56	57	47	46	46	47	45	46
24	67	67	67	57	56	56	48	47	48	47	45	47
25	67	67	67	57	56	56	49	48	49	45	42	44
26	67	67	67	58	55	57	50	49	50	42	37	41
27	67	67	67	58	58	58	53	50	51	37	30	33
28	67	67	67	60	58	59	54	49	53	32	30	31
29	67	67	67	60	59	60	49	44	46	34	32	33
30	67	67	67	60	59	60	44	42	43	36	31	34
31	67	67	67	---	---	---	43	42	43	31	28	29
MONTH	69	60	66	67	55	62	64	41	54	47	28	39

14210000 CLACKAMAS RIVER AT ESTACADA, OR--Continued

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	29	27	28	44	44	44	40	38	39	44	43	43
2	31	29	30	45	44	45	38	37	37	44	43	43
3	33	31	32	46	45	46	38	37	37	44	43	44
4	35	33	34	47	46	47	38	38	38	44	44	44
5	36	35	35	47	47	47	39	38	39	44	43	44
6	37	36	37	48	47	47	40	39	39	43	42	43
7	38	37	38	48	39	46	40	40	40	42	42	42
8	39	38	39	39	34	35	41	40	41	42	42	42
9	41	39	40	35	34	34	42	41	42	43	42	43
10	42	41	41	36	34	35	42	42	42	44	43	43
11	43	42	43	35	34	34	42	40	41	44	43	44
12	44	43	43	36	35	35	40	39	40	45	44	44
13	45	44	44	36	35	36	39	38	38	46	45	45
14	46	45	45	35	34	34	38	38	38	46	45	46
15	47	46	46	35	34	34	38	38	38	46	46	46
16	47	47	47	35	35	35	39	38	39	46	45	46
17	48	47	47	36	35	36	40	39	39	45	44	45
18	48	48	48	37	36	36	40	40	40	44	44	44
19	48	47	47	38	37	38	40	40	40	45	44	44
20	47	46	47	40	38	39	40	40	40	45	44	45
21	46	46	46	40	40	40	41	40	41	45	45	45
22	46	44	46	40	31	38	42	41	42	45	45	45
23	44	41	43	31	29	30	42	41	42	46	45	45
24	41	40	40	33	31	32	42	41	41	46	43	45
25	40	39	40	35	33	34	42	41	41	43	36	40
26	42	40	41	36	35	36	41	41	41	41	39	40
27	42	42	42	36	35	35	41	41	41	40	37	39
28	44	42	43	36	35	35	42	41	41	41	39	41
29	---	---	---	37	36	37	42	41	42	41	40	41
30	---	---	---	39	37	38	43	42	43	41	39	40
31	---	---	---	40	39	39	---	---	---	41	39	40
MONTH	48	27	41	48	29	38	43	37	40	46	36	43

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	44	41	43	59	59	59	69	68	68	68	67	68
2	46	44	46	60	59	60	69	68	69	68	68	68
3	46	46	46	61	60	60	69	68	69	69	68	68
4	47	46	47	63	61	62	69	69	69	69	69	69
5	48	47	48	63	63	63	69	68	69	69	69	69
6	49	48	48	63	63	63	70	67	68	69	69	69
7	50	49	49	64	63	63	69	68	68	69	69	69
8	51	50	50	63	63	63	69	67	68	70	69	69
9	52	51	51	64	63	63	68	67	68	70	69	69
10	53	52	52	64	63	63	70	67	68	70	69	70
11	54	53	53	64	64	64	68	67	67	69	69	69
12	55	54	54	64	64	64	69	68	68	69	68	68
13	55	54	54	64	64	64	69	68	68	68	68	68
14	55	54	54	64	64	64	68	68	68	68	68	68
15	55	55	55	65	64	64	68	68	68	68	68	68
16	56	55	55	65	64	65	68	68	68	69	68	68
17	56	55	56	65	65	65	68	67	68	68	68	68
18	56	56	56	65	65	65	68	68	68	69	68	68
19	56	56	56	66	65	65	68	68	68	69	68	69
20	56	56	56	66	65	66	69	68	68	68	68	68
21	58	56	57	66	66	66	69	68	68	68	68	68
22	58	57	58	66	66	66	69	68	68	68	68	68
23	58	58	58	66	66	66	69	68	69	69	68	68
24	58	58	58	67	66	66	73	69	69	69	69	69
25	58	58	58	67	66	67	69	69	69	69	68	68
26	58	58	58	67	67	67	69	69	69	68	68	68
27	58	58	58	67	67	67	72	68	70	69	68	69
28	58	58	58	68	67	67	69	66	68	69	69	69
29	59	58	58	68	67	68	68	67	68	69	69	69
30	60	58	58	68	67	68	68	68	68	69	69	69
31	---	---	---	68	68	68	68	67	68	---	---	---
MONTH	60	41	54	68	59	65	73	66	68	70	67	68
YEAR	73	27	53									

14210000 CLACKAMAS RIVER AT ESTACADA, OR--Continued

pH, water, unfiltered, field, standard units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.6	7.5	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.3	7.3	7.3
2	7.6	7.5	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.3	7.2	7.3
3	7.6	7.6	7.6	7.6	7.6	7.6	7.7	7.6	7.6	7.4	7.2	7.3
4	7.6	7.5	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.3	7.2	7.2
5	7.7	7.6	7.7	7.7	7.6	7.6	7.6	7.6	7.6	7.3	7.2	7.2
6	7.7	7.6	7.7	7.7	7.6	7.6	7.7	7.6	7.6	7.2	7.2	7.2
7	7.7	7.6	7.6	7.6	7.6	7.6	7.7	7.7	7.7	7.2	7.2	7.2
8	7.7	7.6	7.6	7.6	7.6	7.6	7.7	7.7	7.7	7.2	7.2	7.2
9	7.7	7.6	7.6	7.6	7.6	7.6	7.7	7.7	7.7	7.3	7.2	7.2
10	7.7	7.6	7.6	7.7	7.6	7.6	7.7	7.7	7.7	7.3	7.3	7.3
11	7.7	7.6	7.7	7.6	7.6	7.6	7.7	7.7	7.7	7.3	7.3	7.3
12	7.7	7.6	7.7	7.7	7.6	7.6	7.7	7.7	7.7	7.3	7.3	7.3
13	7.7	7.6	7.7	7.6	7.6	7.6	7.7	7.7	7.7	7.3	7.3	7.3
14	7.6	7.5	7.6	7.6	7.5	7.6	7.7	7.6	7.7	7.3	7.3	7.3
15	7.6	7.5	7.5	7.6	7.5	7.6	7.7	7.6	7.6	7.3	7.2	7.3
16	7.6	7.5	7.6	7.6	7.5	7.5	7.6	7.5	7.6	7.3	7.2	7.3
17	7.6	7.5	7.5	7.6	7.5	7.5	7.5	7.5	7.5	7.3	7.3	7.3
18	7.6	7.5	7.6	7.6	7.5	7.5	7.5	7.5	7.5	7.3	7.3	7.3
19	7.6	7.5	7.5	7.6	7.5	7.5	7.5	7.5	7.5	7.3	7.3	7.3
20	7.6	7.5	7.5	7.6	7.5	7.5	7.5	7.5	7.5	7.3	7.3	7.3
21	7.5	7.5	7.5	7.6	7.5	7.5	7.5	7.5	7.5	7.4	7.3	7.3
22	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.4	7.3	7.3
23	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.4	7.3	7.3
24	7.5	7.5	7.5	7.5	7.5	7.5	7.6	7.5	7.5	7.4	7.3	7.3
25	7.5	7.5	7.5	7.5	7.5	7.5	7.6	7.5	7.5	7.3	7.3	7.3
26	7.5	7.5	7.5	7.6	7.5	7.6	7.6	7.5	7.5	7.3	7.3	7.3
27	7.6	7.5	7.5	7.6	7.6	7.6	7.6	7.5	7.5	7.3	7.2	7.2
28	7.6	7.5	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.2	7.1	7.2
29	7.6	7.5	7.6	7.6	7.6	7.6	7.6	7.5	7.5	7.3	7.1	7.2
30	7.6	7.5	7.6	7.6	7.6	7.6	7.5	7.5	7.5	7.3	7.2	7.3
31	7.6	7.6	7.6	---	---	---	7.5	7.3	7.3	7.2	7.2	7.2
MAX	7.7	7.6	7.7	7.7	7.6	7.6	7.7	7.7	7.7	7.4	7.3	7.3
MIN	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.3	7.3	7.2	7.1	7.2

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.2	7.1	7.2	7.3	7.3	7.3	7.4	7.4	7.4	7.4	7.3	7.4
2	7.2	7.2	7.2	7.4	7.3	7.3	7.4	7.3	7.4	7.4	7.3	7.4
3	7.3	7.2	7.2	7.4	7.3	7.3	7.4	7.3	7.4	7.4	7.3	7.4
4	7.2	7.2	7.2	7.5	7.3	7.5	7.5	7.3	7.4	7.4	7.3	7.3
5	7.3	7.2	7.2	7.5	7.5	7.5	7.5	7.4	7.4	7.4	7.3	7.4
6	7.3	7.2	7.3	7.5	7.5	7.5	7.5	7.4	7.4	7.4	7.3	7.4
7	7.3	7.2	7.3	7.5	7.4	7.5	7.5	7.4	7.4	7.4	7.3	7.3
8	7.3	7.3	7.3	7.4	7.3	7.3	7.5	7.4	7.4	7.4	7.3	7.3
9	7.3	7.3	7.3	7.4	7.3	7.3	7.5	7.4	7.5	7.4	7.3	7.3
10	7.3	7.3	7.3	7.4	7.3	7.4	7.5	7.4	7.4	7.4	7.3	7.3
11	7.3	7.3	7.3	7.4	7.3	7.3	7.5	7.4	7.4	7.4	7.3	7.3
12	7.3	7.3	7.3	7.4	7.3	7.4	7.5	7.4	7.4	7.4	7.3	7.3
13	7.4	7.3	7.3	7.4	7.3	7.4	7.5	7.4	7.4	7.4	7.3	7.3
14	7.4	7.3	7.4	7.4	7.3	7.3	7.4	7.4	7.4	7.4	7.3	7.3
15	7.4	7.3	7.4	7.4	7.3	7.3	7.4	7.3	7.4	7.4	7.3	7.4
16	7.4	7.3	7.4	7.4	7.3	7.3	7.4	7.3	7.4	7.4	7.4	7.4
17	7.4	7.3	7.4	7.4	7.3	7.3	7.4	7.3	7.4	7.4	7.3	7.4
18	7.4	7.3	7.4	7.4	7.3	7.3	7.4	7.3	7.4	7.4	7.4	7.4
19	7.4	7.3	7.4	7.4	7.3	7.4	7.4	7.3	7.4	7.4	7.3	7.4
20	7.4	7.3	7.4	7.4	7.4	7.4	7.4	7.3	7.4	7.4	7.3	7.3
21	7.4	7.3	7.3	7.4	7.4	7.4	7.4	7.3	7.3	7.4	7.3	7.3
22	7.4	7.3	7.3	7.5	7.3	7.4	7.4	7.3	7.3	7.5	7.3	7.4
23	7.3	7.3	7.3	7.3	7.3	7.3	7.5	7.3	7.4	7.5	7.4	7.4
24	7.3	7.3	7.3	7.3	7.3	7.3	7.5	7.4	7.4	7.5	7.4	7.4
25	7.3	7.3	7.3	7.4	7.3	7.3	7.4	7.4	7.4	7.4	7.4	7.4
26	7.3	7.3	7.3	7.4	7.3	7.4	7.4	7.4	7.4	7.4	7.4	7.4
27	7.3	7.3	7.3	7.4	7.3	7.4	7.4	7.4	7.4	7.5	7.4	7.4
28	7.3	7.3	7.3	7.4	7.3	7.3	7.4	7.3	7.4	7.4	7.4	7.4
29	---	---	---	7.4	7.3	7.3	7.4	7.3	7.4	7.4	7.4	7.4
30	---	---	---	7.4	7.3	7.4	7.4	7.3	7.4	7.4	7.3	7.4
31	---	---	---	7.4	7.3	7.4	---	---	---	7.4	7.3	7.4
MAX	7.4	7.3	7.4	7.5	7.5	7.5	7.5	7.4	7.5	7.5	7.4	7.4
MIN	7.2	7.1	7.2	7.3	7.3	7.3	7.4	7.3	7.3	7.4	7.3	7.3

14210000 CLACKAMAS RIVER AT ESTACADA, OR--Continued

pH, water, unfiltered, field, standard units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.4	7.4	7.4	7.4	7.2	7.3	7.5	7.4	7.4	7.6	7.5	7.6
2	7.5	7.4	7.4	7.3	7.2	7.3	7.4	7.4	7.4	7.6	7.5	7.5
3	7.5	7.4	7.4	7.4	7.3	7.3	7.4	7.3	7.4	7.6	7.5	7.5
4	7.5	7.3	7.4	7.4	7.3	7.3	7.4	7.3	7.3	7.8	7.5	7.7
5	7.5	7.3	7.4	7.4	7.3	7.4	7.5	7.3	7.4	7.7	7.6	7.7
6	7.4	7.3	7.4	7.5	7.3	7.4	7.5	7.4	7.5	7.7	7.6	7.7
7	7.4	7.3	7.3	7.4	7.3	7.4	7.6	7.5	7.5	7.7	7.6	7.6
8	7.3	7.2	7.3	7.4	7.3	7.4	7.6	7.4	7.5	7.6	7.6	7.6
9	7.3	7.2	7.3	7.4	7.3	7.3	7.6	7.4	7.5	7.6	7.5	7.5
10	7.3	7.2	7.3	7.4	7.3	7.3	7.5	7.4	7.5	7.6	7.5	7.5
11	7.3	7.2	7.3	7.5	7.3	7.4	7.5	7.4	7.4	7.6	7.5	7.6
12	7.4	7.3	7.3	7.5	7.3	7.4	7.5	7.3	7.4	7.6	7.6	7.6
13	7.5	7.3	7.4	7.5	7.3	7.4	7.7	7.4	7.5	7.6	7.6	7.6
14	7.5	7.4	7.4	7.4	7.3	7.4	7.6	7.5	7.5	7.7	7.6	7.6
15	7.6	7.4	7.5	7.5	7.3	7.4	7.7	7.5	7.5	7.7	7.6	7.6
16	7.5	7.4	7.5	7.5	7.3	7.4	7.6	7.5	7.5	7.7	7.6	7.6
17	7.5	7.3	7.4	7.6	7.4	7.5	7.6	7.5	7.5	7.7	7.6	7.6
18	7.4	7.3	7.3	7.6	7.5	7.5	7.6	7.5	7.5	7.7	7.6	7.7
19	7.3	7.2	7.3	7.6	7.5	7.5	7.6	7.5	7.5	7.7	7.6	7.7
20	7.3	7.2	7.3	7.6	7.4	7.5	7.6	7.5	7.5	7.7	7.6	7.7
21	7.3	7.2	7.2	7.5	7.4	7.5	7.6	7.5	7.5	7.7	7.6	7.7
22	7.4	7.2	7.3	7.5	7.4	7.5	7.7	7.5	7.6	7.7	7.6	7.7
23	7.4	7.3	7.3	7.5	7.4	7.5	7.6	7.5	7.5	7.7	7.6	7.7
24	7.4	7.3	7.3	7.5	7.4	7.5	7.6	7.5	7.5	7.7	7.6	7.7
25	7.4	7.3	7.4	7.5	7.4	7.4	7.6	7.5	7.5	7.7	7.6	7.6
26	7.4	7.3	7.4	7.5	7.4	7.4	7.6	7.5	7.6	7.7	7.6	7.6
27	7.4	7.3	7.3	7.5	7.4	7.4	7.6	7.5	7.5	7.7	7.6	7.6
28	7.4	7.3	7.3	7.5	7.4	7.5	7.6	7.5	7.5	7.7	7.6	7.6
29	7.4	7.2	7.3	7.5	7.4	7.5	7.6	7.5	7.6	7.6	7.6	7.6
30	7.4	7.2	7.3	7.5	7.4	7.4	7.6	7.5	7.6	7.6	7.5	7.5
31	---	---	---	7.5	7.4	7.5	7.6	7.5	7.6	---	---	---
MAX	7.6	7.4	7.5	7.6	7.5	7.5	7.7	7.5	7.6	7.8	7.6	7.7
MIN	7.3	7.2	7.2	7.3	7.2	7.3	7.4	7.3	7.3	7.6	7.5	7.5

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.6	12.3	12.4	7.3	7.0	7.2	6.6	6.2	6.3	5.4	5.1	5.2
2	12.3	12.0	12.1	7.3	6.8	7.1	6.2	6.2	6.2	5.7	5.4	5.6
3	12.2	11.9	12.0	6.9	6.6	6.7	6.2	5.8	6.0	6.2	5.7	6.0
4	11.9	11.7	11.8	6.9	6.6	6.7	5.8	5.5	5.6	6.2	6.1	6.2
5	11.7	11.5	11.6	6.6	6.1	6.3	5.5	5.5	5.5	6.3	6.0	6.2
6	11.5	11.4	11.5	6.2	5.9	6.0	5.5	5.4	5.5	6.0	5.4	5.6
7	11.6	11.4	11.5	5.9	5.8	5.8	5.5	5.3	5.4	5.4	5.2	5.3
8	11.7	11.5	11.6	6.0	5.9	5.9	5.3	5.1	5.2	5.2	4.9	5.0
9	11.8	11.7	11.7	6.0	5.9	5.9	5.1	4.9	5.0	4.9	4.5	4.7
10	11.8	11.7	11.7	6.1	5.9	6.0	5.1	5.0	5.0	4.5	4.2	4.3
11	11.7	11.5	11.6	6.3	6.0	6.2	5.1	5.0	5.1	4.2	4.0	4.0
12	11.5	11.2	11.3	6.8	6.3	6.6	5.1	5.0	5.0	4.0	4.0	4.0
13	11.2	11.0	11.1	6.9	6.7	6.8	5.0	4.9	4.9	4.2	3.9	4.0
14	11.1	10.8	11.0	7.0	6.8	6.9	5.6	5.0	5.3	5.1	4.2	4.8
15	10.8	10.4	10.6	7.2	7.0	7.1	5.7	5.5	5.5	5.3	5.0	5.1
16	10.5	10.2	10.4	7.4	7.1	7.3	6.4	5.7	6.2	5.3	5.3	5.3
17	10.3	10.2	10.2	7.7	7.4	7.5	6.5	6.4	6.4	5.3	5.0	5.1
18	10.3	10.0	10.1	7.7	7.3	7.5	6.5	6.2	6.4	5.0	4.9	4.9
19	10.2	10.1	10.1	7.4	7.2	7.3	6.2	5.8	6.0	4.9	4.8	4.8
20	10.4	10.2	10.3	7.7	7.4	7.6	5.9	5.7	5.8	4.8	4.7	4.7
21	10.4	10.3	10.3	7.6	7.4	7.5	5.7	5.4	5.6	4.7	4.6	4.6
22	10.4	10.2	10.3	7.8	7.6	7.7	5.4	5.0	5.2	4.7	4.5	4.6
23	10.4	10.2	10.3	7.9	7.8	7.8	5.0	4.8	4.9	5.2	4.7	4.9
24	10.2	10	10.1	7.9	7.8	7.8	4.8	4.6	4.7	5.8	5.2	5.5
25	10.1	9.8	9.9	7.8	7.5	7.6	4.7	4.6	4.6	6.0	5.8	5.9
26	9.9	9.6	9.7	7.5	7.2	7.3	4.7	4.6	4.7	6.8	6.0	6.4
27	9.6	9.2	9.4	7.2	7.1	7.1	4.7	4.4	4.6	7.3	6.8	7.1
28	9.2	8.9	9.0	7.1	6.9	7.0	5.0	4.4	4.6	6.9	6.5	6.7
29	8.9	8.6	8.8	6.9	6.6	6.7	5.2	5.0	5.1	6.5	6.5	6.5
30	8.6	7.9	8.2	6.7	6.6	6.7	5.4	5.2	5.3	7.1	6.3	6.6
31	7.9	7.2	7.4	---	---	---	5.4	5.1	5.3	7.6	7.1	7.4
MONTH	12.6	7.2	10.6	7.9	5.8	6.9	6.6	4.4	5.4	7.6	3.9	5.4

14210000 CLACKAMAS RIVER AT ESTACADA, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.6	6.6	6.9	4.0	3.6	3.7	7.9	7.6	7.8	8.8	8.0	8.3
2	6.6	6.4	6.6	4.2	4.0	4.1	7.6	6.9	7.2	9.1	8.3	8.6
3	6.5	6.3	6.4	4.5	4.2	4.4	6.9	6.2	6.4	9.2	8.6	8.9
4	6.3	6.0	6.2	4.8	4.5	4.7	6.3	5.9	6.0	9.1	8.9	9.0
5	6.0	5.6	5.8	5.1	4.8	4.9	6.0	5.7	5.8	9.1	8.5	8.8
6	5.6	4.9	5.2	5.3	5.0	5.1	6.2	5.8	6.0	8.8	8.0	8.4
7	4.9	4.6	4.8	6.0	5.3	5.7	6.2	5.8	6.0	8.6	7.9	8.1
8	4.6	4.4	4.5	6.1	5.6	5.9	6.5	6.0	6.1	8.3	7.8	8.0
9	4.5	4.2	4.3	6.8	5.9	6.4	7.3	6.3	6.7	8.0	7.6	7.8
10	4.4	4.2	4.3	6.9	6.4	6.7	7.8	7.0	7.3	8.0	7.7	7.8
11	4.3	4.1	4.2	7.0	6.5	6.8	8.2	7.7	7.9	8.1	8.0	8.0
12	4.5	4.2	4.3	7.0	6.6	6.8	8.1	7.6	7.9	8.3	8.1	8.2
13	4.8	4.5	4.6	7.0	6.8	6.9	8.2	7.7	8.0	9.2	8.3	8.7
14	4.9	4.8	4.8	7.1	6.7	6.9	8.3	7.6	7.9	9.7	9.2	9.4
15	5.2	4.8	4.9	7.0	6.7	6.9	8.2	7.5	7.8	9.9	9.4	9.6
16	5.5	5.2	5.4	7.2	6.8	7.0	8.0	7.4	7.7	10.1	9.7	9.8
17	5.7	5.5	5.6	6.9	6.5	6.7	8.0	7.5	7.7	10.1	9.2	9.5
18	6.1	5.7	5.9	6.7	6.4	6.6	7.9	7.6	7.7	9.3	8.6	8.9
19	6.1	5.8	5.9	6.6	6.2	6.3	8.1	7.2	7.6	9.1	8.4	8.7
20	5.8	5.7	5.7	6.5	6.2	6.4	8.1	7.0	7.4	9.2	8.7	9.0
21	5.9	5.7	5.8	6.6	6.1	6.3	7.7	7.5	7.6	9.5	8.8	9.1
22	6.2	5.8	6.0	6.8	6.6	6.7	8.0	7.7	7.9	10.1	9.5	9.8
23	6.3	6.1	6.2	6.6	5.6	6.1	8.0	7.7	7.8	10.9	10.1	10.4
24	6.2	5.6	5.8	6.3	5.6	5.9	7.8	7.3	7.6	11.5	10.9	11.2
25	5.6	4.6	5.2	6.2	5.8	6.0	7.9	7.4	7.6	12.0	11.5	11.7
26	4.6	3.6	4.1	6.5	6.1	6.3	7.8	7.2	7.4	12.2	12.0	12.1
27	3.6	3.3	3.4	6.6	6.0	6.4	7.8	6.9	7.3	12.3	11.7	12.0
28	3.6	3.4	3.5	6.4	5.8	6.1	7.9	7.3	7.6	12.4	12.1	12.2
29	---	---	---	6.9	6.0	6.4	8.1	7.5	7.8	12.7	12.4	12.5
30	---	---	---	7.5	6.5	7.0	8.2	7.9	8.0	12.9	12.6	12.7
31	---	---	---	7.8	7.1	7.4	---	---	---	13.2	12.6	12.9
MONTH	7.6	3.3	5.2	7.8	3.6	6.1	8.3	5.7	7.3	13.2	7.6	9.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.4	13.1	13.3	15.9	15.7	15.8	19.3	19.0	19.2	16.7	16.5	16.6
2	13.4	13.1	13.3	16.0	15.6	15.8	19.1	18.8	19.0	16.6	16.4	16.5
3	13.7	13.3	13.5	16.5	16.0	16.3	18.8	18.4	18.6	16.6	16.4	16.5
4	14.0	13.6	13.9	17.0	16.5	16.8	18.4	18.1	18.2	16.7	16.5	16.6
5	14.7	14.0	14.3	17.1	16.9	17.0	18.2	18.0	18.1	16.8	16.6	16.7
6	15.1	14.4	14.8	17.2	17.0	17.1	18.1	17.8	17.9	16.8	16.6	16.7
7	15.3	15.0	15.1	17.2	17.0	17.1	18.1	17.8	17.9	16.8	16.6	16.7
8	15.3	14.9	15.1	17.4	17.1	17.3	18.3	18.0	18.1	16.6	16.4	16.5
9	15.3	15.1	15.2	17.3	17.0	17.1	18.3	18.0	18.1	16.4	16.1	16.2
10	15.3	14.9	15.1	17.7	17.3	17.5	18.1	17.9	18.0	16.1	15.7	15.9
11	15.7	15.3	15.5	18.0	17.6	17.8	17.9	17.8	17.8	15.7	15.4	15.6
12	15.7	15.4	15.6	18.1	17.8	17.9	17.9	17.7	17.8	15.4	15.0	15.2
13	15.4	15.2	15.2	18.2	17.9	18.1	17.8	17.6	17.7	15.0	14.8	14.9
14	15.4	15.1	15.2	18.0	17.8	17.9	17.8	17.6	17.7	14.8	14.6	14.7
15	15.6	15.1	15.3	18.3	17.9	18.1	17.9	17.6	17.8	14.8	14.6	14.7
16	15.5	15.2	15.3	18.4	18.1	18.3	17.8	17.6	17.7	14.7	14.3	14.5
17	15.7	15.2	15.5	18.3	18.1	18.2	17.8	17.6	17.7	14.3	13.9	14.1
18	15.8	15.5	15.6	18.5	18.2	18.3	17.9	17.7	17.8	13.9	13.7	13.8
19	15.5	15.1	15.2	18.7	18.4	18.6	18.0	17.7	17.9	13.9	13.6	13.7
20	15.1	14.9	15.0	18.9	18.6	18.8	17.8	17.6	17.7	13.6	13.3	13.4
21	15.0	14.7	14.9	19.1	18.8	19.0	17.8	17.6	17.7	13.3	13.1	13.2
22	14.7	14.1	14.4	19.3	19.0	19.2	17.8	17.7	17.8	13.4	13.2	13.3
23	14.1	13.8	13.9	19.4	19.1	19.3	17.7	17.2	17.5	13.4	13.2	13.3
24	13.8	13.5	13.7	19.4	19.1	19.2	17.2	17.0	17.1	13.4	13.3	13.4
25	14.2	13.7	13.9	19.2	19.0	19.1	17.0	16.8	16.9	13.4	13.2	13.3
26	14.3	13.9	14.1	19.3	19.1	19.1	16.9	16.7	16.8	13.5	13.2	13.4
27	14.8	14.3	14.6	19.3	19.0	19.1	16.7	16.4	16.6	13.9	13.3	13.6
28	15.3	14.8	15.1	19.3	19.1	19.2	16.6	16.4	16.5	13.8	13.5	13.7
29	15.6	15.3	15.5	19.4	19.2	19.3	16.5	16.3	16.4	13.8	13.7	13.7
30	15.9	15.6	15.8	19.4	19.0	19.2	16.6	16.4	16.5	13.8	13.5	13.6
31	---	---	---	19.5	19.1	19.3	16.6	16.5	16.6	---	---	---
MONTH	15.9	13.1	14.8	19.5	15.6	18.1	19.3	16.3	17.6	16.8	13.1	14.8
YEAR	19.5	3.3	10.2									

14210000 CLACKAMAS RIVER AT ESTACADA, OR--Continued

Dissolved oxygen, water, unfiltered, milligrams per liter
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10.7	10.4	10.6	11.7	11.5	11.7	13.0	12.4	12.7	11.9	11.7	11.8
2	10.8	10.6	10.7	11.8	11.5	11.6	13.0	12.7	12.8	11.9	11.8	11.8
3	10.8	10.6	10.7	11.8	11.6	11.7	13.3	12.7	13.0	12.5	11.8	12.3
4	10.9	10.6	10.8	11.8	11.6	11.7	13.2	13.0	13.1	12.8	12.0	12.2
5	11.1	10.8	11.0	12.2	11.7	11.9	13.4	13.0	13.2	12.8	12.4	12.6
6	11.2	11.0	11.1	12.4	12.0	12.2	13.4	13.2	13.3	12.5	12.2	12.3
7	11.2	11.0	11.1	12.2	11.9	12.1	13.4	13.1	13.3	12.3	12.3	12.3
8	11.2	11.0	11.1	12.3	11.8	12.1	13.4	13.1	13.3	12.4	12.3	12.3
9	11.1	10.9	11.0	12.3	11.8	12.0	13.4	13.1	13.3	12.5	12.3	12.5
10	11.0	10.8	10.9	12.3	12.0	12.2	13.2	12.9	13.1	12.6	12.4	12.5
11	11.0	10.8	10.9	12.5	12.1	12.3	13.3	12.8	13.1	12.6	12.5	12.5
12	11.1	10.9	11.0	12.4	12.3	12.3	13.5	13.1	13.3	12.7	12.5	12.6
13	11.2	11.0	11.1	12.6	12.3	12.5	13.4	13.0	13.2	12.6	12.5	12.6
14	11.0	10.6	10.8	12.6	12.3	12.4	13.2	12.7	12.9	12.6	12.3	12.4
15	11.3	10.5	11.0	12.4	12.0	12.2	12.9	12.3	12.6	12.5	12.3	12.4
16	11.3	11.1	11.2	12.1	11.9	12.0	12.6	12.1	12.3	12.5	12.3	12.4
17	11.2	11.1	11.2	12.4	12.0	12.3	12.3	12.0	12.1	12.6	12.4	12.5
18	11.3	11.1	11.2	12.4	12.2	12.3	12.3	11.9	12.1	12.6	12.5	12.5
19	11.2	11.1	11.1	12.7	12.3	12.5	12.3	11.8	12.2	12.6	12.5	12.6
20	11.2	11.1	11.1	12.6	12.4	12.5	12.5	12.1	12.3	12.6	12.3	12.5
21	11.2	11.0	11.1	12.6	12.4	12.5	12.7	12.4	12.6	12.6	12.3	12.4
22	11.2	11.0	11.1	12.5	12.3	12.4	12.9	12.6	12.8	12.7	12.3	12.5
23	11.1	11.0	11.1	12.5	12.3	12.4	13.0	12.9	13.0	12.6	12.5	12.5
24	11.1	10.9	11.0	12.6	12.4	12.5	13.0	12.7	12.8	12.5	12.3	12.4
25	11.1	11.0	11.0	12.7	12.5	12.6	12.7	12.4	12.5	12.4	12.2	12.3
26	11.1	10.9	11.0	12.9	12.6	12.7	12.8	12.5	12.6	12.9	12.0	12.4
27	11.3	11.1	11.2	12.9	12.7	12.8	12.8	12.3	12.5	12.8	12.6	12.6
28	11.5	11.3	11.4	12.9	12.5	12.8	12.6	12.2	12.4	12.6	12.2	12.3
29	11.6	11.4	11.5	12.9	12.7	12.8	12.4	12.1	12.2	12.3	12.0	12.1
30	11.7	11.5	11.6	12.9	12.6	12.8	12.4	12.1	12.2	13.3	12.3	13.0
31	11.8	11.7	11.7	---	---	---	12.2	11.8	12.0	13.4	12.8	13.1
MONTH	11.8	10.4	11.1	12.9	11.5	12.3	13.5	11.8	12.7	13.4	11.7	12.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	13.4	13.0	13.2	13.3	13.2	13.3	12.1	11.9	12.0	11.8	11.7	11.7
2	13.0	12.8	12.9	13.3	12.9	13.2	12.3	11.9	12.1	11.7	11.5	11.6
3	12.8	12.6	12.7	13.2	12.9	13.0	12.6	12.2	12.4	11.6	11.4	11.5
4	12.7	12.3	12.4	13.0	12.8	12.9	12.6	12.4	12.5	11.5	11.2	11.3
5	12.6	12.3	12.4	12.9	12.8	12.9	12.7	12.5	12.6	11.7	11.4	11.6
6	12.8	12.5	12.7	12.9	12.7	12.7	12.6	12.5	12.6	11.7	11.6	11.7
7	12.8	12.6	12.7	13.6	12.4	13.0	12.6	12.6	12.6	11.7	11.6	11.7
8	13.0	12.8	12.9	13.6	13.3	13.5	12.6	12.5	12.6	11.8	11.6	11.7
9	12.9	12.8	12.8	13.3	13.0	13.1	12.5	12.2	12.4	11.9	11.8	11.9
10	13.0	12.8	12.9	13.2	12.9	13.0	12.2	11.9	12.0	12.0	11.9	11.9
11	13.0	12.9	12.9	13.1	12.5	12.8	11.9	11.8	11.9	12.0	11.9	12.0
12	13.0	12.9	12.9	12.7	12.4	12.5	12.0	11.8	11.9	12.0	11.8	11.9
13	13.0	12.8	12.9	12.5	12.4	12.5	12.1	11.9	12.0	11.8	11.6	11.7
14	12.9	12.8	12.8	12.5	12.2	12.4	12.1	11.8	12.0	11.6	11.4	11.5
15	12.9	12.7	12.8	12.3	12.2	12.3	12.0	11.7	11.9	11.5	11.4	11.5
16	12.8	12.6	12.7	12.2	12.0	12.1	12.0	11.9	12.0	11.5	11.3	11.4
17	12.7	12.5	12.6	12.4	12.0	12.3	11.9	11.8	11.9	11.6	11.4	11.5
18	12.5	12.2	12.3	12.5	12.3	12.4	12.0	11.9	11.9	11.9	11.6	11.8
19	12.4	12.3	12.3	12.5	12.4	12.5	12.1	12.0	12.0	11.9	11.8	11.8
20	12.6	12.4	12.5	12.6	12.5	12.5	12.2	12.0	12.1	11.8	11.7	11.8
21	12.6	12.4	12.5	12.6	12.4	12.4	12.2	11.9	12.0	11.8	11.7	11.8
22	12.5	12.4	12.5	13.5	12.5	13.2	11.9	11.8	11.8	11.7	11.6	11.6
23	12.5	12.4	12.5	13.5	13.4	13.4	12.0	11.7	11.8	11.7	11.5	11.6
24	12.7	12.4	12.5	13.5	13.0	13.3	12.0	11.7	11.8	11.5	11.2	11.3
25	12.9	12.6	12.7	13.0	12.6	12.8	12.0	11.8	11.9	11.2	10.9	11.0
26	13.4	12.8	13.1	13.0	12.6	12.9	12.1	11.9	12.0	11.1	10.9	11.0
27	13.5	13.4	13.5	13.0	12.8	12.9	12.1	12.0	12.0	11.2	11.1	11.1
28	13.5	13.2	13.3	12.9	12.7	12.8	12.0	11.9	11.9	11.2	11.1	11.1
29	---	---	---	12.7	12.6	12.7	12.0	11.8	11.9	11.2	11.0	11.1
30	---	---	---	12.7	12.4	12.6	11.9	11.7	11.8	11.0	10.8	10.9
31	---	---	---	12.4	12.1	12.3	---	---	---	10.9	10.8	10.9
MONTH	13.5	12.2	12.7	13.6	12.0	12.8	12.7	11.7	12.1	12.0	10.8	11.5

14210000 CLACKAMAS RIVER AT ESTACADA, OR--Continued

Dissolved oxygen, water, unfiltered, milligrams per liter
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.1	10.9	10.9	10.2	9.9	10.0	9.4	9.0	9.2	10.0	9.7	9.9
2	11.3	11.1	11.1	10.1	9.9	10.0	9.3	9.0	9.1	9.9	9.5	9.7
3	11.2	11.0	11.1	10.1	9.7	9.9	9.3	9.0	9.1	9.8	9.4	9.6
4	11.1	10.8	11.0	10.0	9.7	9.8	9.3	9.0	9.2	9.8	8.9	9.3
5	10.9	10.7	10.8	10.0	9.7	9.8	9.7	9.2	9.4	9.0	8.6	8.8
6	10.8	10.6	10.7	9.9	9.6	9.8	9.8	9.3	9.5	8.9	8.7	8.8
7	10.7	10.4	10.6	9.8	9.3	9.6	9.8	9.4	9.6	8.9	8.6	8.7
8	10.5	10.2	10.4	9.7	9.3	9.5	9.8	9.3	9.5	8.9	8.7	8.8
9	10.3	10.1	10.2	9.6	9.3	9.5	9.7	9.3	9.5	8.9	8.6	8.8
10	10.2	9.9	10.1	9.6	9.3	9.4	9.6	9.2	9.4	8.9	8.7	8.8
11	10.1	9.9	10.0	9.6	9.2	9.4	9.5	9.2	9.4	9.0	8.8	8.9
12	10.1	9.8	10.0	9.6	9.1	9.3	9.6	9.1	9.4	9.1	8.8	9.0
13	10.1	9.8	10.0	9.6	9.2	9.4	9.6	9.2	9.4	9.1	8.9	9.0
14	10.2	9.9	10.1	9.4	9.1	9.3	9.6	9.2	9.4	9.2	8.9	9.1
15	10.3	10.0	10.1	9.4	9.1	9.2	9.6	9.2	9.4	9.1	8.8	8.9
16	10.3	9.8	10.1	9.4	9.0	9.2	9.6	9.2	9.4	9.5	8.8	9.1
17	9.9	9.4	9.8	9.4	9.0	9.2	9.7	9.2	9.5	9.3	9.1	9.2
18	10.1	9.6	9.9	9.4	9.1	9.2	9.7	9.3	9.5	9.5	9.1	9.4
19	10.0	9.5	9.8	9.3	9.0	9.2	9.5	9.2	9.4	9.6	9.3	9.5
20	9.9	9.4	9.6	9.4	9.1	9.2	9.3	9.1	9.3	9.6	9.4	9.5
21	9.8	9.5	9.7	9.3	9.0	9.1	9.8	9.1	9.5	9.7	9.4	9.6
22	10.2	9.8	10.1	9.3	9.0	9.1	9.8	9.5	9.6	9.7	9.3	9.5
23	10.3	10.0	10.2	9.3	9.0	9.1	9.6	9.4	9.5	9.7	9.3	9.6
24	10.5	10.1	10.3	9.3	8.9	9.1	9.8	9.5	9.6	9.8	9.5	9.6
25	10.7	10.3	10.5	9.3	8.9	9.1	9.8	9.5	9.6	9.9	9.6	9.8
26	10.8	10.4	10.6	9.2	9.0	9.1	9.8	9.5	9.6	9.9	9.5	9.7
27	10.6	10.3	10.5	9.3	8.9	9.1	9.7	9.5	9.6	9.8	9.5	9.6
28	10.5	10.1	10.3	9.4	9.0	9.2	9.9	9.5	9.7	9.9	9.6	9.7
29	10.3	10.0	10.2	9.4	9.1	9.2	9.9	9.6	9.8	9.9	9.5	9.7
30	10.2	9.9	10.1	9.4	9.1	9.2	10.0	9.7	9.8	9.8	9.7	9.7
31	---	---	---	9.3	9.0	9.2	10.0	9.7	9.8	---	---	---
MONTH	11.3	9.4	10.3	10.2	8.9	9.4	10.0	9.0	9.5	10.0	8.6	9.3
YEAR	13.6	8.6	11.3									

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	2	<1	1	2	<1	<1	1	<1	<1	6	3	5
2	1	<1	<1	2	<1	<1	1	<1	<1	7	4	5
3	6	<1	<1	28	<1	<1	<1	<1	<1	14	4	6
4	2	<1	1	28	<1	<1	<1	<1	<1	19	10	16
5	2	<1	<1	2	<1	<1	1	<1	<1	19	11	14
6	2	<1	<1	3	<1	<1	<1	<1	<1	22	10	13
7	3	<1	<1	2	<1	<1	2	<1	<1	12	6	8
8	2	<1	2	2	<1	<1	3	<1	<1	7	4	5
9	2	1	1	1	<1	<1	<1	<1	<1	5	3	4
10	2	<1	1	1	<1	<1	2	<1	<1	4	2	3
11	3	<1	<1	<1	<1	<1	2	<1	1	3	2	2
12	1	<1	<1	1	<1	<1	3	<1	<1	2	2	2
13	2	<1	<1	1	<1	<1	3	<1	1	4	1	2
14	1	<1	<1	1	<1	<1	2	<1	1	4	1	3
15	2	<1	<1	<1	<1	<1	2	1	2	4	3	3
16	<1	<1	<1	2	<1	<1	6	2	4	4	2	3
17	3	<1	<1	1	<1	<1	6	3	4	3	2	2
18	3	<1	<1	1	<1	<1	5	4	5	2	2	2
19	1	<1	<1	1	<1	<1	5	3	4	2	1	2
20	1	<1	<1	<1	<1	<1	4	3	3	3	1	1
21	1	<1	<1	1	<1	<1	4	3	3	1	<1	1
22	1	<1	<1	1	<1	<1	8	2	2	3	<1	1
23	<1	<1	<1	<1	<1	<1	2	2	2	2	<1	1
24	<1	<1	<1	2	<1	<1	2	1	2	2	<1	1
25	<1	<1	<1	2	<1	<1	2	1	2	16	1	2
26	4	<1	<1	1	<1	<1	3	2	2	11	2	3
27	<1	<1	<1	1	<1	<1	5	2	2	21	6	15
28	1	<1	<1	4	<1	<1	4	1	2	24	10	14
29	<1	<1	<1	1	<1	<1	7	4	6	10	6	7
30	<1	<1	<1	2	<1	<1	6	4	4	38	6	16
31	<1	<1	<1	---	---	---	8	3	4	49	35	40
MAX	6	1	2	28	<1	<1	8	4	6	49	35	40
MIN	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	1

14210000 CLACKAMAS RIVER AT ESTACADA, OR--Continued

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	70	41	60	2	<1	<1	4	2	2	3	<1	1
2	43	16	25	2	<1	<1	5	2	3	4	<1	1
3	18	9	12	1	<1	<1	3	2	2	2	<1	1
4	9	6	7	9	<1	<1	3	2	2	2	<1	1
5	8	4	5	2	<1	<1	2	2	2	4	1	1
6	6	3	4	2	1	2	3	1	2	2	1	1
7	3	2	3	14	2	7	2	2	2	2	1	1
8	23	2	2	33	13	23	2	2	2	2	1	1
9	3	2	2	23	11	16	7	1	2	2	1	1
10	3	1	2	14	8	9	3	2	2	1	<1	1
11	3	1	1	10	6	7	7	2	2	2	<1	1
12	2	1	1	10	4	5	3	2	2	2	<1	1
13	3	1	1	5	4	4	9	2	2	3	<1	1
14	2	1	1	5	4	4	7	2	2	2	<1	1
15	3	<1	1	6	3	3	4	1	2	3	<1	1
16	2	<1	1	7	3	3	2	1	2	1	<1	1
17	2	1	2	4	2	3	3	1	2	2	1	1
18	2	1	2	5	2	2	3	1	2	2	<1	1
19	4	2	2	4	2	2	5	2	2	2	1	1
20	3	2	2	4	2	2	3	2	2	11	<1	1
21	5	2	2	5	2	2	2	1	2	11	<1	1
22	10	3	5	35	2	8	4	1	1	1	<1	<1
23	7	3	4	45	20	36	2	1	1	<1	<1	<1
24	5	3	3	20	10	13	3	1	2	3	<1	<1
25	3	2	2	10	5	6	4	1	1	2	<1	<1
26	2	1	2	6	4	5	3	1	2	2	<1	<1
27	3	1	1	6	4	5	3	1	1	2	<1	<1
28	1	1	1	6	3	4	2	1	1	2	<1	<1
29	---	---	---	5	3	3	4	<1	1	1	<1	<1
30	---	---	---	4	2	2	2	<1	1	1	<1	<1
31	---	---	---	5	2	2	---	---	---	2	<1	<1
MAX	70	41	60	45	20	36	9	2	3	11	1	1
MIN	1	<1	1	1	<1	<1	2	<1	1	<1	<1	<1

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	2	<1	<1	1	<1	<1	5	<1	1	2	<1	1
2	2	<1	<1	2	<1	<1	8	1	1	4	1	1
3	<1	<1	<1	3	<1	<1	2	<1	1	6	<1	1
4	2	<1	<1	3	<1	<1	2	<1	1	2	<1	1
5	2	<1	<1	1	<1	<1	3	<1	1	8	<1	<1
6	1	<1	<1	2	<1	<1	4	<1	2	2	<1	<1
7	<1	<1	<1	1	<1	<1	8	1	3	2	<1	<1
8	6	<1	<1	1	<1	<1	12	1	3	2	<1	1
9	4	<1	<1	2	<1	<1	25	<1	2	2	<1	1
10	<1	<1	<1	2	<1	<1	10	<1	1	2	<1	1
11	2	<1	<1	1	<1	<1	11	<1	2	2	<1	<1
12	1	<1	<1	1	<1	<1	10	<1	2	2	<1	<1
13	1	<1	<1	2	<1	<1	10	<1	1	1	<1	<1
14	2	<1	<1	1	<1	<1	2	<1	<1	1	<1	<1
15	<1	<1	<1	1	<1	<1	2	<1	<1	1	<1	<1
16	1	<1	<1	2	<1	<1	1	<1	<1	2	<1	<1
17	2	<1	<1	13	<1	<1	2	<1	<1	3	1	2
18	5	<1	<1	4	<1	<1	1	<1	<1	3	<1	1
19	1	<1	<1	9	<1	<1	1	<1	<1	1	<1	<1
20	1	<1	<1	30	<1	<1	2	<1	<1	2	<1	<1
21	2	<1	<1	9	<1	<1	2	<1	1	1	<1	<1
22	1	<1	1	3	<1	<1	3	<1	1	4	<1	<1
23	2	<1	<1	25	<1	<1	2	<1	1	2	<1	1
24	1	<1	<1	2	<1	<1	2	1	1	1	<1	1
25	3	<1	<1	4	<1	<1	2	1	1	1	<1	<1
26	1	<1	<1	42	<1	<1	2	<1	1	1	<1	<1
27	1	<1	<1	2	<1	<1	4	1	1	<1	<1	<1
28	2	<1	<1	2	<1	1	2	1	1	2	<1	<1
29	2	<1	<1	3	1	2	4	<1	1	<1	<1	<1
30	2	<1	<1	4	1	2	1	<1	1	1	<1	<1
31	---	---	---	7	<1	2	3	<1	1	---	---	---
MAX	6	<1	1	42	1	2	25	1	3	8	1	2
MIN	<1	<1	<1	1	<1	<1	1	<1	<1	<1	<1	<1

14211010 CLACKAMAS RIVER NEAR OREGON CITY, OR

LOCATION.--Lat 45°22'46", long 122°34'34", in SW 1/4 sec.21, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090011, on left bank 1,000 ft upstream from bridge on Interstate Highway 205, at South Fork Water Board water intake facility, and at mile 1.6.

DRAINAGE AREA.--940 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 2001 to current year.

GAGE.--Water-stage recorder.

REMARKS.--No estimated daily discharges. Records good. Diurnal fluctuations and regulation caused by powerplants at River Mill Dam and North Fork Dam. Minor regulation by Timothy Lake (station 14208600). One small diversion for City of Estacada near Estacada.

AVERAGE DISCHARGE.--2 years (water years 2002-03), 3,258 ft^3/s, 2,360,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,900 ft^3/s Feb. 1, 2003, gage height, 38.50 ft; minimum discharge, 518 ft^3/s Sept. 6, 2003.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft3/s and maximum (*):

Date	Time	Discharge (ft3/s)	Gage height (ft)	Date	Time	Discharge (ft3/s)	Gage height (ft)
Feb. 1	0100	*47,900	*38.50	Mar. 22	1900	20,900	32.87
Mar. 8	0100	22,400	33.27				

Minimum discharge, 518 ft3/s Sept. 6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1040	771	756	5920	32600	2650	6440	3490	2020	961	696	674
2	898	778	928	5140	15500	2590	6110	3350	1880	953	727	667
3	905	780	1040	8950	10400	2530	5510	3260	1800	945	757	664
4	1080	785	673	8600	7820	2470	4990	3350	1850	929	744	662
5	984	712	679	10400	6200	2490	4760	3860	1620	920	745	655
6	929	788	830	6520	5190	4410	4890	3610	1590	908	749	653
7	888	819	824	4760	4480	13900	4720	3350	1550	888	764	716
8	855	906	780	3900	4030	19600	4460	3170	1510	897	754	888
9	820	1180	791	3380	3660	14000	4860	2890	1460	885	736	900
10	789	1350	872	2770	3330	11900	4990	2760	1370	845	726	943
11	793	1190	1190	2510	3080	9230	5560	2660	1300	835	722	879
12	779	1220	1740	2670	2910	8470	5470	2810	1360	835	720	888
13	848	1530	2370	4680	2760	8620	5620	2760	1370	823	712	795
14	786	1580	2670	4770	2640	7720	5410	2730	1360	821	692	766
15	813	1370	3320	4200	2550	6910	4790	2740	1270	805	707	837
16	772	1200	5080	3570	2630	6400	4410	2920	1280	805	721	775
17	797	1520	4130	3070	3250	5480	4840	2950	1280	770	750	1020
18	737	1520	3000	2740	4210	4810	5330	2860	1150	769	738	876
19	747	1450	2460	2480	3810	4370	4920	2780	1080	801	706	853
20	804	1410	2050	2300	3960	4340	4440	2620	1150	747	650	827
21	794	1240	2420	2200	4550	4970	4330	2550	1280	742	681	804
22	816	1160	2320	2350	5790	13800	4450	2520	1450	736	691	905
23	810	1090	2030	3580	5360	14400	4450	2650	1260	718	713	772
24	734	1030	1800	3460	4420	9680	4970	2800	1230	671	700	753
25	787	991	1670	4510	3890	7530	4760	2900	1130	716	683	762
26	792	975	1750	7910	3540	8700	4450	2710	1100	715	688	727
27	793	906	4120	10700	3070	8390	4100	2450	1040	710	694	691
28	805	861	5000	7160	3020	6980	3880	2330	1020	692	705	720
29	821	855	4280	5910	---	5900	3930	2310	1000	678	675	736
30	810	859	4660	20000	---	5300	3600	2260	979	708	674	743
31	783	---	7860	29600	---	5590	---	2190	---	670	670	---
TOTAL	25809	32826	74093	190710	158650	234130	145440	88590	40739	24898	22090	23551
MEAN	833	1094	2390	6152	5666	7553	4848	2858	1358	803	713	785
MAX	1080	1580	7860	29600	32600	19600	6440	3860	2020	961	764	1020
MIN	734	712	673	2200	2550	2470	3600	2190	979	670	650	653
AC-FT	51190	65110	147000	378300	314700	464400	288500	175700	80810	49390	43820	46710
CFSM	0.89	1.16	2.54	6.54	6.03	8.03	5.16	3.04	1.44	0.85	0.76	0.84
IN.	1.02	1.30	2.93	7.55	6.28	9.27	5.76	3.51	1.61	0.99	0.87	0.93

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

MEAN	1049	2567	4752	6066	4975	6038	5440	3465	2208	1032	769	835
MAX	1265	4039	7113	6152	5666	7553	6032	4073	3058	1262	825	884
(WY)	2002	2002	2002	2003	2003	2003	2002	2002	2002	2002	2002	2002
MIN	833	1094	2390	5981	4285	4524	4848	2858	1358	803	713	785
(WY)	2003	2003	2003	2002	2002	2002	2003	2003	2003	2003	2003	2003

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2002 - 2003	
ANNUAL TOTAL	1068504		1061526			
ANNUAL MEAN	2927		2908		3258	
HIGHEST ANNUAL MEAN					3607	2002
LOWEST ANNUAL MEAN					2908	2003
HIGHEST DAILY MEAN	21600	Apr 14	32600	Feb 1	32600	Feb 1 2003
LOWEST DAILY MEAN	673	Dec 4	650	Aug 20	650	Aug 20 2003
ANNUAL SEVEN-DAY MINIMUM	755	Aug 28	664	Aug 31	664	Aug 31 2003
ANNUAL RUNOFF (AC-FT)	2119000		2106000		2360000	
ANNUAL RUNOFF (CFSM)	3.11		3.09		3.47	
ANNUAL RUNOFF (INCHES)	42.29		42.01		47.09	
10 PERCENT EXCEEDS	5550		5900		6510	
50 PERCENT EXCEEDS	2490		1510		2620	
90 PERCENT EXCEEDS	785		717		756	

14211010 CLACKAMAS RIVER NEAR OREGON CITY, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 2002 to current year.
pH: June 2002 to current year.
WATER TEMPERATURE: June 2002 to current year.
DISSOLVED OXYGEN: June 2002 to current year.
TURBIDITY: June 2002 to current year.

INSTRUMENTATION.--Water-quality monitor. Electronic datalogger with a 30-minute recording interval.

REMARKS.--
SPECIFIC CONDUCTANCE: Records excellent.
pH: Records excellent except for the period Aug. 13 to Sept. 17, which are poor.
WATER TEMPERATURE: Records excellent.
DISSOLVED OXYGEN: Records excellent for the periods Oct. 1 to Nov. 14, Mar. 4 to Apr. 29; good for the periods Nov. 14 to Dec. 27, Jan. 29 to Mar. 4, June 12 to Sept. 17; fair for the period Dec. 27 to Jan. 29; poor for the periods Apr. 29 to June 12, Sept. 17 to Sept. 30.
TURBIDITY: Records excellent.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 72 microsiemens Sept. 1, 7, 9, 2003; minimum recorded, 32 microsiemens Feb. 1, Mar. 23, 2003.
pH: Maximum recorded, 9.4 units May 21, 2003; minimum recorded, 6.9 units May 30, 2003.
WATER TEMPERATURE: Maximum recorded, 23.6°C July 30, 2003; minimum recorded, 3.9°C Feb. 12, 2003.
DISSOLVED OXYGEN: Maximum recorded, 14.1 mg/L Dec. 8, 2002, May 10, 13, 2003, minimum recorded, 7.4 mg/L July 31, Aug. 2, 2003.
TURBIDITY: Maximum recorded, 291 NTU Jan. 31, 2003; minimum recorded <1 on many days most years.

EXTREMES FOR CURRENT YEAR:--
SPECIFIC CONDUCTANCE: Maximum recorded, 72 microsiemens Sept. 1, 7, 9; minimum recorded, 32 microsiemens Feb. 1, Mar. 23.
pH: Maximum recorded, 9.4 units May 21; minimum recorded, 6.9 units May 30.
WATER TEMPERATURE: Maximum recorded, 23.6°C July 30; minimum recorded, 3.9°C Feb. 12.
DISSOLVED OXYGEN: Maximum recorded, 14.1 mg/L Dec. 8, May 10, 13, minimum recorded, 7.4 mg/L July 31, Aug. 2.
TURBIDITY: Maximum recorded, 291 NTU Jan. 31; minimum recorded <1 on many days during the year.

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	66	64	65	69	67	68	62	61	62	47	46	47
2	66	65	66	69	67	68	63	61	62	46	43	45
3	67	65	66	69	67	68	63	61	62	48	43	44
4	67	65	66	70	67	68	64	62	64	43	37	41
5	66	65	65	69	67	68	64	63	64	38	37	38
6	66	65	65	69	67	68	65	64	64	39	37	37
7	66	65	66	69	67	68	65	64	64	40	38	39
8	67	65	66	68	67	68	65	64	64	41	40	41
9	67	65	66	69	67	68	65	64	64	43	41	42
10	67	66	66	69	67	68	66	64	65	44	43	44
11	67	65	66	68	67	67	66	65	66	46	44	45
12	67	65	66	68	66	67	67	63	65	47	46	46
13	67	66	66	68	67	67	67	64	65	47	45	46
14	67	66	67	68	66	66	65	63	65	48	46	47
15	69	67	67	66	65	65	63	59	61	46	43	44
16	68	67	67	66	63	65	59	53	57	44	43	43
17	68	67	67	65	62	64	53	49	51	44	43	43
18	68	67	67	63	61	62	49	47	48	45	44	44
19	68	67	67	61	60	61	47	47	47	46	45	45
20	68	67	67	61	60	60	48	47	47	46	45	46
21	68	67	67	61	60	60	50	48	49	47	46	47
22	68	67	67	61	60	60	51	50	50	49	47	48
23	69	67	68	61	59	60	52	51	51	49	47	48
24	69	67	68	60	59	59	52	52	52	50	49	49
25	68	67	68	60	58	59	53	52	53	50	46	47
26	68	67	68	60	59	59	54	53	53	48	42	45
27	68	67	68	60	59	60	54	53	53	42	35	39
28	69	67	68	61	60	60	55	53	54	36	35	35
29	69	67	68	62	60	61	55	49	51	38	36	37
30	69	67	68	62	61	61	49	48	49	38	35	37
31	69	67	68	---	---	---	49	46	47	35	33	34
MONTH	69	64	67	70	58	64	67	46	57	50	33	43

14211010 CLACKAMAS RIVER NEAR OREGON CITY, OR--Continued

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	33	32	32	46	46	46	42	40	41	45	44	45
2	35	33	34	47	46	47	41	40	40	45	44	45
3	37	35	36	48	47	47	40	40	40	46	44	45
4	38	37	38	49	48	48	41	40	40	45	44	45
5	40	38	39	49	48	49	41	41	41	46	44	44
6	41	40	40	48	44	46	42	41	41	45	43	44
7	42	41	41	45	40	43	42	42	42	44	42	43
8	43	42	42	40	35	37	43	42	42	44	42	43
9	44	43	43	37	36	37	43	42	43	45	43	44
10	45	44	44	38	37	37	43	42	43	45	44	44
11	46	45	46	37	37	37	43	41	42	46	44	45
12	47	46	46	38	37	37	42	41	41	46	44	45
13	48	47	47	38	38	38	42	40	41	48	44	46
14	48	48	48	38	37	37	41	40	40	51	44	46
15	49	48	48	38	37	37	41	40	40	48	45	46
16	49	49	49	38	37	38	41	40	41	47	44	46
17	50	48	49	39	38	38	42	41	41	47	44	45
18	51	50	50	40	39	39	42	41	41	46	44	45
19	51	50	51	41	40	40	42	41	41	47	42	45
20	50	48	49	42	41	41	42	41	42	48	44	45
21	48	47	47	42	41	42	42	41	42	47	44	46
22	47	46	46	41	36	39	42	40	41	47	45	46
23	46	44	45	36	32	33	---	---	---	48	44	47
24	44	43	43	36	33	34	---	---	---	48	46	47
25	43	42	42	38	36	36	---	---	---	48	46	47
26	44	43	43	38	37	38	---	---	---	48	45	46
27	45	44	44	38	37	38	---	---	---	46	44	45
28	50	45	45	38	37	37	---	---	---	46	44	45
29	---	---	---	40	38	38	---	---	---	46	45	46
30	---	---	---	40	39	39	44	43	44	52	46	47
31	---	---	---	41	40	40	---	---	---	47	46	47
MONTH	51	32	44	49	32	40	---	---	---	52	42	45

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	51	47	47	60	60	60	69	68	69	72	68	70
2	48	47	47	61	60	60	69	68	69	71	68	70
3	48	47	48	61	60	61	70	68	69	71	67	69
4	49	48	48	62	61	62	69	68	69	71	68	70
5	49	49	49	63	62	62	70	69	69	71	70	70
6	50	49	50	63	63	63	70	69	69	71	70	70
7	51	50	50	64	63	63	70	69	69	72	70	70
8	51	50	51	64	63	64	69	68	69	71	69	70
9	52	51	52	64	63	64	69	68	68	72	69	70
10	53	52	53	64	64	64	69	68	69	71	70	70
11	55	53	54	65	64	64	70	68	69	71	70	70
12	55	54	54	65	64	65	69	68	69	70	68	69
13	55	54	55	65	64	65	69	68	69	70	68	69
14	56	55	55	65	64	65	69	68	69	70	69	69
15	56	55	56	66	65	65	70	68	69	70	68	69
16	58	56	56	67	65	66	69	68	69	70	68	69
17	57	56	57	66	64	66	70	68	69	69	66	68
18	61	56	57	67	66	66	70	68	69	68	66	68
19	58	56	57	67	66	66	70	69	69	69	68	68
20	58	57	57	67	66	67	70	69	69	69	68	68
21	58	56	57	67	66	67	70	69	69	69	67	68
22	58	57	58	67	67	67	70	68	69	69	67	68
23	60	58	58	68	67	67	70	68	69	69	67	68
24	59	58	59	68	67	67	70	68	69	69	68	68
25	61	59	59	68	67	67	69	68	69	69	68	69
26	61	59	59	68	67	68	69	68	68	70	68	69
27	59	59	59	68	67	68	69	68	68	70	69	69
28	60	59	59	69	67	68	71	68	69	70	69	69
29	60	59	60	69	68	68	70	67	69	71	69	69
30	60	59	60	69	68	69	71	67	69	70	69	69
31	---	---	---	69	68	69	71	67	69	---	---	---
MONTH	61	47	55	69	60	65	71	67	69	72	66	69

14211010 CLACKAMAS RIVER NEAR OREGON CITY, OR--Continued

pH, water, unfiltered, field, standard units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.4	7.5	7.7	8.1	7.6	7.8	7.8	7.5	7.6	7.3	7.3	7.3
2	8.4	7.5	7.8	8.1	7.5	7.7	8.3	7.5	7.7	7.4	7.3	7.3
3	8.0	7.5	7.7	8.1	7.5	7.7	8.2	7.5	7.7	7.4	7.3	7.4
4	8.3	7.5	7.7	8.1	7.5	7.7	7.9	7.5	7.6	7.4	7.3	7.3
5	8.3	7.5	7.8	8.2	7.5	7.7	8.3	7.5	7.6	7.3	7.3	7.3
6	8.5	7.4	7.8	8.0	7.5	7.7	8.4	7.5	7.8	7.3	7.2	7.3
7	8.5	7.4	7.8	8.0	7.5	7.7	8.2	7.5	7.7	7.3	7.2	7.2
8	8.5	7.5	7.8	8.1	7.5	7.7	8.3	7.5	7.7	7.4	7.2	7.3
9	8.5	7.4	7.9	7.8	7.4	7.6	8.2	7.5	7.7	7.4	7.3	7.3
10	8.4	7.4	7.8	7.9	7.3	7.6	7.9	7.5	7.6	7.4	7.3	7.3
11	8.4	7.5	7.8	7.9	7.5	7.6	7.7	7.5	7.6	7.4	7.3	7.3
12	8.3	7.5	7.8	7.9	7.4	7.6	7.7	7.5	7.6	7.4	7.3	7.3
13	8.4	7.5	7.8	7.7	7.4	7.5	7.6	7.5	7.5	7.4	7.3	7.4
14	8.3	7.5	7.8	8.0	7.3	7.7	7.7	7.5	7.5	7.5	7.3	7.3
15	8.3	7.5	7.8	8.1	7.5	7.7	7.6	7.5	7.5	7.4	7.3	7.3
16	8.3	7.5	7.8	7.8	7.5	7.6	7.5	7.4	7.5	7.5	7.3	7.3
17	8.2	7.5	7.8	8.0	7.5	7.6	7.5	7.4	7.4	7.5	7.3	7.3
18	8.4	7.5	7.8	7.8	7.5	7.6	7.5	7.3	7.4	7.5	7.3	7.4
19	8.4	7.5	7.8	7.9	7.5	7.6	7.4	7.3	7.3	7.5	7.3	7.4
20	8.2	7.5	7.8	8.1	7.4	7.6	7.5	7.3	7.4	7.5	7.3	7.4
21	8.1	7.5	7.7	8.1	7.4	7.6	7.4	7.3	7.3	7.5	7.3	7.4
22	8.4	7.5	7.8	7.9	7.4	7.6	7.4	7.3	7.3	7.5	7.3	7.4
23	8.3	7.4	7.9	8.1	7.4	7.6	7.5	7.3	7.4	7.6	7.3	7.4
24	8.4	7.6	7.9	8.1	7.4	7.7	7.5	7.4	7.4	7.5	7.3	7.4
25	8.3	7.6	7.9	8.1	7.5	7.7	7.6	7.3	7.4	7.4	7.3	7.3
26	8.3	7.6	7.8	8.1	7.5	7.7	7.6	7.4	7.4	7.4	7.3	7.3
27	8.2	7.6	7.8	8.2	7.5	7.7	7.5	7.3	7.4	7.3	7.2	7.3
28	8.4	7.5	7.9	8.2	7.5	7.7	7.6	7.4	7.5	7.3	7.2	7.2
29	8.3	7.5	7.9	8.4	7.5	7.8	7.5	7.4	7.5	7.2	7.2	7.2
30	8.2	7.6	7.8	8.3	7.5	7.8	7.4	7.3	7.4	7.2	7.1	7.1
31	8.1	7.6	7.8	---	---	---	7.4	7.3	7.3	7.1	7.0	7.1
MAX	8.5	7.6	7.9	8.4	7.6	7.8	8.4	7.5	7.8	7.6	7.3	7.4
MIN	8.0	7.4	7.7	7.7	7.3	7.5	7.4	7.3	7.3	7.1	7.0	7.1

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.1	7.0	7.0	7.4	7.2	7.3	7.4	7.2	7.3	8.9	7.1	7.7
2	7.1	7.1	7.1	7.4	7.2	7.3	7.4	7.2	7.3	9.0	7.1	7.8
3	7.2	7.1	7.1	7.5	7.3	7.3	7.5	7.2	7.3	8.7	7.2	7.7
4	7.2	7.1	7.1	7.6	7.2	7.4	7.6	7.2	7.4	8.8	7.2	7.6
5	7.2	7.1	7.2	7.7	7.3	7.5	7.7	7.3	7.5	8.8	7.2	7.8
6	7.2	7.2	7.2	7.6	7.4	7.4	7.7	7.4	7.5	9.0	7.2	7.8
7	7.2	7.2	7.2	7.4	7.2	7.3	7.8	7.3	7.5	8.9	7.2	7.6
8	7.2	7.2	7.2	7.2	7.2	7.2	7.8	7.4	7.5	8.9	7.2	7.6
9	7.2	7.2	7.2	7.3	7.2	7.2	7.9	7.4	7.5	8.8	7.2	7.6
10	7.3	7.2	7.2	7.3	7.2	7.2	7.9	7.3	7.5	9.0	7.2	7.9
11	7.3	7.2	7.2	7.3	7.2	7.2	8.1	7.4	7.6	9.1	7.2	7.8
12	7.3	7.2	7.3	7.3	7.2	7.3	8.0	7.4	7.5	8.9	7.2	7.6
13	7.3	7.3	7.3	7.4	7.2	7.3	7.9	7.4	7.5	9.2	7.2	7.4
14	7.3	7.3	7.3	7.4	7.2	7.3	8.2	7.4	7.6	8.8	7.0	7.3
15	7.3	7.2	7.3	7.4	7.2	7.3	8.3	7.4	7.6	9.3	7.2	7.8
16	7.4	7.3	7.3	7.4	7.3	7.3	8.4	7.4	7.6	9.1	7.4	7.9
17	7.3	7.3	7.3	7.4	7.2	7.3	8.0	7.4	7.6	9.0	7.5	7.9
18	7.4	7.2	7.3	7.5	7.3	7.3	8.3	7.4	7.7	9.3	7.5	8.0
19	7.4	7.3	7.3	7.4	7.3	7.3	8.7	7.4	7.7	9.3	7.4	7.9
20	7.3	7.3	7.3	7.5	7.3	7.4	8.7	7.4	7.7	9.2	7.4	7.9
21	7.4	7.3	7.3	7.5	7.3	7.4	7.8	7.4	7.6	9.3	7.4	7.8
22	7.4	7.3	7.3	7.4	7.3	7.4	8.6	7.4	7.6	9.3	7.4	8.1
23	7.4	7.2	7.3	7.3	7.2	7.3	---	---	---	9.1	7.3	7.5
24	7.4	7.2	7.3	7.3	7.2	7.3	---	---	---	8.7	7.3	7.7
25	7.4	7.2	7.3	7.3	7.2	7.3	---	---	---	8.8	7.4	7.7
26	7.4	7.2	7.3	7.4	7.2	7.3	---	---	---	8.7	7.4	7.7
27	7.4	7.2	7.3	7.4	7.3	7.3	---	---	---	8.5	7.4	7.6
28	7.4	7.2	7.3	7.4	7.2	7.3	---	---	---	8.3	7.3	7.6
29	---	---	---	7.4	7.2	7.3	---	---	---	8.1	7.3	7.5
30	---	---	---	7.5	7.2	7.3	8.7	7.1	7.7	7.9	6.9	7.5
31	---	---	---	7.4	7.2	7.3	---	---	---	8.0	7.3	7.5
MAX	7.4	7.3	7.3	7.7	7.4	7.5	---	---	---	9.3	7.5	8.1
MIN	7.1	7.0	7.0	7.2	7.2	7.2	---	---	---	7.9	6.9	7.3

14211010 CLACKAMAS RIVER NEAR OREGON CITY, OR--Continued

pH, water, unfiltered, field, standard units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.8	7.3	7.5	8.3	7.4	7.8	8.6	7.7	8.0	8.6	7.9	8.2
2	8.2	7.3	7.6	8.2	7.4	7.7	8.2	7.6	8.0	8.7	8.1	8.3
3	8.0	7.4	7.5	8.3	7.4	7.7	8.4	7.6	7.8	8.7	7.9	8.3
4	7.9	7.3	7.5	8.3	7.4	7.7	8.3	7.5	7.8	8.8	7.7	8.3
5	7.9	7.3	7.5	8.3	7.4	7.8	8.0	7.4	7.6	8.6	8.0	8.3
6	7.8	7.3	7.4	8.3	7.4	7.7	8.1	7.4	7.6	8.7	7.8	8.3
7	7.8	7.3	7.5	8.4	7.5	7.8	8.0	7.3	7.7	8.7	8.1	8.3
8	7.9	7.3	7.5	8.3	7.5	7.8	8.1	7.3	7.7	8.3	7.3	8.0
9	7.9	7.3	7.5	8.3	7.5	7.8	8.4	7.4	7.8	8.1	7.6	7.9
10	7.9	7.3	7.5	8.3	7.5	7.8	8.3	7.5	7.9	8.2	7.7	7.9
11	7.9	7.3	7.5	8.4	7.5	7.8	8.3	7.4	7.8	8.4	7.5	7.7
12	8.0	7.3	7.6	8.4	7.5	7.8	8.1	7.2	7.7	8.2	7.4	7.7
13	8.1	7.4	7.6	8.4	7.5	7.9	8.2	7.2	7.8	8.3	7.5	7.8
14	8.1	7.4	7.6	8.4	7.5	7.8	8.5	7.5	7.8	8.4	7.6	8.0
15	8.0	7.4	7.5	8.3	7.5	7.8	8.6	7.6	8.0	8.6	7.7	8.1
16	8.1	7.3	7.6	8.3	7.5	7.8	8.6	7.7	8.0	8.4	7.8	8.1
17	8.1	7.3	7.6	8.2	7.6	7.8	8.5	7.7	8.1	8.7	7.7	8.0
18	7.7	7.3	7.5	8.2	7.5	7.8	8.4	7.7	8.0	8.8	7.6	8.1
19	7.8	7.4	7.5	8.1	7.5	7.8	8.3	7.6	7.9	8.5	7.6	8.0
20	8.1	7.4	7.6	8.2	7.6	7.8	8.1	7.5	7.8	8.8	7.6	8.0
21	7.9	7.4	7.6	8.3	7.6	7.8	8.1	7.6	7.9	8.7	7.6	8.1
22	8.0	7.4	7.6	8.3	7.6	7.9	8.1	7.5	7.8	8.7	7.6	8.1
23	8.2	7.4	7.7	8.3	7.6	7.8	8.3	7.4	7.8	8.5	7.6	8.0
24	8.2	7.4	7.6	8.4	7.6	7.7	8.3	7.6	7.9	8.4	7.6	7.9
25	8.1	7.4	7.6	8.5	7.6	7.9	8.3	7.6	8.0	8.6	7.6	8.0
26	8.3	7.3	7.6	8.4	7.7	8.0	8.3	7.6	8.0	8.7	7.6	8.0
27	8.2	7.4	7.6	8.5	7.6	7.9	8.3	7.8	8.0	8.7	7.6	8.0
28	8.3	7.1	7.6	8.5	7.6	8.0	8.2	7.5	7.9	8.7	7.6	8.1
29	8.3	7.3	7.7	8.5	7.6	8.0	8.2	7.5	7.8	8.5	7.6	8.0
30	8.3	7.4	7.6	8.5	7.6	8.0	8.6	7.7	8.0	8.6	7.6	7.8
31	---	---	---	8.5	7.7	8.0	8.7	8.0	8.3	---	---	---
MAX	8.3	7.4	7.7	8.5	7.7	8.0	8.7	8.0	8.3	8.8	8.1	8.3
MIN	7.7	7.1	7.4	8.1	7.4	7.7	8.0	7.2	7.6	8.1	7.3	7.7

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	13.6	12.1	13.0	6.5	5.4	6.1	6.3	5.3	5.6	6.2	5.9	6.1
2	13.5	11.5	12.6	6.5	5.4	6.1	6.9	5.8	6.5	7.1	6.2	6.6
3	13.6	12.5	12.9	6.7	5.3	6.1	6.4	4.8	5.4	7.1	6.3	6.7
4	13.3	12.6	12.9	6.9	5.7	6.3	5.9	5.4	5.6	7.6	6.6	7.1
5	13.3	12.5	12.8	7.6	6.7	7.1	6.2	5.8	6.0	6.9	6.3	6.5
6	13.3	12.5	12.9	7.5	6.5	7.0	5.8	5.0	5.3	6.4	5.7	6.1
7	13.9	12.0	12.8	7.8	6.8	7.2	5.3	4.5	4.9	6.0	5.2	5.6
8	14.0	12.7	13.4	7.8	7.3	7.6	5.1	4.2	4.6	5.6	4.8	5.1
9	14.0	13.1	13.6	7.8	7.1	7.3	5.4	4.8	5.0	5.3	4.6	4.9
10	13.5	11.8	12.6	7.2	6.4	6.9	6.0	5.4	5.8	5.2	4.5	4.8
11	12.4	10.8	11.6	7.5	6.6	7.1	6.3	5.6	5.9	5.0	4.3	4.7
12	11.8	10.2	11.2	8.5	7.2	7.8	6.3	6.0	6.2	5.2	4.9	5.0
13	12.8	10.5	11.5	8.5	7.4	7.8	6.2	5.9	6.1	5.1	4.7	4.8
14	11.9	10.3	11.3	7.8	7.4	7.7	6.8	5.9	6.3	5.7	4.9	5.3
15	12.3	10.5	11.6	7.7	6.7	7.2	6.4	6.1	6.2	5.8	5.0	5.4
16	12.4	10.9	11.9	7.7	6.5	7.1	6.9	6.2	6.5	6.0	5.2	5.6
17	12.4	10.7	11.6	8.4	7.3	7.8	6.8	6.3	6.5	6.0	5.1	5.5
18	11.8	10.6	11.1	8.2	7.3	7.7	6.8	6.2	6.5	5.7	4.8	5.2
19	12.1	10.8	11.3	8.4	8.0	8.2	6.6	6.1	6.2	5.7	4.2	4.9
20	12.4	11.5	11.9	8.9	7.5	8.2	6.4	5.8	6.1	5.6	4.4	5.0
21	11.9	11.5	11.8	8.8	7.8	8.2	6.4	6.1	6.2	5.6	4.8	5.2
22	12.5	11.5	11.9	8.7	8.1	8.4	6.2	5.9	6.0	5.8	5.0	5.4
23	12.2	10.3	11.1	8.8	8.4	8.6	6.0	5.0	5.4	6.0	5.1	5.5
24	11.1	9.8	10.4	8.7	7.8	8.1	5.4	4.7	5.0	6.5	5.4	6.0
25	10.5	8.8	9.7	7.8	6.1	6.8	5.7	4.9	5.3	6.9	6.4	6.6
26	9.9	8.7	9.3	6.8	5.5	6.1	5.8	5.5	5.7	7.8	6.8	7.3
27	9.5	8.3	8.9	6.8	6.0	6.5	6.2	5.3	5.8	8.1	7.2	7.6
28	10.4	9.3	9.9	6.9	6.2	6.6	5.7	5.2	5.4	7.6	7.0	7.4
29	10.3	8.9	9.7	6.7	5.7	6.2	6.1	5.5	5.7	7.3	7.0	7.1
30	8.9	6.7	7.4	6.4	5.7	6.1	6.3	5.7	6.0	7.9	7.3	7.5
31	7.1	5.7	6.4	---	---	---	6.5	6.1	6.4	8.6	7.9	8.3
MONTH	14.0	5.7	11.3	8.9	5.3	7.2	6.9	4.2	5.8	8.6	4.2	6.0

14211010 CLACKAMAS RIVER NEAR OREGON CITY, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.3	7.3	7.8	6.4	4.3	5.2	9.2	8.0	8.4	12.3	8.3	10.0
2	7.6	7.2	7.4	5.4	4.0	4.6	8.3	7.3	7.8	12.8	8.8	10.6
3	7.5	7.0	7.1	5.6	4.9	5.2	7.9	6.8	7.3	11.2	9.3	10.0
4	7.2	6.3	6.8	6.0	4.8	5.4	7.8	6.5	7.1	10.7	9.1	9.8
5	6.7	5.7	6.2	6.7	5.6	6.1	7.1	6.4	6.7	11.0	9.2	10.0
6	6.3	5.2	5.7	6.4	5.8	6.0	8.7	6.5	7.2	10.9	8.9	9.8
7	6.0	4.6	5.2	6.9	5.8	6.5	7.8	6.8	7.2	10.0	8.4	9.2
8	5.8	4.4	5.0	7.2	6.3	6.7	9.0	7.0	7.8	9.6	8.3	8.9
9	5.6	4.2	4.8	8.1	6.8	7.4	9.6	7.4	8.3	9.6	8.3	8.9
10	6.0	4.7	5.3	8.2	7.1	7.6	8.7	7.9	8.2	10.1	8.3	9.0
11	5.9	4.1	4.9	8.2	7.3	7.7	10.3	8.3	8.9	11.6	8.4	9.8
12	5.9	3.9	4.9	7.9	7.5	7.7	9.9	8.5	9.0	10.7	8.9	9.7
13	6.2	4.9	5.5	8.0	7.5	7.8	9.8	8.6	9.0	13.2	8.4	10.4
14	6.8	5.6	6.1	8.6	7.3	7.8	9.9	8.2	8.9	12.4	9.4	10.8
15	6.3	5.4	5.8	8.6	7.5	7.9	10.1	8.4	9.1	11.8	9.8	10.7
16	6.9	5.8	6.3	8.7	7.2	7.8	10.1	8.5	9.1	11.3	9.4	10.2
17	6.6	6.1	6.3	8.3	7.0	7.6	9.5	8.5	8.9	11.1	9.3	10.1
18	7.5	6.3	6.8	8.0	6.8	7.3	9.7	8.1	8.7	12.1	8.7	10.1
19	7.2	6.6	6.9	7.4	6.8	7.1	10.3	7.7	8.7	13.0	8.4	10.4
20	6.9	6.5	6.7	8.4	6.9	7.4	9.7	8.4	9.0	12.3	8.9	10.5
21	7.4	6.8	7.0	7.6	7.0	7.3	8.6	8.3	8.4	13.9	9.3	11.1
22	7.3	6.6	6.8	7.6	7.0	7.3	9.7	8.2	8.7	14.5	10.1	12.2
23	7.4	5.8	6.6	7.4	6.4	6.9	---	---	---	15.7	10.6	12.9
24	6.5	5.1	5.7	7.5	5.9	6.6	---	---	---	14.3	11.5	12.8
25	6.5	4.4	5.3	7.0	6.6	6.9	---	---	---	13.7	12.0	12.7
26	5.7	4.2	4.9	7.7	6.8	7.1	---	---	---	14.9	11.9	13.2
27	5.9	4.4	5.0	7.8	6.6	7.1	---	---	---	16.8	12.0	14.0
28	4.9	4.0	4.4	8.0	6.3	7.1	---	---	---	16.4	12.6	14.4
29	---	---	---	8.9	6.6	7.6	---	---	---	17.0	12.5	14.6
30	---	---	---	9.4	7.2	8.2	10.2	8.8	9.4	15.8	12.9	13.8
31	---	---	---	9.0	8.1	8.5	---	---	---	16.4	12.8	14.3
MONTH	8.3	3.9	6.0	9.4	4.0	7.0	---	---	---	17.0	8.3	11.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	17.0	13.4	15.1	19.6	16.9	18.1	22.6	20.7	21.8	19.5	17.7	18.8
2	17.3	13.0	15.0	19.4	16.0	17.9	22.4	19.7	20.6	19.5	17.7	18.7
3	18.0	13.1	15.5	20.0	16.5	18.4	20.6	19.1	19.9	19.6	18.4	19.2
4	18.9	13.4	16.1	20.6	17.2	19.1	21.7	18.6	20.1	20.6	18.9	19.8
5	19.4	14.2	16.8	20.6	17.7	19.3	21.8	19.5	20.4	20.4	18.9	19.9
6	20.3	15.0	17.7	20.4	17.8	19.4	21.2	19.1	20.1	20.2	18.7	19.5
7	20.5	15.8	18.3	21.0	18.1	19.7	21.8	19.7	20.9	19.4	18.2	18.7
8	20.2	15.9	18.0	20.9	18.0	19.3	21.8	19.6	20.9	18.2	16.8	17.6
9	19.3	15.3	16.7	21.5	17.8	19.6	21.4	19.6	20.6	17.7	16.4	16.8
10	17.0	15.3	16.3	22.1	18.8	20.5	20.8	19.5	20.3	17.1	16.4	16.7
11	18.8	15.5	16.9	22.1	19.4	21.1	21.1	19.1	20.2	17.7	16.7	17.1
12	18.5	15.3	16.4	22.1	19.6	21.1	21.2	19.0	20.2	17.7	16.2	17.0
13	17.3	15.4	16.3	21.7	19.6	20.6	20.8	18.5	20.0	17.4	15.1	16.5
14	18.3	15.2	16.7	22.2	18.9	20.6	21.7	19.1	20.5	17.5	15.5	16.5
15	19.5	15.4	17.5	22.1	19.6	21.0	21.9	20.0	20.9	16.6	14.6	15.7
16	20.1	15.7	18.0	21.6	19.7	20.8	21.1	19.2	20.2	16.3	15.5	16.0
17	20.4	15.9	18.4	21.8	18.8	20.4	21.4	19.2	20.5	15.9	14.4	15.4
18	20.3	16.5	17.5	22.2	19.4	21.0	21.5	19.3	20.7	16.5	14.3	15.5
19	16.9	15.5	16.1	22.6	19.8	21.4	21.5	19.4	20.4	16.5	15.1	15.7
20	16.5	15.1	15.8	23.1	20.3	21.9	20.4	18.2	19.5	16.2	14.1	15.2
21	16.4	14.7	15.5	23.5	21.4	22.7	20.9	19.0	20.1	16.2	14.2	15.4
22	15.9	14.3	15.1	23.5	21.2	22.6	20.9	18.9	19.7	16.4	14.3	15.5
23	15.5	14.2	14.8	23.4	20.8	22.2	20.0	17.7	18.9	16.4	14.2	15.4
24	17.7	13.9	15.5	22.3	20.2	21.5	19.9	17.6	19.0	16.3	14.6	15.6
25	19.0	14.6	16.8	22.1	19.9	21.2	20.3	18.1	19.4	16.4	14.8	15.8
26	19.8	15.7	17.9	22.3	20.1	21.4	20.4	18.6	19.3	16.6	15.1	16.1
27	20.3	16.5	18.6	22.6	19.9	21.5	19.0	17.9	18.6	16.9	15.5	16.4
28	20.9	16.7	18.9	23.3	20.9	22.3	19.2	17.4	18.4	17.1	15.7	16.5
29	20.9	17.6	19.5	23.3	21.0	22.5	19.8	17.9	19.0	16.8	15.1	15.7
30	20.4	17.4	18.9	23.6	21.3	22.7	19.9	18.3	19.4	15.9	14.5	15.1
31	---	---	---	23.5	21.3	22.4	19.8	18.2	19.3	---	---	---
MONTH	20.9	13.0	16.9	23.6	16.0	20.8	22.6	17.4	20.0	20.6	14.1	16.8

14211010 CLACKAMAS RIVER NEAR OREGON CITY, OR--Continued

Dissolved oxygen, water, unfiltered, milligrams per liter
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.4	9.8	10.5	13.3	11.9	12.5	13.3	12.0	12.6	12.6	12.3	12.5
2	11.7	9.8	10.7	13.3	11.9	12.5	13.4	12.0	12.6	12.5	12.0	12.3
3	10.9	9.6	10.2	13.4	11.9	12.5	13.8	12.1	12.8	12.6	12.0	12.4
4	11.2	9.9	10.4	13.3	11.8	12.5	13.3	12.2	12.6	12.5	12.0	12.2
5	11.5	9.9	10.6	13.1	11.7	12.3	13.6	12.0	12.7	12.7	12.4	12.6
6	11.8	10.0	10.7	13.2	11.6	12.2	13.8	12.2	12.9	12.7	12.4	12.6
7	11.7	10.0	10.7	12.7	11.4	12.0	13.9	12.3	13.0	12.8	12.5	12.7
8	11.7	9.8	10.6	12.6	11.2	11.8	14.1	12.4	13.1	13.0	12.5	12.8
9	11.5	9.6	10.4	12.3	11.3	11.8	13.7	12.4	12.9	13.0	12.6	12.8
10	11.6	9.6	10.5	12.8	11.6	12.1	13.1	12.1	12.5	13.1	12.6	12.9
11	12.0	10.1	11.0	13.0	11.8	12.3	12.8	12.1	12.4	13.1	12.7	12.9
12	12.1	10.3	11.0	13.3	11.6	12.1	12.7	11.9	12.3	12.9	12.5	12.7
13	12.0	10.2	11.0	12.6	11.5	12.0	12.4	12.0	12.2	13.1	12.6	12.9
14	12.0	10.1	11.0	12.8	11.6	12.2	12.3	11.8	12.0	12.9	12.5	12.8
15	11.7	10.0	10.8	13.1	11.8	12.3	12.3	11.8	12.0	13.0	12.4	12.7
16	11.7	9.9	10.6	12.5	11.7	12.1	12.1	11.7	11.8	12.9	12.5	12.7
17	11.8	9.9	10.7	12.8	11.6	12.1	12.2	11.8	12.0	12.9	12.3	12.7
18	12.3	10.1	11.1	12.6	11.7	12.0	12.5	11.8	12.2	13.0	12.4	12.7
19	12.2	10.6	11.2	12.6	11.6	12.0	12.3	11.9	12.1	13.1	12.4	12.8
20	12.0	10.2	11.0	12.8	11.5	12.0	12.4	11.9	12.1	13.1	12.3	12.7
21	11.7	10.3	10.9	12.8	11.4	12.0	12.4	11.9	12.1	12.9	12.3	12.6
22	11.9	10.3	11.0	12.4	11.4	11.8	12.6	12.1	12.4	12.7	12.2	12.5
23	12.1	10.3	11.1	12.7	11.3	11.9	13.0	12.2	12.6	12.9	12.3	12.6
24	12.3	10.4	11.2	12.9	11.4	12.0	12.9	12.4	12.6	12.7	12.0	12.4
25	12.5	10.7	11.5	13.3	11.8	12.5	13.0	12.3	12.6	12.4	11.9	12.2
26	12.6	10.9	11.6	13.6	12.0	12.7	12.8	12.1	12.4	12.2	11.8	12.0
27	12.7	11.0	11.8	13.3	11.9	12.5	12.7	12.1	12.4	12.2	11.8	12.0
28	12.4	10.9	11.5	13.3	11.9	12.5	12.8	12.4	12.6	12.2	11.8	12.0
29	12.3	10.8	11.5	13.7	11.9	12.7	12.9	12.3	12.6	12.0	11.6	11.8
30	13.0	11.3	12.1	13.5	12.0	12.6	12.5	12.1	12.4	12.0	11.6	11.8
31	13.3	11.7	12.5	---	---	---	12.6	12.1	12.3	11.9	11.6	11.8
MONTH	13.3	9.6	11.0	13.7	11.2	12.2	14.1	11.7	12.4	13.1	11.6	12.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.1	11.8	12.0	12.9	12.2	12.6	11.8	11.3	11.6	13.7	11.2	12.3
2	12.0	11.9	12.0	13.0	12.3	12.7	12.1	11.4	11.7	13.5	11.0	12.1
3	12.0	11.8	11.9	12.8	12.2	12.5	12.4	11.6	12.0	13.2	10.8	11.9
4	12.0	11.8	11.9	12.7	12.0	12.4	12.5	11.9	12.1	13.4	10.9	12.0
5	12.1	11.8	12.0	12.5	11.9	12.1	12.6	11.9	12.2	13.7	11.1	12.3
6	12.3	12.0	12.2	12.4	11.7	12.1	12.5	11.9	12.1	13.8	11.3	12.4
7	12.4	12.1	12.3	12.1	11.7	11.8	12.6	11.9	12.2	13.6	11.3	12.3
8	12.5	12.2	12.3	12.2	12.0	12.1	12.5	11.7	12.1	13.9	11.5	12.5
9	12.6	12.2	12.4	12.1	11.7	11.9	12.4	11.6	11.9	13.8	11.5	12.5
10	12.5	12.2	12.4	12.0	11.7	11.9	12.3	11.4	11.8	14.1	11.6	12.7
11	12.5	12.0	12.3	11.9	11.5	11.7	12.3	11.4	11.7	14.0	11.3	12.4
12	12.6	12.0	12.3	11.7	11.4	11.6	12.1	11.2	11.5	13.6	11.2	12.2
13	12.2	12.0	12.1	11.6	11.4	11.5	12.1	11.0	11.5	14.1	10.9	12.1
14	12.2	11.8	12.0	11.7	11.3	11.5	12.3	11.2	11.7	13.1	9.7	11.2
15	12.1	11.8	12.0	11.6	11.3	11.5	12.4	11.2	11.7	12.7	10.5	11.3
16	12.1	11.8	11.9	11.8	11.4	11.6	12.5	11.2	11.8	12.6	10.5	11.4
17	12.1	11.8	12.0	12.0	11.4	11.8	12.2	11.1	11.6	12.7	10.6	11.5
18	12.1	11.8	11.9	12.2	11.8	11.9	12.7	11.3	11.9	13.2	10.8	11.8
19	12.0	11.7	11.8	12.1	11.7	11.9	12.9	11.4	12.0	13.2	10.0	11.6
20	12.1	11.8	11.9	12.2	11.7	11.9	12.8	11.2	11.9	12.9	10.6	11.7
21	12.0	11.7	11.9	12.2	11.7	11.9	12.0	11.2	11.5	12.9	10.3	11.3
22	12.1	11.7	11.9	12.3	11.7	12.0	12.7	11.2	11.8	12.8	10.1	11.3
23	12.1	11.8	12.0	12.3	12.2	12.3	---	---	---	12.4	9.7	10.6
24	12.4	11.9	12.2	12.6	12.0	12.3	---	---	---	11.3	9.6	10.4
25	12.6	12.0	12.3	12.2	11.8	12.1	---	---	---	11.6	9.7	10.6
26	12.8	12.1	12.4	12.2	11.8	12.0	---	---	---	11.6	9.4	10.4
27	12.8	12.3	12.5	12.3	12.0	12.2	---	---	---	11.1	9.5	10.2
28	12.9	12.4	12.7	12.4	11.9	12.2	---	---	---	10.8	9.3	10.1
29	---	---	---	12.4	11.8	12.1	---	---	---	10.7	9.3	9.8
30	---	---	---	12.2	11.5	11.9	13.4	11.2	12.2	10.7	9.2	9.9
31	---	---	---	12.0	11.4	11.7	---	---	---	10.9	9.4	10.1
MONTH	12.9	11.7	12.1	13.0	11.3	12.0	---	---	---	14.1	9.2	11.4

14211010 CLACKAMAS RIVER NEAR OREGON CITY, OR--Continued

Dissolved oxygen, water, unfiltered, milligrams per liter
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.7	9.3	9.9	10.5	8.5	9.5	9.4	7.5	8.4	10.8	8.6	9.6
2	10.9	9.3	10.1	10.3	8.7	9.4	9.4	7.4	8.5	10.9	8.7	9.7
3	10.7	9.2	9.9	10.2	8.4	9.3	9.6	7.9	8.8	10.7	8.6	9.5
4	10.5	8.9	9.8	10.2	8.3	9.2	9.7	7.9	8.8	10.5	8.4	9.3
5	10.3	8.7	9.6	10.2	8.2	9.2	9.6	7.5	8.5	10.5	8.2	9.2
6	10.2	8.4	9.4	10.1	8.2	9.1	9.7	7.7	8.7	10.4	8.2	9.2
7	10.1	8.3	9.2	10.1	8.2	9.1	9.6	7.7	8.5	10.4	8.3	9.3
8	10.2	8.3	9.3	10.1	8.1	9.1	9.8	7.7	8.7	10.4	8.5	9.4
9	10.5	8.5	9.6	10.0	8.4	9.2	10.0	7.9	9.0	10.3	8.7	9.4
10	10.5	9.0	9.7	10.0	8.1	9.0	10.1	7.9	9.1	10.7	8.9	9.7
11	10.2	9.0	9.6	10.1	8.0	9.0	10.1	8.2	9.2	10.7	9.1	9.7
12	10.1	8.8	9.4	9.9	8.0	8.9	10.2	8.5	9.3	10.9	9.0	9.8
13	10.2	8.9	9.5	10.0	8.1	9.1	10.1	8.4	9.2	11.0	8.9	9.9
14	10.4	8.9	9.6	9.9	8.3	9.1	10.1	8.2	9.0	11.0	8.8	9.8
15	10.1	8.6	9.4	9.8	7.9	8.9	10.1	8.0	9.0	11.0	8.9	9.9
16	10.3	8.4	9.3	9.8	8.1	8.9	10.2	8.3	9.2	10.9	8.8	9.7
17	10.1	8.3	9.2	9.8	8.3	9.0	10.2	8.3	9.2	11.5	9.2	10.2
18	9.9	8.2	9.0	9.8	8.0	8.9	10.2	8.1	9.1	11.9	9.4	10.5
19	10.1	8.7	9.4	9.7	7.9	8.8	10.2	8.1	9.1	11.6	9.3	10.4
20	10.4	9.0	9.7	9.7	7.9	8.7	10.4	8.5	9.4	11.8	10.0	10.8
21	10.4	9.1	9.7	9.5	7.7	8.6	10.4	8.4	9.3	12.2	9.6	10.9
22	10.6	9.3	9.9	9.5	7.7	8.6	10.4	8.2	9.3	12.3	9.8	10.9
23	10.8	9.4	10.1	9.5	7.7	8.5	10.5	8.8	9.6	12.3	9.9	10.9
24	10.8	9.2	10.0	9.2	7.5	8.4	10.7	8.6	9.6	12.2	9.9	10.9
25	10.7	8.9	9.7	9.2	7.5	8.3	10.6	8.4	9.5	12.3	9.9	11.0
26	10.8	8.6	9.6	9.4	7.6	8.4	10.5	8.5	9.5	12.1	10.1	11.0
27	10.6	8.5	9.5	9.4	7.5	8.4	10.6	8.9	9.7	12.1	9.8	10.8
28	10.4	8.3	9.3	9.2	7.5	8.3	10.8	8.8	9.7	11.9	9.4	10.8
29	10.2	8.0	9.2	9.3	7.5	8.3	10.8	8.7	9.6	12.0	9.6	10.8
30	10.3	8.3	9.3	9.2	7.4	8.3	10.8	8.5	9.5	12.0	10.3	11.0
31	---	---	---	9.3	7.4	8.3	10.7	8.5	9.6	---	---	---
MONTH	10.9	8.0	9.6	10.5	7.4	8.8	10.8	7.4	9.1	12.3	8.2	10.1

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	3	<1	2	<1	<1	<1	<1	<1	<1	12	5	6
2	2	<1	<1	1	<1	<1	2	<1	<1	21	5	7
3	1	<1	<1	1	<1	<1	<1	<1	<1	30	5	14
4	2	<1	<1	<1	<1	<1	<1	<1	<1	55	5	16
5	2	<1	<1	<1	<1	<1	2	<1	<1	36	9	13
6	3	<1	<1	<1	<1	<1	<1	<1	<1	20	10	14
7	1	<1	<1	3	<1	<1	<1	<1	<1	12	6	9
8	2	<1	<1	2	<1	<1	<1	<1	<1	7	4	6
9	1	<1	<1	4	<1	2	<1	<1	<1	6	3	5
10	1	<1	<1	4	<1	1	4	<1	2	5	3	4
11	1	<1	<1	2	<1	<1	6	<1	4	5	2	4
12	1	<1	<1	7	<1	<1	10	2	4	5	3	4
13	1	<1	<1	5	<1	2	19	4	9	7	3	4
14	<1	<1	<1	3	<1	2	12	4	6	7	4	5
15	<1	<1	<1	2	<1	<1	5	3	4	5	3	4
16	<1	<1	<1	5	<1	1	16	4	9	5	3	4
17	<1	<1	<1	7	<1	3	9	5	6	5	3	4
18	<1	<1	<1	3	<1	2	9	5	6	4	2	3
19	<1	<1	<1	2	<1	1	6	4	6	3	2	3
20	2	<1	<1	2	<1	1	6	4	4	3	2	2
21	1	<1	<1	2	<1	1	11	5	9	3	2	2
22	<1	<1	<1	2	<1	1	8	4	5	14	2	3
23	1	<1	<1	2	<1	1	6	3	4	14	3	5
24	<1	<1	<1	2	<1	1	4	3	3	4	2	4
25	2	<1	<1	2	<1	<1	3	2	3	6	3	4
26	1	<1	<1	<1	<1	<1	6	2	3	48	4	15
27	1	<1	<1	<1	<1	<1	20	4	9	24	9	14
28	<1	<1	<1	<1	<1	<1	7	3	4	20	10	15
29	1	<1	<1	2	<1	<1	9	4	7	24	7	10
30	1	<1	<1	1	<1	<1	43	6	16	104	24	55
31	<1	<1	<1	---	---	---	70	11	30	291	55	71
MAX	3	<1	2	7	<1	3	70	11	30	291	55	71
MIN	<1	<1	<1	<1	<1	<1	<1	<1	<1	3	2	2

14211010 CLACKAMAS RIVER NEAR OREGON CITY, OR--Continued

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	192	47	78	3	2	2	22	4	7	2	1	1
2	55	20	34	2	2	2	7	4	5	2	1	1
3	23	10	15	3	2	2	6	4	4	2	1	1
4	13	6	9	2	<1	2	4	2	3	2	1	1
5	9	5	6	5	<1	1	4	2	3	2	1	2
6	6	4	4	7	1	3	6	2	3	2	1	1
7	4	3	4	98	7	54	3	2	2	3	<1	1
8	4	3	3	56	23	31	3	2	2	2	1	1
9	3	2	3	32	13	20	4	2	2	2	<1	1
10	3	2	2	18	8	10	4	2	2	2	<1	1
11	3	2	2	22	6	8	4	2	3	2	<1	1
12	3	2	2	14	5	7	4	2	2	2	<1	1
13	3	2	2	8	4	6	14	2	6	2	<1	1
14	3	2	2	6	4	4	6	2	2	---	---	---
15	3	2	2	11	4	4	3	2	2	2	<1	1
16	3	2	2	5	3	4	3	2	2	2	<1	<1
17	35	3	4	7	3	3	20	2	3	4	<1	1
18	35	6	10	12	3	4	6	2	3	2	<1	<1
19	6	4	5	5	2	3	3	2	2	2	<1	<1
20	6	4	5	5	3	3	4	2	2	1	<1	<1
21	16	5	6	5	3	3	3	2	2	1	<1	<1
22	13	6	9	22	4	15	2	2	2	1	<1	<1
23	6	4	4	39	18	27	---	---	---	1	<1	1
24	5	4	4	20	8	12	---	---	---	1	<1	<1
25	4	3	3	14	5	8	---	---	---	2	<1	1
26	3	2	3	14	5	7	---	---	---	2	<1	1
27	3	2	2	7	5	5	---	---	---	2	1	1
28	2	2	2	6	4	4	---	---	---	2	1	1
29	---	---	---	4	3	4	---	---	---	2	<1	1
30	---	---	---	3	2	3	2	1	2	---	---	---
31	---	---	---	6	2	3	---	---	---	2	<1	<1
MAX	192	47	78	98	23	54	---	---	---	---	---	---
MIN	2	2	2	2	<1	1	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	3	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1
2	1	<1	<1	<1	<1	<1	1	<1	<1	1	<1	1
3	1	<1	<1	<1	<1	<1	1	<1	<1	2	<1	<1
4	1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1
5	1	<1	<1	<1	<1	<1	2	<1	1	<1	<1	<1
6	1	<1	<1	<1	<1	<1	3	<1	1	<1	<1	<1
7	<1	<1	<1	1	<1	<1	1	<1	<1	4	<1	<1
8	<1	<1	<1	<1	<1	<1	1	<1	1	35	<1	2
9	1	<1	<1	1	<1	<1	2	1	1	3	<1	<1
10	<1	<1	<1	<1	<1	<1	2	1	1	3	<1	<1
11	<1	<1	<1	<1	<1	<1	2	1	1	5	<1	<1
12	<1	<1	<1	<1	<1	<1	2	1	1	1	<1	<1
13	1	<1	<1	<1	<1	<1	2	<1	<1	1	<1	<1
14	<1	<1	<1	1	<1	<1	<1	<1	<1	2	<1	<1
15	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
16	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-1	<1
17	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1
18	2	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1
19	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1
20	1	<1	<1	1	<1	<1	2	<1	<1	<1	<1	<1
21	2	<1	<1	1	<1	<1	1	<1	<1	<1	<1	<1
22	1	<1	<1	1	<1	<1	1	<1	<1	<1	<1	<1
23	1	<1	<1	1	<1	<1	1	<1	<1	<1	<1	<1
24	1	<1	<1	1	<1	<1	1	<1	<1	<1	<1	<1
25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
26	2	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1
27	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
28	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1
29	2	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1
30	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1
31	---	---	---	<1	<1	<1	2	<1	<1	---	---	---
MAX	3	<1	<1	1	<1	<1	3	1	1	35	<1	2
MIN	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-1	<1

14211315 TRYON CREEK BELOW NETTLE CREEK, NEAR LAKE OSWEGO, OR

LOCATION.--Lat 45°25'53", long 122°40'17", in NW 1/4 NW 1/4 sec.42, T.2S., R.1E, Clackamas County, Hydrologic unit 17090012, on right bank , 0.8 mi north of Lake Oswego, and at mile 1.0.

DRAINAGE AREA.--6.28 mi^2.

PERIOD OF RECORD.--August 2001 to current year.

GAGE.--Water-stage recorder. Datum of gage is 95 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except for the period Oct. 1-16 and those above 50 ft^3/s, which are poor.

AVERAGE DISCHARGE.--2 years (water years 2002-03), 8.80 ft^3/s, 19.05 in/yr, 6,380 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft3/s and maximum (*):

Date	Time	Discharge (ft3/s)	Gage height (ft)	Date	Time	Discharge (ft3/s)	Gage height (ft)
Dec. 30	2130	268	5.98	Feb. 17	1830	337	6.39
Jan. 31	0800	*447	*6.97				

Minimum discharge, 0.17 ft3/s Oct. 12.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	0.96	0.98	18	43	5.0	10	8.0	1.7	1.1	0.89	0.92
2	0.41	1.1	1.0	45	21	4.5	8.8	6.9	1.6	1.1	0.86	0.92
3	4.1	1.2	1.00	31	15	6.2	15	7.1	1.6	1.0	0.87	0.92
4	1.4	1.2	1.4	41	9.9	4.3	9.7	11	1.5	1.0	0.88	0.87
5	0.55	1.3	1.4	18	7.9	4.2	10	6.8	1.4	1.0	0.88	0.93
6	0.53	1.3	1.1	14	6.5	7.8	18	5.8	1.4	1.1	0.92	0.99
7	0.33	4.5	0.97	11	5.4	65	12	7.6	1.4	1.0	0.82	2.2
8	0.35	3.8	0.98	9.4	4.6	29	9.3	11	1.2	1.0	1.0	1.7
9	0.26	7.0	1.1	8.3	3.7	44	11	5.6	1.3	0.87	0.99	8.8
10	0.28	2.7	14	7.5	3.3	20	10	4.9	1.2	0.82	0.83	0.65
11	0.28	3.2	16	8.6	3.0	15	7.9	4.5	1.4	0.79	0.83	0.50
12	0.37	16	26	21	2.7	21	33	4.2	1.5	0.82	0.89	0.43
13	0.20	6.2	15	19	2.4	23	55	3.7	2.0	0.90	0.92	0.40
14	0.25	5.8	32	15	2.0	21	20	3.5	1.2	0.92	0.91	0.39
15	0.33	1.8	17	11	10	20	14	3.5	1.1	0.95	0.84	0.41
16	0.55	5.1	57	9.5	17	18	12	12	1.1	0.86	0.86	1.3
17	0.60	2.4	18	8.4	89	14	31	12	1.0	0.77	0.86	0.51
18	0.65	5.7	14	7.6	37	11	14	6.9	1.0	0.79	0.84	0.40
19	0.68	4.7	8.5	7.0	20	16	11	4.8	1.0	0.83	0.81	0.39
20	0.74	2.2	6.8	6.5	15	12	9.8	4.1	1.2	0.78	0.81	0.39
21	0.87	1.9	9.8	6.2	15	21	15	3.5	2.0	0.80	0.83	0.39
22	0.83	1.7	6.9	18	11	37	9.0	3.2	1.2	0.78	0.94	0.45
23	1.2	1.5	5.5	10	9.4	21	25	2.9	1.1	0.79	0.94	0.44
24	1.3	1.4	6.0	13	7.9	15	21	2.8	1.1	0.82	0.88	0.47
25	0.96	1.3	4.4	14	6.7	13	19	2.8	1.2	0.87	0.89	0.46
26	1.1	1.2	13	31	6.0	18	15	2.6	1.1	0.82	0.91	0.48
27	0.77	1.6	37	15	5.0	13	11	2.3	1.3	0.83	0.96	0.54
28	1.6	1.8	26	12	5.8	11	10	2.1	1.0	0.84	0.92	0.59
29	0.74	1.7	18	43	---	8.8	11	2.0	1.0	0.84	0.94	0.64
30	0.73	1.0	81	89	---	8.0	15	1.9	1.1	0.87	0.92	0.72
31	0.89	---	59	221	---	8.8	---	1.8	---	0.88	0.93	---
TOTAL	25.05	93.26	500.83	789.0	385.2	535.6	472.5	161.8	38.9	27.54	27.57	29.20
MEAN	0.81	3.11	16.2	25.5	13.8	17.3	15.8	5.22	1.30	0.89	0.89	0.97
MAX	4.1	16	81	221	89	65	55	12	2.0	1.1	1.0	8.8
MIN	0.20	0.96	0.97	6.2	2.0	4.2	7.9	1.8	1.0	0.77	0.81	0.39
AC-FT	50	185	993	1560	764	1060	937	321	77	55	55	58
CFSM	0.13	0.50	2.57	4.05	2.19	2.75	2.51	0.83	0.21	0.14	0.14	0.15
IN.	0.15	0.55	2.97	4.67	2.28	3.17	2.80	0.96	0.23	0.16	0.16	0.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

MEAN	2.20	7.23	19.6	23.7	14.3	18.2	11.6	4.60	1.90	0.86	0.71	0.89
MAX	3.59	11.3	23.0	25.5	14.8	19.1	15.8	5.22	2.51	0.89	0.89	0.97
(WY)	2002	2002	2002	2003	2002	2002	2003	2003	2002	2003	2003	2003
MIN	0.81	3.11	16.2	21.9	13.8	17.3	7.50	3.99	1.30	0.82	0.52	0.81
(WY)	2003	2003	2003	2002	2003	2003	2002	2002	2003	2002	2002	2002

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2002 - 2003	
ANNUAL TOTAL	2794.65		3086.45			
ANNUAL MEAN	7.66		8.46		8.80	
HIGHEST ANNUAL MEAN					9.15	2002
LOWEST ANNUAL MEAN					8.46	2003
HIGHEST DAILY MEAN	81	Dec 30	221	Jan 31	221	Jan 31 2003
LOWEST DAILY MEAN	0.11	Sep 14	0.20	Oct 13	0.11	Sep 14 2002
ANNUAL SEVEN-DAY MINIMUM	0.16	Aug 30	0.28	Oct 9	0.16	Aug 30 2002
ANNUAL RUNOFF (AC-FT)	5540		6120		6380	
ANNUAL RUNOFF (CFSM)	1.22		1.35		1.40	
ANNUAL RUNOFF (INCHES)	16.55		18.28		19.05	
10 PERCENT EXCEEDS	18		20		20	
50 PERCENT EXCEEDS	2.8		2.2		3.5	
90 PERCENT EXCEEDS	0.33		0.73		0.42	

14211400 JOHNSON CREEK AT REGNER ROAD, AT GRESHAM, OR

LOCATION.--Lat 45°29'12", long 122°25'14", in SW 1/4 NE 1/4 sec.15, T.1 S., R.3 E., Multnomah County, Hydrologic unit 17090012, on left bank at Regner Road, 1.5 mi southeast of Gresham City Hall, and at mile 16.3.

DRAINAGE AREA.--15.36 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1998 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 305 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair except those for the period July 19 to Sept. 7 and estimated daily discharges, which are poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--5 years (water years 1999-2003), 29.6 ft^3/s, 26.16 in/yr, 21,430 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 835 ft^3/s Jan. 31, 2003, gage height, 9.85 ft; minimum daily discharge, 0.13 ft^3/s Sept. 6, 2003.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 350 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 31	0330	468	7.67	Jan. 31	1930	*835	*9.85
Jan. 4	1630	494	7.81	Mar. 7	1300	633	8.60

Minimum daily discharge, 0.42 ft^3/s Oct. 19, 24-27, Nov. 1.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	0.45	0.75	110	288	17	86	14	2.2	1.3	0.87	0.71
2	1.8	0.45	0.76	117	125	15	78	12	2.4	1.3	0.92	1.0
3	4.0	0.46	0.78	125	89	17	76	9.9	2.0	1.4	1.4	0.97
4	4.1	0.47	0.73	222	66	14	60	18	2.1	1.5	1.2	0.67
5	2.2	0.50	0.81	123	52	15	49	13	1.8	1.4	1.0	0.61
6	1.7	0.49	0.72	72	41	33	78	10	1.8	1.4	1.1	0.54
7	1.6	0.60	0.68	38	33	418	56	8.7	1.7	1.3	0.95	1.3
8	1.5	1.1	0.60	13	26	243	46	8.5	1.6	1.3	0.88	5.4
9	1.2	5.4	0.64	8.8	22	205	47	7.3	1.7	1.2	0.79	3.9
10	1.1	2.6	4.0	5.8	18	118	43	6.6	1.8	1.2	0.78	2.3
11	1.0	1.4	12	4.9	16	80	40	6.0	1.8	1.2	0.85	1.9
12	0.94	2.5	25	23	14	91	40	7.0	1.6	1.2	0.76	1.6
13	0.76	3.5	50	27	12	87	96	5.7	2.5	1.1	0.78	1.4
14	0.70	5.1	52	e42	11	70	57	4.9	2.3	1.00	0.79	1.2
15	0.62	2.2	25	e24	11	71	43	4.4	1.6	1.3	0.75	1.5
16	0.54	6.9	118	e19	17	65	31	5.9	1.5	1.2	0.76	8.2
17	0.51	8.2	60	e17	114	51	61	10	1.7	1.1	0.78	5.7
18	0.47	5.8	41	10	157	43	53	12	1.9	1.7	0.87	2.2
19	0.46	14	32	7.5	89	45	39	7.4	1.9	1.1	0.81	1.7
20	0.47	5.0	19	6.0	70	53	29	6.0	2.5	0.94	0.97	1.6
21	0.49	3.1	71	5.1	95	63	32	5.4	6.9	0.88	0.89	1.3
22	0.50	2.3	45	25	89	131	27	4.6	5.8	0.91	0.80	1.1
23	0.46	2.0	30	26	65	110	40	4.5	3.2	0.83	0.82	1.2
24	0.43	1.5	23	40	48	81	76	3.9	2.6	1.0	0.76	1.2
25	0.44	1.1	17	54	36	71	51	4.6	2.5	1.0	0.74	1.1
26	0.43	0.94	35	142	29	105	44	4.0	2.0	0.99	0.71	1.3
27	0.44	0.84	113	95	23	79	31	3.5	1.9	0.97	0.80	1.0
28	0.52	0.85	84	60	19	59	24	3.1	2.3	1.1	0.80	0.94
29	0.59	0.81	93	114	---	44	23	2.8	1.8	1.1	0.70	1.1
30	0.59	0.78	204	368	---	32	17	2.9	1.6	0.82	0.78	1.1
31	0.52	---	273	570	---	52	---	2.6	---	0.81	0.71	---
TOTAL	34.18	81.34	1432.47	2514.1	1675	2578	1473	219.2	69.0	35.55	26.52	55.74
MEAN	1.10	2.71	46.2	81.1	59.8	83.2	49.1	7.07	2.30	1.15	0.86	1.86
MAX	4.1	14	273	570	288	418	96	18	6.9	1.7	1.4	8.2
MIN	0.43	0.45	0.60	4.9	11	14	17	2.6	1.5	0.81	0.70	0.54
AC-FT	68	161	2840	4990	3320	5110	2920	435	137	71	53	111
CFSM	0.07	0.18	3.01	5.28	3.89	5.41	3.20	0.46	0.15	0.07	0.06	0.12
IN.	0.08	0.20	3.47	6.09	4.06	6.24	3.57	0.53	0.17	0.09	0.06	0.13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2003, BY WATER YEAR (WY)

MEAN	3.34	32.3	73.7	70.4	70.2	59.6	26.4	13.1	3.63	1.61	1.14	1.32
MAX	4.98	61.9	121	102	132	83.2	49.1	24.4	5.18	2.49	1.62	1.86
(WY)	2002	1999	1999	1999	1999	2003	2003	1999	1999	1999	1999	2003
MIN	1.10	2.71	30.2	16.8	21.4	36.5	11.0	5.15	2.30	1.15	0.80	0.96
(WY)	2003	2003	2001	2001	2001	2001	2000	2002	2003	2003	2000	2002

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1999 - 2003	
ANNUAL TOTAL	8700.32		10194.10			
ANNUAL MEAN	23.8		27.9		29.6	
HIGHEST ANNUAL MEAN					45.4	1999
LOWEST ANNUAL MEAN					13.4	2001
HIGHEST DAILY MEAN	298	Jan 25	570	Jan 31	570	Jan 31 2003
LOWEST DAILY MEAN	0.41	Sep 14	0.43	Oct 24	0.36	Sep 28 2000
ANNUAL SEVEN-DAY MINIMUM	0.46	Oct 21	0.46	Oct 21	0.43	Sep 23 2000
ANNUAL RUNOFF (AC-FT)	17260		20220		21430	
ANNUAL RUNOFF (CFSM)	1.55		1.82		1.93	
ANNUAL RUNOFF (INCHES)	21.07		24.69		26.16	
10 PERCENT EXCEEDS	76		80		86	
50 PERCENT EXCEEDS	3.5		3.9		7.4	
90 PERCENT EXCEEDS	0.58		0.73		0.88	

e Estimated

14211400 JOHNSON CREEK AT REGNER ROAD, AT GRESHAM, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: January 1999 to current year.

INSTRUMENTATION.--Temperature recorder.

REMARKS.--Records excellent.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 23.7°C July 21, 2003; minimum, 1.5°C Dec. 29, 30, 1999.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 23.7°C July 21; minimum, 1.9°C Nov. 3.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.9	10.7	11.2	4.0	2.7	3.3	4.1	2.8	3.5	8.0	7.8	7.9
2	11.2	9.0	10.3	4.1	2.4	3.2	5.2	4.0	4.5	9.0	8.0	8.5
3	12.4	10.8	11.6	4.0	1.9	2.9	4.0	3.1	3.5	8.9	5.0	8.6
4	12.8	11.9	12.3	4.4	2.4	3.4	4.0	3.2	3.7	9.1	8.2	8.8
5	13.2	12.3	12.7	6.2	3.9	4.9	4.5	3.7	4.1	8.2	7.2	7.8
6	13.7	12.6	13.1	6.6	4.8	5.7	4.3	3.3	3.7	7.8	6.9	7.3
7	13.8	12.4	13.0	8.4	6.6	7.3	4.1	3.2	3.6	7.0	6.4	6.7
8	14.0	12.7	13.3	8.9	8.2	8.5	4.2	3.0	3.5	6.4	5.5	5.9
9	14.0	12.3	13.4	8.9	8.0	8.4	4.9	3.3	4.0	5.7	5.2	5.4
10	12.3	10.9	11.6	8.4	7.6	8.0	6.2	4.9	5.5	5.4	4.7	5.1
11	10.9	9.2	10.0	9.0	8.2	8.6	7.1	5.5	6.1	5.8	4.7	5.2
12	10.3	8.3	9.2	10.2	8.9	9.5	8.4	7.1	7.6	6.7	5.8	6.2
13	11.0	9.2	10	10.1	9.5	9.8	8.2	7.6	8.0	7.4	6.7	7.0
14	11.0	8.4	9.7	10.1	8.6	9.6	9.3	8.2	8.8	7.8	6.6	7.4
15	12.3	10.2	11.1	8.6	7.1	7.8	9.0	8.2	8.5	6.7	5.6	6.2
16	12.8	11.1	11.9	8.3	6.2	7.1	8.4	7.7	8.2	6.8	6.0	6.4
17	12.4	10.7	11.5	8.5	7.6	8.1	7.7	7.1	7.4	6.2	5.4	5.8
18	11.2	10.0	10.6	8.7	7.3	7.9	7.3	6.7	7.1	5.9	5.0	5.4
19	12.3	10.5	11.2	9.8	8.5	9.2	7.2	6.7	6.9	5.3	4.0	4.8
20	13.3	12.2	12.6	9.9	8.8	9.4	6.7	6.3	6.5	5.7	4.2	5.0
21	13.5	12.8	13.1	9.8	8.9	9.4	7.1	6.4	6.8	6.2	5.4	5.7
22	13.7	12.3	13.0	9.9	9.2	9.4	7.5	7.0	7.2	6.6	5.4	5.9
23	12.3	10.6	11.3	10.2	8.7	9.5	7.2	5.6	6.1	7.4	6.1	6.8
24	10.6	8.1	9.0	8.7	6.6	8.0	6.1	5.5	5.8	8.4	6.9	7.7
25	8.4	6.3	7.3	6.6	4.8	5.6	6.8	5.9	6.3	9.1	8.3	8.6
26	7.4	5.7	6.5	4.9	4.0	4.5	7.1	6.6	6.8	10.3	9.1	9.7
27	7.1	5.1	6.1	5.0	4.0	4.5	7.9	6.7	7.4	9.2	8.5	8.9
28	9.3	7.1	8.1	5.2	4.0	4.6	7.8	7.4	7.6	8.9	8.2	8.5
29	8.8	6.8	8.1	5.2	3.9	4.5	7.5	6.9	7.3	8.6	8.1	8.3
30	6.8	4.0	5.0	4.7	3.8	4.2	7.5	6.8	7.1	9.7	8.6	9.1
31	4.2	3.0	3.6	---	---	---	8.2	7.1	7.6	10.4	9.2	9.9
MONTH	14.0	3.0	10.4	10.2	1.9	6.9	9.3	2.8	6.2	10.4	4.0	7.1

14211400 JOHNSON CREEK AT REGNER ROAD, AT GRESHAM, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.3	8.7	9.0	8.1	6.0	7.1	10.8	9.1	9.9	14.1	10.1	12.1
2	9.2	8.6	8.9	6.9	5.0	5.9	9.6	7.9	8.6	14.8	10.9	12.9
3	8.8	8.2	8.5	7.3	6.4	6.8	9.0	7.6	8.3	13.5	11.3	12.1
4	8.2	7.0	7.7	7.3	6.3	6.8	9.5	7.5	8.5	11.3	10.3	10.8
5	7.2	5.8	6.6	8.1	7.1	7.6	8.8	7.9	8.4	12.4	10.2	11.2
6	6.9	5.8	6.3	7.8	7.2	7.5	9.9	7.7	8.7	12.7	10.3	11.5
7	6.6	5.2	6.0	7.8	7.3	7.5	10.5	8.6	9.5	11.6	9.5	10.4
8	6.6	5.3	6.0	8.6	7.2	7.8	12.2	9.2	10.5	10.6	9.5	10.0
9	6.1	4.2	5.3	9.7	8.0	8.8	12.3	9.7	11.1	11.1	9.9	10.4
10	7.0	5.9	6.4	10.2	8.7	9.4	11.6	10.3	11.0	11.7	10.2	10.9
11	6.8	5.0	5.9	10.3	9.0	9.7	12.6	10.2	11.4	13.5	10.8	12.1
12	6.7	4.8	5.9	10.3	9.4	9.9	12.5	10.6	11.6	12.9	11.8	12.4
13	8.1	6.5	7.3	10.3	9.5	9.9	11.8	10.1	10.9	14.5	10.3	12.5
14	9.0	7.8	8.3	10.8	9.1	9.9	11.6	9.3	10.5	14.1	12.3	13.3
15	8.2	7.3	7.8	10.9	9.5	10.1	11.9	9.6	10.7	13.0	11.2	12.1
16	8.2	7.5	7.9	10.6	8.7	9.5	12.3	10.1	11.2	11.2	9.8	10.5
17	7.8	7.1	7.4	9.9	8.3	9.1	11.6	10.3	10.7	10.1	9.0	9.6
18	8.7	7.3	7.9	9.5	7.7	8.8	11.3	9.3	10.3	11.9	8.4	10.1
19	8.7	7.8	8.2	9.2	8.0	8.7	12.5	8.8	10.6	13.6	8.9	11.4
20	8.3	7.9	8.1	10.3	8.6	9.3	12.2	10.1	11.3	13.5	11.3	12.6
21	9.2	8.3	8.7	10.0	8.8	9.4	11.7	10.3	10.7	15.9	12.2	14.1
22	9.0	8.0	8.5	10.1	9.0	9.6	11.3	9.7	10.4	16.8	14.0	15.4
23	8.0	6.2	7.4	9.6	8.2	8.9	11.4	9.5	10.4	18.8	14.6	16.8
24	6.2	4.6	5.3	9.8	7.2	8.6	11.0	9.6	10.3	18.1	16.5	17.3
25	5.8	3.8	4.9	9.9	8.9	9.4	10.7	8.1	9.6	16.8	15.0	15.7
26	6.5	4.2	5.4	9.7	8.5	9.2	11.5	9.2	10.2	16.4	13.6	15.0
27	7.3	5.8	6.5	10.2	8.2	9.1	12.5	8.5	10.6	18.2	13.6	16.0
28	7.0	5.9	6.4	10.6	7.6	9.1	12.9	10.2	11.6	19.2	16.2	17.5
29	---	---	---	11.9	8.2	10.1	13.3	10.3	11.9	19.3	15.5	17.4
30	---	---	---	13.0	9.5	11.4	12.6	11.3	12.0	17.8	15.4	16.4
31	---	---	---	12.3	10.8	11.4	---	---	---	17.1	14.4	15.6
MONTH	9.3	3.8	7.1	13.0	5.0	8.9	13.3	7.5	10.4	19.3	8.4	13.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.2	15.0	16.4	18.4	16.3	17.5	21.2	17.5	19.5	18.0	14.9	16.5
2	17.5	14.2	15.8	18.9	14.3	16.7	20.4	18.1	18.9	18.8	14.4	16.6
3	18.6	13.7	16.1	19.5	14.6	17.1	19.5	17.6	18.5	19.5	16.0	17.7
4	19.9	14.4	17.1	20.1	15.3	17.7	20.4	16.0	18.2	20.3	17.6	18.8
5	21.1	15.4	18.2	19.5	16.1	17.8	19.2	16.8	17.9	19.8	17.4	18.6
6	22.4	16.2	19.2	19.6	16.5	17.9	19.8	16.7	18.2	19.1	16.8	17.8
7	22.9	18.4	20.5	20.4	15.8	18.1	20.8	17.7	19.1	18.2	16.9	17.4
8	20.9	17.8	19.2	19.0	16.7	17.9	20.6	17.9	19.2	17.5	15.5	16.3
9	18.6	16.3	16.8	21.0	15.6	18.2	20.5	17.7	18.9	15.7	15.1	15.4
10	16.7	15.2	15.9	22.0	16.6	19.3	19.9	17.7	18.8	16.1	15.1	15.6
11	17.9	14.9	16.2	22.0	18.1	20.0	20.3	17.4	18.7	17.5	15.8	16.4
12	16.6	14.4	15.6	22.1	18.0	20.0	20.0	16.8	18.4	16.7	15.0	15.9
13	17.2	14.6	15.8	21.1	18.3	19.7	20.0	16.3	18.1	16.3	12.7	14.6
14	17.1	14.6	15.8	21.7	17.5	19.5	21.2	16.6	18.7	15.8	12.9	14.5
15	19.1	14.1	16.5	21.3	18.2	19.7	20.4	19.0	19.6	14.8	12.3	13.4
16	20.0	14.6	17.3	20.6	18.2	19.3	20.2	17.8	18.9	14.1	11.1	12.8
17	21.2	15.9	18.5	21.1	16.4	18.7	20.8	16.9	18.6	13.2	11.0	12.1
18	19.0	16.4	17.5	20.9	16.5	18.8	21.5	17.5	19.4	14.5	11.7	13.2
19	16.4	14.5	15.1	22.2	17.0	19.6	20.2	17.8	18.8	15.0	13.7	14.2
20	15.0	13.7	14.4	22.5	17.7	20.2	19.5	15.8	17.6	14.8	12.5	13.7
21	15.9	13.2	14.1	23.7	19.4	21.5	19.9	15.8	17.7	14.8	11.8	13.3
22	14.1	12.8	13.5	23.3	19.4	21.5	19.2	16.9	17.8	15.2	11.9	13.7
23	14.1	13.0	13.6	22.0	18.5	20.4	18.2	15.2	16.6	15.4	12.6	14.0
24	16.2	12.8	14.3	20.5	17.4	19.0	18.1	14.1	15.9	15.8	12.8	14.4
25	18.2	13.6	15.9	20.5	16.7	18.6	19.0	14.6	16.6	15.8	13.2	14.6
26	20.5	15.4	17.9	20.7	16.9	18.7	18.3	16.9	17.6	16.6	13.8	15.2
27	21.8	17.0	19.3	21.3	16.3	18.7	18.3	16.5	17.2	17.8	14.8	16.2
28	22.3	17.1	19.7	22.5	17.5	19.9	18.2	14.2	16.2	17.2	14.8	16.1
29	22.9	18.8	20.6	23.1	18.0	20.5	18.8	15.4	16.9	16.4	15.2	15.6
30	21.0	18.1	19.4	23.4	18.6	20.9	19.7	15.9	17.7	16.2	14.4	15.2
31	---	---	---	22.2	18.9	20.6	18.9	16.0	17.5	---	---	---
MONTH	22.9	12.8	16.9	23.7	14.3	19.2	21.5	14.1	18.1	20.3	11.0	15.3
YEAR	23.7	1.9	11.7									

14211499 KELLEY CREEK AT 159TH DRIVE, AT PORTLAND, OR

LOCATION.--Lat 45°28'37", long 122°29'50", in SE 1/4 SE 1/4 sec.13, T.1 S., R.2 E., Multnomah County, Hydrologic unit 17090012, on right bank at southeast 159th Drive, 3.3 mi east of I-205, and at mouth.

DRAINAGE AREA.--4.69 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 2000 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 245 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--3 years (water years 2001-03), 6.48 ft^3/s, 18.77 in/yr, 4,690 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 200 ft^3/s Jan. 31, 2003, maximum gage height, 10.21 ft; no flow July 27, 2002.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 30	unknown	unknown	backwater	Jan. 31	unknown	*unknown	*(a)10.21
Jan. 2	1845	134	4.56	Feb. 17	1845	255	5.16
Jan. 26	1100	108	4.38	Mar. 7	unknown	unknown	backwater

Minimum discharge, 0.02 ft^3/s Nov. 1, 2.
(a) Backwater from Johnson Creek.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.64	0.05	0.22	18	e100	3.1	19	4.6	0.79	0.31	0.21	0.06
2	0.32	0.11	0.22	38	33	2.8	15	3.9	0.69	0.28	0.19	0.12
3	1.0	0.10	0.27	36	19	3.6	14	3.6	0.67	0.27	0.18	0.10
4	0.88	0.07	0.40	48	12	2.9	11	6.5	0.63	0.31	0.28	0.11
5	0.39	0.10	0.37	20	9.1	2.8	9.3	4.8	0.60	0.39	0.25	0.12
6	0.36	0.07	0.28	10	6.9	6.9	24	3.9	0.57	0.39	0.20	0.10
7	0.26	0.25	0.25	6.7	5.8	e150	14	3.7	0.55	0.39	0.17	0.74
8	0.23	0.94	0.21	4.7	4.9	70	11	3.4	0.74	0.33	0.18	0.81
9	0.18	2.3	0.62	3.6	3.9	71	12	2.9	0.71	0.33	0.17	0.99
10	0.15	0.81	3.6	3.0	3.7	27	11	2.6	0.62	0.27	0.17	0.32
11	0.18	0.74	5.0	3.0	3.1	15	10	2.3	0.56	0.29	0.18	0.22
12	0.18	1.5	8.0	9.7	2.6	26	11	2.3	0.63	0.29	0.17	0.29
13	0.14	1.3	8.0	12	2.4	27	29	2.0	0.82	0.30	0.16	0.21
14	0.09	1.8	9.8	14	2.2	19	13	1.7	0.56	0.28	0.16	0.26
15	0.12	0.50	3.9	7.6	2.7	16	9.1	1.8	0.52	0.29	0.17	0.12
16	0.20	1.3	25	5.3	5.8	14	7.5	2.2	0.45	0.24	0.17	0.45
17	0.15	0.88	9.0	4.0	76	11	25	3.0	0.49	0.18	0.16	0.27
18	0.17	1.3	6.9	3.3	64	8.8	13	3.1	0.52	0.21	0.15	0.17
19	0.18	2.2	4.5	2.8	24	10	9.1	2.0	0.52	0.21	0.09	0.18
20	0.20	0.78	2.9	2.5	15	10	7.2	1.7	0.52	0.23	0.13	0.20
21	0.14	0.59	9.8	2.3	21	14	7.9	1.5	3.1	0.29	0.14	0.10
22	0.16	0.51	5.6	8.3	16	44	6.7	1.3	1.4	0.22	0.11	0.08
23	0.18	0.45	4.1	7.7	11	26	15	1.2	0.77	0.22	0.14	0.15
24	0.15	0.38	3.8	10	7.7	17	25	1.2	0.64	0.21	0.14	0.20
25	0.13	0.33	2.8	12	5.8	13	13	1.2	0.52	0.20	0.09	0.15
26	0.13	0.41	7.3	49	4.6	32	12	1.1	0.46	0.22	0.10	0.15
27	0.08	0.33	27	19	3.7	16	8.6	0.96	0.48	0.21	0.11	0.19
28	0.10	0.28	17	11	3.5	12	6.9	0.93	0.48	0.23	0.12	0.13
29	0.10	0.26	19	48	---	9.0	6.6	0.88	0.47	0.27	0.10	0.08
30	0.12	0.24	e80	e120	---	7.2	5.2	0.87	0.36	0.23	0.11	0.17
31	0.07	---	e100	e200	---	12	---	0.77	---	0.21	0.08	---
TOTAL	7.38	20.88	365.84	739.5	469.4	699.1	381.1	73.91	20.84	8.30	4.78	7.24
MEAN	0.24	0.70	11.8	23.9	16.8	22.6	12.7	2.38	0.69	0.27	0.15	0.24
MAX	1.0	2.3	100	200	100	150	29	6.5	3.1	0.39	0.28	0.99
MIN	0.07	0.05	0.21	2.3	2.2	2.8	5.2	0.77	0.36	0.18	0.08	0.06
AC-FT	15	41	726	1470	931	1390	756	147	41	16	9.5	14
CFSM	0.05	0.15	2.52	5.09	3.57	4.81	2.71	0.51	0.15	0.06	0.03	0.05
IN.	0.06	0.17	2.90	5.87	3.72	5.55	3.02	0.59	0.17	0.07	0.04	0.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 2003, BY WATER YEAR (WY)

MEAN	0.68	4.11	15.8	16.8	12.7	16.4	7.78	2.08	0.72	0.31	0.24	0.25
MAX	1.05	10.4	29.2	23.9	16.8	22.6	12.7	2.50	0.81	0.38	0.33	0.28
(WY)	2001	2002	2002	2003	2003	2003	2003	2001	2002	2002	2001	2002
MIN	0.24	0.70	6.30	3.50	5.27	8.71	4.89	1.36	0.65	0.27	0.15	0.23
(WY)	2003	2003	2001	2001	2001	2001	2002	2002	2001	2003	2003	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2001 - 2003	
ANNUAL TOTAL	2361.08		2798.27			
ANNUAL MEAN	6.47		7.67		6.48	
HIGHEST ANNUAL MEAN					8.79	2002
LOWEST ANNUAL MEAN					2.98	2001
HIGHEST DAILY MEAN	100	Jan 25	200	Jan 31	200	Jan 31 2003
LOWEST DAILY MEAN	0.05	Nov 1	0.05	Nov 1	0.05	Nov 1 2002
ANNUAL SEVEN-DAY MINIMUM	0.08	Oct 31	0.08	Oct 31	0.08	Oct 31 2002
ANNUAL RUNOFF (AC-FT)	4680		5550		4690	
ANNUAL RUNOFF (CFSM)	1.38		1.63		1.38	
ANNUAL RUNOFF (INCHES)	18.73		22.20		18.77	
10 PERCENT EXCEEDS	16		18		15	
50 PERCENT EXCEEDS	0.88		0.88		1.3	
90 PERCENT EXCEEDS	0.18		0.14		0.18	

e Estimated

14211499 KELLEY CREEK AT 159TH DRIVE, AT PORTLAND, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: January 2000 to current year.

INSTRUMENTATION.--Digital temperature recorder.

REMARKS.--Records excellent except for the period Feb. 2-11, which is poor.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 21.5°C July 30, 2003; minimum, 2.2°C Dec. 12, 2000.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 21.5°C July 30; minimum, 3.3°C Feb. 25.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.5	11.2	11.7	5.5	4.3	4.9	5.9	4.8	5.4	8.2	7.9	8.1
2	11.6	9.7	10.7	6.1	4.5	5.2	6.7	5.8	6.2	9.5	8.2	8.8
3	12.5	11.5	11.9	6.5	4.7	5.6	5.8	5.0	5.3	9.3	8.4	8.9
4	13.5	12.5	13.0	6.7	4.9	5.8	5.5	5.0	5.2	9.6	8.4	9.2
5	13.4	12.6	13.0	7.7	5.9	6.8	5.8	5.2	5.5	8.4	7.2	7.8
6	13.6	12.8	13.2	8.0	6.8	7.4	5.7	5.0	5.3	7.8	6.6	7.2
7	14.0	12.5	13.1	9.6	7.9	8.8	5.6	5.0	5.3	6.8	6.1	6.4
8	14.0	13.2	13.5	9.8	8.8	9.2	5.7	4.8	5.2	6.3	5.2	5.7
9	13.8	12.4	13.5	9.7	8.8	9.1	6.0	5.1	5.6	5.4	4.9	5.1
10	12.4	10.7	11.7	9.4	8.5	9.0	7.2	5.8	6.5	5.1	4.5	4.8
11	10.7	9.3	10	9.9	9.0	9.5	8.4	6.8	7.4	5.9	4.4	5.1
12	10.3	8.3	9.4	10.8	9.9	10.4	9.7	8.2	8.7	7.0	5.9	6.5
13	11.5	9.8	10.5	10.9	10.2	10.5	9.2	8.2	8.7	7.7	6.8	7.2
14	11.3	8.7	10.2	10.8	8.8	10.2	10.2	9.0	9.6	8.0	7.0	7.6
15	12.6	10.8	11.6	8.9	7.7	8.3	9.5	8.6	9.0	7.0	6.1	6.6
16	13.4	11.9	12.6	9.5	6.7	7.8	9.0	7.8	8.6	6.8	6.0	6.4
17	13.2	11.9	12.6	9.5	8.5	8.9	7.8	7.3	7.5	6.1	5.5	5.8
18	11.9	10.9	11.4	9.4	7.8	8.5	7.6	6.4	7.1	6.0	4.9	5.4
19	12.6	11.2	11.9	10.7	9.3	10.1	7.4	6.6	6.8	5.5	4.1	5.0
20	13.4	12.6	13.0	10.8	9.2	10.1	6.8	6.1	6.4	5.9	4.3	5.2
21	13.4	12.9	13.2	10.7	9.8	10.3	7.1	6.4	6.7	6.5	5.6	5.9
22	13.4	12.6	13.0	10.8	10.0	10.3	7.6	6.8	7.1	7.1	5.6	6.3
23	12.6	11.3	11.8	10.9	9.5	10.3	7.1	5.6	6.1	7.9	6.5	7.2
24	11.3	9.4	10.2	9.5	7.8	8.8	6.2	5.5	5.8	8.9	7.4	8.1
25	9.4	7.5	8.4	7.8	6.4	6.9	6.8	5.7	6.3	9.6	8.7	9.1
26	8.8	7.3	8.0	6.4	5.7	6.1	7.2	6.7	7.0	10.7	9.2	10.1
27	8.7	6.8	7.7	6.6	5.8	6.2	8.2	6.9	7.8	9.4	8.5	9.0
28	10.0	8.7	9.4	6.7	5.9	6.3	8.0	7.6	7.8	9.0	8.3	8.6
29	9.5	7.4	8.8	6.8	6.0	6.3	7.6	6.8	7.3	8.9	8.1	8.5
30	7.4	5.2	6.1	6.5	5.8	6.1	7.9	6.9	7.4	10.1	8.9	9.4
31	5.6	4.5	5.0	---	---	---	8.4	7.3	7.8	10.8	9.4	10.4
MONTH	14.0	4.5	11.0	10.9	4.3	8.1	10.2	4.8	6.9	10.8	4.1	7.3

14211499 KELLEY CREEK AT 159TH DRIVE, AT PORTLAND, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.6	9.0	9.3	8.4	6.0	7.2	10.8	9.0	9.9	13.8	9.6	11.8
2	9.4	9.0	9.1	6.9	5.2	6.2	9.3	7.6	8.4	14.5	10.5	12.7
3	9.0	8.5	8.7	7.4	6.6	6.9	9.0	7.2	8.1	13.2	11.3	12.0
4	8.5	7.3	7.8	7.5	6.3	7.0	9.5	7.5	8.4	11.7	10.3	11.0
5	7.3	6.2	6.7	8.5	7.4	7.9	8.7	7.7	8.2	12.1	10.1	11.1
6	6.7	6.0	6.4	8.1	7.5	7.8	10.1	7.6	8.7	12.6	10.2	11.4
7	6.4	5.7	6.1	8.0	7.5	7.7	10.6	8.6	9.6	11.4	9.3	10.5
8	6.3	5.6	6.0	8.7	7.2	7.9	12.4	9.2	10.6	10.8	9.7	10.3
9	6.0	4.8	5.5	10.0	8.1	8.9	12.1	9.5	10.9	11.6	10.0	10.7
10	6.5	5.7	6.0	10.5	8.7	9.5	11.4	10.3	10.8	11.9	10.4	11.1
11	7.0	4.9	6.0	10.6	9.0	9.8	12.8	10.2	11.3	13.6	10.8	12.0
12	7.3	5.5	6.4	10.7	9.5	10.0	12.6	10.6	11.6	13.1	11.8	12.3
13	8.3	6.9	7.6	10.6	9.5	10.0	12.1	10.0	11.0	14.8	10.1	12.4
14	9.4	8.0	8.5	11.1	9.1	10.1	11.4	9.1	10.3	14.0	11.8	12.9
15	8.7	7.9	8.2	11.1	9.4	10.2	11.9	9.5	10.6	12.6	11.0	11.8
16	8.4	7.8	8.1	10.6	8.7	9.6	12.1	10.0	11.1	11.3	9.9	10.5
17	8.1	7.3	7.7	10.2	8.0	9.1	11.5	10.2	10.8	10.7	9.3	9.9
18	9.0	7.6	8.2	9.7	7.5	8.7	11.0	9.2	10.1	11.9	8.6	10.2
19	8.9	8.0	8.4	9.3	8.1	8.8	12.3	8.6	10.4	13.8	9.1	11.4
20	8.6	8.0	8.3	10.5	8.6	9.5	12.2	10.1	11.3	13.8	11.1	12.5
21	9.6	8.6	9.0	10.2	8.9	9.6	11.6	10.2	10.7	16.1	11.9	13.8
22	9.2	8.0	8.6	10.3	8.9	9.7	11.3	9.7	10.4	16.8	13.4	15.0
23	8.0	5.9	7.2	9.7	8.0	8.8	11.6	9.5	10.4	18.5	13.9	16.1
24	5.9	3.9	4.8	9.9	6.8	8.4	11.1	9.5	10.2	17.1	15.4	16.3
25	5.4	3.3	4.4	9.9	8.7	9.3	10.8	7.9	9.5	16.0	14.5	15.2
26	6.4	4.0	5.3	10.2	8.6	9.3	11.5	9.0	10.1	15.9	13.1	14.5
27	7.6	5.8	6.5	10.4	8.0	9.1	12.6	8.2	10.5	17.8	13.0	15.3
28	7.2	6.2	6.7	10.8	7.5	9.1	12.4	10.5	11.5	18.1	15.2	16.5
29	---	---	---	11.9	8.0	10.0	13.1	10.1	11.7	18.1	14.3	16.2
30	---	---	---	12.9	9.2	11.2	12.5	11.3	11.9	16.9	14.9	15.5
31	---	---	---	12.0	10.8	11.4	---	---	---	16.4	13.9	15.1
MONTH	9.6	3.3	7.2	12.9	5.2	9.0	13.1	7.2	10.3	18.5	8.6	12.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	17.0	14.4	15.6	16.7	15.1	15.9	19.3	16.6	18.1	17.3	14.2	15.8
2	16.2	12.9	14.6	16.7	13.5	15.0	19.4	16.8	17.7	18.4	14.4	16.2
3	17.0	12.8	14.9	17.2	13.8	15.4	17.9	16.5	17.1	19.1	15.9	17.5
4	18.2	13.4	15.8	17.8	14.7	16.2	19.2	15.5	17.3	19.7	16.9	18.3
5	19.1	14.7	16.9	17.6	15.2	16.4	18.0	16.1	17.1	19.1	16.5	17.8
6	20.1	15.6	17.8	18.2	15.6	16.7	19.1	16.0	17.4	18.0	16.3	17.1
7	20.1	16.9	18.5	18.7	15.3	16.9	19.4	16.8	18.0	18.1	16.3	17.0
8	19.3	16.3	17.8	18.1	15.6	16.8	18.9	17.3	18.1	16.3	15.4	15.8
9	17.9	15.3	15.8	19.3	14.8	16.9	18.7	17.0	17.8	15.5	14.8	15.1
10	15.8	14.6	15.2	20.0	15.5	17.5	18.7	16.9	17.9	15.9	15.1	15.5
11	16.6	14.4	15.4	19.5	16.5	18.0	18.9	16.7	17.9	17.3	15.7	16.2
12	15.9	13.8	14.8	19.2	16.8	18.1	18.5	16.0	17.3	16.1	14.9	15.4
13	16.2	14.2	15.1	19.2	17.4	18.2	18.4	15.4	16.9	15.9	12.9	14.5
14	16.0	13.8	14.8	19.9	16.4	17.9	20.3	15.8	17.7	15.5	13.3	14.5
15	17.1	13.8	15.4	20.0	17.1	18.5	19.5	17.6	18.4	14.4	12.9	13.7
16	17.7	13.7	15.7	18.9	17.2	17.9	19.2	16.8	17.9	14.2	13.0	13.7
17	18.8	14.9	16.8	18.8	15.3	16.9	19.8	16.4	18.0	14.2	12.8	13.5
18	17.6	15.9	16.4	19.1	15.2	17.1	19.7	16.8	18.3	14.5	12.3	13.5
19	15.9	13.9	14.5	19.6	16.0	17.7	18.8	16.9	17.7	14.9	14.2	14.5
20	14.5	13.5	14.0	20.2	16.9	18.3	18.0	15.0	16.4	14.7	12.6	13.7
21	14.8	13.2	13.9	21.4	18.2	19.7	18.4	15.1	16.7	15.1	12.9	13.8
22	14.2	13.1	13.7	21.1	18.0	19.4	17.6	16.1	16.7	15.6	12.5	14.0
23	14.1	13.0	13.6	19.7	17.0	18.4	16.9	14.7	15.7	15.4	13.0	14.2
24	15.6	12.5	14.0	19.0	16.1	17.4	17.1	14.1	15.7	15.7	13.0	14.3
25	16.9	13.0	14.9	18.6	16.3	17.4	18.0	14.2	16.1	15.7	13.2	14.5
26	18.4	14.5	16.5	18.8	16.3	17.5	17.1	15.9	16.5	16.4	13.9	15.1
27	19.3	16.0	17.7	19.4	16.1	17.6	17.2	15.7	16.4	17.4	14.4	15.9
28	19.8	15.8	17.9	20.1	16.8	18.5	17.4	14.1	15.7	17.2	15.3	16.3
29	20.4	17.6	18.7	21.2	17.1	19.0	18.0	14.7	16.4	16.1	15.2	15.5
30	18.5	16.6	17.5	21.5	17.7	19.5	18.5	15.2	16.9	16.2	14.7	15.3
31	---	---	---	20.6	17.7	19.0	18.0	15.2	16.6	---	---	---
MONTH	20.4	12.5	15.8	21.5	13.5	17.6	20.3	14.1	17.2	19.7	12.3	15.3
YEAR	21.5	3.3	11.6									

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 left bank, 2.8 mi east of I-205 in Portland, and at mile 10.2.

DRAINAGE AREA.--26.8 mi^2.

WATER-DISCHARGE RECORDS

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 NGVD of 1929.

REMARKS.--Records fair except those for for the period Oct. 1 to Dec. 9, which are poor, due to beaver dam downstream from gage. Since January 1980, an occasional overflow from the Powell Butte Reservoir enters Johnson Creek at Circle Avenue, mile 11.6. Slight diurnal fluctuation at low flow caused by recreational ponds upstream. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--63 years (water years 1941-2003), 53.7 ft^3/s, 27.23 in/yr, 38,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,620 ft^3/s Dec. 22, 1964, gage height, 14.68 ft; maximum gage height, 15.30 ft Nov. 19, 1996; minimum discharge, 0.08 ft^3/s Aug. 21, 1966.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 31	0330	621	8.47	Jan. 31	2030	*1,820	*13.24
Jan. 30	1800	622	8.48	Mar. 7	1330	938	10.35

Minimum recorded discharge, 0.20 ft^3/s Sept. 6, 7, but may have been less during period of backwater effect, from beaver dam, Oct. 1 to Dec. 18.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	e1.5	e2.8	151	571	26	122	28	4.4	2.5	0.65	0.34
2	3.5	e1.3	e2.8	163	190	23	111	23	4.3	2.3	0.64	0.43
3	15	e1.1	e2.6	191	131	28	109	20	4.1	2.3	0.81	0.48
4	14	e1.0	e2.6	269	93	23	85	41	3.8	2.5	1.5	0.65
5	5.7	e0.90	e2.4	173	71	22	70	29	3.6	2.5	1.3	0.40
6	4.6	e0.80	e2.4	101	55	45	122	21	3.5	2.6	1.2	0.27
7	3.1	e2.2	e2.4	69	44	597	86	19	3.6	2.4	1.0	6.5
8	2.8	19	e2.2	51	37	338	70	19	3.4	2.3	0.80	17
9	e2.4	30	e2.2	39	31	305	75	15	3.4	2.3	0.68	12
10	e2.2	12	37	31	27	173	70	14	3.5	2.1	0.63	3.7
11	e1.9	8.1	48	29	24	115	64	13	3.4	2.0	0.51	2.2
12	e1.7	14	57	77	22	136	67	15	3.4	2.0	0.59	1.8
13	e1.6	12	99	80	20	142	154	12	5.9	1.9	0.48	1.5
14	e1.4	20	92	98	18	109	88	10	4.3	1.7	0.48	1.4
15	e1.3	6.8	49	63	20	102	66	12	3.4	1.6	0.64	1.0
16	e1.2	13	182	48	34	98	54	13	3.0	1.9	0.62	23
17	e1.1	14	91	37	198	75	114	21	2.9	1.7	0.62	13
18	e1.0	13	69	31	257	63	86	25	3.2	1.6	0.58	3.2
19	e1.0	25	54	25	141	69	62	14	3.3	2.6	0.64	2.6
20	e1.4	10	37	22	105	75	50	12	5.6	1.7	0.62	2.1
21	e2.0	7.2	99	20	130	93	54	10	17	1.6	0.82	1.7
22	e2.2	5.7	66	55	128	199	47	9.1	14	1.4	0.79	1.2
23	e2.1	e5.0	50	58	91	163	68	8.1	5.6	1.4	0.61	1.1
24	e2.0	e4.4	45	69	67	118	129	7.4	4.5	1.1	0.60	1.4
25	e2.0	e4.0	34	85	51	99	83	7.9	3.9	1.4	0.50	1.1
26	e1.9	e3.6	59	211	42	162	72	7.6	3.4	1.5	0.43	1.1
27	e1.8	e3.4	161	146	34	117	54	6.3	3.2	1.4	0.46	1.2
28	e2.0	e3.2	119	94	29	85	44	5.8	3.0	1.2	0.51	0.83
29	e2.8	e3.0	131	169	---	66	44	5.2	3.4	1.5	0.54	0.50
30	e3.2	e2.8	268	533	---	52	33	5.2	2.8	1.4	0.45	0.92
31	e2.4	---	401	1040	---	83	---	4.9	---	0.86	0.35	---
TOTAL	101.3	248.00	2270.4	4228	2661	3801	2353	453.5	136.8	57.26	21.05	104.62
MEAN	3.27	8.27	73.2	136	95.0	123	78.4	14.6	4.56	1.85	0.68	3.49
MAX	15	30	401	1040	571	597	154	41	17	2.6	1.5	23
MIN	1.0	0.80	2.2	20	18	22	33	4.9	2.8	0.86	0.35	0.27
AC-FT	201	492	4500	8390	5280	7540	4670	900	271	114	42	208
CFSM	0.12	0.31	2.73	5.09	3.55	4.58	2.93	0.55	0.17	0.07	0.03	0.13
IN.	0.14	0.34	3.15	5.87	3.69	5.28	3.27	0.63	0.19	0.08	0.03	0.15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2003, BY WATER YEAR (WY)

MEAN	11.5	71.9	126	139	119	86.5	48.9	26.2	11.0	3.21	1.98	3.10
MAX	65.4	239	317	308	320	196	130	90.1	63.5	30.0	8.04	11.9
(WY)	1969	1951	1997	1970	1949	1957	1955	1963	1984	1983	1968	1997
MIN	1.29	1.56	4.34	9.01	16.0	18.1	9.46	3.32	1.46	0.64	0.44	0.55
(WY)	1966	1953	1977	1977	1977	1992	1942	1966	1966	1973	1970	1967

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1941 - 2003	
ANNUAL TOTAL	13575.97		16435.93			
ANNUAL MEAN	37.2		45.0		53.7	
HIGHEST ANNUAL MEAN					91.7	1997
LOWEST ANNUAL MEAN					15.6	1977
HIGHEST DAILY MEAN	436	Jan 25	1040	Jan 31	2150	Dec 22 1964
LOWEST DAILY MEAN	0.67	Aug 15	0.27	Sep 6	0.10	Aug 7 1973
ANNUAL SEVEN-DAY MINIMUM	0.79	Sep 9	0.42	Aug 31	0.11	Aug 5 1973
ANNUAL RUNOFF (AC-FT)	26930		32600		38900	
ANNUAL RUNOFF (CFSM)	1.39		1.68		2.00	
ANNUAL RUNOFF (INCHES)	18.84		22.81		27.23	
10 PERCENT EXCEEDS	110		120		146	
50 PERCENT EXCEEDS	8.7		10		15	
90 PERCENT EXCEEDS	1.1		0.85		1.2	

e Estimated

14211500 JOHNSON CREEK AT SYCAMORE, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: April 1998 to current year.

INSTRUMENTATION.--Temperature recorder.

REMARKS.--Records excellent.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 25.0°C July 28, 1998; minimum, 0.0°C Dec. 23, 24, 1998.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 23.4°C July 21; minimum, 2.6°C Nov. 1.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.3	11.6	11.9	3.2	2.6	2.9	4.6	3.4	4.1	8.2	8.0	8.1
2	11.6	10.0	10.8	3.5	2.7	3.1	5.1	4.3	4.7	9.5	8.2	8.7
3	12.4	11.6	11.9	4.1	3.0	3.5	4.3	3.7	4.0	9.3	8.7	9.0
4	13.6	12.4	13.2	4.4	3.5	4.0	4.7	3.7	4.2	9.5	8.8	9.2
5	13.7	13.0	13.4	6.6	4.4	5.4	4.5	4.0	4.4	8.8	7.6	8.0
6	13.8	13.1	13.5	7.2	5.7	6.4	4.6	3.8	4.2	8.1	7.0	7.5
7	14.1	12.9	13.4	8.5	7.1	7.7	4.2	3.6	3.9	7.0	6.5	6.7
8	14.3	13.7	14.0	9.3	7.8	8.8	4.3	3.4	3.8	6.6	5.4	5.9
9	14.3	12.7	13.9	9.9	8.7	9.2	5.1	3.7	4.4	5.5	5.1	5.3
10	12.7	10.9	12.0	9.6	9.0	9.3	6.6	4.9	5.7	5.2	4.7	5.0
11	10.9	9.4	10.3	9.7	9.1	9.4	7.5	6.6	7.0	5.7	4.6	5.0
12	9.9	8.5	9.3	10.7	9.6	10.1	9.1	7.5	8.0	6.8	5.7	6.3
13	10.6	9.6	10	10.8	10.3	10.6	9.0	8.3	8.5	7.6	6.8	7.2
14	10.5	8.2	9.4	10.8	9.6	10.5	9.6	8.7	9.2	8.0	7.5	7.7
15	11.7	10.0	10.7	9.6	8.4	9.0	9.5	8.8	9.0	7.5	6.3	6.6
16	12.6	11.2	11.9	9.1	7.2	8.1	8.8	8.2	8.6	6.7	6.2	6.5
17	12.5	11.4	12.0	9.4	8.6	9.0	8.2	7.4	7.7	6.3	5.5	5.9
18	12.0	10.6	11.3	9.1	8.2	8.6	7.6	6.7	7.2	5.6	5.0	5.3
19	12.9	11.1	11.9	10.3	9.1	9.9	7.4	6.6	6.9	5.4	4.6	5.0
20	13.7	12.6	13.1	10.6	9.4	10	6.6	6.2	6.4	5.6	4.5	5.1
21	13.9	13.0	13.4	10.6	9.8	10.2	7.0	6.3	6.7	6.2	5.4	5.7
22	13.5	12.7	13.0	10.9	10.1	10.4	7.6	7.0	7.3	6.9	5.9	6.2
23	12.7	11.4	11.8	10.8	9.9	10.4	7.4	5.5	6.4	7.4	6.6	7.0
24	11.4	9.3	10	9.9	8.0	9.0	5.9	5.5	5.6	8.6	7.2	7.9
25	9.3	7.2	7.9	8.0	6.1	6.8	6.6	5.9	6.2	9.6	8.6	9.0
26	7.8	6.8	7.3	6.1	5.2	5.6	7.1	6.6	6.8	10.8	9.6	10.2
27	8.0	6.1	7.0	5.4	5.0	5.2	8.1	6.7	7.5	9.9	9.0	9.3
28	9.5	8.0	8.7	5.2	4.8	5.0	7.9	7.7	7.8	9.5	8.8	9.0
29	9.0	7.0	8.4	5.6	4.7	5.0	7.7	7.2	7.4	9.0	8.4	8.7
30	7.0	4.0	5.1	5.0	4.3	4.7	7.7	6.9	7.3	10.0	9.0	9.4
31	4.0	3.0	3.3	---	---	---	8.2	7.2	7.7	10.9	9.7	10.4
MONTH	14.3	3.0	10.8	10.9	2.6	7.6	9.6	3.4	6.4	10.9	4.5	7.3

14211500 JOHNSON CREEK AT SYCAMORE, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.7	9.1	9.4	8.0	6.4	7.2	11.3	9.7	10.2	13.9	10.8	12.4
2	9.4	9.0	9.2	7.2	5.9	6.5	9.7	8.3	8.8	14.7	11.6	13.2
3	9.0	8.6	8.8	7.4	6.4	6.9	9.0	7.6	8.3	13.9	12.0	12.7
4	8.6	7.5	7.9	7.5	6.7	7.1	9.3	7.8	8.5	12.0	11.0	11.5
5	7.5	6.2	6.7	8.4	7.3	7.9	8.9	8.3	8.6	12.3	10.7	11.5
6	6.7	6.1	6.5	8.2	7.7	8.0	9.7	7.8	8.7	13.0	10.9	11.9
7	6.5	5.9	6.2	7.8	7.4	7.6	10.3	8.9	9.6	12.1	10.4	11.2
8	6.5	5.7	6.1	8.7	7.3	7.9	11.9	9.6	10.6	11.0	10.2	10.6
9	6.2	5.2	5.7	9.8	8.2	8.9	11.9	10.4	11.2	11.5	10.4	10.9
10	7.1	6.0	6.5	10.2	8.9	9.6	11.6	10.9	11.3	11.9	10.6	11.2
11	6.7	5.3	6.1	10.4	9.4	10	12.5	10.7	11.6	13.6	11.1	12.2
12	7.1	5.8	6.4	11.1	9.8	10.3	12.5	11.2	11.9	13.4	12.4	12.8
13	8.0	6.6	7.3	10.6	9.8	10.2	12.1	10.5	11.2	15.1	11.2	13.1
14	9.3	8.0	8.5	10.6	9.5	10.1	11.3	9.9	10.7	14.8	12.8	13.8
15	8.8	8.3	8.6	10.9	9.9	10.4	11.6	10.2	10.9	13.3	11.9	12.6
16	8.6	8.1	8.4	10.3	9.1	9.7	12.1	10.7	11.3	12.1	11.0	11.5
17	8.2	7.3	7.8	9.8	8.7	9.3	11.7	10.6	11.1	11.2	10.0	10.6
18	8.7	7.5	8.1	9.3	8.2	8.9	11.2	9.7	10.5	11.7	8.8	10.2
19	8.7	8.1	8.4	9.3	8.7	9.0	11.9	9.5	10.7	13.7	9.9	11.8
20	8.6	8.1	8.4	10.3	8.8	9.5	12.1	10.9	11.6	14.1	12.1	13.2
21	9.4	8.5	8.9	10.2	9.1	9.7	11.9	10.6	11.1	16.4	12.8	14.4
22	9.1	8.4	8.7	10.2	9.5	9.9	11.4	10.1	10.7	17.7	14.7	16.1
23	8.6	6.6	7.5	9.5	8.4	9.0	11.6	10.1	10.8	19.5	15.3	17.2
24	6.6	4.6	5.2	9.5	7.4	8.6	11.3	9.9	10.5	18.2	17.1	17.7
25	5.2	3.8	4.5	9.8	9.1	9.5	10.6	8.8	9.8	17.1	15.7	16.4
26	6.1	4.6	5.4	10.0	8.9	9.4	11.3	9.5	10.3	17.0	14.6	15.8
27	7.3	5.9	6.5	10.2	8.3	9.2	12.2	9.2	10.7	18.9	14.4	16.5
28	7.0	6.4	6.7	10.1	8.2	9.2	12.5	11.0	11.7	19.4	16.4	17.8
29	---	---	---	11.3	8.7	10.1	13.2	11.2	12.2	19.6	15.8	17.7
30	---	---	---	12.4	10.2	11.4	12.8	11.9	12.4	18.6	16.1	17.0
31	---	---	---	12.2	11.3	11.8	---	---	---	17.8	15.2	16.4
MONTH	9.7	3.8	7.3	12.4	5.9	9.1	13.2	7.6	10.6	19.6	8.8	13.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.0	15.5	16.8	18.9	17.4	18.2	21.3	17.7	19.5	17.6	14.8	16.5
2	17.6	14.5	16.1	18.8	15.3	17.2	20.6	18.1	19.0	18.5	14.6	16.7
3	18.3	14.4	16.5	19.2	15.5	17.5	19.8	17.7	18.7	19.8	16.5	18.1
4	19.6	15.2	17.5	19.8	16.2	18.1	20.4	16.2	18.3	20.5	17.8	19.2
5	20.6	16.4	18.7	19.6	17.0	18.3	19.3	17.1	18.4	19.9	17.4	18.9
6	21.7	17.5	19.8	19.9	17.1	18.3	20.2	17.0	18.5	19.2	16.9	18.0
7	22.3	19.0	20.7	20.3	16.8	18.5	20.6	18.0	19.4	18.3	17.0	17.6
8	21.6	18.5	19.8	19.8	17.6	18.7	20.6	18.3	19.4	18.0	16.4	16.9
9	19.3	17.0	17.6	20.6	16.4	18.5	20.4	18.1	19.3	16.4	16.0	16.1
10	17.4	16.1	16.7	21.8	17.5	19.6	20.1	17.9	19.0	16.6	15.8	16.2
11	18.1	15.8	16.8	21.9	18.6	20.2	19.8	17.6	18.8	18.0	16.3	17.0
12	17.2	15.3	16.1	21.8	18.5	20.2	19.5	16.8	18.4	16.9	15.7	16.3
13	17.3	15.4	16.3	21.2	18.8	20.0	19.5	16.3	18.1	16.4	13.7	15.2
14	17.5	15.2	16.4	21.6	17.9	19.7	20.8	16.7	18.8	16.5	13.8	15.2
15	18.4	15.1	16.9	21.6	18.8	20.1	20.4	19.0	19.7	15.1	13.2	14.2
16	19.3	15.6	17.6	20.7	18.9	19.8	19.7	17.7	18.8	15.0	12.4	13.9
17	20.5	16.8	18.8	20.9	17.1	19.1	20.2	17.3	18.9	14.0	12.3	13.0
18	19.4	17.2	18.2	21.4	17.1	19.3	20.6	17.8	19.4	14.8	12.3	13.5
19	17.2	15.5	16.0	21.9	18.3	20.1	20.1	18.0	18.9	14.8	14.3	14.6
20	15.8	14.7	15.3	22.5	18.5	20.6	18.9	15.8	17.5	14.4	12.8	13.7
21	15.8	14.5	15.2	23.4	19.9	21.7	19.9	16.0	18.0	14.8	12.8	13.8
22	15.2	14.1	14.6	23.1	19.8	21.6	19.4	17.2	18.1	15.4	12.8	14.1
23	14.9	13.7	14.3	21.7	18.9	20.4	17.8	15.4	16.7	15.4	13.2	14.4
24	16.5	13.3	14.8	20.6	17.5	19.1	17.8	14.4	16.3	15.6	13.4	14.6
25	18.5	14.0	16.3	20.4	17.0	18.7	18.8	15.0	17.0	15.8	13.7	14.8
26	20.2	16.0	18.2	20.6	17.1	18.9	18.5	16.9	17.7	16.6	14.3	15.4
27	21.2	17.9	19.7	21.3	16.8	19.1	18.1	16.7	17.4	17.4	14.8	16.2
28	21.8	17.9	20.1	22.3	17.8	20.1	18.1	14.9	16.7	17.1	15.6	16.5
29	22.4	19.6	21.0	22.9	18.6	20.8	18.7	15.7	17.3	16.5	15.5	16.0
30	20.7	18.8	19.8	23.3	19.2	21.3	19.3	16.2	17.9	16.2	15.2	15.7
31	---	---	---	21.9	19.0	20.7	18.8	16.0	17.5	---	---	---
MONTH	22.4	13.3	17.4	23.4	15.3	19.5	21.3	14.4	18.3	20.5	12.3	15.7
YEAR	23.4	2.6	12.0									

14211542 CRYSTAL SPRINGS CREEK AT BYBEE STREET, PORTLAND, OR

WATER-QUALITY RECORDS

LOCATION.--Lat 45°28'27", long 122°38'27", Multnomah County, Hydrologic Unit 17090012, at Bybee Street in Portland, and at mile 1.0.

DRAINAGE AREA.--Not Determined.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: July 1998 to current year.

INSTRUMENTATION.--Temperature recorder.

REMARKS.--Records excellent.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 23.4°C June 7, 2003; minimum, 4.0°C Dec. 22, 1998.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 23.4°C June 7; minimum, 6.9°C Nov. 1.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	14.8	12.9	13.6	8.9	6.9	7.7	8.9	8.0	8.5	10.2	9.7	10.0
2	15.0	12.2	13.5	9.3	7.2	8.1	9.7	8.5	9.1	11.1	9.9	10.5
3	13.9	13.1	13.4	9.7	7.7	8.5	9.4	8.0	8.5	11.1	10.3	10.7
4	14.3	13.1	13.6	10.5	8.0	9.1	8.6	8.2	8.4	11.6	10.3	11.0
5	14.0	13.2	13.7	11.1	9.3	10.1	9.3	8.0	8.5	10.8	9.6	10.1
6	14.8	13.1	13.8	10.8	9.6	10.2	9.1	8.0	8.3	10.0	8.5	9.3
7	14.8	12.9	13.7	11.4	10.0	10.7	9.1	7.7	8.2	9.6	8.2	8.6
8	15.1	13.6	14.1	11.3	10.7	11.0	8.9	7.7	8.0	8.9	7.7	8.1
9	15.4	13.7	14.4	11.3	10.7	10.9	8.9	7.7	8.3	8.3	7.4	7.8
10	14.6	12.8	13.6	11.4	10.2	10.8	9.6	8.6	9.1	8.5	7.4	7.8
11	14.0	11.7	12.7	11.9	10.8	11.3	10.5	9.1	9.8	8.2	7.4	7.8
12	13.4	11.1	12.2	12.5	11.4	11.8	11.0	10.2	10.6	8.9	8.0	8.6
13	14.0	11.2	12.4	12.2	11.4	11.7	10.7	10.2	10.5	10.0	8.9	9.6
14	13.8	11.4	12.4	12.4	11.1	11.6	11.6	10.3	10.8	10.2	9.7	10
15	14.2	11.6	12.7	11.6	10.5	11.0	10.7	9.9	10.3	10.2	8.9	9.6
16	14.7	12.0	13.2	11.0	10.0	10.5	10.7	9.6	10.1	9.9	8.6	9.0
17	14.7	12.0	13.3	12.0	10.3	11.0	10.2	9.1	9.7	9.6	8.2	8.7
18	13.6	12.4	12.9	11.1	10.5	10.8	10.0	8.9	9.4	9.3	7.7	8.4
19	14.2	12.5	13.3	12.0	11.0	11.4	9.6	8.6	8.9	9.3	7.6	8.4
20	14.4	13.3	13.8	12.4	11.0	11.5	9.3	8.3	8.8	9.4	8.2	8.7
21	14.2	13.4	13.8	12.2	11.1	11.6	9.6	8.6	9.1	9.7	8.5	9.0
22	14.9	13.3	13.8	12.0	11.4	11.8	10.0	9.3	9.6	9.7	8.6	9.0
23	14.2	12.5	13.2	12.5	11.4	11.9	9.3	8.2	8.6	11.1	9.4	10.1
24	13.6	11.6	12.4	11.7	10.3	11.2	8.9	8.2	8.6	11.6	10.2	10.9
25	12.7	10.7	11.5	10.5	9.3	9.8	9.6	8.3	9.0	12.2	11.3	11.7
26	12.5	10.8	11.3	9.7	8.8	9.2	9.6	8.9	9.3	13.1	11.6	12.4
27	11.4	10.3	10.9	9.7	8.3	8.8	9.9	8.9	9.5	12.2	11.2	11.6
28	12.5	11.1	11.6	9.7	8.2	8.8	10.0	9.4	9.7	12.2	11.1	11.4
29	11.7	10.2	11.1	9.6	8.3	8.7	10.0	8.9	9.5	11.2	10.9	11.0
30	10.2	8.6	9.4	9.4	8.0	8.7	10.0	8.5	9.4	12.2	11.1	11.5
31	9.3	7.6	8.3	---	---	---	10.3	8.5	9.6	12.3	11.5	12.1
MONTH	15.4	7.6	12.7	12.5	6.9	10.3	11.6	7.7	9.2	13.1	7.4	9.8

14211542 CRYSTAL SPRINGS CREEK AT BYBEE STREET, PORTLAND, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.2	11.1	11.5	12.4	9.5	10.8	13.8	11.6	12.8	17.7	13.0	15.2
2	11.8	10.9	11.3	10.7	9.5	10.2	12.4	10.4	11.3	18.5	14.1	16.0
3	11.4	10.4	10.9	10.9	9.9	10.4	11.9	9.6	10.7	15.2	13.6	14.6
4	10.9	9.4	10.0	11.0	9.9	10.4	12.7	10.2	11.3	14.7	12.7	13.4
5	10.8	9.0	9.6	11.3	10.1	10.7	11.3	10.2	10.8	15.5	12.5	13.7
6	10.6	8.4	9.3	11.5	10.4	10.8	13.7	10.1	11.5	16.8	12.7	14.3
7	10.4	8.4	9.2	11.0	9.8	10.5	13.5	11.2	12.2	14.7	12.5	13.5
8	10.4	8.3	9.1	11.2	10.1	10.6	15.5	11.6	13.2	13.9	12.4	13.0
9	10.9	8.6	9.5	12.7	10.7	11.6	16.2	12.1	13.9	14.2	12.4	13.2
10	11.1	9.4	10.1	13.5	11.5	12.4	14.3	13.2	13.7	14.2	12.4	13.3
11	11.1	8.6	9.6	13.3	11.9	12.6	15.7	12.7	13.9	16.1	12.7	14.3
12	11.2	8.7	9.7	12.9	12.2	12.5	16.2	12.9	14.3	15.8	13.9	14.7
13	11.4	9.7	10.5	13.0	12.1	12.6	16.2	12.9	14.1	18.5	13.0	15.5
14	12.6	10.8	11.4	14.1	11.6	12.7	14.0	12.4	13.2	16.9	14.4	15.6
15	11.7	10.8	11.1	14.0	11.9	12.7	15.2	12.1	13.4	15.3	13.4	14.2
16	11.4	10.1	10.7	14.1	11.6	12.6	15.5	12.6	13.9	14.4	12.6	13.3
17	10.6	9.8	10.2	14.0	11.2	12.3	15.5	12.8	13.8	14.9	11.9	13.0
18	11.7	10.0	10.8	12.3	11.0	11.6	15.6	12.4	13.6	16.2	11.4	13.6
19	11.7	10.6	11.1	11.6	10.7	11.2	16.4	12.0	14.0	17.3	12.5	14.8
20	10.9	10.4	10.6	13.5	10.6	11.8	15.6	13.1	14.3	16.8	14.2	15.5
21	12.0	10.6	11.1	12.4	11.0	11.7	13.9	12.7	13.3	19.0	14.3	16.4
22	12.8	10.6	11.3	12.9	11.0	11.8	14.2	12.0	13.0	20.1	15.9	17.7
23	11.8	8.7	10.4	12.7	10.4	11.3	13.4	12.0	12.7	20.6	15.9	18.2
24	10.0	7.3	8.4	13.0	9.8	11.3	14.9	11.6	12.8	19.2	17.0	18.1
25	10.4	7.0	8.3	12.9	11.0	11.8	14.1	11.3	12.6	17.6	15.6	16.5
26	10.6	7.8	9.1	13.4	10.7	11.9	14.2	11.6	12.7	18.4	14.8	16.3
27	11.7	9.4	10.1	13.2	10.9	11.9	16.3	11.3	13.6	19.6	14.9	17.2
28	10.6	9.7	10.1	14.1	11.0	12.4	15.6	13.3	14.3	21.2	16.9	18.4
29	---	---	---	15.7	11.3	13.3	17.6	12.8	15.0	20.0	15.5	17.6
30	---	---	---	16.5	12.4	14.4	16.3	14.2	15.1	17.4	15.7	16.7
31	---	---	---	15.1	13.2	14.1	---	---	---	19.3	14.9	16.7
MONTH	12.8	7.0	10.2	16.5	9.5	11.8	17.6	9.6	13.2	21.2	11.4	15.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.8	15.8	17.2	18.9	16.4	17.5	20.8	17.0	18.9	18.6	15.4	16.9
2	19.3	14.9	16.9	19.5	15.1	17.1	19.0	16.9	17.7	18.8	15.5	17.1
3	19.7	15.2	17.2	20.2	15.8	17.8	18.6	15.9	17.1	19.1	16.3	17.6
4	20.7	15.9	18.1	20.5	16.4	18.3	19.6	15.3	17.2	19.6	16.5	17.9
5	21.5	16.9	19.2	20.0	16.7	18.2	18.9	16.5	17.6	19.3	16.4	17.7
6	22.3	17.7	19.9	20.5	16.7	18.4	19.8	16.2	17.7	19.1	16.2	17.6
7	23.4	18.6	20.5	21.1	16.8	18.7	20.4	16.9	18.4	18.0	16.2	17.0
8	21.9	17.4	19.2	19.9	17.0	18.3	20.3	17.1	18.4	16.8	15.4	16.0
9	17.8	16.4	17.1	20.9	16.4	18.6	19.5	17.1	18.2	15.7	14.8	15.2
10	17.7	15.3	16.2	22.4	17.3	19.6	20.3	16.8	18.1	15.4	14.6	14.9
11	19.4	15.3	16.7	21.9	17.7	19.6	19.6	16.4	17.8	16.7	14.7	15.5
12	17.5	15.4	16.3	21.9	17.8	19.6	19.5	16.1	17.6	17.0	14.6	15.6
13	18.2	15.2	16.4	20.3	17.9	19.1	19.6	16.1	17.8	17.1	14.2	15.5
14	19.2	15.3	16.9	21.3	16.7	18.8	20.5	16.6	18.4	17.0	14.4	15.5
15	19.8	15.6	17.5	21.6	17.6	19.2	19.2	17.1	18.1	15.8	13.7	14.7
16	20.5	16.2	18.3	21.5	17.8	19.1	19.5	16.0	17.5	15.7	13.9	14.7
17	22.6	17.1	19.3	20.8	16.6	18.6	20.0	16.5	18.1	15.8	13.8	14.7
18	18.5	16.1	17.5	21.4	17.2	19.2	20.3	17.0	18.5	16.3	13.5	14.9
19	16.1	14.8	15.6	22.0	17.6	19.6	20.4	16.8	18.2	15.5	14.6	15.0
20	16.4	14.4	15.4	21.8	17.6	19.6	19.4	15.7	17.4	15.9	13.3	14.5
21	16.8	14.3	15.4	22.1	18.5	20.2	20.0	16.3	18.0	16.3	13.7	14.8
22	16.2	14.3	15.1	21.9	18.2	20.0	18.3	16.4	17.2	16.9	13.9	15.2
23	15.9	14.3	15.0	21.4	17.9	19.6	18.1	14.8	16.4	17.0	14.2	15.5
24	18.0	13.7	15.7	20.7	17.1	18.7	18.9	15.0	16.8	17.5	14.2	15.8
25	19.8	15.1	17.3	20.6	16.7	18.4	19.6	15.6	17.4	17.1	14.4	15.7
26	21.0	16.6	18.7	20.7	16.9	18.6	18.0	16.3	17.0	17.5	14.8	16.0
27	21.8	17.8	19.7	21.1	16.9	18.9	17.6	15.7	16.4	17.6	14.8	16.1
28	21.9	17.7	19.7	21.9	17.8	19.7	18.4	15.0	16.5	17.3	15.0	16.2
29	22.6	18.6	20.2	22.1	18.0	20.0	19.0	15.6	17.1	16.0	15.0	15.4
30	20.4	17.5	18.8	22.1	18.2	20.0	19.4	16.2	17.6	16.0	14.3	14.9
31	---	---	---	21.5	17.5	19.4	19.0	16.0	17.3	---	---	---
MONTH	23.4	13.7	17.6	22.4	15.1	19.0	20.8	14.8	17.6	19.6	13.3	15.8
YEAR	23.4	6.9	13.6									

14211546 CRYSTAL SPRINGS CREEK AT MOUTH, PORTLAND,OR

WATER-QUALITY RECORDS

LOCATION.--Lat 45°27'39", long 122°38'30", Multnomah County, Hydrologic Unit 17090012, at mouth.

DRAINAGE.--Not determined.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: July 1998 to September 2000, December 2002 to September 2003.

INSTRUMENTATION.--Water temperature recorder.

REMARKS.--Records excellent.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum 26.2°C June 7, 2003; minimum, 2.0°C Dec. 22, 1998.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 26.2°C June 7; minimum, 5.3°C Feb. 24, 25.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	9.8	9.3	9.6
2	---	---	---	---	---	---	---	---	---	11.0	9.5	10.3
3	---	---	---	---	---	---	---	---	---	11.0	9.8	10.5
4	---	---	---	---	---	---	---	---	---	11.6	9.9	10.8
5	---	---	---	---	---	---	---	---	---	10.9	9.0	9.7
6	---	---	---	---	---	---	8.4	6.8	7.4	9.6	7.6	8.5
7	---	---	---	---	---	---	8.5	6.5	7.4	9.2	7.0	7.8
8	---	---	---	---	---	---	8.2	6.4	7.2	8.1	6.4	7.1
9	---	---	---	---	---	---	8.5	6.7	7.6	7.8	6.2	6.8
10	---	---	---	---	---	---	9.5	8.1	8.6	7.9	6.5	6.9
11	---	---	---	---	---	---	10.1	8.5	9.3	7.6	6.4	7.1
12	---	---	---	---	---	---	10.6	10.1	10.3	8.7	7.6	8.1
13	---	---	---	---	---	---	10.4	9.9	10.2	9.6	8.4	9.1
14	---	---	---	---	---	---	11.5	10.1	10.6	10.1	9.5	9.7
15	---	---	---	---	---	---	10.4	9.0	9.8	9.9	8.4	9.1
16	---	---	---	---	---	---	10.2	9.0	9.8	9.5	7.6	8.4
17	---	---	---	---	---	---	9.6	8.5	9.0	9.2	7.2	7.9
18	---	---	---	---	---	---	9.6	7.8	8.7	8.7	6.4	7.5
19	---	---	---	---	---	---	9.0	7.9	8.3	9.2	6.4	7.7
20	---	---	---	---	---	---	9.0	7.6	8.1	9.3	7.3	8.2
21	---	---	---	---	---	---	9.2	8.2	8.6	9.3	7.8	8.4
22	---	---	---	---	---	---	9.5	8.7	9.1	9.0	8.1	8.6
23	---	---	---	---	---	---	8.8	7.3	8.0	11.2	8.5	9.7
24	---	---	---	---	---	---	8.4	7.2	7.8	11.5	9.8	10.6
25	---	---	---	---	---	---	9.0	7.8	8.4	12.1	11.2	11.6
26	---	---	---	---	---	---	9.2	8.4	8.8	13.5	11.6	12.6
27	---	---	---	---	---	---	9.6	8.5	9.1	11.9	10.6	11.3
28	---	---	---	---	---	---	9.6	9.0	9.3	11.8	10.6	11.0
29	---	---	---	---	---	---	9.6	8.2	9.0	10.9	10.2	10.5
30	---	---	---	---	---	---	9.6	8.4	9.1	12.1	10.7	11.2
31	---	---	---	---	---	---	10.2	8.4	9.1	12.2	11.3	12.0
MONTH	---	---	---	---	---	---	---	---	---	13.5	6.2	9.3

14211546 CRYSTAL SPRINGS CREEK AT MOUTH, PORTLAND, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	11.9	10.6	11.2	13.2	9.0	10.7	14.1	11.3	12.8	19.9	12.7	16.0
2	11.8	10.4	11.0	10.2	8.2	9.3	12.6	9.8	10.9	20.9	13.7	16.9
3	11.2	9.8	10.4	10.7	9.2	9.8	12.1	8.7	10.3	15.8	13.7	14.7
4	10.4	8.5	9.4	10.9	8.8	9.8	13.2	9.8	11.2	15.5	12.3	13.6
5	10.6	7.8	8.9	11.5	9.6	10.3	11.3	9.8	10.5	16.3	12.2	14.0
6	10.4	7.2	8.5	11.3	9.6	10.3	13.9	9.5	11.4	18.5	12.5	15.0
7	10.4	7.0	8.5	10.4	9.5	10	13.8	11.0	12.3	15.3	12.0	13.7
8	10.4	6.8	8.4	10.9	9.5	10.1	16.8	11.5	13.7	14.5	12.0	13.1
9	10.9	7.5	8.9	12.7	10.2	11.3	17.7	11.8	14.5	15.0	12.3	13.5
10	11.5	8.5	9.8	14.1	11.0	12.3	14.7	13.0	13.8	15.1	12.2	13.7
11	11.0	7.2	8.8	13.6	11.3	12.4	16.8	12.4	14.3	17.8	12.7	15.0
12	11.3	7.5	9.1	12.7	11.8	12.2	17.4	12.9	14.8	16.9	13.9	15.2
13	11.2	8.8	9.9	12.9	11.8	12.3	17.3	12.7	14.6	20.4	12.8	16.4
14	12.7	10.4	11.2	14.4	10.9	12.4	14.7	11.9	13.3	18.3	14.7	16.5
15	11.5	10.1	10.7	14.1	11.3	12.6	16.5	11.8	13.7	16.2	13.4	14.6
16	11.0	9.6	10.3	14.3	11.0	12.3	16.9	12.2	14.4	15.0	12.3	13.5
17	10.1	9.2	9.6	14.3	10.2	12.0	16.3	12.7	14.2	16.2	11.6	13.4
18	11.9	9.3	10.4	12.4	10.1	11.4	16.3	11.9	13.9	17.9	11.0	14.2
19	11.6	10.1	10.8	11.6	10.2	11.0	17.8	11.6	14.5	19.7	12.2	15.8
20	10.6	9.8	10.1	14.4	10.1	11.9	16.9	13.1	14.9	18.6	14.1	16.3
21	11.9	10.1	10.8	12.7	10.7	11.7	14.4	12.7	13.4	21.5	14.5	17.7
22	13.0	9.9	11.0	13.2	10.9	11.8	15.0	11.9	13.1	21.9	16.4	19.0
23	11.5	7.6	9.8	13.0	9.8	11.1	14.0	11.6	12.8	23.9	16.2	19.9
24	9.2	5.3	7.0	13.9	9.0	11.2	15.5	11.3	13.0	20.6	18.2	19.3
25	9.9	5.3	7.3	13.2	10.7	11.8	15.0	10.6	12.8	18.9	16.2	17.5
26	10.4	6.4	8.3	14.3	10.6	12.1	15.0	11.1	12.9	20.2	15.1	17.4
27	11.8	8.5	9.8	13.9	10.2	11.9	18.3	10.6	14.2	22.9	15.2	18.7
28	10.2	8.8	9.5	15.5	10.4	12.7	16.7	13.0	14.7	23.1	17.5	19.9
29	---	---	---	17.3	10.9	13.8	19.6	12.8	15.8	22.6	15.8	19.0
30	---	---	---	17.7	12.1	14.9	17.2	14.2	15.6	18.8	16.4	17.4
31	---	---	---	15.8	13.3	14.5	---	---	---	21.4	15.3	17.9
MONTH	13.0	5.3	9.6	17.7	8.2	11.7	19.6	8.7	13.4	23.9	11.0	16.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	21.4	15.9	18.4	21.0	16.4	18.6	23.6	17.4	20.4	21.2	15.3	18.0
2	21.6	14.7	17.8	22.0	15.1	18.4	20.6	17.4	18.6	21.4	15.6	18.2
3	22.4	14.9	18.3	23.1	15.7	19.2	20.3	16.6	18.2	21.9	16.7	19.1
4	23.8	15.5	19.3	23.8	16.4	19.8	22.5	15.5	18.7	22.5	17.2	19.6
5	24.5	17.0	20.6	22.5	16.8	19.4	20.9	16.8	18.8	22.2	16.8	19.3
6	25.9	18.2	21.7	23.0	16.9	19.8	21.9	16.6	19.0	21.2	16.6	18.7
7	26.2	18.9	22.3	23.8	16.9	20.1	23.1	17.1	20.0	19.7	16.6	17.9
8	23.5	17.9	20.6	21.6	17.1	19.3	22.8	17.6	19.9	18.2	15.5	16.6
9	20.2	16.8	17.8	23.9	16.8	20.3	22.8	17.6	19.8	16.2	15.1	15.6
10	19.0	15.6	17.1	25.0	17.7	21.2	22.2	17.1	19.4	16.2	14.9	15.5
11	21.0	15.4	17.7	24.8	18.3	21.4	21.6	16.8	19.1	18.3	15.1	16.3
12	18.7	15.4	17.1	24.2	18.4	21.3	22.5	16.3	19.1	19.3	14.7	16.5
13	19.7	15.4	17.2	22.2	18.7	20.5	22.5	16.4	19.2	19.2	13.9	16.3
14	21.2	15.4	18.0	24.0	17.2	20.5	23.7	16.8	20.0	19.0	14.2	16.2
15	22.7	15.5	18.9	24.4	18.1	21.0	20.7	18.3	19.2	16.9	13.5	15.0
16	23.4	16.2	19.6	23.5	18.4	20.6	21.9	16.4	18.9	17.1	13.8	15.2
17	24.7	17.2	20.7	23.6	16.8	20.1	23.1	16.9	19.7	17.3	13.7	15.3
18	20.9	17.1	18.3	24.6	17.5	20.9	23.2	17.4	20.1	17.9	13.3	15.5
19	17.1	14.9	16.2	25.0	18.1	21.4	22.3	17.1	19.4	16.5	14.9	15.5
20	17.7	14.5	16.0	25.2	18.1	21.6	21.9	15.7	18.6	17.6	13.2	15.1
21	18.0	14.3	16.1	25.4	19.1	22.2	22.5	16.4	19.3	18.2	13.5	15.5
22	17.0	14.3	15.6	25.1	18.9	21.9	19.5	16.9	18.2	19.0	13.8	16.0
23	16.8	14.4	15.6	24.4	18.3	21.2	20.5	15.0	17.5	19.0	14.0	16.3
24	20.5	13.7	16.9	23.4	17.3	20.1	21.4	15.1	18.0	19.6	14.4	16.8
25	22.4	15.0	18.5	23.4	16.8	19.9	22.1	15.7	18.7	19.4	14.6	16.8
26	24.0	16.8	20.2	23.6	17.1	20.1	19.7	16.8	18.1	19.8	15.0	17.1
27	25.1	18.1	21.4	24.1	17.2	20.5	19.2	16.0	17.4	19.6	14.9	17.0
28	25.3	18.0	21.4	25.1	18.2	21.5	20.7	15.1	17.6	19.3	15.2	17.1
29	25.2	18.9	21.8	25.5	18.8	22.0	21.6	15.7	18.4	16.8	15.4	15.9
30	22.7	18.2	20.1	25.7	18.9	22.1	22.3	16.4	19.0	17.6	14.4	15.7
31	---	---	---	24.4	18.1	21.1	21.8	16.1	18.7	---	---	---
MONTH	26.2	13.7	18.7	25.7	15.1	20.6	23.7	15.0	18.9	22.5	13.2	16.7

14211550 JOHNSON CREEK AT MILWAUKIE, OR

LOCATION.--Lat 45°27'11", long 122°38'31", in NE 1/4 SE 1/4 sec.26, T.1 S., R.1 E., Clackamas County, Hydrologic Unit 17090012, on the right bank upstream side of the Milport Road bridge, in the city limits of Milwaukie, and at mile 0.7.

DRAINAGE AREA.--53.17 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1989 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is NGVD of 1929, from State of Oregon.

REMARKS.--No estimated daily discharges. Records good. Small diversions for irrigation upstream from station. Significant portion of summer flow is from Crystal Springs, through Crystal Springs Creek, which enters 0.5 mi upstream from gage.

AVERAGE DISCHARGE.--14 years (water years 1990-2003), 78.9 ft^3/s, 20.17 in/yr, 57,170 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,170 ft^3/s Feb. 8, 1996, gage height 30.27 ft; maximum gage height, 34.43 ft, Feb. 9, 1996, backwater from Willamette River; minimum discharge, 9.8 ft^3/s July 29, 2003.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 31	0530	833	28.04	Mar. 7	1630	1,130	28.77
Jan. 31	2100	*1,670	*29.85				

Minimum discharge, 9.8 ft^3/s July 29.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	12	14	189	888	41	136	47	17	12	11	11
2	18	14	14	186	241	36	136	43	16	12	11	11
3	26	13	13	265	158	42	135	39	16	12	11	11
4	32	13	14	303	115	36	107	59	15	12	11	11
5	19	13	14	245	90	36	89	55	15	12	11	12
6	16	13	14	128	72	56	143	41	15	12	11	12
7	15	16	14	92	60	721	111	38	14	13	11	13
8	13	32	14	72	53	487	93	40	15	12	11	35
9	13	35	15	59	46	422	96	33	15	12	11	37
10	13	37	48	50	42	222	89	31	15	11	11	20
11	12	23	67	47	38	143	86	30	15	11	11	16
12	13	39	69	97	35	155	96	31	14	11	11	14
13	12	28	140	103	32	187	197	30	16	11	10	14
14	12	34	132	129	30	142	118	27	18	11	10	14
15	12	22	76	87	38	126	90	27	14	11	11	14
16	12	21	240	69	57	126	75	32	13	11	11	24
17	12	31	123	58	226	100	153	40	12	11	11	37
18	12	27	99	50	384	84	118	47	12	11	11	18
19	12	39	78	44	174	89	87	32	13	11	11	16
20	13	26	58	39	129	98	72	28	13	12	11	15
21	13	20	116	37	138	110	75	26	22	11	11	15
22	12	18	91	70	151	256	69	24	36	11	11	15
23	13	17	74	88	110	201	84	23	19	11	12	14
24	13	16	65	88	83	151	171	22	16	11	11	13
25	12	15	56	103	66	123	112	22	15	11	11	14
26	13	14	75	254	56	183	101	22	14	11	11	14
27	13	14	197	190	49	145	78	20	13	11	11	14
28	13	14	151	119	44	111	65	19	12	11	11	15
29	13	14	166	178	---	88	66	18	12	10	12	14
30	14	15	306	699	---	73	54	18	12	11	11	13
31	13	---	584	1140	---	102	---	18	---	11	11	---
TOTAL	458	645	3137	5278	3605	4892	3102	982	464	351	341	496
MEAN	14.8	21.5	101	170	129	158	103	31.7	15.5	11.3	11.0	16.5
MAX	32	39	584	1140	888	721	197	59	36	13	12	37
MIN	12	12	13	37	30	36	54	18	12	10	10	11
AC-FT	908	1280	6220	10470	7150	9700	6150	1950	920	696	676	984
CFSM	0.28	0.40	1.90	3.20	2.42	2.97	1.94	0.60	0.29	0.21	0.21	0.31
IN.	0.32	0.45	2.19	3.69	2.52	3.42	2.17	0.69	0.32	0.25	0.24	0.35

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2003, BY WATER YEAR (WY)

MEAN	35.3	98.5	150	165	162	115	78.3	55.4	31.2	21.4	19.3	20.8
MAX	73.2	244	411	277	386	225	137	111	49.8	36.6	31.5	39.3
(WY)	1998	1997	1997	1997	1996	1997	1993	1998	1998	1997	1997	1997
MIN	14.8	18.5	65.7	42.7	34.0	44.1	39.8	22.2	15.5	11.3	11.0	15.3
(WY)	2003	1994	2001	2001	1993	1992	2000	1994	2003	2003	2003	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1990 - 2003	
ANNUAL TOTAL	20561		23751			
ANNUAL MEAN	56.3		65.1		78.9	
HIGHEST ANNUAL MEAN					137	1997
LOWEST ANNUAL MEAN					38.7	2001
HIGHEST DAILY MEAN	584	Dec 31	1140	Jan 31	1700	Nov 19 1996
LOWEST DAILY MEAN	12	Oct 11	10	Jul 29	10	Jul 3 1994
ANNUAL SEVEN-DAY MINIMUM	12	Oct 13	11	Aug 8	11	Jun 28 1994
ANNUAL RUNOFF (AC-FT)	40780		47110		57170	
ANNUAL RUNOFF (CFSM)	1.06		1.22		1.48	
ANNUAL RUNOFF (INCHES)	14.39		16.62		20.17	
10 PERCENT EXCEEDS	138		147		176	
50 PERCENT EXCEEDS	21		23		39	
90 PERCENT EXCEEDS	13		11		15	

14211550 JOHNSON CREEK AT MILWAUKIE, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: May 1998 to current year.

INSTRUMENTATION.--Temperature recorder.

REMARKS.--Records excellent.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 25.1°C July 10, 2002; minimum, 0.5°C Dec. 22, 1998.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 25.0°C July 30; minimum, 3.6°C Feb. 25.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	14.4	12.4	13.3	7.6	5.1	6.3	7.9	6.4	7.2	8.4	8.2	8.2
2	15.0	11.5	13.2	8.8	5.3	6.9	9.0	7.5	8.3	9.8	8.3	9.0
3	14.0	12.9	13.4	9.2	6.4	7.7	7.8	6.3	7.1	9.7	9.0	9.3
4	14.2	13.0	13.6	9.7	6.8	8.2	8.1	7.0	7.5	9.8	9.0	9.5
5	14.5	13.3	13.9	10.9	8.4	9.5	8.1	6.8	7.5	9.0	7.8	8.3
6	15.1	13.4	14.2	10.6	8.8	9.7	7.8	6.3	7.0	8.0	6.9	7.6
7	15.1	12.9	13.9	12.0	9.6	10.5	7.8	6.3	7.0	7.3	6.3	6.8
8	15.5	13.7	14.5	11.0	10.1	10.4	7.6	6.1	6.8	6.5	5.5	6.0
9	15.9	14.0	14.8	11.2	9.2	10.1	9.2	6.4	7.2	6.0	5.1	5.5
10	14.7	12.6	13.5	11.3	8.8	9.7	8.1	6.6	7.5	5.9	5.0	5.4
11	13.4	10.9	12.2	11.5	9.9	10.7	8.3	7.0	7.6	6.3	4.9	5.6
12	13.2	10.1	11.7	13.0	10.6	11.7	10.0	8.3	9.0	6.8	6.0	6.5
13	14.1	10.4	12.2	11.7	10.8	11.3	9.1	8.6	8.9	7.8	6.8	7.4
14	14.1	10.7	12.4	11.6	10.4	11.0	9.9	8.9	9.4	8.3	7.7	7.9
15	14.8	11.2	12.9	10.6	9.5	10.0	9.4	8.8	9.1	7.9	6.7	7.4
16	15.4	11.9	13.5	10.4	8.6	9.5	8.9	8.2	8.6	7.4	6.2	6.7
17	15.4	11.9	13.6	10.8	9.2	10	8.2	7.3	7.8	7.1	5.8	6.4
18	13.9	12.1	13.0	10.5	9.2	9.8	7.7	7.0	7.3	6.7	5.2	5.9
19	15.0	12.6	13.7	10.9	10.1	10.5	7.3	6.8	7.0	6.6	4.7	5.7
20	15.0	13.8	14.3	11.9	10.1	10.9	7.3	6.4	6.8	7.0	5.2	6.1
21	15.2	13.8	14.4	11.6	10.5	11.0	7.0	6.6	6.8	7.4	6.1	6.7
22	15.5	13.4	14.3	11.8	11.0	11.4	7.7	6.9	7.4	7.2	6.4	6.8
23	14.4	12.0	13.2	12.1	11.0	11.6	7.3	5.9	6.7	8.5	6.9	7.6
24	13.6	11.0	12.2	11.0	9.2	10.4	6.4	5.9	6.1	9.0	7.8	8.4
25	12.4	9.6	11.1	9.2	7.8	8.6	7.3	6.0	6.6	10.0	9.0	9.5
26	12.3	9.9	10.9	8.5	7.1	7.7	7.4	6.8	7.1	11.1	10.0	10.7
27	11.0	9.4	10.3	8.5	6.8	7.6	7.9	6.8	7.5	10.3	9.5	9.8
28	13.0	10.7	11.6	8.6	6.8	7.7	8.2	7.9	8.0	9.8	9.0	9.4
29	11.5	9.1	10.7	8.4	6.9	7.6	7.9	7.2	7.5	9.2	8.8	9.0
30	9.1	7.0	8.1	8.5	6.9	7.6	7.5	7.2	7.3	10.2	9.2	9.5
31	8.1	5.8	6.8	---	---	---	8.2	7.3	7.7	11.2	10.2	10.7
MONTH	15.9	5.8	12.6	13.0	5.1	9.5	10.0	5.9	7.5	11.2	4.7	7.7

14211550 JOHNSON CREEK AT MILWAUKIE, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.2	9.4	9.6	10.1	7.2	8.5	11.7	9.7	10.8	16.2	11.5	13.8
2	9.6	9.2	9.4	8.4	6.5	7.5	9.9	8.6	9.3	17.1	12.5	14.8
3	9.3	8.6	9.0	8.4	7.4	7.8	9.2	7.7	8.6	15.0	12.8	13.6
4	8.6	7.3	8.1	8.8	7.1	7.9	10.0	8.2	8.9	13.2	11.6	12.3
5	7.8	6.6	7.1	9.8	8.2	8.9	9.4	8.5	8.8	13.8	11.2	12.4
6	7.7	5.8	6.7	9.3	8.2	8.7	9.9	8.2	8.9	15.3	11.3	13.1
7	7.7	5.7	6.6	8.5	7.7	7.9	10.9	9.3	10.0	13.3	11.1	12.3
8	7.6	5.6	6.5	8.6	7.5	7.9	13.2	9.9	11.3	12.7	11.0	11.8
9	7.8	5.7	6.7	9.6	8.6	9.0	13.4	10.7	12.0	13.1	11.2	12.2
10	8.5	6.8	7.5	10.6	9.3	9.9	12.3	11.4	11.8	13.5	11.4	12.5
11	8.4	5.9	7.1	10.9	10.0	10.4	13.9	11.2	12.3	15.5	11.8	13.6
12	8.7	5.8	7.3	11.0	10.4	10.7	14.1	11.7	12.7	14.9	13.1	14.0
13	9.2	7.4	8.2	11.0	10.5	10.7	12.6	11.2	11.7	17.6	12.1	14.8
14	10.7	8.8	9.6	11.3	9.9	10.6	11.8	10.5	11.2	16.5	14.0	15.4
15	9.9	8.8	9.3	11.6	10.3	10.8	12.7	10.6	11.5	14.6	13.0	13.8
16	9.5	8.0	9.0	11.1	9.8	10.3	13.6	11.0	12.2	13.6	11.8	12.6
17	8.2	7.8	8.0	11.0	9.1	9.9	12.3	11.2	11.7	13.5	10.7	11.9
18	8.7	7.7	8.1	10.1	8.6	9.4	12.2	10.3	11.2	14.1	9.7	12.0
19	9.0	8.5	8.7	9.9	8.7	9.4	13.1	10.1	11.5	16.5	11.0	13.8
20	8.7	8.5	8.6	11.4	9.1	10.1	13.6	11.3	12.4	16.2	13.1	14.8
21	9.7	8.7	9.2	10.5	9.6	10.1	12.5	11.2	11.8	18.9	13.8	16.3
22	9.7	8.5	9.1	10.4	9.7	10.1	12.6	10.6	11.4	19.8	15.9	17.8
23	8.8	6.3	8.0	9.9	8.9	9.4	12.4	10.5	11.4	21.7	16.1	18.9
24	6.5	4.4	5.5	9.8	8.0	8.9	11.6	10.4	10.9	20.0	17.7	18.8
25	6.4	3.6	4.9	10.5	9.2	9.8	11.4	9.3	10.4	17.7	16.1	17.0
26	7.2	4.2	5.7	10.6	9.3	9.8	11.9	9.9	10.7	18.4	14.9	16.6
27	8.7	6.3	7.3	10.4	8.9	9.6	13.9	9.6	11.7	20.9	15.1	17.9
28	8.1	6.9	7.5	11.2	9.1	10.0	13.8	11.4	12.5	21.2	17.4	19.2
29	---	---	---	12.8	9.2	10.9	15.2	11.5	13.3	21.0	16.0	18.6
30	---	---	---	14.1	10.4	12.3	14.6	12.7	13.6	18.7	16.2	17.2
31	---	---	---	13.1	11.7	12.5	---	---	---	19.6	15.2	17.2
MONTH	10.7	3.6	7.8	14.1	6.5	9.7	15.2	7.7	11.2	21.7	9.7	14.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19.8	15.9	17.9	20.3	16.7	18.4	22.9	17.8	20.4	20.6	15.7	18.1
2	19.8	14.9	17.2	20.9	15.5	18.2	20.9	17.8	18.9	21.1	15.9	18.4
3	20.7	15.1	17.8	21.7	16.0	18.9	20.0	17.0	18.4	21.7	17.2	19.4
4	22.0	15.7	18.8	22.4	16.6	19.5	21.9	16.1	18.9	22.4	17.8	20.0
5	22.9	17.2	20.2	21.5	16.9	19.2	20.4	17.2	19.0	22.1	17.5	19.7
6	24.2	18.2	21.2	22.0	17.0	19.5	21.3	17.1	19.2	20.9	17.1	18.9
7	24.6	19.1	21.8	22.5	17.1	19.8	22.5	17.6	20.0	19.5	16.9	18.1
8	22.2	18.2	20.3	20.6	17.3	19.1	22.0	18.0	20.0	18.0	16.6	17.2
9	19.6	16.9	17.7	22.9	17.1	20.0	22.1	18.1	19.9	16.9	15.6	16.2
10	18.2	15.7	16.9	24.0	17.9	21.0	21.7	17.7	19.6	16.6	15.5	16.1
11	19.6	15.6	17.3	23.6	18.6	21.3	21.1	17.3	19.3	18.3	15.8	16.8
12	18.0	15.8	16.9	23.4	18.7	21.1	21.8	16.9	19.3	18.6	15.2	16.7
13	18.6	15.3	16.9	21.7	18.8	20.4	21.9	16.8	19.4	18.6	14.3	16.4
14	19.8	15.6	17.5	23.0	17.5	20.4	23.2	17.2	20.1	18.5	14.5	16.4
15	21.2	15.8	18.5	23.4	18.5	20.9	21.2	18.7	19.6	16.3	13.8	15.0
16	22.1	16.4	19.3	22.5	18.7	20.5	21.4	16.9	19.1	16.5	13.9	15.2
17	23.4	17.5	20.4	22.7	17.2	20.1	22.6	17.5	19.9	16.0	13.8	14.8
18	20.6	17.1	18.4	23.5	17.8	20.7	22.8	18.0	20.4	17.0	13.4	15.2
19	17.1	15.3	16.3	24.1	18.3	21.2	21.8	17.7	19.7	16.4	15.1	15.7
20	17.3	14.8	16.0	24.3	18.5	21.5	21.4	16.2	18.8	16.9	13.4	15.1
21	17.2	14.6	15.9	24.9	19.7	22.4	22.1	16.8	19.5	17.6	13.7	15.5
22	16.3	14.4	15.4	24.4	19.5	22.1	20.1	17.3	18.5	18.4	14.1	16.1
23	16.4	14.5	15.4	23.7	18.7	21.3	19.8	15.5	17.6	18.4	14.2	16.4
24	19.2	14.0	16.5	22.6	17.7	20.2	20.8	15.4	18.1	19.0	14.7	16.8
25	21.2	15.3	18.2	22.5	17.2	19.9	21.6	16.1	18.8	18.8	14.9	16.9
26	22.8	17.2	20.0	22.5	17.5	20.0	19.6	17.3	18.4	19.4	15.5	17.3
27	23.8	18.4	21.1	23.2	17.5	20.4	19.1	16.6	17.8	19.5	15.4	17.3
28	24.0	18.3	21.2	24.4	18.5	21.5	20.4	15.6	17.9	19.2	15.6	17.4
29	24.0	19.3	21.5	24.9	19.2	22.1	21.2	16.1	18.6	17.3	15.7	16.2
30	21.8	18.4	20.0	25.0	19.4	22.3	21.9	16.8	19.3	17.3	14.8	15.9
31	---	---	---	23.7	18.7	21.3	21.3	16.6	18.9	---	---	---
MONTH	24.6	14.0	18.4	25.0	15.5	20.5	23.2	15.4	19.1	22.4	13.4	16.8
YEAR	25.0	3.6	13.0									

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 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Discharge records October 1972 to September 1994, Flow routed discharge records October 1994 to March 2003, discharge records April 2003 to September 2003. Gage-height records collected in this vicinity since 1879 are in reports of the National Weather Service.

GAGE.--Water-stage and velocity-index recorder. Datum of gage is 1.55 ft above sea level (levels by National Weather Service).

REMARKS.--Water-discharge records fair above 25,000 ft^3/s, poor below. Flow regulated by many reservoirs upstream. Many diversions for irrigation upstream from station. Flow affected by tide, which can cause reverse flow during tidal cycle, during low flow periods. Mean discharge values are based on 24 hour day, not a tidal cycle.

AVERAGE DISCHARGE.--31 years (water years 1973-2003), 33,330 ft^3/s, 24,150,000 acre-ft/yr. Water years include routed discharges from 1995 to 2003.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 283,000 ft^3/s Jan. 18, 1974; maximum gage height, 23.84 ft Jan. 18, 1974; minimum daily discharge, 4,200 ft^3/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, 160,000 ft^3/s Feb. 1; maximum gage height, 14.10 ft Feb. 1; minimum daily discharge, 7,100 ft^3/s July 24, Aug. 23.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e11000	e10000	e9800	e120000	e160000	e26000	e62000	32300	e20000	e9200	e7400	e7300
2	e11000	e10000	e9800	e110000	e140000	e25000	e58000	31600	e19000	e9100	e7400	e7400
3	e12000	e9900	e9400	e110000	e130000	e24000	51800	31600	e19000	e9000	e7400	e7500
4	e12000	e9700	e8800	e110000	e110000	e24000	47700	33000	e19000	e8800	e7800	e7800
5	e13000	e9600	e9000	e120000	e91000	e24000	50800	27700	e19000	e8800	e7400	e7600
6	e12000	e9900	e9000	e100000	e79000	e28000	47300	30000	e19000	e9000	e7800	e7700
7	e12000	e10000	e8800	e86000	e69000	e53000	52100	29200	e18000	e9000	e7800	e7800
8	e12000	e11000	e8400	e73000	e61000	e92000	52100	29500	e18000	e8600	e7900	e8000
9	e11000	e13000	e7700	e64000	e53000	e100000	48600	24200	e18000	e8800	e7900	e8700
10	e11000	e15000	e7900	e56000	e46000	e100000	46900	25700	e18000	e8500	e7900	e9200
11	e11000	e18000	e10000	e49000	e41000	e88000	45500	25200	e16000	e8300	e7600	e9700
12	e11000	e19000	e16000	e47000	e36000	e80000	50000	e26000	e16000	e8400	e7600	e10000
13	e11000	e19000	e23000	e55000	e32000	e80000	55200	e26000	e15000	e8300	e7500	e10000
14	e11000	e19000	e29000	e63000	e28000	e79000	59800	e25000	e14000	e8300	e7400	e10000
15	e10000	e19000	e38000	e62000	e26000	e75000	59400	e24000	e13000	e8500	e7400	e10000
16	e11000	e17000	e54000	e54000	e26000	e68000	53600	e24000	e13000	e8400	e7300	e9900
17	e11000	e17000	e66000	e47000	e31000	e60000	53400	e24000	e12000	e8000	e7700	e10000
18	e11000	e17000	e63000	e41000	e50000	e54000	46500	e24000	e11000	e8100	e7600	e10000
19	e11000	e17000	e56000	e36000	e56000	e48000	e44000	e24000	e11000	e8000	e7300	e10000
20	e11000	e17000	e49000	e32000	e53000	e46000	e42000	e23000	e10000	e7900	e7300	e9900
21	e11000	e17000	e46000	e28000	e50000	e49000	39900	e22000	e11000	e8000	e7300	e9900
22	e11000	e16000	e49000	e28000	e50000	e79000	37800	e22000	e11000	e7600	e7400	e10000
23	e11000	e14000	e45000	e31000	e48000	e100000	42400	e22000	e11000	e7300	e7100	e9700
24	e11000	e14000	e39000	e33000	e43000	e100000	e47000	e22000	e11000	e7100	e7600	e9700
25	e11000	e13000	e34000	e37000	e38000	e93000	e54000	e22000	e11000	e7200	e7600	e9700
26	e11000	e13000	e31000	e51000	e34000	e88000	54900	e22000	e10000	e7300	e7600	e9600
27	e11000	e12000	e41000	e68000	e31000	e91000	51300	e21000	e9900	e7600	e7500	e9700
28	e11000	e12000	e58000	e72000	e28000	e93000	46000	e20000	e9600	e7800	e7500	e9700
29	e11000	e11000	e75000	e71000	---	e88000	39100	e20000	e9500	e7600	e7200	e9700
30	e11000	e10000	e81000	e97000	---	e78000	36000	e20000	e9400	e7500	e7400	e9700
31	e11000	---	e110000	e130000	---	e68000	---	e20000	---	e7300	e7300	---
TOTAL	347000	419100	1101600	2081000	1640000	2101000	1475100	773000	421400	253300	232900	275900
MEAN	11190	13970	35540	67130	58570	67770	49170	24940	14050	8171	7513	9197
MAX	13000	19000	110000	130000	160000	100000	62000	33000	20000	9200	7900	10000
MIN	10000	9600	7700	28000	26000	24000	36000	20000	9400	7100	7100	7300
AC-FT	688300	831300	2185000	4128000	3253000	4167000	2926000	1533000	835800	502400	462000	547200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2003, BY WATER YEAR (WY)

MEAN	15880	39820	68750	66190	55490	45200	35770	26670	18020	9560	8480	11210
MAX	28860	98410	155600	124200	149500	77790	72060	46730	38730	15870	11850	17350
(WY)	1998	1974	1997	1997	1996	1974	1993	1993	1984	1983	1993	1978
MIN	8915	10300	8894	8795	8050	17980	17630	11150	7125	6541	6136	7460
(WY)	1988	1988	1977	1977	1977	1978	1977	1973	1992	1973	1973	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1973 - 2003	
ANNUAL TOTAL	10344600		11121300			
ANNUAL MEAN	28340		30470		33330	
HIGHEST ANNUAL MEAN					54490	1974
LOWEST ANNUAL MEAN					13710	1977
HIGHEST DAILY MEAN	130000	Jan 27	160000	Feb 1	420000	Feb 9 1996
LOWEST DAILY MEAN	7700	Dec 9	7100	Jul 24	4200	Jul 10 1978
ANNUAL SEVEN-DAY MINIMUM	8110	Aug 13	7370	Aug 18	5260	Jul 31 1973
ANNUAL RUNOFF (AC-FT)	20520000		22060000		24150000	
10 PERCENT EXCEEDS	66000		72400		77400	
50 PERCENT EXCEEDS	19000		18000		20900	
90 PERCENT EXCEEDS	8700		7600		8260	

e Estimated

14211720 WILLAMETTE RIVER AT PORTLAND, OR
(National stream quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: December 1975 to September 1981, November 2001 to current year.
WATER TEMPERATURE: November 1975 to September 1981, November 2001 to current year.

REMARKS.--Specific conductance records good, water-temperature records good except for the period Oct. 1 to May 19, which are fair.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily recorded, 144 microsiemens July 27, 2003; minimum, 42 microsiemens Apr. 15, 16, 2002.
WATER TEMPERATURE: Maximum, 27.5°C July 29, Aug. 7, 8, 1978; minimum, 0.0°C Jan. 3-10, 1979.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 144 microsiemens July 27; minimum, 51 microsiemens Mar. 28, 29.
WATER TEMPERATURE: Maximum, 25.8°C July 29, 30; minimum, 5.9°C Jan. 11.

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	85	84	85	84	82	83	83	82	82	69	62	66
2	85	82	83	86	84	85	106	82	84	62	60	61
3	82	82	82	86	85	86	85	83	83	64	61	62
4	84	82	82	86	85	85	86	85	85	66	62	65
5	84	80	82	86	85	86	87	86	86	62	60	61
6	81	80	80	86	85	85	89	87	88	62	60	61
7	81	79	80	86	85	86	95	89	90	64	61	63
8	81	79	80	87	86	86	105	91	92	66	64	65
9	81	79	80	88	87	87	92	91	92	66	65	66
10	81	80	80	89	87	88	93	92	92	68	66	67
11	82	80	81	88	87	87	95	92	94	71	68	70
12	82	81	82	87	85	86	96	94	95	72	71	72
13	82	81	82	90	85	87	105	95	101	73	72	72
14	84	81	82	89	84	87	105	102	103	76	73	75
15	85	82	83	---	---	---	104	86	96	76	74	75
16	90	84	85	78	77	77	86	82	85	75	74	74
17	85	84	84	78	76	77	82	76	77	75	74	75
18	84	82	84	78	77	77	76	74	74	76	75	76
19	84	81	82	77	76	77	78	74	76	77	76	77
20	84	82	83	77	75	76	80	77	78	78	77	77
21	84	81	82	77	76	77	80	79	79	80	78	79
22	84	81	83	77	75	76	79	78	78	82	80	81
23	85	82	84	76	75	75	80	79	80	82	81	81
24	84	82	84	77	75	76	80	79	80	84	81	82
25	84	82	84	76	74	75	80	80	80	87	84	85
26	82	81	82	76	74	75	82	80	81	86	81	83
27	82	81	82	78	76	77	82	80	81	81	70	74
28	85	82	83	79	78	78	80	77	79	71	61	67
29	85	82	84	82	79	81	81	74	79	61	59	60
30	84	82	84	82	81	82	74	69	72	59	57	58
31	84	82	83	---	---	---	69	67	68	60	57	58
MONTH	90	79	82	---	---	---	106	67	84	87	57	71

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	57	53	54	78	76	77	59	57	59	73	72	72
2	55	53	54	80	78	80	60	59	59	76	73	74
3	57	55	56	82	80	81	60	59	59	76	74	75
4	59	57	58	83	82	83	61	59	60	75	75	75
5	60	58	59	84	83	84	64	61	62	76	73	75
6	62	60	61	84	83	84	68	63	66	74	72	73
7	64	62	63	83	70	78	70	68	70	73	68	70
8	65	63	64	71	65	67	70	66	68	68	64	65
9	67	65	66	65	53	58	67	66	67	65	64	64
10	69	67	68	56	53	55	67	65	66	68	65	67
11	71	69	70	57	56	56	65	63	64	70	68	69
12	73	71	72	58	57	57	63	62	63	71	69	70
13	74	73	74	58	57	57	63	62	63	70	69	70
14	75	74	74	57	55	56	68	63	65	71	70	70
15	78	75	76	57	55	56	72	68	71	73	71	72
16	81	78	79	60	57	59	72	67	69	73	72	72
17	83	81	82	62	60	61	67	65	65	73	71	72
18	87	83	85	65	62	63	65	63	64	73	71	72
19	87	82	85	66	64	65	64	62	63	74	72	73
20	82	76	78	68	66	67	63	62	62	72	71	72
21	76	75	75	69	68	69	63	63	63	71	69	70
22	75	73	74	70	62	67	65	63	64	69	68	69
23	73	71	72	62	54	59	66	64	64	70	69	69
24	71	69	70	54	53	54	---	---	---	70	69	69
25	71	69	70	56	54	55	---	---	---	71	70	70
26	73	70	71	59	56	57	73	70	72	72	70	71
27	75	72	73	56	53	54	70	69	69	72	71	71
28	76	74	75	53	51	52	71	69	70	71	70	70
29	---	---	---	53	51	52	71	70	70	70	68	69
30	---	---	---	55	53	54	72	70	71	69	68	69
31	---	---	---	57	55	56	---	---	---	70	69	69
MONTH	87	53	70	84	51	64	---	---	---	76	64	71

14211720 WILLAMETTE RIVER AT PORTLAND, OR--Continued

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	69	68	69	93	89	90	102	96	97	93	91	92
2	69	68	68	91	88	90	101	96	97	94	92	93
3	69	68	68	91	88	89	108	97	99	104	92	94
4	69	67	68	93	90	91	106	97	98	102	92	93
5	68	67	68	---	---	---	106	96	98	94	91	92
6	68	67	68	---	---	---	106	96	99	93	92	93
7	67	65	66	95	90	92	108	97	100	96	92	93
8	65	64	65	95	90	91	110	99	101	110	92	94
9	67	65	66	94	89	91	111	99	102	114	91	94
10	68	66	68	97	89	92	104	100	101	92	90	91
11	69	67	68	96	91	93	104	99	101	92	90	91
12	69	68	68	97	93	95	106	100	102	95	90	92
13	69	67	68	99	94	96	107	101	103	97	94	96
14	69	67	68	99	92	94	104	100	101	97	94	95
15	72	69	70	99	94	96	104	100	101	94	92	93
16	74	71	72	99	93	95	103	98	100	94	92	93
17	76	73	74	95	92	93	105	97	99	93	91	92
18	81	75	78	95	92	93	107	96	99	95	91	92
19	85	79	81	96	94	94	105	95	100	94	90	91
20	84	83	83	97	94	96	103	96	100	93	89	91
21	86	84	85	98	94	95	106	97	100	93	89	91
22	88	86	87	96	93	94	104	97	100	94	89	90
23	89	87	88	101	94	95	102	97	98	92	89	90
24	89	88	88	97	94	95	102	96	97	96	89	91
25	---	---	---	97	94	95	102	95	97	125	89	93
26	---	---	---	99	95	97	101	94	96	92	89	90
27	93	92	93	144	97	102	100	94	97	92	90	91
28	93	91	92	103	97	99	99	94	96	94	90	92
29	93	91	92	107	98	100	98	95	96	95	92	93
30	92	90	91	108	98	100	96	91	94	94	91	92
31	---	---	---	104	97	99	94	91	92	---	---	---
MONTH	---	---	---	---	---	---	111	91	99	125	89	92

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	17.8	17.2	17.4	11.0	10.2	10.6	8.3	7.7	8.1	7.5	7.3	7.4
2	17.2	16.9	17.0	10.2	9.6	9.9	7.9	7.5	7.7	7.9	7.5	7.7
3	16.9	16.4	16.6	9.6	9.4	9.5	7.5	7.1	7.3	7.9	7.7	7.9
4	16.4	16.1	16.4	9.4	9.2	9.4	7.1	6.9	7.0	8.3	7.9	8.2
5	16.1	15.5	15.9	9.2	8.8	9.1	6.9	6.6	6.8	8.3	8.1	8.1
6	15.5	15.0	15.4	9.0	8.3	8.7	6.8	6.6	6.6	8.1	7.7	8.0
7	15.0	14.8	15.0	8.3	8.1	8.2	6.7	6.5	6.6	7.7	7.1	7.4
8	14.8	14.5	14.8	8.1	7.9	8.1	6.5	6.5	6.5	7.1	6.6	6.9
9	14.8	14.5	14.7	8.1	7.9	8.1	6.5	6.5	6.5	6.6	6.2	6.3
10	15.0	14.7	14.9	8.7	8.1	8.4	6.7	6.5	6.5	6.2	6.0	6.1
11	15.3	15.0	15.1	9.3	8.5	8.9	6.9	6.5	6.7	6.1	5.9	5.9
12	15.0	15.0	15.0	9.9	9.3	9.6	7.1	6.9	6.9	6.2	6.0	6.1
13	15.3	14.7	14.9	9.9	9.9	9.9	7.1	6.9	6.9	6.4	6.2	6.2
14	15.0	14.7	14.8	10.1	9.9	9.9	7.2	6.7	7.0	7.1	6.4	6.7
15	14.8	14.5	14.7	9.9	9.7	9.9	8.2	7.2	7.7	7.3	7.1	7.2
16	14.8	14.2	14.4	9.9	9.7	9.8	8.4	8.2	8.3	7.3	7.1	7.2
17	14.3	13.7	14.0	9.9	9.9	9.9	8.4	8.2	8.3	7.3	6.9	7.1
18	13.7	13.5	13.6	9.9	9.9	9.9	8.2	7.8	8.0	6.9	6.8	6.8
19	13.7	13.5	13.5	9.9	9.6	9.8	7.8	7.4	7.6	6.8	6.4	6.7
20	13.7	13.5	13.5	9.8	9.6	9.6	7.4	7.0	7.2	6.4	6.2	6.4
21	14.0	13.7	13.8	9.6	9.6	9.6	7.0	7.0	7.0	6.2	6.1	6.2
22	14.2	14.0	14.1	9.8	9.6	9.6	7.2	7.0	7.0	6.2	6.1	6.2
23	14.2	14.0	14.1	9.8	9.6	9.8	7.2	7.2	7.2	6.4	6.2	6.3
24	14.2	14.0	14.1	10.0	9.8	9.9	7.2	7.0	7.1	7.0	6.4	6.7
25	14.2	14.0	14.0	10.0	9.8	9.8	7.0	6.9	7.0	7.9	7.0	7.4
26	14.0	13.6	13.7	9.8	9.4	9.6	7.0	6.9	6.9	8.7	7.9	8.3
27	13.6	13.1	13.3	9.4	9.2	9.2	7.0	6.9	7.0	9.1	8.7	8.8
28	13.1	12.9	13.0	9.2	9.0	9.1	7.2	6.9	7.0	9.1	8.9	9.1
29	12.9	12.2	12.6	9.1	8.7	8.9	7.4	7.2	7.3	8.9	8.5	8.7
30	12.2	11.7	11.9	8.7	8.3	8.5	7.4	7.2	7.4	8.5	8.3	8.4
31	11.7	10.8	11.3	---	---	---	7.4	7.2	7.3	9.1	8.3	8.7
MONTH	17.8	10.8	14.4	11.0	7.9	9.4	8.4	6.5	7.2	9.1	5.9	7.3

14211720 WILLAMETTE RIVER AT PORTLAND, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.3	9.1	9.2	6.7	6.1	6.4	11.0	10.6	10.8	12.2	11.3	11.7
2	9.3	8.9	9.1	7.0	6.7	6.9	11.0	10.2	10.5	12.9	11.7	12.4
3	8.9	8.7	8.8	7.2	6.9	7.0	10.2	9.3	9.7	13.1	12.4	12.8
4	8.7	8.1	8.5	7.4	7.2	7.3	9.4	9.0	9.1	13.1	12.6	12.9
5	8.1	7.7	7.9	7.6	7.4	7.5	9.0	8.4	8.7	13.1	12.9	12.9
6	7.7	7.1	7.3	7.8	7.6	7.7	8.8	8.4	8.5	12.9	12.4	12.6
7	7.1	6.8	6.9	7.8	7.6	7.6	9.2	8.8	9.0	12.4	11.7	12.2
8	6.8	6.4	6.6	8.0	7.6	7.7	9.8	9.2	9.3	11.7	11.5	11.6
9	6.6	6.2	6.4	8.4	7.8	8.1	10.4	9.8	10.1	11.5	11.3	11.4
10	6.4	6.2	6.3	9.0	8.4	8.7	10.9	10.4	10.6	11.5	11.3	11.4
11	6.4	6.2	6.3	9.4	9.0	9.1	11.2	10.9	11.1	11.9	11.5	11.6
12	6.6	6.2	6.4	9.6	9.4	9.5	11.4	11.2	11.3	12.1	11.6	11.8
13	6.8	6.2	6.6	9.6	9.4	9.5	11.4	11.2	11.3	12.6	11.9	12.2
14	7.0	6.6	6.8	9.4	9.2	9.4	11.6	11.2	11.3	13.5	12.6	13.0
15	7.1	6.8	7.0	9.4	9.2	9.4	11.4	10.9	11.2	13.8	13.3	13.5
16	7.3	7.0	7.1	9.6	9.2	9.3	11.2	10.7	10.9	14.0	13.5	13.7
17	7.9	7.3	7.6	9.6	9.4	9.5	10.9	10.7	10.8	14.0	13.5	13.7
18	8.3	7.9	8.1	9.6	9.2	9.3	10.9	10.7	10.8	13.8	13.3	13.5
19	8.3	7.9	8.0	9.4	8.8	9.0	11.2	10.7	11.0	13.5	12.8	13.2
20	7.9	7.9	7.9	9.0	8.8	8.9	11.2	10.9	10.9	13.3	13.0	13.2
21	8.1	7.9	8.1	9.1	8.8	8.9	11.2	10.9	11.1	13.8	12.8	13.2
22	8.3	8.1	8.3	9.3	9.1	9.1	11.2	10.7	11.0	14.6	13.3	13.8
23	8.3	8.1	8.2	9.1	8.9	8.9	11.2	10.7	11.0	15.4	14.0	14.7
24	8.1	7.5	7.8	8.9	8.7	8.7	---	---	---	16.2	15.1	15.5
25	7.5	6.8	7.3	8.7	8.5	8.7	10.7	10.3	10.5	16.5	15.6	16.1
26	6.9	6.4	6.8	8.9	8.5	8.8	10.3	10.0	10.1	17.0	15.9	16.5
27	6.6	6.2	6.3	8.9	8.7	8.9	10.2	9.8	10.0	17.6	16.4	16.9
28	6.2	6.1	6.2	8.9	8.9	8.9	10.6	10.2	10.3	17.3	16.8	17.0
29	---	---	---	9.4	8.9	9.1	11.1	10.6	10.9	17.0	16.5	16.7
30	---	---	---	10.0	9.4	9.7	11.5	11.1	11.4	16.8	16.2	16.4
31	---	---	---	10.6	10.0	10.4	---	---	---	17.3	16.4	16.8
MONTH	9.3	6.1	7.4	10.6	6.1	8.6	---	---	---	17.6	11.3	13.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	17.3	16.7	17.0	20.6	19.9	20.2	25.3	24.5	24.9	21.8	21.4	21.7
2	17.3	16.7	17.1	21.4	20.4	20.9	24.9	24.1	24.5	22.1	21.4	21.8
3	17.1	16.6	16.8	22.5	21.1	21.6	24.5	24.1	24.1	22.9	21.8	22.1
4	17.4	16.6	16.9	22.5	21.8	22.1	24.5	23.7	24.0	22.9	21.8	22.2
5	18.0	17.1	17.4	---	22.1	---	24.1	23.7	24.0	22.9	21.8	22.3
6	19.0	17.8	18.2	---	---	---	24.9	23.7	24.0	22.5	22.1	22.3
7	19.3	18.4	18.8	23.3	22.5	22.7	25.3	23.7	24.3	22.5	22.1	22.1
8	19.6	18.7	19.2	22.9	22.1	22.4	24.5	24.1	24.1	22.1	21.8	21.8
9	19.6	19.0	19.4	22.9	22.1	22.3	24.1	23.7	23.9	21.8	21.1	21.4
10	19.6	19.3	19.4	23.3	22.1	22.7	23.7	23.3	23.5	21.1	20.7	21.1
11	19.3	19.0	19.2	23.7	22.5	23.0	23.7	22.9	23.2	20.7	20.7	20.7
12	19.0	18.0	18.7	23.3	22.5	23.0	23.3	22.5	22.8	20.7	20.4	20.6
13	18.3	17.7	18.1	23.3	22.9	23.1	22.9	22.1	22.5	20.4	20.0	20.3
14	18.0	17.4	17.7	24.1	22.9	23.5	23.3	22.1	22.8	20.0	19.4	19.7
15	18.3	17.4	17.9	23.7	23.3	23.5	22.9	22.9	22.9	19.4	18.7	19.1
16	19.0	17.7	18.2	23.7	23.3	23.4	23.3	22.9	23.0	18.8	18.4	18.5
17	19.6	18.0	18.7	24.1	23.3	23.6	23.7	22.9	23.2	18.4	18.1	18.1
18	19.0	18.3	18.6	24.5	23.3	23.8	23.7	23.3	23.3	18.4	17.8	18.2
19	18.3	18.3	18.3	24.5	23.7	24.0	24.1	22.9	23.3	18.1	17.8	18.0
20	18.6	18.3	18.4	24.9	23.7	24.2	23.3	22.9	23.1	18.1	17.8	17.9
21	19.0	18.3	18.7	24.9	24.1	24.3	24.1	22.9	23.3	18.4	17.8	17.9
22	19.3	18.6	18.9	24.9	24.1	24.4	23.7	22.9	23.1	18.1	17.5	17.8
23	19.3	18.9	19.0	24.9	24.1	24.5	22.9	22.5	22.7	18.1	17.8	17.8
24	19.3	18.6	18.9	24.9	24.1	24.5	23.3	22.5	22.7	18.4	17.8	17.9
25	---	---	---	24.9	24.1	24.5	23.3	22.5	22.8	18.4	17.8	18.0
26	19.3	18.3	18.8	24.9	24.1	24.5	22.9	22.5	22.7	18.4	18.1	18.2
27	20.0	18.7	19.2	24.9	24.1	24.5	22.5	22.5	22.5	18.5	18.1	18.3
28	20.0	19.0	19.5	25.3	24.5	24.7	22.9	22.1	22.4	18.8	18.4	18.6
29	20.6	19.3	19.9	25.8	24.5	25.1	22.5	22.1	22.2	18.8	18.4	18.5
30	20.6	19.9	20.1	25.8	24.9	25.3	22.2	21.8	22.0	18.8	18.4	18.6
31	---	---	---	25.3	24.9	25.1	22.1	21.8	21.8	---	---	---
MONTH	---	---	---	---	---	---	25.3	21.8	23.2	22.9	17.5	19.7

14211814 FAIRVIEW CREEK AT GLISAN STREET, NEAR GRESHAM, OR

LOCATION.--Lat 45°31'40", long 122°26'51", in Land Grant parcel number 58, T.1 N., R.3 E., Multnomah County, Hydrologic Unit 17090012, on right bank at upstream side of culvert on Glisan St., 0.4 mi east of the intersection of 202nd Ave. and Glisan St., 1.7 mi northwest of Gresham City Hall, and at mile 3.05.

DRAINAGE AREA.--4.94 mi^2.

PERIOD OF RECORD.--May 1992 to current year.

GAGE.--Water-stage recorder. Datum of gage is 205 ft above NGVD of 1929, from topographic map.

REMARKS.--Records poor. No regulation or diversion. High flows affected to an unknown degree by two small ponds just upstream from station.

AVERAGE DISCHARGE.--11 years (water years 1993-2003), 5.57 ft^3/s, 15.32 in/yr, 4,030 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 119 ft^3/s Jan. 31, 2003, gage height, 6.56 ft; minimum discharge, 0.24 ft^3/s Sept. 15, 1995.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 30 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	1030	30	5.20	Feb. 17	2300	31	5.21
Dec. 31	0330	39	5.40	Mar. 7	1430	51	5.64
Jan. 31	1930	*119	*6.56				

Minimum discharge, 0.27 ft^3/s Nov. 2, 3.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	0.30	0.37	11	e34	2.2	10	4.6	2.1	1.3	0.94	0.78
2	1.7	0.27	0.39	10	e16	2.1	8.8	4.2	2.1	1.3	0.93	0.74
3	1.7	0.28	0.40	16	e9.5	2.5	7.3	4.0	2.0	1.2	0.93	0.71
4	3.3	0.30	0.40	16	e7.0	2.3	6.1	5.9	2.1	1.2	0.93	0.71
5	1.8	0.30	0.40	11	e5.0	2.4	4.8	8.4	2.0	1.3	0.93	0.71
6	1.3	0.30	0.42	5.7	4.3	4.7	8.8	6.5	1.9	1.3	0.89	0.71
7	1.1	0.31	0.42	4.3	3.8	34	7.0	4.8	1.9	1.3	0.89	0.71
8	0.96	1.1	0.44	3.4	3.4	21	5.8	4.9	1.9	1.3	0.88	8.4
9	0.85	2.1	0.52	3.0	3.2	18	6.3	4.2	1.8	1.2	0.85	6.9
10	0.84	2.8	4.7	2.7	2.9	9.4	6.5	3.6	1.7	1.2	0.88	3.8
11	0.81	1.6	11	2.5	2.7	6.0	6.7	3.4	1.6	1.2	0.87	1.7
12	0.74	1.7	9.2	7.8	2.5	8.5	6.2	4.0	1.6	1.2	0.81	1.2
13	0.67	2.5	17	8.3	2.3	12	16	4.2	1.7	1.2	0.81	1.0
14	0.71	2.6	13	8.9	2.3	8.0	8.1	3.5	1.9	1.2	0.81	0.88
15	0.69	1.7	6.9	4.3	2.4	6.6	5.4	3.5	1.9	1.2	0.81	0.78
16	0.68	1.2	21	2.8	4.8	5.7	4.7	5.3	1.7	1.2	0.81	2.5
17	0.71	1.6	10	2.4	15	4.8	15	7.3	1.6	1.2	0.80	7.8
18	0.71	1.8	7.3	2.1	20	4.1	12	8.3	1.6	1.2	0.95	2.9
19	0.71	3.0	5.2	2.0	7.8	4.5	6.4	5.2	1.5	1.2	0.97	1.5
20	0.69	2.1	2.9	1.9	5.9	6.2	5.1	3.7	1.5	1.1	0.94	1.2
21	0.58	1.4	6.8	1.9	5.4	6.9	5.5	3.4	2.0	1.1	0.93	0.98
22	0.52	1.1	5.7	4.3	4.6	19	5.9	3.4	2.8	1.1	0.88	0.81
23	0.44	0.91	4.1	7.5	3.6	12	6.2	3.3	2.2	1.1	0.85	0.77
24	0.42	0.77	2.7	5.2	2.9	7.2	15	3.1	1.7	1.1	0.81	0.83
25	0.41	0.65	2.7	5.4	2.7	6.1	8.3	2.8	1.6	1.1	0.81	0.88
26	0.39	0.54	4.4	13	2.5	12	7.6	2.8	1.6	1.0	0.78	1.1
27	0.38	0.37	14	9.3	2.5	8.8	5.8	2.5	1.5	1.1	0.78	0.89
28	0.37	0.35	8.8	5.0	2.4	5.8	4.7	2.5	1.4	1.1	0.78	0.79
29	0.38	0.35	9.7	8.4	---	5.0	6.0	2.5	1.4	1.1	0.78	0.74
30	0.42	0.35	17	29	---	4.5	5.5	2.3	1.3	1.1	0.78	0.74
31	0.35	---	28	e50	---	7.4	---	2.2	---	1.0	0.78	---
TOTAL	30.33	34.65	215.86	265.1	181.4	259.7	227.5	130.3	53.6	36.4	26.59	54.16
MEAN	0.98	1.16	6.96	8.55	6.48	8.38	7.58	4.20	1.79	1.17	0.86	1.81
MAX	5.0	3.0	28	50	34	34	16	8.4	2.8	1.3	0.97	8.4
MIN	0.35	0.27	0.37	1.9	2.3	2.1	4.7	2.2	1.3	1.0	0.78	0.71
AC-FT	60	69	428	526	360	515	451	258	106	72	53	107
CFSM	0.20	0.23	1.41	1.73	1.31	1.70	1.54	0.85	0.36	0.24	0.17	0.37
IN.	0.23	0.26	1.63	2.00	1.37	1.96	1.71	0.98	0.40	0.27	0.20	0.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2003, BY WATER YEAR (WY)

MEAN	2.86	6.18	9.53	10.3	9.55	8.70	6.15	5.10	3.60	2.10	1.42	1.54
MAX	6.77	11.8	20.2	16.8	19.2	17.7	8.81	8.55	6.14	4.76	3.67	3.16
(WY)	1998	1997	1997	1997	1999	1999	1999	1996	1999	1997	1997	1996
MIN	0.98	1.15	4.39	2.13	2.54	4.74	3.42	2.47	1.33	0.47	0.53	0.44
(WY)	2003	2003	1994	2001	1993	1993	2001	1994	2001	2001	1994	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1993 - 2003	
ANNUAL TOTAL	1517.08		1515.59			
ANNUAL MEAN	4.16		4.15		5.57	
HIGHEST ANNUAL MEAN					9.11	1997
LOWEST ANNUAL MEAN					2.55	2001
HIGHEST DAILY MEAN	32	Jan 25	50	Jan 31	71	Nov 19 1996
LOWEST DAILY MEAN	0.27	Nov 2	0.27	Nov 2	0.26	Sep 12 2001
ANNUAL SEVEN-DAY MINIMUM	0.29	Nov 1	0.29	Nov 1	0.27	Sep 8 2001
ANNUAL RUNOFF (AC-FT)	3010		3010		4030	
ANNUAL RUNOFF (CFSM)	0.84		0.84		1.13	
ANNUAL RUNOFF (INCHES)	11.42		11.41		15.32	
10 PERCENT EXCEEDS	11		9.2		13	
50 PERCENT EXCEEDS	2.0		2.1		3.5	
90 PERCENT EXCEEDS	0.50		0.69		0.81	

e Estimated

14211820 COLUMBIA SLOUGH AT PORTLAND, OR

LOCATION.--Lat 45°38'21", long 122°45'43", in NE 1/4 SE 1/4 sec.23, T.2 N., R.1 W., Multnomah County, Hydrologic Unit 17090012, on right bank, 0.25 mi upstream from mouth, and 1.25 mi upstream from confluence of Willamette and Columbia Rivers.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Acoustic velocity meter with water-stage and velocity-index recorder. Datum of gage is 1.53 ft above NGVD of 1929.

REMARKS.--Records poor. Flows affected by tide which can cause reverse direction during tidal cycle. Mean discharge values are based on a 24 hour day, not a tidal cycle.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,400 ft^3/s Dec. 5, 1995, but may have been greater Dec. 2-4, 1995, Feb. 10-14, 1996; maximum gage height, 27.26 ft Feb. 9, 1996; minimum daily discharge, -6,700 ft^3/s Feb. 7, 1996, but may have been less Nov. 29 to Dec. 3, 1995, Feb. 8, 9, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 873 ft^3/s Feb. 4; maximum gage height, 14.29 ft Feb. 1; minimum daily discharge, -1,470 ft^3/s Feb. 2.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	317	32	16	31	-1030	33	128	47	-384	-11	-60	27
2	80	-13	-21	124	-1470	53	31	99	252	-24	-26	80
3	21	24	3.1	151	738	42	150	194	350	97	52	26
4	12	-26	4.1	211	873	37	143	---	215	10	-7.2	70
5	79	3.0	12	186	812	-24	107	---	105	-4.3	70	88
6	51	-0.10	16	218	506	54	73	---	99	49	73	33
7	-24	-30	37	178	272	206	124	-22	20	68	46	6.0
8	---	-18	76	108	314	49	128	212	-13	54	29	16
9	---	96	44	161	287	99	114	---	69	-19	-11	-15
10	---	137	66	205	193	148	78	---	35	-75	-42	1.4
11	---	167	150	141	136	189	135	---	-167	0.24	-30	6.9
12	170	62	94	152	125	286	104	---	-227	-50	-83	2.8
13	101	153	146	129	83	51	119	-0.29	-33	7.6	15	12
14	73	199	85	116	56	90	28	-158	35	-131	-0.62	7.8
15	31	68	92	119	31	33	-38	-45	28	13	-5.1	-2.7
16	22	-14	56	102	104	39	-94	-52	178	1.8	47	-34
17	-7.5	37	140	60	186	57	63	6.2	8.4	-15	-26	72
18	72	25	76	45	177	24	-153	37	51	44	48	52
19	56	21	92	58	72	75	41	18	102	99	12	69
20	31	34	59	56	77	96	136	105	262	43	80	68
21	-30	23	112	52	106	87	153	44	213	20	33	50
22	42	32	92	53	158	12	---	47	104	61	84	-19
23	-12	35	86	117	189	135	---	13	66	30	48	-50
24	24	40	90	110	158	191	200	-46	52	39	11	-26
25	14	100	25	108	113	88	144	91	5.5	19	-70	3.5
26	54	67	154	108	59	140	-92	-18	-98	69	-40	-34
27	133	57	107	35	77	-91	75	-105	16	-26	-85	-73
28	29	73	137	26	58	-42	75	-303	64	-7.4	66	10
29	92	74	132	67	---	73	42	-54	-80	-96	29	51
30	90	40	112	117	---	82	60	-331	34	0.36	-36	-1.1
31	96	---	-80	21	---	191	---	-408	---	41	-21	---
TOTAL	---	1497.90	2210.2	3365	3460	2503	---	---	1361.9	307.30	200.08	497.6
MEAN	---	49.9	71.3	109	124	80.7	---	---	45.4	9.91	6.45	16.6
MAX	---	199	154	218	873	286	---	---	350	99	84	88
MIN	---	-30	-80	21	-1470	-91	---	---	-384	-131	-85	-73
AC-FT	---	2970	4380	6670	6860	4960	---	---	2700	610	397	987

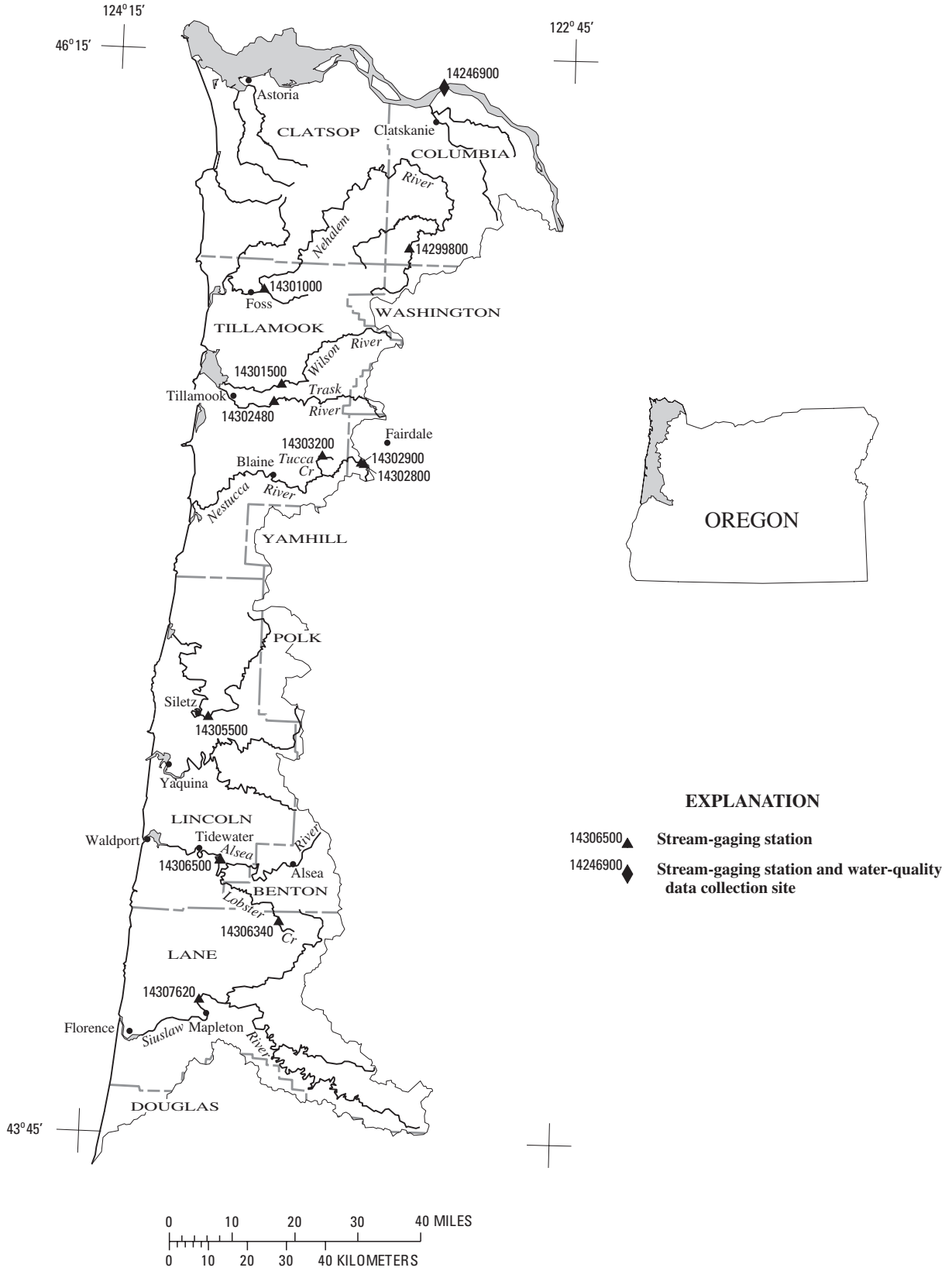


Figure 28. Location of surface-water and water-quality stations in the Oregon Coastal Drainages north of the Siuslaw River Basin and in the lower Columbia River.

14246900 COLUMBIA RIVER AT BEAVER ARMY TERMINAL, NEAR QUINCY, OR

LOCATION.--Lat 46°10'55", long 123°10'50", in NE 1/4 sec.16, T.8 N., R.4 W., Columbia County, Hydrologic Unit 17080003, on left bank, 0.7 mi downstream from Crims Island, 3.0 mi northwest of Quincy, and at mile 53.8.

DRAINAGE AREA.--256,900 mi^2, approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1968 to June 1970, June 1991 to current year.

GAGE.--Water-stage and velocity index recorder. Datum of gage is 0.52 ft above NGVD of 1929. May 1968 to June 1970 water-stage recorder with auxillary water-stage recorder 5.6 miles downstream, at datum 10.00 ft lower.

REMARKS.--Records fair. Flow regulated by many reservoirs on Columbia River and in tributary basins. Flows affected by tide which can cause reverse direction during tidal cycle when mean daily flows are less than 250,000 ft^3/s. Mean discharge values are based on a 24 hour day, not a tidal cycle.

AVERAGE DISCHARGE.--13 years (water years 1969, 1992-2003), 236,900 ft^3/s, 171,600,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 864,000 ft^3/s Feb. 10, 1996; minimum daily discharge, 63,600 ft^3/s Sept. 9, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 503,000 ft^3/s Feb. 1; maximum gage height, 9.30 ft Jan. 2; minimum daily discharge, 82,900 ft^3/s Sept. 15.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	114000	156000	156000	274000	503000	175000	e340000	317000	372000	178000	129000	128000
2	114000	157000	148000	279000	501000	166000	309000	306000	358000	178000	146000	112000
3	117000	151000	152000	287000	456000	164000	321000	292000	332000	155000	135000	93400
4	136000	134000	154000	287000	424000	182000	303000	289000	326000	121000	111000	105000
5	e95000	136000	142000	306000	364000	187000	295000	291000	316000	142000	129000	115000
6	101000	126000	142000	289000	309000	215000	300000	299000	296000	144000	125000	103000
7	102000	122000	146000	269000	275000	231000	302000	326000	287000	117000	127000	111000
8	116000	127000	158000	247000	260000	299000	305000	318000	284000	141000	137000	e96000
9	117000	152000	147000	259000	229000	337000	306000	308000	287000	144000	132000	96000
10	149000	171000	144000	235000	204000	340000	309000	302000	282000	174000	140000	107000
11	159000	171000	162000	209000	202000	319000	312000	283000	300000	185000	125000	86600
12	154000	157000	154000	203000	191000	291000	302000	262000	315000	172000	134000	86200
13	108000	173000	170000	206000	184000	288000	301000	255000	307000	166000	150000	92000
14	116000	172000	164000	222000	182000	310000	310000	259000	286000	147000	138000	91200
15	137000	163000	192000	224000	169000	295000	310000	300000	288000	163000	127000	82900
16	126000	151000	201000	209000	159000	298000	319000	303000	251000	149000	127000	84800
17	120000	165000	258000	201000	165000	303000	317000	301000	249000	160000	125000	123000
18	132000	156000	262000	183000	187000	302000	337000	301000	269000	165000	119000	100000
19	116000	159000	245000	177000	208000	296000	336000	297000	271000	133000	151000	105000
20	96300	160000	213000	170000	221000	290000	318000	289000	246000	114000	142000	92900
21	102000	151000	200000	168000	209000	286000	298000	275000	203000	145000	155000	95300
22	117000	153000	203000	169000	224000	299000	304000	287000	192000	153000	149000	107000
23	119000	155000	195000	184000	213000	349000	320000	295000	198000	149000	144000	129000
24	128000	156000	190000	184000	207000	340000	341000	303000	199000	169000	128000	127000
25	132000	163000	170000	189000	182000	321000	333000	304000	186000	158000	133000	109000
26	151000	166000	185000	202000	189000	332000	336000	308000	212000	145000	142000	114000
27	131000	174000	165000	247000	191000	358000	352000	315000	227000	135000	157000	115000
28	127000	156000	199000	271000	173000	382000	317000	326000	208000	127000	154000	122000
29	152000	151000	219000	294000	---	381000	321000	326000	183000	146000	119000	105000
30	141000	152000	211000	305000	---	348000	320000	324000	188000	145000	103000	102000
31	155000	---	246000	372000	---	325000	---	358000	---	134000	121000	---
TOTAL	3880300	4636000	5693000	7321000	6981000	9009000	9494000	9319000	7918000	4654000	4154000	3136300
MEAN	125200	154500	183600	236200	249300	290600	316500	300600	263900	150100	134000	104500
MAX	159000	174000	262000	372000	503000	382000	352000	358000	372000	185000	157000	129000
MIN	95000	122000	142000	168000	159000	164000	295000	255000	183000	114000	103000	82900
AC-FT	7697000	9196000	11290000	14520000	13850000	17870000	18830000	18480000	15710000	9231000	8239000	6221000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2003, BY WATER YEAR (WY)

MEAN	143400	193500	263000	285100	280000	258400	276600	331500	317800	208900	155900	126300
MAX	212300	256500	430800	444300	543400	388700	406500	507500	514500	279300	223000	177300
(WY)	1998	1996	1996	1997	1996	1997	1969	1997	1997	1997	1999	1997
MIN	98380	136100	175400	153400	141500	142100	150500	174700	151700	98390	106300	90080
(WY)	2002	1994	1994	2001	2001	2001	2001	2001	2001	2001	2001	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1969 - 2003	
ANNUAL TOTAL	78176600		76195600			
ANNUAL MEAN	214200		208800		236900	
HIGHEST ANNUAL MEAN					338200	1997
LOWEST ANNUAL MEAN					140000	2001
HIGHEST DAILY MEAN	464000	Apr 18	503000	Feb 1	864000	Feb 10 1996
LOWEST DAILY MEAN	88500	Sep 9	82900	Sep 15	63600	Sep 9 2001
ANNUAL SEVEN-DAY MINIMUM	97300	Sep 8	90100	Sep 10	78700	Sep 5 2001
ANNUAL RUNOFF (AC-FT)	155100000		151100000		171600000	
10 PERCENT EXCEEDS	337000		320000		383000	
50 PERCENT EXCEEDS	195000		183000		214000	
90 PERCENT EXCEEDS	120000		116000		123000	

e Estimated

14246900 COLUMBIA RIVER AT BEAVER ARMY TERMINAL, NEAR QUINCY, OR--Continued
(National stream quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--August 1967 to September 1970, October 1993 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1993 to current year.
WATER TEMPERATURE: August 1967 to September 1970. October 1993 to current year.
TURBIDITY: February 2001 to current year.

INSTRUMENTATION.--Temperature recorder August 1967 to September 1970. Water-quality monitor.

REMARKS.--Specific conductance, water temperature and turbidity records good. The probe was checked using a formazin standard. Since February, 1994, specific conductance and temperature sensors located near right bank. Prior to that time, sensors were located near left bank. It was determined that daily record collected prior to February 1994 is not representative of the cross section due to a seasonal influence from several upstream sloughs. Additional specific conductance and temperatu 16 UG/L have been designated as estimated due to a change in the minimum reporting level effective December 22, 1997.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 188 microsiemens Feb. 5, 1994, but may have been higher during periods of missing record; minimum recorded, 73 microsiemens Feb. 9, 1996, but may have been lower during periods of missing record.
WATER TEMPERATURE: Maximum, 24.0°C July 28, 1998; minimum, 0.0°C Jan. 31, Feb. 1, 1969.
TURBIDITY: Maximum, 221 NTU Feb. 1, 2003; minimum, <1 NTU Mar. 2, 2001.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum recorded, 174 microsiemens Dec. 2, 6; minimum recorded, 85 microsiemens Feb. 1.
WATER TEMPERATURE: Maximum, 23.1°C July 30; minimum, 5.8°C Jan. 13, 14, Feb. 27.
TURBIDITY: Maximum, 221 NTU Feb. 1; minimum, 1 NTU Sept. 27, 28, 30.

WATER-QUALITY DATA

Date	Time	Dis-charge, cfs (00060)	Turbid-ity, wat unf lab, Hach 2100AN NTU (99872)	Tur-bidity, NTU (00076)	Baro-metric pres-sure, mm Hg (00025)	Dis-solved oxygen, mg/L (00300)	Dis-solved oxygen, percent of sat-uration (00301)	pH, water, unfltrd field, std units (00400)	Specif. conduc-tance, wat unf uS/cm 25 degC (00095)	Temper-ature, water, deg C (00010)	Hard-ness, water, unfltrd mg/L as CaCO3 (00900)	Calcium water, fltrd, mg/L (00915)	Magnes-ium, water, fltrd, mg/L (00925)
OCT 2002													
16...	1210	126000	6.2	1.0	763	9.8	96	7.8	141	14.8	54	14.5	4.26
NOV													
14...	1140	172000	--	2.7	772	10.6	94	7.6	146	10.9	--	--	--
DEC													
09...	1150	147000	3.6	3.7	762	11.6	97	7.8	158	7.6	63	17.1	5.01
JAN 2003													
02...	0920	279000	--	19	--	12.4	--	7.4	107	7.2	--	--	--
16...	1300	209000	4.5	9.1	773	--	--	7.6	128	6.3	48	12.8	3.84
FEB													
03...	1350	456000	--	58	772	12.0	99	7.3	97	7.5	--	--	--
10...	1200	204000	E9.6	14	769	13.2	105	7.6	129	6.0	44	11.6	3.54
MAR													
10...	1330	340000	--	27	765	12.0	99	7.4	113	7.3	42	11.3	3.35
APR													
07...	1300	302000	--	9.5	765	11.7	100	7.6	142	8.8	--	--	--
MAY													
12...	1230	262000	--	4.4	766	--	--	8.1	129	12.2	--	--	--
JUN													
10...	1220	282000	4.5	10	761	10.0	103	7.5	102	16.7	40	11.2	2.92
JUL													
14...	1240	147000	6.3	8.3	764	9.7	107	7.7	124	20.5	49	13.5	3.68
AUG													
11...	1150	125000	--	7.1	766	8.8	100	7.5	127	22.3	--	--	--
SEP													
08...	1230	E96000	3.8	5.2	762	8.3	94	7.6	133	21.5	49	13.3	3.82

Date	Potas-sium, water, fltrd, mg/L (00935)	Sodium adsorp-tion ratio (00931)	Sodium, water, fltrd, mg/L (00930)	Sodium, percent (00932)	Alka-linity, wat flt inc tit field, mg/L as CaCO3 (39086)	Bicar-bonate, wat flt incrm. titr., field, mg/L (00453)	Carbon-ate, wat flt incrm. titr., field, mg/L (00452)	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti-tuents mg/L (70301)	Residue water, fltrd, tons/ acre-ft (70303)
OCT 2002													
16...	1.11	.4	6.12	19	52	63	0	3.66	<.17	8.88	9.4	80	.12
NOV													
14...	--	--	--	--	53	65	0	--	--	--	--	--	--
DEC													
09...	1.12	.4	6.89	19	61	74	0	3.98	<.17	8.44	11.4	92	.13
JAN 2003													
02...	--	--	--	--	39	47	--	--	--	--	--	--	--
16...	1.00	.4	6.05	21	46	56	--	4.30	<.17	11.1	8.4	77	.12
FEB													
03...	--	--	--	--	36	44	--	--	--	--	--	--	--
10...	.86	.3	5.19	20	47	57	--	3.26	.11	10.7	8.5	74	.12
MAR													
10...	.98	.4	5.88	23	40	49	--	2.72	.09	12.2	7.9	71	.11
APR													
07...	--	--	--	--	53	64	0	--	--	--	--	--	--
MAY													
12...	--	--	--	--	50	60	0	--	--	--	--	--	--
JUN													
10...	.98	.4	5.18	21	38	46	0	3.36	<.2	11.5	6.6	65	.09
JUL													
14...	.91	.3	4.58	17	48	58	0	3.11	<.2	8.35	7.7	71	.09
AUG													
11...	--	--	--	--	49	60	--	--	--	--	--	--	--
SEP													
08...	1.09	.4	6.00	21	51	62	0	3.83	<.2	8.88	8.7	77	.10

< -- Less than
E -- Estimated value

WATER-QUALITY DATA

Date	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia + org-N, water, fltrd, mg/L as N (00623)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Ortho-phos-phate, water, fltrd, mg/L as P (00671)	Phos-phorus, water, fltrd, mg/L (00666)	Phos-phorus, water, unfltrd mg/L (00665)	Phos-phorus, suspnd sedimnt total, percent (30292)	Total carbon, suspnd sedimnt total, percent (30244)	Total carbon, suspnd sedimnt total, mg/L (00694)	Inor-ganic carbon, suspnd sedimnt total, mg/L (00688)
OCT 2002													
16...	90	.10	.15	.033	.149	.005	.017	.022	.021	--	--	.3	<.1
NOV													
14...	--	--	--	--	--	--	--	--	--	--	--	.6	<.1
DEC													
09...	99	E.08	.14	.026	.259	.006	.018	.025	.024	--	--	.2	<.1
JAN 2003													
02...	--	--	--	--	--	--	--	--	--	--	--	.4	<.1
16...	86	E.10	.16	.033	.485	.004	.020	.023	.022	.160	3.3	<.1	<.1
FEB													
03...	--	--	--	--	--	--	--	--	--	--	--	1.0	<.1
10...	85	E.07	.20	.017	.410	.003	.015	.021	.027	--	--	.3	<.1
MAR													
10...	84	.10	.24	.021	.527	.005	.016	.021	.045	.130	2.1	.6	<.1
APR													
07...	--	--	--	--	--	--	--	--	--	--	--	.3	<.1
MAY													
12...	--	--	--	--	--	--	--	--	--	--	--	.6	<.1
JUN													
10...	70	.11	.18	<.015	.134	.003	.009	.014	.037	.030	--	.3	<.1
JUL													
14...	69	E.08	.16	<.015	.060	.003	.008	.013	.043	--	--	.5	<.1
AUG													
11...	--	--	--	--	--	--	--	--	--	--	--	.4	<.1
SEP													
08...	76	E.10	.17	<.015	.104	.003	.012	.019	.036	.150	6.1	.3	<.1

Date	Organic carbon, suspnd sedimnt total, mg/L (00689)	Organic carbon, water, fltrd, mg/L (00681)	Organic carbon, suspnd sedimnt percent (50465)	Alum-inum, water, fltrd, ug/L (01106)	Anti-mony, water, fltrd, ug/L (01095)	Arsenic water, fltrd, ug/L (01000)	Barium, water, fltrd, ug/L (01005)	Beryll-ium, water, fltrd, ug/L (01010)	Boron, water, fltrd, ug/L (01020)	Cadmium water, fltrd, ug/L (01025)	Chrom-ium, water, fltrd, ug/L (01030)	Cobalt water, fltrd, ug/L (01035)	Copper, water, fltrd, ug/L (01040)
OCT 2002													
16...	.2	1.9	--	--	--	.9	--	--	10	--	--	--	--
NOV													
14...	.6	1.8	--	--	--	--	--	--	--	--	--	--	--
DEC													
09...	.2	1.6	--	--	--	.9	--	--	12	--	--	--	--
JAN 2003													
02...	.4	2.2	--	--	--	--	--	--	--	--	--	--	--
16...	<.1	2.2	3.5	5	E.19	.6	17	<.06	12	<.04	<.8	.050	.9
FEB													
03...	1.0	2.8	--	--	--	--	--	--	--	--	--	--	--
10...	.3	1.8	--	--	--	.3	--	--	10	--	--	--	--
MAR													
10...	.6	2.1	2.2	7	<.30	.5	14	<.06	16	<.04	<.8	.055	1.0
APR													
07...	.3	1.8	--	--	--	--	--	--	--	--	--	--	--
MAY													
12...	.6	1.9	--	--	--	--	--	--	--	--	--	--	--
JUN													
10...	.3	2.4	3.5	6	<.30	.8	15	<.06	E6	<.04	<.8	.053	1.1
JUL													
14...	.5	2.5	--	--	--	.8	--	--	11	--	--	--	--
AUG													
11...	.4	1.9	--	--	--	--	--	--	--	--	--	--	--
SEP													
08...	.3	2.2	6.1	3	<.30	.9	19	<.06	8	<.04	<.8	.058	1.1

Date	Iron, water, fltrd, ug/L (01046)	Lead, water, fltrd, ug/L (01049)	Lithium water, fltrd, ug/L (01130)	Mangan-ese, water, fltrd, ug/L (01056)	Molyb-denum, water, fltrd, ug/L (01060)	Nickel, water, fltrd, ug/L (01065)	Selen-ium, water, fltrd, ug/L (01145)	Silver, water, fltrd, ug/L (01075)	Stront-ium, water, fltrd, ug/L (01080)	Vanad-ium, water, fltrd, ug/L (01085)	Zinc, water, fltrd, ug/L (01090)	Alum-inum, suspnd sedimnt total, percent (30221)	Anti-mony, suspnd sedimnt total, ug/g (29816)
OCT 2002													
16...	<10	--	2.4	--	--	--	<.5	--	83.6	1.8	--	--	--
NOV													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
09...	E6	--	2.7	--	--	--	<.5	--	96.9	1.6	--	--	--
JAN 2003													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	13	.18	2.3	2.8	.7	.93	<.5	<.2	73.3	1.5	4	8.4	1.0
FEB													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	11	--	2.2	--	--	--	<.5	--	69.6	1.4	--	--	--
MAR													
10...	16	.12	2.2	3.0	.6	1.81	<.5	<.2	68.3	1.7	4	8.6	.8
APR													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
10...	12	<.08	1.9	.9	.6	1.20	<.5	<.2	55.3	1.8	2	--	.7
JUL													
14...	E4	--	2.2	--	--	--	<.5	--	72.0	1.6	--	--	--
AUG													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
08...	<8	<.08	2.1	.3	.7	.46	<.5	<.2	75.1	1.8	3	6.7	1.1

< -- Less than
E -- Estimated value

14246900 COLUMBIA RIVER AT BEAVER ARMY TERMINAL, NEAR QUINCY, OR--Continued

WATER-QUALITY DATA

Date	Arsenic suspnd sedimnt total, ug/g (29818)	Barium, suspnd sedimnt total, ug/g (29820)	Beryll-ium, suspnd sedimnt total, ug/g (29822)	Cadmium suspnd sedimnt total, ug/g (29826)	Chrom-ium, suspnd sedimnt total, ug/g (29829)	Cobalt, suspnd sedimnt total, ug/g (35031)	Copper, suspnd sedimnt total, ug/g (29832)	Iron, suspnd sedimnt total, percent (30269)	Lead, suspnd sedimnt total, ug/g (29836)	Lithium suspnd sedimnt total, ug/g (35050)	Mangan-ese, suspnd sedimnt total, ug/g (29839)	Mercury suspnd sedimnt total, ug/g (29841)	Molyb-denum, suspnd sedimnt total, ug/g (29843)
OCT 2002													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
09...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN 2003													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	8.0	470	2	.7	83	20	54	4.6	22	28	1600	--	3
FEB													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
10...	6.3	470	2	.5	54	20	48	4.5	15	26	900	--	2
APR													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
10...	1.8	120	3	--	--	--	--	--	--	--	--	--	--
JUL													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
08...	9.3	540	1	.8	85	16	61	3.8	26	23	1600	.15	3

Date	Nickel, suspnd sedimnt total, ug/g (29845)	Selen-ium, suspnd sedimnt total, ug/g (29847)	Silver, suspnd sedimnt total, ug/g (29850)	Stront-ium, suspnd sedimnt total, ug/g (35040)	Titan-ium, suspnd sedimnt total, percent (30317)	Vanad-ium, suspnd sedimnt total, ug/g (29853)	Zinc, suspnd sedimnt total, ug/g (29855)	2,6-Di-ethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)	Atra-zine, water, fltrd, ug/L (39632)
OCT 2002													
16...	--	--	--	--	--	--	--	<.006	<.006	<.006	<.004	<.005	E.004
NOV													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
09...	--	--	--	--	--	--	--	<.006	<.006	<.006	<.004	<.005	<.007
JAN 2003													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	43	1	<1	310	.530	130	150	<.006	<.006	<.006	<.004	<.005	.016
FEB													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	<.006	E.003	<.006	<.004	<.005	.011
MAR													
10...	32	M	<.5	350	.530	120	200	<.006	<.006	<.006	<.004	<.005	<.010
APR													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
10...	--	M	--	--	--	--	--	<.006	<.006	<.006	<.004	<.005	<.007
JUL													
14...	--	--	--	--	--	--	--	<.006	<.006	<.006	<.004	<.005	<.007
AUG													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
08...	44	M	<.5	290	.470	110	190	<.006	<.006	<.006	<.004	<.005	E.004

Date	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyrifos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Diazi-non, water, fltrd, ug/L (39572)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)
OCT 2002													
16...	<.050	<.010	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.005	<.02	<.002
NOV													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
09...	<.050	<.010	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.005	<.02	<.002
JAN 2003													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.050	<.010	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.005	<.02	<.002
FEB													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.050	<.010	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.005	<.02	<.002
MAR													
10...	<.050	<.010	<.002	<.041	<.020	.013	<.006	<.018	<.003	<.005	<.005	<.02	<.002
APR													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
10...	<.050	<.010	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.005	<.02	.003
JUL													
14...	<.050	<.010	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.005	<.02	<.002
AUG													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
08...	<.050	<.010	<.002	<.041	<.020	<.005	<.006	<.018	<.003	<.005	<.005	<.02	<.002

< -- Less than
E -- Estimated value
M -- Presence verified, not quantified

14246900 COLUMBIA RIVER AT BEAVER ARMY TERMINAL, NEAR QUINCY, OR--Continued

WATER-QUALITY DATA

Date	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)	Mala-thion, water, fltrd, ug/L (39532)	Methyl para-thion, water, fltrd 0.7u GF ug/L (82667)	Metola-chlor, water, fltrd, ug/L (39415)	Metri-buzin, water, fltrd, ug/L (82630)	Moli-nate, water, fltrd 0.7u GF ug/L (82671)	Naprop-amide, water, fltrd 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)	Para-thion, water, fltrd, ug/L (39542)
OCT 2002													
16...	<.009	<.005	<.003	<.004	<.035	<.027	<.006	E.004	<.006	<.002	<.007	<.003	<.010
NOV													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
09...	<.009	<.005	<.003	<.004	<.035	<.027	<.006	<.013	<.006	<.002	<.007	<.003	<.010
JAN 2003													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.009	<.005	<.003	<.004	<.035	<.027	<.006	E.008	.010	<.002	<.007	<.003	<.010
FEB													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.009	<.005	<.003	<.004	<.035	<.027	<.006	E.004	.006	<.002	<.007	<.003	<.010
MAR													
10...	<.009	<.005	<.003	<.004	<.035	<.027	<.006	E.010	<.006	<.002	<.007	<.003	<.010
APR													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
10...	<.009	<.005	<.003	<.004	<.035	<.027	<.006	<.013	<.006	<.002	<.007	<.003	<.010
JUL													
14...	<.009	<.005	<.003	<.004	<.035	<.027	<.006	<.013	<.006	<.002	<.007	<.003	<.010
AUG													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
08...	<.009	<.005	<.003	<.004	<.035	<.027	<.006	E.004	<.006	<.002	<.007	<.003	<.010

Date	Peb-ulate, water, fltrd 0.7u GF ug/L (82669)	Pendi-meth-alin, water, fltrd 0.7u GF ug/L (82683)	Phorate water fltrd 0.7u GF ug/L (82664)	Prome-ton, water, fltrd, ug/L (04037)	Pron-amide, water, fltrd 0.7u GF ug/L (82676)	Propa-chlor, water, fltrd, ug/L (04024)	Pro-panil, water, fltrd 0.7u GF ug/L (82679)	Propar-gite, water, fltrd 0.7u GF ug/L (82685)	Sima-zine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd 0.7u GF ug/L (82670)	Terba-cil, water, fltrd 0.7u GF ug/L (82665)	Terbu-fos, water, fltrd 0.7u GF ug/L (82675)	Thio-bencarb water fltrd 0.7u GF ug/L (82681)
OCT 2002													
16...	<.004	<.022	<.011	<.01	<.004	<.01	<.011	<.02	<.005	<.02	<.034	<.02	<.005
NOV													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
09...	<.004	<.022	<.011	<.01	<.004	<.01	<.011	<.02	<.005	<.02	<.034	<.02	<.005
JAN 2003													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
16...	<.004	<.022	<.011	<.01	<.004	<.01	<.011	<.02	<.005	<.02	<.034	<.02	<.005
FEB													
03...	--	--	--	--	--	--	--	--	--	--	--	--	--
10...	<.004	E.008	<.011	<.01	<.004	<.01	<.011	<.02	E.004	<.02	<.034	<.02	<.005
MAR													
10...	<.004	<.022	<.011	<.01	<.004	<.01	<.011	<.02	.038	<.02	<.034	<.02	<.005
APR													
07...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
12...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
10...	<.004	<.022	<.011	<.01	<.004	<.01	<.011	<.02	<.005	<.02	<.034	<.02	<.005
JUL													
14...	<.004	<.022	<.011	<.01	<.004	<.01	<.011	<.02	<.005	<.02	<.034	<.02	<.005
AUG													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
08...	<.004	<.022	<.011	<.01	<.004	<.01	<.011	<.02	<.005	<.02	<.034	<.02	<.005

Date	Tri-allate, water, fltrd 0.7u GF ug/L (82678)	Tri-flur-alin, water, fltrd 0.7u GF ug/L (82661)	Uranium natural water, fltrd, ug/L (22703)	Uranium suspnd sedimnt total, ug/g (35046)	Suspnd. sedi-ment, sieve diametr percent <.063mm (70331)	Sus-pended sedi-ment concen-tration mg/L (80154)	Sus-pended sedi-ment load, tons/d (80155)
OCT 2002							
16...	<.002	<.009	--	--	92	5	1700
NOV							
14...	--	--	--	--	91	3	1390
DEC							
09...	<.002	<.009	--	--	95	5	1980
JAN 2003							
02...	--	--	--	--	83	21	15800
16...	<.002	<.009	.53	<100	98	6	3390
FEB							
03...	--	--	--	--	78	678	835000
10...	<.002	<.009	--	--	93	15	8260
MAR							
10...	<.002	<.009	.48	<50	64	41	37600
APR							
07...	--	--	--	--	58	17	13900
MAY							
12...	--	--	--	--	94	9	6370
JUN							
10...	<.002	<.009	.30	4	88	12	9140
JUL							
14...	<.002	<.009	--	--	82	15	5950
AUG							
11...	--	--	--	--	80	12	4050
SEP							
08...	<.002	<.009	.44	<50	94	8	E2070

< -- Less than
E -- Estimated value

14246900 COLUMBIA RIVER AT BEAVER ARMY TERMINAL, NEAR QUINCY, OR--Continued

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	138	135	136	153	142	145	169	155	159	120	106	114
2	138	133	135	152	144	148	174	159	164	111	105	108
3	140	133	136	150	142	147	166	157	161	109	103	106
4	142	134	138	148	143	145	164	159	161	106	102	104
5	138	134	136	149	144	146	170	159	163	107	103	105
6	136	133	135	152	146	149	174	161	165	107	104	105
7	140	135	137	152	144	148	168	160	163	108	104	106
8	138	132	135	150	142	146	167	156	159	112	106	109
9	134	131	133	157	145	149	166	158	160	119	110	115
10	139	133	135	160	147	153	162	157	159	126	119	123
11	147	139	143	151	145	147	163	152	158	131	124	127
12	147	137	142	149	146	148	158	151	154	129	124	128
13	146	137	141	149	145	148	152	147	150	136	128	131
14	149	137	144	151	145	148	149	143	146	136	130	134
15	145	137	142	151	144	147	146	131	141	132	126	130
16	144	137	140	146	141	143	142	133	139	131	126	129
17	143	137	140	146	143	144	135	123	130	133	126	129
18	144	138	140	150	143	147	126	118	123	139	128	132
19	145	138	142	151	135	145	127	119	123	139	132	135
20	147	139	142	147	138	145	139	118	125	145	133	140
21	145	140	143	150	143	145	138	129	134	145	139	142
22	151	140	145	150	141	146	138	129	133	144	138	141
23	145	141	143	159	148	152	143	130	134	145	137	142
24	145	141	143	154	147	150	135	129	132	145	135	141
25	147	140	143	155	149	151	135	127	133	146	136	141
26	148	143	145	156	151	153	139	130	134	143	131	138
27	148	141	143	155	149	153	143	133	139	134	120	129
28	154	142	148	160	148	152	139	133	137	124	112	118
29	145	139	142	160	151	154	134	128	131	115	110	112
30	146	140	143	159	154	156	134	126	131	117	109	114
31	151	143	147	---	---	---	127	115	123	111	94	102
MONTH	154	131	141	160	135	148	174	115	144	146	94	124

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	98	85	89	151	144	148	153	145	149	136	129	131
2	98	86	92	155	148	151	147	143	145	138	129	134
3	104	95	99	158	150	153	149	142	145	137	131	134
4	105	99	101	164	155	159	153	141	146	138	129	133
5	114	104	111	160	154	158	147	140	143	133	126	129
6	117	111	113	160	154	157	146	141	144	128	122	125
7	118	114	116	161	149	155	147	139	143	126	121	123
8	127	117	122	150	133	142	145	133	139	125	123	123
9	132	126	129	133	117	125	144	130	135	127	123	125
10	132	127	130	118	114	116	133	126	130	128	124	126
11	138	130	133	117	110	113	135	126	130	126	123	124
12	139	132	135	111	102	106	128	120	124	131	123	126
13	138	133	136	105	99	102	124	112	118	130	124	127
14	141	135	138	107	97	102	116	110	113	130	123	127
15	152	140	143	108	102	105	115	110	112	131	125	128
16	154	148	151	109	100	104	120	111	115	133	127	130
17	157	150	154	110	101	105	123	118	120	132	125	129
18	156	148	152	121	105	114	126	122	123	129	123	126
19	156	145	150	127	117	122	131	125	129	127	123	125
20	149	141	145	128	120	123	131	124	129	127	122	125
21	148	143	146	128	118	122	129	120	125	126	122	124
22	154	142	148	122	112	117	123	119	122	129	124	126
23	149	137	144	117	109	112	125	122	123	128	124	127
24	145	139	141	110	103	107	130	125	127	129	126	127
25	145	135	141	110	105	107	132	127	130	131	126	128
26	142	135	138	116	108	111	130	124	128	127	123	125
27	144	138	140	125	114	119	133	129	131	127	123	125
28	149	141	144	137	125	132	133	127	129	130	124	126
29	---	---	---	145	137	141	133	127	130	126	123	125
30	---	---	---	148	145	146	137	129	132	131	126	129
31	---	---	---	154	147	150	---	---	---	131	130	131
MONTH	157	85	131	164	97	127	153	110	130	138	121	127

14246900 COLUMBIA RIVER AT BEAVER ARMY TERMINAL, NEAR QUINCY, OR--Continued

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	130	128	129	120	115	118	123	120	121	134	132	133
2	131	128	130	122	115	119	126	120	124	137	131	135
3	132	128	129	118	116	117	126	120	123	137	132	134
4	135	125	130	119	116	118	122	119	121	140	131	136
5	129	122	126	122	117	119	124	119	121	140	135	137
6	122	119	121	121	117	120	124	118	120	142	136	139
7	123	118	120	121	116	119	125	119	121	140	133	137
8	118	112	115	124	118	122	128	123	125	140	133	137
9	112	103	109	124	120	122	125	121	123	143	137	140
10	104	101	102	124	121	123	135	123	127	145	133	140
11	102	98	99	126	121	124	131	122	125	141	133	137
12	105	96	100	124	119	121	123	120	121	142	135	140
13	105	101	102	125	119	122	128	120	122	137	133	135
14	103	100	101	123	119	121	129	121	125	136	133	135
15	104	102	103	125	121	122	127	123	125	137	133	135
16	105	103	104	124	120	122	128	124	126	138	133	135
17	107	105	106	124	120	122	127	123	125	138	133	137
18	113	105	109	124	120	122	130	125	127	144	135	138
19	113	106	109	126	121	124	136	126	131	142	135	138
20	114	107	111	124	120	123	130	124	126	139	132	135
21	114	108	110	125	119	122	132	124	126	139	132	135
22	111	108	109	125	120	121	128	124	126	138	133	135
23	110	108	109	127	120	123	129	126	127	139	132	134
24	110	108	109	123	117	120	133	126	130	140	131	134
25	117	108	112	120	118	119	133	127	130	142	137	140
26	116	110	112	120	117	118	132	127	130	140	135	137
27	117	111	113	124	117	120	133	128	131	142	135	139
28	121	113	117	125	118	121	137	128	131	143	136	139
29	116	113	115	124	119	121	133	128	130	139	136	137
30	119	113	116	122	118	120	137	133	135	140	138	139
31	---	---	---	122	119	120	135	132	134	---	---	---
MONTH	135	96	113	127	115	121	137	118	126	145	131	137
YEAR	174	85	131									

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	18.4	18.4	18.4	12.7	11.6	12.1	8.5	8.2	8.3	7.2	7.2	7.2
2	18.4	17.8	18.0	11.6	10.9	11.2	8.2	8.0	8.2	7.6	7.2	7.3
3	17.8	17.2	17.5	10.9	10.3	10.6	8.0	7.8	7.9	7.8	7.4	7.6
4	17.2	17.2	17.2	10.3	10.0	10.2	8.3	8.0	8.0	7.8	7.6	7.7
5	17.2	17.2	17.2	10.3	10.1	10.3	8.4	8.3	8.3	7.8	7.6	7.8
6	17.5	16.9	17.2	10.3	10.3	10.3	8.3	8.0	8.2	7.7	7.3	7.5
7	17.2	16.9	16.9	10.5	10.3	10.4	8.0	7.8	7.9	7.5	7.1	7.2
8	16.9	16.9	16.9	10.7	10.5	10.6	8.0	7.6	7.8	7.1	6.8	7.0
9	16.9	16.6	16.6	10.7	10.5	10.7	7.6	7.6	7.6	6.8	6.2	6.5
10	16.6	16.3	16.5	10.5	10.5	10.5	7.6	7.6	7.6	6.2	6.1	6.1
11	16.6	16.3	16.5	10.9	10.5	10.7	7.8	7.6	7.6	6.1	5.9	5.9
12	16.6	16.0	16.3	11.1	10.9	10.9	8.0	7.8	7.9	5.9	5.9	5.9
13	16.1	15.8	15.9	11.1	10.9	11.0	8.2	8.0	8.1	6.0	5.8	5.8
14	15.8	15.5	15.7	10.9	10.9	10.9	8.3	8.2	8.2	6.1	5.8	6.0
15	15.5	15.0	15.3	10.9	10.7	10.7	8.4	8.2	8.3	6.3	6.1	6.2
16	15.2	14.7	14.9	10.7	10.5	10.6	8.3	8.1	8.2	6.3	6.1	6.3
17	15.0	14.7	14.7	10.5	10.5	10.5	8.1	7.9	8.0	6.3	6.3	6.3
18	14.7	14.5	14.6	10.5	10.1	10.4	7.9	7.9	7.9	6.3	6.3	6.3
19	14.5	14.5	14.5	10.3	10.1	10.1	7.9	7.7	7.8	6.3	6.1	6.1
20	14.7	14.5	14.6	10.3	10.1	10.3	7.7	7.5	7.6	6.1	6.0	6.0
21	15.0	14.7	14.7	10.5	10.1	10.3	7.5	7.3	7.5	6.0	6.0	6.0
22	15.0	14.7	14.9	10.5	10.3	10.4	7.3	7.3	7.3	6.1	6.0	6.1
23	15.3	15.0	15.0	10.7	10.5	10.6	7.3	7.1	7.1	6.3	6.1	6.1
24	15.3	15.0	15.2	10.7	10.5	10.7	7.1	6.9	7.0	6.3	6.1	6.3
25	15.0	15.0	15.0	10.5	10.3	10.5	7.0	6.8	7.0	6.6	6.1	6.4
26	15.0	14.2	14.6	10.3	9.7	10.2	6.8	6.8	6.8	7.3	6.6	6.8
27	14.2	13.7	13.9	9.7	9.3	9.6	6.9	6.8	6.9	7.3	7.1	7.2
28	13.7	13.4	13.7	9.3	8.9	9.2	7.0	6.9	6.9	7.5	7.1	7.2
29	13.7	13.4	13.5	8.9	8.7	8.8	7.0	7.0	7.0	7.3	7.1	7.3
30	13.5	13.2	13.3	8.7	8.5	8.5	7.2	7.0	7.0	7.5	7.1	7.2
31	13.4	12.7	13.0	---	---	---	7.2	7.0	7.2	7.9	7.3	7.7
MONTH	18.4	12.7	15.6	12.7	8.5	10.4	8.5	6.8	7.6	7.9	5.8	6.7

14246900 COLUMBIA RIVER AT BEAVER ARMY TERMINAL, NEAR QUINCY, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.7	7.7	7.7	6.5	6.2	6.3	9.5	9.5	9.5	12.0	11.6	11.8
2	7.7	7.5	7.6	6.5	6.3	6.3	9.5	9.1	9.2	12.5	11.8	12.0
3	7.5	7.3	7.5	6.3	6.2	6.3	9.1	8.7	8.9	12.5	12.2	12.2
4	7.3	6.9	7.2	6.3	6.3	6.3	9.2	8.7	8.8	12.2	12.0	12.1
5	7.1	6.8	6.9	6.5	6.3	6.3	8.7	8.5	8.7	12.0	11.8	11.8
6	6.8	6.6	6.6	6.7	6.3	6.5	8.8	8.5	8.7	12.0	11.6	11.9
7	6.6	6.2	6.4	6.7	6.5	6.7	8.9	8.7	8.8	12.0	11.8	11.9
8	6.2	6.1	6.2	6.9	6.7	6.7	9.2	8.7	8.9	12.0	11.8	11.8
9	6.1	5.9	6.0	7.1	6.9	7.0	9.8	9.1	9.4	12.0	11.6	11.8
10	6.2	5.9	6.0	7.4	7.0	7.2	9.8	9.5	9.6	12.0	11.8	11.9
11	6.2	6.0	6.1	7.8	7.4	7.6	9.8	9.5	9.8	12.2	11.8	11.9
12	6.2	6.0	6.1	8.0	7.8	7.9	10.2	9.8	10	12.7	12.0	12.3
13	6.2	6.1	6.2	8.4	8.0	8.1	10.6	10.2	10.3	13.2	12.5	12.8
14	6.4	6.2	6.3	8.4	8.2	8.3	10.6	10.2	10.4	12.9	12.9	12.9
15	6.6	6.4	6.4	8.6	8.2	8.4	10.4	10.2	10.3	13.2	12.7	12.9
16	6.6	6.4	6.5	8.4	8.2	8.3	10.6	10.2	10.3	12.9	12.7	12.8
17	6.6	6.6	6.6	8.4	8.2	8.3	10.8	10.4	10.5	12.7	12.4	12.6
18	6.6	6.6	6.6	8.2	8.0	8.1	10.8	10.6	10.7	12.7	12.2	12.5
19	6.8	6.6	6.7	8.2	8.0	8.0	10.8	10.4	10.6	12.9	12.5	12.7
20	7.0	6.8	6.9	8.0	7.8	8.0	11.0	10.6	10.9	13.2	12.9	13.0
21	7.1	7.0	7.0	8.2	8.0	8.1	11.0	10.8	11.0	13.7	13.2	13.3
22	7.3	7.0	7.1	8.4	8.2	8.3	10.8	10.6	10.8	13.9	13.4	13.7
23	7.3	6.9	7.2	8.4	8.2	8.3	10.8	10.8	10.8	14.4	13.9	14.1
24	7.1	6.8	7.0	8.2	8.0	8.2	10.8	10.6	10.8	14.7	14.4	14.5
25	6.9	6.3	6.6	8.4	8.0	8.2	11.1	10.8	11.0	14.7	14.4	14.5
26	6.5	6.0	6.2	8.6	8.2	8.4	11.3	10.9	11.1	14.4	14.2	14.3
27	6.2	5.8	6.0	8.4	8.2	8.3	11.4	10.9	11.1	14.8	14.0	14.4
28	6.2	6.0	6.0	8.6	8.3	8.4	11.6	11.1	11.2	14.8	14.6	14.7
29	---	---	---	9.0	8.3	8.6	11.6	11.3	11.4	15.1	14.6	14.8
30	---	---	---	9.3	8.7	9.0	12.0	11.6	11.7	15.1	14.8	15.0
31	---	---	---	9.6	9.1	9.4	---	---	---	15.1	14.8	15.0
MONTH	7.7	5.8	6.6	9.6	6.2	7.7	12.0	8.5	10.2	15.1	11.6	13.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15.4	14.8	15.1	19.0	18.7	19.0	22.7	22.3	22.4	21.6	21.2	21.4
2	15.6	15.1	15.3	19.0	18.4	18.7	22.7	22.3	22.5	21.6	21.2	21.5
3	15.6	15.4	15.5	19.0	18.7	18.8	22.7	22.3	22.3	21.6	21.2	21.4
4	16.2	15.6	15.7	19.0	18.7	18.8	22.3	21.9	21.9	21.6	21.2	21.4
5	16.5	15.9	16.2	19.0	19.0	19.0	21.9	21.2	21.6	21.9	21.6	21.7
6	16.8	16.4	16.5	19.3	18.6	18.9	21.6	21.2	21.4	21.9	21.6	21.7
7	17.3	16.7	16.9	19.3	18.6	18.9	22.3	21.6	21.8	21.6	21.2	21.6
8	17.3	17.0	17.3	19.3	18.9	19.1	21.9	21.9	21.9	21.6	21.2	21.6
9	17.3	16.7	17.1	19.9	19.3	19.5	22.3	21.9	22.0	21.6	20.8	21.2
10	17.0	16.4	16.6	20.3	19.6	19.9	22.3	21.9	22.1	21.2	20.8	21.0
11	16.7	16.4	16.4	20.3	19.9	20.1	22.3	21.9	22.3	20.8	20.1	20.6
12	16.7	16.4	16.5	20.6	20.2	20.4	22.3	21.9	22.3	20.2	20.1	20.1
13	16.7	16.4	16.6	20.6	20.2	20.6	22.3	22.3	22.3	20.2	19.8	20.0
14	16.7	16.4	16.7	20.6	20.2	20.5	22.3	21.9	22.2	20.1	19.8	19.8
15	17.3	16.7	17.0	20.9	20.6	20.7	22.3	21.9	22.1	19.8	19.2	19.5
16	17.6	17.3	17.4	20.9	20.6	20.8	22.3	21.9	22.1	19.5	19.1	19.3
17	17.9	17.6	17.8	21.3	20.6	20.9	22.7	21.9	22.3	19.5	18.8	19.2
18	17.9	17.9	17.9	21.3	20.9	21.1	22.3	21.9	22.2	19.3	18.9	19.1
19	17.9	17.2	17.6	21.7	20.9	21.1	22.3	21.9	22.1	18.9	18.6	18.9
20	17.2	16.9	17.2	22.0	21.3	21.5	22.3	21.5	21.9	18.9	18.6	18.8
21	17.2	16.9	17.1	22.0	21.6	21.8	21.9	21.6	21.9	19.3	18.6	18.8
22	17.2	16.9	16.9	22.4	22.0	22.2	21.9	21.6	21.8	18.6	18.3	18.6
23	16.9	16.6	16.6	22.4	22.0	22.1	21.9	21.2	21.6	18.6	18.3	18.5
24	16.9	16.3	16.5	22.4	21.6	22.0	21.9	21.5	21.6	19.3	18.6	18.8
25	17.2	16.6	16.9	22.0	21.6	21.9	21.6	21.2	21.5	19.0	18.6	18.9
26	17.8	16.9	17.4	22.0	21.3	21.7	21.6	21.2	21.6	19.3	18.9	19.1
27	18.4	17.8	18.1	21.7	21.3	21.5	21.6	21.2	21.3	19.3	18.9	19.1
28	19.1	18.4	18.5	21.9	21.6	21.7	21.6	21.2	21.5	19.3	19.3	19.3
29	19.4	18.7	18.9	22.3	21.6	21.9	21.6	20.8	21.2	19.3	19.3	19.3
30	19.4	19.0	19.1	23.1	21.9	22.3	21.6	21.2	21.2	19.3	18.9	19.3
31	---	---	---	22.7	22.3	22.3	21.6	21.2	21.3	---	---	---
MONTH	19.4	14.8	17.0	23.1	18.4	20.6	22.7	20.8	21.9	21.9	18.3	20.0
YEAR	23.1	5.8	13.1									

14246900 COLUMBIA RIVER AT BEAVER army TERMINAL, NEAR QUINCY, OR--Continued

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8	2	4	6	3	5	6	2	5	27	9	18
2	6	2	4	7	3	5	7	1	5	30	9	17
3	6	2	4	9	4	5	9	3	5	50	12	25
4	7	3	4	8	4	6	7	3	5	62	19	42
5	6	3	4	9	4	6	6	3	5	60	23	34
6	6	2	4	8	4	6	10	2	5	58	16	31
7	10	2	4	7	4	5	6	2	4	42	12	22
8	7	3	4	7	2	5	6	2	4	30	12	19
9	6	2	4	7	3	5	6	2	4	22	9	15
10	9	2	4	6	3	5	5	2	3	18	6	11
11	8	2	4	7	3	5	8	2	4	16	5	9
12	7	2	4	7	3	5	6	2	4	14	5	8
13	6	2	4	7	3	5	7	2	4	11	4	8
14	6	2	4	13	2	6	16	4	8	12	4	8
15	10	2	4	14	3	6	58	4	8	14	3	7
16	9	2	5	7	3	5	88	22	46	10	4	7
17	7	4	5	6	2	5	58	20	42	11	4	8
18	7	4	5	7	3	5	31	10	21	16	5	8
19	8	4	5	9	3	5	25	8	18	8	4	7
20	8	3	5	8	3	5	32	8	16	9	4	7
21	9	4	5	6	3	5	22	10	16	10	3	7
22	7	4	5	6	3	5	20	9	15	8	4	6
23	9	4	5	9	3	5	21	8	14	7	3	5
24	7	3	5	6	3	5	16	6	11	10	4	7
25	6	3	5	6	2	4	14	4	9	9	3	7
26	7	3	5	6	2	4	16	5	8	10	3	7
27	7	3	5	6	2	4	18	5	8	45	8	19
28	9	3	4	7	2	4	12	4	8	28	8	19
29	7	3	5	6	2	4	26	6	10	22	7	15
30	12	3	5	8	3	5	10	4	8	27	9	14
31	6	2	5	---	---	---	21	5	9	201	17	44
MAX	12	4	5	14	4	6	88	22	46	201	23	44
MIN	6	2	4	6	2	4	5	1	3	7	3	5

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	221	126	171	15	7	11	16	8	13	13	6	10
2	139	77	101	13	6	10	15	7	11	11	6	9
3	90	59	71	12	6	10	14	8	11	12	4	9
4	82	52	64	14	6	9	14	7	10	12	5	8
5	63	33	43	12	5	9	13	6	10	11	4	8
6	45	24	30	11	5	8	13	6	10	13	4	8
7	30	16	24	16	5	11	14	8	11	11	5	8
8	25	14	21	17	6	13	17	5	12	11	5	8
9	24	11	18	19	9	16	17	10	14	12	6	8
10	32	9	18	38	15	28	22	12	16	11	4	8
11	31	9	16	33	20	28	20	12	16	12	4	8
12	23	7	15	35	19	25	20	9	16	11	3	8
13	22	8	14	106	24	37	27	10	16	10	3	8
14	---	---	---	106	41	69	32	14	22	13	3	7
15	---	---	---	82	30	61	23	11	17	11	2	8
16	15	8	12	74	28	53	19	9	15	10	2	8
17	17	7	12	56	22	42	21	9	14	11	3	8
18	21	7	13	47	19	32	18	8	14	11	3	8
19	24	9	15	36	17	26	17	8	13	12	3	9
20	17	8	14	33	14	22	20	8	12	16	4	9
21	24	10	16	38	16	24	15	7	11	16	5	8
22	31	15	25	50	16	32	15	8	11	13	4	7
23	45	17	29	79	34	52	14	8	11	14	4	8
24	32	14	22	52	25	39	14	7	11	9	3	8
25	35	11	18	42	24	33	14	8	12	9	4	7
26	22	10	15	41	21	27	14	8	11	9	3	7
27	20	9	14	28	17	23	13	7	11	10	3	8
28	20	8	12	23	14	18	14	6	11	12	4	8
29	---	---	---	21	12	16	19	6	10	16	6	10
30	---	---	---	18	10	15	16	6	10	16	5	10
31	---	---	---	18	9	13	---	---	---	17	7	10
MAX	---	---	---	106	41	69	32	14	22	17	7	10
MIN	---	---	---	11	5	8	13	5	10	9	2	7

14246900 COLUMBIA RIVER AT BEAVER ARMY TERMINAL, NEAR QUINCY, OR--Continued

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18	8	13	9	3	7	9	2	5	10	2	4
2	18	9	14	13	3	7	9	2	6	7	2	4
3	18	6	12	14	4	8	10	3	6	6	2	4
4	17	8	11	14	4	8	9	3	6	7	1	4
5	27	8	16	17	5	8	15	3	7	12	2	4
6	22	6	12	14	5	8	16	3	7	8	2	4
7	22	3	7	14	4	7	11	3	6	6	2	4
8	15	3	6	17	4	7	11	3	6	9	2	4
9	14	2	6	12	4	8	13	2	6	12	2	4
10	12	3	6	15	4	8	11	3	6	8	2	4
11	12	3	7	20	3	7	10	3	6	10	2	4
12	10	3	8	13	3	6	10	3	6	6	2	4
13	16	3	8	19	4	8	10	3	6	10	2	4
14	13	4	8	11	4	8	10	3	6	7	2	4
15	11	4	8	12	4	8	8	2	5	6	2	4
16	12	3	8	20	5	10	8	2	5	7	2	3
17	20	3	8	13	4	9	7	2	4	12	2	4
18	15	4	8	12	4	8	6	2	4	8	1	4
19	11	5	8	12	3	7	10	2	5	6	2	4
20	10	3	8	13	3	6	9	3	6	6	2	4
21	13	3	7	12	3	6	10	4	7	8	2	4
22	16	2	6	10	3	6	12	4	8	7	2	4
23	10	3	6	10	2	6	12	4	9	8	2	4
24	10	2	6	10	2	6	14	6	9	8	2	4
25	8	2	6	9	3	6	13	6	9	7	2	3
26	26	2	7	10	2	6	14	6	9	8	2	4
27	17	3	7	10	2	6	13	5	9	6	1	3
28	10	3	6	10	2	6	11	5	8	5	1	3
29	12	3	6	10	2	6	19	6	8	5	2	3
30	14	3	7	10	3	6	11	5	8	6	1	3
31	---	---	---	10	2	5	10	2	6	---	---	---
MAX	27	9	16	20	5	10	19	6	9	12	2	4
MIN	8	2	6	9	2	5	6	2	4	5	1	3

NEHALEM RIVER BASIN

14299800 NEHALEM RIVER NEAR VERNONIA, OR

LOCATION.--Lat 45°48'26", long 123°16'55", in NE 1/4 NE 1/4 sec.27 ,T.4N., R.5 W., Columbia County, Hydrologic Unit 17100202, on left bank, 6.75 mi southwest of Vernonia and at mile 100.7.

DRAINAGE AREA.--69.8mi^2.

PERIOD OF RECORD.--July 2001 to current year.

GAGE.--Water-stage recorder. Datum of gage is 640 ft above NGVD of 1929.

REMARKS.--Records good except for flows below 100 ft^3/s, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--2 years (water years 2002-03), 258 ft^3/s, 50.32 in/yr, 187,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,560 ft^3/s Jan. 7, 2002, gage height, 11.57; minimum discharge, 2.6 ft^3/s Sept. 29, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,210 ft^3/s Jan. 31, gage height, 10.51; minimum discharge , 2.6 ft^3/s Sept. 29.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	6.2	15	760	2300	180	282	204	45	17	5.5	3.5
2	6.5	6.7	15	1090	1270	165	265	187	43	16	5.7	3.3
3	5.6	e7.0	e14	1440	873	158	277	172	41	16	5.8	3.3
4	6.6	e7.5	e14	1740	660	145	273	168	39	15	6.0	3.2
5	6.7	8.1	e14	1450	521	142	262	167	37	15	6.4	2.9
6	5.7	8.7	e12	950	426	205	298	147	35	16	7.7	2.8
7	5.4	15	e12	671	358	640	303	136	34	15	7.7	3.6
8	5.0	40	e12	507	306	662	298	128	32	14	7.4	5.0
9	4.7	48	e16	398	265	853	278	119	32	15	8.7	6.8
10	4.7	52	e50	324	235	803	257	111	33	13	7.7	9.3
11	4.5	46	270	296	211	645	242	106	32	13	7.7	6.9
12	4.4	42	365	468	190	784	254	100	31	12	8.0	5.7
13	4.0	72	380	422	173	1170	333	95	32	12	6.6	5.2
14	4.2	70	1110	383	157	1150	327	89	30	12	6.1	4.5
15	4.6	43	1030	341	173	1090	306	88	30	12	5.7	4.1
16	4.7	40	1160	305	184	883	279	100	27	11	5.8	4.5
17	4.6	76	790	272	404	694	256	91	26	11	5.9	6.2
18	4.5	49	621	244	591	560	234	85	25	10	5.4	5.5
19	4.5	55	583	217	486	501	212	79	26	9.7	5.0	5.0
20	4.9	49	476	196	416	566	193	74	26	9.0	4.6	4.8
21	5.2	38	387	179	366	772	185	72	26	8.9	4.6	4.3
22	5.4	32	318	237	345	1930	167	68	26	8.7	4.5	3.9
23	5.4	27	281	443	306	1500	169	65	25	8.2	4.2	3.6
24	5.2	24	250	472	274	1030	178	62	24	7.9	4.1	3.5
25	4.7	22	228	475	247	786	168	60	22	7.7	4.0	3.4
26	4.8	20	251	1090	229	647	163	57	20	7.5	3.9	3.1
27	5.1	19	456	1000	209	541	156	55	19	7.3	4.1	3.0
28	5.6	18	459	721	192	462	156	52	18	7.1	4.3	3.0
29	6.0	17	385	628	---	401	235	50	17	6.6	4.4	2.8
30	6.5	16	531	885	---	352	219	48	17	6.1	4.0	2.9
31	6.5	---	844	2750	---	314	---	47	---	5.7	3.7	---
TOTAL	168.2	974.2	11349	21354	12367	20731	7225	3082	870	345.4	175.2	129.6
MEAN	5.43	32.5	366	689	442	669	241	99.4	29.0	11.1	5.65	4.32
MAX	12	76	1160	2750	2300	1930	333	204	45	17	8.7	9.3
MIN	4.0	6.2	12	179	157	142	156	47	17	5.7	3.7	2.8
AC-FT	334	1930	22510	42360	24530	41120	14330	6110	1730	685	348	257
CFSM	0.08	0.47	5.25	9.87	6.33	9.58	3.45	1.42	0.42	0.16	0.08	0.06
IN.	0.09	0.52	6.05	11.38	6.59	11.05	3.85	1.64	0.46	0.18	0.09	0.07

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2002 - 2003, BY WATER YEAR (WY)

MEAN	8.32	222	707	786	482	558	212	80.0	27.2	12.1	5.67	4.35
MAX	11.2	412	1047	883	522	669	241	99.4	29.0	13.1	5.69	4.39
(WY)	2002	2002	2002	2002	2002	2003	2003	2003	2003	2002	2002	2002
MIN	5.43	32.5	366	689	442	448	183	60.6	25.4	11.1	5.65	4.32
(WY)	2003	2003	2003	2003	2003	2002	2002	2002	2002	2003	2003	2003

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 2002 - 2003	
ANNUAL TOTAL	77207.3		78770.6			
ANNUAL MEAN	212		216		258	
HIGHEST ANNUAL MEAN					301	2002
LOWEST ANNUAL MEAN					216	2003
HIGHEST DAILY MEAN	3830	Jan 7	2750	Jan 31	3830	Jan 7 2002
LOWEST DAILY MEAN	3.4	Sep 28	2.8	Sep 6	2.8	Sep 6 2003
ANNUAL SEVEN-DAY MINIMUM	3.6	Sep 23	3.1	Sep 24	3.1	Sep 24 2003
ANNUAL RUNOFF (AC-FT)	153100		156200		187200	
ANNUAL RUNOFF (CFSM)	3.03		3.09		3.70	
ANNUAL RUNOFF (INCHES)	41.16		41.99		50.32	
10 PERCENT EXCEEDS	591		646		756	
50 PERCENT EXCEEDS	40		45		50	
90 PERCENT EXCEEDS	4.6		4.6		4.7	

e Estimated

14301000 NEHALEM RIVER NEAR FOSS, OR

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 mi^2.

PERIOD OF RECORD.--October 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 32.60 ft above NGVD of 1929 (State Highway Department bench mark). Prior to Nov. 11, 1939, nonrecording gage.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation. Several small diversions for irrigation and domestic use upstream from station.

AVERAGE DISCHARGE.--64 years (water years 1940-2003), 2,672 ft^3/s, 54.43 in/yr, 1,936,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,300 ft^3/s Feb. 8, 1996, gage height, 29.56 ft, based on slope-area measurement of peak flow; minimum discharge, 34 ft^3/s Aug. 29-31, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 19,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	1900	27,800	16.51	No other peak greater than base discharge.			

Minimum discharge, 42 ft^3/s Sept. 6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	76	293	6180	23200	1960	3150	1680	541	224	93	52
2	100	75	279	7400	17400	1790	2970	1590	521	215	90	51
3	105	77	267	8720	10400	e1700	3100	1500	496	208	88	50
4	139	79	265	10200	7230	e1600	3260	1670	472	205	88	47
5	142	81	259	10200	5500	1650	3200	1970	449	201	90	45
6	129	89	252	7900	4380	2910	4250	1800	425	200	105	44
7	115	147	242	5730	3610	7650	4570	1610	404	196	103	59
8	109	308	232	4420	3040	9190	4290	1490	384	196	103	63
9	103	401	233	3570	2630	9410	3940	1370	371	197	115	89
10	97	501	632	2970	2310	8830	3420	1270	367	192	112	107
11	92	563	2830	2630	2050	7350	3090	1190	368	184	109	176
12	88	696	5110	3120	1840	8840	2820	1110	366	180	104	189
13	85	1080	e5300	3140	1680	12000	3100	1050	365	180	102	165
14	82	1160	8060	2890	1530	11500	3620	992	363	174	101	144
15	79	802	10100	2600	1480	10100	3330	980	353	171	97	120
16	77	770	9860	2360	1570	8420	2950	1110	338	165	96	138
17	75	1020	8490	2150	2460	6740	2670	1150	318	162	91	142
18	75	841	6440	1970	4190	5510	2450	1140	305	156	84	131
19	75	2220	e5100	1810	4260	4840	2190	1040	299	148	80	133
20	77	1660	e4200	1670	4050	5310	1960	972	298	140	75	124
21	78	1090	e3500	1570	4610	8810	1830	923	307	136	72	123
22	80	803	e2900	1770	4790	17100	1720	865	315	131	68	111
23	82	643	e2600	2800	4270	15400	1670	819	320	126	66	99
24	80	549	2430	3330	3640	11000	1790	769	311	119	63	92
25	79	476	2240	3730	3130	8040	1840	742	292	117	60	88
26	79	423	2590	9340	2730	6590	1770	706	274	113	58	84
27	79	384	3370	9060	2420	5750	1720	677	257	109	59	81
28	79	353	3790	6890	e2200	5200	1650	644	241	108	60	72
29	79	329	3510	5810	---	4620	1660	611	223	103	60	69
30	78	309	3940	8860	---	3990	1750	582	226	100	58	71
31	77	---	5080	22500	---	3490	---	564	---	97	55	---
TOTAL	2821	18005	104394	167290	132600	217290	81730	34586	10569	4953	2605	2959
MEAN	91.0	600	3368	5396	4736	7009	2724	1116	352	160	84.0	98.6
MAX	142	2220	10100	22500	23200	17100	4570	1970	541	224	115	189
MIN	75	75	232	1570	1480	1600	1650	564	223	97	55	44
AC-FT	5600	35710	207100	331800	263000	431000	162100	68600	20960	9820	5170	5870
CFSM	0.14	0.90	5.05	8.09	7.10	10.5	4.08	1.67	0.53	0.24	0.13	0.15
IN.	0.16	1.00	5.82	9.33	7.40	12.12	4.56	1.93	0.59	0.28	0.15	0.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

MEAN	797	3737	6209	6182	5784	4292	2703	1280	618	273	147	208
MAX	3698	9256	11390	12450	13000	8696	6389	3028	1591	747	314	911
(WY)	1998	1974	1956	1971	1999	1956	1996	1948	1968	1983	1968	1997
MIN	69.9	154	599	596	1066	1171	1149	520	250	137	62.5	63.6
(WY)	1953	1994	1977	1977	1977	1992	1941	1989	1992	1967	1967	1967

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	795326		779802			
ANNUAL MEAN	2179		2136		2672	
HIGHEST ANNUAL MEAN					4292	1999
LOWEST ANNUAL MEAN					1044	2001
HIGHEST DAILY MEAN	21500	Jan 25	23200	Feb 1	61600	Feb 8 1996
LOWEST DAILY MEAN	65	Sep 28	44	Sep 6	36	Aug 29 1967
ANNUAL SEVEN-DAY MINIMUM	69	Sep 23	49	Aug 31	38	Aug 26 1967
ANNUAL RUNOFF (AC-FT)	1578000		1547000		1936000	
ANNUAL RUNOFF (CFSM)	3.27		3.20		4.01	
ANNUAL RUNOFF (INCHES)	44.36		43.49		54.43	
10 PERCENT EXCEEDS	6260		6280		7250	
50 PERCENT EXCEEDS	544		611		1130	
90 PERCENT EXCEEDS	80		79		124	

e Estimated

14301500 WILSON RIVER NEAR TILLAMOOK, OR

LOCATION.--Lat 45°29'05", long 123°41'20", in NW 1/4 NE 1/4 sec.17, T.1 S., R.8 W., Tillamook County, Hydrologic Unit 17100203, on right bank 0.1 mi downstream from Negro Jack Creek, 8.0 mi east of Tillamook, and at mile 11.5.

DRAINAGE AREA.--161 mi^2, at former site, 2.1 mi downstream.

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 NGVD 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. Oct. 18, 1968 to Sept. 6, 1973 at site 50 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records good. Discharge for the period Nov. 25 to Dec. 19 computed from data obtained through the U.S. Army Corps of Engineers Columbia River Operational Hydromet System (CROHMS) database. No regulation. Small diversions for domestic use upstream from station.

AVERAGE DISCHARGE.--73 years (water years 1915, 1932-2003), 1,179 ft^3/s, 99.50 in/yr, 854,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,000 ft^3/s Jan. 20, 1972, gage height, 16.91 ft, site then in use; maximum gage height, 19.59 ft Dec. 27, 1998, from floodmark; minimum discharge, 32 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	1700	*17,800	*14.70	No other peak above base discharge.			

Minimum discharge, 48 ft^3/s Sept. 30.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	50	175	2940	9440	836	1250	646	261	133	82	67
2	60	50	167	4480	5240	748	1200	604	251	127	81	67
3	65	51	160	4780	3570	710	1310	583	242	124	81	66
4	73	52	171	4990	2610	639	1370	901	232	121	81	66
5	68	52	173	4520	2000	735	1470	1100	222	119	83	65
6	63	56	161	3050	1600	1460	1950	980	212	117	87	65
7	60	80	151	2200	1320	5260	2230	862	206	115	84	77
8	58	166	144	1690	1130	3950	2440	774	201	116	82	85
9	57	264	141	1380	982	5000	2250	691	196	116	84	107
10	55	302	436	1160	867	4630	1870	626	196	112	82	106
11	54	390	2240	1080	773	3510	1630	576	192	109	80	120
12	54	446	3640	1680	696	5040	1490	535	188	107	81	110
13	53	779	3550	1560	632	6040	1640	494	196	110	79	91
14	53	850	4830	1410	583	4660	1490	466	188	109	78	81
15	52	475	5630	1250	599	3920	1310	472	179	105	77	76
16	51	411	5040	1110	695	3080	1140	565	173	103	77	83
17	50	672	3710	993	1570	2460	1030	553	167	101	76	82
18	51	603	2830	894	2360	2110	956	517	162	100	75	75
19	52	1890	2410	807	1900	2130	853	481	161	97	74	72
20	53	1190	1980	737	2050	2870	784	452	160	95	73	69
21	53	746	1610	690	2630	6280	749	428	160	94	72	66
22	53	533	1370	899	2790	10300	683	403	161	93	71	63
23	52	417	1210	1640	2270	6610	741	381	157	91	71	60
24	51	347	1110	2060	1760	4410	860	362	152	90	71	58
25	51	294	1040	2560	1430	3410	816	351	146	89	70	56
26	51	259	1190	7260	1200	2980	801	332	142	89	70	54
27	51	234	1900	5030	1030	2720	763	316	137	88	70	52
28	52	214	1960	3190	923	2330	713	302	132	87	71	50
29	52	199	1590	3030	---	1930	752	290	127	85	70	49
30	50	186	2230	5510	---	1610	688	278	135	84	69	49
31	49	---	2840	13900	---	1400	---	273	---	83	68	---
TOTAL	1712	12258	55789	88480	54650	103768	37229	16594	5434	3209	2370	2187
MEAN	55.2	409	1800	2854	1952	3347	1241	535	181	104	76.5	72.9
MAX	73	1890	5630	13900	9440	10300	2440	1100	261	133	87	120
MIN	49	50	141	690	583	639	683	273	127	83	68	49
AC-FT	3400	24310	110700	175500	108400	205800	73840	32910	10780	6370	4700	4340
CFSM	0.34	2.54	11.2	17.7	12.1	20.8	7.71	3.32	1.13	0.64	0.47	0.45
IN.	0.40	2.83	12.89	20.44	12.63	23.98	8.60	3.83	1.26	0.74	0.55	0.51

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2003, BY WATER YEAR (WY)

MEAN	557	1878	2680	2514	2228	1783	1176	620	338	167	104	152
MAX	2249	4266	7988	5776	5166	3637	2622	1391	876	514	240	780
(WY)	1998	1996	1934	1953	1999	1956	1991	1933	1933	1983	1968	1959
MIN	43.5	87.2	378	344	634	406	426	202	131	76.5	44.3	40.1
(WY)	1988	1937	1977	1977	1993	1992	1939	1939	1992	1992	1967	1967

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1915 - 2003	
ANNUAL TOTAL	371835		383680			
ANNUAL MEAN	1019		1051		1179	
HIGHEST ANNUAL MEAN					1811	1996
LOWEST ANNUAL MEAN					495	2001
HIGHEST DAILY MEAN	12400	Jan 25	13900	Jan 31	28000	Feb 8 1996
LOWEST DAILY MEAN	49	Oct 31	49	Oct 31	34	Sep 1 1967
ANNUAL SEVEN-DAY MINIMUM	51	Oct 27	51	Oct 27	35	Aug 30 1967
ANNUAL RUNOFF (AC-FT)	737500		761000		854100	
ANNUAL RUNOFF (CFSM)	6.33		6.53		7.32	
ANNUAL RUNOFF (INCHES)	85.91		88.65		99.50	
10 PERCENT EXCEEDS	2820		2960		2920	
50 PERCENT EXCEEDS	302		316		570	
90 PERCENT EXCEEDS	56		58		86	

14302480 TRASK RIVER ABOVE CEDAR CREEK, NEAR TILLAMOOK, OR

LOCATION.--Lat 45°26'47", long 123°42'33", in NW 1/4 SE 1/4 sec.30, T.1 S., R.8 W., Tillamook County, Hydrologic Unit 17100203, on right bank 0.1 mi upstream from Cedar Creek, 6.8 mi east of Tillamook, and at mile 10.95.

DRAINAGE AREA.--156 mi^2, at Long Prairie Road bridge, 4.0 mi downstream, where all discharge measurements are made.

PERIOD OF RECORD.--April 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 70 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair. No regulation. Water diverted from the J.W. Barney Reservoir (capacity 20,000 acre-ft) on the Middle Fork of the North Fork of the Trask River to the Tualatin River by the City of Hillsboro and Oregon Department of Fish and Wildlife.

AVERAGE DISCHARGE.--7 years (water years 1997-2003), 1,058 ft^3/s, 92.19 in/yr, 766,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,500 ft^3s Nov. 25, 1999, gage height, 21.77 ft; minimum discharge, 56 ft^3/s Sept. 24, 26, 27, Oct. 31 to Nov. 1, 2002.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 8, 1996 reached a stage of 23.2 ft, from floodmark; discharge, 25,800 ft^3/s, from slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 9,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	1730	*12,500	*16.79	No other peak greater than base discharge.			

Minimum discharge, 56 ft^3/s Oct. 31 to Nov. 1.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	58	232	2000	7470	993	1190	639	328	153	76	61
2	e70	59	e225	2290	4290	926	1170	607	317	142	77	61
3	e76	59	e220	2660	3010	906	1310	590	303	137	77	60
4	e84	60	e230	3230	2290	857	1390	833	290	131	78	59
5	79	60	e230	3210	1840	1050	1440	958	279	129	81	58
6	73	64	e220	2350	1550	2190	1990	846	267	126	87	59
7	69	110	e210	1790	1350	6450	1960	778	262	122	82	70
8	68	251	e205	1450	1210	4340	1810	729	255	125	78	84
9	66	291	e205	1220	1090	4200	1650	670	255	125	79	98
10	65	289	e450	1070	1010	3530	1440	630	257	116	76	100
11	64	305	1410	1010	940	2630	1310	598	249	113	75	148
12	64	320	2040	1280	885	2910	1220	570	245	111	76	136
13	63	466	2140	1210	838	3230	1370	540	253	113	75	90
14	63	508	3350	1160	801	2910	1220	516	242	112	73	76
15	61	350	3850	1070	809	2730	1100	518	231	106	71	72
16	60	329	3890	996	830	2310	1000	626	218	103	74	102
17	59	447	2990	925	1450	1940	936	604	210	101	73	112
18	59	435	2260	862	1930	1690	891	552	206	99	71	85
19	62	1220	1880	808	1610	1640	814	514	209	96	68	79
20	63	823	1560	760	1720	2130	762	490	204	93	66	75
21	64	592	1310	726	2170	3910	754	470	203	92	65	72
22	63	471	1150	816	2460	7020	699	453	206	90	64	69
23	62	402	1040	953	2070	4980	748	432	196	88	64	65
24	61	364	976	1050	1690	3370	819	420	189	87	64	64
25	60	326	918	1230	1430	2660	778	412	177	86	63	63
26	60	299	976	3000	1260	2370	777	393	169	86	63	62
27	61	281	1340	2740	1130	2210	747	381	161	85	66	60
28	62	264	1310	1990	1060	1940	708	366	152	84	66	59
29	63	253	1180	2060	---	1670	717	358	146	82	64	60
30	60	240	1600	4020	---	1440	670	346	155	78	63	62
31	58	---	2130	9760	---	1280	---	342	---	77	63	---
TOTAL	2030	9996	41727	59696	50193	82412	33390	17181	6834	3288	2218	2321
MEAN	65.5	333	1346	1926	1793	2658	1113	554	228	106	71.5	77.4
MAX	88	1220	3890	9760	7470	7020	1990	958	328	153	87	148
MIN	58	58	205	726	801	857	670	342	146	77	63	58
AC-FT	4030	19830	82770	118400	99560	163500	66230	34080	13560	6520	4400	4600
CFSM	0.42	2.14	8.63	12.3	11.5	17.0	7.13	3.55	1.46	0.68	0.46	0.50
IN.	0.48	2.38	9.95	14.24	11.97	19.65	7.96	4.10	1.63	0.78	0.53	0.55

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2003, BY WATER YEAR (WY)

MEAN	440	1518	2584	2204	1949	1763	896	630	355	177	101	123
MAX	1688	2370	4157	2893	4345	2658	1257	857	622	254	127	374
(WY)	1998	2000	1997	1998	1999	2003	2002	1999	2000	1997	1997	1997
MIN	65.5	333	849	570	650	673	538	402	226	106	71.5	67.5
(WY)	2003	2003	2001	2001	2001	2001	2000	2002	2002	2003	2003	2002

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1997 - 2003	
ANNUAL TOTAL	320974		311286			
ANNUAL MEAN	879		853		1058	
HIGHEST ANNUAL MEAN					1449	1999
LOWEST ANNUAL MEAN					461	2001
HIGHEST DAILY MEAN	9880	Jan 25	9760	Jan 31	17300	Nov 25 1999
LOWEST DAILY MEAN	58	Sep 25	58	Oct 31	58	Sep 25 2002
ANNUAL SEVEN-DAY MINIMUM	59	Sep 23	59	Oct 30	59	Sep 23 2002
ANNUAL RUNOFF (AC-FT)	636700		617400		766800	
ANNUAL RUNOFF (CFSM)	5.64		5.47		6.78	
ANNUAL RUNOFF (INCHES)	76.54		74.23		92.19	
10 PERCENT EXCEEDS	2260		2200		2720	
50 PERCENT EXCEEDS	314		346		528	
90 PERCENT EXCEEDS	64		63		85	

e Estimated

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 mi^2.

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Nonrecording gage. Datum of gage is NGVD 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. Elevations based on once-daily staff gage readings. Readings are taken on an average of 13 per month.

EXTREMES FOR PERIOD OF RECORD.--Maximum observed contents, 4,440 acre-ft Apr. 18 2003, elevation, 1,869.3 ft; no contents most of time during winter months.

EXTREMES FOR CURRENT YEAR.--Maximum observed contents, 4,440 acre-ft Apr. 18, elevation, 1,869.3 ft; minimum contents observed, zero acre-ft Nov. 27 to Dec. 8, Jan. 17-23, elevation, 1,810.0 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	1,833.5	790	
Oct. 31	1,826.0	430	-360
Nov. 30	1,810.0	0	-430
Dec. 31	1,815.0	100	+100
CAL YR 2002	-	-	+100
Jan. 31	1,822.8	319	+219
Feb. 28	1,842.5	1,380	+1,061
Mar. 31	1,864.9	3,760	+2,380
Apr. 30	1,868.8	4,360	+600
May 31	1,865.1	3,780	-580
June 30	1,862.9	3,480	-300
July 31	1,859.1	2,980	-500
Aug. 31	1,852.3	2,240	-740
Sept.30	1,844.5	1,540	-700
WTR YR 2003	-	-	+750

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 mi^2.

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

REVISED RECORDS.--WDR OR-97-1: 1994-95 (adjusted discharge), WDR OR-00-1: 1999 (adjusted discharge).

GAGE.--Water-stage recorder. Datum of gage is 1,778.99 ft above NGVD of 1929 (levels by city of McMinnville).

REMARKS.--Records good except for estimated daily discharges, which are poor. 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. Trans-basin diversion upstream from station to Haskins Creek Basin (see station 14196001). About 2,710 acre-ft diverted during the 2003 water year, primarily during summer and fall.

AVERAGE DISCHARGE.--43 years (water years 1961-2003), 31.6 ft^3/s, 69.44 in/yr, 22,890 acre-ft/yr, adjusted for storage and diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 876 ft^3/s Dec. 22, 1964, gage height, 10.43 ft; minimum discharge, 0.16 ft^3/s Sept. 13, 14, 2002.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 271 ft^3/s Jan. 31, gage height, 5.15 ft; minimum discharge, 0.19 ft^3/s Oct. 2, 3.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.71	e0.24	e7.0	97	134	11	17	30	10	2.8	1.9	0.95
2	0.43	e0.25	e6.4	115	96	9.2	19	29	10	2.8	1.9	1.1
3	e0.42	e0.25	e6.6	125	74	8.6	22	28	7.1	2.7	1.9	1.1
4	e0.41	e0.26	e6.4	136	41	7.9	23	37	3.9	2.6	1.7	1.1
5	e0.40	e0.26	e6.3	111	22	10	24	36	3.5	2.6	1.2	1.1
6	e0.39	e0.30	e5.1	91	18	27	35	33	3.4	2.6	1.2	1.1
7	e0.34	e3.9	e5.2	77	15	108	35	32	3.4	2.5	1.1	1.1
8	e0.33	e8.1	e3.9	67	13	76	33	31	3.4	2.7	1.00	1.3
9	e0.32	e11	e8.6	45	11	83	30	29	3.4	2.7	1.00	1.8
10	e0.31	e12	e35	41	10	59	27	28	3.5	2.5	0.91	1.8
11	e0.30	e13	e54	45	9.0	42	25	28	3.4	2.5	0.92	2.0
12	e0.30	e17	e83	76	8.2	56	24	27	3.6	2.5	0.89	2.0
13	e0.29	e18	e130	60	7.5	54	34	26	3.5	2.5	0.90	1.9
14	e0.29	e17	155	57	6.9	54	27	25	3.3	2.5	0.92	1.8
15	e0.27	e18	149	54	8.9	52	24	26	3.2	2.5	0.85	1.8
16	e0.26	e16	174	46	12	42	21	28	3.1	2.6	0.89	2.0
17	e0.26	e15	116	33	38	34	19	26	3.1	2.3	0.89	4.7
18	e0.26	e38	94	33	42	31	24	25	3.1	2.3	0.87	1.7
19	e0.28	e28	84	27	31	32	32	24	3.1	2.3	1.0	1.5
20	e0.30	e42	76	23	27	42	30	23	3.1	2.2	0.76	1.6
21	e0.30	e29	70	20	26	76	31	23	3.1	2.2	0.97	1.6
22	e0.29	e22	65	39	27	122	29	23	3.2	2.2	1.2	1.6
23	e0.28	e17	45	40	23	82	35	23	3.2	2.1	1.2	1.6
24	e0.27	e14	44	45	20	54	38	22	3.1	2.1	1.1	1.6
25	e0.26	e12	50	47	17	42	36	22	2.9	2.1	1.2	1.6
26	e0.26	e10	47	87	14	40	36	22	2.8	2.1	1.1	1.6
27	e0.27	e9.0	75	80	12	37	34	21	2.7	2.0	1.1	1.6
28	e0.28	e8.3	69	54	11	31	33	17	2.6	2.0	1.2	1.7
29	e0.29	e7.8	61	64	---	26	34	11	2.6	1.9	1.1	1.7
30	e0.26	e7.3	87	92	---	21	31	11	2.8	1.9	1.1	1.7
31	e0.25	---	105	200	---	18	---	10	---	1.9	1.2	---
TOTAL	9.88	394.96	1923.5	2127	774.5	1387.7	862	776	113.1	73.2	35.17	49.75
MEAN	0.32	13.2	62.0	68.6	27.7	44.8	28.7	25.0	3.77	2.36	1.13	1.66
MAX	0.71	42	174	200	134	122	38	37	10	2.8	1.9	4.7
MIN	0.25	0.24	3.9	20	6.9	7.9	17	10	2.6	1.9	0.76	0.95
AC-FT	20	783	3820	4220	1540	2750	1710	1540	224	145	70	99
MEAN†	-3.56	6.20	63.8	72.2	46.8	83.4	38.8	15.6	0.72	-3.25	-6.88	-6.39
CFSM†	-0.58	1.00	10.3	11.7	7.58	13.5	6.28	2.53	0.12	-0.53	-1.11	-1.03
IN.†	-0.66	1.11	11.90	13.47	7.89	15.57	7.01	2.91	0.13	-0.61	-1.28	-1.15
AC-FT†	-219	367	3920	4439	2600	5130	2310	960	43	-200	-423	-380

CAL YR 2002 TOTAL 9169.21 MEAN 25.1 MAX 296 MIN 0.18 AC-FT 18190 MEAN† 27.8 CFSM† 4.50 IN.† 61.14 AC-FT† 20148
WTR YR 2003 TOTAL 8526.76 MEAN 23.4 MAX 200 MIN 0.24 AC-FT 16910 MEAN† 25.6 CFSM† 4.15 IN.† 56.29 AC-FT† 18550

e Estimated
† Adjusted for storage and diversion from McGuire Lake.
Note - Negative values shown for adjusted values during summer period are a result of evaporation exceeding inflows to McGuire Lake.

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 confluence with Elk Creek, and 8 mi northeast of Blaine.

DRAINAGE AREA.--3.09 mi^2.

PERIOD OF RECORD.--July 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,400 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair.

AVERAGE DISCHARGE.--20 years (water years 1984-2003), 17.2 ft^3/s, 75.70 in/yr, 12,470 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 680 ft^3/s Feb. 6, 1996, gage height, 4.30 ft, from rating curve extended above 190 ft^3/s on basis of slope-area measurement of peak flow; maximum gage height, 5.49 ft, Dec. 27, 1998; minimum discharge, 0.46 ft^3/s Sept. 30, Oct. 1, 2, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 180 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	1900	*159	*3.92				

Minimum discharge, 0.79 ft^3/s Sept. 6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	2.0	5.7	49	119	18	21	13	6.6	2.8	1.5	0.96
2	1.3	2.0	5.5	48	73	16	20	13	6.0	2.8	1.5	0.92
3	1.7	2.0	5.2	54	53	15	20	13	5.9	2.7	1.5	0.88
4	1.5	2.0	5.7	58	43	15	20	17	5.6	2.6	1.5	0.88
5	1.3	1.9	5.3	56	35	16	22	18	5.4	2.5	1.6	0.86
6	1.3	2.2	4.9	47	30	24	30	19	5.2	2.5	1.6	0.84
7	1.3	4.1	4.7	37	26	87	34	18	5.1	2.4	1.5	1.2
8	1.2	4.3	4.6	30	23	72	33	17	4.9	2.5	1.5	1.5
9	1.2	6.6	4.5	24	20	63	31	16	4.9	2.5	1.4	2.0
10	1.2	6.8	11	20	18	59	28	14	4.9	2.4	1.4	1.6
11	1.2	5.4	25	19	17	49	26	14	4.7	2.3	1.4	2.1
12	1.1	8.8	38	21	16	49	25	13	4.7	2.3	1.4	1.6
13	1.1	12	45	20	15	53	28	12	4.6	2.3	1.3	1.2
14	1.1	10	70	19	14	49	26	11	4.3	2.3	1.3	1.2
15	1.1	7.6	81	18	13	45	24	11	4.2	2.2	1.3	1.1
16	1.1	7.6	77	18	14	41	22	12	4.1	2.1	1.3	1.6
17	1.1	7.8	62	17	26	37	20	11	3.9	2.1	1.2	1.5
18	1.1	9.6	48	16	35	34	19	10	3.9	2.0	1.2	1.2
19	1.1	27	42	15	33	33	17	9.8	3.9	1.9	1.2	1.2
20	1.2	20	37	14	32	37	15	9.5	3.8	1.9	1.2	1.2
21	1.1	15	31	13	34	62	15	9.2	3.8	1.8	1.1	1.1
22	1.1	12	28	15	40	103	14	8.9	3.7	1.8	1.1	1.1
23	1.1	10	25	18	39	79	15	8.7	3.6	1.8	1.1	1.1
24	1.1	9.4	23	18	33	56	15	8.5	3.4	1.7	1.1	1.1
25	1.2	8.4	21	21	28	44	15	8.3	3.2	1.7	1.1	1.1
26	1.2	7.7	21	44	25	39	15	7.9	3.1	1.7	1.1	1.1
27	1.2	7.1	30	50	22	36	15	7.6	3.0	1.7	1.1	1.1
28	1.3	6.7	31	40	20	34	15	7.4	2.9	1.6	1.0	1.1
29	1.3	6.3	30	43	---	31	15	7.3	2.8	1.5	1.0	1.1
30	1.3	5.9	39	72	---	27	14	7.1	3.0	1.5	1.0	1.2
31	1.6	---	52	133	---	23	---	6.9	---	1.5	0.98	---
TOTAL	38.3	238.2	913.1	1067	896	1346	629	359.1	129.1	65.4	39.48	36.64
MEAN	1.24	7.94	29.5	34.4	32.0	43.4	21.0	11.6	4.30	2.11	1.27	1.22
MAX	1.7	27	81	133	119	103	34	19	6.6	2.8	1.6	2.1
MIN	1.1	1.9	4.5	13	13	15	14	6.9	2.8	1.5	0.98	0.84
AC-FT	76	472	1810	2120	1780	2670	1250	712	256	130	78	73
CFSM	0.40	2.57	9.53	11.1	10.4	14.1	6.79	3.75	1.39	0.68	0.41	0.40
IN.	0.46	2.87	10.99	12.85	10.79	16.20	7.57	4.32	1.55	0.79	0.48	0.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

MEAN	5.71	30.6	36.8	33.8	34.1	25.2	17.9	10.6	6.50	3.03	1.73	1.85
MAX	29.2	66.1	98.5	60.0	98.0	43.4	41.4	18.7	12.0	4.49	2.44	7.64
(WY)	1998	1996	1997	1999	1999	2003	1996	1984	1990	1997	1997	1997
MIN	0.95	1.76	15.9	9.03	10.3	6.59	8.66	4.02	2.40	1.65	1.11	0.91
(WY)	1988	1994	1987	2001	1993	1992	2000	1989	1992	1992	1986	1987

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1984 - 2003	
ANNUAL TOTAL	5453.3		5757.32			
ANNUAL MEAN	14.9		15.8		17.2	
HIGHEST ANNUAL MEAN					29.4	1999
LOWEST ANNUAL MEAN					7.65	2001
HIGHEST DAILY MEAN	126	Jan 25	133	Jan 31	460	Feb 8 1996
LOWEST DAILY MEAN	1.1	Sep 12	0.84	Sep 6	0.55	Oct 1 1987
ANNUAL SEVEN-DAY MINIMUM	1.1	Sep 21	0.90	Aug 31	0.63	Sep 28 1987
ANNUAL RUNOFF (AC-FT)	10820		11420		12470	
ANNUAL RUNOFF (CFSM)	4.84		5.10		5.57	
ANNUAL RUNOFF (INCHES)	65.65		69.31		75.70	
10 PERCENT EXCEEDS	41		42		40	
50 PERCENT EXCEEDS	6.3		7.6		8.5	
90 PERCENT EXCEEDS	1.3		1.1		1.4	

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 mi^2.

PERIOD OF RECORD.--October 1905 to December 1908, January 1910 to November 1911, January 1912 to April 1912, December 1924 to current year. Monthly discharges, January to December 1909, 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 NGVD 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. Continuous water-quality records for the period February 1972 to September 1985 have been collected at this location.

AVERAGE DISCHARGE.--82 years (water years 1906-08, 1911, 1926-2003), 1,512 ft^3/s, 101.71 in/yr, 1,096,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,800 ft^3/s Nov. 26, 1999, gage height, 28.62 ft, from rating curve extended above 22,700 ft^3s on basis of slope-area measurement of peak flow; minimum discharge, 42 ft^3/s Sept. 5, 6, 2003.

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 ft^3/s, from rating curve extended above 17,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 14,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 31	1830	*17,400	*15.25	No other peak greater than base discharge.			

Minimum discharge, 42 ft^3/s Sept. 5, 6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106	58	259	4380	11300	1130	1610	1090	336	166	74	47
2	86	58	249	4070	6570	1010	1640	998	325	149	73	46
3	89	58	238	5010	4490	1050	1960	931	312	144	73	46
4	119	59	261	5220	3300	941	2380	1420	299	141	73	45
5	100	60	307	4730	2580	1010	2490	1660	285	137	73	43
6	88	62	269	3450	2090	2130	3660	1460	272	134	75	42
7	81	82	244	2620	1760	9460	3310	1310	265	132	74	55
8	77	283	229	2080	1510	8590	2870	1200	259	142	72	108
9	74	399	224	1720	1320	7360	2590	1070	251	150	70	143
10	71	509	429	1460	1180	5880	2230	969	249	134	68	191
11	68	485	1790	1340	1060	4320	2030	897	242	127	67	165
12	67	426	3500	2150	961	4520	1930	827	239	122	67	181
13	66	861	3800	3060	887	4650	1990	765	260	129	66	116
14	64	1170	5080	2760	829	3910	1780	712	247	127	64	90
15	63	679	5620	2290	853	3520	1690	677	232	119	62	77
16	61	524	7370	1930	909	2950	1530	702	220	115	63	80
17	60	675	5010	1660	1710	2450	1410	675	211	110	63	109
18	60	549	3760	1440	3020	2100	1360	633	205	107	61	91
19	60	1860	3030	1270	2170	1940	1230	581	203	103	59	83
20	62	1320	2430	1140	2100	2340	1140	544	200	99	e57	78
21	62	872	2090	1040	2790	5490	1070	517	200	98	e56	72
22	62	655	1790	1260	3170	11200	988	493	200	95	e56	68
23	61	536	1610	1370	2660	7120	1080	473	194	92	e55	63
24	60	477	1500	1600	2170	4660	1450	455	187	89	e54	61
25	60	417	1390	2750	1810	3690	1340	453	179	88	e54	59
26	60	369	1520	6000	1550	3480	1420	426	171	87	e53	58
27	60	337	3340	5090	1350	3130	1440	405	165	86	52	57
28	62	312	3080	3310	1220	2710	1350	387	157	84	52	55
29	66	290	2600	3230	---	2330	1340	373	149	81	51	54
30	65	273	4120	9570	---	1990	1190	360	159	77	50	57
31	59	---	6610	13800	---	1750	---	354	---	75	49	---
TOTAL	2199	14715	73749	102800	67319	118811	53498	23817	6873	3539	1936	2440
MEAN	70.9	490	2379	3316	2404	3833	1783	768	229	114	62.5	81.3
MAX	119	1860	7370	13800	11300	11200	3660	1660	336	166	75	191
MIN	59	58	224	1040	829	941	988	354	149	75	49	42
AC-FT	4360	29190	146300	203900	133500	235700	106100	47240	13630	7020	3840	4840
CFSM	0.35	2.43	11.8	16.4	11.9	19.0	8.83	3.80	1.13	0.57	0.31	0.40
IN.	0.40	2.71	13.58	18.93	12.40	21.88	9.85	4.39	1.27	0.65	0.36	0.45

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 2003, BY WATER YEAR (WY)

MEAN	704	2422	3353	3257	2940	2235	1494	836	495	223	130	194
MAX	3412	6207	7828	7664	6055	4560	3560	2579	1602	602	419	1138
(WY)	1927	1907	1934	1953	1949	1932	1937	1933	1906	1910	1968	1959
MIN	50.1	72.4	401	518	752	557	387	233	144	99.7	62.5	58.6
(WY)	1988	1930	1977	1977	1973	1941	1926	1939	1928	1992	2003	1965

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1906 - 2003	
ANNUAL TOTAL	460521		471696			
ANNUAL MEAN	1262		1292		1512	
HIGHEST ANNUAL MEAN					2337	1974
LOWEST ANNUAL MEAN					660	1977
HIGHEST DAILY MEAN	13300	Jan 8	13800	Jan 31	36700	Dec 28 1998
LOWEST DAILY MEAN	58	Nov 1	42	Sep 6	42	Sep 6 2003
ANNUAL SEVEN-DAY MINIMUM	59	Oct 31	45	Aug 31	45	Aug 31 2003
ANNUAL RUNOFF (AC-FT)	913400		935600		1096000	
ANNUAL RUNOFF (CFSM)	6.25		6.40		7.49	
ANNUAL RUNOFF (INCHES)	84.81		86.87		101.71	
10 PERCENT EXCEEDS	3460		3490		3790	
50 PERCENT EXCEEDS	429		426		740	
90 PERCENT EXCEEDS	71		60		103	

e Estimated

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 Lobster Creek, and 9 mi south of Alsea.

DRAINAGE AREA.--5.70 mi^2.

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 above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good except those for the period Oct. 1 to Nov. 6, which are fair. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--20 years (water years 1984-2003), 24.9 ft^3/s, 59.37 in/yr, 18,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,360 ft^3/s Feb. 7, 1996, gage height, 5.37 ft, from rating curve extended above 900 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 0.17 ft^3/s Sept. 27, 28, Oct. 2, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 30	2245	*353	*3.78	No other peak greater than base discharge.			

Minimum discharge, 0.47 ft^3/s Oct. 15-18.

WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.71	0.71	1.8	94	151	17	26	16	4.1	2.0	0.94	0.57
2	0.57	0.72	1.8	73	98	16	26	14	4.0	1.9	0.97	0.58
3	0.57	0.72	1.7	87	68	17	42	13	3.8	1.8	0.97	0.57
4	0.73	0.72	1.9	93	49	15	67	23	3.6	1.8	0.91	0.58
5	0.67	0.71	2.1	79	38	17	58	28	3.5	1.8	0.91	0.58
6	0.60	0.71	1.8	54	31	29	99	22	3.3	1.8	0.94	0.59
7	0.56	1.0	1.7	39	26	117	67	19	3.2	1.7	0.92	0.63
8	0.56	5.2	1.6	30	22	139	51	17	3.1	1.8	0.90	0.80
9	0.53	12	1.6	25	19	119	43	15	3.1	1.8	0.88	1.3
10	0.53	11	4.7	20	17	102	38	13	3.0	1.6	0.82	1.2
11	0.53	21	20	18	15	75	36	13	3.0	1.5	0.80	1.1
12	0.53	14	43	26	14	61	38	13	3.0	1.5	0.80	0.99
13	0.51	14	50	38	13	53	40	12	3.2	1.7	0.80	0.90
14	0.50	8.8	77	34	11	62	35	11	3.0	1.6	0.79	0.75
15	0.48	5.3	121	28	12	76	31	9.8	2.8	1.5	0.77	0.69
16	0.47	6.3	187	23	16	60	28	10	2.7	1.5	0.77	0.69
17	0.47	12	87	20	62	46	26	9.7	2.6	1.5	0.72	0.74
18	0.48	7.7	81	18	87	37	25	9.0	2.6	1.4	0.71	0.73
19	0.50	6.6	55	15	49	34	22	8.0	2.6	1.4	0.70	0.71
20	0.50	5.3	41	14	39	45	20	7.3	2.5	1.3	0.69	0.69
21	0.52	4.3	78	13	41	80	19	6.9	2.5	1.2	0.67	0.68
22	0.54	3.6	64	14	49	176	17	6.5	2.5	1.2	0.67	0.69
23	0.56	3.1	44	14	43	120	21	6.2	2.4	1.2	0.67	0.68
24	0.56	3.7	34	21	34	81	28	5.9	2.4	1.2	0.63	0.67
25	0.56	3.1	27	33	28	63	26	5.9	2.3	1.2	0.61	0.67
26	0.56	2.7	35	75	24	73	27	5.5	2.2	1.2	0.60	0.67
27	0.58	2.4	127	67	21	63	25	5.1	2.0	1.1	0.60	0.69
28	0.67	2.2	79	43	18	49	22	4.9	1.9	1.0	0.61	0.75
29	0.70	2.0	76	39	---	39	20	4.6	1.9	0.99	0.61	0.78
30	0.71	1.9	167	123	---	32	17	4.5	2.0	0.95	0.61	0.82
31	0.71	---	196	141	---	28	---	4.3	---	0.94	0.58	---
TOTAL	17.67	163.49	1709.7	1411	1095	1941	1040	343.1	84.8	45.08	23.57	22.49
MEAN	0.57	5.45	55.2	45.5	39.1	62.6	34.7	11.1	2.83	1.45	0.76	0.75
MAX	0.73	21	196	141	151	176	99	28	4.1	2.0	0.97	1.3
MIN	0.47	0.71	1.6	13	11	15	17	4.3	1.9	0.94	0.58	0.57
AC-FT	35	324	3390	2800	2170	3850	2060	681	168	89	47	45
CFSM	0.10	0.96	9.68	7.99	6.86	11.0	6.08	1.94	0.50	0.26	0.13	0.13
IN.	0.12	1.07	11.16	9.21	7.15	12.67	6.79	2.24	0.55	0.29	0.15	0.15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

MEAN	4.94	38.1	54.2	56.0	55.9	39.1	25.2	14.5	7.80	2.33	1.24	1.34
MAX	32.4	115	137	116	164	77.1	49.5	28.2	21.3	3.88	1.92	4.51
(WY)	1998	1985	1997	1999	1999	1997	1993	1999	1985	1984	1996	1997
MIN	0.39	1.41	17.6	8.87	13.4	11.5	7.26	5.57	1.83	1.25	0.52	0.51
(WY)	1988	1994	1990	2001	2001	1992	2000	2002	1992	2002	1992	2002

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1984 - 2003	
ANNUAL TOTAL	7823.89		7896.90			
ANNUAL MEAN	21.4		21.6		24.9	
HIGHEST ANNUAL MEAN					46.7	1999
LOWEST ANNUAL MEAN					8.28	2001
HIGHEST DAILY MEAN	284	Jan 25	196	Dec 31	817	Feb 7 1996
LOWEST DAILY MEAN	0.41	Sep 25	0.47	Oct 16	0.25	Oct 13 1991
ANNUAL SEVEN-DAY MINIMUM	0.42	Sep 23	0.49	Oct 14	0.29	Oct 9 1991
ANNUAL RUNOFF (AC-FT)	15520		15660		18040	
ANNUAL RUNOFF (CFSM)	3.76		3.80		4.37	
ANNUAL RUNOFF (INCHES)	51.06		51.54		59.37	
10 PERCENT EXCEEDS	64		67		63	
50 PERCENT EXCEEDS	4.0		4.7		9.5	
90 PERCENT EXCEEDS	0.54		0.61		0.96	

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 mi^2.

PERIOD OF RECORD.--October 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 48.16 ft above NGVD of 1929. Prior to Nov. 16, 1939, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharges. Records good. No regulation. Diversion for irrigation upstream from station. Continuous water-quality records for the period October 1979 to September 1981 have been collected at this location.

AVERAGE DISCHARGE.--64 years (water years 1940-2003), 1,472 ft^3/s, 59.89 in/yr, 1,067,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,800 ft^3/s Dec. 22, 1964, gage height, 27.44 ft; minimum discharge, 45 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	0900	*13,700	*15.01	No other peak greater than base discharge.			

Minimum discharge, 57 ft^3/s Sept. 5, 6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	117	66	156	5730	8520	1160	1920	1090	429	200	93	63
2	101	66	152	4350	6070	1070	2010	1020	415	195	92	62
3	90	69	147	5630	4500	1090	2460	972	401	189	95	61
4	104	70	158	5630	3530	1020	3900	1280	387	185	97	60
5	106	70	178	5740	2880	1010	3360	1610	369	181	94	58
6	95	72	168	4150	2430	1300	4730	1430	355	178	94	57
7	87	90	156	3200	2090	4140	4200	1270	341	175	95	62
8	82	416	148	2570	1840	6800	3380	1190	336	171	94	82
9	78	787	147	2150	1630	5270	2880	1080	327	171	91	125
10	75	845	227	1850	1470	4550	2470	1000	324	168	89	159
11	72	547	553	1640	1340	3590	2230	945	317	160	86	138
12	71	461	1320	1800	1240	3120	2090	945	311	156	84	118
13	70	684	2560	2690	1150	3000	2110	873	320	157	82	101
14	69	497	3710	2550	1070	3350	1930	819	318	158	82	91
15	68	378	5580	2230	1060	3900	1800	781	297	153	81	84
16	68	326	10700	1930	1180	3410	1660	778	283	147	78	82
17	67	533	5250	1700	1990	2820	1600	758	273	142	77	90
18	65	446	4280	1520	3760	2390	1530	722	267	136	76	90
19	66	443	3300	1370	2670	2160	1410	677	268	132	74	87
20	67	408	2500	1260	2180	2360	1320	646	264	127	71	82
21	68	321	2880	1170	2090	3400	1250	620	259	122	70	79
22	69	269	2750	1260	2150	8770	1180	598	260	120	70	76
23	70	235	2210	1430	1990	7260	1250	574	255	115	70	74
24	69	238	1880	1430	1780	4970	1610	554	247	113	71	71
25	69	227	1600	1910	1580	3960	1520	545	237	111	69	69
26	68	202	1620	3190	1430	3760	1520	527	226	110	67	68
27	68	187	4770	3830	1310	3500	1460	503	217	109	66	68
28	69	177	4060	2760	1210	3030	1360	483	208	107	66	66
29	71	169	3470	2370	---	2610	1260	468	200	104	65	65
30	70	161	4720	5560	---	2280	1190	455	198	99	65	67
31	67	---	10200	6870	---	2040	---	451	---	95	65	---
TOTAL	2376	9460	81550	91470	66140	103090	62590	25664	8909	4486	2469	2455
MEAN	76.6	315	2631	2951	2362	3325	2086	828	297	145	79.6	81.8
MAX	117	845	10700	6870	8520	8770	4730	1610	429	200	97	159
MIN	65	66	147	1170	1060	1010	1180	451	198	95	65	57
AC-FT	4710	18760	161800	181400	131200	204500	124100	50900	17670	8900	4900	4870
CFSM	0.23	0.94	7.88	8.83	7.07	9.96	6.25	2.48	0.89	0.43	0.24	0.25
IN.	0.26	1.05	9.08	10.19	7.37	11.48	6.97	2.86	0.99	0.50	0.27	0.27

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2003, BY WATER YEAR (WY)

MEAN	362	1735	3308	3525	3243	2455	1484	801	407	191	117	127
MAX	2521	6058	7419	7874	6909	5144	3203	1848	1053	363	234	452
(WY)	1948	1974	1965	1953	1996	1961	1963	1963	1993	1983	1968	1941
MIN	62.0	108	182	211	607	604	550	331	178	116	65.6	60.1
(WY)	1988	1994	1977	1977	1977	1941	1977	1966	1966	1992	1966	1965

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1940 - 2003	
ANNUAL TOTAL	455968		460659			
ANNUAL MEAN	1249		1262		1472	
HIGHEST ANNUAL MEAN					2541	1974
LOWEST ANNUAL MEAN					431	1977
HIGHEST DAILY MEAN	10700	Dec 16	10700	Dec 16	36100	Dec 22 1964
LOWEST DAILY MEAN	64	Sep 15	57	Sep 6	47	Sep 26 1965
ANNUAL SEVEN-DAY MINIMUM	67	Sep 10	60	Sep 1	51	Sep 25 1965
ANNUAL RUNOFF (AC-FT)	904400		913700		1067000	
ANNUAL RUNOFF (CFSM)	3.74		3.78		4.41	
ANNUAL RUNOFF (INCHES)	50.78		51.31		59.89	
10 PERCENT EXCEEDS	3710		3550		3810	
50 PERCENT EXCEEDS	376		416		636	
90 PERCENT EXCEEDS	70		69		97	

14307620 SIUSLAW RIVER NEAR MAPLETON, OR

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 mi^2.

PERIOD OF RECORD.--October 1967 to September 1994, October 2001 to current year (discharge), February 1998 to September 2001 (gage height only).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 41 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair, except for estimated daily discharges, which are poor. No regulation or diversions upstream from station. Water-quality records are available in the Environmental Quality Section (EQS) of the Oregon District Office.

AVERAGE DISCHARGE.--29 years (water years 1968-1994, 2002-03), 2,002 ft^3/s, 46.26 in/yr, 1,450,000 ac-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum 49,400 ft^3/s Jan. 21, 1972, gage height, 28.45 ft; minimum, 45 ft^3/s Aug. 18, 19, 1997.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of December 1964 reached a stage of about 28 ft, from information by local residents (discharge not determined). Flood of Feb. 7, 1996 reached a stage of 30.21 ft, present datum, from floodmark, discharge, 54,800 ft^3/s, from rating curve extended above 40,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 15,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	unknown	unknown	unknown	Jan. 31	unknown	unknown	unknown
Dec. 31	unknown	*26,900	a*20.12				

Minimum discharge, 66 ft^3/s Sept. 6.
a From high-water mark.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	174	81	256	e11000	e19000	1730	2850	1860	644	291	123	76
2	152	82	245	7140	8750	1630	2880	1700	620	277	122	75
3	138	83	233	7410	6280	1670	3240	1580	593	268	125	73
4	151	86	250	7460	4810	1600	4570	1940	572	260	129	71
5	154	89	274	7110	3920	1580	4450	2240	551	255	126	70
6	142	91	257	5420	3310	2040	6370	2060	528	251	127	68
7	130	109	240	e4200	2860	7290	5950	1850	513	242	127	77
8	121	398	229	e3400	2530	10700	4580	1720	499	234	121	116
9	115	960	228	2930	2280	8010	3750	1600	485	234	118	159
10	112	1360	334	2540	2070	7300	3210	1490	477	227	115	214
11	106	1480	883	2290	1900	5980	2890	1390	469	219	111	188
12	102	1070	1820	2620	1780	4900	2780	1450	456	213	110	158
13	100	1030	3370	4610	1690	4240	2960	1360	486	211	109	145
14	98	881	4120	4600	1580	4130	2880	1270	490	209	106	128
15	97	695	7500	4000	1580	4390	2670	1200	463	202	103	115
16	95	574	e16500	3300	1770	4020	2460	1170	446	199	100	107
17	94	638	e8000	2800	2580	3470	2320	1120	429	193	99	126
18	92	630	6010	2470	5440	2990	2210	1070	415	187	97	116
19	92	608	4680	2210	4800	2720	2060	1020	410	181	94	107
20	92	554	3550	2000	3630	e3000	1910	967	400	174	90	101
21	92	476	4340	1850	3260	e4400	1810	929	398	166	88	97
22	92	415	4410	1860	3190	e12000	1730	896	393	162	87	93
23	91	368	3320	1960	2920	e11000	1880	858	386	155	87	89
24	92	371	2670	2220	e2600	e8800	2580	828	381	150	89	83
25	92	364	2250	3180	e2350	5510	3120	818	367	146	89	79
26	92	337	2270	4670	e2150	6680	2950	790	350	143	85	78
27	91	313	7890	6070	1960	6490	2700	760	333	143	84	75
28	92	298	7400	4560	1820	5110	2440	729	311	140	83	72
29	92	284	6490	3870	---	4140	2210	701	296	136	82	70
30	90	268	e9000	e9600	---	3500	2020	682	295	131	81	72
31	85	---	e21000	e15000	---	3080	---	670	---	126	79	---
TOTAL	3358	14993	130019	144350	102810	154100	90430	38718	13456	6125	3186	3098
MEAN	108	500	4194	4656	3672	4971	3014	1249	449	198	103	103
MAX	174	1480	21000	15000	19000	12000	6370	2240	644	291	129	214
MIN	85	81	228	1850	1580	1580	1730	670	295	126	79	68
AC-FT	6660	29740	257900	286300	203900	305700	179400	76800	26690	12150	6320	6140
CFSM	0.18	0.85	7.13	7.92	6.24	8.45	5.13	2.12	0.76	0.34	0.17	0.18
IN.	0.21	0.95	8.23	9.13	6.50	9.75	5.72	2.45	0.85	0.39	0.20	0.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2003, BY WATER YEAR (WY)

MEAN	366	2189	4683	4956	4238	3437	2189	1067	591	267	155	169
MAX	1219	7819	9787	10060	9084	6819	4445	2102	1466	628	321	356
(WY)	1969	1974	1982	1970	1986	1974	1982	1984	1993	1983	1968	1971
MIN	64.3	173	261	300	876	1119	686	541	280	127	77.9	86.8
(WY)	1988	1994	1977	1977	1977	1992	1977	1985	1992	1977	1973	1987

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1968 - 2003	
ANNUAL TOTAL	660679		704643			
ANNUAL MEAN	1810		1931		2002	
HIGHEST ANNUAL MEAN					3711	1974
LOWEST ANNUAL MEAN					576	1977
HIGHEST DAILY MEAN	21000	Dec 31	21000	Dec 31	45900	Jan 16 1974
LOWEST DAILY MEAN	62	Sep 5	68	Sep 6	45	Aug 18 1977
ANNUAL SEVEN-DAY MINIMUM	66	Sep 3	73	Sep 1	47	Aug 14 1977
ANNUAL RUNOFF (AC-FT)	1310000		1398000		1450000	
ANNUAL RUNOFF (CFSM)	3.08		3.28		3.40	
ANNUAL RUNOFF (INCHES)	41.80		44.58		46.26	
10 PERCENT EXCEEDS	4880		4980		5240	
50 PERCENT EXCEEDS	554		620		868	
90 PERCENT EXCEEDS	90		91		124	

e Estimated

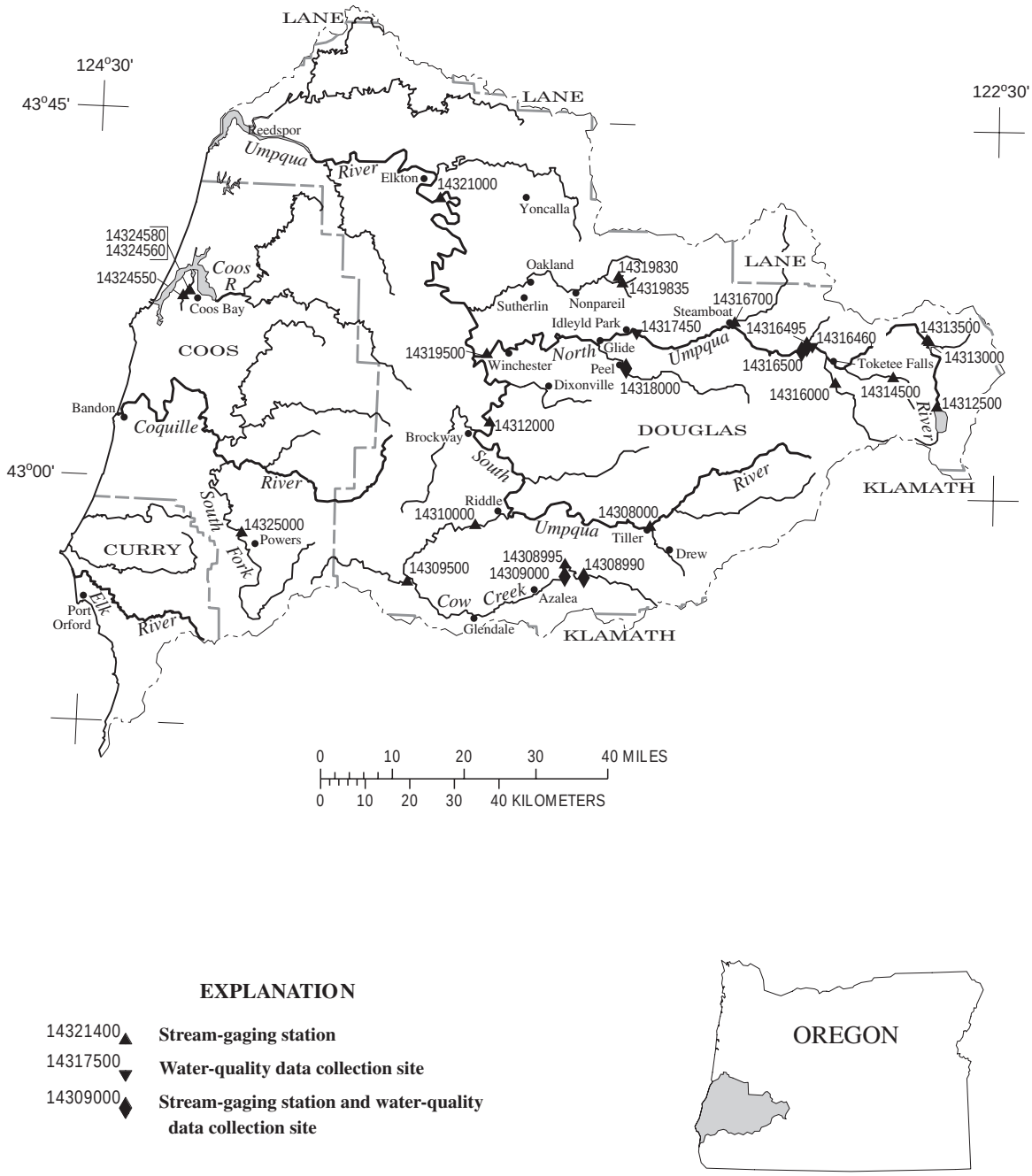


Figure 29. Location of surface-water and water-quality stations in the Umpqua, Coos and Coquille River Basins.

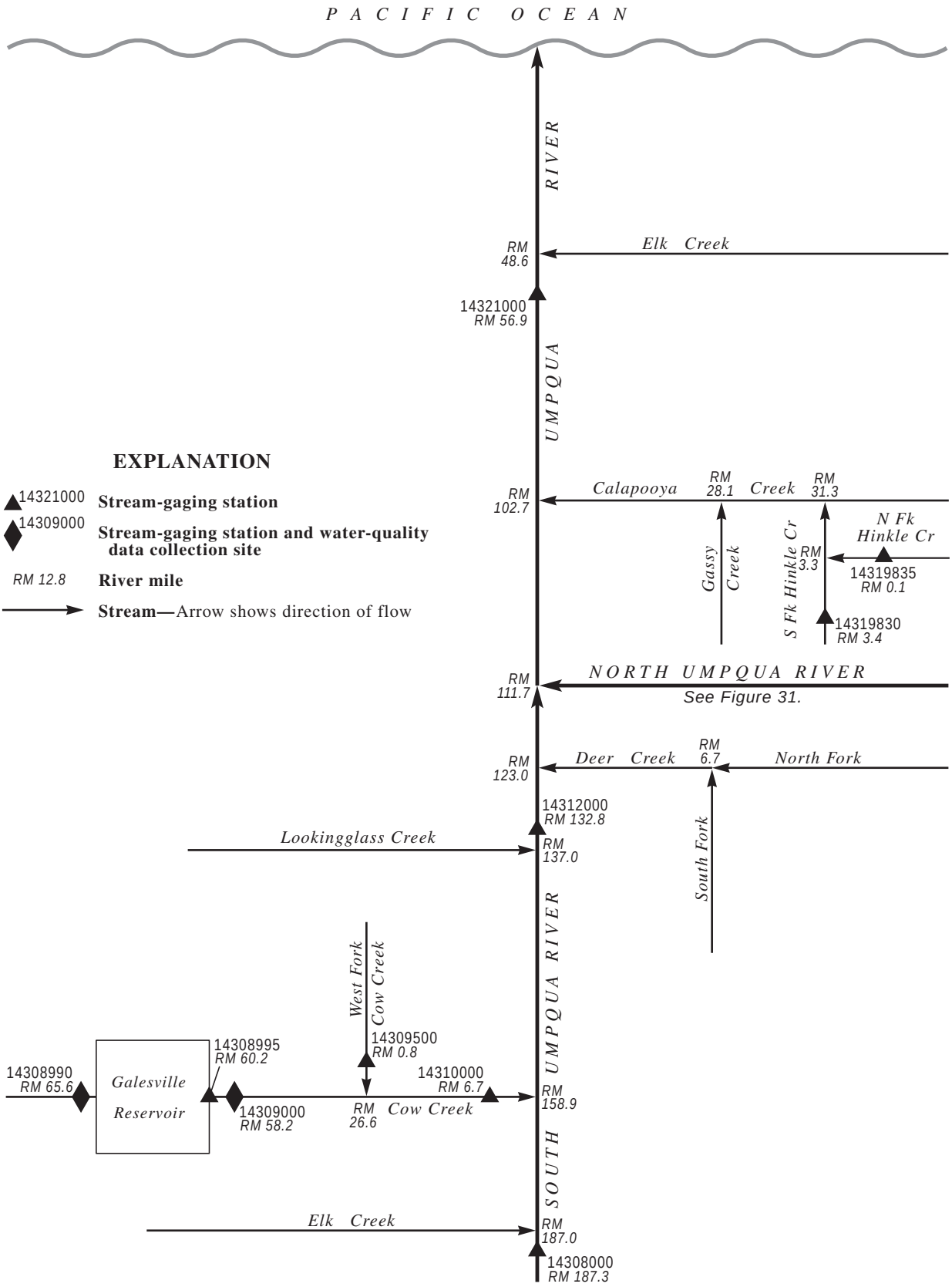


Figure 30. Schematic diagram showing gaging stations in the Umpqua and the South Fork Umpqua River Basins.

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 mi^2.

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 NGVD of 1929 (river-profile survey). Prior to Oct. 1, 1939, nonrecording gage at site 0.2 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. No regulation. Small diversions for irrigation upstream from station. National Weather Service telephone telemetry at station.

AVERAGE DISCHARGE.--65 years, (water years 1911, 1940-2003), 1,024 ft^3/s, 30.98 in/yr, 741,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 60,200 ft^3/s Dec. 22, 1964, gage height, 25.72 ft; minimum discharge observed, 20 ft^3/s Sept. 3, 4, 1911.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than ase discharge of 7,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	0800	8,470	9.46	Jan. 30	1600	7,490	8.88
Dec. 27	2130	*9,990	*10.29	Mar. 26	0830	7,590	8.94

Minimum discharge, 33 ft^3/s Nov. 2.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	37	71	3310	3810	695	2660	1190	508	121	53	41
2	73	36	68	3320	3120	641	2500	1090	466	121	53	40
3	56	37	65	5410	2380	674	2170	1530	437	118	57	40
4	67	37	64	3830	1850	746	2270	2600	417	114	62	38
5	77	37	63	2980	1500	699	2450	2780	392	109	61	37
6	61	37	62	2050	1240	861	2820	2130	368	107	58	38
7	53	39	61	1650	1050	2170	2860	1720	348	104	79	41
8	49	127	58	1370	914	2950	3070	1500	329	101	88	56
9	46	587	57	1170	803	2640	3200	1350	308	98	69	172
10	45	587	64	1000	714	3000	2890	1200	287	95	63	272
11	43	584	121	878	648	2240	3780	1190	270	91	61	114
12	42	347	242	855	591	1870	3050	1160	254	89	59	79
13	42	378	489	1000	569	1680	2610	1090	243	87	58	66
14	41	219	604	1770	624	2050	2340	1070	232	85	57	59
15	40	161	1260	1660	581	3100	2000	1040	218	84	55	55
16	39	132	5240	1290	1590	2630	1710	945	209	83	52	54
17	39	192	1790	1080	1630	2080	1600	855	200	81	51	67
18	38	252	979	1030	1730	1680	1520	776	192	79	51	69
19	38	174	705	961	1740	1430	1360	713	190	76	50	59
20	38	138	540	866	1540	1400	1230	671	189	73	49	54
21	38	131	732	778	1400	1820	1380	653	181	71	48	52
22	39	122	910	736	1630	3840	1330	663	173	70	47	50
23	39	109	638	1010	1470	4540	1300	701	166	69	46	49
24	38	105	492	1110	1250	3070	2130	758	162	66	47	47
25	38	112	410	2930	1050	3820	2450	769	157	64	46	45
26	38	99	371	2370	914	7110	2090	725	149	64	45	43
27	38	88	4780	5340	810	5200	1780	662	141	62	44	43
28	38	82	8990	3850	724	3440	1580	643	134	60	44	42
29	39	78	4840	2470	---	2520	1430	633	128	57	43	41
30	38	74	4220	4680	---	2020	1340	626	123	55	43	41
31	38	---	5740	4530	---	1800	---	571	---	54	42	---
TOTAL	1411	5138	44726	67284	37872	74416	64900	34004	7571	2608	1681	1904
MEAN	45.5	171	1443	2170	1353	2401	2163	1097	252	84.1	54.2	63.5
MAX	77	587	8990	5410	3810	7110	3780	2780	508	121	88	272
MIN	38	36	57	736	569	641	1230	571	123	54	42	37
AC-FT	2800	10190	88710	133500	75120	147600	128700	67450	15020	5170	3330	3780
CFSM	0.10	0.38	3.21	4.83	3.01	5.35	4.82	2.44	0.56	0.19	0.12	0.14
IN.	0.12	0.43	3.71	5.57	3.14	6.17	5.38	2.82	0.63	0.22	0.14	0.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 2003, BY WATER YEAR (WY)

MEAN	191	1026	2012	2086	1979	1722	1422	1067	510	153	76.8	74.6
MAX	1791	3976	7480	4513	4907	4776	2756	2093	1643	301	206	364
(WY)	1951	1974	1965	1972	1986	1972	1993	1963	1953	1953	1976	1986
MIN	34.5	48.2	66.6	89.7	95.1	328	433	231	108	49.5	29.9	38.9
(WY)	1988	1940	1977	1977	1977	1992	1968	1992	1992	1940	1940	1992

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1911 - 2003	
ANNUAL TOTAL	284654		343515			
ANNUAL MEAN	780		941		1024	
HIGHEST ANNUAL MEAN					1762	1974
LOWEST ANNUAL MEAN					268	1977
HIGHEST DAILY MEAN	8990	Dec 28	8990	Dec 28	36500	Dec 22 1964
LOWEST DAILY MEAN	34	Sep 15	36	Nov 2	20	Sep 3 1911
ANNUAL SEVEN-DAY MINIMUM	36	Sep 11	37	Oct 31	26	Aug 27 1940
ANNUAL RUNOFF (AC-FT)	564600		681400		741600	
ANNUAL RUNOFF (CFSM)	1.74		2.10		2.28	
ANNUAL RUNOFF (INCHES)	23.58		28.46		30.98	
10 PERCENT EXCEEDS	2000		2710		2420	
50 PERCENT EXCEEDS	309		329		505	
90 PERCENT EXCEEDS	39		42		58	

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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,900 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. No regulation or diversion upstream from station. Continuous water-quality records for the period November 1985 to September 1989 have been collected at this location.

AVERAGE DISCHARGE.--18 years (water years 1986-2003), 84.2 ft^3/s, 17.67 in/yr, 60,970 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 6,980 ft^3/s Jan. 9, 1995, gage height 12.04 ft, from rating curve extended above 2,450 ft^3/s; maximum gage height 12.30 ft Jan. 9, 1995 (from outside highwater mark); minimum discharge, 3.5 ft^3/s Dec. 26, 1989, result of freezeup.

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 ft^3/s at site 7.4 mi downstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	0100	1,890	6.41	Dec. 30	1700	*1,990	*6,56
Dec. 27	1100	1,600	5.91				

Minimum discharge, 4.1 ft^3/s Sept. 10, 25.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.9	7.2	10	550	294	75	212	149	38	18	9.6	8.0
2	7.2	8.1	9.8	561	260	70	181	137	37	18	10	8.0
3	7.2	7.2	9.8	746	209	79	162	160	35	17	13	7.7
4	10	7.2	9.7	535	176	77	187	155	34	17	15	7.6
5	8.9	7.2	9.8	400	152	70	221	145	33	16	12	7.6
6	7.7	7.3	9.7	288	133	69	237	132	31	16	11	7.5
7	7.0	11	9.4	230	117	72	246	119	30	16	16	8.5
8	7.1	68	9.3	191	104	71	252	116	29	16	13	13
9	7.1	128	9.4	163	92	83	242	118	28	15	12	19
10	7.1	81	13	143	84	120	217	108	28	15	11	16
11	6.9	45	14	126	78	105	187	101	28	14	11	12
12	6.9	31	14	123	71	92	186	101	27	14	10	11
13	6.8	30	52	148	74	97	178	91	27	13	10	9.8
14	6.7	21	274	210	81	343	191	83	26	13	9.8	9.7
15	6.3	17	602	182	84	593	160	78	25	13	9.7	9.7
16	6.4	15	1070	146	179	328	150	73	25	14	9.7	10
17	6.3	18	264	127	185	276	170	69	24	13	9.0	11
18	6.3	16	123	117	170	222	168	65	24	13	9.0	10
19	6.4	14	81	105	156	195	152	62	25	13	9.2	9.9
20	6.3	13	76	94	145	196	141	59	25	12	8.8	9.5
21	6.8	13	131	85	134	176	251	56	24	12	8.8	9.4
22	6.9	12	88	99	129	187	246	54	23	12	8.8	9.3
23	6.9	11	67	141	118	195	235	51	23	12	8.8	9.2
24	6.8	13	55	119	107	169	396	49	22	11	8.9	9.2
25	6.9	13	47	158	96	184	335	52	21	11	8.6	8.8
26	7.0	12	58	137	87	257	280	49	20	11	8.5	8.5
27	6.8	11	1070	392	80	252	243	45	20	11	8.6	8.2
28	7.1	11	1180	278	74	204	214	43	19	10	8.8	8.1
29	7.3	10	599	201	---	171	187	42	18	9.1	8.6	8.3
30	7.2	10	971	174	---	149	166	41	18	9.6	8.1	9.0
31	7.1	---	1160	159	---	146	---	41	---	9.6	8.2	---
TOTAL	219.3	668.2	8095.9	7128	3669	5323	6393	2644	787	414.3	313.5	293.5
MEAN	7.07	22.3	261	230	131	172	213	85.3	26.2	13.4	10.1	9.78
MAX	10	128	1180	746	294	593	396	160	38	18	16	19
MIN	6.3	7.2	9.3	85	71	69	141	41	18	9.1	8.1	7.5
AC-FT	435	1330	16060	14140	7280	10560	12680	5240	1560	822	622	582
CFSM	0.11	0.34	4.04	3.55	2.03	2.65	3.29	1.32	0.41	0.21	0.16	0.15
IN.	0.13	0.38	4.65	4.10	2.11	3.06	3.68	1.52	0.45	0.24	0.18	0.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2003, BY WATER YEAR (WY)

MEAN	12.9	55.0	152	202	189	157	107	71.3	33.7	16.0	10.1	9.50
MAX	27.2	269	862	506	483	315	213	208	83.8	30.2	15.8	18.8
(WY)	1998	1999	1997	1997	1999	1989	2003	1998	1998	1998	1993	1986
MIN	6.41	12.2	18.2	22.5	29.2	32.6	32.5	18.8	11.8	7.03	5.16	5.66
(WY)	1988	1988	1990	2001	2001	2001	1990	2001	2001	1994	1994	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1986 - 2003	
ANNUAL TOTAL	26451.8		35948.7			
ANNUAL MEAN	72.5		98.5		84.2	
HIGHEST ANNUAL MEAN					179	1997
LOWEST ANNUAL MEAN					20.0	2001
HIGHEST DAILY MEAN	1180	Dec 28	1180	Dec 28	3980	Jan 1 1997
LOWEST DAILY MEAN	4.9	Sep 15	6.3	Oct 15	4.2	Sep 24 1994
ANNUAL SEVEN-DAY MINIMUM	5.2	Sep 10	6.4	Oct 14	4.5	Sep 21 1994
ANNUAL RUNOFF (AC-FT)	52470		71300		60970	
ANNUAL RUNOFF (CFSM)	1.12		1.52		1.30	
ANNUAL RUNOFF (INCHES)	15.21		20.67		17.67	
10 PERCENT EXCEEDS	150		232		199	
50 PERCENT EXCEEDS	20		30		30	
90 PERCENT EXCEEDS	6.4		7.7		8.0	

14308990 COW CREEK ABOVE GALESVILLE RESERVOIR, NEAR AZALEA, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
TURBIDITY: October 1999 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Records good except for the period June 30 to July 15 and those greater than 100 NTU, which are fair. The probe was checked using a polymer bead standard. Water-quality monitor located 600 ft downstream from water discharge site.

EXTREMES FOR PERIOD OF RECORD.--Maximum recorded, 182 NTU Dec. 30, 2002; minimum, <1 many days each year.

EXTREMES FOR CURRENT YEAR.--
TURBIDITY: Maximum recorded, 182 NTU Dec. 30; minimum, <1 many days during year.

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	3	1	2	---	---	---	<1	<1	<1	32	15	21
2	3	2	2	---	---	---	<1	<1	<1	44	12	18
3	3	2	2	---	---	---	2	<1	<1	41	16	21
4	3	1	2	---	---	---	2	<1	<1	17	12	14
5	3	2	2	---	---	---	1	<1	<1	14	9	11
6	3	1	2	---	---	---	2	<1	<1	10	7	8
7	3	2	2	---	---	---	3	<1	<1	8	6	6
8	4	<1	1	28	6	13	1	<1	<1	6	4	5
9	2	<1	1	48	7	14	<1	<1	<1	5	3	4
10	2	<1	<1	19	6	8	2	<1	<1	4	3	4
11	4	<1	<1	6	3	4	3	<1	<1	4	2	3
12	2	<1	<1	4	1	2	2	<1	<1	4	2	3
13	4	<1	<1	2	1	1	12	2	5	6	3	3
14	4	<1	<1	2	<1	1	122	3	27	7	5	6
15	2	<1	<1	3	<1	<1	176	18	31	7	4	5
16	2	<1	<1	2	<1	<1	---	---	---	4	3	3
17	2	<1	<1	2	<1	1	65	11	24	4	2	3
18	2	<1	<1	1	<1	<1	15	6	9	4	2	2
19	2	<1	<1	1	<1	<1	8	5	5	3	2	2
20	2	<1	1	1	<1	<1	9	4	4	4	2	2
21	3	<1	2	2	<1	<1	12	5	9	2	2	2
22	2	<1	<1	1	<1	<1	5	4	5	8	2	2
23	2	<1	<1	2	<1	<1	7	3	3	8	3	4
24	2	<1	<1	1	<1	<1	4	2	3	5	2	3
25	5	<1	<1	1	<1	<1	3	2	2	5	4	4
26	4	<1	<1	1	<1	<1	7	2	2	5	3	3
27	2	<1	<1	2	<1	<1	139	6	83	40	4	18
28	3	<1	<1	<1	<1	<1	70	31	42	13	7	8
29	2	<1	<1	<1	<1	<1	39	14	23	8	4	6
30	3	<1	<1	<1	<1	<1	182	12	48	5	4	4
31	3	<1	1	---	---	---	146	32	59	5	3	4
MAX	5	2	2	---	---	---	---	---	---	44	16	21
MIN	2	<1	<1	---	---	---	---	---	---	2	2	2

14308990 COW CREEK ABOVE GALESVILLE RESERVOIR, NEAR AZALEA, OR--Continued

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	18	4	12	2	<1	1	---	---	---	3	2	2
2	10	6	8	2	<1	<1	---	---	---	4	2	2
3	7	4	6	2	<1	1	---	---	---	4	3	3
4	6	4	4	2	1	1	---	---	---	5	2	3
5	5	3	4	2	<1	1	---	---	---	3	2	2
6	6	3	3	3	1	1	---	---	---	3	2	2
7	4	3	3	2	1	1	---	---	---	4	2	2
8	4	2	3	2	1	1	---	---	---	3	2	2
9	4	2	2	4	1	2	6	3	3	2	2	2
10	4	2	2	4	2	3	4	2	3	2	1	2
11	4	2	2	2	2	2	3	2	3	2	1	1
12	3	2	2	4	2	2	8	2	3	3	1	2
13	3	2	2	6	2	2	6	2	3	4	1	2
14	4	2	3	---	---	---	7	3	4	3	1	2
15	5	2	2	---	---	---	4	2	2	3	<1	2
16	9	5	7	---	---	---	3	2	2	3	<1	1
17	9	5	6	---	---	---	5	2	3	4	<1	1
18	5	4	4	---	---	---	5	2	3	2	<1	1
19	4	3	4	---	---	---	3	2	2	2	<1	<1
20	4	3	3	---	---	---	4	2	2	1	<1	<1
21	4	2	3	---	---	---	12	4	9	2	<1	<1
22	4	2	3	---	---	---	7	5	6	2	<1	<1
23	3	2	2	---	---	---	21	4	5	1	<1	<1
24	4	2	2	---	---	---	30	11	13	2	<1	<1
25	4	<1	1	---	---	---	12	6	7	2	<1	<1
26	2	<1	1	---	---	---	6	4	5	1	<1	<1
27	3	<1	<1	---	---	---	5	4	4	2	<1	<1
28	2	<1	<1	---	---	---	6	3	3	2	<1	<1
29	---	---	---	---	---	---	4	2	3	3	<1	<1
30	---	---	---	---	---	---	6	2	3	2	<1	<1
31	---	---	---	---	---	---	---	---	---	2	<1	<1
MAX	18	6	12	---	---	---	---	---	---	5	3	3
MIN	2	<1	<1	---	---	---	---	---	---	1	<1	<1

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1	<1	<1	<1	<1	<1	2	<1	<1	4	<1	1
2	3	<1	1	2	<1	<1	2	<1	<1	5	<1	1
3	2	<1	<1	1	<1	<1	2	<1	<1	4	<1	1
4	2	<1	<1	<1	<1	<1	2	<1	1	3	<1	1
5	7	<1	2	<1	<1	<1	2	<1	<1	4	1	1
6	6	2	3	1	<1	<1	2	<1	<1	9	1	2
7	3	<1	1	<1	<1	<1	1	<1	<1	3	<1	1
8	1	<1	<1	1	<1	<1	1	<1	<1	2	<1	<1
9	2	<1	<1	<1	<1	<1	1	<1	<1	3	<1	1
10	2	<1	<1	2	<1	<1	<1	<1	<1	2	<1	<1
11	2	<1	<1	1	<1	<1	2	<1	<1	1	<1	<1
12	2	<1	<1	2	<1	<1	2	<1	<1	1	<1	<1
13	2	<1	<1	1	<1	<1	3	<1	<1	2	<1	<1
14	1	<1	<1	<1	<1	<1	2	<1	<1	2	<1	<1
15	3	<1	1	1	<1	<1	4	<1	<1	2	<1	<1
16	6	2	3	<1	<1	<1	5	<1	<1	2	<1	<1
17	5	<1	2	1	<1	<1	2	<1	1	<1	<1	<1
18	6	<1	1	2	<1	<1	6	<1	1	1	<1	<1
19	4	<1	<1	<1	<1	<1	3	<1	1	2	<1	<1
20	1	<1	<1	1	<1	<1	3	<1	1	4	<1	<1
21	2	<1	<1	2	<1	<1	4	<1	1	2	<1	<1
22	1	<1	<1	2	<1	<1	2	<1	1	3	<1	<1
23	<1	<1	<1	2	<1	<1	2	<1	1	3	<1	<1
24	2	<1	<1	2	<1	<1	3	<1	1	2	<1	<1
25	2	<1	<1	2	<1	<1	3	<1	1	2	<1	<1
26	2	<1	<1	1	<1	1	3	<1	1	2	<1	<1
27	2	<1	<1	2	<1	1	6	<1	<1	2	<1	<1
28	1	<1	<1	2	<1	1	3	<1	<1	4	<1	<1
29	5	<1	<1	1	<1	<1	4	<1	<1	5	<1	1
30	6	<1	<1	2	<1	<1	2	<1	1	2	<1	1
31	---	---	---	2	<1	<1	4	<1	1	---	---	---
MAX	7	2	3	2	<1	1	6	<1	1	9	1	2
MIN	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

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 mi^2.

PERIOD OF RECORD.--October 1985 to current year.

GAGE.--Water-stage recorder. Datum of gage is NGVD 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.--Capacity table furnished by Douglas County Public Works Department.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 43,230 acre-ft Jan. 2, 3, 1997, elevation, 1,883.62 ft; minimum contents, 7,240 acre-ft Jan. 9, 10, 1991, elevation, 1,805.03 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 40,930 acre-ft Apr. 28, elevation, 1,879.99 ft; minimum contents, 20,600 acre-ft Dec. 12, elevation, 1,841.74 ft.

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

1,780	1,800	1,820	11,960	1,860	29,480
1,790	3,590	1,830	15,660	1,870	34,970
1,800	5,890	1,840	19,820	1,880	40,930
1,810	8,700	1,850	24,420	1,885	44,130

Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1852.00	1846.45	1842.41	1858.94	1849.66	1856.09	1869.44	1879.44	1875.74	1866.24	1860.54	1856.38
2	1851.92	1846.27	1842.33	1857.86	1850.47	1856.11	1869.99	1879.20	1875.66	1865.85	1860.43	1856.24
3	1851.88	1846.10	1842.26	1857.45	1851.03	1856.17	1870.48	1879.05	1875.59	1865.51	1860.31	1856.10
4	1851.83	1845.92	1842.19	1856.14	1851.43	1856.22	1871.07	1878.88	1875.47	1865.19	1860.21	1855.94
5	1851.75	1845.74	1842.12	1854.28	1851.74	1856.24	1871.75	1878.70	1875.32	1864.89	1860.07	1855.79
6	1851.66	1845.61	1842.05	1851.98	1851.95	1856.27	1872.48	1878.48	1875.12	1864.60	1859.99	1855.63
7	1851.55	1845.50	1841.98	1849.74	1852.10	1856.29	1873.26	1878.23	1874.89	1864.31	1859.89	1855.52
8	1851.43	1845.49	1841.91	1848.05	1852.23	1856.28	1874.02	1878.03	1874.58	1864.04	1859.77	1855.40
9	1851.31	1845.34	1841.87	1847.11	1852.32	1856.40	1874.73	1877.84	1874.21	1863.79	1859.64	1855.36
10	1851.16	1844.97	1841.82	1846.63	1852.38	1856.60	1875.38	1877.66	1873.83	1863.57	1859.50	1855.26
11	1851.00	1844.56	1841.77	1846.06	1852.42	1856.76	1875.91	1877.47	1873.47	1863.37	1859.37	1855.13
12	1850.85	1844.38	1841.76	1845.51	1852.45	1856.86	1876.42	1877.29	1873.14	1863.18	1859.23	1855.00
13	1850.69	1844.27	1841.77	1845.24	1852.51	1857.00	1876.94	1877.11	1872.81	1863.02	1859.10	1854.87
14	1850.51	1844.17	1842.47	1845.38	1852.58	1858.13	1877.44	1876.94	1872.46	1862.88	1858.97	1854.73
15	1850.30	1844.05	1844.44	1845.41	1852.68	1860.19	1877.82	1876.82	1872.10	1862.76	1858.83	1854.59
16	1850.07	1843.95	1850.77	1845.29	1853.16	1861.23	1877.97	1876.74	1871.75	1862.65	1858.69	1854.45
17	1849.84	1843.84	1850.09	1845.06	1853.68	1862.04	1877.93	1876.66	1871.39	1862.53	1858.54	1854.33
18	1849.59	1843.72	1848.39	1844.81	1854.11	1862.62	1877.84	1876.58	1871.03	1862.42	1858.41	1854.20
19	1849.34	1843.59	1846.63	1844.51	1854.49	1863.11	1877.79	1876.51	1870.67	1862.30	1858.26	1854.07
20	1849.09	1843.45	1845.61	1844.15	1854.83	1863.59	1877.71	1876.44	1870.33	1862.17	1858.12	1853.93
21	1848.84	1843.33	1845.47	1843.95	1855.12	1864.00	1877.98	1876.32	1869.96	1862.05	1857.98	1853.80
22	1848.59	1843.21	1845.13	1844.05	1855.35	1864.45	1878.17	1876.26	1869.57	1861.92	1857.83	1853.67
23	1848.34	1843.09	1844.74	1844.32	1855.55	1864.92	1878.36	1876.16	1869.20	1861.78	1857.69	1853.54
24	1848.09	1843.01	1844.58	1844.52	1855.72	1865.28	1879.07	1876.10	1868.83	1861.65	1857.54	1853.41
25	1847.86	1842.91	1844.49	1844.86	1855.84	1865.78	1879.55	1876.08	1868.55	1861.50	1857.39	1853.27
26	1847.63	1842.83	1844.35	1845.11	1855.93	1866.50	1879.83	1876.04	1868.17	1861.38	1857.24	1853.12
27	1847.41	1842.74	1849.15	1846.48	1855.99	1867.22	1879.97	1876.05	1867.79	1861.25	1857.10	1852.96
28	1847.21	1842.66	1853.18	1847.37	1856.04	1867.74	1879.85	1875.98	1867.41	1861.12	1856.96	1852.79
29	1847.01	1842.57	1853.06	1847.91	---	1868.13	1879.80	1875.93	1867.01	1860.98	1856.82	1852.63
30	1846.82	1842.49	1855.50	1848.34	---	1868.44	1879.64	1875.88	1866.62	1860.83	1856.67	1852.47
31	1846.62	---	1859.95	1848.69	---	1868.81	---	1875.82	---	1860.68	1856.53	---
MAX	1852.00	1846.45	1859.95	1858.94	1856.04	1868.81	1879.97	1879.44	1875.74	1866.24	1860.54	1856.38
MIN	1846.62	1842.49	1841.76	1843.95	1849.66	1856.09	1869.44	1875.82	1866.62	1860.68	1856.53	1852.47
(†)	22820	20930	29450	23800	27420	34290	40710	38380	33070	29840	27670	25630
(‡)	-2610	-1890	+8520	-5650	+3620	+6870	+6420	-2330	-5310	-3230	-2170	-2040

CAL YR 2002 MAX --- MIN --- AC-FT‡ +10,910
WTR YR 2003 MAX 1879.97 MIN 1841.76 AC-FT‡ +200

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

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 mi^2.

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 NGVD of 1929 (Douglas County Road Department bench mark). Prior to July 19, 1949, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated since Oct. 7, 1985 by Galesville Reservoir (station 14308995). Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--73 years (water years 1930-31, 1933-2003), 107 ft^3/s, 18.63 in/yr, 77,520 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft^3/s Jan. 15, 1974, gage height, 16.40 ft, from high-water mark in well; minimum discharge, 1.1 ft^3/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, 977 ft^3/s Jan. 1, gage height, 5.75 ft; minimum discharge, 24 ft^3/s Oct. 1, 2.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	48	29	907	104	79	83	181	61	115	42	39
2	25	47	27	956	103	79	83	186	61	108	43	39
3	27	47	27	952	100	79	81	181	61	104	43	38
4	27	47	26	921	98	79	82	e181	71	99	42	38
5	29	48	26	899	97	79	84	e182	78	95	42	40
6	32	48	26	876	97	80	86	186	88	91	42	38
7	33	52	26	783	91	79	86	184	97	90	43	38
8	35	104	26	584	85	80	85	180	113	85	42	38
9	37	176	27	372	85	81	83	167	123	79	42	39
10	41	180	27	238	83	80	83	156	127	70	41	38
11	42	146	28	237	80	81	84	156	124	65	41	39
12	43	80	27	236	79	82	81	152	113	59	41	38
13	46	59	58	204	79	85	82	142	115	54	40	38
14	49	48	123	168	79	84	82	133	118	48	40	38
15	53	45	185	168	80	89	91	115	119	43	39	37
16	58	45	209	167	83	88	122	102	119	42	40	38
17	60	46	475	167	84	88	167	99	118	42	40	38
18	64	45	570	166	84	88	172	96	118	42	40	38
19	65	45	506	166	84	87	153	92	117	41	39	38
20	65	44	339	165	84	86	148	87	117	42	39	37
21	65	42	179	137	83	84	172	93	118	44	39	36
22	65	40	177	91	83	82	186	82	118	43	39	36
23	65	39	166	86	84	81	190	85	118	43	39	36
24	64	38	110	89	82	81	193	76	118	43	42	36
25	61	35	80	94	79	82	195	70	117	43	39	36
26	59	34	104	94	79	85	188	67	118	42	39	39
27	57	32	203	101	79	86	185	70	118	42	38	40
28	55	31	414	100	79	82	189	68	118	42	38	40
29	52	30	703	98	---	80	183	61	118	42	39	40
30	54	29	723	97	---	80	e183	61	118	42	39	40
31	48	---	411	97	---	81	---	61	---	43	39	---
TOTAL	1500	1750	6057	10416	2407	2557	3882	3752	3237	1883	1251	1143
MEAN	48.4	58.3	195	336	86.0	82.5	129	121	108	60.7	40.4	38.1
MAX	65	180	723	956	104	89	195	186	127	115	43	40
MIN	24	29	26	86	79	79	81	61	61	41	38	36
AC-FT	2980	3470	12010	20660	4770	5070	7700	7440	6420	3730	2480	2270
MEAN†	6.02	26.6	334	244	151	194	237	83.1	18.7	8.13	10.9	3.87
CFSM†	0.08	0.34	4.28	3.13	1.94	2.49	3.04	1.06	0.24	0.10	0.14	0.05
IN.†	0.09	0.38	4.94	3.61	2.02	2.87	3.39	1.23	0.27	0.12	0.16	0.06
AC-FT†	370	1580	20530	15010	8390	11940	14120	5110	1110	500	670	230

CAL YR 2002 TOTAL 24625 MEAN 67.5 MAX 723 MIN 20 AC-FT 48840 MEAN† 82.5 CFSM† 1.06 IN.† 14.36 AC-FT† 59750
WTR YR 2003 TOTAL 39835 MEAN 109 MAX 956 MIN 24 AC-FT 79010 MEAN† 109 CFSM† 1.40 IN.† 19.04 AC-FT† 79200

e Estimated
† Adjusted for change in contents, in Galesville Reservoir.

14309000 COW CREEK NEAR AZALEA, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
DISSOLVED OXYGEN: November 1985 to current year.
TURBIDITY: October 1999 to current year.

INSTRUMENTATION.--Water-quality monitor since November 1985.

REMARKS.--Dissolved oxygen records good except for the periods Oct. 8-21, Nov. 5-25, Dec. 26 to Jan. 28, July 15-30, which are fair; turbidity records good except for the periods Nov. 5-25, Apr. 22 to May 6, June 3-17, which are fair. The turbidity probe was checked using a polymer bead standard. Water-quality monitor located 1.9 mi upstream from water-discharge site, 1000 ft downstream from Galesville Dam, and at mile 60.1.

EXTREMES FOR PERIOD OF DAILY RECORD.--
DISSOLVED OXYGEN: Maximum recorded, 15.1 mg/L Feb. 7, 1989, Nov. 17, 20, 1996, caused by operation of bypass valve at dam; minimum, 0.9 mg/L July 30, 1988.
TURBIDITY: Maximum recorded, 89 NTU May 1, 2002, but may have been higher during period of missing record; minimum, <1 NTU many days each year.

EXTREMES FOR CURRENT YEAR.--
DISSOLVED OXYGEN: Maximum recorded, 13.2 mg/L Mar. 20, but may have been higher during periods of missing record; minimum recorded, 5.7 mg/L Jan. 22, but may have been lower during periods of missing record.
TURBIDITY: Maximum recorded, 31 NTU Jan. 4, but may have been higher during periods of missing record; minimum, <1 NTU many days during the year.

Dissolved oxygen, water, unfiltered, milligrams per liter
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.2	7.7	7.8	8.1	7.8	7.9	---	---	---	7.7	6.3	7.2
2	9.6	7.6	8.4	8.0	7.8	7.9	---	---	---	9.6	7.1	8.2
3	9.9	7.9	9.0	8.0	7.7	7.9	---	---	---	8.7	7.2	7.8
4	8.1	7.8	7.9	8.0	7.8	7.9	---	---	---	8.1	7.1	7.7
5	8.2	7.9	8.0	8.7	7.6	7.9	---	---	---	8.6	7.1	7.9
6	8.2	7.8	8.0	8.0	7.8	7.9	---	---	---	8.6	7.3	8.1
7	8.3	8.0	8.1	7.9	7.8	7.8	---	---	---	8.5	7.6	8.2
8	8.3	7.9	8.1	8.9	7.6	7.8	---	---	---	8.6	7.6	8.1
9	8.2	7.9	8.0	7.8	7.5	7.7	---	---	---	9.0	7.1	7.9
10	8.1	7.8	8.0	7.8	7.6	7.7	---	---	---	8.8	7.0	8.0
11	8.2	7.9	8.0	7.8	7.5	7.6	---	---	---	8.4	5.8	7.2
12	8.3	7.9	8.1	7.6	7.1	7.3	---	---	---	9.0	6.7	7.6
13	8.2	8.0	8.1	7.4	7.3	7.4	---	---	---	8.1	6.7	7.3
14	8.3	8.0	8.1	7.3	7.0	7.2	---	---	---	8.7	6.7	7.4
15	8.3	8.0	8.1	7.2	7.1	7.2	---	---	---	8.3	6.7	7.3
16	8.4	8.1	8.3	7.2	6.0	6.9	---	---	---	8.0	6.4	7.0
17	8.5	8.3	8.4	7.2	6.7	7.0	---	---	---	7.9	6.3	6.8
18	8.6	8.3	8.5	7.1	6.9	6.9	---	---	---	7.9	6.5	7.1
19	8.6	8.4	8.5	7.1	6.9	6.9	---	---	---	7.6	6.2	6.7
20	8.6	8.4	8.5	7.1	6.6	6.9	---	---	---	7.3	6.2	6.7
21	8.9	8.3	8.4	7.0	6.7	6.8	---	---	---	7.9	6.0	6.9
22	8.4	8.2	8.3	6.9	6.6	6.8	---	---	---	7.9	5.7	6.7
23	8.4	8.2	8.2	6.8	6.5	6.7	---	---	---	8.4	5.9	7.3
24	8.7	8.1	8.4	6.6	6.2	6.4	---	---	---	9.0	7.2	8.2
25	8.7	8.4	8.5	---	---	---	---	---	---	9.4	7.6	8.8
26	8.6	8.3	8.5	---	---	---	---	---	---	9.4	8.5	8.8
27	8.5	8.2	8.3	---	---	---	9.2	8.0	8.6	8.8	6.0	7.9
28	8.4	8.2	8.2	---	---	---	8.8	7.4	8.0	---	---	---
29	8.2	8.0	8.1	---	---	---	9.5	7.5	8.3	---	---	---
30	8.2	7.9	8.1	---	---	---	8.3	6.8	7.6	---	---	---
31	8.1	7.9	8.0	---	---	---	8.2	7.0	7.5	---	---	---
MONTH	9.9	7.6	8.2	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	11.9	11.4	11.6	10.9	10.6	10.8
2	---	---	---	---	---	---	11.8	11.2	11.5	11.9	10.5	11.0
3	---	---	---	---	---	---	12.5	11.4	11.9	10.8	10.5	10.7
4	---	---	---	---	---	---	12.5	11.7	12.1	10.9	10.1	10.7
5	---	---	---	---	---	---	12.1	11.3	11.8	12.2	10.6	11.1
6	---	---	---	---	---	---	11.8	11.3	11.6	11.9	10.0	10.8
7	---	---	---	---	---	---	11.6	11.1	11.4	12.1	10.6	11.0
8	---	---	---	---	---	---	11.6	10.9	11.2	11.0	10.7	10.9
9	---	---	---	---	---	---	11.3	10.7	11.1	11.1	10.8	11.0
10	---	---	---	---	---	---	11.4	10.9	11.1	11.1	10.9	11.0
11	---	---	---	---	---	---	11.3	10.7	11.0	11.0	10.8	11.0
12	---	---	---	9.8	8.9	9.2	11.2	10.7	10.9	11.0	10.2	10.9
13	---	---	---	11.4	9.5	10	11.2	10.5	10.8	11.1	10.9	11.0
14	---	---	---	12.8	9.7	11.2	11.1	10.7	10.9	11.1	10.8	11.0
15	---	---	---	12.3	11.6	11.9	10.9	10.6	10.7	11.2	10.8	11.0
16	---	---	---	12.3	11.7	12.0	10.8	10.5	10.7	11.2	10.8	11.0
17	---	---	---	12.7	12.2	12.4	10.8	10.3	10.6	11.2	10.8	11.0
18	---	---	---	12.8	12.4	12.6	10.9	10.1	10.6	11.1	10.8	11.0
19	---	---	---	12.9	12.4	12.7	10.8	10.5	10.7	11.1	10.1	10.8
20	---	---	---	13.2	12.7	13.0	10.7	10.4	10.6	11.0	10.6	10.8
21	---	---	---	12.9	12.5	12.7	10.6	10.3	10.5	11.6	10.6	10.8
22	---	---	---	12.7	12.1	12.5	10.9	10.4	10.6	10.8	10.3	10.6
23	---	---	---	12.8	11.9	12.5	11.7	10.6	10.9	11.6	10.1	10.7
24	---	---	---	12.5	12.0	12.3	10.9	10.5	10.7	10.7	10.2	10.5
25	---	---	---	12.3	11.9	12.1	11.8	10.1	10.8	10.7	10.4	10.5
26	---	---	---	12.3	11.7	12.0	10.9	10.6	10.7	10.6	10.2	10.4
27	---	---	---	12.4	11.7	12.0	10.9	10.5	10.7	11.3	10.1	10.6
28	---	---	---	12.2	11.9	12.0	12.1	10.6	11.0	11.4	10.2	10.6
29	---	---	---	12.2	11.8	12.0	11.0	10.5	10.7	10.7	10.1	10.4
30	---	---	---	12.1	11.7	11.9	12.4	10.4	11.1	10.6	10.2	10.4
31	---	---	---	12.0	11.5	11.8	---	---	---	10.5	10.0	10.3
MONTH	---	---	---	---	---	---	12.5	10.1	11.0	12.2	10.0	10.8

14309000 COW CREEK NEAR AZALEA, OR--Continued

Dissolved oxygen, water, unfiltered, milligrams per liter
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.5	10.0	10.3	---	---	---	10.8	10.1	10.5	9.8	9.1	9.6
2	10.6	10.1	10.3	---	---	---	10.7	10.3	10.5	9.9	9.1	9.5
3	10.7	9.6	10.2	---	---	---	10.7	10.3	10.5	9.8	9.1	9.5
4	11.1	10.1	10.6	---	---	---	11.0	10.1	10.6	9.9	9.1	9.5
5	10.9	10.1	10.4	---	---	---	11.2	10.2	10.6	10.1	9.0	9.5
6	10.7	10.2	10.4	---	---	---	11.1	10.1	10.7	10	9.0	9.5
7	10.9	10.1	10.5	---	---	---	11.0	10.3	10.7	9.8	8.9	9.4
8	11.1	10.3	10.7	11.5	10.0	10.4	11.1	10.3	10.7	9.6	9.1	9.3
9	11.2	10.9	11.0	11.5	9.9	10.2	11.2	10.3	10.8	9.6	9.0	9.3
10	11.1	10.9	11.0	10.5	9.8	10.1	11.1	10.4	10.7	9.5	8.7	9.2
11	11.1	10.0	10.8	10.4	9.7	10.1	11.2	9.9	10.8	9.7	9.1	9.3
12	10.6	10.1	10.4	10.3	9.7	10.0	11.0	10.3	10.6	9.5	8.9	9.2
13	10.7	10.3	10.5	10.3	9.8	10.1	10.8	9.5	10.1	9.5	8.9	9.1
14	10.8	10.2	10.5	10.4	9.8	10.2	10.3	9.6	10	9.3	8.8	9.1
15	10.8	10.2	10.5	---	---	---	10.4	9.7	10.0	9.3	8.8	9.0
16	10.6	10.0	10.3	11.1	10.6	10.9	10.4	9.7	10.0	9.1	8.6	8.9
17	---	---	---	11.1	10.6	10.9	10.3	9.6	10.0	9.3	8.7	9.0
18	---	---	---	11.0	10.5	10.8	10.4	9.4	10.0	9.3	8.7	9.0
19	---	---	---	11.3	10.4	10.8	10.4	9.4	9.9	9.3	8.7	9.0
20	---	---	---	11.1	10.4	10.8	10.1	9.5	9.9	9.4	8.7	9.0
21	---	---	---	11.7	10.4	11.0	10.2	9.3	9.9	9.2	8.6	8.9
22	---	---	---	11.9	10.7	11.2	10.2	9.2	9.7	9.2	8.4	8.8
23	---	---	---	11.9	10.8	11.2	10.0	9.0	9.6	9.3	8.7	9.0
24	---	---	---	11.6	10.6	11.0	10.5	9.0	9.6	9.3	8.8	9.1
25	---	---	---	11.5	10.5	10.9	9.7	8.8	9.3	9.3	8.8	9.1
26	---	---	---	11.2	10.4	10.8	9.9	9.0	9.4	9.3	8.7	9.0
27	---	---	---	11.0	10.2	10.7	9.8	9.1	9.4	9.4	8.8	9.1
28	---	---	---	11.0	10.1	10.6	10.1	9.2	9.6	9.4	8.9	9.2
29	---	---	---	11.0	9.8	10.5	10	9.1	9.6	9.6	9.0	9.3
30	---	---	---	11.0	10.0	10.5	10	9.2	9.6	9.5	9.1	9.2
31	---	---	---	11.5	10.3	10.6	9.9	9.2	9.6	---	---	---
MONTH	---	---	---	---	---	---	11.2	8.8	10.1	10.1	8.4	9.2

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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

14309000 COW CREEK NEAR AZALEA, OR--Continued

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8	7	7	4	3	3	<1	<1	<1	---	---	---
2	7	6	7	4	3	3	<1	<1	<1	---	---	---
3	7	6	6	4	3	4	4	<1	<1	---	---	---
4	8	6	7	7	3	4	3	<1	<1	---	---	---
5	7	6	6	10	4	6	5	<1	1	---	---	---
6	7	5	6	---	---	---	2	<1	<1	---	---	---
7	6	6	6	4	3	3	6	<1	<1	1	<1	<1
8	6	5	6	4	3	3	<1	<1	<1	1	<1	<1
9	7	6	6	4	3	3	2	<1	<1	<1	<1	<1
10	6	4	6	4	3	3	<1	<1	<1	1	<1	<1
11	6	5	5	---	---	---	<1	<1	<1	<1	<1	<1
12	6	5	5	---	---	---	<1	<1	<1	<1	<1	<1
13	6	5	5	---	---	---	<1	<1	<1	<1	<1	<1
14	5	4	5	---	---	---	2	<1	<1	<1	<1	<1
15	5	4	5	<1	<1	<1	4	<1	<1	<1	<1	<1
16	5	4	5	<1	<1	<1	2	<1	<1	1	<1	<1
17	5	4	4	<1	<1	<1	3	<1	1	1	<1	<1
18	6	4	4	<1	<1	<1	---	---	---	1	<1	<1
19	5	4	4	<1	<1	<1	---	---	---	1	<1	<1
20	5	4	4	<1	<1	<1	---	---	---	<1	<1	<1
21	5	4	4	1	<1	<1	---	---	---	---	---	---
22	4	4	4	<1	<1	<1	---	---	---	1	<1	<1
23	4	4	4	<1	<1	<1	---	---	---	2	<1	<1
24	4	3	4	<1	<1	<1	---	---	---	<1	<1	<1
25	4	3	4	<1	<1	<1	---	---	---	1	<1	<1
26	4	3	4	<1	<1	<1	---	---	---	2	<1	<1
27	4	3	4	1	<1	<1	---	---	---	2	<1	1
28	4	3	3	1	<1	<1	---	---	---	<1	<1	<1
29	---	---	---	<1	<1	<1	---	---	---	1	<1	<1
30	---	---	---	<1	<1	<1	---	---	---	<1	<1	<1
31	---	---	---	2	<1	<1	---	---	---	<1	<1	<1
MAX	8	7	7	---	---	---	---	---	---	---	---	---
MIN	4	3	3	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	<1	<1	<1	<1	<1	<1	---	---	---	---	---	---
2	<1	<1	<1	---	---	---	---	---	---	---	---	---
3	<1	<1	<1	---	---	---	---	---	---	---	---	---
4	3	<1	<1	---	---	---	---	---	---	---	---	---
5	<1	<1	<1	---	---	---	8	3	4	---	---	---
6	4	<1	<1	---	---	---	4	3	4	---	---	---
7	6	<1	<1	---	---	---	5	3	4	---	---	---
8	3	<1	<1	2	1	1	9	4	4	---	---	---
9	2	<1	1	5	1	1	---	---	---	6	1	2
10	1	<1	1	5	1	2	---	---	---	---	---	---
11	1	<1	<1	2	2	2	---	---	---	---	---	---
12	1	<1	<1	2	2	2	---	---	---	---	---	---
13	1	<1	<1	3	2	2	5	2	2	---	---	---
14	1	<1	<1	3	2	2	2	2	2	---	---	---
15	1	<1	<1	3	2	2	3	2	2	---	---	---
16	2	1	1	3	2	3	4	2	2	---	---	---
17	---	---	---	6	3	3	2	2	2	---	---	---
18	---	---	---	8	3	5	2	2	2	---	---	---
19	---	---	---	8	4	5	---	---	---	---	---	---
20	---	---	---	5	3	4	2	2	2	---	---	---
21	---	---	---	5	2	4	2	1	2	---	---	---
22	---	---	---	5	2	2	2	2	2	---	---	---
23	---	---	---	3	2	2	2	1	2	4	<1	<1
24	---	---	---	---	---	---	7	1	2	1	<1	<1
25	---	---	---	---	---	---	5	1	2	2	<1	<1
26	---	---	---	---	---	---	2	2	2	<1	<1	<1
27	---	---	---	---	---	---	3	1	2	1	<1	<1
28	---	---	---	---	---	---	---	---	---	1	<1	1
29	---	---	---	---	---	---	---	---	---	1	<1	1
30	---	---	---	---	---	---	---	---	---	1	<1	1
31	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

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 mi^2.

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 NGVD of 1929. Prior to June 8, 1964, at site 0.6 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--48 years (water years 1956-2003), 256 ft^3/s, 40.01 in/yr, 185,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft^3/s Dec. 22, 1964, gage height, 18.59 ft, from floodmark, from rating curve extended above 2,600 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 2.5 ft^3/s Sept. 10, 2001.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 14	1630	4,250	9.42	Dec. 30	2300	*7,830	*12.78
Dec. 16	0200	7,730	12.69	Jan. 3	0230	2,680	7.75
Dec. 27	1130	3,100	8.20				

Minimum discharge, 4.2 ft^3/s Sept. 5, 6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.6	9.0	13	1390	429	135	236	254	48	22	8.0	5.3
2	5.7	9.2	12	1450	462	123	221	224	47	22	9.0	5.1
3	5.8	9.4	12	1990	383	122	220	201	46	21	13	5.0
4	6.8	9.5	12	1120	317	117	368	226	44	20	13	4.8
5	7.8	9.3	12	828	267	109	560	240	42	20	12	4.6
6	7.5	9.3	12	596	227	108	673	219	40	19	12	4.5
7	6.9	27	11	449	195	116	754	195	39	19	11	4.9
8	6.6	173	11	358	173	114	664	183	37	18	10	6.3
9	6.4	263	11	296	154	163	573	167	37	18	9.6	11
10	6.3	271	28	250	138	245	494	150	37	18	9.0	16
11	6.1	245	36	215	130	208	435	140	37	16	8.7	10
12	6.0	115	37	219	121	178	383	136	36	16	8.6	8.5
13	6.1	89	379	278	115	192	346	124	37	15	8.6	7.7
14	6.3	56	2220	490	106	770	305	113	37	15	8.4	7.2
15	6.2	40	2700	419	126	1300	268	105	35	15	7.9	6.8
16	6.1	32	4020	334	320	843	243	97	33	14	7.5	6.8
17	6.1	32	931	273	694	537	240	92	32	14	7.3	8.1
18	6.0	28	565	229	700	395	232	87	31	13	7.1	8.3
19	6.0	24	482	196	548	335	216	83	33	12	6.9	7.6
20	6.4	22	749	172	404	352	198	79	32	12	6.8	7.0
21	6.7	20	1070	158	330	336	187	75	31	11	6.6	6.8
22	6.9	19	678	165	293	482	170	72	30	11	6.3	6.4
23	6.9	18	459	192	263	647	188	69	29	11	6.4	6.2
24	6.9	18	344	177	234	475	567	66	29	10	6.5	5.9
25	7.1	17	263	238	201	404	467	65	28	10	6.3	5.7
26	7.5	16	416	335	177	692	457	63	26	9.9	5.9	5.5
27	7.6	15	2100	816	157	679	485	58	24	9.8	5.9	5.4
28	7.9	14	2140	560	141	507	415	56	23	9.5	6.1	5.3
29	8.1	14	1400	397	---	387	348	55	22	8.8	6.1	5.2
30	8.5	13	3100	339	---	311	288	54	21	8.3	5.9	5.2
31	8.7	---	4300	305	---	264	---	51	---	8.1	5.7	---
TOTAL	209.5	1636.7	28523	15234	7805	11646	11201	3799	1023	446.4	252.1	203.1
MEAN	6.76	54.6	920	491	279	376	373	123	34.1	14.4	8.13	6.77
MAX	8.7	271	4300	1990	700	1300	754	254	48	22	13	16
MIN	5.6	9.0	11	158	106	108	170	51	21	8.1	5.7	4.5
AC-FT	416	3250	56580	30220	15480	23100	22220	7540	2030	885	500	403
CFSM	0.08	0.63	10.6	5.65	3.21	4.32	4.30	1.41	0.39	0.17	0.09	0.08
IN.	0.09	0.70	12.21	6.52	3.34	4.99	4.79	1.63	0.44	0.19	0.11	0.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2003, BY WATER YEAR (WY)

MEAN	39.3	287	598	662	571	465	268	114	40.9	17.4	9.89	12.2
MAX	254	1470	1960	1496	1660	934	840	476	99.4	29.5	16.0	56.9
(WY)	1963	1974	1997	1970	1958	1983	1982	1963	1993	1983	1983	1986
MIN	5.19	13.7	13.3	24.2	66.0	91.6	56.2	38.3	17.8	7.55	3.85	3.75
(WY)	1988	1994	1977	1977	1977	1992	1990	1987	1992	1999	1992	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1956 - 2003	
ANNUAL TOTAL	80061.5		81978.8			
ANNUAL MEAN	219		225		256	
HIGHEST ANNUAL MEAN					499	1974
LOWEST ANNUAL MEAN					56.6	2001
HIGHEST DAILY MEAN	4300	Dec 31	4300	Dec 31	11000	Dec 22 1964
LOWEST DAILY MEAN	4.5	Aug 17	4.5	Sep 6	3.0	Aug 31 1992
ANNUAL SEVEN-DAY MINIMUM	4.7	Sep 24	4.9	Sep 1	3.2	Aug 26 1992
ANNUAL RUNOFF (AC-FT)	158800		162600		185400	
ANNUAL RUNOFF (CFSM)	2.52		2.58		2.94	
ANNUAL RUNOFF (INCHES)	34.27		35.09		40.01	
10 PERCENT EXCEEDS	480		541		665	
50 PERCENT EXCEEDS	29		40		65	
90 PERCENT EXCEEDS	5.3		6.3		8.3	

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 mi^2.

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 NGVD of 1929.

REMARKS.--Records good. Regulated since Oct. 7, 1985 by Galesville Reservoir (station 14308995). Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--31 years (water years 1955-85), 903 ft^3/s, 654,200 acre-ft/yr.
18 years (water years 1986-2003), 681 ft^3/s, 493,700 acre-ft/yr, regulated.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,400 ft^3/s Jan. 15, 1974, gage height, 28.17 ft; minimum discharge, 7.4 ft^3/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 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 24,400 ft^3/s Dec. 31, gage height, 20.88 ft; minimum discharge, 27 ft^3/s Oct. 1.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	73	90	6710	1300	491	776	930	227	180	49	42
2	34	70	89	5200	1560	465	783	839	219	179	e55	42
3	37	70	88	7350	1330	453	742	816	211	175	e68	41
4	40	70	88	4960	1100	447	913	812	208	168	e75	40
5	49	70	88	3670	926	431	1300	810	209	160	e74	40
6	51	70	88	2820	805	421	1490	763	208	151	73	41
7	48	82	88	2300	716	441	1860	721	210	145	68	44
8	48	359	88	1840	655	440	1680	690	213	144	66	45
9	48	746	88	1450	595	458	1420	661	225	139	64	62
10	49	956	96	1100	533	596	1200	e620	236	131	60	81
11	50	894	131	925	e515	595	1030	e590	242	120	58	85
12	53	496	127	857	e490	548	914	e560	239	110	57	76
13	56	351	693	917	e470	535	902	534	226	103	57	67
14	57	250	3770	1470	444	1830	860	500	227	96	55	61
15	62	196	7100	1520	440	4000	799	469	226	89	53	58
16	65	168	13900	1260	687	3010	754	433	221	79	51	56
17	69	158	4040	1050	1740	1840	786	405	218	73	49	56
18	74	154	2300	908	1750	1310	807	387	213	72	49	61
19	76	142	1760	804	1570	1050	759	366	218	67	48	60
20	81	132	1950	732	1250	1010	709	350	218	61	46	58
21	82	126	3190	686	1040	914	720	333	215	57	45	56
22	83	120	2030	624	918	970	791	331	213	57	44	54
23	83	115	1400	706	834	1420	834	310	213	57	45	53
24	84	114	1050	654	766	1170	2170	304	209	58	47	52
25	84	112	777	731	681	1000	2050	295	205	58	47	52
26	84	104	731	813	614	1480	1770	290	201	59	48	52
27	80	98	5270	2140	560	1790	1630	269	194	59	46	51
28	79	94	9570	2070	512	1460	1430	261	190	59	44	54
29	77	92	6950	1470	---	1140	1250	251	187	55	45	54
30	76	90	7840	1170	---	915	1040	242	181	52	44	54
31	74	---	18100	997	---	790	---	238	---	49	43	---
TOTAL	1963	6572	93570	59904	24801	33420	34169	15380	6422	3062	1673	1648
MEAN	63.3	219	3018	1932	886	1078	1139	496	214	98.8	54.0	54.9
MAX	84	956	18100	7350	1750	4000	2170	930	242	180	75	85
MIN	30	70	88	624	440	421	709	238	181	49	43	40
AC-FT	3890	13040	185600	118800	49190	66290	67770	30510	12740	6070	3320	3270

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2003, BY WATER YEAR (WY)

MEAN	104	504	1400	1892	1609	1157	715	388	185	100	80.9	85.0
MAX	249	1792	6225	4144	4420	2362	1833	1074	477	189	166	152
(WY)	1998	1999	1997	1995	1999	1995	1993	1998	1998	1998	1993	1986
MIN	55.4	88.5	210	189	285	253	194	98.8	47.2	27.6	20.7	21.6
(WY)	1989	1988	1990	2001	2001	2001	1990	2001	2001	2001	2001	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1986 - 2003	
ANNUAL TOTAL	240899		282584			
ANNUAL MEAN	660		774		681	
HIGHEST ANNUAL MEAN					1221	1999
LOWEST ANNUAL MEAN					152	2001
HIGHEST DAILY MEAN	18100	Dec 31	18100	Dec 31	23100	Dec 8 1996
LOWEST DAILY MEAN	18	Aug 30	30	Oct 1	16	Aug 29 1986
ANNUAL SEVEN-DAY MINIMUM	19	Aug 30	41	Oct 1	17	Aug 13 2001
ANNUAL RUNOFF (AC-FT)	477800		560500		493700	
10 PERCENT EXCEEDS	1370		1650		1680	
50 PERCENT EXCEEDS	127		226		213	
90 PERCENT EXCEEDS	23		51		58	

e Estimated

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 mi^2.

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 and crest-stage gage. Datum of gage is 462.52 ft above NGVD 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 above sea level (State Highway Department bench mark).

REMARKS.--No estimated daily discharges. Records good. Regulation from Ben Irving Reservoir, since January 1980, on Berry Creek during summer months. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--69 years (water years 1907-11, 1924-26, 1943-2003), 2,761 ft^3/s, 22.46 in/yr, 2,000,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 125,000 ft^3/s Dec. 23, 1964, gage height, 34.28 ft; minimum discharge, 16 ft^3/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, 89,500 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	1430	32,500	17.00	Dec. 31	0830	*43,200	*20.00
Dec. 28	0900	30,000	16.33	Jan. 3	1230	21,700	14.01

Minimum discharge, 69 ft^3/s Sept. 6, 7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	145	222	19000	8540	1840	4570	3550	1000	311	83	85
2	88	148	212	13200	8660	1740	5080	3170	914	311	80	82
3	109	145	204	20600	6720	1670	4610	3170	850	308	93	79
4	146	146	201	14800	5290	1790	4830	3990	805	298	124	76
5	149	146	198	10900	4300	1760	6210	5070	767	288	139	74
6	158	146	194	7870	3600	1730	7330	4330	739	276	142	71
7	162	156	190	6110	3070	2670	8330	3670	699	266	139	74
8	146	265	188	4960	2670	4200	7420	3250	672	251	144	91
9	140	893	186	4070	2370	3910	6900	3040	646	243	157	137
10	132	2040	199	3380	2120	4740	6040	2760	641	235	158	208
11	128	1900	226	2870	1930	4140	6130	2560	632	223	133	426
12	125	1490	292	2590	1780	3480	5770	2520	620	210	115	271
13	126	946	697	2690	1660	3100	5170	2420	588	198	106	199
14	129	816	2990	4070	1670	4180	4920	2260	567	190	105	175
15	125	563	11000	4910	1640	8680	4400	2150	545	176	102	156
16	130	443	24800	4120	2160	8630	3890	2030	522	164	99	147
17	133	386	11100	3430	4340	6130	3990	1840	493	157	104	147
18	137	392	5420	3030	4730	4710	3970	1690	470	151	99	151
19	139	480	3840	2770	4800	3870	3680	1560	471	146	92	158
20	140	396	3170	2520	4220	3590	3300	1460	476	141	88	152
21	145	340	4820	2310	3700	3500	3620	1370	470	130	84	136
22	144	316	4360	2150	3530	5030	4030	1330	451	119	86	129
23	147	305	3280	2370	3500	7830	4020	1330	438	116	85	124
24	147	300	2550	2510	3140	6420	7620	1340	428	114	95	118
25	148	286	2050	4070	2760	5480	8580	1410	408	113	96	118
26	152	284	1820	4730	2420	10500	6940	1400	393	111	90	109
27	151	272	8740	9600	2180	11100	5770	1280	374	118	86	109
28	146	251	28200	10600	1960	8010	4990	1180	353	121	83	107
29	144	238	22300	6900	---	5920	4510	1140	343	110	83	108
30	142	229	16000	6090	---	4680	3980	1110	330	97	83	110
31	143	---	37400	8610	---	3970	---	1100	---	83	87	---
TOTAL	4227	14863	197049	197830	99460	149000	160600	70480	17105	5775	3260	4127
MEAN	136	495	6356	6382	3552	4806	5353	2274	570	186	105	138
MAX	162	2040	37400	20600	8660	11100	8580	5070	1000	311	158	426
MIN	76	145	186	2150	1640	1670	3300	1100	330	83	80	71
AC-FT	8380	29480	390800	392400	197300	295500	318600	139800	33930	11450	6470	8190
CFSM	0.08	0.30	3.81	3.82	2.13	2.88	3.21	1.36	0.34	0.11	0.06	0.08
IN.	0.09	0.33	4.39	4.41	2.22	3.32	3.58	1.57	0.38	0.13	0.07	0.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1907 - 2003, BY WATER YEAR (WY)

MEAN	453	2645	5669	6877	6230	4721	3254	1973	865	265	137	149
MAX	6045	13590	19950	16010	15370	10950	7378	6909	3312	576	392	587
(WY)	1951	1974	1997	1956	1958	1974	1963	1963	1953	1953	1993	1986
MIN	103	190	184	262	341	882	589	446	142	52.6	40.2	50.0
(WY)	1988	1953	1977	1977	1977	1992	1926	1926	1926	1926	1973	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1907 - 2003	
ANNUAL TOTAL	762888		923776			
ANNUAL MEAN	2090		2531		2761	
HIGHEST ANNUAL MEAN					5567	1974
LOWEST ANNUAL MEAN					562	1977
HIGHEST DAILY MEAN	37400	Dec 31	37400	Dec 31	90200	Oct 29 1950
LOWEST DAILY MEAN	34	Aug 18	71	Sep 6	17	Aug 20 1977
ANNUAL SEVEN-DAY MINIMUM	40	Aug 16	77	Sep 1	18	Aug 17 1977
ANNUAL RUNOFF (AC-FT)	1513000		1832000		2000000	
ANNUAL RUNOFF (CFSM)	1.25		1.52		1.65	
ANNUAL RUNOFF (INCHES)	16.99		20.58		22.46	
10 PERCENT EXCEEDS	5080		6160		6730	
50 PERCENT EXCEEDS	550		697		1050	
90 PERCENT EXCEEDS	60		109		114	

14312500 LAKE CREEK NEAR DIAMOND LAKE, OR

LOCATION.--Lat 43°11'12", long 122°09'55", in NW 1/4 SW 1/4 sec.30, T.27 S., R.6 E., Douglas County, Hydrolgic Unit 17100301, Umpqua National Forest, on right bank 600 ft downstream from outlet of Diamond Lake, 1.6 mi northwest of town of Diamond Lake, and at mile 10.7.

DRAINAGE AREA.--54.9 mi^2.

PERIOD OF RECORD.--May 1922 to September 1925 (no winter records), October 1926 to September 1929, April, July, August 1930, October 1930 to September 1953, October 1971 to October 1977, February 1978 to September 1984, October 1999 to current year. Prior to October 1971 published as "at Diamond Lake, near Fort Klamath".

GAGE.--Water-stage recorder. Elevation of gage is 5,180 ft from river-profile map. Prior to May 26, 1931, nonrecording gage at site 300 ft downstream at different datum. May 26, 1931 to Oct. 6, 1933, nonrecording gage at present site and datum. Prior to September 30, 1999, datum of gage was 2.66 ft higher.

REMARKS.--No estimated daily discharges. Records fair. Flow regulated by gates and fish racks at lake outlet. No diversion upstream from station.

AVERAGE DISCHARGE.--42 years (water years 1927-29, 1931-53, 1972-77, 1979-84, 2000-03), 57.9 ft^3/s, 41,950 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 336 ft^3/s Jan. 1, 1943, gage height, 2.8 ft from rating curve extended above 120 ft^3/s; no flow Aug. 25-27, 1931, Sept. 19, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum recorded discharge, 106 ft^3/s Jan. 3, gage height, 2.20 ft; minimum discharge, 5.3 ft^3/s May 3, result of regulation at outlet.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	83	52	100	92	60	73	29	50	9.3	12	12
2	24	78	51	102	91	36	72	29	49	11	12	12
3	25	75	50	104	89	11	74	30	48	12	11	12
4	26	73	50	103	86	12	75	32	45	12	10	12
5	25	71	49	101	84	13	74	34	44	12	10	12
6	26	69	48	97	81	16	76	35	44	12	10	12
7	26	68	47	93	79	21	74	35	44	12	11	12
8	25	73	47	90	77	23	72	34	44	12	11	12
9	25	83	47	87	75	28	70	35	41	12	11	12
10	23	86	47	85	72	31	69	40	39	12	11	13
11	23	85	49	84	70	31	70	42	33	12	11	13
12	22	85	49	85	68	33	70	45	25	12	11	13
13	21	83	51	85	67	33	69	47	25	12	11	13
14	21	80	56	85	67	37	69	54	25	12	11	13
15	21	77	60	83	67	40	68	60	23	12	10	14
16	20	76	64	80	72	41	66	59	20	12	10	14
17	20	75	65	78	74	41	54	59	20	12	11	14
18	20	72	63	76	74	40	42	58	20	12	11	14
19	20	69	11	74	73	41	42	57	20	12	11	14
20	20	68	14	72	71	42	42	54	19	12	11	14
21	19	66	17	71	70	46	42	50	17	12	11	14
22	19	64	25	71	69	58	41	50	17	12	12	14
23	19	63	68	72	67	61	34	50	13	12	11	14
24	19	62	73	73	66	61	28	50	9.9	12	11	14
25	19	61	72	75	64	66	28	50	9.8	12	11	13
26	19	59	75	77	63	74	28	50	9.8	12	11	13
27	19	58	84	82	61	73	29	50	9.8	12	12	15
28	19	56	92	81	60	71	29	51	9.7	12	12	18
29	66	55	93	80	---	69	28	51	9.7	12	12	18
30	92	54	99	89	---	67	29	51	9.4	12	12	18
31	87	---	101	91	---	67	---	50	---	12	12	---
TOTAL	854	2127	1769	2626	2049	1343	1637	1421	793.1	368.3	344	408
MEAN	27.5	70.9	57.1	84.7	73.2	43.3	54.6	45.8	26.4	11.9	11.1	13.6
MAX	92	86	101	104	92	74	76	60	50	12	12	18
MIN	19	54	11	71	60	11	28	29	9.4	9.3	10	12
AC-FT	1690	4220	3510	5210	4060	2660	3250	2820	1570	731	682	809

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 2003, BY WATER YEAR (WY)

MEAN	41.7	66.0	78.5	81.0	75.5	68.9	58.0	59.8	66.4	40.4	26.9	27.6
MAX	93.5	133	139	142	140	134	106	107	149	81.1	59.7	58.2
(WY)	1972	1974	1953	1953	1953	1972	1972	1943	1953	1953	1953	1953
MIN	11.8	14.7	33.2	33.7	33.9	28.5	5.00	26.5	23.1	9.53	6.19	7.41
(WY)	1942	1937	1937	1977	1977	1941	1942	2002	1934	1979	1980	1981

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1927 - 2003	
ANNUAL TOTAL	14769.0		15739.4			
ANNUAL MEAN	40.5		43.1		57.9	
HIGHEST ANNUAL MEAN					90.7	1953
LOWEST ANNUAL MEAN					36.9	1937
HIGHEST DAILY MEAN	101	Dec 31	104	Jan 3	250	Jan 1 1943
LOWEST DAILY MEAN	4.7	Aug 14	9.3	Jul 1	0.00	Aug 25 1931
ANNUAL SEVEN-DAY MINIMUM	4.9	Aug 14	9.6	Jun 25	1.2	Aug 14 1978
ANNUAL RUNOFF (AC-FT)	29290		31220		41950	
10 PERCENT EXCEEDS	76		81		100	
50 PERCENT EXCEEDS	31		41		55	
90 PERCENT EXCEEDS	7.9		12		20	

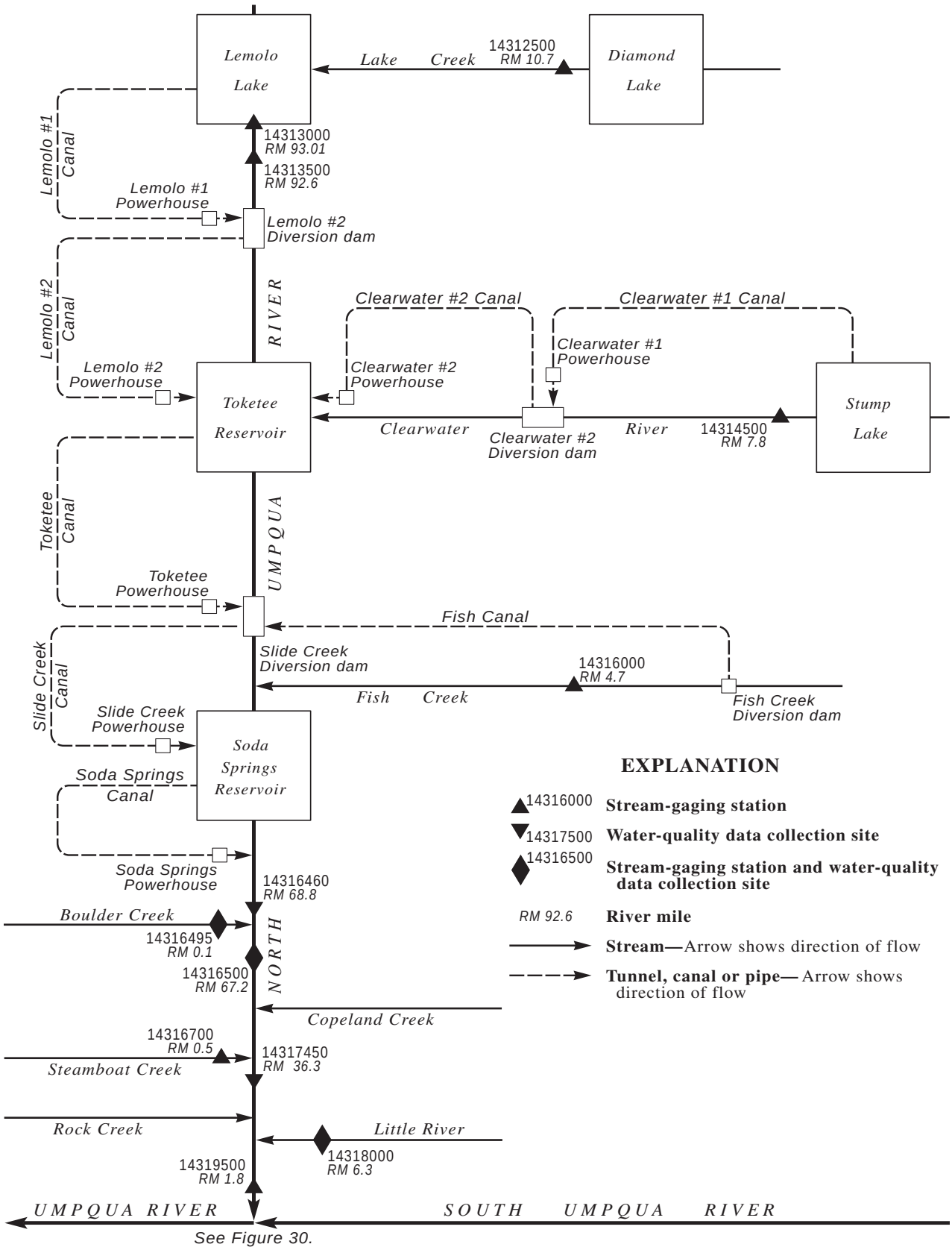


Figure 31. Schematic diagram showing gaging stations and diversions in the North Umpqua River Basin.

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 mi^2.

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 NGVD of 1929 (levels by PacifiCorp).

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 PacifiCorp.

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, 13,540 acre-ft Aug. 29, elevation, 4,148.45 ft; minimum observed, 5,970 acre-ft Dec. 10-12, elevation, 4,126.50 ft.

MONTHEND ELEVATION AND CONTENTS AT 0900, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30	4,147.10	12,970	--
Oct. 31	4,136.95	9,190	-3,780
Nov. 30	4,130.83	7,240	-1,950
Dec. 31	4,137.78	9,480	+2,240
CAL YR 2002	--	--	+2,640
Jan. 31	4,140.10	10,280	+800
Feb. 28	4,130.05	7,010	-3,270
Mar. 31	4,143.10	11,390	+4,380
Apr. 30	4,144.87	12,070	+680
May 31	4,147.95	13,330	+1,260
June 30	4,148.35	13,500	+170
July 31	4,147.95	13,330	-170
Aug. 31	4,148.40	13,520	+190
Sept.30	4,139.60	10,100	-3,420
WTR YR 2003	--	--	-2,870

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 mi^2 (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. WDR OR-75-1: 1964(M).

GAGE.--Water-stage recorder. Elevation of gage is 4,025 ft above NGVD of 1929, 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.--Records fair. 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 (water years 1928-83), 423 ft^3/s, 33.79 in/yr, 306,500 acre-ft/yr, adjusted for storage.
36 years (water years 1968-2003), 62.1 ft^3/s, 44,990 acre-ft/yr (river only).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 4,600 ft^3/s Dec. 25, 1964, from rating curve extended above 450 ft^3/s on basis of slope-area measurement of peak flow, gage height, 9.20 ft, from floodmark; minimum discharge, 6.4 ft^3/s July 17, 1954.

Combined flow, maximum discharge, 4,680 ft^3/s Dec. 25, 1964, from river rating curve extended above 450 ft^3/s on basis of slope-area measurement of peak flow; minimum daily, 9.7 ft^3/s May 13, 1955.

EXTREMES FOR CURRENT YEAR.--River only, maximum recorded discharge, 528 ft^3/s June 2, 3, gage height, 6.59 ft; minimum discharge, 28 ft^3/s Nov. 14-18, 20-24, Dec. 9-16.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	29	e29	e31	e51	e29	e41	353	490	353	315	308
2	32	29	e29	e32	e47	e29	40	353	497	373	315	348
3	32	29	e29	e31	e44	e29	39	355	502	350	316	379
4	32	29	e29	e32	e41	e29	38	356	480	335	310	388
5	32	29	e29	e33	e39	e29	38	365	480	336	299	363
6	32	29	e29	e30	e38	e29	37	383	480	336	299	347
7	32	29	e29	e31	e36	e29	37	389	479	336	299	347
8	31	29	e29	e31	e35	e29	36	389	478	336	300	347
9	31	29	e28	e31	e35	e29	38	388	478	335	301	346
10	32	29	e28	e31	e34	e29	37	388	461	335	328	346
11	33	29	e28	e31	e33	e30	38	389	437	335	345	345
12	33	29	e28	e30	e33	e31	38	389	417	333	310	345
13	33	29	e28	e33	e32	e32	39	390	404	331	304	344
14	33	28	e28	e33	e31	e33	39	397	396	331	309	343
15	32	28	e28	e32	e31	e34	e100	407	379	330	292	363
16	32	28	e28	e31	e31	e34	e450	408	361	329	286	381
17	31	28	e29	e31	e30	e34	74	408	362	329	298	375
18	31	276	e29	e30	e29	e33	36	407	364	329	324	359
19	31	363	e29	e30	e29	e33	36	417	358	329	324	358
20	31	322	e29	e30	e29	e33	35	425	354	329	302	357
21	31	e28	e29	e29	e29	e33	35	427	355	329	299	357
22	30	e28	e29	e29	e30	e38	35	429	356	329	309	367
23	30	e28	e29	e29	e30	e38	35	445	356	329	300	371
24	30	e28	e29	e29	e29	e38	36	378	356	328	314	373
25	29	e29	e29	e29	e29	e38	35	390	355	322	306	246
26	30	e29	e29	e30	e29	e44	35	441	340	317	316	29
27	30	e29	e29	e34	e29	e42	264	470	330	317	303	29
28	29	e29	e29	e34	e29	e41	325	477	330	317	305	29
29	29	e29	e29	e34	---	e41	347	497	331	317	289	30
30	29	e29	e30	e53	---	e41	353	517	331	317	312	64
31	29	---	e30	e54	---	e41	---	515	---	332	303	---
TOTAL	964	1736	893	1008	942	1052	2766	12742	12097	10284	9532	8984
MEAN	31.1	57.9	28.8	32.5	33.6	33.9	92.2	411	403	332	307	299
MAX	33	363	30	54	51	44	450	517	502	373	345	388
MIN	29	28	28	29	29	29	35	353	330	317	286	29
AC-FT	1910	3440	1770	2000	1870	2090	5490	25270	23990	20400	18910	17820

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2003, BY WATER YEAR (WY)

MEAN	37.5	35.0	40.0	42.5	34.5	37.4	42.6	117	142	89.0	72.3	53.6
MAX	126	150	185	307	144	200	119	411	687	332	321	299
(WY)	1979	1979	1997	1997	1996	1972	1987	2003	1974	2003	1979	2003
MIN	19.8	19.1	19.5	19.6	19.8	19.8	22.2	22.2	22.6	24.2	20.8	20.9
(WY)	1973	1973	1971	1985	1973	1973	1973	1973	1973	1968	1971	1972

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1968 - 2003	
ANNUAL TOTAL	12949		63000			
ANNUAL MEAN	35.5		173		62.1	
HIGHEST ANNUAL MEAN					173	2003
LOWEST ANNUAL MEAN					24.1	1973
HIGHEST DAILY MEAN	363	Nov 19	517	May 30	1070	Jun 4 1975
LOWEST DAILY MEAN	28	Jan 22	28	Nov 14	15	Oct 15 1970
ANNUAL SEVEN-DAY MINIMUM	28	Jan 22	28	Dec 9	17	Jan 24 1985
ANNUAL RUNOFF (AC-FT)	25680		125000		44990	
10 PERCENT EXCEEDS	42		389		138	
50 PERCENT EXCEEDS	32		38		30	
90 PERCENT EXCEEDS	28		29		23	

e Estimated

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 mi^2 (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 NGVD 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.--Records fair except for estimated daily discharges, which are poor. 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. Discharges for the period Nov. 7 to Jan. 31 estimated from data obtained from PacifiCorp.

AVERAGE DISCHARGE.--55 years (water years 1928-83), 173 ft^3/s, 125,300 acre-ft/yr.
20years (water years 1984-2003), 19.2 ft^3/s, 13,890 acre-ft/yr (river only).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 848 ft^3/s Dec. 23, 1964, gage height, 7.19 ft; maximum gage height, 7.87 ft Dec. 23, 1964, log jam; minimum discharge, 0.08 ft^3/s Sept. 21, 1977, result of beavers plugging release gate at diversion dam 900 ft upstream.

Combined flow, maximum discharge, 1,020 ft^3/s Dec. 23, 1964; minimum daily, 91 ft^3/s Nov. 4-6, 1931.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 52 ft^3/s Mar. 22, 26, gage height, 3.34 ft; minimum daily discharge, 6.0 ft^3/s Jan. 6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.7	7.7	e7.4	e6.6	26	7.7	25	7.5	8.1	8.2	8.1	8.1
2	7.7	7.7	e7.1	e6.9	11	7.8	17	7.7	8.0	8.1	8.1	8.1
3	7.7	7.7	e7.4	e18	9.1	7.8	12	8.1	7.9	8.1	8.2	8.1
4	7.7	7.7	e7.4	e11	8.9	7.8	9.6	8.3	7.8	8.1	8.1	8.1
5	7.7	7.7	e7.1	e8.1	8.6	7.8	8.2	7.9	8.0	8.1	8.1	8.1
6	7.7	7.7	e7.1	e6.0	8.4	7.9	8.1	7.8	8.1	8.1	8.6	8.1
7	7.7	e7.7	e7.4	e6.3	8.4	7.9	7.8	7.8	8.2	8.1	11	8.2
8	7.7	e7.7	e7.1	e6.6	8.4	7.9	7.8	7.8	8.2	8.1	8.2	8.6
9	7.7	e7.4	e7.1	e7.2	8.4	8.1	7.9	7.7	8.1	8.3	8.1	11
10	7.7	e7.1	e7.1	e7.2	8.2	7.9	8.5	7.5	8.1	8.4	8.1	7.9
11	7.7	e7.4	e8.4	e6.6	8.2	7.8	15	7.6	8.0	8.4	8.1	7.9
12	7.7	e7.4	e7.1	e9.1	8.4	7.8	12	7.7	8.0	8.4	8.1	8.1
13	7.7	e7.4	e7.1	e11	8.5	7.9	11	7.8	7.9	8.2	8.1	8.1
14	7.7	e7.7	e7.1	e9.1	8.6	8.5	9.1	7.8	8.1	8.3	8.2	7.9
15	7.7	e8.0	e7.7	e7.8	8.7	19	8.4	8.1	8.1	8.3	8.1	7.8
16	7.7	e7.7	e24	e8.1	9.3	16	8.1	8.1	8.1	8.4	8.1	7.8
17	7.7	e7.7	e7.8	e8.1	8.3	15	7.8	8.1	8.3	8.2	8.1	7.8
18	7.7	e8.0	e7.8	e8.1	7.6	11	7.8	7.9	8.6	8.1	8.1	7.8
19	7.7	e7.4	e7.5	e8.1	7.5	7.8	7.8	7.8	8.4	8.1	8.1	7.8
20	7.7	e7.4	e7.2	e8.1	7.5	7.9	7.8	7.8	8.3	8.1	8.1	7.7
21	7.7	e7.7	e6.9	e8.1	7.6	9.0	7.8	8.1	8.1	8.1	8.1	7.5
22	7.7	e7.7	e6.9	e8.1	7.8	33	7.8	8.3	8.3	8.1	8.1	7.3
23	7.7	e7.4	e6.9	e12	7.7	23	7.8	11	8.2	8.1	8.1	7.2
24	7.7	e7.7	e6.9	e8.4	7.5	12	8.4	21	8.1	8.1	8.1	7.3
25	7.7	e7.4	e6.6	e21	7.5	23	8.1	22	8.1	8.1	8.1	7.5
26	7.7	e7.7	e7.2	e15	7.5	43	7.8	16	8.2	8.1	8.1	7.5
27	7.7	e7.4	e21	e50	7.5	29	7.8	13	8.8	8.1	8.1	7.5
28	7.7	e7.4	e11	e15	7.5	20	7.8	11	8.5	8.1	8.1	7.5
29	7.7	e7.4	e7.5	e7.8	---	14	7.7	9.3	8.5	8.1	8.1	7.5
30	7.7	e7.4	e7.5	e32	---	12	7.5	11	8.4	8.1	8.1	7.5
31	7.7	---	e7.8	e31	---	16	---	8.2	---	8.1	8.1	---
TOTAL	238.7	227.4	260.1	376.4	248.6	421.3	285.2	295.7	245.5	253.2	254.8	237.3
MEAN	7.70	7.58	8.39	12.1	8.88	13.6	9.51	9.54	8.18	8.17	8.22	7.91
MAX	7.7	8.0	24	50	26	43	25	22	8.8	8.4	11	11
MIN	7.7	7.1	6.6	6.0	7.5	7.7	7.5	7.5	7.8	8.1	8.1	7.2
AC-FT	473	451	516	747	493	836	566	587	487	502	505	471

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

MEAN	22.4	20.1	14.6	16.6	20.5	13.8	21.4	40.6	15.3	20.1	14.7	9.79
MAX	130	177	68.5	143	177	45.0	66.1	125	56.8	88.3	100	59.4
(WY)	2002	2001	1997	1997	1996	1997	1997	1984	1999	1993	1996	1994
MIN	4.91	5.04	3.48	5.43	5.32	5.56	5.98	5.10	5.56	5.43	5.04	5.02
(WY)	1989	1988	1998	1987	1990	1988	1991	1992	1992	1990	1986	1987

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1984 - 2003	
ANNUAL TOTAL	3581.5		3344.2			
ANNUAL MEAN	9.81		9.16		19.2	
HIGHEST ANNUAL MEAN					52.0	1997
LOWEST ANNUAL MEAN					5.85	1987
HIGHEST DAILY MEAN	152	Apr 14	50	Jan 27	659	Jan 1 1997
LOWEST DAILY MEAN	6.2	Jan 20	6.0	Jan 6	2.0	Aug 19 1986
ANNUAL SEVEN-DAY MINIMUM	6.5	Jan 18	6.9	Jan 5	3.2	Aug 15 1986
ANNUAL RUNOFF (AC-FT)	7100		6630		13890	
10 PERCENT EXCEEDS	11		11		41	
50 PERCENT EXCEEDS	7.7		8.1		6.7	
90 PERCENT EXCEEDS	6.9		7.4		5.4	

e Estimated

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 mi^2 (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 NGVD of 1929 (levels by PacifiCorp).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. 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 (water years 1947-83), 237 ft^3/s, 46.78 in/yr, 171,700 acre-ft/yr.
20 years (water years 1984-2003), 125 ft^3/s, 24.68 in/yr, 90,520 acre-ft/yr (river only).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 12,100 ft^3/s Dec. 22, 1964, gage height, 13.9 ft, from floodmark; minimum discharge, 2.3 ft^3/s Sept. 25, 1957.

Combined flow, maximum discharge, 12,100 ft^3/s Dec. 22, 1964; minimum daily, 19 ft^3/s July 30, 1979, result of diversion dam manipulation.

EXTREMES FOR CURRENT YEAR.--River only, maximum recorded discharge, 1,270 ft^3/s Mar. 26, gage height, 6.29 ft, but may have been higher during period of missing record Jan. 30, 31; minimum discharge, 15 ft^3/s Sept. 21.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	26	23	126	e730	41	444	97	209	33	32	26
2	22	29	22	223	e510	39	360	99	189	35	31	23
3	22	20	21	495	e380	43	301	166	177	35	33	19
4	26	19	21	448	e300	38	257	221	171	35	38	18
5	22	19	21	382	e135	32	212	201	160	34	33	20
6	21	19	20	247	e180	36	189	180	152	35	36	22
7	20	24	20	180	e150	65	170	166	145	35	58	21
8	19	79	19	137	e125	86	187	160	133	38	31	28
9	18	60	21	108	e100	144	235	139	115	39	30	48
10	18	30	42	85	e80	208	292	126	96	37	30	23
11	18	27	51	71	e70	191	456	121	81	36	29	17
12	19	42	53	144	e70	197	384	128	71	34	28	17
13	20	32	75	234	e55	227	333	143	62	35	27	17
14	20	20	175	275	e70	263	275	189	55	37	28	17
15	20	21	219	209	e60	471	230	209	49	36	29	17
16	19	19	515	150	e140	374	193	178	46	35	29	17
17	19	39	228	124	e90	288	178	152	45	34	29	20
18	19	23	142	132	e85	224	156	129	42	35	29	17
19	19	19	64	132	e80	186	134	118	38	34	28	17
20	19	24	43	115	e80	168	127	121	35	32	27	16
21	19	27	44	104	e75	222	126	139	35	33	27	16
22	19	23	37	131	e90	821	123	187	34	33	27	17
23	18	21	37	211	e80	728	127	261	35	34	27	17
24	18	19	37	251	e70	484	168	332	36	35	26	17
25	18	19	34	460	57	679	142	331	35	35	26	17
26	19	20	45	523	49	1050	129	292	33	34	26	17
27	18	25	318	859	44	681	119	270	33	32	26	17
28	19	25	378	574	42	489	116	289	32	31	26	17
29	20	24	226	e450	---	383	111	307	31	32	25	17
30	20	24	233	e1140	---	338	102	303	32	33	25	17
31	19	---	229	e950	---	375	---	247	---	32	26	---
TOTAL	614	818	3413	9670	3997	9571	6376	6001	2407	1068	922	589
MEAN	19.8	27.3	110	312	143	309	213	194	80.2	34.5	29.7	19.6
MAX	27	79	515	1140	730	1050	456	332	209	39	58	48
MIN	18	19	19	71	42	32	102	97	31	31	25	16
AC-FT	1220	1620	6770	19180	7930	18980	12650	11900	4770	2120	1830	1170
CFSM	0.29	0.40	1.60	4.53	2.07	4.49	3.09	2.81	1.17	0.50	0.43	0.29
IN.	0.33	0.44	1.85	5.23	2.16	5.18	3.45	3.24	1.30	0.58	0.50	0.32

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

MEAN	27.8	92.5	160	188	162	189	219	229	132	39.2	34.8	28.9
MAX	78.8	387	747	682	545	581	434	505	429	111	74.5	74.5
(WY)	1987	1997	1997	1997	1986	1993	1989	1993	1999	1999	1985	1986
MIN	11.7	17.2	24.1	21.1	22.6	31.0	57.9	36.4	28.9	23.5	23.3	13.6
(WY)	1984	1990	2001	2001	2001	1992	2001	1992	1987	1996	1992	1990

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1984 - 2003	
ANNUAL TOTAL	35991		45446			
ANNUAL MEAN	98.6		125		125	
HIGHEST ANNUAL MEAN					247	1997
LOWEST ANNUAL MEAN					36.8	2001
HIGHEST DAILY MEAN	1530	Apr 14	1140	Jan 30	4100	Jan 1 1997
LOWEST DAILY MEAN	18	Oct 9	16	Sep 20	5.9	Oct 25 1983
ANNUAL SEVEN-DAY MINIMUM	18	Oct 21	17	Sep 18	6.8	Oct 15 1983
ANNUAL RUNOFF (AC-FT)	71390		90140		90520	
ANNUAL RUNOFF (CFSM)	1.43		1.81		1.82	
ANNUAL RUNOFF (INCHES)	19.46		24.57		24.68	
10 PERCENT EXCEEDS	231		305		309	
50 PERCENT EXCEEDS	45		43		45	
90 PERCENT EXCEEDS	20		19		17	

e Estimated

14316460 NORTH UMPQUA RIVER AT SODA SPRINGS, NEAR TOKETEE FALLS, OR

LOCATION.--Lat 43°18'22", long 122°30'42", in NE 1/4 SW 1/4 sec.18, T.26 S., R.3 E., Douglas County, Hydrologic Unit 17100301, on right bank 0.9 mi upstream from Boulder Creek, 4.5 mi west of Toketee Falls, and at mile 68.8.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1997 to current year.
pH: October 1997 to current year.
WATER TEMPERATURE: October 1997 to current year.
DISSOLVED OXYGEN: October 1997 to current year.
TURBIDITY: October 1999 to current year.

INSTRUMENTATION.--Water-quality monitor and data logger, satellite telemetry at station.

REMARKS.--
SPECIFIC CONDUCTANCE: Records excellent.
pH: Records good.
WATER TEMPERATURE: Records excellent.
DISSOLVED OXYGEN: Records good except during the periods Nov. 26 to Dec. 17, Apr. 2-23, May 7-20, which are poor
TURBIDITY: Records good except for the periods Oct. 1 to Nov. 6, July 31 to Aug. 14, which are fair. The probe was checked using a polymer bead standard. Effective May 20, 2003, the probe was calibrated with a stabilized formazin standard and checked using a polymer bead standard.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 83 microsiemens May 24, 2001; minimum recorded, 30 microsiemens Apr. 14, 2002.
pH: Maximum recorded, 8.4 units July 30, Aug. 1-5, 2002; minimum recorded, 6.9 units Dec. 19, 2001.
WATER TEMPERATURE: Maximum recorded, 15.9°C July 23, 2003; minimum recorded, 1.9°C Jan. 29, 2002.
DISSOLVED OXYGEN: Maximum recorded, 15.2 mg/L Nov. 19, 2000; minimum recorded, 6.9 mg/L July 11, 2001, but may have been lower during period of missing record.
TURBIDITY: Maximum, 67 NTU Apr. 6, 2003; minimum, <1 many days each year.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 73 microsiemens Oct. 21; minimum, 36 microsiemens Jan. 30, 31.
pH: Maximum, 8.3 units July 16; minimum, 7.3 units Jan. 31.
WATER TEMPERATURE: Maximum recorded, 15.9°C July 23; minimum recorded, 3.1°C Feb. 7.
DISSOLVED OXYGEN: Maximum recorded, 14.2 mg/L Dec. 11; minimum recorded, 9.3 mg/L July 29.
TURBIDITY: Maximum, 67 NTU Apr. 6; minimum, <1 many days throughout the year.

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	64	60	61	68	62	65	62	59	60	57	51	54
2	64	59	61	63	61	62	62	59	60	57	48	53
3	62	59	60	65	55	61	61	59	60	50	46	48
4	62	59	60	63	61	62	62	60	60	49	46	47
5	62	59	60	65	60	61	61	59	60	49	47	48
6	62	58	60	65	60	61	62	60	60	52	47	49
7	61	58	60	62	60	61	62	60	60	53	49	52
8	61	58	60	63	52	60	62	59	60	54	52	53
9	64	58	61	61	57	59	62	59	60	55	53	54
10	64	61	62	63	59	61	62	59	60	55	54	55
11	63	62	62	63	60	62	62	55	60	56	54	55
12	63	61	62	62	61	62	62	59	60	56	53	55
13	64	61	62	62	59	60	65	54	60	53	52	52
14	64	61	62	62	60	61	65	56	59	52	49	51
15	63	61	62	62	60	61	58	52	55	52	49	51
16	63	60	62	62	60	61	57	44	51	53	50	52
17	63	60	61	67	59	60	57	51	54	53	51	53
18	63	60	61	61	59	60	59	55	56	53	51	53
19	63	60	61	62	60	61	60	57	58	53	51	52
20	63	59	61	62	60	61	60	58	58	54	51	53
21	73	59	61	61	60	61	59	56	58	54	52	53
22	68	59	61	61	60	61	61	58	59	55	52	54
23	64	61	62	61	60	61	61	58	60	53	49	51
24	64	59	62	61	59	60	61	59	60	52	49	51
25	64	55	62	62	59	60	62	59	60	49	45	47
26	64	53	58	62	59	60	62	59	60	47	44	46
27	68	61	63	61	59	60	61	48	53	45	40	42
28	69	63	66	61	59	60	49	46	48	45	42	44
29	68	63	66	61	59	60	53	47	50	46	45	46
30	69	62	65	63	59	60	55	48	52	46	36	40
31	69	55	62	---	---	---	54	48	51	39	36	38
MONTH	73	53	62	68	52	61	65	44	57	57	36	50

14316460 NORTH UMPQUA RIVER AT SODA SPRINGS, NEAR TOKETEE FALLS, OR--Continued

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	41	39	40	57	54	55	46	44	45	54	47	51
2	44	41	43	57	55	56	47	45	46	53	47	49
3	46	44	45	56	55	56	48	47	47	55	50	52
4	47	45	47	58	55	56	48	47	48	57	50	54
5	48	46	47	58	55	56	49	48	49	57	50	54
6	48	47	48	59	56	57	51	48	49	51	47	48
7	50	48	49	59	54	56	50	46	48	52	50	51
8	50	49	49	56	54	55	50	46	47	52	50	51
9	50	49	50	56	53	55	50	49	50	52	50	52
10	51	49	50	53	52	52	49	47	48	53	51	52
11	53	50	52	53	51	52	47	45	46	57	51	53
12	54	52	52	53	50	52	47	41	45	60	51	53
13	54	51	52	51	50	50	47	46	47	53	51	52
14	53	51	52	50	49	49	48	47	48	55	51	52
15	54	52	53	49	46	47	49	48	49	55	43	50
16	53	51	52	52	47	50	50	49	50	55	49	50
17	54	51	52	52	44	50	52	50	50	55	50	51
18	54	53	53	47	44	45	52	50	50	51	50	51
19	54	53	53	48	45	46	51	48	51	53	51	52
20	55	52	53	47	46	47	51	50	50	52	50	52
21	54	52	53	51	46	49	51	50	50	52	50	51
22	54	52	53	49	41	45	52	50	50	51	45	50
23	55	52	53	44	42	43	51	50	50	50	47	49
24	55	53	53	46	44	46	50	50	50	48	46	47
25	55	53	54	46	42	45	51	50	50	46	45	45
26	55	53	54	42	40	41	55	50	51	45	44	45
27	56	53	54	44	42	43	52	51	52	46	42	45
28	57	53	55	46	44	45	53	49	52	47	45	46
29	---	---	---	47	46	47	53	49	52	46	45	46
30	---	---	---	48	47	48	53	52	52	49	41	45
31	---	---	---	48	46	48	---	---	---	46	44	45
MONTH	57	39	51	59	40	50	55	41	49	60	41	50

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	47	44	46	59	53	58	62	61	62	65	61	64
2	48	44	47	59	58	58	63	61	62	65	61	64
3	48	45	47	64	57	59	63	61	62	64	62	63
4	49	47	48	59	58	58	63	61	62	63	62	63
5	49	47	49	60	56	58	63	59	63	63	61	63
6	50	48	49	60	56	59	67	62	63	63	62	63
7	50	43	49	60	59	59	63	61	62	64	59	63
8	50	49	49	60	59	60	63	61	62	64	62	63
9	51	50	50	60	59	60	63	62	62	63	61	62
10	52	40	48	61	59	60	63	62	62	62	61	62
11	52	50	51	61	58	60	63	62	62	63	62	63
12	53	51	52	61	54	59	63	62	62	63	62	63
13	54	52	53	60	57	59	63	62	62	67	63	63
14	54	53	53	61	60	60	63	62	63	63	53	60
15	55	51	54	61	58	60	63	62	63	63	63	63
16	55	50	54	61	60	60	63	62	63	64	63	63
17	56	52	54	61	60	61	64	61	63	63	60	63
18	56	55	55	62	60	61	64	60	62	63	61	62
19	56	51	55	61	59	61	65	63	63	64	62	63
20	56	54	55	61	60	61	63	62	63	66	62	63
21	56	48	55	61	60	61	64	62	63	64	62	63
22	57	54	56	62	59	61	64	62	63	63	63	63
23	57	50	56	62	58	61	63	62	63	64	62	63
24	57	53	55	64	59	61	64	63	63	64	62	63
25	57	55	57	62	60	61	65	63	64	63	62	62
26	58	55	57	62	60	62	65	64	65	63	62	63
27	63	55	58	62	61	62	65	62	64	64	62	63
28	60	48	56	62	58	62	65	62	63	63	62	62
29	59	55	58	63	60	62	64	58	61	65	61	63
30	59	58	58	63	61	62	65	63	63	63	62	63
31	---	---	---	63	61	62	66	60	63	---	---	---
MONTH	63	40	53	64	53	60	67	58	63	67	53	63
YEAR	73	36	56									

14316460 NORTH UMPQUA RIVER AT SODA SPRINGS, NEAR TOKETEE FALLS, OR--Continued

pH, water, unfiltered, field, standard units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.1	7.8	7.9	7.8	7.7	7.7	7.8	7.7	7.7	7.6	7.5	7.6
2	8.1	7.8	7.9	7.8	7.7	7.7	7.8	7.7	7.7	7.6	7.5	7.6
3	8.1	7.7	7.8	7.8	7.7	7.7	7.8	7.7	7.7	7.6	7.5	7.6
4	8.0	7.7	7.8	7.8	7.7	7.7	7.8	7.7	7.7	7.6	7.5	7.5
5	8.2	7.8	7.9	7.8	7.7	7.7	7.8	7.7	7.8	7.6	7.5	7.6
6	8.1	7.8	7.8	7.8	7.7	7.7	7.9	7.7	7.7	7.6	7.5	7.6
7	8.1	7.8	7.8	7.9	7.7	7.8	7.8	7.7	7.8	7.6	7.5	7.6
8	8.0	7.8	7.8	7.8	7.7	7.7	7.9	7.7	7.8	7.6	7.5	7.6
9	8.0	7.7	7.8	7.7	7.6	7.7	7.9	7.7	7.8	7.7	7.6	7.6
10	8.1	7.7	7.8	7.7	7.6	7.7	7.8	7.7	7.7	7.7	7.6	7.6
11	8.0	7.8	7.8	7.8	7.6	7.7	7.8	7.7	7.7	7.7	7.6	7.6
12	8.0	7.7	7.8	7.7	7.6	7.7	7.8	7.7	7.7	7.7	7.6	7.6
13	7.9	7.7	7.8	7.8	7.6	7.7	7.8	7.7	7.7	7.6	7.6	7.6
14	7.9	7.7	7.8	7.8	7.6	7.7	7.8	7.7	7.7	7.6	7.5	7.6
15	7.9	7.7	7.8	7.8	7.7	7.7	7.8	7.7	7.7	7.7	7.6	7.6
16	7.9	7.7	7.8	7.8	7.7	7.7	7.7	7.6	7.7	7.7	7.6	7.6
17	7.9	7.7	7.8	7.8	7.7	7.7	7.6	7.4	7.6	7.7	7.6	7.6
18	8.1	7.7	7.8	7.8	7.7	7.7	7.7	7.6	7.6	7.7	7.6	7.6
19	7.9	7.7	7.8	7.8	7.6	7.7	7.7	7.6	7.6	7.7	7.6	7.6
20	7.9	7.7	7.7	7.7	7.6	7.7	7.7	7.6	7.6	7.7	7.6	7.6
21	7.9	7.7	7.7	7.8	7.6	7.7	7.7	7.6	7.6	7.7	7.6	7.7
22	7.9	7.7	7.7	7.8	7.6	7.7	7.7	7.6	7.6	7.7	7.6	7.7
23	7.9	7.7	7.7	7.7	7.6	7.7	7.7	7.6	7.6	7.7	7.6	7.6
24	8.0	7.7	7.7	7.8	7.6	7.7	7.7	7.6	7.6	7.7	7.6	7.6
25	8.0	7.7	7.7	7.8	7.7	7.7	7.7	7.6	7.6	7.6	7.5	7.6
26	8.0	7.7	7.8	7.8	7.6	7.7	7.6	7.6	7.6	7.6	7.5	7.5
27	8.0	7.7	7.7	7.8	7.7	7.7	7.6	7.5	7.6	7.6	7.5	7.5
28	8.0	7.7	7.8	7.7	7.7	7.7	7.6	7.5	7.5	7.6	7.5	7.5
29	8.0	7.7	7.8	7.8	7.7	7.7	7.6	7.5	7.6	7.6	7.5	7.6
30	7.8	7.7	7.7	7.8	7.7	7.7	7.6	7.5	7.6	7.6	7.4	7.4
31	7.8	7.7	7.7	---	---	---	7.6	7.5	7.6	7.5	7.3	7.4
MAX	8.2	7.8	7.9	7.9	7.7	7.8	7.9	7.7	7.8	7.7	7.6	7.7
MIN	7.8	7.7	7.7	7.7	7.6	7.7	7.6	7.4	7.5	7.5	7.3	7.4

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.5	7.5	7.5	7.8	7.6	7.7	7.7	7.6	7.6	7.9	7.7	7.7
2	7.5	7.5	7.5	7.8	7.7	7.7	7.6	7.5	7.6	7.9	7.6	7.7
3	7.5	7.5	7.5	7.8	7.7	7.7	7.6	7.5	7.6	7.7	7.6	7.7
4	7.5	7.5	7.5	7.8	7.7	7.7	7.6	7.6	7.6	7.8	7.6	7.7
5	7.5	7.5	7.5	7.8	7.7	7.7	7.6	7.5	7.6	7.8	7.6	7.7
6	7.5	7.5	7.5	7.8	7.6	7.7	7.6	7.5	7.5	7.8	7.6	7.7
7	7.5	7.5	7.5	7.7	7.6	7.7	7.6	7.5	7.6	7.8	7.6	7.7
8	7.5	7.5	7.5	7.8	7.6	7.7	7.7	7.5	7.6	7.8	7.6	7.7
9	7.6	7.5	7.5	7.7	7.6	7.7	7.7	7.5	7.6	7.7	7.6	7.7
10	7.6	7.5	7.5	7.7	7.6	7.6	7.7	7.5	7.6	7.8	7.6	7.7
11	7.7	7.5	7.6	7.7	7.6	7.6	7.7	7.5	7.6	7.8	7.7	7.7
12	7.7	7.6	7.6	7.7	7.5	7.6	7.7	7.5	7.6	7.9	7.7	7.7
13	7.7	7.6	7.6	7.7	7.6	7.7	7.7	7.5	7.6	7.9	7.7	7.7
14	7.7	7.6	7.6	7.7	7.6	7.7	7.7	7.6	7.6	7.8	7.7	7.8
15	7.7	7.6	7.6	7.7	7.6	7.6	7.7	7.5	7.6	7.8	7.5	7.8
16	7.7	7.6	7.6	7.7	7.6	7.6	7.7	7.5	7.6	7.8	7.6	7.8
17	7.7	7.6	7.6	7.7	7.6	7.7	7.7	7.6	7.6	7.9	7.7	7.8
18	7.7	7.6	7.7	7.7	7.6	7.6	7.7	7.6	7.6	7.8	7.7	7.8
19	7.7	7.6	7.7	7.7	7.6	7.6	7.7	7.6	7.6	7.8	7.7	7.8
20	7.7	7.6	7.7	7.7	7.6	7.6	7.7	7.6	7.7	7.8	7.7	7.7
21	7.7	7.6	7.7	7.7	7.6	7.6	7.8	7.6	7.7	7.7	7.6	7.7
22	7.7	7.6	7.7	7.6	7.5	7.6	7.8	7.6	7.7	7.7	7.6	7.7
23	7.7	7.6	7.7	7.6	7.5	7.6	7.7	7.6	7.7	7.7	7.6	7.6
24	7.7	7.6	7.7	7.6	7.5	7.6	7.8	7.6	7.7	7.7	7.5	7.6
25	7.7	7.6	7.7	7.6	7.5	7.6	7.7	7.6	7.7	7.6	7.5	7.6
26	7.7	7.6	7.7	7.5	7.5	7.5	7.8	7.6	7.7	7.7	7.5	7.6
27	7.7	7.6	7.7	7.6	7.5	7.5	7.8	7.7	7.7	7.7	7.5	7.6
28	7.7	7.6	7.7	7.6	7.5	7.6	7.8	7.7	7.7	7.7	7.5	7.6
29	---	---	---	7.6	7.5	7.6	7.8	7.7	7.7	7.7	7.5	7.6
30	---	---	---	7.7	7.5	7.6	7.8	7.7	7.7	7.6	7.5	7.6
31	---	---	---	7.7	7.5	7.6	---	---	---	7.7	7.5	7.6
MAX	7.7	7.6	7.7	7.8	7.7	7.7	7.8	7.7	7.7	7.9	7.7	7.8
MIN	7.5	7.5	7.5	7.5	7.5	7.5	7.6	7.5	7.5	7.6	7.5	7.6

14316460 NORTH UMPQUA RIVER AT SODA SPRINGS, NEAR TOKETEE FALLS, OR--Continued

pH, water, unfiltered, field, standard units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	7.7	7.6	7.7	8.0	7.8	7.8	8.1	7.7	7.8	8.1	7.7	7.8
2	7.7	7.6	7.7	8.0	7.8	7.8	8.0	7.6	7.8	8.1	7.7	7.7
3	7.7	7.5	7.7	8.0	7.7	7.8	8.0	7.6	7.7	8.1	7.7	7.8
4	7.7	7.6	7.7	8.0	7.7	7.8	8.1	7.7	7.8	8.1	7.7	7.8
5	7.7	7.6	7.7	8.0	7.7	7.8	8.0	7.6	7.7	8.0	7.6	7.7
6	7.7	7.5	7.7	8.0	7.7	7.8	8.0	7.6	7.7	7.9	7.6	7.7
7	7.7	7.5	7.7	8.0	7.6	7.8	8.0	7.6	7.7	8.0	7.6	7.7
8	7.7	7.5	7.7	8.0	7.7	7.8	8.0	7.6	7.7	8.0	7.6	7.7
9	7.7	7.6	7.7	8.0	7.7	7.7	8.1	7.6	7.7	8.0	7.5	7.7
10	7.8	7.6	7.7	8.0	7.7	7.7	8.1	7.7	7.7	8.0	7.6	7.7
11	7.8	7.6	7.8	8.1	7.6	7.7	8.1	7.7	7.8	8.1	7.7	7.8
12	7.8	7.7	7.8	8.1	7.7	7.7	8.1	7.6	7.8	8.0	7.7	7.7
13	7.8	7.7	7.8	8.1	7.6	7.7	8.2	7.6	7.8	8.0	7.6	7.7
14	7.9	7.7	7.8	8.2	7.6	7.7	8.2	7.7	7.8	8.0	7.7	7.7
15	7.9	7.7	7.8	8.2	7.6	7.7	8.2	7.7	7.8	8.1	7.7	7.8
16	7.9	7.7	7.8	8.3	7.6	7.7	8.2	7.7	7.8	8.0	7.7	7.8
17	7.9	7.7	7.8	8.2	7.6	7.8	8.2	7.7	7.8	8.0	7.7	7.7
18	8.0	7.7	7.8	8.2	7.8	7.9	8.2	7.7	7.8	7.9	7.7	7.7
19	8.0	7.8	7.8	8.2	7.8	7.9	8.2	7.7	7.8	7.9	7.5	7.7
20	8.0	7.8	7.8	8.2	7.8	7.8	8.2	7.7	7.8	8.0	7.7	7.7
21	8.0	7.8	7.8	8.2	7.8	7.8	8.1	7.7	7.8	8.0	7.6	7.7
22	8.0	7.8	7.8	8.2	7.8	7.9	8.1	7.7	7.7	7.9	7.6	7.7
23	8.0	7.8	7.8	8.2	7.8	7.9	8.1	7.7	7.7	7.9	7.6	7.7
24	8.0	7.7	7.8	8.2	7.8	7.9	8.1	7.7	7.8	7.9	7.6	7.7
25	8.0	7.8	7.8	8.1	7.7	7.8	8.1	7.7	7.8	7.9	7.6	7.6
26	8.0	7.8	7.8	8.1	7.8	7.8	8.2	7.7	7.8	7.9	7.6	7.7
27	8.0	7.7	7.8	8.2	7.7	7.8	8.2	7.7	7.8	7.8	7.6	7.6
28	8.0	7.8	7.8	8.2	7.7	7.8	8.2	7.7	7.8	7.8	7.6	7.7
29	8.0	7.7	7.8	8.2	7.7	7.8	8.2	7.7	7.8	7.8	7.6	7.7
30	8.0	7.8	7.8	8.2	7.7	7.8	8.2	7.7	7.8	7.8	7.5	7.6
31	---	---	---	8.1	7.7	7.8	8.2	7.7	7.7	---	---	---
MAX	8.0	7.8	7.8	8.3	7.8	7.9	8.2	7.7	7.8	8.1	7.7	7.8
MIN	7.7	7.5	7.7	8.0	7.6	7.7	8.0	7.6	7.7	7.8	7.5	7.6

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.7	8.2	8.5	4.8	4.2	4.5	4.6	4.4	4.6	4.8	4.5	4.6
2	8.4	7.8	8.2	4.5	4.0	4.3	4.4	4.0	4.2	5.1	4.5	4.7
3	8.1	7.7	7.9	4.5	4.0	4.3	4.0	3.9	3.9	5.6	5.1	5.3
4	8.6	7.9	8.2	4.9	4.4	4.7	4.7	3.9	4.3	5.9	5.5	5.7
5	9.5	8.6	9.2	5.0	4.6	4.9	4.8	4.6	4.7	5.8	4.8	5.3
6	9.9	9.4	9.6	5.5	4.8	5.1	4.7	4.4	4.6	4.8	4.3	4.5
7	9.6	8.9	9.2	6.1	5.2	5.7	4.5	4.2	4.4	4.5	4.1	4.2
8	9.1	8.6	8.9	6.0	5.8	5.9	4.2	4.0	4.1	4.1	3.7	3.8
9	8.8	8.3	8.5	5.8	5.2	5.5	4.5	3.9	4.2	4.0	3.7	3.9
10	8.7	8.1	8.4	5.2	4.8	4.9	4.9	4.4	4.7	4.2	4.0	4.1
11	8.1	7.2	7.8	5.2	4.8	5.0	4.8	4.6	4.7	4.6	4.2	4.3
12	7.6	7.1	7.3	5.7	5.1	5.4	4.8	4.5	4.6	5.1	4.6	4.8
13	7.8	7.3	7.5	5.6	5.4	5.5	5.3	4.7	5.0	5.2	4.9	5.1
14	7.9	7.5	7.7	5.6	5.3	5.5	5.9	5.2	5.5	5.3	5.0	5.1
15	7.9	7.6	7.7	5.4	4.6	5.1	6.0	5.5	5.7	5.2	4.4	4.7
16	8.1	7.6	7.9	4.9	4.6	4.7	5.6	5.1	5.4	4.6	4.1	4.3
17	8.3	7.9	8.1	5.3	4.7	5.1	5.1	4.6	4.8	4.6	4.2	4.4
18	8.4	7.8	8.1	5.2	4.9	5.1	4.6	4.2	4.4	4.8	4.5	4.6
19	8.2	7.7	7.9	5.4	4.9	5.2	4.3	4.0	4.2	4.8	4.3	4.5
20	8.4	7.7	8.0	5.6	5.3	5.5	4.2	4.0	4.0	4.6	4.2	4.4
21	8.0	7.6	7.8	5.8	5.3	5.6	4.4	4.0	4.2	4.9	4.3	4.7
22	8.0	7.4	7.7	5.7	5.4	5.6	4.3	4.0	4.2	5.5	4.9	5.2
23	7.8	7.3	7.5	5.4	5.1	5.3	4.2	3.5	3.9	5.8	5.3	5.5
24	7.6	7.0	7.3	5.4	5.0	5.3	3.5	3.3	3.4	5.4	5.1	5.2
25	7.3	6.8	7.1	5.2	4.5	5.0	3.7	3.2	3.5	6.0	5.4	5.6
26	7.1	6.5	6.9	4.5	3.9	4.1	4.1	3.6	4.0	6.2	5.8	6.0
27	6.6	6.2	6.3	4.2	3.8	4.0	4.9	4.0	4.5	6.1	5.6	5.9
28	7.0	6.2	6.7	4.7	4.2	4.4	4.7	4.4	4.5	5.6	4.8	5.1
29	7.0	6.2	6.8	4.8	4.5	4.7	4.6	4.2	4.4	5.4	4.8	5.0
30	6.2	5.0	5.9	4.7	4.5	4.6	4.6	4.4	4.5	6.6	5.4	6.1
31	5.2	4.6	4.9	---	---	---	4.9	4.5	4.7	7.0	6.5	6.7
MONTH	9.9	4.6	7.7	6.1	3.8	5.0	6.0	3.2	4.4	7.0	3.7	4.9

14316460 NORTH UMPQUA RIVER AT SODA SPRINGS, NEAR TOKETEE FALLS, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.9	5.4	5.8	4.6	4.0	4.2	6.9	5.5	5.8	7.8	7.2	7.4
2	5.5	5.1	5.3	4.7	4.4	4.6	5.6	4.8	5.1	8.2	7.7	7.9
3	5.5	4.8	5.0	5.0	4.6	4.8	5.2	4.4	4.7	8.1	6.9	7.6
4	4.8	4.4	4.5	5.2	4.8	5.0	5.3	4.6	4.9	6.9	6.1	6.4
5	4.4	3.5	3.8	5.1	4.9	5.0	5.3	4.7	4.9	6.9	5.9	6.3
6	4.0	3.5	3.7	5.2	4.9	5.1	5.4	4.4	4.8	7.3	6.5	6.9
7	3.7	3.1	3.3	4.9	4.7	4.8	6.5	5.2	5.7	7.7	7.2	7.4
8	3.7	3.2	3.4	5.6	4.8	5.2	7.7	5.6	6.4	7.6	6.5	6.9
9	3.7	3.2	3.4	5.9	5.6	5.8	7.7	6.6	7.1	6.7	6.4	6.5
10	3.8	3.3	3.5	6.3	5.8	6.0	7.5	6.5	6.9	7.0	6.4	6.7
11	3.8	3.3	3.5	6.4	6.1	6.3	7.3	6.4	6.9	7.2	6.6	6.9
12	4.1	3.5	3.7	6.4	6.0	6.2	7.3	6.5	7.0	8.5	6.8	7.5
13	4.8	4.1	4.6	6.5	6.2	6.3	7.2	6.2	6.5	9.3	8.4	8.7
14	5.2	4.8	5.0	6.5	5.8	6.1	6.8	5.6	6.1	9.8	9.1	9.4
15	5.2	4.8	5.0	6.5	6.0	6.2	6.8	6.0	6.3	9.9	8.2	9.0
16	5.0	4.6	4.8	6.0	5.3	5.6	6.9	5.8	6.3	8.3	7.5	7.8
17	4.8	4.3	4.5	5.9	5.2	5.6	7.0	6.2	6.6	8.1	7.1	7.5
18	5.0	4.5	4.7	5.8	5.0	5.4	6.7	5.8	6.2	7.8	6.5	7.1
19	5.0	4.7	4.9	5.8	5.3	5.5	7.4	5.6	6.3	8.5	7.4	7.9
20	5.1	4.9	5.0	6.2	5.6	5.9	7.6	6.7	7.1	9.4	8.4	8.9
21	5.3	4.9	5.1	6.2	5.6	5.9	7.7	6.8	7.1	9.8	9.2	9.5
22	5.4	5.2	5.3	6.0	5.4	5.8	7.1	6.8	7.0	10.6	9.7	10.0
23	5.2	4.5	4.8	5.7	5.0	5.4	7.2	6.5	6.8	11.2	10.0	10.5
24	4.6	4.0	4.3	6.1	4.9	5.5	7.0	6.0	6.3	11.4	10.0	10.5
25	4.2	3.7	3.9	6.1	5.6	5.8	6.1	5.3	5.6	10.3	9.3	9.6
26	4.0	3.5	3.7	5.8	5.3	5.6	6.1	5.3	5.7	10.2	8.7	9.3
27	4.4	3.8	4.2	5.9	5.0	5.4	6.7	5.8	6.2	10.9	9.4	10.0
28	4.4	4.0	4.2	6.6	5.1	5.7	7.0	6.6	6.8	11.1	10.3	10.7
29	---	---	---	7.3	5.7	6.4	6.9	6.5	6.7	11.7	10.2	10.8
30	---	---	---	7.7	6.2	6.9	7.2	6.5	6.8	11.7	10.2	10.7
31	---	---	---	7.7	6.6	7.0	---	---	---	11.0	9.6	10.2
MONTH	6.9	3.1	4.4	7.7	4.0	5.6	7.7	4.4	6.2	11.7	5.9	8.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.2	9.8	10.4	13.7	12.2	12.9	14.5	13.6	14.1	13.2	12.2	12.5
2	11.6	10.4	10.9	12.5	12.0	12.2	13.6	13.0	13.3	13.1	12.2	12.5
3	11.8	10.8	11.3	13.4	12.3	12.6	13.5	12.4	13.0	13.1	12.2	12.7
4	12.2	11.3	11.8	13.6	12.5	12.9	14.4	12.9	13.6	13.2	12.3	12.7
5	12.2	11.4	11.8	13.8	12.7	13.1	13.6	12.8	13.3	13.0	12.3	12.7
6	12.6	11.6	12.1	14.0	12.8	13.3	13.4	12.3	12.8	12.6	11.7	12.1
7	13.0	11.9	12.4	14.2	13.1	13.4	13.5	12.4	12.9	12.0	11.4	11.8
8	13.0	12.0	12.5	14.4	13.2	13.7	14.1	12.8	13.3	11.4	10.8	11.1
9	12.9	11.8	12.1	14.3	13.2	13.6	14.2	13.1	13.4	10.9	10.5	10.7
10	12.4	11.2	11.7	14.4	13.3	13.9	14.1	13.1	13.4	11.3	10.3	10.7
11	12.1	11.1	11.6	14.6	13.7	14.1	14.0	13.0	13.5	11.5	10.6	10.9
12	12.2	11.3	11.6	14.8	13.9	14.2	13.8	12.7	13.1	12.0	10.8	11.3
13	11.7	10.8	11.2	14.7	13.9	14.2	13.8	12.6	13.0	11.6	10.8	11.2
14	11.8	11.1	11.5	14.6	13.5	14.0	13.8	12.7	13.1	11.1	10.3	10.6
15	12.3	11.4	11.9	14.6	13.5	14.0	14.1	12.9	13.3	11.4	10.4	10.7
16	12.8	12.0	12.3	14.9	13.8	14.3	14.1	12.8	13.3	10.9	10.1	10.6
17	13.4	12.5	12.9	15.0	13.9	14.4	13.9	12.7	13.0	10.2	9.4	9.7
18	13.5	12.7	13.1	14.9	14.0	14.3	14.2	12.8	13.3	10.5	9.4	9.8
19	12.9	11.8	12.4	15.3	14.1	14.6	14.6	13.2	13.6	10.7	9.6	10
20	11.8	11.2	11.4	15.4	14.3	14.6	14.2	12.9	13.5	10.8	9.9	10.2
21	11.3	10.8	11.0	15.3	14.4	14.7	13.2	12.4	12.9	10.7	9.9	10.2
22	11.2	10.4	10.8	15.7	14.6	15.0	12.5	12.0	12.2	10.9	10.0	10.3
23	11.3	10.3	10.8	15.9	14.8	15.3	12.9	11.8	12.2	10.9	10.2	10.4
24	11.3	9.9	10.5	15.1	14.2	14.8	13.5	12.1	12.6	10.9	10.3	10.4
25	12.4	10.9	11.6	14.9	13.8	14.3	13.6	12.4	12.8	10.8	10.1	10.4
26	13.2	11.9	12.5	15.2	13.8	14.4	13.6	12.4	12.8	10.8	10.1	10.4
27	13.8	12.5	13.2	15.4	13.9	14.5	13.5	12.4	12.8	11.5	10.6	11.1
28	13.8	13.0	13.3	15.6	14.0	14.6	13.2	12.4	12.7	11.8	11.3	11.6
29	14.1	13.3	13.6	15.4	14.2	14.7	13.3	12.3	12.6	11.5	10.6	11.1
30	14.1	13.3	13.7	15.5	14.2	14.7	13.4	12.3	12.7	10.6	9.9	10.2
31	---	---	---	15.2	13.9	14.6	13.3	12.4	12.7	---	---	---
MONTH	14.1	9.8	11.9	15.9	12.0	14.1	14.6	11.8	13.1	13.2	9.4	11.0
YEAR	15.9	3.1	8.1									

14316460 NORTH UMPQUA RIVER AT SODA SPRINGS, NEAR TOKETEE FALLS, OR--Continued

Dissolved oxygen, water, unfiltered, milligrams per liter
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.02	11.39	11.67	12.68	12.47	12.59	12.84	12.55	12.72	12.52	12.24	12.41
2	12.07	11.58	11.78	12.80	12.55	12.68	13.03	12.65	12.86	12.43	12.13	12.32
3	12.21	11.64	11.85	12.76	12.49	12.65	13.14	12.82	12.99	12.29	12.03	12.17
4	12.20	11.59	11.82	12.69	12.35	12.54	13.16	12.75	12.97	12.34	11.99	12.09
5	12.14	11.44	11.67	12.60	12.25	12.43	13.23	12.73	12.92	12.41	12.10	12.28
6	11.86	11.33	11.55	12.53	11.89	12.25	13.12	12.73	12.91	12.65	12.35	12.48
7	12.00	11.39	11.64	12.15	11.56	11.89	13.15	12.85	13.01	12.78	12.51	12.64
8	12.00	11.51	11.73	11.94	11.59	11.73	13.37	12.95	13.18	12.89	12.55	12.71
9	11.85	11.38	11.61	12.07	11.63	11.89	13.30	12.92	13.13	12.94	12.54	12.73
10	11.90	11.34	11.57	12.38	11.93	12.18	13.41	12.89	13.03	12.79	12.45	12.60
11	12.00	11.53	11.78	12.52	12.15	12.31	14.16	12.93	13.13	12.65	12.33	12.49
12	12.17	11.78	11.95	12.31	11.98	12.15	13.47	12.41	12.98	12.55	12.25	12.40
13	12.12	11.75	11.91	12.33	11.97	12.14	13.07	12.63	12.87	12.45	12.17	12.34
14	12.08	11.66	11.86	12.33	12.04	12.17	13.05	12.45	12.67	12.63	12.28	12.45
15	12.04	11.70	11.84	12.55	12.09	12.30	12.90	12.47	12.62	12.90	12.46	12.62
16	12.00	11.62	11.78	12.50	12.23	12.34	12.67	12.22	12.43	12.70	12.41	12.58
17	11.94	11.56	11.74	12.52	12.22	12.38	12.65	12.22	12.39	12.75	12.34	12.50
18	12.13	11.59	11.85	12.64	12.23	12.46	12.57	12.21	12.38	12.48	12.25	12.37
19	12.08	11.69	11.88	12.72	12.36	12.49	12.68	12.19	12.37	12.54	12.27	12.38
20	12.17	11.67	11.89	12.56	12.22	12.40	12.52	12.18	12.33	12.56	12.34	12.43
21	12.10	11.71	11.91	12.53	12.14	12.31	12.58	12.25	12.42	12.52	12.10	12.36
22	11.94	11.62	11.80	12.53	12.15	12.31	12.88	12.39	12.55	12.19	11.95	12.09
23	11.92	11.54	11.73	12.56	12.25	12.40	13.03	12.40	12.61	12.12	11.95	12.05
24	11.99	11.57	11.78	12.74	12.35	12.51	13.00	12.59	12.81	12.31	12.06	12.15
25	12.03	11.64	11.84	12.76	12.42	12.62	13.06	12.58	12.81	12.24	11.90	12.08
26	12.19	11.73	11.95	13.00	12.64	12.82	12.68	12.45	12.58	12.06	11.78	11.95
27	12.47	11.94	12.17	13.86	12.58	12.83	12.52	12.16	12.32	12.16	11.88	12.04
28	12.35	11.84	12.07	12.82	12.50	12.66	12.33	12.02	12.16	12.43	12.13	12.30
29	12.24	11.80	11.99	12.84	12.49	12.64	12.98	12.04	12.33	12.44	11.95	12.20
30	12.40	11.98	12.18	12.87	12.50	12.64	12.50	12.00	12.21	12.02	11.85	11.92
31	13.56	12.38	12.53	---	---	---	12.49	11.99	12.15	11.88	11.57	11.72
MONTH	13.56	11.33	11.85	13.86	11.56	12.39	14.16	11.99	12.67	12.94	11.57	12.32

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.11	11.60	11.95	12.60	12.33	12.45	11.72	11.20	11.54	12.09	11.63	11.88
2	12.38	12.08	12.16	12.45	12.27	12.35	11.89	10.73	11.25	11.90	10.92	11.62
3	12.37	12.08	12.25	12.42	12.19	12.28	11.16	10.76	11.00	11.80	11.40	11.61
4	12.54	12.36	12.46	12.32	12.10	12.19	11.27	10.86	11.07	12.30	11.78	12.08
5	12.80	12.53	12.69	12.30	12.09	12.17	11.14	10.85	11.02	12.61	12.07	12.28
6	12.81	12.61	12.74	12.30	12.02	12.14	11.16	10.88	11.04	12.37	11.89	12.10
7	13.10	12.71	12.89	12.34	12.08	12.16	11.26	10.78	11.04	12.44	11.73	11.90
8	13.05	12.68	12.87	12.21	11.86	12.09	11.26	10.57	10.94	12.37	11.69	11.99
9	13.05	12.67	12.89	11.93	11.64	11.82	11.09	10.58	10.86	12.23	11.92	12.10
10	13.04	12.67	12.89	11.86	11.57	11.74	11.26	10.57	10.85	12.46	11.97	12.12
11	12.94	12.58	12.74	11.79	11.51	11.62	11.04	10.57	10.82	12.22	11.81	12.04
12	12.67	12.42	12.53	11.76	10.99	11.38	10.84	10.53	10.67	12.40	11.58	11.96
13	12.63	12.09	12.25	11.10	10.88	10.96	11.15	10.60	10.89	11.94	11.31	11.58
14	12.33	12.03	12.17	11.16	10.85	11.01	11.37	10.99	11.17	11.82	11.06	11.43
15	12.35	11.96	12.13	11.08	10.75	10.96	11.42	10.97	11.20	---	---	---
16	12.38	11.98	12.18	11.40	11.07	11.25	11.59	11.16	11.35	12.45	11.77	12.07
17	12.53	12.19	12.35	11.54	11.16	11.38	11.59	11.12	11.35	12.58	11.83	12.16
18	12.55	12.12	12.36	11.66	11.31	11.49	11.95	11.33	11.63	12.71	12.14	12.37
19	12.55	12.14	12.31	11.52	11.30	11.37	12.04	11.44	11.75	12.45	11.86	12.14
20	12.51	12.13	12.32	11.43	11.12	11.25	11.99	11.29	11.58	11.96	11.41	11.74
21	12.57	12.24	12.36	11.37	11.08	11.25	12.01	11.44	11.74	11.84	11.48	11.67
22	12.53	12.23	12.37	11.59	11.23	11.34	12.03	11.58	11.78	11.66	11.28	11.46
23	12.56	12.31	12.44	11.74	10.92	11.57	11.96	11.61	11.80	11.58	11.14	11.35
24	12.72	12.42	12.57	11.70	11.34	11.53	12.80	11.57	12.02	11.37	10.97	11.21
25	12.90	12.58	12.74	11.52	11.32	11.42	12.74	12.07	12.37	11.50	11.14	11.36
26	12.76	12.45	12.63	11.74	11.47	11.63	12.37	11.86	12.07	11.74	11.34	11.52
27	12.51	12.23	12.36	11.92	11.58	11.77	12.35	11.72	11.93	11.68	11.17	11.42
28	12.54	12.24	12.39	11.83	11.37	11.64	12.19	11.60	11.81	11.44	10.93	11.19
29	---	---	---	11.72	11.23	11.48	12.05	11.62	11.84	11.26	10.84	11.04
30	---	---	---	11.76	11.22	11.45	12.48	11.84	12.11	11.26	10.76	11.04
31	---	---	---	11.37	11.13	11.24	---	---	---	11.46	11.03	11.25
MONTH	13.10	11.60	12.46	12.60	10.75	11.63	12.80	10.53	11.42	---	---	---

14316460 NORTH UMPQUA RIVER AT SODA SPRINGS, NEAR TOKETEE FALLS, OR--Continued

Dissolved oxygen, water, unfiltered, milligrams per liter
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.48	10.99	11.21	10.73	10.04	10.44	10.56	10.00	10.29	10.82	10.34	10.54
2	11.27	10.84	11.01	10.87	10.33	10.60	10.68	10.18	10.41	10.86	10.31	10.55
3	11.15	10.62	10.92	10.82	10.35	10.60	10.86	10.29	10.55	10.78	10.30	10.52
4	10.73	10.19	10.54	10.80	10.38	10.60	10.72	10.17	10.43	10.78	10.28	10.52
5	10.56	10.19	10.38	10.76	10.35	10.58	10.80	10.17	10.44	10.76	10.28	10.50
6	10.50	10.16	10.34	10.71	10.31	10.52	10.91	10.27	10.53	10.96	10.35	10.61
7	10.44	9.98	10.23	10.70	10.24	10.48	10.82	10.14	10.46	10.98	10.49	10.68
8	10.37	9.94	10.17	10.69	10.26	10.47	10.80	10.16	10.43	11.24	10.59	10.88
9	10.46	9.98	10.26	10.68	10.27	10.48	10.85	10.22	10.46	11.19	10.69	10.89
10	10.64	10.16	10.44	10.70	9.86	10.42	10.90	10.23	10.47	11.33	10.52	11.02
11	10.60	10.13	10.39	10.66	10.14	10.39	10.92	10.24	10.50	11.27	10.87	11.04
12	10.34	9.50	10.13	10.62	10.10	10.36	10.96	10.28	10.54	11.11	10.80	10.95
13	11.21	9.95	10.19	10.65	9.95	10.35	11.10	10.32	10.61	11.16	10.38	10.89
14	10.38	9.70	10.15	10.68	10.19	10.41	10.86	10.26	10.53	11.24	10.89	11.04
15	10.44	9.89	10.16	10.59	10.10	10.37	10.81	10.21	10.46	11.22	10.89	11.02
16	10.39	9.93	10.11	10.57	10.11	10.30	10.83	10.26	10.49	11.24	10.87	11.02
17	10.25	9.71	9.95	10.62	9.97	10.29	10.85	10.30	10.52	11.51	11.05	11.28
18	10.39	9.71	10.01	10.62	10.08	10.32	10.81	10.20	10.46	11.43	11.12	11.28
19	10.42	9.88	10.11	10.53	10.01	10.26	10.67	10.17	10.39	11.40	11.07	11.21
20	10.46	10.05	10.29	10.50	10.02	10.26	10.71	10.17	10.39	11.33	10.61	11.14
21	10.70	10.16	10.44	10.50	9.97	10.23	10.82	10.23	10.46	11.40	11.06	11.18
22	10.85	10.33	10.55	10.45	9.92	10.17	10.94	10.11	10.55	11.22	11.00	11.11
23	10.78	10.29	10.53	10.38	9.85	10.11	10.98	10.40	10.65	11.29	10.71	11.06
24	10.95	10.47	10.71	10.40	9.80	10.13	10.95	10.42	10.62	11.28	10.94	11.07
25	10.85	10.39	10.60	10.51	9.93	10.22	10.91	10.37	10.57	11.30	10.99	11.11
26	10.68	9.79	10.42	10.54	9.94	10.24	10.92	10.34	10.60	11.28	10.56	11.09
27	10.55	10.07	10.30	10.59	9.97	10.25	10.96	10.39	10.62	11.04	10.71	10.90
28	10.53	10.00	10.26	10.56	9.92	10.22	10.79	10.40	10.55	10.91	10.61	10.74
29	10.49	9.81	10.20	10.57	9.30	10.17	10.82	10.36	10.54	11.08	10.34	10.82
30	10.54	9.96	10.28	10.60	9.88	10.17	10.79	10.32	10.52	11.27	10.79	11.04
31	---	---	---	10.58	9.82	10.16	10.80	10.32	10.53	---	---	---
MONTH	11.48	9.50	10.38	10.87	9.30	10.34	11.10	10.00	10.50	11.51	10.28	10.92

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	10	<1	<1	1	<1	<1	1	<1	<1	20	6	12
2	5	<1	1	2	<1	1	2	<1	<1	12	6	7
3	4	<1	<1	1	<1	<1	2	<1	<1	19	8	12
4	8	<1	1	2	<1	<1	1	<1	<1	10	6	8
5	2	<1	<1	4	<1	2	<1	<1	<1	10	6	6
6	11	<1	<1	2	<1	<1	1	<1	<1	10	4	5
7	3	<1	<1	4	<1	<1	<1	<1	<1	4	3	3
8	1	<1	<1	3	<1	2	4	<1	<1	8	3	4
9	1	<1	<1	3	1	2	1	<1	<1	5	3	4
10	2	<1	<1	2	1	1	1	<1	<1	6	2	3
11	<1	<1	<1	1	<1	1	2	<1	1	4	2	2
12	<1	<1	<1	2	<1	1	2	<1	1	10	1	2
13	2	<1	<1	5	<1	1	2	<1	2	5	2	2
14	1	<1	<1	2	<1	1	7	1	2	8	2	3
15	<1	<1	<1	1	<1	<1	10	3	5	5	2	2
16	<1	<1	<1	2	<1	<1	62	3	24	4	1	2
17	1	<1	<1	1	<1	<1	14	2	6	2	1	2
18	1	<1	<1	1	<1	<1	4	2	3	2	1	2
19	4	<1	<1	3	<1	2	3	1	2	2	<1	1
20	5	<1	<1	2	<1	1	3	2	2	2	<1	1
21	2	<1	<1	2	<1	1	3	2	2	2	<1	1
22	1	<1	<1	1	<1	<1	3	1	2	3	<1	1
23	<1	<1	<1	<1	<1	<1	2	1	1	2	1	2
24	1	<1	<1	<1	<1	<1	2	<1	1	4	<1	2
25	1	<1	<1	<1	<1	<1	2	<1	1	9	4	6
26	1	<1	<1	2	<1	<1	2	<1	1	10	4	5
27	<1	<1	<1	4	<1	2	38	1	19	36	10	21
28	20	<1	<1	2	<1	1	36	14	19	14	6	9
29	10	<1	<1	1	<1	<1	24	9	11	6	4	5
30	2	<1	<1	2	<1	<1	26	8	10	55	4	44
31	2	<1	<1	---	---	---	51	15	20	44	19	30
MAX	20	<1	1	5	1	2	62	15	24	55	19	44
MIN	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	1

14316460 NORTH UMPQUA RIVER AT SODA SPRINGS, NEAR TOKETEE FALLS, OR--Continued

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	19	10	12	2	<1	1	8	3	4	2	<1	1
2	10	6	8	2	<1	1	3	1	2	5	<1	1
3	6	5	5	1	<1	<1	6	2	3	2	<1	1
4	5	4	4	2	<1	<1	7	2	3	4	1	2
5	5	3	3	1	<1	<1	22	2	2	4	1	2
6	4	2	3	1	<1	<1	67	17	41	3	1	2
7	5	2	3	2	<1	1	19	8	13	5	1	2
8	3	2	3	4	2	3	10	8	9	2	<1	1
9	5	2	2	5	3	3	10	7	8	4	<1	1
10	3	2	2	4	3	4	9	5	6	3	<1	<1
11	2	<1	1	4	2	3	10	6	9	2	<1	1
12	2	1	2	5	1	1	7	5	6	1	<1	<1
13	3	1	2	9	2	2	7	4	4	2	<1	<1
14	2	1	1	4	2	3	5	3	4	2	<1	1
15	2	<1	1	8	3	5	6	3	4	3	<1	1
16	4	1	2	5	2	3	9	4	6	3	<1	1
17	5	2	2	3	2	2	6	4	4	2	<1	1
18	3	2	2	11	2	2	8	3	4	2	<1	1
19	3	2	2	3	2	2	5	3	4	4	<1	<1
20	3	2	2	5	1	2	4	3	3	2	<1	<1
21	2	1	2	4	1	2	4	3	3	1	<1	<1
22	3	2	2	30	4	13	3	2	2	1	<1	<1
23	2	1	2	22	8	12	5	1	2	2	<1	1
24	2	1	2	9	5	6	3	1	2	3	1	2
25	2	1	2	19	4	5	2	1	2	2	1	2
26	2	1	2	29	11	19	2	1	2	3	1	2
27	3	1	2	12	6	8	4	1	1	2	1	1
28	2	<1	1	7	4	5	2	1	1	2	1	1
29	---	---	---	4	3	3	3	1	1	3	1	2
30	---	---	---	4	2	3	3	<1	1	8	1	2
31	---	---	---	5	2	3	---	---	---	3	2	2
MAX	19	10	12	30	11	19	67	17	41	8	2	2
MIN	2	<1	1	1	<1	<1	2	<1	1	1	<1	<1

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	6	1	2	15	<1	<1	1	<1	<1	<1	<1	<1
2	2	1	1	7	<1	1	<1	<1	<1	<1	<1	<1
3	3	1	2	2	<1	<1	<1	<1	<1	<1	<1	<1
4	2	<1	1	2	<1	<1	1	<1	<1	1	<1	<1
5	2	<1	1	2	<1	<1	8	<1	<1	2	<1	<1
6	2	<1	1	<1	<1	<1	<1	<1	<1	6	<1	<1
7	4	<1	1	<1	<1	<1	2	<1	1	1	<1	<1
8	3	<1	1	<1	<1	<1	2	1	1	1	<1	<1
9	1	<1	1	<1	<1	<1	2	<1	<1	1	<1	<1
10	2	<1	1	1	<1	<1	<1	<1	<1	<1	<1	<1
11	2	<1	1	5	<1	<1	<1	<1	<1	<1	<1	<1
12	2	<1	1	1	<1	<1	<1	<1	<1	3	<1	<1
13	1	<1	<1	2	<1	<1	4	<1	<1	1	<1	<1
14	1	<1	<1	4	<1	<1	2	<1	<1	<1	<1	<1
15	3	<1	<1	4	<1	<1	1	<1	<1	1	<1	<1
16	2	<1	<1	2	<1	<1	2	<1	<1	1	<1	<1
17	1	<1	<1	1	<1	<1	1	<1	<1	<1	<1	<1
18	2	<1	<1	1	<1	<1	<1	<1	<1	2	<1	<1
19	2	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1
20	1	<1	<1	8	<1	<1	<1	<1	<1	<1	<1	<1
21	<1	<1	<1	<1	<1	<1	1	<1	<1	2	<1	<1
22	2	<1	<1	1	<1	<1	1	<1	<1	<1	<1	<1
23	1	<1	<1	1	<1	<1	2	<1	<1	<1	<1	<1
24	2	<1	<1	1	<1	<1	1	<1	<1	<1	<1	<1
25	1	<1	<1	2	<1	<1	2	<1	<1	4	<1	2
26	1	<1	<1	2	<1	<1	4	<1	<1	3	<1	1
27	<1	<1	<1	2	<1	<1	7	<1	2	2	<1	<1
28	3	<1	<1	2	<1	<1	2	<1	<1	4	<1	1
29	1	<1	<1	8	<1	1	<1	<1	<1	4	<1	<1
30	<1	<1	<1	5	<1	<1	1	<1	<1	4	<1	<1
31	---	---	---	1	<1	<1	<1	<1	<1	---	---	---
MAX	6	1	2	15	<1	1	8	1	2	6	<1	2
MIN	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

14316495 BOULDER CREEK NEAR TOKETEE FALLS, OR

LOCATION.--Lat 43°18'13", long 122°31'45", in NE 1/4 SW 1/4 sec.13, T.26 S., R.2 E., Douglas County, Hydrologic Unit 17100301, Umpqua National Forest, and at mile 0.1.

DRAINAGE AREA.--30.4 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,640 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good.

AVERAGE DISCHARGE.--6 years (water years 1998-2003), 94.8 ft^3/s, 42.39 in/yr, 68,710 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,370 ft^3/s Nov. 21, 1998, gage height, 6.98 ft; minimum discharge, 1.9 ft^3/s Oct. 5-8, 2001.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 28	1730	632	4.79	Jan. 30	1200	*2,050	*6.57
Jan. 3	0530	896	5.26	Mar. 25	2230	955	5.35
Jan. 27	0900	1,020	5.45	Apr. 11	0100	652	4.83

Minimum discharge, 3.1 ft^3/s Sept. 3-5, 29, 30.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	4.2	9.5	211	e480	65	230	90	61	11	4.5	3.3
2	6.2	4.2	9.1	305	e350	58	198	88	55	11	4.6	3.3
3	6.2	4.2	8.7	657	e250	60	175	98	51	11	4.8	3.2
4	8.7	4.2	8.6	517	199	60	170	142	47	10	5.6	3.1
5	7.0	4.2	8.5	439	158	57	167	178	43	10	6.5	3.1
6	6.0	4.1	8.1	260	128	74	166	151	40	9.8	5.5	3.2
7	5.5	4.3	7.8	222	107	179	183	134	37	9.5	9.4	3.4
8	5.1	11	7.5	184	93	311	269	119	35	9.1	6.3	7.1
9	4.9	33	7.3	156	82	355	335	105	32	8.9	5.6	17
10	4.7	45	9.3	122	73	379	344	96	29	8.6	5.3	11
11	4.6	50	17	93	66	290	508	92	28	8.3	5.1	6.7
12	4.5	42	21	88	59	261	324	93	26	8.0	4.9	5.5
13	4.5	35	39	133	57	242	245	95	25	7.8	4.8	4.9
14	4.4	24	42	224	58	218	196	105	24	7.6	4.7	4.5
15	4.3	21	55	178	57	224	165	105	22	7.5	4.4	4.2
16	4.2	18	184	133	98	203	142	95	21	7.3	4.3	4.6
17	4.2	39	96	119	107	174	133	86	20	7.2	4.2	6.6
18	4.1	28	54	128	119	149	125	77	20	6.9	4.2	5.1
19	4.1	21	39	112	135	131	113	71	19	6.7	4.1	4.6
20	4.1	21	31	89	153	131	105	70	19	6.4	4.0	4.2
21	4.2	21	47	76	158	241	103	73	18	6.2	3.9	4.0
22	4.2	18	49	73	218	525	100	81	17	6.1	4.0	3.8
23	4.2	16	35	81	178	446	102	91	17	5.9	4.1	3.7
24	4.1	16	28	120	141	296	127	102	16	5.7	3.9	3.6
25	4.2	15	23	271	112	495	135	103	16	5.6	3.8	3.4
26	4.1	13	35	333	95	757	122	93	15	5.5	3.7	3.3
27	4.1	12	316	831	82	468	108	87	14	5.4	3.6	3.3
28	4.2	11	544	456	72	304	102	86	13	5.1	3.6	3.2
29	4.3	11	309	274	---	227	97	84	12	4.9	3.5	3.1
30	4.2	10	301	1280	---	204	95	81	12	4.8	3.4	3.2
31	4.2	---	356	e750	---	205	---	70	---	4.6	3.3	---
TOTAL	152.1	560.4	2705.4	8915	3885	7789	5384	3041	804	232.4	143.6	143.2
MEAN	4.91	18.7	87.3	288	139	251	179	98.1	26.8	7.50	4.63	4.77
MAX	8.8	50	544	1280	480	757	508	178	61	11	9.4	17
MIN	4.1	4.1	7.3	73	57	57	95	70	12	4.6	3.3	3.1
AC-FT	302	1110	5370	17680	7710	15450	10680	6030	1590	461	285	284
CFSM	0.16	0.61	2.87	9.46	4.56	8.27	5.90	3.23	0.88	0.25	0.15	0.16
IN.	0.19	0.69	3.31	10.91	4.75	9.53	6.59	3.72	0.98	0.28	0.18	0.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2003, BY WATER YEAR (WY)

MEAN	16.5	67.1	140	217	154	166	157	135	60.7	15.9	6.79	4.77
MAX	60.3	189	239	311	256	251	232	287	144	34.6	13.1	7.16
(WY)	1998	1999	1999	1999	1999	2003	2002	1999	1999	1999	1999	1999
MIN	4.91	18.7	63.3	36.3	41.9	92.0	83.8	84.0	18.6	7.50	4.15	3.08
(WY)	2003	2003	2001	2001	2001	2001	2001	2001	2001	2003	2001	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1998 - 2003	
ANNUAL TOTAL	32215.9		33755.1			
ANNUAL MEAN	88.3		92.5		94.8	
HIGHEST ANNUAL MEAN					155	1999
LOWEST ANNUAL MEAN					38.8	2001
HIGHEST DAILY MEAN	967	Apr 14	1280	Jan 30	1310	Nov 21 1998
LOWEST DAILY MEAN	4.1	Sep 15	3.1	Sep 4	1.9	Oct 5 2001
ANNUAL SEVEN-DAY MINIMUM	4.1	Oct 18	3.2	Aug 31	2.0	Oct 2 2001
ANNUAL RUNOFF (AC-FT)	63900		66950		68710	
ANNUAL RUNOFF (CFSM)	2.90		3.04		3.12	
ANNUAL RUNOFF (INCHES)	39.42		41.31		42.39	
10 PERCENT EXCEEDS	235		254		234	
50 PERCENT EXCEEDS	42		31		55	
90 PERCENT EXCEEDS	4.4		4.1		4.5	

e Estimated

14316495 BOULDER CREEK NEAR TOKETEE FALLS, OR--Continued

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: February 1999 to current year.

INSTRUMENTATION.--Water-quality monitor and data logger.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--
WATER TEMPERATURE: Maximum, 22.1°C July 13, 2002, July 30, 2003; minimum, 1.2°C Jan. 17, Feb. 13, 2001.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 22.1°C July 30; minimum, 2.2°C Nov. 2.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.0	9.9	10.3	4.2	2.9	3.4	4.9	4.5	4.7	6.3	6.1	6.2
2	10.3	8.7	9.5	3.4	2.2	2.8	4.5	3.8	4.0	6.6	6.1	6.3
3	9.6	8.9	9.3	3.8	2.5	3.1	3.8	3.3	3.5	7.3	6.5	6.9
4	11.2	9.6	10.3	4.0	2.9	3.5	4.7	3.5	4.1	7.2	6.8	7.0
5	12.1	10.6	11.3	4.9	3.6	4.1	4.8	4.3	4.6	6.8	6.0	6.4
6	12.8	11.3	11.9	5.3	4.0	4.7	5.0	4.5	4.7	6.3	5.6	5.9
7	12.4	10.9	11.6	6.5	5.2	6.0	4.8	4.1	4.3	6.0	5.4	5.7
8	11.8	10.3	11.0	6.6	6.2	6.4	4.1	3.6	3.8	5.5	4.9	5.2
9	10.9	9.9	10.3	6.4	5.6	5.9	4.7	3.8	4.2	5.8	5.1	5.4
10	10.9	9.8	10.3	6.1	5.5	5.8	5.1	4.6	4.9	5.6	4.8	5.2
11	9.8	8.4	9.1	7.0	6.1	6.6	5.2	5.0	5.0	6.0	5.4	5.7
12	9.2	7.5	8.3	7.4	6.8	7.0	5.9	5.1	5.5	6.4	6.0	6.1
13	9.0	7.4	8.1	7.2	6.6	6.9	6.8	5.9	6.4	6.5	6.1	6.3
14	9.0	7.4	8.2	7.3	6.7	7.1	7.6	6.8	7.3	6.6	6.2	6.3
15	9.2	7.6	8.3	6.7	5.7	6.0	7.4	6.7	6.9	6.2	5.3	5.7
16	9.4	7.8	8.5	6.2	5.4	5.7	7.0	6.5	6.9	5.7	4.8	5.2
17	9.8	8.2	8.9	6.9	6.2	6.6	6.5	5.6	6.0	6.2	5.2	5.7
18	9.7	8.3	9.0	6.5	5.5	6.0	5.6	5.0	5.3	6.3	5.5	5.9
19	9.9	8.5	9.1	6.9	6.4	6.7	5.1	4.8	4.9	6.1	5.3	5.7
20	9.8	8.9	9.4	7.0	6.3	6.7	5.1	4.6	4.9	5.8	5.0	5.5
21	10.4	9.1	9.6	7.3	6.7	7.0	5.2	5.0	5.1	6.6	5.6	6.0
22	9.8	8.6	9.2	7.4	7.0	7.2	5.7	5.2	5.4	6.9	6.2	6.5
23	9.5	8.2	8.8	7.2	6.4	6.7	5.5	4.1	4.7	6.8	6.3	6.6
24	8.9	7.7	8.4	7.1	6.4	6.7	4.3	3.8	4.1	6.8	6.0	6.4
25	8.9	7.7	8.3	6.8	4.9	5.8	4.5	3.8	4.1	7.6	6.8	7.2
26	8.3	7.7	8.0	4.9	4.0	4.2	5.0	4.5	4.6	7.6	7.4	7.5
27	7.8	6.7	7.3	4.4	3.7	4.0	6.3	5.0	5.8	7.4	6.5	7.2
28	8.6	7.6	7.9	4.8	4.3	4.5	6.7	6.0	6.4	6.8	5.8	6.3
29	8.1	6.9	7.5	5.1	4.6	4.9	6.4	6.0	6.2	6.8	6.1	6.4
30	6.9	4.8	5.8	5.0	4.6	4.9	6.6	5.6	6.0	7.9	6.8	7.5
31	4.9	3.7	4.2	---	---	---	6.6	6.2	6.5	---	---	---
MONTH	12.8	3.7	9.0	7.4	2.2	5.6	7.6	3.3	5.2	---	---	---

14316495 BOULDER CREEK NEAR TOKETEE FALLS, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	5.1	4.0	4.6	6.8	5.4	6.0	8.5	5.6	7.2
2	---	---	---	5.0	3.7	4.4	5.4	4.5	4.8	9.1	6.9	8.0
3	---	---	---	5.1	4.4	4.8	4.8	3.8	4.3	8.5	7.1	7.7
4	5.4	4.6	5.1	5.0	4.2	4.7	5.4	4.1	4.7	7.1	5.7	6.3
5	4.6	3.8	4.2	5.5	4.8	5.2	5.4	4.6	5.0	7.2	5.7	6.4
6	4.4	3.8	4.1	5.4	5.0	5.2	5.4	3.5	4.5	7.7	5.3	6.6
7	3.9	3.2	3.6	5.9	5.0	5.3	7.3	5.2	6.0	7.9	6.4	7.1
8	3.8	3.0	3.5	7.3	5.9	6.6	7.8	5.6	6.6	6.9	5.6	6.4
9	3.9	3.1	3.5	6.7	6.2	6.5	7.9	6.4	7.0	6.7	6.0	6.4
10	3.8	3.0	3.4	7.6	6.5	7.0	7.9	6.4	7.0	7.3	5.7	6.6
11	3.9	2.9	3.4	7.4	6.6	7.0	7.9	6.2	7.0	7.4	6.4	7.0
12	4.6	3.3	3.8	7.5	6.3	7.0	7.6	6.6	7.1	9.7	6.8	8.1
13	5.8	4.5	5.2	7.3	6.6	7.0	6.9	6.0	6.4	10.6	7.0	8.8
14	6.3	5.7	6.0	7.2	6.3	6.7	7.2	5.6	6.3	10.7	8.1	9.4
15	6.0	5.4	5.7	6.8	6.1	6.6	6.6	5.9	6.2	9.5	7.5	8.5
16	6.0	5.1	5.5	6.7	5.5	6.0	7.2	5.6	6.3	7.7	6.2	7.0
17	5.8	5.1	5.5	6.2	5.4	5.8	7.0	6.0	6.5	6.9	5.4	6.4
18	5.8	4.9	5.4	6.2	4.8	5.5	6.5	5.3	5.9	7.5	4.7	6.2
19	6.5	5.6	6.0	6.3	4.8	5.6	7.6	4.5	6.0	9.0	5.3	7.1
20	6.1	5.6	5.9	6.9	6.0	6.4	8.0	6.2	7.1	10.3	7.1	8.7
21	6.8	5.9	6.3	6.3	5.5	5.9	7.6	6.5	7.0	11.2	8.1	9.6
22	6.6	5.5	6.0	6.9	5.8	6.6	7.6	6.6	7.0	11.9	9.0	10.4
23	5.7	4.7	5.2	6.6	5.6	6.0	7.1	6.3	6.7	12.6	9.2	10.9
24	5.2	4.2	4.8	6.7	4.9	5.8	6.8	5.2	5.9	11.7	9.9	10.7
25	4.6	3.6	4.1	6.8	5.9	6.3	6.0	4.8	5.4	10.6	9.5	10
26	4.7	3.4	4.0	6.9	5.9	6.4	6.5	5.2	5.8	11.3	8.8	9.9
27	5.2	4.3	4.7	6.7	5.6	6.1	7.1	5.0	6.0	11.7	9.0	10.4
28	4.5	3.7	4.2	7.2	5.3	6.2	7.4	6.4	6.9	12.8	10.2	11.5
29	---	---	---	8.1	5.8	6.9	7.3	5.9	6.7	13.0	10.4	11.8
30	---	---	---	8.6	6.4	7.4	8.3	6.1	7.1	12.6	11.0	11.9
31	---	---	---	7.8	6.8	7.3	---	---	---	12.2	9.9	11.1
MONTH	---	---	---	8.6	3.7	6.1	8.3	3.5	6.2	13.0	4.7	8.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	12.4	9.6	11.1	17.1	15.3	16.1	20.2	18.6	19.5	19.1	16.3	17.5
2	13.2	10.5	11.9	16.8	13.8	15.2	19.8	18.9	19.4	19.4	16.5	17.8
3	13.8	10.8	12.4	17.3	13.8	15.4	20.2	18.4	19.3	19.4	16.8	18.0
4	14.2	11.5	13.0	17.6	14.0	15.8	21.1	18.3	19.6	19.8	17.1	18.2
5	14.6	11.8	13.4	18.0	14.4	16.2	19.9	18.1	19.0	19.3	17.1	18.0
6	15.6	12.6	14.2	18.7	15.1	16.8	19.8	17.3	18.5	19.2	16.5	17.6
7	15.9	13.4	14.9	18.8	15.3	17.0	19.2	16.8	18.0	17.5	15.9	16.7
8	16.2	13.8	15.2	18.7	15.5	17.0	18.9	16.7	17.9	15.9	14.9	15.3
9	15.5	13.1	14.4	19.1	15.6	17.3	19.8	17.1	18.3	14.9	13.9	14.2
10	14.7	12.4	13.8	19.9	16.3	18.0	19.5	16.9	18.1	14.9	13.6	14.2
11	14.5	12.2	13.6	20.1	16.8	18.4	19.5	17.2	18.1	15.5	13.3	14.3
12	14.4	12.5	13.5	20.0	16.9	18.4	19.1	16.4	17.6	15.8	13.8	14.6
13	14.1	12.3	13.2	20.2	17.3	18.5	19.1	16.1	17.5	15.2	12.8	13.9
14	14.6	12.3	13.4	19.6	16.4	18.0	19.4	16.3	17.8	14.9	12.4	13.6
15	15.0	12.2	13.7	19.8	16.6	18.2	19.8	17.0	18.2	15.4	13.0	13.9
16	16.1	13.2	14.7	20.0	17.3	18.5	19.2	16.3	17.6	13.8	12.3	12.9
17	17.4	14.6	15.9	20.0	16.6	18.3	19.4	16.2	17.7	13.4	11.7	12.3
18	16.7	15.2	15.9	20.4	17.2	18.8	20.2	17.0	18.4	13.1	11.0	12.0
19	15.4	13.8	14.7	20.6	17.6	19.1	20.4	17.4	18.7	13.6	11.4	12.3
20	14.1	12.9	13.4	20.8	17.6	19.2	19.8	16.7	18.2	13.9	11.6	12.6
21	13.3	12.2	12.7	21.4	18.1	19.8	18.8	17.0	18.0	14.1	11.7	12.7
22	13.9	11.3	12.4	21.9	19.2	20.6	18.6	17.3	17.9	14.4	12.0	13.0
23	12.5	11.3	12.0	22.0	19.4	20.7	19.5	16.8	17.9	14.7	12.4	13.3
24	13.5	10.1	11.7	20.8	19.0	20.0	19.5	16.4	17.8	14.8	12.5	13.4
25	15.3	11.8	13.3	21.1	18.3	19.7	19.7	16.6	17.9	14.5	12.2	13.2
26	16.8	13.2	14.8	21.0	18.0	19.5	19.2	16.5	17.8	14.8	12.4	13.4
27	17.9	14.4	15.9	21.3	18.1	19.7	19.6	16.8	17.8	15.7	13.3	14.3
28	18.6	14.8	16.5	21.7	18.5	20.1	18.6	16.5	17.5	16.0	14.0	14.8
29	19.2	16.0	17.3	21.8	18.6	20.2	19.0	16.1	17.4	14.8	14.0	14.4
30	19.2	16.3	17.4	22.1	18.9	20.4	19.4	16.4	17.7	14.7	12.7	13.6
31	---	---	---	21.7	18.6	20.1	19.1	16.6	17.7	---	---	---
MONTH	19.2	9.6	14.0	22.1	13.8	18.4	21.1	16.1	18.2	19.8	11.0	14.5

14316500 NORTH UMPQUA 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 mi^2.

WATER-DISCHARGE RECORDS

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 above NGVD of 1929, from river-profile map. Prior to Aug. 1, 1976, on right bank at same datum.

REMARKS.--No estimated daily discharges. Records good. 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.--54 years (water years 1950-2003), 1,468 ft^3/s, 1,063,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,700 ft^3/s Dec. 22, 1964, gage height, 19.1 ft, from floodmark, from rating curve extended above 7,200 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 345 ft^3/s July 24, 1992; minimum daily, 565 ft^3/s Sept. 13, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,150 ft^3/s Jan. 30, gage height, 10.39 ft; minimum discharge, 669 ft^3/s Aug. 26-29.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	733	747	733	1310	3520	1150	2550	1400	1600	888	764	714
2	729	745	732	1450	2790	1100	2400	1380	1490	876	741	713
3	723	765	735	2490	2510	1060	2260	1450	1390	874	720	733
4	727	772	736	2160	2280	1040	2220	1710	1440	876	713	744
5	722	777	742	2120	1970	1040	2110	1740	1430	875	726	749
6	720	777	734	1620	1830	1050	1960	1670	1420	874	751	751
7	715	767	739	1400	1700	1160	1990	1630	1410	872	797	749
8	714	796	739	1410	1640	1330	2270	1590	1390	874	801	753
9	712	851	744	1450	1480	1550	2210	1560	1350	873	783	831
10	711	856	749	1440	1460	1870	2230	1500	1280	855	752	810
11	718	851	758	1400	1380	1860	2930	1440	1230	820	741	770
12	724	852	767	1370	1290	1840	2600	1440	1160	814	734	762
13	730	907	785	1690	1250	1940	2190	1490	1110	809	721	739
14	744	925	793	1880	1260	2060	2250	1560	1070	809	711	725
15	755	879	891	1710	1290	2220	2070	1630	1050	813	707	720
16	758	857	1490	1600	1450	2180	1890	1610	1040	810	699	736
17	759	875	1070	1400	1540	1940	1860	1510	1010	806	705	764
18	753	853	920	1400	1480	1670	1840	1440	999	805	717	762
19	750	802	880	1390	1440	1590	1760	1400	997	804	733	759
20	750	776	831	1370	1400	1570	1690	1410	1000	815	751	757
21	750	777	825	1350	1400	1710	1650	1450	998	808	726	757
22	752	774	828	1330	1460	3250	1630	1500	997	802	720	761
23	754	769	807	1400	1420	3380	1620	1580	988	804	713	764
24	750	764	800	1560	1400	2650	1680	1750	968	798	698	765
25	742	762	790	2220	1390	3040	1630	1760	952	792	691	764
26	745	762	804	2300	1330	4630	1530	1710	939	786	682	778
27	740	749	1720	3520	1250	3420	1490	1700	926	769	682	782
28	743	736	2250	2890	1200	2730	1450	1700	923	762	682	776
29	739	732	1790	2500	---	2430	1410	1800	912	764	694	774
30	738	734	1640	5010	---	2320	1410	1770	902	771	711	775
31	740	---	1920	4590	---	2330	---	1740	---	774	714	---
TOTAL	22840	23989	30742	60730	45810	63110	58780	49020	34371	25472	22480	22737
MEAN	737	800	992	1959	1636	2036	1959	1581	1146	822	725	758
MAX	759	925	2250	5010	3520	4630	2930	1800	1600	888	801	831
MIN	711	732	732	1310	1200	1040	1410	1380	902	762	682	713
AC-FT	45300	47580	60980	120500	90860	125200	116600	97230	68170	50520	44590	45100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2003, BY WATER YEAR (WY)

MEAN	922	1267	1756	1808	1819	1763	1872	2002	1630	1064	881	849
MAX	1568	2324	5163	3592	3462	4221	2876	3191	2933	1652	1178	1107
(WY)	1951	1997	1965	1997	1996	1972	1952	1956	1974	1953	1972	1972
MIN	661	754	803	788	670	873	1065	855	700	664	598	612
(WY)	1995	1988	1977	1977	1977	1977	1968	1992	1992	1992	1992	1994

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1950 - 2003	
ANNUAL TOTAL	436576		460081			
ANNUAL MEAN	1196		1260		1468	
HIGHEST ANNUAL MEAN					2080	1956
LOWEST ANNUAL MEAN					897	1977
HIGHEST DAILY MEAN	4600	Apr 14	5010	Jan 30	24300	Dec 22 1964
LOWEST DAILY MEAN	670	Sep 2	682	Aug 26	565	Sep 13 1959
ANNUAL SEVEN-DAY MINIMUM	674	Aug 30	691	Aug 24	587	Sep 2 1992
ANNUAL RUNOFF (AC-FT)	865900		912600		1063000	
10 PERCENT EXCEEDS	1850		2170		2390	
50 PERCENT EXCEEDS	1040		952		1220	
90 PERCENT EXCEEDS	712		731		760	

14316500 NORTH UMPQUA RIVER ABOVE COPELAND CREEK, NEAR TOKETEE FALLS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: June 1998 to current year.
pH: June 1998 to current year.
WATER TEMPERATURE: June 1998 to current year.
DISSOLVED OXYGEN: June 1998 to current year.
TURBIDITY: June 2000 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Seasonal records only (June to September).
SPECIFIC CONDUCTANCE: Records good.
pH: Records good.
WATER TEMPERATURE: Records good except those for Sept. 9-11, which are poor.
DISSOLVED OXYGEN: Records good except for the periods July 17-31, Aug. 14-28, Sept. 11-29, which are fair.
TURBIDITY: Records good except for the periods June 4 to July 1, Sept. 11-29, which are fair. Turbidity sensor calibrated to polymer bead standards

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE FOR PERIOD JUNE TO SEPTEMBER: Maximum recorded, 69 microsiemens Sept. 24, 25, 2001; minimum recorded, 35 microsiemens June 15, 1999.
pH FOR PERIOD JUNE TO SEPTEMBER: Maximum recorded, 8.4 units July 28-30, 2001, July 30, Aug. 13, 2002, July 17, 18, 2003; minimum recorded, 7.1 units Aug. 22, 1998.
WATER TEMPERATURE FOR PERIOD JUNE TO SEPTEMBER: Maximum recorded, 16.2°C July 23, 2003; minimum recorded, 6.5°C June 9, 1999.
DISSOLVED OXYGEN FOR PERIOD JUNE TO SEPTEMBER: Maximum recorded, 12.6 mg/L June 8, 9, 1999; minimum recorded, 6.6 mg/L July 30, 1998.
TURBIDITY FOR PERIOD JUNE TO SEPTEMBER: Maximum recorded, 89 NTU June 22, 2001; minimum recorded, <1 many days most years.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE FOR PERIOD JUNE TO SEPTEMBER: Maximum recorded, 64 microsiemens several days in August and September, but could have been higher during periods of missing record; minimum recorded, 47 microsiemens June 3, but could have been less during period of missing record.
pH FOR PERIOD JUNE TO SEPTEMBER: Maximum recorded, 8.4 units July 17, 18; minimum recorded, 7.6 units June 29, July 30, 31.
WATER TEMPERATURE FOR PERIOD JUNE TO SEPTEMBER: Maximum recorded, 16.2°C July 23; minimum recorded, 9.4°C Sept. 18, but could have been lower during period of missing record.
DISSOLVED OXYGEN FOR PERIOD JUNE TO SEPTEMBER: Maximum recorded, 12.0 mg/L Sept. 17, but could have been higher during period of missing record, minimum recorded, 10.2 mg/L several days in June and July.
TURBIDITY FOR PERIOD JUNE TO SEPTEMBER: Maximum recorded, 5 NTU June 3, but could have been higher during periods of missing record; minimum recorded, <1 NTU many days during June, July, August, and September.

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
JUNE TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	59	58	58	63	62	62	64	63	64
2	---	---	---	58	57	57	63	61	62	64	63	64
3	50	47	48	58	56	57	63	61	62	64	62	63
4	51	49	50	60	57	58	63	61	62	63	62	62
5	51	50	50	60	58	59	64	63	63	63	61	62
6	51	50	51	60	59	59	63	62	63	63	61	62
7	51	50	50	60	59	59	64	62	62	62	61	61
8	51	50	50	60	59	60	63	62	62	62	61	61
9	51	51	51	60	59	60	63	62	62	63	61	62
10	52	50	51	61	59	60	63	62	63	62	61	62
11	53	51	52	61	59	60	64	62	63	---	---	---
12	53	52	53	61	60	60	64	62	63	---	---	---
13	54	53	54	61	60	61	63	62	63	63	62	62
14	55	53	54	61	60	61	64	62	63	63	62	63
15	55	54	54	61	60	61	63	62	63	63	62	63
16	56	54	55	61	60	61	64	62	63	63	62	63
17	56	55	55	62	60	61	64	63	63	63	62	62
18	56	55	56	62	61	61	64	63	63	62	62	62
19	56	55	56	62	60	61	64	62	63	63	62	62
20	57	55	56	61	60	61	64	62	63	63	62	62
21	57	55	56	62	61	61	64	62	63	63	62	63
22	57	56	57	62	61	62	64	63	63	63	62	63
23	58	57	57	62	60	61	63	62	63	64	62	63
24	58	57	57	62	61	62	64	63	63	64	62	63
25	57	56	57	62	61	62	64	63	63	63	62	62
26	58	56	57	62	61	62	64	63	64	64	62	62
27	58	57	57	62	61	62	64	62	63	64	62	63
28	58	56	57	62	61	62	64	63	63	63	61	62
29	58	57	57	63	61	62	64	61	63	---	---	---
30	59	57	58	63	61	62	64	63	64	---	---	---
31	---	---	---	63	62	62	64	63	64	---	---	---
MONTH	---	---	---	63	56	60	64	61	63	---	---	---

14316500 NORTH UMPQUA RIVER ABOVE COPELAND CREEK, NEAR TOKETEE FALLS, OR--Continued

pH, water, unfiltered, field, standard units
JUNE TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	8.1	7.7	7.9	8.2	7.8	7.9	8.2	7.8	7.9
2	---	---	---	8.1	7.8	7.9	8.1	7.8	7.9	8.2	7.8	7.8
3	7.9	7.7	7.8	8.1	7.8	7.8	8.2	7.8	7.9	8.2	7.8	7.8
4	8.0	7.7	7.8	8.1	7.8	7.8	8.2	7.8	7.9	8.1	7.8	7.8
5	8.0	7.8	7.8	8.1	7.8	7.8	8.1	7.8	7.8	8.1	7.8	7.8
6	8.0	7.7	7.8	8.1	7.8	7.8	8.1	7.8	7.8	8.0	7.7	7.8
7	8.0	7.7	7.8	8.1	7.8	7.9	8.1	7.8	7.8	8.1	7.7	7.8
8	8.0	7.8	7.8	8.1	7.8	7.9	8.1	7.7	7.8	8.1	7.8	7.8
9	7.9	7.7	7.8	8.1	7.8	7.8	8.1	7.8	7.8	8.1	7.7	7.8
10	7.9	7.7	7.8	8.1	7.8	7.9	8.1	7.8	7.8	8.1	7.7	7.8
11	7.9	7.8	7.8	8.1	7.8	7.9	8.2	7.8	7.8	---	---	---
12	8.0	7.8	7.8	8.1	7.8	7.9	8.2	7.8	7.8	---	---	---
13	8.0	7.8	7.9	8.2	7.8	7.9	8.2	7.8	7.8	8.1	7.7	7.8
14	8.0	7.8	7.9	8.2	7.8	7.9	8.2	7.8	7.8	8.1	7.7	7.8
15	8.0	7.7	7.8	8.2	7.8	7.9	8.2	7.8	7.9	8.1	7.7	7.8
16	8.0	7.7	7.8	8.2	7.9	8.0	8.2	7.8	7.9	8.1	7.8	7.8
17	7.9	7.7	7.8	8.4	7.9	8.0	8.2	7.8	7.8	8.0	7.7	7.8
18	8.1	7.7	7.9	8.4	8.0	8.1	8.2	7.8	7.9	8.0	7.7	7.8
19	8.1	7.8	7.9	8.3	8.0	8.0	8.2	7.8	7.9	8.0	7.7	7.8
20	8.0	7.8	7.9	8.3	7.9	8.0	8.2	7.8	7.9	8.1	7.7	7.8
21	8.0	7.8	7.9	8.3	7.9	8.0	8.2	7.8	7.9	8.0	7.7	7.8
22	8.0	7.8	7.9	8.3	7.8	7.9	8.3	7.8	7.9	8.0	7.7	7.8
23	8.0	7.8	7.9	8.2	7.8	7.9	8.2	7.8	7.9	8.0	7.7	7.7
24	8.0	7.8	7.8	8.2	7.8	7.9	8.2	7.8	7.9	8.0	7.7	7.7
25	8.0	7.8	7.8	8.2	7.8	7.9	8.2	7.8	7.9	8.0	7.7	7.7
26	8.0	7.7	7.8	8.2	7.8	7.8	8.3	7.8	7.9	8.0	7.7	7.7
27	8.0	7.7	7.8	8.2	7.8	7.8	8.2	7.8	7.9	8.0	7.7	7.7
28	7.9	7.7	7.7	8.1	7.7	7.8	8.3	7.8	7.9	8.0	7.7	7.7
29	8.0	7.6	7.8	8.1	7.7	7.8	8.3	7.9	8.0	---	---	---
30	8.0	7.7	7.8	8.1	7.6	7.7	8.2	7.8	7.9	---	---	---
31	---	---	---	8.2	7.6	7.8	8.3	7.8	7.9	---	---	---
MAX	---	---	---	8.4	8.0	8.1	8.3	7.9	8.0	---	---	---
MIN	---	---	---	8.1	7.6	7.7	8.1	7.7	7.8	---	---	---

Temperature, water, degrees Celsius
WATER YEAR JUNE TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	13.7	12.3	13.1	14.9	13.9	14.3	13.2	11.9	12.3
2	---	---	---	12.9	12.0	12.3	13.9	13.3	13.6	13.0	11.8	12.2
3	11.6	10.7	11.2	13.7	12.1	12.7	14.0	12.7	13.2	12.8	11.7	12.2
4	12.0	11.2	11.7	14.0	12.4	12.9	14.9	13.1	13.8	12.7	11.6	12.1
5	12.0	11.3	11.8	14.2	12.6	13.2	14.1	13.0	13.5	12.5	11.6	12.0
6	12.4	11.5	12.0	14.5	12.9	13.4	13.8	12.4	13.0	11.9	10.9	11.3
7	12.8	11.9	12.4	14.6	13.1	13.5	13.7	12.6	13.1	11.1	10.4	10.9
8	12.9	12.1	12.6	14.7	13.2	13.7	14.2	12.9	13.4	10.4	9.8	10.1
9	12.8	11.8	12.2	14.7	13.2	13.7	14.5	13.1	13.6	10.0	9.5	9.7
10	12.2	11.2	11.7	14.7	13.2	13.9	14.5	13.1	13.6	11.1	9.7	10.2
11	12.0	11.2	11.7	15.0	13.7	14.2	14.4	13.1	13.6	---	---	---
12	12.1	11.3	11.6	15.0	13.8	14.3	14.1	12.7	13.3	---	---	---
13	11.6	11.0	11.2	15.1	13.8	14.3	14.0	12.6	13.1	11.9	10.8	11.3
14	12.2	11.1	11.6	14.9	13.5	14.1	14.1	12.7	13.2	11.4	10.3	10.8
15	12.8	11.6	12.1	15.0	13.4	14.0	14.4	13.0	13.5	11.7	10.4	10.9
16	13.4	12.0	12.5	15.2	13.7	14.3	14.3	12.9	13.5	10.9	10.2	10.7
17	14.0	12.6	13.2	15.3	13.8	14.4	14.2	12.7	13.2	10.4	9.5	9.9
18	13.9	12.8	13.3	15.3	13.8	14.3	14.6	12.9	13.4	10.7	9.4	9.9
19	13.1	11.9	12.6	15.5	13.9	14.6	14.9	13.3	13.8	11.0	9.6	10.1
20	11.9	11.3	11.6	15.6	14.2	14.7	14.5	12.9	13.6	11.1	10	10.3
21	11.5	10.9	11.2	15.7	14.2	14.8	13.6	12.6	13.0	11.1	9.9	10.3
22	11.6	10.6	11.0	16.0	14.5	15.1	13.0	12.2	12.5	11.2	9.9	10.4
23	11.5	10.4	11.0	16.2	14.7	15.4	13.4	12.1	12.5	11.1	10.2	10.5
24	11.7	10.0	10.7	15.4	14.2	14.9	13.9	12.2	12.8	11.1	10.2	10.5
25	12.8	10.8	11.7	15.4	13.9	14.5	14.1	12.5	13.0	11.1	10.1	10.5
26	13.6	11.9	12.6	15.7	13.9	14.6	13.9	12.6	13.0	11.0	10.1	10.5
27	14.2	12.5	13.3	15.8	14.0	14.7	13.9	12.5	13.0	11.7	10.5	11.1
28	14.2	13.0	13.5	16.0	14.2	14.8	13.4	12.4	12.8	12.1	11.3	11.6
29	14.4	13.3	13.7	15.9	14.3	14.9	13.4	12.3	12.7	---	---	---
30	14.4	13.3	13.9	15.9	14.3	14.9	13.7	12.2	12.7	---	---	---
31	---	---	---	15.7	14.1	14.8	13.4	12.2	12.6	---	---	---
MONTH	---	---	---	16.2	12.0	14.2	14.9	12.1	13.2	---	---	---

14316500 NORTH UMPQUA RIVER ABOVE COPELAND CREEK, NEAR TOKETEE FALLS, OR--Continued

Dissolved oxygen, water, unfiltered, milligrams per liter
JUNE TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	10.7	10.3	10.6	10.9	10.6	10.7	---	---	---
2	---	---	---	10.8	10.6	10.7	11.1	10.7	10.9	---	---	---
3	11.1	10.7	10.9	10.8	10.5	10.6	11.2	10.6	10.9	---	---	---
4	11.0	10.6	10.8	10.8	10.5	10.6	10.9	10.4	10.7	---	---	---
5	10.9	10.6	10.8	10.7	10.4	10.5	11.0	10.6	10.7	---	---	---
6	10.9	10.6	10.7	10.7	10.4	10.6	11.2	10.7	10.9	---	---	---
7	10.8	10.4	10.6	10.7	10.4	10.5	11.0	10.7	10.9	---	---	---
8	10.8	10.4	10.6	10.7	10.4	10.5	10.9	10.6	10.8	---	---	---
9	11.0	10.5	10.8	10.7	10.4	10.5	10.9	10.5	10.7	---	---	---
10	11.2	10.8	11.0	10.7	10.4	10.5	10.8	10.6	10.7	---	---	---
11	11.2	10.8	11.0	10.6	10.3	10.4	10.8	10.4	10.6	---	---	---
12	11.1	10.8	10.9	10.5	10.3	10.4	10.8	10.5	10.6	---	---	---
13	11.2	10.8	11.0	10.6	10.3	10.4	10.9	10.4	10.6	11.3	11.1	11.2
14	11.2	10.9	11.0	10.6	10.4	10.5	11.0	10.4	10.7	11.5	11.2	11.4
15	11.2	10.8	10.9	10.6	10.3	10.5	11.2	10.8	11.0	11.5	11.2	11.3
16	11.0	10.7	10.8	10.6	10.3	10.5	11.2	10.8	11.0	11.6	11.2	11.4
17	10.8	10.5	10.6	10.5	10.3	10.4	11.2	10.7	11.0	12.0	11.5	11.8
18	10.6	10.3	10.5	10.6	10.4	10.5	---	---	---	11.9	11.6	11.8
19	10.7	10.4	10.6	10.6	10.3	10.5	---	---	---	11.9	11.5	11.7
20	11.0	10.7	10.9	10.6	10.4	10.5	---	---	---	11.8	11.5	11.6
21	11.4	11.0	11.2	10.6	10.3	10.4	---	---	---	11.8	11.5	11.6
22	11.4	11.1	11.2	10.6	10.2	10.4	---	---	---	11.7	11.4	11.6
23	11.3	11.1	11.2	10.5	10.2	10.3	---	---	---	11.7	11.3	11.5
24	11.6	11.2	11.4	10.5	10.2	10.4	---	---	---	11.7	11.5	11.5
25	11.3	10.9	11.1	10.6	10.3	10.4	---	---	---	11.7	11.5	11.6
26	11.0	10.7	10.9	10.6	10.4	10.5	---	---	---	11.7	11.4	11.6
27	10.8	10.4	10.6	10.6	10.3	10.5	---	---	---	11.4	11.1	11.3
28	10.7	10.4	10.5	10.6	10.2	10.4	---	---	---	11.3	11.1	11.1
29	10.5	10.2	10.4	10.6	10.2	10.3	---	---	---	---	---	---
30	10.6	10.3	10.4	10.5	10.2	10.3	---	---	---	---	---	---
31	---	---	---	10.7	10.2	10.5	---	---	---	---	---	---
MONTH	---	---	---	10.8	10.2	10.5	---	---	---	---	---	---

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR JUNE TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	2	<1	<1	1	<1	<1	2	<1	<1
2	---	---	---	1	<1	<1	2	<1	<1	2	<1	<1
3	5	<1	<1	2	<1	<1	1	<1	<1	1	<1	<1
4	3	<1	<1	1	<1	<1	3	<1	<1	2	<1	<1
5	2	<1	<1	1	<1	<1	2	<1	<1	<1	<1	<1
6	2	<1	<1	<1	<1	<1	2	<1	<1	1	<1	<1
7	2	<1	<1	1	<1	<1	3	<1	2	<1	<1	<1
8	1	<1	<1	2	<1	<1	3	1	2	2	<1	<1
9	1	<1	<1	<1	<1	<1	2	<1	<1	2	<1	<1
10	2	<1	<1	4	<1	<1	1	<1	<1	2	<1	<1
11	1	<1	<1	<1	<1	<1	2	<1	<1	---	---	---
12	4	<1	<1	1	<1	<1	2	<1	<1	---	---	---
13	3	<1	<1	2	<1	<1	2	<1	<1	1	<1	<1
14	1	<1	<1	1	<1	<1	2	<1	<1	1	<1	<1
15	1	<1	<1	<1	<1	<1	2	<1	<1	1	<1	<1
16	1	<1	<1	<1	<1	<1	2	<1	<1	1	<1	<1
17	2	<1	<1	1	<1	<1	<1	<1	<1	1	<1	<1
18	1	<1	<1	2	<1	<1	2	<1	<1	2	<1	<1
19	1	<1	<1	2	<1	<1	2	<1	<1	2	<1	<1
20	1	<1	<1	1	<1	<1	2	<1	<1	2	<1	<1
21	<1	<1	<1	1	<1	<1	2	<1	<1	2	<1	<1
22	1	<1	<1	1	<1	<1	1	<1	<1	2	<1	<1
23	1	<1	<1	2	<1	<1	1	<1	<1	1	<1	<1
24	<1	<1	<1	2	<1	<1	<1	<1	<1	1	<1	<1
25	<1	<1	<1	2	<1	1	1	<1	<1	4	<1	2
26	<1	<1	<1	2	<1	<1	3	<1	<1	3	<1	1
27	2	<1	<1	1	<1	<1	4	<1	<1	2	<1	<1
28	1	<1	<1	2	<1	<1	1	<1	<1	4	<1	<1
29	<1	<1	<1	1	<1	<1	1	<1	<1	---	---	---
30	2	<1	<1	2	<1	<1	1	<1	<1	---	---	---
31	---	---	---	1	<1	<1	2	<1	<1	---	---	---
MAX	---	---	---	4	<1	1	4	1	2	---	---	---
MIN	---	---	---	<1	<1	<1	<1	<1	<1	---	---	---

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 mi^2.

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 NGVD 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 good. No regulation or diversion upstream from station. National Weather Service satellite telemeter at station.

AVERAGE DISCHARGE.--47 years (water years 1957-2003), 729 ft^3/s, 43.64 in/yr, 528,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,000 ft^3/s Dec. 22, 1964, gage height, 25.6 ft, from floodmark, from rating curve extended above 13,000 ft^3/s on basis of slope-area measurement at 17.96 ft; minimum discharge, 25 ft^3/s Sept. 24, 2001.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 30	1330	*8,660	*9.62	No other peak greater than base discharge.			

Minimum discharge, 27 ft^3/s Sept. 5.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	111	34	63	2090	3170	390	958	583	177	72	36	29
2	74	34	60	2660	2480	356	884	533	167	73	36	29
3	57	34	58	5020	1790	391	875	521	159	71	39	29
4	75	34	58	3060	1310	452	1030	746	154	68	41	28
5	72	34	59	2570	1000	425	1220	1030	147	66	46	28
6	56	34	56	1650	794	760	1420	829	139	66	44	31
7	49	36	54	1260	634	3050	1660	688	133	64	95	32
8	45	127	52	991	531	3460	2020	616	126	62	66	50
9	43	593	51	810	450	2890	2130	550	124	61	52	84
10	41	643	74	639	390	3120	1850	507	120	60	45	93
11	39	643	149	526	352	2030	2020	485	116	58	43	59
12	39	332	201	535	321	1550	1630	474	112	57	41	46
13	38	324	481	810	305	1290	1610	440	109	55	40	41
14	38	191	542	1460	318	1080	1370	435	108	54	40	37
15	37	154	958	1210	301	1040	1140	419	103	53	38	35
16	36	123	1760	868	857	934	988	375	101	53	36	39
17	36	226	903	675	1220	796	1030	337	98	53	36	51
18	35	222	542	614	1370	669	1020	308	97	50	35	45
19	35	152	400	537	1250	599	906	284	95	48	35	41
20	35	125	316	454	1080	726	787	270	95	47	34	38
21	35	120	912	395	1070	1310	745	262	94	47	33	36
22	36	106	896	377	1350	2960	701	270	91	47	33	34
23	35	94	494	496	1150	2880	699	279	88	45	33	33
24	35	93	345	526	906	1900	1400	290	87	44	33	33
25	35	98	265	1410	701	2430	1580	290	85	43	32	32
26	35	86	625	1790	570	4390	1220	263	82	42	32	31
27	35	78	3780	4240	480	2730	1000	236	79	42	32	31
28	35	74	3850	2130	414	1830	879	227	76	41	31	30
29	35	69	2510	1360	---	1340	767	219	74	40	31	30
30	35	66	3510	5660	---	1070	672	213	74	39	30	30
31	34	---	3880	4400	---	958	---	196	---	37	30	---
TOTAL	1376	4979	27904	51223	26564	49806	36211	13175	3310	1658	1228	1185
MEAN	44.4	166	900	1652	949	1607	1207	425	110	53.5	39.6	39.5
MAX	111	643	3880	5660	3170	4390	2130	1030	177	73	95	93
MIN	34	34	51	377	301	356	672	196	74	37	30	28
AC-FT	2730	9880	55350	101600	52690	98790	71820	26130	6570	3290	2440	2350
CFSM	0.20	0.73	3.97	7.28	4.18	7.08	5.32	1.87	0.49	0.24	0.17	0.17
IN.	0.23	0.82	4.57	8.39	4.35	8.16	5.93	2.16	0.54	0.27	0.20	0.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2003, BY WATER YEAR (WY)

MEAN	163	869	1506	1513	1393	1239	979	633	269	96.0	59.5	67.2
MAX	536	2887	5391	3415	3195	2774	2017	1337	780	193	158	260
(WY)	1957	1974	1965	1970	1986	1972	1993	1963	1984	1983	1976	1986
MIN	31.5	56.5	62.6	108	142	211	287	165	87.5	53.5	35.9	31.2
(WY)	1988	1994	1977	1977	1977	1992	1968	1992	1992	2003	1994	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1957 - 2003	
ANNUAL TOTAL	193682		218619			
ANNUAL MEAN	531		599		729	
HIGHEST ANNUAL MEAN					1253	1974
LOWEST ANNUAL MEAN					239	1977
HIGHEST DAILY MEAN	4500	Jan 8	5660	Jan 30	33000	Dec 22 1964
LOWEST DAILY MEAN	31	Sep 13	28	Sep 4	26	Sep 23 2001
ANNUAL SEVEN-DAY MINIMUM	32	Sep 10	29	Aug 30	27	Sep 18 2001
ANNUAL RUNOFF (AC-FT)	384200		433600		528200	
ANNUAL RUNOFF (CFSM)	2.34		2.64		3.21	
ANNUAL RUNOFF (INCHES)	31.74		35.83		43.64	
10 PERCENT EXCEEDS	1520		1650		1740	
50 PERCENT EXCEEDS	191		154		327	
90 PERCENT EXCEEDS	35		35		47	

14317450 NORTH UMPQUA RIVER NEAR IDLEYLD PARK, OR.

LOCATION.--Lat 43°19'29", long 122°59'55", IN SW 1/4 NE 1/4 sec.12, T.26 S., R.3 W., Douglas County, Hydrologic Unit 17100301, on right bank 0.5 mi upstream from Rock Creek bridge, 2 mi east of Idleyld Park, and at mile 36.3.

DRAINAGE AREA.--886 mi^2, at former site 0.5 mi downstream.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1998 to current year.
pH: January 1998 to current year.
WATER TEMPERATURE: January 1998 to current year.
DISSOLVED OXYGEN: January 1998 to current year.
TURBIDITY: October 1999 to current year. Turbidity sensor calibrated to polymer bead standards.

INSTRUMENTATION.--Water-quality monitor and data logger since January 1998.

REMARKS.--
SPECIFIC CONDUCTANCE: Records good.
pH: Records good.
WATER TEMPERATURE: Records good.
DISSOLVED OXYGEN: Records good except those for the period Mar. 12 to Apr. 1, which are poor.
TURBIDITY: Records good.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 76 microsiemens June 22, 2001; minimum recorded, 26 microsiemens Nov. 21, 1998, but may have been lower during period of missing record.
pH: Maximum, 8.9 units Aug. 1, 2003; minimum recorded, 6.1 units Dec. 18, 1999, but may have been lower during period of missing record.
WATER TEMPERATURE: Maximum , 21.4°C July 30, 2003; minimum recorded, 2.2°C Nov. 18, 19, 2000.
DISSOLVED OXYGEN: Maximum recorded, 14.5 mg/L Feb. 10, 1999, but may have been higher during period of missing record; minimum recorded, 6.4 mg/L Aug. 14, 2001.
TURBIDITY: Maximum recorded, 220 NTU Dec. 14, 2001; minimum recorded, <1 many days each year.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 74 microsiemens Oct. 8; minimum, 37 microsiemens Jan. 30, 31.
pH: Maximum, 8.9 units Aug. 1; minimum, 7.0 units Mar. 26.
WATER TEMPERATURE: Maximum, 21.4°C July 30; minimum, 3.3°C Nov. 2, 3, Feb. 8, 9, 11.
DISSOLVED OXYGEN: Maximum recorded , 13.9 mg/L Feb. 9; minimum, 9.0 mg/L July 21-23, 30.
TURBIDITY: Maximum recorded, 113 NTU Dec. 16; minimum, <1 many days during year.

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	71	67	68	69	67	68	66	65	65	46	43	44
2	72	68	70	68	67	68	66	65	65	47	41	46
3	69	67	68	69	66	67	66	65	66	41	38	39
4	71	68	69	67	65	66	66	65	65	42	41	42
5	71	69	70	67	65	66	66	65	66	44	41	42
6	70	68	69	66	65	65	67	65	66	46	44	45
7	70	69	69	66	64	65	66	65	66	47	46	46
8	74	65	68	69	63	64	67	65	66	49	47	48
9	66	65	65	73	67	70	67	65	66	50	49	49
10	67	65	66	67	60	62	66	64	65	51	49	50
11	67	65	66	60	59	59	68	66	67	52	51	52
12	67	66	66	61	58	59	68	66	67	53	52	52
13	67	65	66	62	60	61	66	64	65	52	49	51
14	67	65	66	61	59	60	65	60	61	50	46	48
15	67	65	65	62	61	61	60	53	57	48	46	47
16	67	65	65	63	62	62	60	46	51	49	47	48
17	67	65	66	63	61	62	50	47	49	49	49	49
18	67	65	66	64	59	61	53	50	52	50	48	49
19	68	66	67	61	59	60	57	53	55	49	48	49
20	69	66	67	62	61	61	58	56	57	50	48	49
21	69	66	67	63	62	62	58	50	56	51	49	50
22	68	66	67	63	61	62	53	49	51	51	50	51
23	68	66	67	62	62	62	57	53	55	51	47	50
24	68	66	67	62	61	62	58	56	57	48	48	48
25	68	66	67	64	62	63	59	58	58	49	45	46
26	68	66	67	65	64	65	60	58	59	45	43	44
27	68	66	67	66	65	65	59	39	46	43	39	40
28	68	66	67	66	65	65	41	40	41	44	40	42
29	67	64	66	66	65	65	45	40	42	45	44	44
30	68	66	67	66	65	65	45	39	43	45	37	41
31	69	66	67	---	---	---	43	39	40	39	37	38
MONTH	74	64	67	73	58	63	68	39	58	53	37	46

14317450 NORTH UMPQUA RIVER NEAR IDLEYLD PARK, OR--Continued

Specific conductance, water, unfiltered, microsiemens per centimeter at 25 degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	40	39	40	53	52	52	46	44	45	51	50	50
2	42	40	41	54	52	53	46	45	45	51	51	51
3	44	42	43	53	52	53	46	46	46	52	50	51
4	46	44	44	53	52	53	47	46	46	50	48	49
5	46	46	46	54	52	53	47	46	46	48	47	48
6	47	46	47	53	50	52	47	46	46	49	48	48
7	49	47	48	50	41	45	47	46	46	49	48	48
8	50	49	49	43	41	42	47	45	46	49	48	49
9	50	50	50	45	42	44	46	44	45	50	49	49
10	52	50	51	43	41	42	45	43	44	50	49	50
11	52	51	52	45	43	44	43	40	41	51	50	50
12	53	52	52	46	45	46	43	42	42	51	50	51
13	54	52	53	46	46	46	43	43	43	51	50	51
14	53	52	52	46	45	46	45	43	44	52	50	51
15	53	52	52	46	45	46	46	45	45	51	49	50
16	52	49	51	46	44	45	47	46	46	50	49	49
17	49	47	48	47	46	46	47	46	46	50	49	49
18	47	47	47	47	47	47	48	47	47	50	50	50
19	48	47	47	48	47	48	50	47	49	51	50	50
20	48	47	48	49	48	48	50	50	50	51	50	51
21	49	48	48	48	45	47	51	50	50	52	51	51
22	48	46	47	45	40	42	50	49	50	52	50	51
23	47	46	47	42	39	40	49	48	48	51	48	50
24	48	47	48	44	42	43	48	46	47	49	47	48
25	50	48	49	44	41	44	47	46	46	47	46	46
26	51	50	50	41	38	39	47	47	47	46	46	46
27	51	51	51	42	40	41	48	47	47	47	46	47
28	52	51	51	44	42	43	49	48	48	48	47	47
29	---	---	---	45	44	44	49	49	49	48	47	47
30	---	---	---	46	45	46	50	49	49	47	46	47
31	---	---	---	47	46	46	---	---	---	47	46	47
MONTH	54	39	48	54	38	46	51	40	46	52	46	49

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	48	47	48	61	60	61	65	64	65	66	66	66
2	49	48	49	62	60	61	65	64	64	66	65	66
3	50	49	50	62	61	61	66	64	65	67	66	66
4	50	49	50	62	60	61	66	65	65	66	65	66
5	51	50	50	62	61	61	67	65	65	66	65	66
6	52	50	51	62	61	62	69	66	67	66	65	66
7	52	51	52	62	62	62	67	65	66	67	66	66
8	52	51	52	64	62	63	69	65	67	66	64	65
9	52	51	52	64	63	63	67	65	66	67	65	66
10	53	51	52	64	63	64	67	66	66	70	65	68
11	54	52	53	65	63	64	67	66	66	66	65	65
12	54	53	53	65	64	64	68	66	67	66	65	66
13	55	54	54	66	64	65	67	65	66	66	65	66
14	55	55	55	66	65	65	66	65	65	67	66	66
15	56	55	55	66	65	65	67	65	66	67	66	66
16	57	56	56	66	65	65	67	65	66	67	66	66
17	57	56	57	66	64	65	67	66	66	67	65	66
18	57	57	57	66	65	65	67	66	66	67	66	67
19	58	57	58	66	65	66	67	66	67	66	66	66
20	58	57	58	66	65	65	68	66	67	66	66	66
21	58	58	58	66	65	66	68	66	67	67	66	66
22	58	58	58	67	66	66	68	66	67	67	66	66
23	59	58	58	67	66	67	68	67	67	67	66	67
24	59	59	59	67	66	66	68	67	67	67	66	67
25	60	59	59	67	66	66	68	67	67	67	66	67
26	60	60	60	67	65	66	68	67	68	67	66	66
27	61	60	61	66	65	65	68	65	67	67	66	66
28	62	61	61	67	66	66	66	65	66	68	66	67
29	62	61	62	67	65	66	69	65	66	68	66	66
30	62	61	62	66	64	65	69	66	67	67	66	66
31	---	---	---	65	64	64	66	66	66	---	---	---
MONTH	62	47	55	67	60	64	69	64	66	70	64	66
YEAR	74	37	56									

14317450 NORTH UMPQUA RIVER NEAR IDLEYLD PARK, OR--Continued

pH, water, unfiltered, field, standard units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	8.2	7.6	7.8	7.7	7.6	7.6	7.8	7.5	7.6	7.3	7.2	7.3
2	8.1	7.6	7.8	7.7	7.6	7.6	7.7	7.5	7.6	7.3	7.2	7.3
3	8.2	7.6	7.7	7.7	7.6	7.6	7.7	7.6	7.6	7.2	7.2	7.2
4	8.2	7.5	7.8	7.8	7.5	7.6	7.8	7.5	7.6	7.3	7.2	7.2
5	8.2	7.6	7.8	7.8	7.6	7.6	7.8	7.5	7.6	7.3	7.2	7.3
6	8.1	7.6	7.7	7.8	7.6	7.6	7.8	7.5	7.6	7.3	7.3	7.3
7	8.1	7.6	7.7	7.8	7.6	7.6	7.7	7.5	7.6	7.3	7.3	7.3
8	8.0	7.6	7.7	7.8	7.5	7.6	7.8	7.5	7.6	7.4	7.3	7.3
9	8.1	7.6	7.8	7.6	7.5	7.5	7.8	7.6	7.6	7.5	7.3	7.4
10	8.3	7.6	7.8	7.6	7.5	7.5	7.7	7.6	7.6	7.5	7.4	7.4
11	8.0	7.6	7.8	7.6	7.5	7.5	7.7	7.5	7.6	7.5	7.4	7.4
12	8.0	7.6	7.7	7.6	7.4	7.5	7.8	7.5	7.6	7.5	7.4	7.4
13	7.9	7.6	7.7	7.7	7.5	7.5	7.6	7.5	7.5	7.4	7.3	7.4
14	7.9	7.6	7.7	7.7	7.5	7.5	7.6	7.5	7.5	7.4	7.3	7.3
15	7.9	7.6	7.7	7.8	7.5	7.6	7.5	7.4	7.5	7.5	7.3	7.4
16	7.9	7.6	7.7	7.7	7.5	7.6	7.5	7.3	7.4	7.5	7.4	7.5
17	7.9	7.5	7.7	7.8	7.5	7.6	7.5	7.3	7.4	7.5	7.4	7.5
18	8.1	7.5	7.7	7.8	7.5	7.6	7.6	7.4	7.5	7.5	7.4	7.5
19	7.9	7.5	7.7	7.7	7.5	7.5	7.6	7.5	7.5	7.5	7.4	7.5
20	8.1	7.5	7.7	7.7	7.5	7.5	7.6	7.5	7.5	7.5	7.4	7.5
21	7.9	7.5	7.7	7.8	7.5	7.6	7.6	7.4	7.5	7.6	7.4	7.5
22	7.9	7.6	7.7	7.8	7.5	7.6	7.6	7.4	7.5	7.6	7.4	7.5
23	7.9	7.5	7.7	7.8	7.5	7.6	7.6	7.4	7.5	7.6	7.4	7.5
24	8.0	7.6	7.7	7.8	7.5	7.6	7.7	7.5	7.5	7.5	7.4	7.4
25	7.9	7.6	7.7	7.7	7.5	7.6	7.7	7.5	7.5	7.5	7.4	7.4
26	8.0	7.6	7.7	7.7	7.5	7.6	7.6	7.5	7.5	7.4	7.3	7.4
27	8.0	7.6	7.7	7.7	7.5	7.6	7.5	7.2	7.3	7.3	7.2	7.3
28	7.9	7.5	7.7	7.7	7.5	7.6	7.3	7.2	7.2	7.4	7.3	7.4
29	7.9	7.6	7.7	7.8	7.5	7.6	7.3	7.2	7.3	7.4	7.3	7.4
30	7.8	7.6	7.7	7.7	7.6	7.6	7.3	7.2	7.3	7.4	7.1	7.2
31	7.8	7.6	7.6	---	---	---	7.3	7.2	7.2	7.3	7.1	7.1
MAX	8.3	7.6	7.8	7.8	7.6	7.6	7.8	7.6	7.6	7.6	7.4	7.5
MIN	7.8	7.5	7.6	7.6	7.4	7.5	7.3	7.2	7.2	7.2	7.1	7.1

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.3	7.2	7.2	7.7	7.6	7.6	7.7	7.5	7.5	7.9	7.6	7.8
2	7.3	7.2	7.3	7.7	7.5	7.6	7.5	7.4	7.5	7.9	7.6	7.8
3	7.3	7.3	7.3	7.8	7.6	7.7	7.5	7.3	7.4	7.9	7.7	7.7
4	7.4	7.3	7.3	7.8	7.6	7.6	7.5	7.3	7.3	7.8	7.7	7.7
5	7.4	7.3	7.3	7.8	7.6	7.7	7.5	7.2	7.4	7.8	7.6	7.7
6	7.4	7.3	7.3	7.7	7.5	7.6	7.4	7.2	7.3	8.1	7.7	7.9
7	7.4	7.2	7.4	7.6	7.4	7.5	7.5	7.3	7.4	8.1	7.8	7.9
8	7.4	7.3	7.4	7.5	7.4	7.5	7.5	7.3	7.4	8.0	7.8	7.9
9	7.5	7.3	7.4	7.5	7.4	7.5	7.4	7.2	7.4	8.0	7.8	7.8
10	7.5	7.4	7.4	7.5	7.3	7.4	7.5	7.2	7.3	8.0	7.8	7.8
11	7.6	7.5	7.5	7.5	7.3	7.5	7.4	7.3	7.4	8.0	7.8	7.9
12	7.6	7.4	7.5	7.6	7.4	7.4	7.5	7.3	7.4	8.0	7.8	7.8
13	7.6	7.4	7.5	7.6	7.4	7.5	7.5	7.4	7.5	8.0	7.7	7.8
14	7.6	7.4	7.5	7.6	7.4	7.5	7.6	7.4	7.5	8.0	7.7	7.8
15	7.6	7.5	7.5	7.6	7.4	7.5	7.6	7.4	7.5	8.0	7.7	7.8
16	7.5	7.4	7.5	7.6	7.4	7.5	7.6	7.4	7.5	8.0	7.7	7.8
17	7.5	7.4	7.5	7.7	7.5	7.6	7.6	7.3	7.4	7.9	7.7	7.8
18	7.6	7.4	7.5	7.7	7.5	7.6	7.6	7.4	7.5	7.9	7.7	7.8
19	7.6	7.5	7.5	7.7	7.6	7.6	7.6	7.4	7.5	8.2	7.7	7.8
20	7.6	7.5	7.5	7.7	7.5	7.6	7.6	7.4	7.5	8.2	8.0	8.1
21	7.6	7.5	7.5	7.7	7.5	7.5	7.5	7.4	7.5	8.3	8.0	8.1
22	7.6	7.5	7.5	7.5	7.4	7.4	---	---	---	8.3	8.0	8.1
23	7.6	7.4	7.5	7.5	7.4	7.4	---	---	---	8.2	7.9	8.0
24	7.6	7.5	7.5	7.6	7.4	7.5	7.6	7.5	7.6	8.3	7.9	8.0
25	7.7	7.5	7.6	7.5	7.1	7.4	7.7	7.5	7.6	8.2	7.9	8.0
26	7.7	7.5	7.6	7.4	7.0	7.1	7.7	7.5	7.6	8.2	7.9	8.0
27	7.7	7.5	7.6	7.5	7.4	7.4	7.7	7.5	7.6	8.2	7.9	8.0
28	7.7	7.5	7.6	7.5	7.4	7.4	7.8	7.5	7.7	8.2	7.8	8.0
29	---	---	---	7.7	7.4	7.5	7.8	7.6	7.7	8.2	7.8	8.0
30	---	---	---	7.6	7.5	7.5	7.8	7.6	7.7	8.2	7.8	8.0
31	---	---	---	7.7	7.5	7.5	---	---	---	8.3	7.8	8.0
MAX	7.7	7.5	7.6	7.8	7.6	7.7	---	---	---	8.3	8.0	8.1
MIN	7.3	7.2	7.2	7.4	7.0	7.1	---	---	---	7.8	7.6	7.7

14317450 NORTH UMPQUA RIVER NEAR IDLEYLD PARK, OR--Continued

pH, water, unfiltered, field, standard units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8.2	7.8	8.0	8.7	7.9	8.2	8.9	7.8	8.3	8.5	7.6	7.9
2	8.3	7.8	8.0	8.7	7.9	8.1	8.7	7.8	8.2	8.5	7.6	7.9
3	8.2	7.8	7.9	8.6	7.8	8.1	8.8	7.8	8.2	8.6	7.5	7.9
4	8.2	7.8	7.9	8.6	7.8	8.0	8.7	7.8	8.2	8.4	7.5	7.9
5	8.2	7.8	7.9	8.6	7.8	8.0	8.8	7.8	8.1	8.4	7.5	7.8
6	8.3	7.8	7.9	8.6	7.7	8.0	8.7	7.8	8.1	8.4	7.5	7.8
7	8.3	7.8	7.9	8.6	7.7	8.0	8.6	7.7	8.1	8.4	7.5	7.8
8	8.4	7.8	8.0	8.6	7.7	8.0	8.6	7.7	8.0	8.5	7.5	7.9
9	8.4	7.8	8.0	8.5	7.7	8.0	8.6	7.7	8.1	8.3	7.6	7.8
10	8.5	7.8	8.1	8.5	7.6	7.9	8.6	7.7	8.0	8.3	7.5	7.8
11	8.4	7.8	8.1	8.5	7.6	7.9	8.5	7.7	8.0	8.3	7.5	7.8
12	8.5	7.8	8.0	8.5	7.5	7.9	8.6	7.7	8.0	8.3	7.5	7.8
13	8.5	7.8	8.1	8.5	7.6	7.9	8.5	7.6	8.0	8.2	7.5	7.8
14	8.6	7.9	8.1	8.4	7.5	7.9	8.6	7.6	8.0	8.3	7.5	7.8
15	8.6	7.9	8.1	8.4	7.5	7.9	8.6	7.6	8.1	8.4	7.5	7.8
16	8.6	7.9	8.1	8.5	7.5	7.9	8.5	7.6	8.0	8.3	7.5	7.8
17	8.6	7.8	8.1	8.5	7.7	8.0	8.5	7.7	7.9	8.1	7.5	7.8
18	8.6	7.9	8.1	8.6	7.6	7.9	8.5	7.6	7.9	8.1	7.5	7.7
19	8.5	7.9	8.1	8.6	7.6	8.1	8.5	7.6	8.0	8.1	7.5	7.7
20	8.7	7.9	8.2	8.6	7.7	8.0	8.5	7.6	7.9	8.1	7.5	7.7
21	8.6	7.9	8.2	8.5	7.6	8.0	8.6	7.6	8.0	8.1	7.5	7.7
22	8.6	7.9	8.2	8.7	7.6	8.2	8.5	7.6	8.1	8.1	7.5	7.7
23	8.6	7.9	8.2	8.8	7.8	8.2	8.6	7.6	8.0	8.0	7.5	7.7
24	8.6	7.9	8.2	8.8	7.8	8.2	8.5	7.6	7.9	8.1	7.5	7.7
25	8.6	7.9	8.2	8.8	7.9	8.2	8.5	7.6	7.9	8.1	7.5	7.7
26	8.7	7.9	8.1	8.8	7.8	8.2	8.6	7.6	8.0	8.0	7.5	7.7
27	8.7	7.9	8.1	8.8	8.0	8.3	8.6	7.6	8.0	8.0	7.5	7.6
28	8.7	7.9	8.1	8.8	7.9	8.3	8.7	7.7	8.0	8.1	7.5	7.7
29	8.8	7.9	8.2	8.7	7.7	8.1	8.6	7.7	8.0	8.2	7.5	7.7
30	8.8	7.9	8.3	8.8	7.6	8.0	8.6	7.6	8.0	8.1	7.5	7.8
31	---	---	---	8.8	7.8	8.2	8.6	7.6	8.0	---	---	---
MAX	8.8	7.9	8.3	8.8	8.0	8.3	8.9	7.8	8.3	8.6	7.6	7.9
MIN	8.2	7.8	7.9	8.4	7.5	7.9	8.5	7.6	7.9	8.0	7.5	7.6

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.3	10.3	10.7	4.2	3.6	3.9	5.2	4.5	4.8	7.0	6.6	6.7
2	10.6	9.6	10.2	4.0	3.3	3.6	4.9	4.5	4.7	7.3	6.5	6.7
3	9.8	9.2	9.4	4.3	3.3	3.8	4.5	3.8	4.0	7.8	7.3	7.6
4	10.7	9.2	9.9	4.7	3.7	4.2	4.9	3.8	4.4	7.9	7.6	7.7
5	11.6	10.6	11.1	5.4	4.2	4.8	5.4	4.9	5.1	7.8	6.7	7.3
6	12.2	11.0	11.5	6.3	4.8	5.2	5.5	4.9	5.2	6.7	5.8	6.0
7	12.3	11.3	11.7	6.8	5.3	6.2	5.4	4.6	5.0	5.8	5.2	5.5
8	11.6	10.8	11.2	7.3	6.7	7.0	4.6	4.1	4.4	5.2	4.6	4.9
9	11.1	10.5	10.7	7.2	6.9	7.1	4.9	4.2	4.5	4.8	4.5	4.6
10	11.1	10.2	10.6	7.0	6.8	6.9	5.4	4.7	5.1	5.1	4.8	4.9
11	10.2	8.8	9.5	7.2	6.8	7.0	5.8	5.3	5.5	5.6	5.1	5.3
12	8.8	8.0	8.4	7.3	7.2	7.2	6.1	5.6	5.8	6.5	5.6	6.0
13	8.6	7.5	8.0	7.5	7.2	7.4	6.8	6.1	6.3	6.7	6.4	6.6
14	8.8	7.6	8.1	7.5	7.0	7.3	7.5	6.8	7.2	6.9	6.6	6.8
15	9.0	7.9	8.4	7.0	6.3	6.7	7.5	7.3	7.4	6.9	6.0	6.4
16	9.1	8.0	8.5	6.3	5.8	6.0	7.7	7.3	7.5	6.0	5.2	5.6
17	9.3	8.2	8.7	6.6	5.8	6.3	7.3	6.2	6.7	5.3	5.0	5.1
18	9.7	8.4	9.0	6.5	6.3	6.4	6.2	5.5	5.9	5.7	5.2	5.4
19	9.6	8.6	9.1	6.7	6.3	6.5	5.5	5.1	5.3	5.6	5.5	5.6
20	9.7	8.6	9.1	6.6	6.2	6.4	5.2	5.0	5.1	5.5	5.1	5.2
21	9.8	9.1	9.4	7.1	6.4	6.7	5.9	5.2	5.5	6.0	5.2	5.4
22	9.3	8.7	9.0	7.3	6.7	7.0	6.1	5.9	6.0	6.8	5.9	6.3
23	8.9	8.1	8.5	7.3	6.7	7.1	6.0	4.8	5.4	7.0	6.8	6.9
24	9.0	8.2	8.6	6.9	6.5	6.7	4.8	4.5	4.7	6.9	6.6	6.7
25	8.7	8.1	8.4	6.6	5.3	6.1	4.6	4.5	4.5	7.8	6.8	7.4
26	8.7	8.1	8.3	5.3	4.3	4.7	5.3	4.5	4.9	8.5	7.8	8.0
27	8.2	7.2	7.6	4.3	3.8	4.0	7.5	5.3	6.7	8.6	7.8	8.3
28	8.2	7.2	7.7	4.4	3.8	4.1	7.2	6.7	6.9	7.8	6.8	7.1
29	7.9	7.1	7.6	4.8	4.2	4.5	6.9	6.4	6.6	6.8	6.6	6.7
30	7.1	5.5	6.6	4.9	4.5	4.7	7.2	6.3	6.6	8.7	6.8	7.9
31	5.5	4.2	4.9	---	---	---	7.3	7.0	7.2	9.0	8.6	8.8
MONTH	12.3	4.2	9.0	7.5	3.3	5.8	7.7	3.8	5.6	9.0	4.5	6.4

14317450 NORTH UMPQUA RIVER NEAR IDLEYLD PARK, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.8	7.3	7.9	5.7	5.1	5.4	8.4	7.0	7.8	10.5	8.2	9.2
2	7.3	7.1	7.2	5.8	5.1	5.4	7.0	6.1	6.4	10.4	9.1	9.9
3	7.2	6.3	6.8	6.4	5.8	6.0	6.1	5.5	5.8	10.3	9.2	9.5
4	6.3	5.5	5.8	6.4	5.8	6.1	6.6	5.6	6.1	9.2	8.1	8.5
5	5.5	4.4	4.9	6.6	6.2	6.3	6.5	5.9	6.2	8.6	7.3	7.9
6	4.4	4.1	4.3	6.5	6.2	6.4	6.7	5.8	6.2	9.6	7.2	8.3
7	4.2	3.7	3.9	7.2	6.4	6.7	8.1	6.5	7.2	9.4	8.1	8.8
8	3.8	3.3	3.6	8.0	7.2	7.5	8.7	7.2	7.9	9.1	7.9	8.6
9	3.9	3.3	3.6	7.9	7.4	7.6	9.1	8.0	8.6	8.7	7.6	7.9
10	3.9	3.4	3.6	8.5	7.7	8.0	8.9	8.3	8.6	9.7	7.4	8.4
11	3.9	3.3	3.6	8.4	7.8	8.1	8.7	7.9	8.3	9.1	7.9	8.5
12	4.3	3.4	3.8	8.4	7.9	8.2	8.6	8.0	8.3	11.0	8.2	9.3
13	5.5	4.3	4.8	8.3	7.8	8.0	8.4	7.6	8.0	12.2	9.6	10.9
14	6.2	5.5	5.9	8.1	7.5	7.8	8.1	7.1	7.6	12.7	10.5	11.7
15	6.3	5.9	6.1	8.1	7.5	7.8	7.8	7.3	7.6	12.4	10.5	11.2
16	6.5	6.0	6.3	7.5	6.8	7.1	8.0	7.2	7.6	10.7	9.2	10.0
17	6.4	6.0	6.2	7.2	6.6	6.9	8.3	7.5	7.9	9.8	8.2	9.0
18	6.6	6.1	6.4	7.2	6.2	6.7	8.3	7.2	7.7	10.0	7.6	8.9
19	6.9	6.3	6.6	6.7	6.0	6.3	8.5	6.5	7.6	10.8	8.2	9.4
20	6.9	6.5	6.7	7.8	6.4	7.0	9.0	7.6	8.4	12.0	9.3	10.6
21	7.1	6.6	6.9	7.6	7.2	7.3	8.8	8.1	8.3	13.0	10.5	11.8
22	7.1	6.7	7.0	7.8	7.3	7.5	8.7	7.7	8.2	13.8	11.3	12.6
23	6.7	5.8	6.1	7.3	6.6	7.0	8.6	7.6	8.0	14.6	11.8	13.3
24	6.0	5.2	5.5	7.2	6.2	6.7	8.1	7.1	7.5	14.5	12.5	13.4
25	5.2	4.5	4.8	7.6	7.1	7.2	7.4	6.4	6.9	13.5	11.8	12.4
26	4.8	4.0	4.4	7.7	7.0	7.4	7.6	6.5	7.1	12.9	10.9	11.9
27	5.4	4.7	5.0	7.4	6.6	7.0	8.2	6.6	7.4	13.8	11.1	12.5
28	5.4	5.2	5.3	7.7	6.6	7.2	8.6	7.7	8.2	14.9	12.0	13.4
29	---	---	---	8.4	7.2	7.8	8.5	7.9	8.3	14.7	12.5	13.8
30	---	---	---	9.2	8.0	8.6	9.5	7.9	8.6	14.4	12.5	13.2
31	---	---	---	9.1	8.4	8.8	---	---	---	14.1	11.9	13.1
MONTH	8.8	3.3	5.5	9.2	5.1	7.2	9.5	5.5	7.6	14.9	7.2	10.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	14.5	11.7	13.2	17.7	15.9	17.1	19.7	18.3	19.0	17.5	15.7	16.5
2	15.0	12.4	13.8	17.3	15.4	16.2	18.3	17.3	17.8	17.7	15.6	16.5
3	15.7	12.9	14.3	17.5	15.6	16.4	18.3	16.7	17.4	17.7	15.9	16.7
4	16.3	13.6	15.1	18.1	15.8	16.7	19.8	17.2	18.3	17.9	15.8	16.7
5	16.5	14.1	15.5	18.6	16.3	17.2	19.2	17.8	18.3	17.8	16.1	16.7
6	17.0	14.5	15.9	19.1	16.8	17.7	19.2	17.1	17.9	17.3	16.1	16.6
7	17.5	14.9	16.3	19.2	17.1	17.9	18.8	17.0	17.7	16.2	14.9	15.7
8	17.4	15.2	16.5	19.0	17.2	17.9	18.7	16.9	17.6	14.9	14.1	14.4
9	17.3	14.9	16.1	19.6	17.2	18.2	18.9	17.1	17.8	14.2	13.5	13.7
10	16.4	13.9	15.2	19.9	17.7	18.6	19.1	17.2	17.9	14.5	13.4	13.8
11	15.9	14.1	15.1	20.0	17.9	18.7	18.6	17.1	17.7	14.9	13.4	14.1
12	15.8	14.3	14.9	20.2	18.1	18.9	19.0	17.0	17.8	15.4	13.9	14.5
13	15.2	13.9	14.4	20.0	18.2	19.0	18.8	16.7	17.4	14.8	13.4	14.0
14	15.3	13.9	14.5	20.1	17.9	18.8	18.9	16.5	17.5	14.6	13.1	13.7
15	15.9	14.3	15.2	20.1	18.0	18.8	18.5	16.8	17.5	14.4	13.0	13.6
16	16.8	15.3	16.1	19.4	18.0	18.4	18.8	16.6	17.6	13.6	12.6	13.0
17	17.8	16.4	17.0	20.1	17.7	18.6	19.1	16.6	17.7	13.4	11.9	12.6
18	17.4	15.7	16.7	20.6	18.1	19.0	19.5	17.0	18.1	12.9	11.7	12.3
19	16.3	14.7	15.5	20.8	18.3	19.3	19.5	17.3	18.2	13.3	11.5	12.3
20	15.7	14.5	15.0	20.8	18.3	19.3	18.9	17.0	17.8	13.5	12.1	12.7
21	14.8	14.0	14.4	21.3	18.8	19.8	18.9	16.7	17.6	13.6	12.2	12.8
22	14.2	13.6	13.9	21.3	19.3	20.1	17.5	16.2	16.7	13.8	12.2	12.9
23	14.0	13.2	13.7	21.2	19.1	19.9	17.8	15.8	16.7	13.8	12.2	12.9
24	14.7	12.5	13.6	20.2	18.7	19.4	18.1	16.0	16.9	13.9	12.5	13.0
25	16.1	13.9	14.9	20.0	17.7	18.7	18.3	15.9	17.0	13.8	12.4	12.9
26	17.4	15.3	16.2	20.1	17.9	18.8	18.0	16.2	17.0	13.9	12.2	12.9
27	18.6	16.5	17.3	20.9	18.0	19.2	18.0	15.7	16.8	14.3	12.6	13.3
28	19.1	17.1	17.9	21.3	18.5	19.7	17.9	16.1	16.9	14.6	13.1	13.7
29	19.5	17.7	18.4	21.3	18.6	19.7	17.8	15.8	16.7	14.2	13.2	13.8
30	18.6	17.7	18.1	21.4	18.7	19.7	18.0	15.8	16.8	13.5	12.4	12.9
31	---	---	---	21.0	18.7	19.6	17.8	16.0	16.8	---	---	---
MONTH	19.5	11.7	15.5	21.4	15.4	18.6	19.8	15.7	17.5	17.9	11.5	14.0
YEAR	21.4	3.3	10.3									

14317450 NORTH UMPQUA RIVER NEAR IDLEYLD PARK, OR--Continued

Dissolved oxygen, water, unfiltered, milligrams per liter
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.6	11.0	11.3	13.3	12.9	13.1	13.0	12.6	12.8	12.3	12.2	12.2
2	11.7	11.1	11.4	13.4	13.1	13.2	13.0	12.6	12.8	12.3	12.1	12.2
3	11.9	11.4	11.6	13.4	12.9	13.2	13.2	12.8	13.0	12.1	11.9	12.0
4	11.8	11.1	11.5	13.2	12.8	13.0	13.2	12.7	13.0	12.0	11.9	11.9
5	11.6	11.0	11.2	13.0	12.5	12.8	12.9	12.5	12.7	12.3	12.0	12.2
6	11.3	10.7	11.0	12.8	12.1	12.5	12.8	12.4	12.6	12.6	12.3	12.5
7	11.3	10.6	10.9	12.3	11.6	12.0	12.9	12.5	12.7	12.8	12.5	12.7
8	11.4	10.8	11.0	11.9	11.6	11.7	13.2	12.7	13.0	12.9	12.7	12.9
9	11.5	10.8	11.0	11.9	11.6	11.8	13.1	12.6	12.8	13.1	12.8	12.9
10	11.4	10.9	11.1	12.1	11.9	12.0	12.8	12.5	12.6	12.9	12.7	12.8
11	11.8	11.1	11.4	12.3	11.8	12.1	12.6	12.4	12.5	12.8	12.6	12.7
12	12.2	11.5	11.8	12.1	11.8	11.9	12.5	12.0	12.3	12.6	12.3	12.5
13	12.2	11.7	11.9	12.2	11.8	12.0	12.2	11.8	12.0	12.4	12.3	12.3
14	12.2	11.6	11.9	12.1	11.8	11.9	11.8	11.5	11.6	12.4	12.3	12.3
15	12.0	11.6	11.7	12.4	11.9	12.1	11.8	11.4	11.6	12.6	12.3	12.5
16	12.0	11.5	11.7	12.4	11.9	12.2	11.8	11.4	11.6	12.8	12.5	12.7
17	11.8	11.4	11.6	12.5	12.1	12.3	12.2	11.8	12.0	12.9	12.7	12.8
18	11.8	11.3	11.5	12.5	12.0	12.2	12.6	12.2	12.4	12.8	12.6	12.7
19	11.7	11.3	11.5	12.3	12.1	12.2	12.6	12.4	12.5	12.7	12.6	12.6
20	11.9	11.3	11.6	12.3	12.0	12.2	12.6	12.4	12.5	12.8	12.6	12.7
21	11.6	11.2	11.4	12.3	11.9	12.1	12.7	12.4	12.5	12.8	12.4	12.6
22	11.8	11.3	11.5	12.2	11.8	12.0	12.6	12.4	12.5	12.4	12.2	12.3
23	11.9	11.4	11.6	12.2	11.8	12.0	12.8	12.4	12.6	12.3	12.1	12.2
24	11.9	11.5	11.6	12.4	12.0	12.2	13.1	12.8	12.9	12.4	12.1	12.2
25	12.0	11.5	11.7	12.7	12.1	12.4	13.2	12.8	13.0	12.2	11.9	12.1
26	11.9	11.5	11.7	13.1	12.6	12.9	12.8	12.6	12.7	11.9	11.7	11.8
27	12.3	11.5	12.0	13.3	12.9	13.1	12.6	12.0	12.2	11.9	11.7	11.8
28	12.2	11.6	11.9	13.2	12.9	13.1	12.2	11.9	12.1	12.3	11.9	12.2
29	12.2	11.7	11.9	13.1	12.8	12.9	12.3	12.0	12.2	12.4	12.2	12.3
30	12.5	11.9	12.2	13.0	12.7	12.8	12.2	11.9	12.1	12.3	12.0	12.1
31	13.1	12.5	12.8	---	---	---	12.2	11.9	12.0	12.1	11.7	11.9
MONTH	13.1	10.6	11.6	13.4	11.6	12.4	13.2	11.4	12.4	13.1	11.7	12.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.4	11.8	12.2	13.2	12.9	13.0	11.8	11.1	11.6	12.2	11.3	11.9
2	12.6	12.4	12.5	13.2	12.8	13.1	---	---	---	11.9	11.4	11.6
3	12.7	12.5	12.6	12.9	12.5	12.8	---	---	---	11.9	11.4	11.7
4	13.0	12.7	12.9	13.0	12.5	12.8	---	---	---	12.3	11.8	12.2
5	13.4	13.0	13.2	12.9	12.6	12.7	---	---	---	12.7	12.2	12.5
6	13.6	13.3	13.5	12.8	12.5	12.7	---	---	---	12.7	11.6	12.2
7	13.7	13.4	13.6	12.7	12.4	12.6	---	---	---	12.0	11.3	11.7
8	13.8	13.5	13.7	12.5	12.1	12.3	---	---	---	11.9	11.3	11.6
9	13.9	13.6	13.7	12.3	12.1	12.2	---	---	---	12.1	11.5	11.9
10	13.8	13.3	13.6	12.3	12.0	12.2	---	---	---	12.2	11.3	11.8
11	13.6	13.3	13.4	12.2	11.9	12.1	---	---	---	12.0	11.4	11.7
12	13.5	13.0	13.3	12.3	11.9	12.0	---	---	---	11.9	10.9	11.6
13	13.0	12.6	12.9	12.2	11.9	12.0	---	---	---	11.5	10.6	11.1
14	12.7	12.3	12.6	12.4	11.9	12.1	---	---	---	11.3	10.6	10.9
15	12.6	12.3	12.4	12.3	12.0	12.1	---	---	---	11.5	10.7	11.2
16	12.6	12.3	12.5	12.6	12.2	12.4	---	---	---	11.9	11.2	11.6
17	12.7	12.5	12.6	12.8	12.5	12.6	---	---	---	12.2	11.5	11.9
18	12.7	12.4	12.6	12.9	12.6	12.7	---	---	---	12.5	11.5	12.0
19	12.6	12.3	12.4	12.9	12.6	12.8	---	---	---	12.2	11.0	11.7
20	12.6	12.4	12.5	12.8	11.7	12.6	---	---	---	11.7	10.6	11.2
21	12.6	12.2	12.4	12.6	12.4	12.5	---	---	---	11.3	10.3	10.9
22	12.5	12.2	12.4	12.5	12.3	12.4	---	11.5	---	11.2	10.3	10.8
23	12.8	12.3	12.6	12.7	12.4	12.6	12.0	11.5	11.8	11.0	10.0	10.5
24	12.9	12.5	12.7	12.8	12.4	12.6	12.2	11.6	12.0	10.8	10.0	10.5
25	13.3	12.8	13.0	12.6	12.2	12.4	12.4	12.0	12.2	11.0	10.3	10.8
26	13.4	13.0	13.2	12.2	10.2	11.0	12.6	12.1	12.4	11.3	10.7	11.0
27	13.3	12.9	13.1	12.3	11.7	12.0	12.6	11.9	12.3	11.4	10.4	10.9
28	13.2	12.9	13.0	12.4	12.0	12.2	12.2	11.8	12.0	11.2	10.2	10.7
29	---	---	---	12.2	11.8	12.0	12.2	11.8	12.0	11.0	10.2	10.6
30	---	---	---	12.0	11.6	11.8	12.3	11.7	12.1	11.0	10.2	10.7
31	---	---	---	11.8	11.6	11.7	---	---	---	11.3	10.6	10.9
MONTH	13.9	11.8	12.9	13.2	10.2	12.4	---	---	---	12.7	10.0	11.4

14317450 NORTH UMPQUA RIVER NEAR IDLEYLD PARK, OR--Continued

Dissolved oxygen, water, unfiltered, milligrams per liter
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11.5	10.5	11.0	10.2	9.2	9.7	10.0	9.1	9.6	10.8	9.9	10.2
2	11.4	10.3	10.8	10.5	9.7	10.0	10.1	9.4	9.8	10.8	9.8	10.2
3	11.2	9.9	10.6	10.4	9.7	10.0	10.4	9.6	9.9	10.7	9.8	10.2
4	10.9	9.8	10.3	10.4	9.6	9.9	10.2	9.2	9.7	10.6	9.8	10.1
5	10.7	9.7	10.2	10.4	9.6	9.9	10.2	9.3	9.7	10.6	9.7	10.0
6	10.7	9.6	10.1	10.2	9.5	9.8	10.3	9.5	9.9	10.6	9.8	10.1
7	10.6	9.6	10.1	10.1	9.5	9.8	10.4	9.6	9.9	10.8	10.0	10.3
8	10.6	9.6	10.0	10.3	9.5	9.9	10.4	9.7	9.9	11.1	10.3	10.6
9	10.7	9.6	10.1	10.3	9.5	9.8	10.4	9.6	9.9	11.1	10.3	10.7
10	11.0	9.8	10.3	10.2	9.5	9.7	10.4	9.6	9.9	11.3	10.6	10.9
11	11.0	9.9	10.4	10.2	9.4	9.7	10.4	9.7	10.0	11.2	10.5	10.8
12	10.9	9.9	10.4	10.2	9.5	9.8	10.5	9.6	10.0	11.2	10.5	10.7
13	11.1	10.1	10.6	10.2	9.5	9.8	10.6	9.6	9.9	11.3	10.6	10.8
14	11.1	10.3	10.7	10.3	9.5	9.8	10.5	9.6	9.9	11.4	10.6	10.9
15	11.0	10.0	10.5	10.3	9.6	9.9	10.5	9.6	9.9	11.4	10.6	10.9
16	10.7	9.8	10.3	10.6	9.2	9.8	10.6	9.6	10.0	11.5	10.7	11.1
17	10.4	9.5	9.9	10.0	9.2	9.5	10.5	9.5	9.9	11.7	11.0	11.3
18	10.3	9.4	9.9	9.9	9.1	9.4	10.4	9.4	9.8	11.8	11.1	11.4
19	10.5	9.6	10.1	10.0	9.1	9.5	10.3	9.4	9.7	11.9	11.0	11.4
20	10.7	10.0	10.3	10.0	9.1	9.5	10.4	9.4	9.8	11.7	11.0	11.3
21	10.8	10.2	10.5	9.9	9.0	9.4	10.4	9.5	9.8	11.8	11.0	11.3
22	11.0	10.3	10.7	9.8	9.0	9.3	10.6	9.5	10.1	11.6	11.0	11.2
23	11.0	10.3	10.7	9.8	9.0	9.3	10.7	9.8	10.2	11.6	10.9	11.2
24	11.2	10.3	10.8	10.0	9.1	9.5	10.6	9.7	10.1	11.7	11.0	11.2
25	10.8	10.1	10.5	10.2	9.3	9.7	10.6	9.6	10.0	11.7	11.1	11.3
26	10.5	9.8	10.1	10.2	9.3	9.7	10.6	9.7	10.0	11.7	11.0	11.3
27	10.2	9.6	9.9	10.2	9.2	9.6	10.6	9.7	10.0	11.6	10.9	11.2
28	10.1	9.4	9.7	10.1	9.2	9.5	10.6	9.8	10.1	11.4	10.8	11.0
29	10.0	9.2	9.5	10.2	9.2	9.6	10.7	9.8	10.2	11.4	10.7	11.0
30	10.1	9.3	9.6	10.1	9.0	9.4	10.6	9.8	10.1	11.7	11.0	11.3
31	---	---	---	9.9	9.1	9.4	10.8	9.9	10.2	---	---	---
MONTH	11.5	9.2	10.3	10.6	9.0	9.7	10.8	9.1	9.9	11.9	9.7	10.9

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1	<1	<1	1	<1	<1	<1	<1	<1	12	8	9
2	1	<1	<1	<1	<1	<1	1	<1	<1	23	6	7
3	1	<1	<1	1	<1	<1	<1	<1	<1	28	12	20
4	<1	<1	<1	<1	<1	<1	1	<1	<1	12	7	9
5	<1	<1	<1	2	<1	<1	1	<1	<1	8	6	7
6	1	<1	<1	2	<1	<1	1	<1	<1	7	4	5
7	1	<1	<1	1	<1	<1	1	<1	<1	6	3	4
8	<1	<1	<1	3	<1	1	<1	<1	<1	4	3	3
9	<1	<1	<1	11	2	7	<1	<1	<1	3	2	3
10	<1	<1	<1	10	4	5	<1	<1	<1	3	2	2
11	1	<1	<1	5	3	4	2	<1	<1	2	2	2
12	<1	<1	<1	4	2	2	2	1	1	2	2	2
13	<1	<1	<1	3	1	2	8	2	4	3	2	2
14	1	<1	<1	2	<1	1	6	2	4	4	3	4
15	2	<1	<1	1	<1	<1	9	4	7	4	2	3
16	<1	<1	<1	1	<1	<1	113	6	27	3	2	2
17	<1	<1	<1	2	<1	<1	20	7	9	2	2	2
18	1	<1	<1	1	<1	<1	7	4	5	2	2	2
19	2	<1	<1	1	<1	<1	5	3	3	2	1	1
20	2	<1	<1	1	<1	<1	4	2	2	2	1	1
21	<1	<1	<1	3	<1	<1	4	2	2	1	1	1
22	1	<1	<1	1	<1	<1	4	3	4	3	<1	1
23	1	<1	<1	1	<1	<1	8	2	3	2	1	1
24	<1	<1	<1	1	<1	<1	2	2	2	3	1	2
25	1	<1	<1	<1	<1	<1	2	1	2	7	3	6
26	<1	<1	<1	<1	<1	<1	4	1	1	25	4	4
27	<1	<1	<1	<1	<1	<1	64	4	19	23	14	20
28	2	<1	<1	1	<1	<1	34	16	20	14	6	9
29	1	<1	<1	<1	<1	<1	17	10	13	7	4	5
30	2	<1	<1	<1	<1	<1	33	9	11	86	4	25
31	<1	<1	<1	---	---	---	27	12	16	51	15	25
MAX	2	<1	<1	11	4	7	113	16	27	86	15	25
MIN	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	1

14317450 NORTH UMPQUA RIVER NEAR IDLEYLD PARK, OR--Continued

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	15	10	12	2	1	1	4	3	3	2	1	2
2	12	7	8	1	1	1	4	3	3	2	1	2
3	7	5	6	2	1	1	4	3	3	2	1	1
4	5	4	5	2	1	1	4	3	4	3	2	2
5	4	3	4	2	1	1	5	4	4	3	2	3
6	4	3	3	5	1	2	32	5	9	3	2	2
7	3	2	3	14	5	10	14	7	8	2	2	2
8	3	2	2	15	8	11	7	5	6	2	2	2
9	3	2	2	9	6	7	7	4	5	2	1	2
10	2	2	2	11	6	7	4	4	4	2	1	1
11	2	1	1	6	4	4	14	4	6	2	1	2
12	2	1	1	4	3	3	10	4	4	2	1	1
13	2	1	1	3	2	3	4	3	4	2	1	1
14	2	1	1	4	2	3	5	3	4	2	1	1
15	1	1	1	4	2	3	3	3	3	2	1	1
16	6	1	3	4	2	3	4	3	3	6	<1	1
17	4	4	4	3	2	2	4	3	4	1	<1	1
18	5	4	4	3	2	2	3	3	3	2	<1	<1
19	4	3	4	7	2	2	3	2	3	1	<1	<1
20	3	3	3	2	2	2	3	2	2	1	<1	<1
21	4	2	3	6	2	2	3	2	3	1	<1	<1
22	3	3	3	16	5	8	---	---	---	1	<1	<1
23	3	2	3	17	8	11	---	---	---	2	<1	<1
24	3	2	2	8	5	6	7	4	6	2	<1	1
25	2	2	2	17	4	5	6	4	4	2	1	1
26	2	2	2	24	13	20	4	3	3	2	<1	1
27	2	1	2	13	7	9	3	2	2	12	<1	1
28	2	1	1	7	5	6	3	2	2	1	<1	<1
29	---	---	---	5	4	4	3	2	2	2	<1	1
30	---	---	---	4	3	3	2	2	2	2	<1	1
31	---	---	---	4	2	3	---	---	---	1	1	1
MAX	15	10	12	24	13	20	---	---	---	12	2	3
MIN	1	1	1	1	1	1	---	---	---	1	<1	<1

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1	<1	1	1	<1	<1	1	<1	<1	2	<1	1
2	2	<1	<1	2	<1	<1	4	<1	<1	1	<1	1
3	2	<1	1	2	<1	<1	2	<1	<1	2	<1	1
4	2	1	1	2	<1	<1	8	<1	<1	2	<1	1
5	2	1	1	1	<1	<1	3	<1	<1	2	<1	1
6	3	1	1	1	<1	<1	2	<1	<1	1	<1	1
7	2	1	1	2	<1	<1	2	<1	1	2	<1	1
8	3	1	1	1	<1	<1	2	<1	1	2	<1	1
9	2	1	1	1	<1	<1	2	<1	1	2	<1	2
10	3	<1	1	1	<1	<1	4	<1	2	3	1	2
11	2	<1	1	5	<1	<1	3	<1	1	2	<1	1
12	2	<1	1	2	<1	<1	3	<1	<1	1	<1	1
13	2	<1	<1	4	<1	1	2	<1	<1	2	<1	1
14	1	<1	<1	1	<1	<1	1	<1	<1	2	<1	1
15	1	<1	<1	2	<1	<1	3	<1	<1	6	<1	1
16	2	<1	<1	1	<1	1	1	<1	<1	5	<1	1
17	2	<1	<1	2	<1	<1	1	<1	<1	2	<1	1
18	2	<1	<1	4	<1	1	2	<1	<1	2	<1	1
19	6	<1	<1	3	<1	1	3	<1	<1	1	<1	1
20	1	<1	<1	2	<1	<1	2	<1	<1	2	<1	1
21	1	<1	<1	4	<1	<1	2	<1	<1	2	<1	1
22	1	<1	<1	2	<1	1	2	<1	<1	2	<1	1
23	2	<1	<1	2	<1	1	2	<1	<1	2	<1	1
24	1	<1	<1	2	<1	<1	2	<1	<1	2	<1	1
25	1	<1	<1	2	<1	<1	1	<1	<1	2	<1	1
26	1	<1	<1	2	<1	<1	2	<1	<1	2	1	2
27	2	<1	<1	4	<1	<1	3	<1	<1	3	1	2
28	1	<1	<1	2	<1	<1	3	<1	1	2	<1	1
29	1	<1	<1	3	<1	1	1	<1	1	2	<1	1
30	1	<1	<1	3	<1	<1	2	<1	1	2	1	1
31	---	---	---	2	<1	<1	2	<1	1	---	---	---
MAX	6	1	1	5	<1	1	8	<1	2	6	1	2
MIN	1	<1	<1	1	<1	<1	1	<1	<1	1	<1	1

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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1954 to September 1989, July 1999 to current year.

GAGE.--Water-stage recorder. Datum of gage is 828.33 ft above NGVD of 1929.

REMARKS.--Records good. No regulation. Small diversions for rural domestic use and irrigation upstream from station.

AVERAGE DISCHARGE.--38 years (1955-89, 2001-03), 457 ft ^{3}/s, 35.06 in/yr, 330,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,100 ft^3/s Dec. 11, 1956, gage height, 19.63 ft, from rating curve extended above 5,900 ft^3/s on basis of slope-area measurment at gage height 16.55 ft; minimum discharge, 7.5 ft^3/s Sept. 5, 2003.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 22, 23, 1953, reached a stage of 20.6 ft, from floodmark, discharge, 22,700 ft^3/s, from rating curve extended above 5,900 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft3/s)	Gage height (ft)	Date	Time	Discharge (ft3/s)	Gage height (ft)
Dec. 30	2300	*4,470	*8.68				

Minimum discharge, 7.5 ft^3/s Sept. 5.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	13	30	1760	1820	284	748	516	115	40	18	11
2	31	13	29	1780	1550	261	761	458	108	41	18	11
3	24	13	28	2720	1160	333	779	443	102	40	21	11
4	34	13	28	1860	863	392	947	633	98	39	21	9.4
5	34	13	27	1510	668	365	1100	767	91	38	20	8.6
6	26	13	27	994	537	520	1460	629	85	37	19	8.4
7	22	16	26	737	441	1030	1320	524	81	36	25	13
8	20	96	25	579	376	1170	1320	501	77	35	27	24
9	18	285	24	475	e340	1190	1340	470	76	35	22	77
10	18	253	38	400	e280	1290	1230	429	74	33	20	75
11	16	271	66	348	258	962	1330	420	72	32	19	38
12	16	157	78	344	234	801	1220	408	70	31	18	29
13	15	138	305	418	225	677	1190	372	69	30	17	24
14	14	88	311	738	243	695	1190	340	67	30	17	22
15	14	66	628	656	230	820	978	313	63	29	16	20
16	13	55	2360	509	493	725	845	287	61	29	16	21
17	13	89	823	417	514	602	1000	260	58	30	16	27
18	13	94	473	372	618	505	1020	240	56	28	15	27
19	13	69	334	329	625	447	859	221	58	27	15	23
20	13	56	251	292	606	467	734	206	58	27	14	21
21	13	50	315	262	596	663	990	193	56	26	14	20
22	13	45	365	256	701	1230	961	184	55	25	13	19
23	13	41	268	353	649	1400	953	176	53	25	14	18
24	13	43	216	383	539	1020	1860	173	53	24	14	18
25	13	48	178	851	440	1130	1560	183	50	23	13	17
26	13	42	190	985	372	2380	1140	174	48	23	12	15
27	13	38	2140	2630	324	1930	883	157	45	23	12	15
28	13	35	3100	1480	291	1280	735	145	43	22	12	14
29	13	33	1950	939	---	919	630	134	42	21	12	14
30	13	32	2900	1650	---	713	589	130	40	19	12	15
31	13	---	3760	1640	---	617	---	125	---	18	11	---
TOTAL	547	2218	21293	28667	15993	26818	31672	10211	2024	916	513	665.4
MEAN	17.6	73.9	687	925	571	865	1056	329	67.5	29.5	16.5	22.2
MAX	37	285	3760	2720	1820	2380	1860	767	115	41	27	77
MIN	13	13	24	256	225	261	589	125	40	18	11	8.4
AC-FT	1080	4400	42230	56860	31720	53190	62820	20250	4010	1820	1020	1320
CFSM	0.10	0.42	3.88	5.22	3.23	4.89	5.96	1.86	0.38	0.17	0.09	0.13
IN.	0.11	0.47	4.48	6.02	3.36	5.64	6.66	2.15	0.43	0.19	0.11	0.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 2003, BY WATER YEAR (WY)

MEAN	99.3	552	952	946	806	797	638	419	164	56.5	31.8	36.7
MAX	366	2162	3090	2122	1857	1757	1065	956	501	137	88.6	181
(WY)	1963	1974	1965	1971	1986	1972	1979	1963	1984	1983	1976	1986
MIN	14.4	41.3	34.9	53.4	70.2	249	237	108	54.0	29.5	15.9	15.8
(WY)	1988	1977	1977	1977	1977	1978	1968	1987	1987	2003	2002	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1955 - 2003	
ANNUAL TOTAL	125450		141537.4			
ANNUAL MEAN	344		388		457	
HIGHEST ANNUAL MEAN					805	1974
LOWEST ANNUAL MEAN					158	1977
HIGHEST DAILY MEAN	3760	Dec 31	3760	Dec 31	15200	Dec 22 1964
LOWEST DAILY MEAN	11	Sep 13	8.4	Sep 6	8.4	Sep 6 2003
ANNUAL SEVEN-DAY MINIMUM	12	Sep 10	10	Aug 31	10	Aug 31 2003
ANNUAL RUNOFF (AC-FT)	248800		280700		330900	
ANNUAL RUNOFF (CFSM)	1.94		2.19		2.58	
ANNUAL RUNOFF (INCHES)	26.37		29.75		35.06	
10 PERCENT EXCEEDS	928		1160		1100	
50 PERCENT EXCEEDS	89		89		215	
90 PERCENT EXCEEDS	13		13		24	

e Estimated

PERIOD OF RECORD.--
WATER TEMPERATURE: June 1999 to current year.

INSTRUMENTATION.--Temperature recorder since June 1999.

REMARKS.--Record good.

EXTREMES FOR PERIOD OF RECORD.--
WATER TEMPERATURE: Maximum 24.7°C July 30, 2003: minimum, 0.5°C Nov. 19, 2000.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum 24.7°C July 30: minimum, 1.3°C Nov. 2.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.3	11.3	11.8	3.6	2.1	2.8	4.6	4.1	4.4	7.3	6.9	7.1
2	11.6	9.5	10.5	2.6	1.3	2.0	4.5	4.2	4.4	7.8	7.2	7.5
3	10.5	9.3	9.7	3.0	1.4	2.3	4.4	3.8	4.0	8.4	7.8	8.1
4	12.2	9.9	11.1	3.4	2.0	2.8	4.8	3.6	4.1	8.6	8.2	8.3
5	13.7	12.0	12.8	4.4	2.8	3.7	5.2	4.5	4.8	8.2	6.7	7.3
6	14.2	13.0	13.6	4.9	3.8	4.4	6.0	5.1	5.5	6.7	5.9	6.4
7	13.8	13.1	13.4	7.2	4.9	6.0	5.8	5.2	5.5	6.6	5.8	6.1
8	13.8	12.4	13.0	8.3	7.2	7.8	5.2	4.4	4.6	5.9	5.1	5.4
9	12.8	11.8	12.1	8.0	7.1	7.5	4.9	4.2	4.5	5.9	5.1	5.5
10	13.0	11.8	12.3	7.5	6.9	7.2	5.3	4.8	5.0	6.1	5.5	5.8
11	12.1	9.9	10.8	8.0	7.1	7.6	6.0	5.2	5.6	7.1	6.1	6.5
12	9.9	8.3	9.0	8.8	7.9	8.3	7.0	5.8	6.3	8.1	7.1	7.6
13	9.1	7.5	8.4	8.4	7.7	8.1	7.7	7.0	7.2	8.0	7.4	7.7
14	9.1	7.4	8.3	8.8	7.8	8.3	8.5	7.7	8.2	7.9	7.4	7.7
15	9.3	7.5	8.5	7.8	6.8	7.3	8.2	7.4	7.6	7.4	6.3	6.8
16	9.4	7.8	8.7	6.9	5.6	6.3	7.9	7.0	7.7	6.6	5.6	5.9
17	9.8	8.1	9.0	8.1	6.8	7.4	7.0	6.5	6.7	6.3	5.2	5.7
18	10.1	8.6	9.4	7.3	6.3	6.8	6.6	5.8	6.1	6.6	5.8	6.2
19	10.1	8.6	9.4	8.0	7.1	7.5	6.0	5.5	5.8	6.4	6.0	6.2
20	10.3	9.1	9.7	7.8	6.8	7.3	6.1	5.4	5.7	6.2	5.3	5.8
21	11.0	9.6	10.3	7.7	6.6	7.2	6.3	6.1	6.2	7.3	5.8	6.5
22	11.3	10.0	10.6	8.1	7.0	7.5	6.6	6.0	6.3	8.4	7.1	7.8
23	10.5	9.1	9.8	8.6	8.0	8.3	6.4	4.6	5.3	8.3	7.6	7.9
24	10.2	9.5	9.8	8.5	8.0	8.3	5.5	4.4	4.9	8.1	7.4	7.7
25	9.8	9.0	9.4	8.4	5.9	7.1	5.8	4.8	5.3	9.1	8.1	8.6
26	10.3	9.3	9.7	5.9	4.0	4.6	6.5	5.8	6.1	9.6	8.9	9.2
27	9.6	8.0	8.5	4.0	2.9	3.4	7.6	6.5	7.2	9.5	7.9	8.9
28	9.5	8.1	8.7	3.7	2.9	3.4	7.5	6.9	7.3	7.9	7.0	7.5
29	9.0	7.8	8.4	3.9	3.1	3.5	6.9	6.3	6.5	8.1	7.2	7.6
30	7.8	5.6	6.6	4.6	3.8	4.2	7.5	6.6	7.1	9.3	8.1	8.8
31	5.6	3.6	4.4	---	---	---	7.6	7.1	7.4	9.9	9.2	9.5
MONTH	14.2	3.6	9.9	8.8	1.3	6.0	8.5	3.6	5.9	9.9	5.1	7.2

14318000 LITTLE RIVER AT PEEL, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.4	7.7	8.2	6.7	5.4	6.0	8.9	7.0	8.0	11.2	8.0	9.4
2	8.1	7.6	7.8	6.2	4.7	5.5	7.0	5.9	6.5	11.4	8.9	10.2
3	7.7	6.6	7.1	7.1	5.7	6.3	6.8	5.3	6.0	10.6	8.8	9.5
4	6.6	5.7	6.0	6.3	5.1	5.8	7.2	5.9	6.5	8.8	8.0	8.4
5	5.9	4.6	5.1	7.0	6.0	6.5	7.0	5.9	6.5	9.1	6.8	7.9
6	4.9	3.9	4.4	6.8	6.4	6.6	7.5	6.1	6.8	10.2	6.7	8.4
7	4.3	3.3	3.9	7.3	6.6	6.9	9.4	7.0	8.0	9.8	8.1	9.0
8	4.1	3.0	3.6	8.2	7.0	7.6	9.5	6.9	8.1	8.8	7.1	8.1
9	---	---	---	8.2	7.3	7.8	9.8	7.9	8.7	8.4	7.5	7.9
10	---	---	---	9.0	7.7	8.3	9.5	8.1	8.8	10.6	7.7	8.9
11	4.0	2.7	3.4	9.2	7.9	8.5	9.1	7.5	8.4	9.7	7.8	8.7
12	4.9	2.9	3.8	9.3	8.1	8.7	9.1	7.9	8.5	12.4	8.6	10.1
13	6.3	4.8	5.4	9.2	8.4	8.8	8.4	7.2	7.8	13.7	9.1	11.3
14	7.4	6.3	6.8	9.0	7.7	8.4	8.9	7.1	7.9	13.7	10.5	12.2
15	7.0	6.0	6.5	8.6	7.5	8.2	8.2	7.3	7.8	12.7	10.6	11.3
16	7.1	6.5	6.8	8.2	6.7	7.4	8.6	7.2	8.0	11.1	8.8	10.2
17	7.1	6.1	6.6	8.0	6.6	7.2	8.9	7.8	8.2	10.2	7.9	9.3
18	7.3	6.3	6.8	7.7	5.6	6.6	8.9	7.2	7.9	10.7	7.1	9.1
19	7.6	6.7	7.1	6.9	5.7	6.3	9.7	6.1	7.8	11.8	7.5	9.8
20	7.2	6.7	7.0	8.3	6.8	7.5	9.7	7.6	8.6	13.2	9.1	11.3
21	8.0	7.0	7.5	7.8	7.1	7.4	8.9	7.8	8.1	14.4	10.5	12.5
22	7.7	6.5	7.2	8.3	7.3	7.9	8.5	7.7	8.0	15.3	11.7	13.8
23	6.5	5.3	5.9	7.7	6.5	7.0	8.8	7.2	7.9	16.7	12.6	14.9
24	6.1	5.1	5.5	7.7	5.5	6.6	8.2	6.8	7.4	16.4	14.2	15.2
25	5.3	4.1	4.8	8.0	7.3	7.6	8.2	6.4	7.2	15.2	13.4	14.1
26	5.5	3.7	4.6	8.0	6.8	7.5	8.6	6.6	7.5	15.9	12.3	14.1
27	6.3	5.0	5.6	8.0	6.4	7.1	8.9	6.6	7.8	16.4	12.8	14.9
28	5.6	4.4	5.1	8.7	6.3	7.4	9.3	7.8	8.5	17.5	14.5	16.1
29	---	---	---	9.7	7.1	8.4	8.7	7.5	8.2	17.9	14.9	16.5
30	---	---	---	10.9	8.2	9.4	10.3	7.5	8.7	17.0	14.0	15.3
31	---	---	---	9.8	8.9	9.4	---	---	---	16.3	12.7	14.4
MONTH	---	---	---	10.9	4.7	7.4	10.3	5.3	7.8	17.9	6.7	11.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	17.2	13.4	15.4	21.0	18.4	19.3	23.6	21.4	22.5	20.0	17.8	19.0
2	17.8	14.8	16.2	19.7	16.3	18.2	22.3	21.0	21.5	20.1	17.5	19.0
3	18.3	14.4	16.4	20.0	16.4	18.5	22.4	20.3	21.2	20.6	18.3	19.6
4	19.4	15.0	17.2	20.6	17.0	19.1	23.5	20.6	22.2	21.2	18.7	20.0
5	20.7	16.4	18.6	21.1	17.8	19.7	23.0	21.1	21.9	21.4	19.1	20.2
6	21.8	17.6	19.7	21.7	18.4	20.3	22.5	20.0	21.3	21.0	19.1	20.1
7	22.0	18.1	20.2	21.6	18.8	20.5	22.3	20.1	21.2	19.9	18.3	18.9
8	21.6	18.2	20.1	21.8	19.1	20.7	21.7	19.8	20.8	18.3	16.7	17.3
9	20.4	17.6	19.2	22.5	19.1	21.0	22.2	20.3	21.2	17.0	15.4	16.0
10	19.1	16.7	17.6	22.8	19.9	21.7	21.8	19.6	20.8	16.3	14.6	15.5
11	18.3	15.5	16.8	22.7	20.2	21.7	21.8	19.6	20.7	17.1	14.6	16.0
12	17.7	15.3	16.6	22.9	20.2	21.8	21.6	19.2	20.5	17.9	16.4	17.2
13	16.9	15.5	16.0	23.3	21.4	22.3	21.4	18.7	20.2	17.0	15.3	16.2
14	18.2	14.7	16.4	22.7	20.2	21.7	21.5	18.6	20.3	16.2	14.4	15.5
15	19.1	14.9	17.1	22.5	20.3	21.5	21.1	19.4	20.3	16.7	15.3	15.9
16	20.1	15.6	17.9	22.1	20.4	21.3	21.0	18.2	19.8	15.9	14.1	14.7
17	21.2	17.1	19.2	22.1	19.3	20.9	21.3	18.3	20.0	15.2	13.4	14.3
18	20.2	17.3	18.1	22.5	19.7	21.3	22.4	19.3	20.9	14.4	12.7	13.7
19	17.3	15.4	16.0	23.3	20.5	22.0	22.5	19.9	21.2	14.9	13.2	14.1
20	16.9	13.8	15.4	23.1	20.4	22.0	21.4	19.2	20.5	14.8	13.5	14.1
21	17.2	15.2	16.2	24.4	21.3	22.9	21.2	18.6	20.1	14.8	12.8	13.9
22	16.6	14.2	15.5	24.5	22.7	23.7	20.9	19.5	20.2	15.1	13.0	14.2
23	15.7	14.0	14.9	24.5	22.3	23.5	21.4	18.9	20.1	15.3	13.2	14.4
24	17.4	13.0	15.2	23.5	21.5	22.3	21.0	18.5	19.9	15.7	13.5	14.8
25	19.2	14.6	16.9	22.6	20.1	21.5	20.9	18.2	19.7	16.0	14.0	15.1
26	20.9	16.2	18.6	22.3	19.9	21.3	20.3	18.5	19.5	16.2	14.1	15.3
27	22.1	17.7	20.0	23.1	20.1	21.8	20.3	17.7	19.1	17.1	14.8	16.1
28	22.8	18.5	20.9	24.0	21.0	22.7	19.9	17.8	19.0	17.5	15.7	16.7
29	23.3	19.9	21.9	24.4	21.5	23.2	20.1	17.7	19.0	17.1	16.0	16.5
30	22.6	20.4	21.4	24.7	21.7	23.4	20.5	17.8	19.3	16.0	14.1	15.1
31	---	---	---	24.6	21.9	23.4	20.4	18.2	19.4	---	---	---
MONTH	23.3	13.0	17.7	24.7	16.3	21.5	23.6	17.7	20.5	21.4	12.7	16.3

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 300 ft downstream from county bridge, 3.0 mi west of Winchester, and at mile 1.8.

DRAINAGE AREA.--1,344 mi^2.

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-65-1: 1954(M). WDR OR-72-1: 1965(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 372.97 ft above NGVD 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. Records good. Occasional regulation caused by upstream powerplants; slight regulation by Lemolo Lake and Diamond Lake. Several small diversions for irrigation upstream from station. Continuous water-quality records for water years 1967-69, 1971-91, have been collected at this site.

AVERAGE DISCHARGE.--60 years (water years 1909-13, 1924-29, 1955-2003), 3,709 ft^3/s, 37.50 in/yr, 2,687,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 150,000 ft^3/s Dec. 22, 1964, gage height, 34.2 ft, from floodmark; minimum discharge, 235 ft^3/s Aug. 27, 1987, result of regulation at Winchester Dam 5.2 mi upstream.

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 ft^3/s. Flood of Nov. 23, 1953, reached a stage of 28.4 ft, from floodmarks, present site and datum, discharge, 93,300 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 31	0130	22,600	10.76	Jan. 30	2130	*26,200	*11.79

Minimum discharge, 696 ft^3/s Aug. 27-30.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	875	807	909	10500	14700	2680	5560	3710	2380	1140	825	738
2	947	813	899	8020	11600	2480	5610	3430	2210	1120	820	742
3	885	813	890	17500	8700	2540	5470	3350	2060	1110	814	736
4	891	836	896	12100	6910	2720	5970	3870	2020	1090	791	753
5	914	850	898	10500	5610	2690	6670	5130	2070	1080	783	767
6	879	868	901	7300	4770	2820	7820	4610	2040	1070	811	772
7	842	938	886	5500	4080	6600	8040	4090	2030	1060	843	799
8	830	1080	886	4510	3690	10200	7990	3810	2010	1050	963	831
9	860	1780	884	3950	3290	7820	8300	3590	1970	1040	915	935
10	846	2700	926	3540	2980	9840	7540	3360	1920	1030	868	1220
11	824	2520	1050	3230	2810	7590	8440	3230	1840	996	824	1050
12	801	2010	1270	3030	2590	6260	8030	3200	1760	956	808	911
13	798	1740	1700	3420	2440	5570	7430	3090	1680	951	798	869
14	796	1560	2460	5620	2450	5420	7410	3040	1610	937	783	830
15	812	1390	3540	5520	2400	5590	6500	3050	1540	940	769	804
16	818	1260	8000	4530	3250	5650	5790	2980	1500	943	764	802
17	820	1220	5740	3750	4550	4900	6050	2820	1470	931	750	843
18	819	1490	3420	3360	5300	4240	6130	2630	1420	926	749	891
19	814	1340	2650	3160	5270	3730	5530	2470	1410	915	764	867
20	812	1180	2220	2940	4800	3750	4890	2370	1400	907	773	850
21	814	1100	2100	2760	4550	4250	5320	2340	1400	912	793	838
22	813	1080	3310	2660	5160	8560	5000	2370	1370	900	770	834
23	814	1040	2500	2940	5120	12100	5080	2420	1360	889	764	833
24	820	1040	2040	3110	4420	8710	8540	2540	1340	886	757	835
25	815	1030	1800	5660	3830	7870	8400	2700	1300	879	731	830
26	806	1020	1840	6310	3410	16700	6710	2680	1260	874	723	821
27	811	987	8670	15700	3070	13300	5570	2530	1220	868	712	838
28	808	955	17000	11100	2790	9160	4870	2420	1200	843	710	840
29	810	930	13400	7390	---	6990	4400	2520	1180	824	708	835
30	806	916	11400	13300	---	5860	4090	2530	1160	819	716	832
31	801	---	19300	18800	---	5280	---	2510	---	821	740	---
TOTAL	25801	37293	124385	211710	134540	201870	193150	95390	49130	29707	24339	25346
MEAN	832	1243	4012	6829	4805	6512	6438	3077	1638	958	785	845
MAX	947	2700	19300	18800	14700	16700	8540	5130	2380	1140	963	1220
MIN	796	807	884	2660	2400	2480	4090	2340	1160	819	708	736
AC-FT	51180	73970	246700	419900	266900	400400	383100	189200	97450	58920	48280	50270
CFSM	0.62	0.92	2.99	5.08	3.58	4.85	4.79	2.29	1.22	0.71	0.58	0.63
IN.	0.71	1.03	3.44	5.86	3.72	5.59	5.35	2.64	1.36	0.82	0.67	0.70

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 2003, BY WATER YEAR (WY)

MEAN	1346	4054	6294	6736	6210	5581	4845	3847	2430	1331	994	980
MAX	2752	12550	23640	15220	13250	12880	8881	7147	4992	2824	1578	1689
(WY)	1963	1974	1965	1965	1986	1972	1993	1963	1984	1913	1976	1986
MIN	683	931	1005	1125	1019	1681	1605	1401	913	717	635	695
(WY)	1988	1994	1977	1977	1977	1992	1926	1926	1926	1926	1992	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1909 - 2003	
ANNUAL TOTAL	1040954		1152661			
ANNUAL MEAN	2852		3158		3709	
HIGHEST ANNUAL MEAN					6116	1974
LOWEST ANNUAL MEAN					1639	1977
HIGHEST DAILY MEAN	19300	Dec 31	19300	Dec 31	117000	Dec 23 1964
LOWEST DAILY MEAN	681	Sep 3	708	Aug 29	549	Aug 22 1994
ANNUAL SEVEN-DAY MINIMUM	688	Aug 31	720	Aug 25	600	Oct 1 1908
ANNUAL RUNOFF (AC-FT)	2065000		2286000		2687000	
ANNUAL RUNOFF (CFSM)	2.12		2.35		2.76	
ANNUAL RUNOFF (INCHES)	28.81		31.90		37.50	
10 PERCENT EXCEEDS	6330		7680		7530	
50 PERCENT EXCEEDS	1780		1800		2410	
90 PERCENT EXCEEDS	748		807		878	

14321000 UMPQUA RIVER NEAR ELKTON, OR

LOCATION.--Lat 43°35'10", long 123°33'15", in NW 1/4 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 mi^2.

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 NGVD 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.--Records good. Regulation by powerplants on North Umpqua River ordinarily does not affect discharge at this station. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--98 years (water years 1906-2003), 7,381 ft^3/s, 27.23 in/yr, 5,347,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 265,000 ft^3/s Dec. 23, 1964, gage height, 51.95 ft, from floodmarks; minimum discharge observed, 640 ft^3/s July 18, 1926.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least December 1861, 51.95 ft on Dec. 23, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 52,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 29	0900	54,600	19.92	Dec. 31	1630	*80,100	*24.88

Minimum recorded discharge, 905 ft^3/s Aug. 31.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	984	e1070	1270	46600	29000	5190	9840	8660	3650	1510	1040	938
2	1020	1050	1250	24400	26800	4970	11200	7850	3400	1480	1030	946
3	1150	1060	1240	39300	20000	4690	11000	7270	3160	1450	1030	956
4	1130	1060	1230	35400	15500	4900	11300	7440	2940	1440	1020	948
5	1140	1080	1220	27000	12500	5070	13100	9750	2840	e1420	1020	951
6	1170	1100	1220	19700	10300	4990	16300	10200	2790	1410	1000	962
7	1170	e1180	1210	14600	8810	6640	19400	8840	2700	1400	1050	969
8	1130	e1440	1200	11700	7650	14600	17400	7910	2630	1380	1060	983
9	1120	e2120	1190	9760	6870	14300	16700	7380	2560	1350	1150	1050
10	1130	e2760	1220	8440	6090	14600	15400	6870	2480	1340	1160	1150
11	1110	e3430	1270	7370	5560	14300	14500	6370	2420	1330	1120	1400
12	1090	e3200	1380	6810	5170	11500	15600	6140	2340	1290	1100	1450
13	1070	e2110	1810	7070	4780	9920	14200	6000	2270	1260	1060	1390
14	1050	e1950	2970	9670	4550	9230	13800	5730	2190	1240	1030	1250
15	1040	e1840	9990	12600	e4590	11400	12800	5500	2100	1210	1010	1150
16	1060	e1750	27100	11000	e6280	15500	11300	5380	2020	1200	990	1110
17	1050	e1690	29700	9140	e10800	12900	10900	5130	1960	1200	984	1090
18	1060	e1650	13000	7780	e12000	10400	11800	4770	1910	1180	973	1090
19	1060	e1640	8950	7070	11900	8750	11000	4450	1850	1170	968	1140
20	1070	e1940	7000	6500	10900	7970	9730	4180	1830	1150	974	1130
21	1070	e1740	6510	5980	9750	8030	9450	3990	1840	1150	973	1110
22	1070	1550	8390	5570	9280	11100	10300	3900	1840	1150	988	1100
23	1070	1490	e7010	5550	9790	19700	10000	3870	1810	1130	983	1080
24	1070	1460	e6370	6090	8950	18600	16800	3900	1780	1110	967	1070
25	1070	1450	e5950	7460	7870	14800	21400	4050	1760	1100	963	1070
26	1070	1430	e5950	11900	6950	23800	17500	4220	1700	1090	951	1050
27	1070	1400	e14900	21500	6210	29600	14000	4130	1650	1090	939	1040
28	1070	1370	e31300	27500	5620	21400	11900	3870	1610	1100	930	1030
29	1070	1330	49700	18200	---	15900	10700	3700	1560	1080	924	1040
30	e1080	1300	31500	15300	---	12600	9650	3760	1540	1070	918	1040
31	e1070	---	68900	33400	---	10700	---	3690	---	1050	918	---
TOTAL	33584	49640	351900	480360	284470	378050	398970	178900	67130	38530	31223	32683
MEAN	1083	1655	11350	15500	10160	12200	13300	5771	2238	1243	1007	1089
MAX	1170	3430	68900	46600	29000	29600	21400	10200	3650	1510	1160	1450
MIN	984	1050	1190	5550	4550	4690	9450	3690	1540	1050	918	938
AC-FT	66610	98460	698000	952800	564200	749900	791400	354800	133200	76420	61930	64830
CFSM	0.29	0.45	3.08	4.21	2.76	3.31	3.61	1.57	0.61	0.34	0.27	0.30
IN.	0.34	0.50	3.55	4.85	2.87	3.82	4.03	1.81	0.68	0.39	0.32	0.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 2003, BY WATER YEAR (WY)

MEAN	1860	6972	13400	15830	14930	12140	9548	6490	3715	1717	1176	1195
MAX	14200	29500	51220	34900	32800	27100	20480	15800	9526	5063	1867	3475
(WY)	1951	1974	1965	1956	1907	1972	1937	1921	1953	1913	1976	1920
MIN	857	832	1238	1440	1365	2909	2432	1934	1053	742	703	740
(WY)	1930	1930	1977	1977	1977	1992	1926	1934	1926	1926	1931	1931

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1906 - 2003	
ANNUAL TOTAL	2015733		2325440			
ANNUAL MEAN	5523		6371		7381	
HIGHEST ANNUAL MEAN					13360	1974
LOWEST ANNUAL MEAN					2321	1977
HIGHEST DAILY MEAN	68900	Dec 31	68900	Dec 31	260000	Dec 23 1964
LOWEST DAILY MEAN	859	Sep 4	918	Aug 30	663	Sep 1 1931
ANNUAL SEVEN-DAY MINIMUM	869	Aug 31	930	Aug 27	663	Sep 1 1931
ANNUAL RUNOFF (AC-FT)	3998000		4613000		5347000	
ANNUAL RUNOFF (CFSM)	1.50		1.73		2.00	
ANNUAL RUNOFF (INCHES)	20.36		23.49		27.23	
10 PERCENT EXCEEDS	12900		15300		17100	
50 PERCENT EXCEEDS	2210		2420		3910	
90 PERCENT EXCEEDS	951		1040		1060	

e Estimated

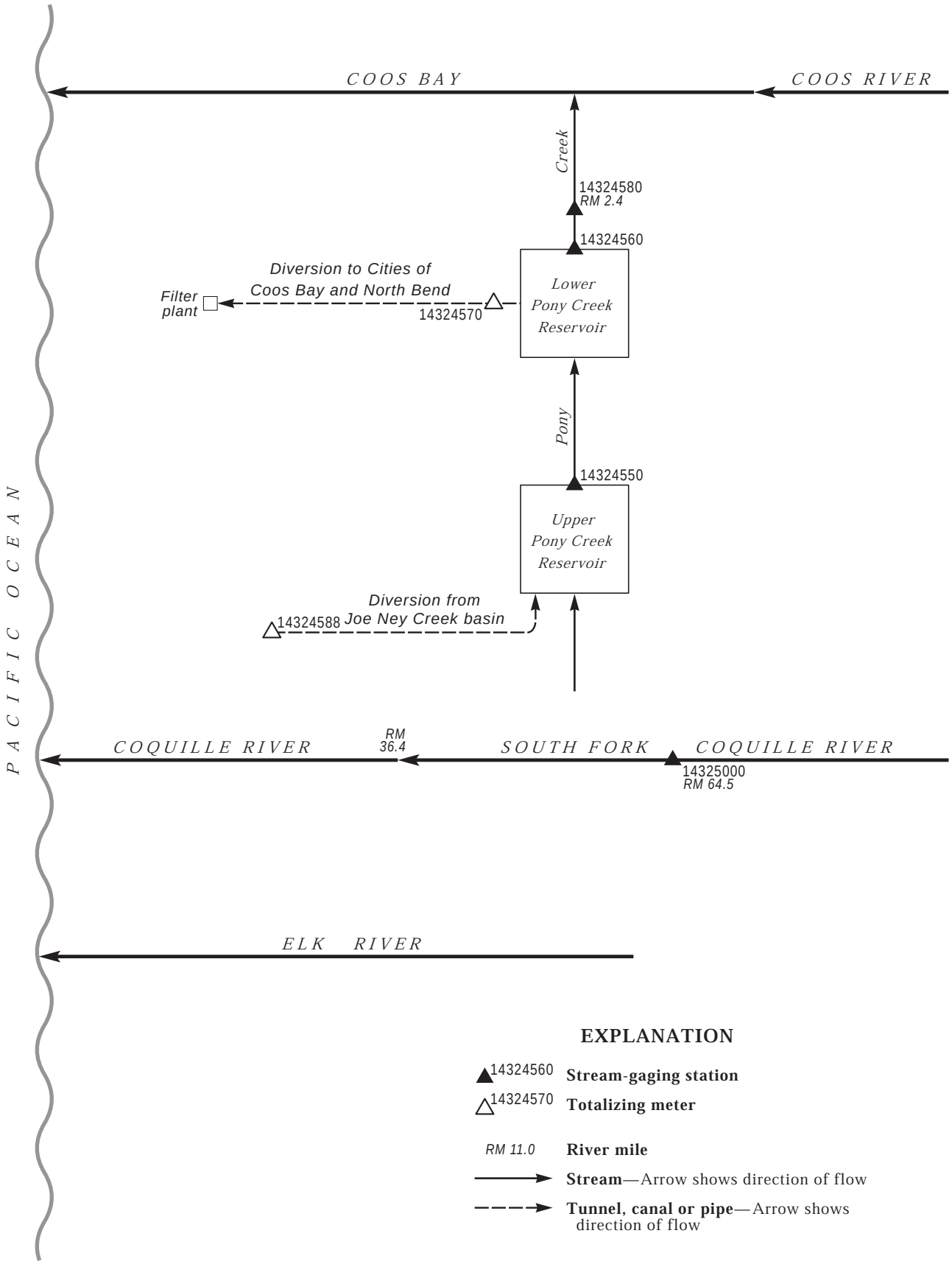


Figure 32. Schematic diagram showing gaging stations and diversions in the Pony Creek Basin.

14324580 PONY CREEK AT COOS BAY, OR

LOCATION.--Lat 43°22'44", long 124°14'29", in NE 1/4 NE 1/4 sec.28, T.25 S., R.13 W., Coos County, Hydrologic Unit 17100304, at spillway for Lower Pony Creek Reservoir, in Coos Bay, and at mile 2.3.

DRAINAGE AREA.--3.88 mi^2.

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

REVISED RECORDS.--WDR OR-93-1: Drainage Area.

GAGE.--Water-stage recorder. Datum of gage is NAVD of 1988 (Coos Bay-North Bend Water Board bench mark). Oct. 1, 1982 to September 30, 1987, gage at site 500 ft downstream at datum 2.9 ft higher. July 1975 to Sept. 30, 1982 and Oct. 1, 1987 to Sept. 30, 1992, at site 0.1 mi downstream, at datum 15.13 ft above NGVD of 1929.Oct. 1, 1992 to July 19, 2001 at same site at datum 2.9 ft higher.

REMARKS.--No estimated daily discharges. Records good. Records prior to 1993 were computed for site at the lower end of culvert under Ocean Boulevard. 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 5.5 ft^3/s is diverted to the Coos Bay-North Bend water treatment plant, maximum capacity, 10.8 ft^3/s.

COOPERATION.--Data for diversion from Joe Ney Creek into Pony Creek (14324590), diversion from Lower Pony Creek Reservoir to City of Coos Bay (14324570) and contents of Upper Pony Creek Reservoir provided by Coos Bay-North Bend Water Board.

AVERAGE DISCHARGE.--28 years (water years 1976-2003), 10.13ft^3/s, 35.27 in/yr, 7,340 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 ft^3/s Dec. 6, 1981, gage height, 6.19 ft; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 64 ft^3/s Dec. 15, gage height, 42.46 ft; minimum discharge, no flow many days during year.

CORRECTIONS.--Data published in the 'Average Discharge' paragraph for the 2001 and 2002 water years have been corrected to 10.11 ft^3/s, 35.21 in/yr, 7,320 acre-feet and 10.12 ft^3/s, 35.24 in/yr, 7,330 acre-ft, respectively.

Listed below are the corrections for the 2001 and 2002 water years for Pony Creek, adjusted for diversion and change in contents, for acre-feet and inches.

	Pony Creek adjusted for diversion and change in contents (acre-feet)	(inches)		Pony Creek adjusted for diversion and change in contents (acre-feet)	(inches)
October.....	168.6	0.81	October.....	120.3	0.58
November.....	196.4	0.94	November.....	218.2	1.05
December.....	615.6	2.96	December.....	1,244.1	5.98
CAL YR 2000...	6,876.5	33.07	CAL YR 2001...	3,608.5	17.35
January.....	462.3	2.22	January.....	1,945.2	9.35
February.....	407.5	1.96	February.....	1,616.9	7.78
March.....	295.8	1.42	March.....	851.0	4.09
April.....	370.8	1.78	April.....	589.1	2.83
May.....	265.0	1,27	May.....	440.7	2.12
June.....	136.7	0.66	June.....	405.8	1.95
July.....	42.5	0.20	July.....	469.3	2.26
August.....	23.0	0.11	August.....	-293.7	-1.41
September.....	22.3	0.11	September.....	-31.8	-0.15
WTR YR 2001...	3,006.50	14.46	WTR YR 2002...	7,575.1	36.43

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 2002 TO SEPTEMBER 2003

	14324588 Diversion from Joe Ney Creek into Pony Creek (acre-feet)	14324580 Pony Creek at Coos Bay (acre-feet)	14324570 Diversion from Lower Pony Creek 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.....	-29.6	0	385.6	-6.8	-309.0	40.2	0.19
November.....	-5.8	0	298.5	-27.4	-77.0	188.3	0.90
December.....	-252.0	241.2	309.5	+92.9	+307.0	698.6	3.36
CAL YR 2002...	-347.5	3,356.1	4,430.8	+49.2	-569.0	6,919.6	33.28
January.....	-425.1	169.0	322.9	0	+1,839.0	1,905.8	9.16
February.....	-380.0	368.1	266.7	-6.6	+1,170.0	1,418.2	6.82
March.....	-342.8	255.5	289.7	-8.3	+370.0	564.1	2.71
April.....	0	248.3	293.4	+6.1	+920.0	1,467.8	7.06
May.....	0	130.4	351.2	-1.3	+230.0	710.3	3.42
June.....	0	64.2	449.5	-10.4	-510.0	-6.7	-0.03
July.....	0	257.2	539.3	+6.9	-400.0	403.4	1.94
August.....	0	460.4	507.1	+14.9	-830.0	152.4	0.73
September.....	0	340.3	389.2	-15.3	-640.0	74.2	0.36
WTR YR 2003...	-1,435.0	2,534.6	4,402.6	+44.7	+2,070.0	7,616.9	36.63

14324580 PONY CREEK AT COOS BAY, OR--Continued

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.00	0.00	5.7	10	5.9	1.3	3.6	2.3	0.07	2.0	13
2	0.00	0.00	0.00	5.2	9.0	5.9	3.4	2.2	0.35	0.08	2.4	14
3	0.00	0.00	0.00	2.4	5.5	5.9	5.5	2.0	0.39	0.27	2.9	12
4	0.00	0.00	0.00	3.8	4.7	4.2	6.0	5.3	1.1	2.2	4.0	12
5	0.00	0.00	0.00	2.3	4.8	3.1	4.7	2.8	0.45	8.3	4.2	13
6	0.00	0.00	0.00	0.29	4.7	3.2	7.4	1.2	0.32	9.2	6.4	12
7	0.00	0.00	0.00	0.13	5.5	6.7	4.1	1.7	1.2	6.1	8.2	15
8	0.00	0.00	0.00	0.11	6.6	7.3	4.1	2.2	1.1	3.4	7.7	13
9	0.00	0.00	0.00	0.03	6.9	5.7	4.7	2.1	0.63	1.4	7.6	12
10	0.00	0.00	0.00	0.00	5.7	3.6	3.1	2.1	0.57	0.82	9.8	7.8
11	0.00	0.00	0.00	0.00	4.6	3.1	3.3	2.8	1.1	1.3	7.9	2.9
12	0.00	0.00	0.00	1.8	5.6	3.7	3.4	1.5	0.89	3.3	7.6	0.37
13	0.00	0.00	0.00	3.5	6.1	3.4	3.3	0.78	0.78	2.2	7.4	0.00
14	0.00	0.00	0.04	2.1	5.8	3.8	2.0	1.4	2.4	1.3	7.3	0.00
15	0.00	0.00	28	1.4	8.1	4.7	2.4	1.1	2.9	3.0	7.1	0.00
16	0.00	0.00	31	0.80	9.8	5.2	2.9	0.72	1.4	4.4	6.8	0.00
17	0.00	0.00	13	0.42	9.4	3.4	3.3	1.3	0.68	5.1	6.2	0.00
18	0.00	0.00	5.5	0.03	7.2	3.4	2.3	1.9	0.37	8.0	6.5	0.00
19	0.00	0.00	1.7	0.00	6.5	3.4	2.0	1.4	0.27	11	7.7	0.00
20	0.00	0.00	1.9	0.00	6.5	4.5	2.5	1.2	0.78	9.1	11	0.51
21	0.00	0.00	2.3	0.00	6.6	5.1	1.8	0.70	2.2	8.3	10	7.4
22	0.00	0.00	1.4	0.00	7.1	7.5	1.6	0.15	3.7	8.1	5.9	7.7
23	0.00	0.00	0.25	0.00	7.0	7.3	4.1	0.60	2.0	6.5	4.6	4.8
24	0.00	0.00	0.08	0.91	5.3	4.0	7.4	1.7	0.20	3.6	4.8	4.9
25	0.00	0.00	0.00	9.9	6.0	1.8	6.9	4.2	0.14	3.7	7.0	4.3
26	0.00	0.00	1.0	18	8.1	3.1	8.7	3.5	0.04	5.8	8.1	3.2
27	0.00	0.00	0.73	8.8	7.2	2.7	7.6	4.0	0.00	3.2	11	3.4
28	0.00	0.00	1.4	3.6	5.3	2.5	5.1	4.7	0.92	3.3	12	3.8
29	0.00	0.00	2.3	3.3	---	2.0	5.2	3.1	2.2	2.9	12	2.6
30	0.00	0.00	16	5.3	---	1.6	5.1	1.6	1.0	2.0	12	1.9
31	0.00	---	15	5.3	---	1.1	---	2.2	---	1.7	14	---
TOTAL	0.00	0.00	121.60	85.12	185.6	128.8	125.2	65.75	32.38	129.64	232.1	171.58
MEAN	0.000	0.000	3.92	2.75	6.63	4.15	4.17	2.12	1.08	4.18	7.49	5.72
MAX	0.00	0.00	31	18	10	7.5	8.7	5.3	3.7	11	14	15
MIN	0.00	0.00	0.00	0.00	4.6	1.1	1.3	0.15	0.00	0.07	2.0	0.00
AC-FT	0.00	0.00	241	169	368	255	248	130	64	257	460	340

CAL YR 2002 TOTAL 1692.06 MEAN 4.64 MAX 31 MIN 0.00 AC-FT 3360
WTR YR 2003 TOTAL 1277.77 MEAN 3.50 MAX 31 MIN 0.00 AC-FT 2530

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 mi^2.

PERIOD OF RECORD.--September 1916 to September 1926, December 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 NGVD of 1929. Prior to Nov. 17, 1938, nonrecording gage at various sites within 1 mi of present site at different datums. National weather Service telephone telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--84 years (water years 1917-26, 1930-2003), 781 ft^3/s, 62.78 in/yr, 565,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,900 ft^3/s Dec. 22, 1964, gage height, 26.51 ft, from floodmarks, from rating curve extended above 19,000 ft^3/s on basis of contracted-opening measurement at gage height 18.14 ft and slope-area measurement of peak flow; minimum discharge, 6.4 ft^3/s Oct. 10-12, 1995.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,300 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 14	1630	12,000	10.83	Dec. 27	1000	11,000	10.34
Dec. 16	0130	*19,500	*14.28	Dec. 30	2100	16,000	12.67

Minimum discharge, 12 ft^3/s Oct. 19, 20, Nov. 1-7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	13	48	4070	2140	447	717	970	143	45	26	22
2	17	12	46	3810	2030	411	731	845	137	44	26	22
3	16	13	45	5710	1560	427	946	746	129	44	30	21
4	23	12	44	3950	1210	409	1650	994	121	43	31	21
5	25	13	44	2880	979	388	1500	1000	114	42	30	21
6	23	12	42	1890	820	376	2320	852	107	42	30	20
7	20	47	41	1370	702	444	2130	740	103	42	31	20
8	17	685	40	1070	619	528	1820	717	98	42	29	21
9	16	1070	39	879	550	1070	1910	696	94	40	28	24
10	15	1040	79	751	491	1430	1830	643	91	39	27	31
11	14	875	135	675	448	992	1780	600	90	38	27	29
12	14	641	211	872	408	796	1490	579	85	37	27	26
13	14	545	1550	1110	380	894	1280	529	86	35	27	23
14	13	312	7260	1330	352	1950	1100	479	87	35	27	22
15	13	204	8240	1150	409	2770	963	442	79	35	27	21
16	13	153	11700	941	737	2250	921	407	74	36	26	20
17	13	288	3420	793	1410	1600	1060	379	73	34	26	21
18	13	232	2300	685	1960	1200	1050	348	70	33	26	21
19	13	165	1770	602	1540	1070	919	325	74	32	26	21
20	13	129	2680	540	1320	1360	819	303	71	31	26	19
21	13	107	3500	509	1120	1310	754	283	67	30	26	19
22	13	90	2190	532	986	2380	706	265	66	30	25	19
23	13	79	1510	726	866	2440	830	248	64	30	26	19
24	13	75	1150	731	758	1650	1910	231	64	30	26	18
25	13	73	922	1020	660	1420	1590	227	61	30	25	18
26	13	66	1650	1470	584	2170	1750	210	56	30	23	17
27	13	60	7590	2730	525	1740	1770	191	52	29	24	17
28	13	56	5350	1680	471	1360	1430	177	50	29	24	16
29	13	53	3890	1190	---	1070	1220	169	48	28	23	16
30	13	50	7770	1570	---	884	1100	162	45	27	23	16
31	13	---	10100	1500	---	760	---	154	---	26	22	---
TOTAL	466	7170	85356	48736	26035	37996	39996	14911	2499	1088	820	621
MEAN	15.0	239	2753	1572	930	1226	1333	481	83.3	35.1	26.5	20.7
MAX	25	1070	11700	5710	2140	2770	2320	1000	143	45	31	31
MIN	13	12	39	509	352	376	706	154	45	26	22	16
AC-FT	924	14220	169300	96670	51640	75370	79330	29580	4960	2160	1630	1230
CFSM	0.09	1.41	16.3	9.30	5.50	7.25	7.89	2.85	0.49	0.21	0.16	0.12
IN.	0.10	1.58	18.79	10.73	5.73	8.36	8.80	3.28	0.55	0.24	0.18	0.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 2003, BY WATER YEAR (WY)

MEAN	196	1015	1729	1807	1646	1315	918	455	171	60.7	34.5	44.5
MAX	1945	4232	5361	4244	4151	3818	2451	1568	699	186	101	384
(WY)	1951	1974	1965	1970	1958	1938	1963	1953	1937	1947	1947	1978
MIN	11.1	15.8	44.1	97.3	209	330	203	78.3	50.8	27.7	17.4	12.1
(WY)	1988	1937	1977	1977	1977	1934	1990	1939	1924	1926	1939	1987

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1917 - 2003	
ANNUAL TOTAL	250813		265694			
ANNUAL MEAN	687		728		781	
HIGHEST ANNUAL MEAN					1374	1974
LOWEST ANNUAL MEAN					237	1977
HIGHEST DAILY MEAN	11700	Dec 16	11700	Dec 16	34900	Dec 22 1964
LOWEST DAILY MEAN	12	Sep 27	12	Nov 2	7.2	Oct 10 1994
ANNUAL SEVEN-DAY MINIMUM	13	Oct 31	13	Oct 31	7.3	Oct 7 1994
ANNUAL RUNOFF (AC-FT)	497500		527000		565700	
ANNUAL RUNOFF (CFSM)	4.07		4.31		4.62	
ANNUAL RUNOFF (INCHES)	55.21		58.48		62.78	
10 PERCENT EXCEEDS	1530		1770		2000	
50 PERCENT EXCEEDS	97		153		262	
90 PERCENT EXCEEDS	14		17		26	

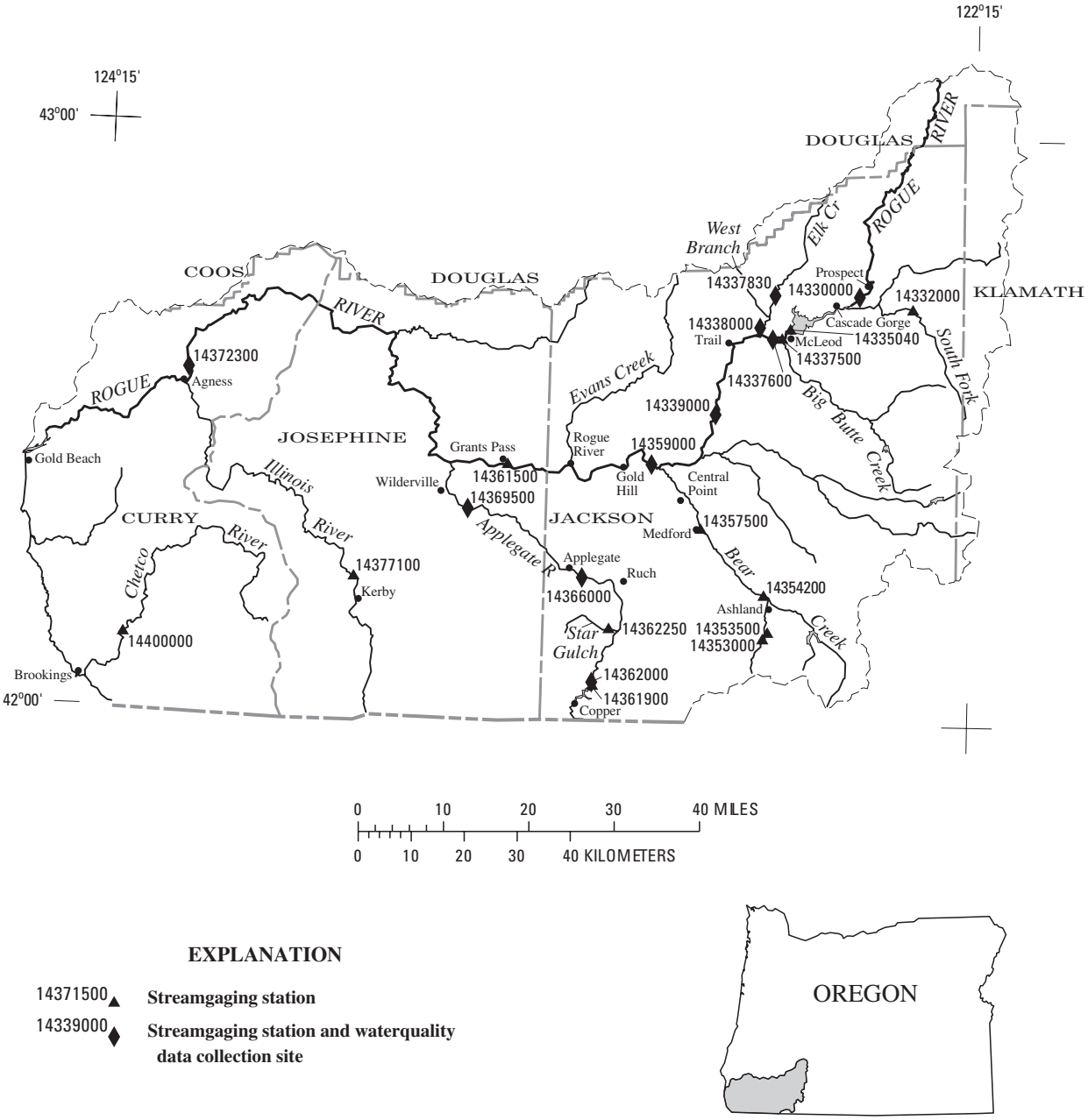


Figure 33. Location of surface-water and water-quality stations in the Rogue and Chetco River Basins.

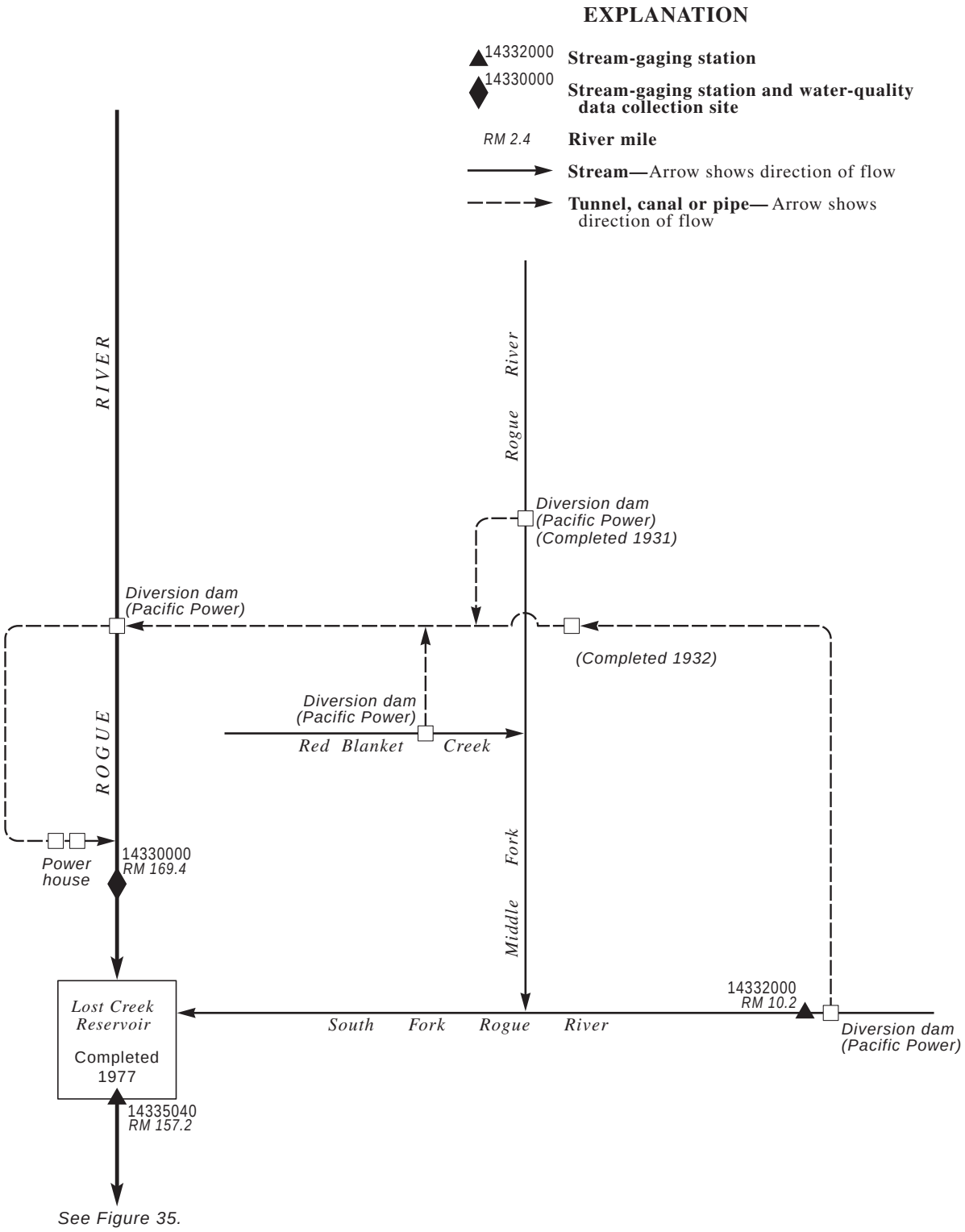


Figure 34. Schematic diagram showing gaging stations in the Rogue River Basin, upstream from Lost Creek Reservoir.

14330000 ROGUE RIVER BELOW PROSPECT, OR

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.

DRAINAGE AREA.--379 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1913 to September 1930, October 1968 to current year.

REVISED RECORDS.--WSP 1518: 1914-23, 1924(M), 1925, 1928.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,964.56 ft above NGVD of 1929 (Pacific Power and Light Co. bench mark). Prior to September 1927 nonrecording gage at site 1,000 ft upstream, above powerplants, at different datum, also concurrent nonrecording gage on headrace to obtain equivalent combined flow.

REMARKS.--No estimated daily discharges. Records fair. Fluctuations caused by powerplant 600 ft upstream from station. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--35 years, (water years 1969-2003), 1,457 ft^3/s, 1,056,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,200 ft^3/s Jan. 1, 1997, gage height, 8.15 ft; minimum discharge, 166 ft^3/s Sept. 29, 1992, result of regulation by upstream diversion gates.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 12.4 ft Dec. 22, 1964, from floodmarks, discharge, 25,000 ft^3/s, from records for station upstream from Prospect (station 14328000) and for station downstream from South Fork Rogue River near Prospect (station 14335000) after adjusting for estimated intervening tributary inflow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,710 ft^3/s Jan. 27, gage height 4.86 ft; minimum discharge, 218 ft^3/s Aug. 28, result of regulation by upstream diversion gates.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	638	633	656	1170	3130	1260	2450	1620	1780	1060	843	742
2	618	633	650	1110	2600	1220	2200	1630	1730	1050	852	738
3	628	643	649	1410	2270	1230	2030	1800	1700	1040	874	739
4	644	643	647	1530	2000	1200	1920	2090	1690	1030	898	758
5	628	640	650	1630	1830	1180	1840	2070	1670	1020	881	727
6	626	635	649	1380	1700	1210	1810	1950	1640	1010	852	754
7	651	647	646	1270	1610	1300	1750	1890	1630	1000	980	755
8	664	797	632	1210	1540	1410	1810	1850	1610	1000	884	801
9	666	872	648	1180	1470	1480	1980	1780	1570	987	878	915
10	664	770	668	1150	1410	1760	2150	1730	1510	979	860	900
11	660	731	682	1110	1360	1740	2510	1720	1460	969	854	791
12	664	752	705	1190	1310	1740	2380	1730	1420	961	842	770
13	660	777	797	1460	1340	1730	2320	1740	1390	956	840	775
14	657	649	1020	1800	1400	1930	2160	1840	1370	948	834	767
15	657	616	1220	1670	1360	2390	2010	1900	1360	953	822	708
16	656	559	1590	1470	1630	2250	1900	1820	1330	939	820	628
17	652	649	1140	1370	1520	1990	1870	1760	1310	929	818	646
18	653	672	941	1440	1440	1820	1810	1690	1290	928	812	634
19	653	650	848	1470	1470	1730	1730	1650	1270	913	806	639
20	651	706	810	1440	1470	1710	1710	1650	1250	910	795	664
21	654	731	838	1380	1450	1790	1700	1690	1220	902	802	701
22	655	748	803	1370	1560	2640	1700	1770	1180	895	779	703
23	652	717	772	1790	1500	2760	1730	1880	1180	894	712	728
24	650	699	754	1770	1460	2320	1880	2010	1170	885	706	722
25	651	701	742	2660	1400	2440	1800	2000	1140	893	699	730
26	653	610	756	2500	1350	3370	1740	1940	1130	876	694	734
27	647	665	1580	3700	1320	2740	1690	1890	1120	873	691	730
28	656	658	1750	2880	1280	2410	1680	1920	1100	869	661	729
29	650	663	1360	2340	---	2180	1650	1940	1080	864	690	727
30	650	658	1250	3410	---	2080	1640	1970	1080	855	709	730
31	643	---	1340	3590	---	2140	---	1860	---	852	726	---
TOTAL	20151	20524	28193	54850	45180	59150	57550	56780	41380	29240	24914	22085
MEAN	650	684	909	1769	1614	1908	1918	1832	1379	943	804	736
MAX	666	872	1750	3700	3130	3370	2510	2090	1780	1060	980	915
MIN	618	559	632	1110	1280	1180	1640	1620	1080	852	661	628
AC-FT	39970	40710	55920	108800	89610	117300	114200	112600	82080	58000	49420	43810

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2003, BY WATER YEAR (WY)

MEAN	941	1213	1538	1690	1672	1818	1895	2017	1617	1176	996	931
MAX	1342	2100	3312	3012	2728	3627	2668	3282	2923	1660	1356	1267
(WY)	1985	1974	1997	1997	1996	1972	1989	1971	1974	1971	1984	1984
MIN	606	684	909	946	946	1045	1268	933	765	717	623	560
(WY)	1993	2003	2003	1977	1977	1977	2001	1992	1992	1992	2001	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1969 - 2003	
ANNUAL TOTAL	425190		459997			
ANNUAL MEAN	1165		1260		1457	
HIGHEST ANNUAL MEAN					2053	1974
LOWEST ANNUAL MEAN					957	2001
HIGHEST DAILY MEAN	5040	Apr 14	3700	Jan 27	10500	Jan 1 1997
LOWEST DAILY MEAN	559	Nov 16	559	Nov 16	499	Sep 12 2001
ANNUAL SEVEN-DAY MINIMUM	615	Sep 25	633	Oct 1	506	Sep 6 2001
ANNUAL RUNOFF (AC-FT)	843400		912400		1056000	
10 PERCENT EXCEEDS	1800		1990		2260	
50 PERCENT EXCEEDS	1040		1130		1290	
90 PERCENT EXCEEDS	650		651		823	

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.

REMARKS.--Records good. During low flows and warm weather, water temperatures may be influenced by return flows from hydroelectric plant 600 ft upstream.

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 at times most 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, 16.2°C July 22, 23; minimum, 2.0°C Feb. 8.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	7.9	6.9	7.4	3.8	2.8	3.3	4.8	4.1	4.4	3.2	2.8	3.0
2	7.3	5.9	6.7	3.7	2.4	3.1	4.3	3.7	4.0	4.0	3.0	3.4
3	7.0	6.1	6.6	4.2	3.0	3.6	4.2	3.5	3.8	4.3	3.8	4.1
4	8.3	6.9	7.5	4.6	3.4	4.0	4.9	3.8	4.4	4.6	4.1	4.3
5	9.1	7.9	8.5	5.0	3.8	4.4	5.0	4.3	4.7	4.4	3.7	4.0
6	9.0	7.6	8.4	5.5	4.3	4.9	5.1	4.5	4.8	3.8	3.2	3.5
7	8.8	7.4	8.2	6.3	5.4	5.9	4.6	4.0	4.3	3.6	3.0	3.3
8	8.4	7.1	7.9	6.4	6.0	6.2	4.3	3.6	4.0	3.3	2.7	3.0
9	8.2	6.9	7.6	6.0	4.2	5.1	5.0	3.9	4.4	3.6	2.8	3.2
10	7.6	6.4	7.1	4.3	3.1	3.5	5.2	4.7	4.9	4.0	3.3	3.6
11	6.8	5.6	6.3	4.7	3.4	4.0	5.1	4.7	5.0	4.5	3.8	4.1
12	6.7	5.2	6.0	5.4	4.5	5.0	5.0	4.3	4.7	4.8	4.3	4.6
13	6.8	5.3	6.1	5.5	4.9	5.3	5.6	4.9	5.1	4.8	4.4	4.7
14	7.1	5.5	6.4	6.0	5.3	5.6	5.8	5.5	5.7	5.0	4.6	4.8
15	7.3	6.0	6.7	5.4	4.8	5.1	5.6	5.2	5.3	4.8	4.2	4.5
16	7.5	6.1	6.8	5.1	4.4	4.8	5.3	4.8	5.2	4.4	3.8	4.1
17	7.6	6.2	7.0	5.3	4.8	5.1	4.9	4.2	4.5	4.4	3.6	4.0
18	7.5	6.4	7.0	5.5	4.5	5.0	4.2	3.9	4.0	4.5	3.9	4.2
19	7.5	6.3	7.0	6.0	5.3	5.6	4.1	3.8	3.9	4.4	3.8	4.1
20	7.4	6.4	7.0	6.1	5.3	5.7	4.3	3.8	4.0	4.2	3.5	3.9
21	7.2	6.1	6.8	6.0	5.2	5.6	4.2	3.3	3.9	4.6	3.8	4.2
22	7.0	5.9	6.6	5.6	5.0	5.3	3.8	3.1	3.4	5.0	4.4	4.7
23	6.9	5.8	6.4	5.3	4.7	5.0	4.4	2.1	3.4	5.0	4.8	4.9
24	6.5	5.5	6.1	5.7	4.6	5.3	3.1	2.5	2.7	5.0	4.5	4.7
25	6.2	5.2	5.8	5.3	4.3	4.8	3.3	2.4	2.8	5.3	4.5	4.9
26	5.9	5.0	5.5	4.3	3.4	3.9	4.2	3.3	3.5	5.4	5.1	5.2
27	5.8	4.7	5.3	4.4	3.5	3.9	3.9	2.9	3.6	5.4	4.4	4.9
28	6.3	5.2	5.8	4.8	3.9	4.4	3.0	2.2	2.6	4.6	4.0	4.3
29	6.0	5.0	5.5	4.8	4.0	4.5	3.4	2.7	3.0	5.0	4.3	4.5
30	5.4	4.2	4.8	4.9	4.2	4.6	4.0	3.3	3.4	5.5	4.8	5.2
31	4.2	3.3	3.7	---	---	---	3.3	2.5	3.0	5.7	4.8	5.3
MONTH	9.1	3.3	6.6	6.4	2.4	4.8	5.8	2.1	4.1	5.7	2.7	4.2

14330000 ROGUE RIVER BELOW PROSPECT, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5.8	4.7	5.2	4.8	3.4	4.0	6.5	4.8	5.4	7.7	5.9	6.8
2	4.9	4.4	4.7	5.0	3.5	4.2	4.8	4.0	4.3	7.9	6.8	7.3
3	4.5	3.6	4.0	5.1	4.0	4.5	4.1	3.6	3.9	7.3	6.3	7.0
4	3.7	3.0	3.4	4.6	3.7	4.2	4.4	3.4	3.8	6.4	5.1	5.6
5	3.3	2.6	2.9	5.2	4.0	4.6	4.5	3.6	4.1	6.8	4.8	5.7
6	3.3	2.6	2.9	5.0	4.2	4.6	3.6	2.5	3.0	6.9	5.8	6.4
7	3.0	2.1	2.6	4.5	4.0	4.2	5.6	2.9	4.3	8.0	6.2	6.9
8	3.0	2.0	2.5	5.5	4.1	4.8	6.7	4.6	5.6	7.2	6.2	6.6
9	3.5	2.1	2.7	5.7	5.0	5.4	7.0	5.8	6.4	6.6	5.7	6.1
10	3.4	2.3	2.8	6.1	5.1	5.6	6.6	5.7	6.1	7.4	5.7	6.5
11	3.4	2.2	2.8	6.0	5.4	5.7	6.6	5.5	6.2	6.4	5.6	6.1
12	3.9	2.5	3.2	6.0	5.4	5.8	6.6	5.9	6.3	8.7	6.0	7.1
13	4.6	3.8	4.2	6.0	5.6	5.8	6.2	5.3	5.6	9.7	7.3	8.3
14	5.4	4.4	4.8	6.0	5.4	5.7	6.3	5.0	5.6	9.9	8.4	9.0
15	5.0	4.3	4.6	5.9	5.2	5.6	5.9	5.3	5.7	9.0	7.7	8.4
16	4.5	3.7	4.0	5.4	4.7	5.1	6.3	5.5	5.8	8.1	6.6	7.2
17	4.3	3.5	3.9	5.4	4.6	5.1	6.6	5.7	6.1	7.7	6.3	6.9
18	4.3	3.5	4.0	5.6	4.2	4.9	6.4	5.3	5.8	7.6	5.4	6.4
19	4.9	4.1	4.5	5.0	4.3	4.7	6.9	5.0	5.8	8.7	6.1	7.2
20	4.8	4.3	4.5	6.2	4.8	5.5	6.9	6.2	6.5	9.7	7.4	8.3
21	5.3	4.5	4.9	5.9	4.5	5.1	6.8	6.5	6.6	10.0	8.2	9.0
22	5.3	4.5	4.9	5.3	4.5	4.9	7.2	6.2	6.7	10.8	8.7	9.6
23	4.8	3.8	4.3	5.2	4.3	4.8	6.7	6.2	6.5	11.0	9.4	10.1
24	5.1	4.1	4.5	5.5	4.2	4.9	6.3	4.8	5.3	10.4	9.0	9.9
25	4.2	3.2	3.7	5.6	5.0	5.3	4.8	4.4	4.6	9.1	8.6	8.9
26	3.5	2.5	3.1	5.4	4.6	5.0	5.6	4.1	4.8	10.0	8.2	9.0
27	4.4	3.1	3.7	5.6	4.2	5.0	6.1	4.7	5.4	10.3	8.8	9.5
28	4.0	3.4	3.7	6.1	4.6	5.4	6.8	5.9	6.3	10.6	9.5	10.0
29	---	---	---	6.7	5.3	6.0	6.9	5.8	6.3	10.9	9.6	10.1
30	---	---	---	7.1	5.9	6.5	7.3	5.8	6.4	10.5	9.0	10.0
31	---	---	---	7.0	6.4	6.7	---	---	---	10.3	8.4	9.2
MONTH	5.8	2.0	3.8	7.1	3.4	5.1	7.3	2.5	5.5	11.0	4.8	7.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	10.8	8.9	9.6	13.3	11.1	12.2	14.3	12.4	13.3	12.4	10.3	11.4
2	11.6	9.3	10.2	13.6	10.5	11.8	13.4	11.9	12.5	12.4	10.3	11.4
3	12.3	10.0	10.9	13.6	10.6	12.0	13.0	11.3	12.1	12.1	10.4	11.4
4	12.5	10.5	11.3	13.8	10.8	12.2	13.9	11.1	12.4	14.6	10.6	11.8
5	12.6	10.6	11.4	14.1	11.0	12.4	13.4	11.7	12.6	12.8	10.9	11.9
6	13.0	10.6	11.7	14.4	11.2	12.7	13.4	9.5	12.1	12.5	10.9	11.7
7	13.5	11.2	12.2	14.4	11.4	12.9	13.0	11.0	12.0	11.9	10.9	11.2
8	13.7	11.4	12.3	14.1	11.4	12.7	12.9	10.4	11.6	10.9	9.7	10.2
9	12.9	11.0	11.8	14.4	11.2	12.7	14.4	10.5	12.0	10.1	9.1	9.6
10	12.5	10.0	11.1	14.7	11.6	13.1	13.4	10.8	12.2	10.8	8.8	9.7
11	12.5	9.8	10.9	14.9	11.9	13.4	13.3	11.0	12.2	11.3	9.3	10.2
12	11.9	9.5	10.7	14.8	12.2	13.4	13.0	10.6	11.8	11.2	9.4	10.3
13	12.2	9.6	10.8	14.8	12.1	13.3	13.2	10.5	11.8	10.7	9.1	10
14	12.8	10.1	11.2	14.6	11.6	13.0	13.5	10.9	12.1	10.4	8.6	9.6
15	13.1	10.0	11.4	14.8	11.7	13.2	13.6	11.5	12.5	10.7	9.0	9.9
16	13.9	10.5	12.0	14.8	12.0	13.3	13.4	11.1	12.2	10.4	9.3	9.7
17	14.6	11.3	12.8	14.8	11.8	13.2	13.4	11.0	12.2	9.4	8.0	8.8
18	13.6	11.9	12.6	15.1	12.2	13.5	14.0	11.3	12.6	9.5	7.7	8.6
19	12.3	10.8	11.5	15.4	12.5	13.8	14.4	11.8	13.1	9.8	8.1	8.9
20	11.5	9.8	10.6	15.5	12.6	13.9	14.0	11.4	12.9	10.0	8.3	9.2
21	11.7	9.3	10.3	15.6	12.8	14.1	13.2	11.7	12.3	9.9	8.3	9.2
22	11.6	8.9	10.1	16.2	13.1	14.6	12.3	11.3	11.8	10.2	8.6	9.4
23	10.8	8.8	9.7	16.2	13.6	14.9	12.3	10.5	11.5	10.4	8.7	9.6
24	11.7	8.3	9.8	15.5	13.8	14.6	12.8	10.7	11.7	10.4	8.8	9.6
25	13.0	9.2	10.9	15.4	13.0	14.2	13.0	10.7	11.9	10.2	8.7	9.5
26	13.8	10.3	11.9	15.4	12.8	14.0	12.5	11.0	11.9	10.4	8.6	9.5
27	14.5	11.2	12.6	15.4	12.6	14.0	12.6	10.6	11.8	11.1	9.4	10.2
28	14.6	11.4	12.9	15.4	12.7	14.0	12.9	10.2	11.7	11.2	9.8	10.5
29	14.6	11.6	13.0	15.5	12.8	14.1	12.3	10.6	11.5	10.7	9.4	9.8
30	14.2	11.5	12.8	15.6	13.0	14.2	12.4	10.5	11.5	9.6	8.3	9.0
31	---	---	---	15.1	12.8	14.0	12.2	10.6	11.5	---	---	---
MONTH	14.6	8.3	11.4	16.2	10.5	13.4	14.4	9.5	12.1	14.6	7.7	10.1
YEAR	16.2	2.0	7.4									

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 mi^2. Drainage area at site upstream from Imnaha Creek was used October 1931 to September 1949, 61.3 mi^2; and Imnaha Creek near Prospect, 22.2 mi^2.

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 above NGVD of 1929, from topographic map. Prior to Sept. 10, 1965, at site 1,000 ft upstream at different datum.

REMARKS.--No estimated daily discharges. Records 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 main stem Rogue River upstream from South Fork Rogue River; practically no storage upstream from diversion dam.

AVERAGE DISCHARGE.--59 years (water years 1925-83), 178 ft^3/s, 129,000 acre-ft/yr (includes flow of South Fork power canal). 20 years (water years 1984-2003), 75.4 ft^3/s, 54,590 acre-ft/yr (river only).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 7,010 ft^3/s Dec. 22, 1964, gage height, 11.1 ft, from floodmark, from rating curve extended above 410 ft^3/s on basis of measurement of flow over dam of 3,180 ft^3/s; no flow Jan. 31, 1950, Sept. 29, 30, 1967 (entire flow diverted to canal).

Combined flow, maximum discharge, 7,010 ft^3/s Dec. 22, 1964 (no flow in canal); minimum daily, about 38 ft^3/s Aug. 1-31, 1931.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 985 ft^3/s Mar. 26, gage height, 4.54 ft; minimum discharge, 8.6 ft^3/s Nov. 1.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	14	21	24	260	15	221	60	108	13	12	12
2	11	16	20	20	149	15	172	62	93	13	12	12
3	11	16	20	19	95	16	133	111	88	13	13	12
4	12	16	20	14	65	15	111	173	85	12	12	12
5	12	16	20	13	43	14	96	140	78	12	12	12
6	11	16	19	13	29	15	89	124	68	12	12	12
7	11	17	19	13	22	16	87	111	65	12	12	12
8	11	26	19	12	18	15	98	106	56	12	12	12
9	11	34	19	12	17	16	99	97	44	12	12	13
10	11	35	22	12	17	16	113	95	31	12	12	12
11	11	33	24	12	16	16	205	95	24	12	12	12
12	11	33	22	13	16	16	189	108	19	12	12	12
13	11	32	20	14	17	17	177	106	16	12	12	12
14	12	26	23	14	18	31	158	124	15	12	12	12
15	11	25	25	13	17	42	138	146	14	12	12	27
16	11	24	34	13	17	37	121	127	14	12	12	53
17	11	29	22	12	16	29	130	106	14	12	12	54
18	11	26	18	13	57	21	118	88	14	12	12	43
19	11	24	19	13	17	18	99	77	13	12	12	35
20	11	24	18	12	17	18	97	77	13	12	12	24
21	11	26	19	13	17	26	93	88	13	12	12	13
22	11	25	17	13	18	148	95	111	13	12	12	13
23	11	23	16	13	17	205	100	147	13	12	12	13
24	12	23	16	13	16	121	105	185	13	12	12	13
25	12	23	16	83	16	263	89	168	13	12	12	13
26	12	22	16	87	16	709	78	136	13	12	12	13
27	12	21	35	286	15	369	70	133	13	12	12	13
28	12	21	38	156	15	275	65	143	13	12	12	13
29	12	21	28	80	---	217	64	153	12	12	12	13
30	12	21	34	292	---	187	64	155	12	12	12	13
31	12	---	38	372	---	184	---	125	---	12	12	---
TOTAL	353	708	697	1689	1053	3102	3474	3677	1000	375	373	535
MEAN	11.4	23.6	22.5	54.5	37.6	100	116	119	33.3	12.1	12.0	17.8
MAX	12	35	38	372	260	709	221	185	108	13	13	54
MIN	11	14	16	12	15	14	64	60	12	12	12	12
AC-FT	700	1400	1380	3350	2090	6150	6890	7290	1980	744	740	1060

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

MEAN	23.0	39.8	85.9	91.0	89.2	102	141	164	98.9	26.1	18.6	25.7
MAX	116	161	526	435	323	238	345	347	301	155	121	115
(WY)	1998	1997	1997	1997	1996	1993	1989	1997	1984	1997	1997	1997
MIN	1.85	5.38	3.80	2.87	3.42	9.91	19.9	12.8	5.23	5.30	4.11	1.16
(WY)	1984	1986	1987	1985	1985	1985	1988	1992	1987	1988	1986	1984

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1984 - 2003	
ANNUAL TOTAL	18556		17036			
ANNUAL MEAN	50.8		46.7		75.4	
HIGHEST ANNUAL MEAN					224	1997
LOWEST ANNUAL MEAN					17.6	1987
HIGHEST DAILY MEAN	1090	Apr 14	709	Mar 26	2670	Jan 1 1997
LOWEST DAILY MEAN	11	Sep 28	11	Oct 2	0.22	Oct 7 1984
ANNUAL SEVEN-DAY MINIMUM	11	Oct 6	11	Oct 6	0.23	Oct 2 1984
ANNUAL RUNOFF (AC-FT)	36810		33790		54590	
10 PERCENT EXCEEDS	124		126		205	
50 PERCENT EXCEEDS	20		16		18	
90 PERCENT EXCEEDS	12		12		4.7	

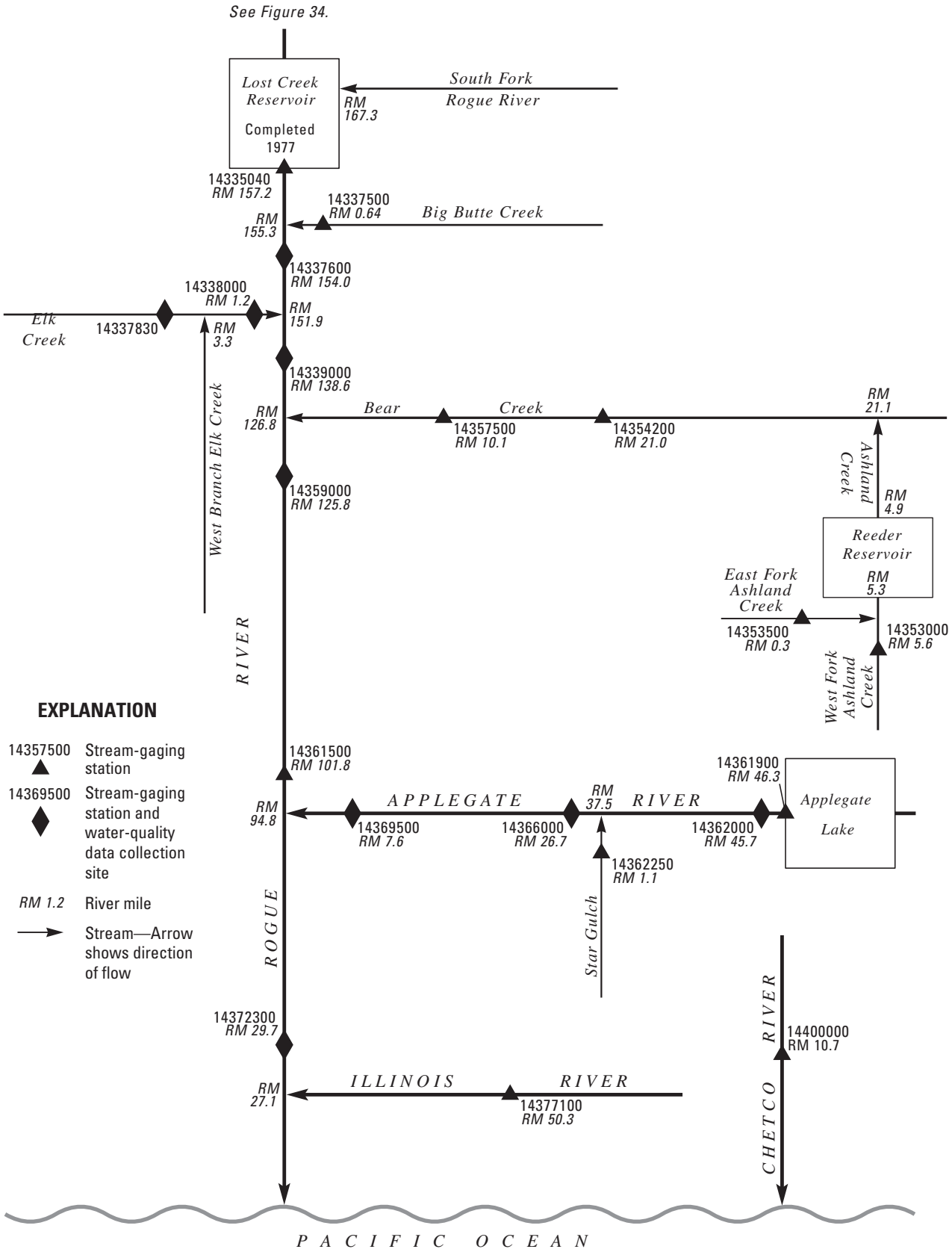


Figure 35. Schematic of surface-water and water-quality stations in the Rogue River Basin, downstream from Lost Creek Reservoir.

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 mi^2.

PERIOD OF RECORD.--February 1977 to current year.

REVISED RECORDS.--WDR OR-85-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is NGVD 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.--Capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 466,500 acre-ft May 22, 2000, elevation, 1,872.43 ft; minimum contents since first filling, 100,800 acre-ft Oct. 29, 1977, elevation, 1,720.50 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 465,100 acre-ft May 4, elevation, 1,872.04 ft; minimum contents, 274,900 acre-ft Nov. 7, elevation, 1,808.25 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 above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1809.97	1808.42	1809.81	1812.10	---	---	---	1871.98	1871.92	1853.78	1840.77	1822.50
2	1809.92	1808.39	1809.80	1812.21	---	---	1862.45	1872.01	1871.82	1853.32	1840.33	1821.76
3	1809.92	1808.36	1809.76	1812.81	---	---	1862.76	1872.00	1871.72	1852.86	1839.98	1821.02
4	1809.92	1808.33	1809.74	1813.45	---	---	1863.04	1871.97	1871.50	1852.39	1839.56	1820.31
5	1809.91	1808.30	1809.72	1814.13	---	---	1863.28	1871.95	1871.24	1851.92	1839.13	1819.57
6	1809.88	1808.26	1809.68	1814.52	---	---	1863.58	1871.98	1870.92	1851.49	1838.71	1818.84
7	1809.83	1808.30	1809.64	1814.76	---	---	1863.89	1871.95	1870.57	1851.11	1838.34	1818.11
8	1809.78	1808.48	1809.58	1814.96	---	---	1864.43	1871.95	1870.13	1850.73	1837.92	1817.41
9	1809.74	1808.84	1809.54	1815.19	---	---	1865.03	1871.92	1869.64	1850.34	1837.49	1816.90
10	1809.68	1809.09	1809.57	1815.52	---	---	1865.01	1871.92	1869.10	1849.95	1837.04	1816.26
11	1809.63	1809.18	1809.61	1815.80	---	---	1865.76	1871.94	1868.43	1849.55	1836.58	1815.54
12	1809.56	1809.31	1809.65	1816.21	---	---	1865.88	1871.94	1867.70	1849.15	1836.11	1814.88
13	1809.50	1809.44	1809.78	1816.80	---	---	1866.24	1871.95	1866.94	1848.73	1835.62	1814.26
14	1809.44	1809.49	1810.15	1817.46	---	---	1866.53	1871.98	1866.15	1848.29	1835.06	1813.71
15	1809.37	1809.54	1810.70	1818.01	---	---	1866.79	1871.98	1865.34	1847.86	1834.40	1813.24
16	1809.30	1809.56	1811.72	1818.45	---	---	1867.14	1871.92	1864.46	1847.48	1833.73	1812.85
17	1809.23	1809.65	1811.93	1818.82	---	---	1867.57	1871.87	1863.56	1847.10	1833.06	1812.51
18	1809.16	1809.71	1811.91	1819.27	---	---	1867.93	1871.84	1862.67	1846.70	1832.38	1812.26
19	1809.10	1809.71	1811.89	1819.74	---	---	1868.25	1871.85	1861.76	1846.31	1831.70	1812.06
20	1809.04	1809.73	1811.84	1820.18	---	---	1868.58	1871.88	1860.87	1845.91	1831.02	1811.94
21	1808.99	1809.77	1811.87	1820.54	---	---	1868.96	1871.95	1860.02	1845.51	1830.33	1811.89
22	1808.94	1809.83	1811.89	1820.86	---	---	1869.32	1871.99	1859.20	1845.10	1829.64	1811.83
23	1808.89	1809.86	1811.88	1821.21	---	---	1869.73	1871.97	1858.42	1844.70	1828.95	1811.78
24	1808.84	1809.89	1811.88	1821.58	---	---	1870.05	1871.98	1857.68	1844.29	1828.26	1811.71
25	1808.78	1809.90	1811.88	1822.79	---	---	1870.21	1871.96	1856.98	1843.87	1827.56	1811.64
26	1808.72	1809.90	1811.91	1823.74	---	---	1870.51	1871.96	1856.34	1843.45	1826.86	1811.58
27	1808.65	1809.87	1812.82	1825.66	---	---	1870.90	1871.93	1855.74	1843.01	1826.15	1811.51
28	1808.60	1809.86	1813.22	---	---	---	1871.27	1871.94	1855.19	1842.56	1825.42	1811.45
29	1808.55	1809.84	1812.88	---	---	---	1871.64	1871.95	1854.67	1842.12	1824.70	1811.39
30	1808.51	1809.83	1812.51	---	---	---	1871.94	1871.97	1854.23	1841.68	1823.96	1811.31
31	1808.46	---	1812.32	---	---	---	---	1871.94	---	1841.22	1823.23	---
MAX	1809.97	1809.90	1813.22	---	---	---	---	1872.01	1871.92	1853.78	1840.77	1822.50
MIN	1808.46	1808.26	1809.54	---	---	---	---	1871.84	1854.23	1841.22	1823.23	1811.31
(†)	275900	279400	285800	---	---	---	464800	464800	406400	366400	315000	283200
(‡)	-3900	+3500	+6400	---	---	---	---	0	-58400	-40000	-51400	-31800

CAL YR 2002 MAX 1871.98 MIN 1804.27 AC-FT‡ +23700
WTR YR 2003 MAX --- MIN --- AC-FT‡ +3400

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

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 mi^2.

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 NGVD of 1929. Oct. 9, 1945, to Sept. 30, 1957, nonrecording gage at site 260 ft downstream at datum 0.53 ft higher.

REMARKS.--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. Continuous water-quality data records for the period October 1973 to September 2000 have been collected at this location.

AVERAGE DISCHARGE.--48 years (water years 1946-57, 1968-2003), 252 ft^3/s, 182,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,950 ft^3/s Dec. 22, 1955, gage height, 12.75 ft, site and datum then in use, from rating curve extended above 3,300 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 6.4 ft^3/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 ft^3/s, from rating curve, at former site, extended above 9,000 ft^3/s and field estimate of overflow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 28	0230	*1,760	*6.41				

Minimum discharge, 27 ft^3/s Nov. 7.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	29	30	366	530	122	606	272	92	54	41	38
2	96	29	30	277	385	112	462	252	89	53	46	36
3	98	31	30	274	308	118	432	338	84	53	44	36
4	104	33	30	220	253	113	478	417	78	51	44	37
5	101	33	30	187	213	104	490	418	75	51	41	38
6	98	30	30	155	187	102	743	385	72	51	42	46
7	96	35	30	130	164	108	625	358	69	50	46	45
8	96	34	30	113	146	102	569	371	65	50	41	49
9	95	67	30	105	131	104	543	367	64	50	39	74
10	96	153	32	100	118	110	538	336	65	49	41	75
11	95	75	35	96	110	102	597	331	66	48	41	48
12	96	52	34	106	105	100	540	369	65	48	40	47
13	96	42	42	124	137	99	486	319	65	49	39	45
14	95	36	78	198	191	187	485	295	65	49	40	43
15	95	31	114	154	183	185	430	272	64	49	40	42
16	95	30	304	127	587	189	388	249	63	49	39	41
17	96	33	148	110	310	169	510	227	62	49	40	43
18	97	32	91	103	304	153	486	206	61	49	39	42
19	96	32	68	97	272	144	417	193	63	48	38	41
20	97	32	59	93	244	154	383	180	68	48	37	94
21	97	32	72	94	217	168	369	169	64	48	39	105
22	97	32	63	100	207	232	351	158	64	46	37	101
23	97	31	52	126	189	291	341	151	64	44	37	101
24	97	32	49	132	175	251	499	143	64	40	38	102
25	97	31	46	211	154	409	426	138	63	41	38	102
26	97	31	47	175	141	855	369	133	62	41	38	102
27	97	30	853	610	132	665	334	119	61	41	39	102
28	97	30	1320	399	122	501	315	111	52	41	39	101
29	47	30	605	289	---	404	298	107	53	40	38	101
30	38	29	656	345	---	339	316	105	53	40	37	102
31	38	---	712	333	---	346	---	100	---	40	37	---
TOTAL	2835	1177	5750	5949	6215	7038	13826	7589	1995	1460	1235	1979
MEAN	91.5	39.2	185	192	222	227	461	245	66.5	47.1	39.8	66.0
MAX	104	153	1320	610	587	855	743	418	92	54	46	105
MIN	38	29	30	93	105	99	298	100	52	40	37	36
AC-FT	5620	2330	11410	11800	12330	13960	27420	15050	3960	2900	2450	3930

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2003, BY WATER YEAR (WY)

MEAN	121	182	385	468	464	473	362	236	134	78.2	66.0	69.4
MAX	330	535	1542	1325	1234	1362	723	492	450	148	121	106
(WY)	1951	1974	1997	1956	1996	1972	1974	1953	1953	1948	1956	1948
MIN	64.4	39.2	58.0	64.2	90.0	92.2	73.4	57.0	42.3	36.7	33.1	43.8
(WY)	1982	2003	1977	1977	2001	1992	1977	1968	2001	1968	2001	1988

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1946 - 2003	
ANNUAL TOTAL	46082		57048			
ANNUAL MEAN	126		156		252	
HIGHEST ANNUAL MEAN					501	1956
LOWEST ANNUAL MEAN					74.7	2001
HIGHEST DAILY MEAN	1320	Dec 28	1320	Dec 28	7190	Jan 22 1972
LOWEST DAILY MEAN	29	Nov 1	29	Nov 1	15	Jun 24 1977
ANNUAL SEVEN-DAY MINIMUM	30	Nov 27	30	Nov 27	30	Jun 23 1977
ANNUAL RUNOFF (AC-FT)	91400		113200		182900	
10 PERCENT EXCEEDS	284		392		566	
50 PERCENT EXCEEDS	85		96		137	
90 PERCENT EXCEEDS	36		36		55	

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 mi^2.

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 NGVD of 1929.

REMARKS.--No estimated daily discharges. Records good. 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.--12 years (water years 1966-77), 2,176 ft^3/s, 1,577,000 acre-ft/yr.
26 years (water years 1978-2003), 2,049 ft^3/s, 1,485,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft^3/s Mar. 3, 1972, gage height, 12.24 ft; minimum discharge, 468 ft^3/s Feb. 18, 1977, result of closure of Lost Creek Dam.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1928, 20.35 ft Dec. 22, 1964, from floodmarks, discharge, 74,300 ft^3/s, from slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,720 ft^3/s Mar. 26, gage height, 5.46 ft; minimum discharge, 820 ft^3/s Mar. 3, 4.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	997	955	933	2670	3140	870	3350	2190	2370	1940	1650	1930
2	988	949	932	1890	2980	852	2820	2230	2410	1940	1650	1920
3	969	926	933	1540	2730	855	2760	2770	2410	1930	1660	1910
4	984	931	935	1430	2000	845	2800	3390	2570	1930	1650	1910
5	991	930	938	1410	1470	839	2700	3250	2590	1930	1640	1910
6	995	926	960	1410	1410	849	2960	2920	2650	1850	1650	1930
7	985	914	950	1410	1220	906	2610	2870	2700	1740	1660	1920
8	988	927	951	1410	1020	916	2220	2810	2790	1740	1640	1930
9	977	970	948	1270	992	910	2270	2710	2790	1740	1630	1950
10	964	1050	938	1070	983	916	2760	2540	2800	1730	1630	1970
11	959	992	940	1060	953	909	3550	2520	2900	1730	1650	1930
12	951	973	949	1060	954	899	3690	2620	2970	1730	1670	1820
13	957	944	963	1140	1010	902	3080	2510	2970	1750	1660	1730
14	993	927	1000	1590	1070	992	2920	2560	2970	1770	1780	1630
15	1010	916	1030	1480	1070	990	2700	2720	2970	1740	1930	1500
16	1010	924	1220	1320	1530	993	2370	2660	3060	1670	1930	1410
17	1010	932	1380	1270	1220	1230	2340	2490	3050	1660	1930	1340
18	997	928	1310	1230	1210	1550	2310	2330	3050	1660	1940	1220
19	1000	921	1190	1210	1150	1540	2140	2180	3050	1650	1930	1150
20	1010	923	1220	1210	1050	1600	2030	2100	2970	1660	1930	1100
21	1020	926	1170	1260	1010	1770	1920	2110	2860	1650	1940	1030
22	1030	930	1120	1360	1000	1850	1900	2280	2780	1650	1940	1010
23	1040	928	1110	1770	955	1920	1940	2580	2690	1650	1940	1010
24	1030	927	1060	1810	959	2640	2490	2760	2600	1640	1940	1010
25	1030	932	1030	1930	948	4120	2490	2820	2480	1640	1930	1010
26	1030	937	1020	2080	925	5690	2080	2640	2360	1640	1930	1010
27	1040	945	2760	3170	923	6230	1760	2600	2280	1660	1920	1010
28	1030	932	4300	3310	908	5390	1740	2600	2180	1650	1930	1010
29	969	936	3490	3470	---	4490	1700	2600	2080	1650	1930	1010
30	943	933	3540	3330	---	3700	1790	2660	1950	1640	1930	1020
31	942	---	3490	2920	---	3020	---	2530	---	1650	1940	---
TOTAL	30839	28184	44710	54490	36790	61183	74190	80550	80300	53610	56080	44240
MEAN	995	939	1442	1758	1314	1974	2473	2598	2677	1729	1809	1475
MAX	1040	1050	4300	3470	3140	6230	3690	3390	3060	1940	1940	1970
MIN	942	914	932	1060	908	839	1700	2100	1950	1640	1630	1010
AC-FT	61170	55900	88680	108100	72970	121400	147200	159800	159300	106300	111200	87750

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2003, BY WATER YEAR (WY)

MEAN	1239	1625	2237	2164	1717	2033	2368	2744	2481	2135	2139	1675
MAX	1905	3544	6464	7584	4131	3557	3821	4024	3755	3447	2921	2195
(WY)	1984	1985	1997	1997	1996	1986	1989	1996	1984	1999	1984	1983
MIN	872	844	964	1038	842	820	823	1578	1492	1123	1761	1290
(WY)	2002	2002	1993	2001	2001	2001	2001	1992	2001	1992	1994	1980

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1978 - 2003	
ANNUAL TOTAL	597574		645166			
ANNUAL MEAN	1637		1768		2049	
HIGHEST ANNUAL MEAN					3224	1997
LOWEST ANNUAL MEAN					1314	1992
HIGHEST DAILY MEAN	6290	Apr 16	6230	Mar 27	16500	Jan 9 1997
LOWEST DAILY MEAN	797	Mar 13	839	Mar 5	730	Feb 4 1981
ANNUAL SEVEN-DAY MINIMUM	821	Mar 10	859	Mar 1	734	Feb 6 1981
ANNUAL RUNOFF (AC-FT)	1185000		1280000		1485000	
10 PERCENT EXCEEDS	2670		2910		3260	
50 PERCENT EXCEEDS	1630		1650		1850	
90 PERCENT EXCEEDS	914		933		985	

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.

REMARKS.--Records good except for the period Oct. 1 to Mar. 10, which are fair.

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, 16.5°C Sept. 14, 1999, but may have been higher during period of missing record Sept. 21-30; minimum, 2.5°C Jan. 10, 1999.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 14.5°C Aug. 17, 24; minimum, 4.6°C Feb. 8.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.9	10.4	11.0	9.6	8.3	8.8	7.9	7.1	7.4	6.7	6.4	6.5
2	11.6	10.0	10.6	9.6	8.3	8.8	7.8	7.1	7.4	6.6	6.3	6.4
3	10.8	9.7	10.3	9.6	8.3	8.9	8.1	7.2	7.7	6.7	6.4	6.5
4	11.9	10.2	10.8	9.7	8.5	8.9	7.8	7.1	7.4	6.8	6.4	6.6
5	12.1	10.5	11.1	9.7	8.7	9.0	7.9	7.4	7.6	6.6	6.0	6.3
6	12.2	10.3	11.0	9.5	8.7	9.0	8.0	7.5	7.7	6.2	5.7	5.9
7	11.9	10.2	10.9	9.5	8.5	9.0	8.0	7.6	7.7	6.1	5.5	5.7
8	11.4	9.9	10.5	9.4	8.7	9.0	7.9	7.4	7.6	6.0	5.4	5.6
9	11.7	10.3	10.7	9.0	8.8	8.9	8.0	7.6	7.7	6.0	5.6	5.8
10	11.8	9.9	10.7	8.9	8.7	8.8	8.0	7.5	7.7	6.1	5.6	5.8
11	11.5	10.0	10.6	9.5	8.7	9.0	8.0	7.6	7.8	6.0	5.7	5.8
12	11.0	9.3	10.1	9.1	8.8	8.9	8.0	7.5	7.7	6.3	5.8	6.0
13	11.0	9.3	10	10.0	8.0	9.2	7.9	7.5	7.7	6.1	5.9	6.0
14	11.2	9.4	10.1	10.0	9.0	9.4	8.0	7.5	7.7	6.2	5.8	6.0
15	11.2	9.6	10.2	9.7	8.9	9.2	7.9	7.4	7.6	6.0	5.6	5.8
16	11.0	9.7	10.1	9.7	8.8	9.1	8.0	7.4	7.7	5.9	5.4	5.6
17	11.1	9.5	10.1	9.6	8.8	9.2	7.8	7.3	7.5	5.8	5.3	5.5
18	10.9	9.6	10.1	9.6	8.7	9.1	7.7	7.3	7.4	5.9	5.2	5.5
19	11.0	9.6	10.2	9.7	8.8	9.2	7.6	7.2	7.4	5.9	5.2	5.5
20	11.0	9.7	10.3	9.3	8.5	8.8	7.8	7.3	7.5	5.9	5.2	5.4
21	11.0	9.7	10.3	9.0	8.3	8.6	7.7	7.2	7.4	5.8	5.3	5.5
22	11.0	9.6	10.2	8.7	8.1	8.4	7.8	7.2	7.4	5.6	5.5	5.6
23	10.7	9.3	9.9	8.8	8.1	8.3	7.5	6.8	7.1	5.7	5.4	5.6
24	10.6	9.5	9.9	8.8	8.0	8.3	7.3	6.8	7.0	5.7	5.4	5.5
25	10.6	9.3	9.8	8.4	7.6	8.0	7.3	6.8	7.0	6.0	5.6	5.8
26	10.4	9.3	9.7	8.4	7.5	7.9	7.1	6.9	7.0	5.8	5.6	5.7
27	10.2	9.2	9.6	8.3	7.8	7.9	7.2	6.7	7.0	6.6	5.7	6.1
28	10.3	9.2	9.6	8.3	7.5	7.8	6.9	6.6	6.7	5.9	5.4	5.6
29	10.2	9.0	9.5	8.2	7.5	7.7	7.0	6.6	6.8	5.8	5.5	5.7
30	10.1	8.9	9.4	8.0	7.4	7.6	6.9	6.6	6.7	6.0	5.7	5.8
31	9.5	8.2	8.9	---	---	---	6.8	6.5	6.7	6.1	5.8	5.9
MONTH	12.2	8.2	10.2	10.0	7.4	8.7	8.1	6.5	7.4	6.8	5.2	5.8

14337600 ROGUE RIVER NEAR MCLEOD, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.3	5.8	6.1	6.5	5.3	5.8	8.4	6.8	7.7	10.1	9.0	9.6
2	6.1	5.5	5.8	6.8	5.1	5.7	7.9	6.8	7.4	10.4	8.5	9.6
3	6.0	5.5	5.7	6.8	5.5	5.9	7.7	7.0	7.3	9.3	8.0	8.9
4	5.8	5.0	5.4	6.2	5.3	5.7	8.0	7.3	7.5	8.9	7.9	8.4
5	5.8	4.8	5.2	6.8	5.6	6.0	7.8	6.8	7.2	9.3	8.0	8.7
6	5.8	4.8	5.2	6.3	5.8	6.0	7.8	7.0	7.4	9.3	8.4	8.9
7	5.8	4.8	5.2	6.4	5.8	6.1	9.1	7.5	8.3	10.0	8.2	8.9
8	5.8	4.6	5.1	7.4	5.8	6.5	9.7	8.2	8.9	10.0	8.2	8.9
9	5.9	4.7	5.2	7.2	6.5	6.8	9.7	8.4	8.9	9.3	8.2	8.7
10	6.0	4.7	5.3	---	6.6	---	9.3	8.6	9.0	10.6	8.7	9.5
11	6.0	4.8	5.3	7.8	6.8	7.2	9.0	7.8	8.5	10.1	9.0	9.5
12	6.2	4.9	5.5	8.0	6.7	7.2	8.7	7.8	8.2	10.1	8.7	9.4
13	5.9	5.5	5.7	7.5	6.8	7.1	8.6	8.0	8.3	10.9	9.5	10.2
14	6.7	5.6	6.0	8.6	6.6	7.5	8.9	7.7	8.3	11.6	9.9	10.6
15	5.8	5.3	5.6	8.4	6.9	7.5	9.0	7.7	8.4	11.7	9.7	10.4
16	6.2	5.5	5.9	7.8	6.7	7.2	9.9	7.7	8.8	11.2	9.2	10.0
17	6.5	5.6	5.9	8.0	6.8	7.1	9.2	8.4	8.8	11.2	9.4	10.3
18	6.5	5.6	6.0	7.8	6.6	7.0	9.6	8.0	8.7	11.2	8.8	10.2
19	6.6	5.6	6.1	7.5	6.6	7.1	9.8	8.3	9.0	11.4	8.8	10.2
20	6.2	5.5	5.8	8.0	6.6	7.1	9.6	8.8	9.3	11.6	10.0	10.9
21	6.7	5.6	6.1	7.5	6.9	7.2	8.9	7.6	8.4	11.7	9.5	10.8
22	6.7	5.3	5.9	7.4	6.9	7.1	9.8	7.6	8.8	12.0	10.4	11.3
23	6.3	5.1	5.6	8.0	6.6	7.1	9.6	8.7	9.0	12.1	9.8	11.1
24	6.6	5.1	5.7	7.4	6.2	6.9	9.1	7.9	8.6	12.3	10.1	11.1
25	6.4	4.9	5.5	7.5	7.0	7.4	9.9	7.5	8.9	12.3	10.2	11.2
26	5.8	4.8	5.3	7.1	6.6	6.9	9.5	7.5	8.6	11.7	9.9	10.8
27	6.4	5.2	5.6	7.5	6.8	7.1	9.8	8.2	9.0	12.4	11.1	11.6
28	5.9	5.1	5.5	7.4	6.9	7.2	9.9	8.6	9.3	12.3	10.3	11.4
29	---	---	---	7.8	7.1	7.5	10.1	8.2	9.1	12.2	10.6	11.5
30	---	---	---	8.1	7.5	7.7	10.2	8.7	9.5	12.8	10.4	11.5
31	---	---	---	8.4	7.5	8.0	---	---	---	12.7	10.2	11.4
MONTH	6.7	4.6	5.6	---	5.1	---	10.2	6.8	8.5	12.8	7.9	10.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.0	10.3	11.5	12.9	10.8	11.9	13.2	11.2	12.4	14.2	12.7	13.4
2	12.7	10.0	11.0	12.8	11.2	12.0	12.8	11.9	12.4	14.2	13.1	13.5
3	12.1	9.8	11.0	12.8	10.6	11.8	13.6	11.1	12.4	14.2	12.6	13.5
4	12.3	10.0	11.0	13.1	10.8	12.0	14.2	11.7	12.9	14.2	13.2	13.6
5	11.9	10.7	11.3	12.8	10.4	11.8	13.7	11.4	12.8	14.0	12.8	13.4
6	12.2	10.6	11.4	13.1	10.6	11.9	13.8	11.7	12.9	13.6	12.5	13.0
7	12.6	10.2	11.5	13.3	10.8	12.1	14.0	12.3	13.1	13.2	12.4	12.7
8	12.5	10.6	11.7	13.2	10.6	12.0	14.2	12.1	13.1	13.0	12.1	12.4
9	12.3	11.1	11.7	13.3	11.2	12.2	14.4	12.3	13.4	12.8	12.0	12.3
10	11.7	10.0	11.1	13.2	10.9	12.1	14.2	12.5	13.4	13.0	12.0	12.3
11	11.6	9.9	10.9	13.4	10.6	12.2	14.4	12.6	13.5	13.2	12.0	12.5
12	11.5	9.9	10.9	13.3	10.8	12.0	14.2	12.5	13.4	13.2	12.1	12.5
13	11.8	10.0	10.9	12.9	10.9	12.0	14.1	12.2	13.4	13.2	11.9	12.4
14	11.9	10.0	11.0	13.0	10.5	12.0	14.3	12.4	13.4	13.3	12.0	12.5
15	11.8	10.2	11.2	13.0	10.5	11.9	14.4	12.6	13.5	13.1	11.9	12.3
16	12.0	10.2	11.4	13.0	10.2	11.8	14.4	12.4	13.6	12.6	11.6	11.9
17	12.5	10.7	11.7	12.9	10.1	11.6	14.5	12.6	13.7	12.9	11.4	12.0
18	12.1	10.6	11.4	12.5	9.5	11.2	14.2	12.2	13.7	12.9	11.4	12.0
19	12.3	10.4	11.5	11.8	9.3	10.9	14.0	12.2	13.2	12.9	11.2	11.9
20	12.0	10.9	11.4	11.9	8.9	10.9	14.0	12.3	13.2	12.3	10.5	11.3
21	12.0	10.7	11.4	12.1	9.5	11.1	13.6	12.4	13.2	11.6	9.9	10.6
22	12.3	10.9	11.6	12.2	9.5	11.2	13.9	12.5	13.3	10.8	9.3	10
23	11.9	10.7	11.3	12.1	9.6	11.3	14.3	12.4	13.5	10.9	9.0	9.6
24	12.0	10.6	11.3	11.9	9.9	11.4	14.5	13.0	13.7	10.6	8.9	9.5
25	12.2	10.2	11.4	12.3	10.1	11.6	14.0	12.9	13.5	10.4	8.9	9.4
26	12.7	10.6	11.7	12.5	9.9	11.8	14.0	12.4	13.3	10.4	8.6	9.3
27	12.9	10.8	11.9	12.9	10.5	11.9	14.4	12.7	13.4	10.7	8.8	9.5
28	12.9	10.9	11.8	13.0	10.5	12.1	14.4	12.6	13.6	10.7	8.9	9.6
29	13.0	11.2	11.9	13.1	10.9	12.2	14.1	12.6	13.4	10.2	8.8	9.3
30	13.3	11.1	12.1	13.3	10.7	12.3	14.2	12.8	13.5	10.0	8.4	9.0
31	---	---	---	13.4	11.0	12.5	14.1	12.9	13.5	---	---	---
MONTH	13.3	9.8	11.4	13.4	8.9	11.8	14.5	11.1	13.3	14.2	8.4	11.6

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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1986 to September 2003 (discontinued), (operated as a low-flow station only).

GAGE.--Water-stage recorder. Elevation of gage is 1,680 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair. No regulation. Some diversions upstream from station for irrigation. Operated as a low-flow station only. Discharges above 440 ft^3/s not published. U.S. Geological Survey satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Minimum discharge recorded, 0.54 ft^3/s Sept. 23, 1992, but may have been less during period of estimated discharge during that year.

EXTREMES FOR CURRENT YEAR.--Minimum discharge, 2.2 ft^3/s Sept. 4, 5.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	5.7	e10	---	---	121	---	187	51	14	4.0	3.1
2	6.3	5.8	e9.7	---	---	107	---	168	46	14	4.0	3.1
3	5.7	6.4	e9.3	---	---	110	---	207	46	12	6.7	2.7
4	7.3	6.4	9.2	---	350	111	---	---	43	11	27	2.5
5	6.3	6.6	8.8	---	287	104	---	---	40	14	11	2.7
6	5.0	6.7	9.2	---	235	122	---	395	43	11	9.7	3.7
7	4.4	9.0	8.4	361	207	217	---	300	36	11	19	4.0
8	4.2	34	8.0	292	162	275	---	237	39	11	10	4.8
9	3.9	145	8.6	246	138	263	---	203	30	17	7.0	15
10	3.7	169	11	205	123	334	---	187	34	13	7.0	20
11	3.5	138	16	177	109	323	---	188	28	10	6.5	10
12	3.9	121	22	177	97	288	---	183	26	9.1	5.0	7.5
13	4.2	100	69	229	107	260	---	173	27	10	5.0	6.5
14	3.9	51	---	382	117	---	379	152	25	9.4	5.0	6.5
15	3.9	40	---	350	118	---	334	142	26	8.1	4.4	5.9
16	3.7	31	---	272	---	---	279	120	23	9.6	3.9	5.1
17	3.7	37	---	223	---	---	255	110	22	11	4.3	6.1
18	3.5	33	217	207	---	345	229	100	22	12	4.3	6.3
19	3.6	27	138	186	415	293	203	91	23	11	3.8	5.4
20	3.7	23	114	162	372	287	180	93	23	9.0	4.0	5.2
21	4.4	22	320	144	334	---	173	83	21	7.0	3.7	4.7
22	4.5	20	281	144	320	---	169	81	24	8.9	3.7	4.8
23	4.6	19	167	226	293	---	168	79	21	6.8	3.8	4.6
24	4.7	19	114	---	253	---	---	73	19	5.2	4.3	4.9
25	4.9	18	83	---	203	---	---	72	18	5.0	4.3	3.9
26	5.3	16	92	---	171	---	370	70	23	4.7	3.4	4.0
27	5.5	e14	---	---	147	---	332	62	21	6.6	3.4	3.8
28	5.7	e13	---	---	128	---	307	58	16	6.1	3.5	4.1
29	5.7	e12	---	---	---	---	269	62	18	4.3	3.2	3.8
30	5.6	e11	---	---	---	355	224	55	15	3.9	3.1	4.2
31	5.5	---	---	---	---	---	---	58	---	4.3	3.1	---
TOTAL	146.5	1159.6	---	---	---	---	---	---	849	290.0	191.1	168.9
MEAN	4.73	38.7	---	---	---	---	---	---	28.3	9.35	6.16	5.63
MAX	7.3	169	---	---	---	---	---	---	51	17	27	20
MIN	3.5	5.7	---	---	---	---	---	---	15	3.9	3.1	2.5
AC-FT	291	2300	---	---	---	---	---	---	1680	575	379	335
CFSM	0.04	0.35	---	---	---	---	---	---	0.25	0.08	0.06	0.05
IN.	0.05	0.39	---	---	---	---	---	---	0.28	0.10	0.06	0.06

e Estimated

14337830 ELK CREEK BELOW ALCO CREEK, NEAR TRAIL, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: April 1986 to September 2003 (discontinued).
TURBIDITY: October 2000 to September 2003 (discontinued).

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Water temperature records good. Available turbidity records fair. The probe was checked using a polymer bead standard.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum recorded, 31.5°C June 22, 1992, but may have been higher during period of missing record in August 1992; minimum, 0.0°C at times during most winter periods.
TURBIDITY: Maximum, >100 NTU many days during 2002 water year; minimum, <1 NTU many days most years.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 30.4°C July 29; minimum, 1.3°C Nov. 2.
TURBIDITY: Maximum recorded, 90 NTU Mar. 9; minimum, <1 many days during the year.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.4	10.8	13.0	6.5	1.6	3.8	---	---	---	7.0	6.7	6.8
2	15.6	9.2	12.1	6.4	1.3	3.6	---	---	---	7.4	6.5	7.0
3	12.6	9.9	11.4	7.6	2.2	4.6	---	---	---	8.0	7.2	7.6
4	16.3	11.7	13.5	7.8	2.9	5.1	5.7	2.9	4.2	8.2	7.5	7.8
5	18.2	12.9	15.0	8.7	3.6	5.8	5.5	3.4	4.4	7.5	6.3	6.8
6	18.8	12.5	15.1	8.1	4.5	6.3	6.3	3.6	4.6	6.4	5.5	6.0
7	18.6	12.1	15.0	9.1	7.3	8.2	5.5	2.5	3.6	6.0	5.1	5.6
8	17.9	11.5	14.4	8.6	7.9	8.2	4.1	1.8	2.9	5.4	4.5	5.0
9	17.4	11.1	13.9	7.9	6.8	7.2	5.3	3.0	4.1	5.8	4.6	5.2
10	14.4	10.2	12.2	7.2	6.3	6.8	5.7	4.9	5.3	6.0	4.9	5.5
11	14.0	8.1	11.0	8.7	7.2	7.9	5.9	5.2	5.6	6.5	5.8	6.1
12	14.4	7.5	10.6	8.9	7.8	8.4	7.0	5.4	6.2	7.5	6.5	6.9
13	14.4	7.5	10.7	8.6	7.6	8.2	7.4	6.6	7.0	7.4	6.9	7.2
14	14.6	7.9	10.9	9.8	7.9	8.6	8.2	7.3	7.8	7.7	7.1	7.3
15	15.0	8.2	11.3	8.5	6.7	7.5	8.0	7.2	7.5	7.3	6.0	6.6
16	15.2	8.6	11.7	7.1	5.4	6.4	8.1	7.4	7.8	6.6	5.2	5.9
17	15.3	9.1	12.0	8.6	6.9	7.6	7.4	6.5	7.0	6.4	5.0	5.7
18	14.3	9.5	11.9	7.6	5.7	6.8	6.6	6.0	6.3	6.7	5.3	6.0
19	14.9	9.2	11.9	9.4	7.1	8.0	6.1	5.3	5.6	6.4	5.2	5.9
20	14.5	9.8	12.0	9.1	6.5	7.7	6.0	5.3	5.6	6.0	5.0	5.5
21	14.5	9.2	11.7	8.3	6.7	7.4	6.7	5.6	6.1	7.0	5.4	6.2
22	14.2	8.8	11.3	7.8	6.3	7.1	7.0	6.1	6.5	7.3	6.3	6.8
23	13.5	8.1	10.6	8.8	6.5	7.3	6.2	4.8	5.5	7.8	7.0	7.3
24	12.5	7.9	10.1	8.8	7.0	7.7	5.3	4.4	4.9	7.6	6.8	7.1
25	12.4	7.2	9.7	---	---	---	5.6	4.4	5.0	8.8	7.6	8.2
26	11.5	7.0	9.1	---	---	---	6.2	5.5	5.8	8.9	8.4	8.6
27	9.8	6.1	8.2	---	---	---	7.3	6.1	6.7	8.7	7.5	8.4
28	11.6	7.1	9.2	---	---	---	7.2	6.4	6.8	7.7	6.7	7.2
29	10.2	6.7	8.1	---	---	---	7.0	6.4	6.7	7.7	6.8	7.2
30	9.2	4.5	6.6	---	---	---	7.2	6.5	6.7	8.7	7.7	8.2
31	7.4	2.5	4.8	---	---	---	7.3	6.7	7.0	9.6	8.6	9.0
MONTH	18.8	2.5	11.3	---	---	---	---	---	---	9.6	4.5	6.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.1	7.4	8.1	7.5	5.3	6.2	8.8	7.0	7.8	12.1	6.6	9.2
2	8.1	6.8	7.4	7.1	4.3	5.9	7.3	6.1	6.6	11.2	8.6	10.0
3	7.1	5.8	6.4	7.7	5.7	6.6	7.4	5.6	6.4	10.3	8.5	9.3
4	6.4	5.0	5.6	6.7	4.6	5.7	7.0	5.2	6.1	9.5	7.5	8.3
5	5.8	4.2	5.0	8.1	5.5	6.7	7.0	5.7	6.3	10.2	6.4	8.0
6	5.6	4.0	4.8	7.3	6.3	6.6	6.8	5.0	6.0	9.9	6.5	8.2
7	5.1	3.3	4.3	7.1	6.0	6.5	9.7	6.3	7.7	10.9	7.6	8.9
8	5.0	3.0	4.0	8.5	6.1	7.2	10.3	6.2	7.9	9.5	7.1	8.2
9	5.2	3.0	4.1	8.6	6.8	7.7	10.3	7.3	8.6	9.1	6.8	7.9
10	5.2	3.1	4.2	9.5	7.6	8.4	10.3	7.4	8.7	11.4	6.8	8.7
11	5.3	3.0	4.3	8.9	7.4	8.1	10.0	6.9	8.3	9.3	7.2	8.3
12	6.0	3.6	4.8	9.1	7.3	8.2	9.2	7.5	8.3	13.3	8.1	10.4
13	6.8	5.7	6.2	8.5	7.7	8.1	8.1	6.7	7.4	14.6	8.3	11.4
14	8.3	6.5	7.3	9.1	7.2	8.1	9.9	6.5	7.7	14.8	9.8	12.3
15	7.3	5.8	6.5	8.4	7.4	8.0	8.7	6.5	7.5	12.9	10.0	11.3
16	7.1	6.3	6.8	8.6	6.8	7.5	9.6	6.7	8.1	12.5	7.4	9.8
17	7.7	6.6	7.0	8.3	6.1	7.0	9.8	7.3	8.3	11.5	7.1	9.2
18	7.7	6.3	7.0	8.6	5.2	6.7	9.9	6.4	7.9	11.8	6.0	9.0
19	8.2	6.8	7.3	7.3	5.5	6.5	10.9	5.3	8.0	13.3	6.7	10.1
20	7.3	6.2	6.8	9.0	6.8	7.7	9.7	7.3	8.6	14.5	8.6	11.6
21	8.0	6.8	7.4	7.7	6.7	7.2	8.9	7.6	8.2	15.2	9.9	12.7
22	7.9	6.2	7.1	8.3	7.0	7.7	10.9	7.5	8.8	17.0	11.0	14.0
23	7.2	5.2	6.2	8.4	6.3	7.1	9.4	7.3	8.4	18.1	11.8	15.0
24	8.0	5.8	6.7	8.6	5.3	6.9	8.5	6.2	7.2	16.5	13.5	15.2
25	6.8	4.5	5.7	7.7	7.1	7.4	7.9	5.9	6.7	15.2	13.3	14.2
26	5.8	3.7	4.9	7.9	6.9	7.6	8.6	6.1	7.1	17.3	12.0	14.5
27	7.1	4.8	5.8	8.6	6.2	7.2	8.8	6.4	7.7	17.4	12.0	14.8
28	6.0	4.2	5.2	9.6	6.0	7.6	10	7.4	8.5	18.1	13.6	15.8
29	---	---	---	10.4	6.6	8.3	9.7	7.2	8.5	18.5	13.9	16.3
30	---	---	---	11.3	7.3	9.2	11.2	7.4	9.0	18.3	15.0	16.3
31	---	---	---	10.7	8.5	9.5	---	---	---	18.4	13.2	15.6
MONTH	9.1	3.0	6.0	11.3	4.3	7.4	11.2	5.0	7.7	18.5	6.0	11.4

14337830 ELK CREEK BELOW ALCO CREEK, NEAR TRAIL, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.6	12.3	15.4	23.0	17.1	19.9	25.7	20.8	23.4	25.2	18.1	21.5
2	19.6	13.3	16.4	23.9	16.1	19.8	23.6	21.4	22.2	25.8	18.8	22.1
3	20.5	13.9	17.1	24.2	16.1	20.0	25.2	20.3	22.3	24.4	19.4	22.2
4	21.2	14.7	17.9	24.7	16.4	20.5	25.9	19.4	22.3	24.5	19.4	22.0
5	22.0	15.3	18.7	24.8	16.9	20.8	25.0	19.7	22.1	25.3	19.9	22.5
6	22.8	16.1	19.4	25.4	17.3	21.3	25.4	19.3	21.9	24.9	18.7	21.7
7	23.2	17.0	20.0	25.4	17.6	21.4	24.8	19.1	21.7	21.9	18.8	20.3
8	23.4	17.2	20.2	24.7	16.9	20.9	25.2	18.4	21.6	19.6	16.3	18.0
9	22.0	16.3	19.0	26.0	17.6	21.8	25.6	19.0	22.0	17.8	15.7	16.8
10	21.2	14.7	17.7	26.5	18.7	22.6	24.8	18.6	21.5	19.3	14.2	16.4
11	21.0	14.4	17.4	26.7	19.2	22.9	24.6	18.5	21.3	20.8	14.7	17.6
12	19.5	14.0	16.8	26.3	19.4	22.8	24.6	17.4	20.7	21.0	15.9	18.2
13	20.5	14.6	17.2	25.7	19.6	22.6	25.2	17.6	21.1	20.2	14.4	17.2
14	21.1	14.2	17.3	26.4	18.5	22.3	25.6	18.0	21.6	20.4	14.3	17.1
15	21.5	14.4	17.8	26.7	19.1	22.7	25.3	18.6	21.8	20.9	15.4	17.7
16	23.1	15.2	18.9	26.5	18.9	22.5	25.2	17.9	21.4	17.4	14.8	16.0
17	24.2	17.0	20.2	26.8	18.6	22.5	25.6	17.9	21.6	18.0	12.6	15.1
18	21.1	17.2	19.0	27.5	19.6	23.4	26.5	19.1	22.5	18.3	12.4	15.2
19	19.1	15.6	17.3	27.9	20.1	23.7	26.1	19.5	22.6	19.3	13.5	16.1
20	19.1	14.6	16.5	27.9	19.8	23.6	26.1	18.5	22.1	19.9	13.8	16.6
21	19.5	14.5	16.7	29.1	21.0	24.8	23.7	19.1	21.5	20.3	13.9	16.9
22	20.0	13.3	16.5	30.1	22.1	25.7	23.3	19.8	21.4	20.6	14.3	17.3
23	17.4	13.8	15.3	29.0	22.3	25.3	24.4	17.5	20.7	21.0	14.7	17.7
24	20.3	12.2	16.0	27.0	21.2	23.7	25.2	17.8	21.2	21.2	14.9	17.8
25	22.4	14.2	18.0	28.2	20.1	23.6	25.4	18.0	21.4	21.0	14.6	17.6
26	24.1	15.7	19.7	28.4	20.1	24.0	23.6	18.4	21.1	21.4	14.8	17.9
27	25.4	17.3	21.2	29.2	20.6	24.6	24.6	17.8	21.0	22.6	16.1	19.1
28	25.9	17.6	21.7	29.4	21.2	25.1	24.0	18.2	21.1	22.6	16.9	19.6
29	25.8	18.8	22.2	30.4	21.4	25.6	24.5	18.0	21.1	19.5	16.1	17.3
30	25.3	18.1	21.4	30.1	21.7	25.6	25.0	18.2	21.4	19.0	13.1	15.9
31	---	---	---	29.3	21.1	25.0	24.6	18.6	21.5	---	---	---
MONTH	25.9	12.2	18.3	30.4	16.1	22.9	26.5	17.4	21.6	25.8	12.4	18.2

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

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

14337830 ELK CREEK BELOW ALCO CREEK, NEAR TRAIL, OR--Continued

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	22	5	6	---	---	---	1	<1	<1
2	---	---	---	47	5	19	---	---	---	1	<1	1
3	---	---	---	56	11	26	---	---	---	2	<1	1
4	---	---	---	45	7	16	7	4	6	4	2	2
5	---	---	---	51	6	18	6	4	5	6	3	4
6	---	---	---	61	11	35	6	3	5	3	2	2
7	---	---	---	19	10	11	5	3	5	2	1	2
8	---	---	---	45	9	13	5	4	4	2	1	2
9	---	---	---	90	14	26	5	3	4	2	1	1
10	---	---	---	48	12	15	5	3	4	2	1	1
11	---	---	---	64	30	38	4	3	4	2	1	2
12	---	---	---	---	---	---	4	3	3	3	1	2
13	8	4	5	---	---	---	4	3	3	---	---	---
14	5	4	4	---	---	---	4	2	3	9	6	7
15	5	2	3	15	11	13	4	3	3	6	5	6
16	17	4	8	18	9	11	3	2	3	5	4	5
17	9	5	6	27	8	17	3	2	2	5	4	4
18	6	4	5	20	8	10	3	1	2	7	4	4
19	5	4	4	31	7	8	2	2	2	6	4	4
20	5	3	4	12	6	7	2	1	2	6	4	5
21	6	3	3	16	10	13	2	1	1	5	3	4
22	6	3	4	18	13	14	2	<1	1	5	3	4
23	11	4	6	21	9	12	2	<1	1	6	3	4
24	16	4	6	---	---	---	8	1	6	6	3	4
25	15	4	6	---	---	---	8	2	5	4	3	3
26	8	6	6	---	---	---	4	<1	2	3	2	2
27	10	6	7	50	18	41	2	<1	1	4	2	3
28	11	6	8	72	15	19	2	<1	<1	4	2	3
29	---	---	---	87	30	52	2	<1	1	4	2	3
30	---	---	---	---	---	---	1	<1	<1	3	2	2
31	---	---	---	---	---	---	---	---	---	3	2	2
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	4	2	2	---	---	---	---	---	---	---	---	---
2	3	2	2	---	---	---	---	---	---	---	---	---
3	4	2	3	---	---	---	---	---	---	---	---	---
4	4	2	3	---	---	---	---	---	---	---	---	---
5	5	2	3	---	---	---	---	---	---	---	---	---
6	5	2	3	---	---	---	---	---	---	---	---	---
7	4	2	3	---	---	---	---	---	---	---	---	---
8	3	1	2	---	---	---	---	---	---	---	---	---
9	4	1	2	---	---	---	4	<1	<1	---	---	---
10	3	1	2	---	---	---	3	<1	<1	10	<1	2
11	8	2	3	---	---	---	1	<1	<1	---	---	---
12	19	4	6	---	---	---	2	<1	<1	---	---	---
13	28	5	10	---	---	---	1	<1	<1	5	<1	<1
14	25	9	15	---	---	---	1	<1	<1	---	---	---
15	23	6	9	---	---	---	2	<1	<1	---	---	---
16	24	8	15	---	---	---	2	<1	<1	8	<1	1
17	17	4	8	---	---	---	1	<1	<1	3	<1	1
18	---	---	---	---	---	---	4	<1	<1	2	<1	1
19	9	5	6	---	---	---	6	<1	<1	6	<1	1
20	34	5	8	---	---	---	5	<1	1	4	<1	2
21	34	5	7	---	---	---	8	1	2	2	<1	2
22	30	7	12	---	---	---	11	2	3	2	<1	1
23	44	6	14	---	---	---	16	1	4	3	<1	1
24	17	7	11	---	---	---	9	1	3	3	<1	1
25	---	---	---	---	---	---	6	<1	2	2	<1	1
26	70	17	24	---	---	---	---	---	---	2	<1	1
27	---	---	---	---	---	---	---	---	---	2	<1	1
28	---	---	---	---	---	---	---	---	---	3	<1	2
29	---	---	---	---	---	---	---	---	---	4	2	3
30	---	---	---	---	---	---	---	---	---	3	<1	2
31	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

14338000 ELK CREEK NEAR TRAIL, OR

LOCATION.--Lat 42°40'44", long 122°44'27", in NE 1/4 NW 1/4 sec.30, T.33 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on right bank 4.5 mi northeast of Trail and at mile 1.5.

DRAINAGE AREA.--129 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year. Prior to March 1946 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WDR OR-89-2: Drainage area. WDR OR-92-1: 1989(M), 1990(M), 1991(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,493.91 ft above NGVD 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 0.5 mi downstream at datum 25.21 ft lower, May 24, 1954, to Sept. 30, 1988 at site 0.8 mi downstream at datum 37.35 ft lower.

REMARKS.--No estimated daily discharges. Records good. Diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--57 years (water years 1947-2003), 216 ft^3/s, 156,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,200 ft^3/s Dec. 22, 1964, gage height, 18.84 ft, from rating curve extended above 4,700 ft^3/s on basis of slope-area measurement of peak flow, site and datum then in use; minimum discharge, 0.01 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 27	1800	*4,120	*8.84	No other peak greater than base discharge.			

Minimum discharge, 0.60 ft^3/s Oct. 14.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	4.8	15	1060	686	126	610	230	54	14	3.9	4.9
2	5.8	5.0	15	737	633	113	553	202	51	14	4.5	4.7
3	5.1	5.1	14	1070	495	113	473	248	48	14	6.8	4.3
4	6.5	5.2	12	919	378	114	478	403	45	13	24	4.3
5	7.4	5.1	14	690	297	109	589	535	42	13	13	4.3
6	6.2	5.0	14	451	241	119	683	439	39	12	11	5.5
7	5.3	5.1	13	353	199	207	785	339	38	12	16	6.2
8	4.9	25	13	296	168	265	844	288	36	11	13	7.0
9	4.6	135	13	249	144	256	842	252	34	11	10	14
10	4.4	178	15	206	125	329	699	224	32	10	9.5	23
11	4.3	153	20	174	114	329	660	215	31	9.3	8.9	12
12	4.2	122	26	168	104	288	537	215	30	9.0	7.9	9.3
13	4.5	124	73	214	108	256	461	195	30	9.4	7.9	8.0
14	4.4	69	178	375	120	526	422	178	29	9.7	7.8	7.0
15	4.3	47	422	363	121	776	371	161	28	8.3	7.1	6.3
16	4.1	37	1320	282	552	724	319	143	26	8.3	6.8	6.1
17	4.0	40	464	226	527	508	292	129	24	8.9	6.7	7.4
18	3.8	39	234	206	474	375	265	117	23	8.4	6.9	7.8
19	3.8	32	147	183	453	310	235	108	25	7.8	6.1	6.8
20	3.9	28	118	159	407	303	214	101	25	7.2	5.7	6.2
21	4.1	26	316	141	353	352	206	95	23	6.8	5.7	5.8
22	4.3	24	287	136	336	585	200	92	23	6.4	5.8	5.6
23	4.3	22	176	222	305	858	203	88	22	6.0	5.9	5.3
24	4.4	21	123	230	261	618	385	85	21	5.6	6.0	5.0
25	4.3	22	94	590	215	602	503	83	20	5.6	6.0	4.7
26	4.4	20	88	496	180	1260	445	79	18	5.3	5.5	4.6
27	4.6	18	1940	862	153	1030	394	72	16	5.3	5.1	4.4
28	4.7	17	2650	917	134	746	357	68	16	5.1	5.2	4.2
29	4.8	16	1430	536	---	504	313	65	15	4.6	5.2	4.4
30	4.8	16	1280	573	---	378	270	63	15	4.1	4.9	4.8
31	4.8	---	1880	625	---	323	---	59	---	3.9	4.8	---
TOTAL	145.6	1266.3	13404	13709	8283	13402	13608	5571	879	269.0	243.6	203.9
MEAN	4.70	42.2	432	442	296	432	454	180	29.3	8.68	7.86	6.80
MAX	7.4	178	2650	1070	686	1260	844	535	54	14	24	23
MIN	3.8	4.8	12	136	104	109	200	59	15	3.9	3.9	4.2
AC-FT	289	2510	26590	27190	16430	26580	26990	11050	1740	534	483	404

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2003, BY WATER YEAR (WY)

MEAN	29.4	179	436	515	500	414	285	162	58.4	14.6	6.42	7.02
MAX	404	1008	1851	1283	1131	1074	565	358	254	36.1	25.1	43.7
(WY)	1951	1974	1965	1965	1958	1972	1956	1975	1953	1953	1976	1986
MIN	3.17	8.92	13.1	19.8	23.1	45.4	65.8	21.6	7.42	1.39	0.21	0.60
(WY)	1953	1994	1977	1977	1977	1992	1968	1992	1992	1994	1994	1992

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1947 - 2003	
ANNUAL TOTAL	59142.61		70984.4			
ANNUAL MEAN	162		194		216	
HIGHEST ANNUAL MEAN					438	1974
LOWEST ANNUAL MEAN					38.4	2001
HIGHEST DAILY MEAN	2650	Dec 28	2650	Dec 28	12200	Dec 22 1964
LOWEST DAILY MEAN	0.74	Aug 18	3.8	Oct 18	0.12	Sep 1 1994
ANNUAL SEVEN-DAY MINIMUM	1.0	Aug 16	4.0	Oct 15	0.12	Sep 1 1994
ANNUAL RUNOFF (AC-FT)	117300		140800		156600	
10 PERCENT EXCEEDS	412		552		547	
50 PERCENT EXCEEDS	33		40		66	
90 PERCENT EXCEEDS	2.3		4.8		4.6	

14338000 ELK CREEK NEAR TRAIL, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--June 1973 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: June 1973 to current year.
TURBIDITY: October 1999 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Water-temperature records good. Turbidity records good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 33.0°C Aug. 24, 1999; minimum, 0.0°C at times during most winter periods.
TURBIDITY: Maximum recorded, 100 NTU Jan. 10, 2000 but may have been higher during periods of missing record; minimum recorded, <1 NTU many times during most years.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 29.8°C July 29; minimum, 2.9°C Nov. 3, Dec. 8, Feb. 8.
TURBIDITY: Maximum recorded, 96 NTU Dec.27, but may have been higher during periods of missing record; minimum recorded, <1 NTU many times during the year.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.8	13.6	14.7	7.1	4.1	5.0	4.5	3.7	4.0	7.3	6.9	7.1
2	15.7	12.3	13.7	5.7	3.0	4.0	4.2	3.2	3.6	7.8	6.8	7.3
3	13.3	11.9	12.6	5.7	2.9	4.0	4.1	3.2	3.5	8.5	7.5	8.0
4	14.4	12.0	13.1	5.9	3.3	4.3	4.8	3.3	4.0	8.6	8.0	8.2
5	16.4	13.2	14.7	6.9	3.8	4.9	5.1	4.2	4.6	8.1	6.7	7.2
6	16.9	13.9	15.3	6.0	4.6	5.1	5.5	4.3	4.7	6.7	5.6	6.2
7	17.0	13.8	15.4	7.1	5.2	6.1	4.8	3.7	4.2	6.4	5.2	5.9
8	16.5	13.3	14.9	7.9	6.7	7.5	3.7	2.9	3.3	5.8	4.7	5.4
9	16.2	13.0	14.5	7.8	6.4	7.1	4.8	3.1	3.8	6.2	4.9	5.5
10	15.3	12.4	13.5	6.7	5.9	6.3	5.5	4.8	5.1	6.3	5.3	5.9
11	15.3	11.1	12.7	8.1	6.7	7.3	5.9	5.3	5.6	7.0	6.2	6.6
12	15.1	10.3	12.2	8.6	7.6	8.1	7.0	5.9	6.3	8.1	7.0	7.5
13	13.8	9.8	11.5	8.5	7.7	8.1	7.6	6.9	7.2	8.1	7.6	7.8
14	14.1	9.7	11.4	9.2	7.9	8.5	8.5	7.6	8.0	8.4	7.8	8.0
15	13.4	9.7	11.5	8.5	7.3	7.8	8.3	7.6	7.9	8.0	6.8	7.3
16	13.8	9.8	11.6	7.6	6.0	6.5	8.3	7.8	8.1	7.3	5.9	6.6
17	14.1	10.1	11.8	8.1	6.7	7.4	7.8	6.9	7.4	7.0	5.4	6.2
18	13.2	10.4	11.8	7.4	6.1	6.7	6.9	6.3	6.6	7.4	5.7	6.5
19	13.5	10.1	11.7	8.3	7.1	7.7	6.5	5.6	5.9	7.2	5.9	6.5
20	13.4	10.5	11.8	8.1	7.2	7.8	6.2	5.5	5.8	6.8	5.6	6.1
21	13.2	10.0	11.5	7.9	7.4	7.6	7.0	5.8	6.4	7.6	5.9	6.7
22	13.2	9.8	11.3	7.5	7.0	7.2	7.2	6.3	6.7	7.9	7.0	7.4
23	12.8	9.5	10.9	7.7	6.9	7.3	6.7	5.3	6.0	8.9	7.8	8.2
24	11.7	9.2	10.4	8.1	7.4	7.7	5.5	4.7	5.1	8.3	7.5	7.9
25	11.8	8.8	10.0	7.8	6.1	6.9	5.8	4.7	5.2	9.6	8.2	8.8
26	10.9	8.5	9.5	6.1	4.6	5.2	6.5	5.8	6.1	9.6	9.0	9.3
27	10	7.8	8.7	4.6	3.8	4.3	7.7	6.4	7.0	9.4	8.3	9.1
28	11.0	7.7	9.0	4.9	4.0	4.5	7.5	6.6	7.0	8.3	7.2	7.7
29	10.7	7.3	8.3	4.7	4.2	4.5	7.4	6.7	7.1	8.2	7.2	7.7
30	9.7	6.3	7.4	4.7	3.7	4.1	7.5	6.8	7.1	9.2	8.2	8.6
31	8.3	5.1	6.2	---	---	---	7.6	7.0	7.4	10.3	9.1	9.6
MONTH	17.0	5.1	11.7	9.2	2.9	6.3	8.5	2.9	5.8	10.3	4.7	7.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.7	7.8	8.6	8.2	5.9	6.8	10.5	8.3	9.1	12.2	7.5	9.9
2	8.5	7.3	7.8	7.9	5.1	6.6	8.3	7.0	7.6	11.8	9.6	10.9
3	7.5	6.0	6.7	8.5	6.6	7.4	8.5	6.5	7.3	11.3	9.4	10.2
4	6.7	5.1	5.9	7.3	5.3	6.4	8.0	6.2	7.2	10.1	8.2	9.0
5	6.0	4.2	5.2	8.9	6.2	7.4	7.9	6.5	7.2	10.7	7.0	8.7
6	6.0	3.9	4.9	8.1	7.1	7.5	7.7	6.3	7.0	10.4	7.2	8.9
7	5.5	3.3	4.4	7.8	6.5	7.1	10.8	7.2	8.6	11.5	8.2	9.7
8	5.2	2.9	4.1	9.1	6.5	7.8	11.1	7.2	8.9	10.3	7.9	9.2
9	5.5	3.0	4.2	9.1	7.3	8.2	11.2	8.3	9.6	9.8	7.7	8.8
10	5.6	3.1	4.3	10.8	8.1	9.2	11.2	8.5	9.8	11.4	7.8	9.5
11	5.6	3.0	4.3	9.5	7.9	8.7	10.8	8.0	9.4	10.5	8.3	9.3
12	6.4	3.6	5.0	9.7	7.8	8.8	9.9	8.4	9.2	14.0	8.9	11.1
13	7.0	6.0	6.4	9.1	8.2	8.6	9.1	7.6	8.4	15.5	9.7	12.6
14	9.1	6.9	7.8	9.6	7.6	8.6	10.6	7.4	8.7	15.7	11.7	13.8
15	7.9	6.3	6.9	8.9	8.0	8.5	9.4	7.2	8.4	14.4	11.6	12.9
16	7.5	6.6	7.1	9.2	7.2	8.1	10.3	7.5	8.9	12.4	9.2	11.1
17	8.0	6.8	7.4	8.6	6.6	7.6	10.0	8.1	9.1	12.5	8.8	10.7
18	8.4	6.2	7.5	9.2	5.6	7.3	10.5	7.3	8.8	12.5	8.0	10.3
19	8.6	7.3	7.9	7.7	6.0	6.9	11.2	6.3	8.8	13.8	8.9	11.3
20	7.9	6.6	7.3	9.8	7.3	8.3	10.6	8.2	9.4	15.2	10.6	12.9
21	8.8	7.3	8.0	8.6	7.3	7.9	9.9	8.5	9.0	16.1	12.0	14.1
22	8.4	6.8	7.6	8.8	7.9	8.2	11.2	8.2	9.5	17.7	13.1	15.3
23	7.6	5.4	6.6	9.0	6.8	7.7	10.3	8.3	9.3	18.9	14.0	16.4
24	8.5	6.0	7.2	9.1	5.8	7.4	9.5	6.9	8.0	18.2	15.8	16.8
25	7.3	4.9	6.2	8.3	7.6	7.9	8.3	6.3	7.2	16.6	15.0	15.8
26	6.1	4.0	5.2	8.5	7.6	8.2	9.1	6.5	7.7	17.9	13.8	15.7
27	7.7	5.2	6.2	9.3	6.7	7.8	9.4	6.9	8.2	18.1	14.3	16.3
28	6.5	4.7	5.6	10.3	6.5	8.2	10.4	7.9	9.1	18.6	15.4	17.1
29	---	---	---	11.0	7.2	9.0	10.0	7.8	9.0	19.3	15.9	17.7
30	---	---	---	11.8	7.7	9.7	11.3	8.1	9.6	18.8	16.7	17.8
31	---	---	---	11.9	9.1	10.6	---	---	---	18.7	15.1	17.0
MONTH	9.7	2.9	6.3	11.9	5.1	8.0	11.3	6.2	8.6	19.3	7.0	12.6

14338000 ELK CREEK NEAR TRAIL, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18.9	14.8	16.9	23.2	21.0	22.0	26.6	23.7	25.3	25.1	20.7	22.9
2	19.8	15.8	17.7	24.8	19.9	21.9	24.8	23.2	24.0	25.2	20.9	23.2
3	20.8	16.4	18.6	24.5	20.8	22.5	25.9	22.7	24.0	25.0	21.3	23.0
4	21.4	17.5	19.4	25.0	20.9	22.7	25.2	21.4	23.4	24.8	21.0	22.9
5	22.3	18.4	20.3	25.1	21.1	22.9	25.3	22.7	23.7	26.2	21.2	23.1
6	22.9	19.3	21.0	25.6	21.4	23.3	25.4	21.9	23.3	24.9	20.7	22.8
7	23.4	20.1	21.7	25.8	21.6	23.4	24.3	21.6	22.9	22.7	20.5	21.8
8	23.3	20.3	21.8	25.0	21.6	23.2	25.6	21.7	23.6	21.6	19.6	20.4
9	22.1	19.8	21.1	25.8	21.7	23.7	26.0	22.2	23.9	19.6	17.7	18.8
10	21.5	18.7	20.1	26.7	22.4	24.4	25.6	21.9	23.7	19.0	16.5	17.6
11	21.2	18.5	19.7	26.9	22.9	24.8	25.4	21.7	23.4	20.6	16.9	18.5
12	19.9	18.1	19.1	26.4	23.1	24.7	24.8	21.0	22.8	21.1	17.5	19.2
13	20.9	17.7	19.1	26.7	23.3	24.8	25.5	20.9	22.9	20.9	17.1	18.8
14	20.7	18.2	19.4	26.5	22.6	24.4	25.7	21.0	23.3	20.0	16.7	18.4
15	21.4	18.1	19.6	27.1	22.7	24.6	25.5	21.4	23.5	20.7	17.0	18.7
16	22.7	18.7	20.4	26.7	22.5	24.5	25.7	21.2	23.3	18.8	16.6	17.6
17	23.7	20.1	21.7	26.7	22.5	24.5	26.1	21.2	23.5	19.0	15.6	17.0
18	22.3	20.3	21.2	27.7	23.0	25.0	27.1	21.9	24.2	18.2	15.2	16.7
19	20.3	18.9	19.6	27.8	23.3	25.3	27.1	22.1	24.3	18.8	15.4	16.9
20	19.4	17.9	18.6	28.0	23.1	25.3	26.9	21.7	24.5	19.2	15.7	17.6
21	19.8	17.4	18.4	28.6	23.7	26.1	25.8	22.9	24.5	19.7	15.9	17.8
22	19.6	16.9	18.3	29.7	24.7	27.0	25.5	22.9	23.9	19.8	16.2	18.2
23	18.6	16.9	17.7	29.4	24.9	27.0	25.6	21.5	23.5	20.0	16.5	18.5
24	19.5	16.1	17.7	27.9	24.7	26.0	25.7	21.4	23.7	20.4	16.9	18.8
25	21.3	17.1	19.1	28.1	23.7	25.7	25.4	21.5	23.6	20.1	16.6	18.6
26	23.2	18.9	20.9	28.2	23.6	25.9	25.1	21.5	23.3	20.7	16.7	18.8
27	24.8	20.5	22.5	28.7	23.7	26.1	25.5	21.0	23.2	21.5	17.6	19.8
28	25.4	21.3	23.2	28.6	23.9	26.4	25.2	21.3	23.2	22.4	18.4	20.3
29	25.5	22.2	23.7	29.8	24.1	26.8	25.3	21.0	23.1	19.9	17.4	18.7
30	24.8	21.8	23.2	29.5	24.2	26.7	25.5	20.9	23.1	19.0	16.1	17.6
31	---	---	---	28.9	24.0	26.4	25.8	21.1	23.2	---	---	---
MONTH	25.5	14.8	20.1	29.8	19.9	24.8	27.1	20.9	23.6	26.2	15.2	19.4
YEAR	29.8	2.9	12.9									

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	31	15	22
2	---	---	---	---	---	---	---	---	---	22	13	14
3	---	---	---	---	---	---	---	---	---	31	14	17
4	---	---	---	---	---	---	---	---	---	16	10	12
5	---	---	---	---	---	---	---	---	---	12	8	9
6	---	---	---	---	---	---	---	---	---	10	7	8
7	---	---	---	---	---	---	---	---	---	7	6	6
8	---	---	---	---	---	---	---	---	---	8	5	5
9	---	---	---	---	---	---	---	---	---	13	4	5
10	---	---	---	---	---	---	---	---	---	6	3	4
11	---	---	---	---	---	---	---	---	---	8	3	5
12	---	---	---	---	---	---	---	---	---	7	3	4
13	---	---	---	---	---	---	10	<1	4	7	3	3
14	---	---	---	---	---	---	68	4	7	8	6	7
15	---	---	---	---	---	---	72	14	27	6	4	5
16	---	---	---	---	---	---	---	---	---	6	3	4
17	---	---	---	---	---	---	53	15	22	5	3	3
18	---	---	---	---	---	---	24	8	13	6	2	3
19	---	---	---	---	---	---	9	6	8	4	2	2
20	---	---	---	---	---	---	6	4	5	3	2	2
21	---	---	---	---	---	---	20	6	13	16	2	2
22	---	---	---	---	---	---	12	7	9	10	2	2
23	---	---	---	---	---	---	7	5	6	13	4	6
24	---	---	---	---	---	---	5	3	4	15	3	4
25	---	---	---	---	---	---	4	3	3	25	9	14
26	---	---	---	---	---	---	3	2	2	10	6	7
27	---	---	---	---	---	---	---	---	---	36	6	20
28	---	---	---	---	---	---	---	---	---	20	9	12
29	---	---	---	---	---	---	86	33	45	10	6	7
30	---	---	---	---	---	---	95	20	29	13	5	9
31	---	---	---	---	---	---	73	24	44	9	6	7
MAX	---	---	---	---	---	---	---	---	---	36	15	22
MIN	---	---	---	---	---	---	---	---	---	3	2	2

14338000 ELK CREEK NEAR TRAIL, OR--Continued

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	13	6	8	2	1	1	35	8	13	5	2	2
2	7	5	6	2	<1	1	8	6	6	5	2	2
3	7	4	5	2	<1	1	7	5	5	6	2	4
4	8	4	4	2	<1	1	14	5	6	14	5	8
5	7	3	4	5	<1	<1	14	7	8	14	6	8
6	5	3	3	2	<1	<1	22	8	12	7	4	5
7	4	2	3	6	2	4	16	9	11	5	3	4
8	4	2	2	6	4	4	13	8	10	5	3	3
9	3	2	2	4	3	3	12	7	9	4	2	2
10	3	2	2	5	3	4	7	5	6	4	2	2
11	3	2	2	8	2	4	17	7	8	5	2	3
12	2	2	2	4	2	2	8	5	6	6	2	3
13	4	2	2	9	1	2	6	4	5	4	2	2
14	4	2	3	31	6	17	6	4	4	4	2	2
15	17	2	3	23	11	14	5	3	4	4	2	2
16	44	11	19	11	6	8	5	3	4	4	1	2
17	19	9	10	7	4	5	5	3	3	3	1	1
18	11	8	9	6	3	4	7	2	3	2	<1	1
19	10	6	8	5	2	3	5	2	3	4	<1	1
20	7	5	6	6	2	3	4	2	2	2	<1	1
21	6	4	5	7	2	4	3	1	2	2	<1	1
22	5	4	4	15	6	8	4	1	2	2	<1	1
23	4	3	4	15	7	10	4	1	2	2	<1	<1
24	4	3	3	8	5	5	15	3	10	2	<1	<1
25	4	2	3	33	4	6	13	7	8	2	<1	<1
26	3	2	2	49	18	33	7	5	6	2	<1	<1
27	4	2	2	18	8	11	7	4	5	2	<1	<1
28	2	1	2	9	6	7	35	4	4	2	<1	<1
29	---	---	---	9	4	5	6	3	3	3	<1	1
30	---	---	---	5	3	4	6	2	3	8	<1	<1
31	---	---	---	16	3	3	---	---	---	4	<1	<1
MAX	44	11	19	49	18	33	35	9	13	14	6	8
MIN	2	1	2	2	<1	<1	3	1	2	2	<1	<1

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	2	<1	<1	---	---	---	---	---	---	3	<1	1
2	4	<1	<1	---	---	---	---	---	---	2	<1	1
3	7	<1	2	2	<1	<1	---	---	---	3	<1	1
4	6	<1	1	2	<1	1	---	---	---	3	<1	1
5	6	<1	1	3	<1	1	---	---	---	4	<1	<1
6	9	<1	1	4	<1	1	---	---	---	---	---	---
7	6	<1	<1	---	---	---	---	---	---	---	---	---
8	4	<1	<1	---	---	---	---	---	---	---	---	---
9	6	<1	<1	---	---	---	2	<1	1	---	---	---
10	1	<1	<1	---	---	---	3	<1	1	---	---	---
11	1	<1	<1	---	---	---	3	<1	1	---	---	---
12	2	<1	<1	---	---	---	3	<1	1	---	---	---
13	2	<1	<1	---	---	---	3	<1	1	---	---	---
14	4	<1	<1	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	1	<1	<1	---	---	---	---	---	---	---	---	---
17	2	<1	<1	---	---	---	---	---	---	---	---	---
18	9	<1	<1	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	3	<1	1	---	---	---
22	---	---	---	---	---	---	2	<1	1	---	---	---
23	---	---	---	---	---	---	3	<1	2	---	---	---
24	---	---	---	---	---	---	2	<1	1	---	---	---
25	---	---	---	---	---	---	3	1	1	---	---	---
26	---	---	---	---	---	---	4	<1	1	---	---	---
27	---	---	---	---	---	---	3	<1	2	---	---	---
28	---	---	---	---	---	---	3	<1	1	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	2	<1	1	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

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 138.6.

DRAINAGE AREA.--1,215 mi^2.

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 1,271.99 ft above NGVD 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.--Records good. 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. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--39 years (water years 1939-77), 2,636 ft^3/s, 1,910,000 acre-ft/yr.
26 years (water years 1978-2003), 2,394 ft^3/s, 1,735,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 87,600 ft^3/s Dec. 22, 1964, gage height, 12.78 ft, datum then in use, from rating curve extended above 23,000 ft^3/s; minimum discharge, 567 ft^3/s Feb. 18, 1977, result of closure of Lost Creek dam, minimum prior to that time, 611 ft^3/s Aug. 6, 14, 29, Sept. 9, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,400 ft^3/s Dec. 27, gage height, 7.97 ft; minimum discharge, 937 ft^3/s Nov. 6.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1040	961	978	4530	4320	1080	4640	2500	2440	2040	1700	2000
2	1030	955	975	3240	3990	1050	3750	2530	2450	2030	1710	1990
3	1020	954	978	3390	3550	1050	3510	3040	2450	2040	1730	1980
4	1030	960	976	2950	2670	1040	3660	3820	2580	2040	1740	1980
5	1050	958	976	2580	2000	1030	3770	4050	2630	2040	1720	1980
6	1050	960	986	2230	1820	1030	4510	3460	2660	1970	1720	2000
7	1040	971	987	2050	1580	1170	4070	3300	2720	1860	1740	2010
8	1040	985	985	1910	1270	1250	3570	3190	2790	1850	1710	2010
9	1040	1170	986	1740	1220	1250	3410	3080	2800	1830	1690	2060
10	1040	1400	982	1420	1170	1380	3800	2840	2800	1830	1700	2090
11	1040	1270	995	1350	1140	1380	4300	2810	2890	1820	1700	2030
12	1050	1160	998	1350	1120	1320	4600	2910	2980	1820	1720	1920
13	1050	1170	1090	1470	1150	1270	3870	2780	2980	1840	1720	1830
14	1060	1080	1300	2320	1270	1910	3580	2780	2980	1850	1800	1720
15	1060	1030	1790	2200	1290	2350	3340	2890	2990	1830	1980	1580
16	1060	1020	3880	1860	2820	2190	2910	2890	3060	1750	2000	1480
17	1070	1020	2600	1700	2180	1970	2810	2680	3060	1730	2000	1420
18	1050	1020	1830	1570	2070	2210	2770	2540	3070	1730	2020	1300
19	1050	1010	1490	1520	1970	2100	2560	2360	3080	1720	2000	1220
20	1050	1000	1450	1470	1720	2140	2390	2260	3020	1720	2000	1150
21	1040	996	1760	1480	1570	2330	2340	2260	2910	1720	2010	1080
22	1040	992	1600	1580	1500	2700	2280	2370	2840	1710	2000	1050
23	1040	987	1420	2140	1420	3090	2280	2650	2750	1700	2000	1040
24	1040	990	1300	2300	1340	3310	3200	2820	2680	1700	2010	1050
25	1040	996	1220	3030	1250	5150	3390	2900	2580	1690	2000	1040
26	1040	999	1200	2870	1180	7970	2840	2740	2460	1700	1990	1040
27	1050	1010	7270	4120	1140	8220	2470	2680	2370	1720	1990	1040
28	1050	988	11600	4860	1100	6770	2250	2680	2280	1710	1990	1040
29	1010	992	6400	4390	---	5470	2250	2670	2190	1710	2000	1040
30	970	983	6350	4280	---	4430	2160	2700	2070	1690	2000	1040
31	974	---	7650	3870	---	3580	---	2620	---	1700	2000	---
TOTAL	32214	30987	75002	77770	50820	83190	97280	87800	81560	56090	58090	46210
MEAN	1039	1033	2419	2509	1815	2684	3243	2832	2719	1809	1874	1540
MAX	1070	1400	11600	4860	4320	8220	4640	4050	3080	2040	2020	2090
MIN	970	954	975	1350	1100	1030	2160	2260	2070	1690	1690	1040
AC-FT	63900	61460	148800	154300	100800	165000	193000	174200	161800	111300	115200	91660

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2003, BY WATER YEAR (WY)

MEAN	1284	1898	3052	2958	2550	2598	2767	2959	2572	2179	2186	1725
MAX	1931	4925	9909	9857	6045	4645	4520	4658	3939	3777	3092	2200
(WY)	1983	1985	1997	1997	1982	1989	1989	1996	1984	1999	1984	1983
MIN	874	928	1274	1084	924	920	969	1577	1566	1116	1795	1288
(WY)	1993	1988	1990	2001	2001	1992	1992	1992	2001	1992	1994	1980

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1978 - 2003	
ANNUAL TOTAL	696944		777013			
ANNUAL MEAN	1909		2129		2394	
HIGHEST ANNUAL MEAN					4012	1997
LOWEST ANNUAL MEAN					1381	1992
HIGHEST DAILY MEAN	11600	Dec 28	11600	Dec 28	23000	Dec 15 1977
LOWEST DAILY MEAN	954	Nov 3	954	Nov 3	823	Feb 12 1981
ANNUAL SEVEN-DAY MINIMUM	960	Nov 1	960	Nov 1	840	Oct 15 2001
ANNUAL RUNOFF (AC-FT)	1382000		1541000		1735000	
10 PERCENT EXCEEDS	2880		3530		3920	
50 PERCENT EXCEEDS	1740		1850		2010	
90 PERCENT EXCEEDS	999		1020		1130	

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.
TURBIDITY: October 1999 to current year.

INSTRUMENTATION.--Water-quality monitor since August 1973.

REMARKS.--Water temperature records good. Available turbidity records fair. The probe was checked using a polymer bead standard.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE:
Prior to construction of Lost Creek Dam and Lake: Maximum, 20.0°C July 27, 28, 1975; minimum, 0.0°C Jan. 6-8, 10, 11, 1974, Jan. 6-9, 1977.
After full operation of Lost Creek Dam and Lake: Maximum, 21.0°C July 26-29, 1992; minimum, 0.5°C Feb. 5, 6, 1989.
TURBIDITY: Maximum, 98 NTU Jan. 11, 2000; minimum, <1 many days most years.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 18.6°C Aug. 9; minimum, 3.1°C Feb. 9.
TURBIDITY: Maximum recorded, 74 NTU Dec. 30, but may have been higher during period of missing record; minimum, <1 NTU many days.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	11.9	8.0	9.8	7.7	4.6	6.2	6.3	5.1	5.8	6.5	5.9	6.2
2	11.7	7.2	9.6	8.0	4.4	6.4	6.2	4.7	5.5	6.9	5.6	6.3
3	10.4	7.8	9.1	8.4	5.1	6.9	6.2	5.2	5.6	7.7	6.4	6.9
4	11.4	8.8	10.0	8.3	5.4	7.1	6.9	5.0	5.9	7.7	6.8	7.2
5	12.7	9.0	10.9	8.8	5.8	7.4	6.5	4.9	5.8	7.1	5.8	6.5
6	12.2	8.6	10.5	8.3	6.3	7.3	6.4	5.0	5.7	6.2	4.8	5.6
7	11.9	8.2	10.2	8.5	7.3	8.0	6.0	4.7	5.4	6.1	4.4	5.3
8	11.6	7.9	9.9	8.6	7.2	7.9	5.8	4.5	5.2	5.9	4.3	5.0
9	11.7	7.4	9.7	8.1	7.1	7.4	6.8	4.8	5.8	5.8	4.5	5.1
10	10.7	7.5	9.2	7.7	6.5	7.1	6.6	5.6	6.2	5.8	4.6	5.3
11	10.6	6.8	8.9	8.7	7.0	7.8	6.6	5.7	6.1	6.4	5.2	5.7
12	10.7	6.6	8.8	8.5	7.3	7.9	7.2	5.5	6.3	7.1	5.6	6.3
13	10.9	6.8	8.9	8.7	7.7	8.1	6.9	6.1	6.6	6.9	6.0	6.5
14	10.9	6.7	9.0	9.0	7.1	8.0	7.3	6.6	6.9	7.0	6.3	6.6
15	10.9	7.0	9.1	8.3	6.2	7.3	7.2	6.6	6.9	6.6	5.6	6.2
16	10.8	7.0	9.1	8.0	5.8	6.8	7.9	6.9	7.3	6.2	5.2	5.7
17	11.0	7.2	9.3	8.6	7.0	7.7	7.4	6.2	6.8	6.0	4.6	5.2
18	10.7	7.5	9.2	8.0	5.8	6.9	6.6	5.6	6.1	6.5	4.5	5.4
19	10.9	7.5	9.2	8.8	7.2	7.9	5.9	5.1	5.5	6.3	4.7	5.4
20	10.6	7.9	9.3	8.6	6.3	7.4	6.4	5.1	5.8	6.0	4.5	5.2
21	10.6	7.4	9.2	7.9	6.4	7.2	6.8	5.4	6.1	6.6	4.7	5.7
22	10.2	7.2	9.0	7.4	6.3	7.0	6.9	5.6	6.2	6.2	5.5	5.8
23	10.1	7.0	8.7	7.7	6.5	7.1	6.3	5.1	5.6	7.0	5.7	6.1
24	9.8	7.0	8.5	8.4	6.7	7.5	6.3	4.9	5.5	6.4	5.5	6.0
25	9.9	6.7	8.4	7.6	5.7	6.7	6.3	4.6	5.5	7.6	6.3	6.9
26	9.2	6.8	8.1	6.9	4.7	5.9	6.4	5.6	6.0	7.3	6.6	6.9
27	8.9	6.3	7.7	7.2	4.7	6.0	7.2	6.0	6.4	8.2	6.6	7.2
28	9.5	7.0	8.2	7.6	5.4	6.5	6.6	5.7	6.1	6.8	5.7	6.2
29	8.7	6.2	7.5	7.2	5.1	6.2	6.6	5.8	6.2	6.4	5.6	6.0
30	8.6	5.4	7.2	6.8	5.0	6.0	6.6	5.8	6.2	7.2	6.0	6.5
31	8.0	4.7	6.5	---	---	---	6.8	6.0	6.4	7.6	6.5	7.1
MONTH	12.7	4.7	9.0	9.0	4.4	7.1	7.9	4.5	6.0	8.2	4.3	6.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.4	6.1	6.9	7.6	5.2	6.2	8.7	7.0	8.1	12.5	8.0	10.1
2	7.1	5.6	6.3	7.9	4.4	6.2	8.2	6.4	7.2	11.7	9.0	10.3
3	6.7	5.1	5.9	8.5	5.6	6.8	8.0	6.4	7.1	10.1	8.6	9.3
4	6.3	4.7	5.4	7.3	4.6	5.9	8.3	6.7	7.4	10.2	7.8	8.7
5	6.1	3.8	4.9	8.6	5.1	6.8	7.8	6.4	7.0	10.7	7.5	8.9
6	6.0	3.6	4.8	7.3	5.8	6.6	8.0	6.5	7.1	10.6	7.9	9.2
7	5.9	3.4	4.6	7.2	5.8	6.5	10.3	7.0	8.4	10.6	8.2	9.3
8	5.8	3.2	4.5	8.7	5.4	7.1	10.3	7.5	8.9	9.9	8.6	9.2
9	6.0	3.1	4.6	8.0	6.4	7.3	11.0	8.0	9.7	9.5	8.3	8.9
10	6.1	3.5	4.8	10.2	7.1	8.4	10.2	8.3	9.2	12.2	8.3	9.9
11	6.1	3.4	4.8	9.2	7.0	8.1	9.7	7.9	8.8	11.1	8.9	10
12	6.8	3.6	5.3	9.2	6.7	8.1	9.2	7.5	8.3	12.3	9.1	10.5
13	6.6	5.3	6.0	8.1	6.9	7.5	8.9	7.5	8.1	14.0	9.5	11.5
14	8.2	5.8	6.9	9.5	6.8	8.2	9.9	7.6	8.6	14.1	9.8	11.7
15	6.8	5.2	5.9	9.1	7.6	8.2	9.4	7.1	8.2	12.4	10.4	11.2
16	6.8	5.8	6.4	8.9	6.5	7.7	10.6	7.6	8.9	12.3	9.6	10.7
17	7.4	5.9	6.6	8.8	6.2	7.4	10.1	8.3	9.1	12.1	9.3	10.5
18	7.5	6.0	6.7	8.9	5.6	7.1	10.2	7.8	8.9	13.4	9.5	11.1
19	7.8	6.0	6.9	7.4	5.6	6.5	11.0	7.6	9.2	13.3	9.2	11.0
20	6.9	5.6	6.3	9.2	6.5	7.6	10.8	8.5	9.4	14.6	9.1	11.4
21	7.8	6.1	6.9	8.1	6.7	7.3	9.3	8.2	8.7	14.1	9.8	11.6
22	7.8	5.5	6.9	8.0	6.9	7.4	10.9	7.6	9.1	15.2	9.7	12.0
23	7.0	4.6	6.0	8.8	6.5	7.4	9.9	8.5	9.3	14.8	10.2	12.1
24	7.8	4.7	6.2	8.5	5.8	7.0	9.5	8.0	8.7	13.6	10.6	11.9
25	7.1	4.3	5.8	7.8	6.8	7.3	9.8	7.3	8.4	12.2	10.2	11.4
26	5.8	3.6	4.9	8.1	6.4	7.2	10.0	6.7	8.5	14.1	9.8	11.9
27	7.0	4.5	5.7	8.1	6.2	7.1	10.9	7.6	9.1	14.8	10.1	12.3
28	6.1	4.1	5.2	8.4	6.5	7.4	11.0	8.3	9.7	14.1	10.8	12.1
29	---	---	---	9.3	6.7	7.8	11.4	8.0	9.6	14.4	11.1	12.4
30	---	---	---	9.7	7.0	8.3	12.3	8.1	9.9	13.8	11.4	12.3
31	---	---	---	9.8	7.5	8.4	---	---	---	14.8	10.9	13.0
MONTH	8.2	3.1	5.8	10.2	4.4	7.3	12.3	6.4	8.6	15.2	7.5	10.9

14339000 ROGUE RIVER AT DODGE BRIDGE, NEAR EAGLE POINT, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15.4	10.0	12.7	16.2	10.9	13.4	16.5	11.5	13.9	17.0	12.6	14.6
2	15.0	10.2	12.5	16.9	10.8	13.5	14.3	12.3	13.2	17.4	12.9	14.9
3	15.5	10.4	12.5	16.6	10.6	13.3	17.2	12.4	14.5	16.8	13.3	14.8
4	15.5	10.8	12.9	16.9	10.8	13.5	18.1	12.2	14.9	16.9	13.0	14.7
5	15.8	11.1	13.1	16.8	11.0	13.6	17.7	12.2	14.8	17.0	13.4	14.9
6	15.9	11.2	13.2	17.2	10.8	13.6	17.8	12.8	14.9	16.7	12.7	14.5
7	16.2	10.9	13.3	17.4	10.8	13.8	17.8	12.8	15.0	14.8	12.6	13.5
8	16.4	11.1	13.3	17.0	10.7	13.7	18.1	12.4	15.0	14.6	12.0	13.2
9	16.0	11.0	13.1	17.4	11.1	14.0	18.6	13.0	15.3	14.6	12.1	13.0
10	15.1	10.5	12.6	17.1	11.6	14.1	18.3	12.9	15.2	15.6	11.9	13.5
11	14.9	9.7	12.1	17.5	11.4	14.2	18.1	13.0	15.2	16.1	11.7	13.7
12	14.4	9.9	11.9	17.4	11.6	14.1	17.8	12.9	15.0	16.1	11.8	13.7
13	14.4	10.2	12.1	16.9	11.1	13.8	18.1	12.5	15.1	15.8	11.5	13.4
14	14.7	10.4	12.3	17.7	11.4	14.0	18.4	12.5	15.3	15.9	11.4	13.5
15	15.3	10.4	12.5	17.5	11.0	14.0	17.6	13.1	15.0	16.0	12.0	13.8
16	15.4	10.5	12.7	17.4	11.0	13.9	17.8	12.4	15.0	14.2	11.8	12.9
17	15.6	10.8	13.1	17.1	10.8	13.8	18.2	12.5	15.2	15.4	10.6	12.8
18	14.4	11.0	12.6	16.8	10.4	13.4	18.4	13.1	15.5	15.8	10.6	13.1
19	14.4	10.7	12.5	16.6	9.6	13.4	17.8	12.5	15.0	16.0	11.2	13.4
20	14.0	10.8	12.4	17.0	9.8	13.8	17.7	12.2	14.8	15.5	10.8	13.2
21	14.7	10.9	12.4	16.8	10.2	13.5	16.4	12.6	14.5	15.0	10.3	12.7
22	15.0	10.9	12.6	17.1	10.6	13.8	16.2	13.2	14.5	14.5	9.8	12.3
23	14.2	10.7	12.1	17.0	10.4	13.7	17.7	12.5	14.8	14.0	9.2	11.8
24	15.4	10.0	12.4	15.5	10.7	13.2	17.8	12.9	15.1	13.8	9.2	11.6
25	15.8	10.2	12.8	17.1	11.1	13.7	17.7	13.0	15.1	13.6	9.2	11.5
26	16.3	10.8	13.3	17.4	10.4	14.1	17.0	12.5	14.6	13.5	8.7	11.3
27	16.9	11.3	13.7	17.4	11.2	14.4	17.6	12.5	14.8	13.8	9.5	11.7
28	16.9	11.2	13.8	17.3	11.6	14.8	17.7	12.9	15.0	13.6	9.6	11.6
29	16.8	11.4	13.8	17.6	11.3	14.2	17.1	12.5	14.7	12.2	9.0	10.5
30	16.6	10.9	13.5	18.0	11.2	14.4	17.5	12.5	14.8	12.6	8.8	10.6
31	---	---	---	17.7	11.2	14.5	17.1	12.8	14.7	---	---	---
MONTH	16.9	9.7	12.8	18.0	9.6	13.8	18.6	11.5	14.9	17.4	8.7	13.0
YEAR	18.6	3.1	9.6									

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	2	<1	1	3	<1	<1	3	<1	<1	20	11	14
2	4	<1	1	7	<1	<1	1	<1	<1	15	8	10
3	4	<1	<1	2	<1	<1	1	<1	<1	22	12	16
4	5	<1	<1	2	<1	<1	1	<1	<1	18	8	10
5	2	<1	<1	<1	<1	<1	2	<1	<1	---	---	---
6	2	1	1	7	<1	<1	<1	<1	<1	---	---	---
7	1	<1	<1	---	---	---	---	---	---	---	---	---
8	1	<1	<1	---	---	---	---	---	---	---	---	---
9	<1	<1	<1	---	---	---	---	---	---	---	---	---
10	<1	<1	<1	---	---	---	---	---	---	---	---	---
11	<1	<1	<1	---	---	---	1	<1	<1	3	1	2
12	<1	<1	<1	---	---	---	<1	<1	<1	3	1	2
13	1	<1	<1	---	---	---	3	<1	<1	4	2	2
14	1	<1	<1	---	---	---	21	1	2	7	4	5
15	2	<1	<1	---	---	---	24	8	19	5	3	3
16	1	<1	<1	---	---	---	---	---	---	3	2	2
17	1	<1	<1	---	---	---	---	---	---	2	2	2
18	1	<1	<1	---	---	---	---	---	---	2	1	2
19	1	<1	<1	---	---	---	---	---	---	2	1	1
20	2	<1	1	---	---	---	3	2	2	3	1	1
21	3	<1	1	4	<1	2	14	3	7	2	1	1
22	5	<1	<1	6	<1	2	6	3	4	5	1	1
23	2	<1	<1	4	<1	1	3	1	2	6	3	4
24	2	<1	<1	6	1	3	3	<1	1	16	2	2
25	1	<1	<1	---	---	---	2	<1	<1	18	6	11
26	4	1	1	---	---	---	2	<1	<1	7	3	4
27	3	<1	<1	2	<1	<1	---	---	---	---	---	---
28	2	<1	<1	1	<1	<1	---	---	---	16	5	8
29	4	<1	1	2	<1	<1	53	20	28	7	3	4
30	5	<1	<1	2	<1	<1	74	11	20	5	3	3
31	5	<1	<1	---	---	---	59	19	36	5	3	4
MAX	5	1	1	---	---	---	---	---	---	---	---	---
MIN	<1	<1	<1	---	---	---	---	---	---	---	---	---

14339000 ROGUE RIVER AT DODGE BRIDGE, NEAR EAGLE POINT, OR--Continued

Turbidity, water, unfiltered, nephelometric turbidity units
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10	3	6	3	<1	1	---	---	---	7	<1	<1
2	5	3	4	2	<1	1	---	---	---	4	<1	<1
3	3	2	3	3	<1	1	---	---	---	7	<1	<1
4	5	2	2	3	<1	2	---	---	---	5	<1	<1
5	4	2	2	3	1	2	---	---	---	2	<1	<1
6	2	1	2	---	---	---	---	---	---	1	<1	<1
7	2	1	2	---	---	---	---	---	---	1	<1	<1
8	2	1	1	---	---	---	---	---	---	2	<1	<1
9	2	1	1	---	---	---	---	---	---	<1	<1	<1
10	1	<1	1	---	---	---	---	---	---	<1	<1	<1
11	3	<1	1	---	---	---	---	---	---	2	<1	<1
12	5	<1	<1	---	---	---	---	---	---	2	<1	<1
13	2	<1	<1	---	---	---	---	---	---	5	<1	<1
14	5	2	3	43	16	32	---	---	---	2	<1	<1
15	28	1	2	35	25	30	---	---	---	2	<1	<1
16	49	16	37	30	22	25	---	---	---	1	<1	<1
17	16	7	10	34	19	24	---	---	---	<1	<1	<1
18	9	6	7	52	23	32	---	---	---	1	<1	<1
19	7	5	6	66	20	28	---	---	---	---	---	---
20	7	4	5	68	19	40	8	<1	2	6	1	2
21	8	3	4	55	22	32	---	---	---	8	1	2
22	4	2	3	48	25	36	---	---	---	---	---	---
23	3	2	2	53	28	36	10	6	7	---	---	---
24	3	2	2	60	28	37	16	6	9	---	---	---
25	3	1	2	63	27	39	19	7	9	---	---	---
26	3	1	2	93	49	66	11	6	7	---	---	---
27	2	1	1	65	42	50	---	---	---	---	---	---
28	2	<1	1	67	43	53	8	6	6	---	---	---
29	---	---	---	---	---	---	9	<1	6	---	---	---
30	---	---	---	---	---	---	4	<1	<1	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MAX	49	16	37	---	---	---	---	---	---	---	---	---
MIN	1	<1	<1	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	2	<1	<1	---	---	---	---	---	---
2	---	---	---	2	<1	<1	---	---	---	---	---	---
3	---	---	---	2	<1	<1	---	---	---	---	---	---
4	---	---	---	5	<1	<1	---	---	---	---	---	---
5	4	<1	<1	4	<1	<1	---	---	---	---	---	---
6	4	<1	<1	8	<1	<1	---	---	---	3	<1	<1
7	3	<1	<1	6	<1	<1	---	---	---	6	<1	1
8	4	<1	<1	3	<1	<1	---	---	---	5	<1	<1
9	4	<1	<1	7	<1	<1	---	---	---	---	---	---
10	4	<1	<1	2	<1	<1	---	---	---	---	---	---
11	3	<1	<1	---	---	---	---	---	---	---	---	---
12	5	<1	<1	4	<1	<1	---	---	---	---	---	---
13	4	<1	<1	7	<1	<1	---	---	---	---	---	---
14	2	<1	<1	3	<1	<1	---	---	---	---	---	---
15	1	<1	<1	3	<1	<1	---	---	---	---	---	---
16	2	<1	<1	6	<1	<1	6	<1	1	---	---	---
17	7	<1	<1	8	<1	<1	6	<1	1	---	---	---
18	3	<1	<1	3	<1	<1	5	<1	1	---	---	---
19	1	<1	<1	---	---	---	6	<1	1	---	---	---
20	5	<1	<1	---	---	---	3	<1	1	---	---	---
21	3	<1	<1	---	---	---	7	<1	1	---	---	---
22	4	<1	<1	---	---	---	5	<1	1	---	---	---
23	3	<1	<1	---	---	---	3	<1	1	---	---	---
24	7	<1	<1	---	---	---	5	<1	1	---	---	---
25	4	<1	<1	---	---	---	4	<1	1	---	---	---
26	8	<1	<1	---	---	---	4	<1	1	---	---	---
27	4	<1	<1	---	---	---	7	<1	1	---	---	---
28	4	<1	<1	---	---	---	8	<1	1	---	---	---
29	6	<1	<1	---	---	---	4	<1	<1	---	---	---
30	6	<1	<1	---	---	---	6	<1	1	---	---	---
31	---	---	---	---	---	---	3	<1	1	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

14353000 WEST FORK ASHLAND CREEK, NEAR ASHLAND, OR

LOCATION.--Lat 42°08'55", long 122°42'55" near line between NW 1/4 SW 1/4 sec.28, T.39 S., R.1 E., Jackson County, Hydrologic Unit 17100308, in Rogue River National Forest, on left bank 0.3 mi upstream from city diversion, 2.5 mi south of Ashland, and at mile 0.4.

DRAINAGE AREA.--10.5 mi^2, at diversion dam 0.3 mi downstream.

PERIOD OF RECORD.--September 1924 to January 1933, water years 1954-60, 1963, annual maximum; December 1974 to September 1982, Oct. 2002 to current year. Monthly discharge only for some periods published in WSP 1318.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,962.75 ft above NGVD of 1929. Sept. 10, 1924 to Jan. 31, 1933, water-stage recorder at site about 0.2 mi upstream at different datum. Oct. 14, 1953 to Sept. 30, 1963, crest-stage gage at diversion dam 0.3 mi downstream at different datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No regulation or diversion above station.

AVERAGE DISCHARGE.--16 years (water years 1925-32, 1976-82, 2003), 9.23 ft^3/s, 11.95 in/yr, 6,690 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 330 ft^3/s Dec. 2, 1962, gage height, 15.51 ft, site and datum then in use, from rating curve defined by computation of peak flow over dam; minimum, 1.3 ft^3/s Aug. 29, 1931, Sept. 8, 9, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 14	0830	unknown	1.29	Mar. 15	0130	59	0.90
Dec. 16	0130	unknown	1.28	Mar. 30	1800	55	0.87
Dec. 27	1330	*100	*1.17				

Minimum discharge, 1.6 ft^3/s Sept. 25, 26.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.6	e3.9	e3.7	20	22	10	27	21	48	13	3.6	2.9
2	e2.5	e4.0	e3.7	18	20	9.9	24	21	47	12	4.3	2.6
3	e2.6	e4.2	e3.6	18	18	10	22	22	47	11	6.0	2.5
4	e2.9	e4.0	e3.6	20	17	9.5	21	22	46	11	5.3	3.5
5	e2.6	e4.0	e3.6	20	16	9.2	20	21	45	11	4.8	4.2
6	e2.4	e4.0	e3.5	18	15	9.0	20	20	e44	10	5.2	3.1
7	e2.3	e13	e3.4	17	14	8.7	21	21	43	9.7	5.4	3.7
8	e2.2	e12	e3.4	16	14	8.4	23	21	40	9.2	4.7	4.1
9	e2.3	e6.5	e3.4	15	13	8.4	24	21	37	8.8	4.6	5.1
10	e2.4	e6.0	e3.9	14	12	8.8	24	22	34	8.4	e4.5	4.1
11	e2.5	e5.5	e4.0	13	12	9.1	24	22	32	8.0	e4.3	3.6
12	e2.5	e9.0	e4.0	15	11	9.0	23	25	30	7.8	e4.1	3.4
13	e2.5	e6.5	e15	19	14	11	23	25	28	7.7	e3.9	3.2
14	e2.5	e5.5	e35	20	14	21	24	26	27	7.5	e3.7	3.1
15	e2.5	e5.0	e25	e18	14	45	22	26	25	7.2	3.6	e3.1
16	e2.5	e5.0	e40	e16	16	32	22	25	24	7.0	3.5	e3.0
17	e2.5	e6.2	19	17	14	28	22	24	23	6.8	3.4	e3.0
18	e2.5	e5.2	12	18	14	26	21	23	22	6.4	3.3	e3.0
19	e2.6	e5.0	9.4	17	13	25	20	23	21	6.1	3.2	2.9
20	e2.7	e6.0	7.9	16	13	23	20	23	20	5.7	3.1	2.7
21	e2.9	e5.6	6.3	15	13	22	21	25	19	5.4	3.1	2.6
22	e2.9	e4.8	5.4	17	13	26	20	27	18	5.2	5.3	2.4
23	e2.9	e4.6	4.7	17	12	23	21	30	18	5.0	4.6	2.3
24	e3.0	e4.4	4.2	16	12	21	25	33	17	5.2	3.9	2.2
25	e3.1	e4.2	3.7	16	12	23	23	34	16	5.3	3.6	2.0
26	e3.2	e4.1	3.9	18	11	35	22	35	15	4.8	3.5	2.0
27	e3.3	e4.0	52	24	11	32	22	38	14	4.5	3.4	2.0
28	e3.4	e4.0	59	20	11	31	23	41	14	4.2	3.3	2.1
29	e3.5	e3.8	39	18	---	29	22	47	13	3.9	3.2	2.3
30	e3.6	e3.8	27	21	---	28	21	49	13	3.8	3.0	2.4
31	e3.8	---	23	22	---	28	---	49	---	3.7	2.9	---
TOTAL	85.7	163.8	435.3	549	391	619.0	667	862	840	225.3	124.3	89.1
MEAN	2.76	5.46	14.0	17.7	14.0	20.0	22.2	27.8	28.0	7.27	4.01	2.97
MAX	3.8	13	59	24	22	45	27	49	48	13	6.0	5.1
MIN	2.2	3.8	3.4	13	11	8.4	20	20	13	3.7	2.9	2.0
AC-FT	170	325	863	1090	776	1230	1320	1710	1670	447	247	177
CFSM	0.26	0.52	1.34	1.69	1.33	1.90	2.12	2.65	2.67	0.69	0.38	0.28
IN.	0.30	0.58	1.54	1.95	1.39	2.19	2.36	3.05	2.98	0.80	0.44	0.32

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 2003, BY WATER YEAR (WY)

MEAN	3.55	6.03	9.08	9.03	11.3	12.0	13.5	18.8	15.9	6.50	3.73	3.32
MAX	8.36	15.0	39.0	20.6	25.6	23.6	24.1	32.3	34.8	13.2	6.44	7.48
(WY)	1925	1982	1982	1982	1925	1982	1925	1927	1975	1927	1976	1978
MIN	2.40	2.44	2.90	2.81	2.47	2.84	4.52	4.54	3.18	2.09	1.57	1.82
(WY)	1932	1930	1932	1977	1977	1977	1977	1931	1931	1926	1931	1926

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 1925 - 2003	
ANNUAL TOTAL	5051.5			
ANNUAL MEAN	13.8		9.23	
HIGHEST ANNUAL MEAN			17.9	1982
LOWEST ANNUAL MEAN			3.26	1931
HIGHEST DAILY MEAN	59	Dec 28	112	Feb 21 1927
LOWEST DAILY MEAN	2.0	Sep 25	1.4	Aug 28 1931
ANNUAL SEVEN-DAY MINIMUM	2.1	Sep 23	1.4	Oct 15 1931
ANNUAL RUNOFF (AC-FT)	10020		6690	
ANNUAL RUNOFF (CFSM)	1.32		0.88	
ANNUAL RUNOFF (INCHES)	17.90		11.95	
10 PERCENT EXCEEDS	27		21	
50 PERCENT EXCEEDS	11		5.6	
90 PERCENT EXCEEDS	2.9		2.4	

e Estimated

14353500 EAST FORK ASHLAND CREEK, NEAR ASHLAND, OR

LOCATION.--Lat 42°09'10", long 122°42'30" near line between NE 1/4 NW 1/4 sec.28, T.39 S., R.1 E., Jackson County, Hydrologic Unit 17100308, in Rogue River National Forest, on left bank 0.1 mi upstream from city diversion dam, 2.5 mi south of Ashland, and at mile 0.2.

DRAINAGE AREA.--8.14 mi^2, at diversion dam 0.1 mi downstream.

PERIOD OF RECORD.--September 1924 to January 1933, water years 1954-60, 1963, annual maximum; December 1974 to September 1982, Oct. 2002 to September 2003.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,903.70 ft above NGVD of 1929. Sept. 10, 1924 to Jan. 31, 1933, water-stage recorder at site about 200 ft downstream at different datum. Oct. 19, 1953 to Sept. 30, 1963, crest-stage gage at diversion dam 0.1 mi downstream at different datum.

REMARKS.--Records fair. No regulation or diversion.

AVERAGE DISCHARGE.--16 years (water years 1925-32, 1976-82, 2003), 9.59 ft^3/s, 16.01 in/yr, 6,950 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 335 ft^3/s Dec. 2, 1962, gage height, 5.42 ft, site and datum then in use, from rating curve defined by computation of peak flow over dam; minimum, 0.47 ft^3/s Mar. 14, 1977, result of freezeup.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 15, 1974, is the highest since at least 1925. Discharge, 5,630 ft^3/s by slope-area measurement of peak flow, gage height, 10.2 ft from floodmarks. Peak believed to be affected by release from debris dams breaking upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	0130	67	2.66	Mar. 26	0100	41	2.41
Dec. 27	1230	*72	*2.70	May 31	0230	51	2.51
Mar. 15	0500	57	2.57				

Minimum discharge, 2.3 ft^3/s Oct. 7-9.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	e4.1	3.8	17	27	8.5	24	18	40	14	5.5	3.4
2	2.7	4.2	3.7	15	23	8.2	22	18	40	13	5.9	3.3
3	2.7	4.3	3.7	16	21	7.7	23	19	39	12	6.9	3.2
4	3.1	4.1	3.7	18	17	7.1	23	18	39	12	6.2	3.5
5	2.7	4.1	3.7	18	16	6.9	23	17	41	12	6.0	3.9
6	2.6	4.1	3.7	15	15	6.6	23	16	39	11	5.9	3.3
7	2.4	12	3.5	14	14	6.3	24	17	40	11	6.9	3.4
8	2.4	11	3.5	13	13	6.2	25	17	38	10	5.9	3.5
9	2.4	6.5	3.6	11	12	6.3	22	17	38	10	5.4	4.2
10	2.5	6.1	4.0	11	11	6.5	17	17	36	10	5.3	3.7
11	2.6	5.7	4.0	10	10	7.0	16	17	35	9.9	4.8	3.5
12	2.6	8.3	4.0	16	10	7.0	19	18	32	9.6	4.7	3.4
13	2.6	6.3	12	24	14	8.7	22	19	31	9.1	4.6	3.2
14	2.6	5.4	30	26	13	15	22	20	26	8.8	4.4	3.1
15	2.6	5.0	20	21	13	35	21	20	24	8.6	4.2	3.0
16	2.6	5.0	34	17	16	25	20	19	23	8.3	4.1	3.2
17	2.6	6.1	11	16	13	26	20	18	22	8.5	4.0	3.6
18	2.6	5.2	7.2	19	e12	24	20	17	19	8.8	3.9	3.2
19	2.7	5.1	5.8	18	e11	20	20	17	20	8.3	3.9	3.1
20	2.8	6.1	5.2	16	e11	22	21	17	19	7.9	3.7	3.0
21	3.0	5.7	4.6	16	e10	21	21	20	19	7.2	3.7	2.9
22	3.0	5.1	4.2	20	e10	28	20	26	18	7.0	5.7	2.8
23	3.0	4.7	3.9	21	8.9	28	22	30	17	7.1	5.5	2.7
24	3.2	4.6	3.8	18	8.2	27	23	31	14	7.0	4.6	2.7
25	3.3	4.4	3.6	22	7.7	28	20	32	13	7.1	4.2	2.6
26	3.4	4.2	3.6	22	7.5	36	19	33	14	6.7	4.1	2.6
27	e3.5	4.1	39	30	7.9	31	19	35	14	8.1	4.0	2.7
28	e3.6	4.1	42	25	7.8	28	19	38	15	6.9	3.9	2.6
29	e3.7	3.9	28	23	---	25	19	41	14	6.3	3.8	2.7
30	e3.8	3.9	23	28	---	24	19	44	14	5.8	3.6	2.8
31	e4.0	---	20	27	---	23	---	42	---	5.5	3.5	---
TOTAL	90.1	163.4	345.8	583	360.0	559.0	628	728	793	277.5	148.8	94.8
MEAN	2.91	5.45	11.2	18.8	12.9	18.0	20.9	23.5	26.4	8.95	4.80	3.16
MAX	4.0	12	42	30	27	36	25	44	41	14	6.9	4.2
MIN	2.4	3.9	3.5	10	7.5	6.2	16	16	13	5.5	3.5	2.6
AC-FT	179	324	686	1160	714	1110	1250	1440	1570	550	295	188
CFSM	0.36	0.67	1.37	2.31	1.58	2.22	2.57	2.88	3.25	1.10	0.59	0.39
IN.	0.41	0.75	1.58	2.66	1.65	2.55	2.87	3.33	3.62	1.27	0.68	0.43

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 2003, BY WATER YEAR (WY)

MEAN	3.35	6.15	9.57	8.76	11.4	11.6	12.5	19.4	18.9	8.31	3.99	3.24
MAX	6.79	16.1	42.9	20.4	30.8	24.7	23.1	34.1	51.1	17.7	6.65	6.65
(WY)	1925	1982	1982	1980	1982	1982	1925	1927	1975	1927	1975	1978
MIN	2.06	2.67	2.74	2.74	2.52	2.77	3.68	5.44	4.03	2.08	1.45	1.67
(WY)	1978	1930	1932	1977	1977	1977	1977	1977	1931	1931	1931	1931

SUMMARY STATISTICS	FOR 2003 WATER YEAR		WATER YEARS 1925 - 2003	
ANNUAL TOTAL	4771.4			
ANNUAL MEAN	13.1		9.59	
HIGHEST ANNUAL MEAN			19.2	1982
LOWEST ANNUAL MEAN			3.18	1977
HIGHEST DAILY MEAN	44	May 30	130	Dec 19 1981
LOWEST DAILY MEAN	2.4	Oct 7	1.0	Aug 29 1931
ANNUAL SEVEN-DAY MINIMUM	2.5	Oct 6	1.0	Aug 29 1931
ANNUAL RUNOFF (AC-FT)	9460		6950	
ANNUAL RUNOFF (CFSM)	1.61		1.18	
ANNUAL RUNOFF (INCHES)	21.81		16.01	
10 PERCENT EXCEEDS	27		21	
50 PERCENT EXCEEDS	10		6.0	
90 PERCENT EXCEEDS	3.1		2.5	

e Estimated

14354200 BEAR CREEK BELOW ASHLAND CREEK, AT ASHLAND, OR

LOCATION.--Lat 42°12'58", long 122°43'16", in SE 1/4 SE 1/4 sec.32, T.38 S., R.1 E, Jackson County, Hydrologic Unit 17100308, on left bank, 0.1 mi downstream from Ashland Creek, and at mile 21.0.

DRAINAGE AREA.--168 mi^2.

PERIOD OF RECORD.--July 1990 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,686.64 ft above NGVD of 1929.

REMARKS.--Records good. Flow 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.

AVERAGE DISCHARGE.--13 years (water years 1991-2003) 90.4 ft^3/s, 65,480 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft^3/s Jan. 1, 1997, gage height 11.00 ft; minimum discharge, 0.33 ft^3/s Oct. 18, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 474 ft^3/s Dec. 16, gage height, 2.61 ft; minimum daily discharge, 6.9 ft^3/s Oct. 20, 21.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	8.2	11	115	150	59	198	163	85	40	59	50
2	22	8.3	10	91	127	56	139	159	81	46	58	46
3	21	8.7	10	96	105	58	178	165	78	58	60	45
4	31	8.4	10	99	94	55	188	176	78	53	51	45
5	23	8.4	10	90	86	52	163	175	75	54	35	39
6	17	8.3	10	77	80	50	176	177	72	52	44	29
7	15	21	10	68	74	49	178	184	70	51	36	42
8	14	32	10	65	72	46	179	198	69	50	28	37
9	11	29	10	62	68	45	177	211	66	48	27	36
10	9.7	30	14	60	68	46	166	185	72	45	28	35
11	9.6	18	12	59	65	45	170	170	66	52	32	32
12	8.7	16	12	66	63	45	156	197	60	54	35	26
13	8.2	15	23	86	85	58	157	157	58	55	35	23
14	8.1	13	80	114	97	121	211	137	55	56	34	22
15	7.9	12	72	90	87	202	219	156	52	54	37	21
16	7.6	12	214	77	146	132	213	153	52	56	39	20
17	7.5	15	79	71	102	140	230	125	48	57	39	22
18	7.1	13	57	71	88	115	223	107	55	52	41	24
19	7.1	12	50	71	88	104	194	99	53	51	49	24
20	6.9	12	54	67	95	98	185	93	54	51	55	24
21	6.9	12	51	65	93	94	184	88	51	53	55	24
22	7.1	12	47	69	88	105	181	86	51	59	54	23
23	7.1	12	40	79	79	114	176	80	51	70	49	22
24	7.3	12	31	71	72	97	208	77	43	72	46	22
25	7.5	11	29	80	e63	106	200	83	43	69	44	20
26	7.1	11	28	79	e59	179	182	80	40	64	50	22
27	7.3	11	176	177	60	192	175	77	38	65	60	21
28	7.7	10	269	126	57	200	169	77	37	62	56	21
29	7.9	10	191	97	---	213	168	84	37	42	53	24
30	8.1	11	153	104	---	223	172	89	38	49	50	25
31	7.7	---	234	103	---	219	---	90	---	58	49	---
TOTAL	349.1	412.3	2007	2645	2411	3318	5515	4098	1728	1698	1388	866
MEAN	11.3	13.7	64.7	85.3	86.1	107	184	132	57.6	54.8	44.8	28.9
MAX	31	32	269	177	150	223	230	211	85	72	60	50
MIN	6.9	8.2	10	59	57	45	139	77	37	40	27	20
AC-FT	692	818	3980	5250	4780	6580	10940	8130	3430	3370	2750	1720

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2003, BY WATER YEAR (WY)

MEAN	16.9	38.0	127	180	130	131	138	126	71.1	50.8	49.1	28.3
MAX	29.2	214	791	1091	607	343	326	465	197	70.1	72.1	43.5
(WY)	1998	1999	1997	1997	1996	1998	1998	1998	1998	1998	2000	1998
MIN	4.93	9.70	14.4	16.4	16.9	13.6	12.7	22.3	34.8	23.6	35.2	8.33
(WY)	1991	1993	1991	2001	1992	1992	1992	1992	1994	1992	1994	1992

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1991 - 2003	
ANNUAL TOTAL	16921.4		26435.4			
ANNUAL MEAN	46.4		72.4		90.4	
HIGHEST ANNUAL MEAN					226	1997
LOWEST ANNUAL MEAN					22.0	1992
HIGHEST DAILY MEAN	269	Dec 28	269	Dec 28	6910	Jan 1 1997
LOWEST DAILY MEAN	6.9	Oct 20	6.9	Oct 20	0.90	Oct 20 1990
ANNUAL SEVEN-DAY MINIMUM	7.1	Oct 18	7.1	Oct 18	1.4	Oct 23 1990
ANNUAL RUNOFF (AC-FT)	33560		52430		65480	
10 PERCENT EXCEEDS	76		176		202	
50 PERCENT EXCEEDS	43		55		44	
90 PERCENT EXCEEDS	10		10		13	

e Estimated

14357500 BEAR CREEK AT MEDFORD, OR

LOCATION.--Lat 42°19'27", long 122°51'56", in NW 1/4 sec.30, T.37 S., R.1 W., Jackson County, Hydrologic Unit 17100308, on left bank 50 ft downstream from Cottage Street, in Medford, and at mile 10.1.

DRAINAGE AREA.--289 mi^2.

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. Datum of gage is 1,343.27 ft above NGVD of 1929. Prior to Sept. 19, 1991, at site 0.2 mi downstream, at datum 1.29 ft lower, 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. 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. Bureau of Reclamation satellite telemeter at station.

AVERAGE DISCHARGE.--81 years (water years 1921-81, 1984-2003), 114 ft^3/s, 82,670 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,600 ft^3/s Jan. 1, 1997, gage height, 14.69 ft, present datum; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 2,870 ft^3/s Dec. 28, gage height, 7.09 ft; minimum daily discharge, 18.0 ft^3/s Oct. 17-22.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	20	32	326	576	96	384	248	91	33	34	40
2	e66	20	31	225	313	90	248	238	89	37	37	37
3	63	20	30	211	220	93	312	268	70	42	52	40
4	91	21	30	203	181	88	330	293	58	39	54	43
5	57	21	30	181	158	82	298	272	61	41	39	46
6	37	20	30	148	142	79	342	274	54	41	65	33
7	31	35	30	127	128	77	347	287	63	40	91	38
8	30	62	30	116	120	75	334	331	71	40	52	50
9	26	105	30	110	113	74	309	367	62	41	41	81
10	24	140	38	104	108	73	290	300	63	40	36	54
11	24	68	36	98	104	72	298	276	66	41	35	44
12	e24	54	34	103	99	71	276	325	59	40	40	43
13	21	47	51	155	140	83	281	259	53	40	36	39
14	20	41	155	243	171	199	357	214	47	41	33	36
15	20	39	155	169	179	342	392	233	45	38	30	34
16	19	37	782	138	326	214	368	228	45	37	36	35
17	18	41	197	122	193	244	398	194	39	38	42	41
18	18	39	117	118	167	194	372	168	41	37	37	40
19	18	36	92	115	162	173	311	165	51	39	37	36
20	18	35	90	109	174	167	289	153	54	42	35	36
21	18	35	83	103	160	159	327	132	52	37	32	37
22	18	35	74	124	147	164	294	116	50	36	44	37
23	19	35	68	137	131	191	274	97	51	38	43	34
24	19	35	56	126	121	162	382	79	44	40	36	33
25	20	34	50	139	107	179	363	97	39	42	34	32
26	e20	33	48	134	100	313	311	92	38	35	33	32
27	e20	33	869	713	97	343	293	86	34	35	36	35
28	20	32	1890	326	94	336	278	85	31	35	36	38
29	e21	32	661	208	---	349	271	84	33	32	39	36
30	e21	32	452	217	---	368	270	91	36	34	41	38
31	22	---	1010	200	---	372	---	97	---	33	42	---
TOTAL	919	1237	7281	5548	4731	5522	9599	6149	1590	1184	1278	1198
MEAN	29.6	41.2	235	179	169	178	320	198	53.0	38.2	41.2	39.9
MAX	91	140	1890	713	576	372	398	367	91	42	91	81
MIN	18	20	30	98	94	71	248	79	31	32	30	32
AC-FT	1820	2450	14440	11000	9380	10950	19040	12200	3150	2350	2530	2380

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2003, BY WATER YEAR (WY)

MEAN	32.3	62.8	159	219	211	196	196	138	74.4	33.6	34.2	36.0
MAX	216	367	1137	1365	873	787	686	652	264	95.4	115	91.6
(WY)	1963	1999	1965	1997	1958	1957	1974	1998	1998	1971	1976	1971
MIN	4.74	8.23	17.3	13.2	11.5	13.7	4.88	1.46	2.12	0.53	0.39	0.70
(WY)	1932	1937	1937	1937	1931	1931	1931	1931	1931	1924	1924	1931

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1921 - 2003	
ANNUAL TOTAL	28139		46236			
ANNUAL MEAN	77.1		127		114	
HIGHEST ANNUAL MEAN					304	1974
LOWEST ANNUAL MEAN					8.42	1931
HIGHEST DAILY MEAN	1890	Dec 28	1890	Dec 28	10900	Jan 1 1997
LOWEST DAILY MEAN	18	Oct 17	18	Oct 17	0.20	Jul 30 1922
ANNUAL SEVEN-DAY MINIMUM	18	Oct 16	18	Oct 16	0.20	Jul 23 1924
ANNUAL RUNOFF (AC-FT)	55810		91710		82670	
10 PERCENT EXCEEDS	121		311		262	
50 PERCENT EXCEEDS	43		63		52	
90 PERCENT EXCEEDS	27		30		12	

e Estimated

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 mi^2.

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 NGVD 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.--Records good. Flow regulated since February 1977 by Lost Creek Lake (station 14335040). Slight regulation by Fish Lake and Emigrant Lake. Many diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--71 years (water years 1906-76), 2,998 ft^3/s, 2,172,000 acre-ft/yr.
27 years (water years 1977-2003), 2,808 ft^3/s, 2,034,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 131,000 ft^3/s Dec. 23, 1964, gage height, 23.43 ft, from rating curve extended above 63,000 ft^3/s on basis of slope-area measurement of 113,000 ft^3/s; minimum discharge recorded, 418 ft^3/s Sept. 19, 1968, as result of regulation, but may have been lower during periods of no record during water years 1931-34.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 27,500 ft^3/s Dec. 28, gage height, 10.33 ft; minimum discharge, 900 ft^3/s Oct. 31.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1100	e1010	1040	6350	6230	1550	5920	3300	2590	1960	1590	1970
2	1100	e1010	1040	4450	5490	1490	4890	3320	2580	1960	1650	1940
3	1040	978	1030	4380	4640	1500	4730	3790	2550	1950	1730	1940
4	1100	975	1020	3890	3610	1510	4800	4860	2620	1950	1740	1940
5	1090	979	1010	3390	2750	1450	5080	5190	2700	1960	1680	1950
6	1040	984	1020	2880	2480	1420	6320	4450	2700	1900	1710	1960
7	1030	1010	1030	2610	2240	1530	5920	4250	2770	1800	1880	1980
8	1030	1100	1030	2430	1850	1630	5010	4330	2860	1750	1760	2040
9	1010	1430	1030	2260	1730	1640	4550	4460	2870	1740	1700	2310
10	1000	2090	1040	1910	1660	1750	4840	3960	2850	1720	1680	2280
11	1010	1620	1070	1800	1600	1800	5260	3840	2920	1720	1680	2120
12	1010	1370	1050	1810	1550	1710	5700	4080	3020	1720	1700	2030
13	1010	1360	1190	2000	1640	1660	4950	3790	3030	1740	1690	1900
14	1020	1220	1510	3290	2100	2550	4760	3600	3010	1750	1720	1790
15	1010	1150	2290	3030	2010	3360	4520	3620	3020	1740	1870	1660
16	1010	1120	5840	2510	4980	3190	3980	3640	3080	1670	1920	1550
17	1020	1130	3350	2290	3430	2770	4000	3270	3070	1640	1950	1500
18	1000	1130	2420	2100	3000	2960	4070	3090	3070	1640	1960	1400
19	999	1100	1880	2020	2880	2730	3620	2850	3080	1630	1920	1290
20	994	1080	1750	1930	2680	2750	3340	2680	3020	1630	1920	1190
21	990	1070	2000	1910	2430	2900	3480	2640	2920	1630	1920	1110
22	987	1070	1890	2020	2280	3250	3320	2680	2850	1610	1950	1060
23	992	1060	1680	2600	2130	3940	3200	2900	2760	1610	1970	1040
24	990	1060	1520	2760	1990	3840	4550	3040	2680	1610	1950	1030
25	993	1060	1420	3830	1830	5590	4980	3180	2550	1630	1940	1020
26	996	1060	1370	3520	1710	9690	4050	3030	2430	1610	1910	1030
27	1010	1080	8000	7610	1640	9860	3570	2910	2320	1620	1920	1030
28	1030	1060	22600	6560	1560	8370	3110	2880	2230	1640	1920	1040
29	985	1050	10300	5400	---	6910	3180	2840	2140	1600	1950	1060
30	927	1050	7910	5240	---	5780	3030	2850	2020	1600	1950	1060
31	e979	---	11600	4880	---	4560	---	2820	---	1590	1970	---
TOTAL	31502	34466	102930	103660	74120	105640	132730	108140	82310	53320	56800	47220
MEAN	1016	1149	3320	3344	2647	3408	4424	3488	2744	1720	1832	1574
MAX	1100	2090	22600	7610	6230	9860	6320	5190	3080	1960	1970	2310
MIN	927	975	1010	1800	1550	1420	3030	2640	2020	1590	1590	1020
AC-FT	62480	68360	204200	205600	147000	209500	263300	214500	163300	105800	112700	93660

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2003, BY WATER YEAR (WY)

MEAN	1417	2274	3940	3755	3374	3319	3447	3366	2679	2166	2155	1823
MAX	2110	6184	14680	13750	8461	6151	5596	5605	4426	3589	3115	2508
(WY)	1984	1985	1997	1997	1996	1989	1983	1998	1993	1999	1984	1983
MIN	932	1089	1336	1255	1095	1111	989	1483	1171	1117	1131	1434
(WY)	1995	1988	1977	2001	2001	1992	1977	1977	1977	1992	1977	1980

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1977 - 2003	
ANNUAL TOTAL	783158		932838			
ANNUAL MEAN	2146		2556		2808	
HIGHEST ANNUAL MEAN					5098	1997
LOWEST ANNUAL MEAN					1284	1977
HIGHEST DAILY MEAN	22600	Dec 28	22600	Dec 28	53900	Jan 1 1997
LOWEST DAILY MEAN	927	Sep 26	927	Oct 30	662	Feb 19 1977
ANNUAL SEVEN-DAY MINIMUM	949	Sep 23	980	Oct 30	862	Apr 16 1977
ANNUAL RUNOFF (AC-FT)	1553000		1850000		2034000	
10 PERCENT EXCEEDS	3200		4740		4920	
50 PERCENT EXCEEDS	1850		1950		2160	
90 PERCENT EXCEEDS	1020		1030		1250	

e Estimated

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.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, prior to operation of Lost Creek Dam, 22.0°C July 25, 26, 1976; minimum, 0.0°C Jan. 7, 1974. Maximum since full operation of Lost Creek Dam, 26.0°C July 26, 1996; minimum, 1.0°C Dec. 30, 1978, Jan. 30, 1980, Feb. 5, 6, 1989, Dec. 26, 1989, Dec. 21, 1990.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 18.1°C Aug. 19; minimum, 2.4°C Feb. 8.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	12.4	11.6	12.0	7.2	6.6	6.9	6.5	6.2	6.3	7.0	6.4	6.7
2	12.5	11.4	11.9	7.2	6.4	6.8	6.3	5.8	6.0	7.3	6.6	6.9
3	12.2	11.1	11.5	7.4	6.8	7.0	6.0	5.8	5.9	7.7	7.2	7.4
4	12.4	11.2	11.6	7.7	7.2	7.4	6.4	5.9	6.0	8.1	7.6	7.9
5	13.7	12.4	12.9	8.1	7.5	7.8	6.7	6.4	6.6	8.0	7.3	7.6
6	13.7	13.0	13.3	8.3	7.8	8.1	6.7	6.5	6.6	7.4	6.4	6.8
7	13.4	12.8	13.1	9.4	8.3	8.8	6.6	6.1	6.4	6.8	5.9	6.4
8	13.3	12.5	12.9	9.7	9.4	9.5	6.2	5.6	5.9	6.5	5.4	6.0
9	13.0	12.1	12.4	9.7	9.0	9.3	6.1	5.4	5.7	6.0	5.3	5.6
10	12.5	11.7	12.0	9.1	8.7	8.8	6.8	6.1	6.6	6.0	5.5	5.8
11	11.9	10.6	11.1	9.4	8.6	8.9	7.0	6.8	6.9	6.2	5.7	5.9
12	11.2	10.4	10.7	9.6	9.2	9.4	7.3	6.9	7.1	7.3	6.2	6.6
13	11.0	10.3	10.7	9.6	9.2	9.5	7.7	7.3	7.6	7.4	7.1	7.2
14	11.0	10.4	10.7	9.7	9.3	9.5	8.2	7.7	7.9	7.6	7.3	7.5
15	11.2	10.6	10.8	9.7	8.5	9.0	8.3	7.4	7.7	7.5	6.9	7.3
16	11.3	10.8	11.0	8.8	7.9	8.3	8.2	7.6	7.8	7.3	6.6	6.9
17	11.5	11.0	11.2	9.3	8.4	8.8	7.7	7.3	7.5	6.7	6.1	6.3
18	11.6	11.1	11.4	9.3	7.9	8.4	7.4	6.4	6.7	6.5	6.0	6.2
19	11.5	10.9	11.2	9.2	8.4	8.7	6.7	6.1	6.3	6.6	6.1	6.3
20	11.6	11.2	11.4	9.2	8.5	8.8	6.3	5.8	6.0	6.4	5.9	6.1
21	11.7	11.1	11.4	8.9	8.3	8.5	6.7	6.2	6.4	6.8	5.9	6.2
22	11.5	10.8	11.1	8.4	8.1	8.3	6.9	6.4	6.7	7.1	6.6	6.8
23	11.1	10.3	10.6	8.3	8.0	8.1	6.9	6.0	6.3	7.2	6.7	7.0
24	10.8	10.1	10.4	8.7	8.2	8.4	6.1	5.6	5.9	7.2	6.6	6.8
25	10.4	9.8	10.0	8.8	7.7	8.2	6.2	5.6	5.8	7.9	6.8	7.3
26	10.2	9.4	9.7	7.8	6.4	7.0	6.6	5.9	6.3	7.9	7.7	7.8
27	9.8	8.7	9.1	6.7	6.2	6.4	7.2	6.5	6.8	8.7	7.2	8.1
28	9.7	8.7	9.1	6.9	6.5	6.7	6.8	5.9	6.2	8.1	7.2	7.4
29	9.8	8.6	9.1	7.0	6.5	6.8	6.6	6.0	6.3	7.3	6.9	7.1
30	8.8	7.8	8.2	6.8	6.3	6.5	6.8	6.4	6.6	7.5	6.8	7.1
31	8.2	7.0	7.4	---	---	---	6.8	6.2	6.5	8.0	7.4	7.7
MONTH	13.7	7.0	11.0	9.7	6.2	8.2	8.3	5.4	6.6	8.7	5.3	6.9

14359000 ROGUE RIVER AT RAYGOLD, NEAR CENTRAL POINT, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.0	7.6	7.9	7.7	6.1	6.6	10.3	8.7	9.4	12.7	10.0	11.4
2	7.8	7.2	7.5	7.6	6.8	7.2	9.0	7.6	8.2	12.6	10.8	11.7
3	7.4	6.0	6.7	8.2	7.5	7.7	8.5	7.2	7.9	11.9	10.3	11.0
4	7.1	6.8	6.9	8.2	7.0	7.4	9.2	7.4	8.3	11.3	8.9	9.9
5	7.0	6.1	6.5	8.8	6.2	7.7	8.5	7.4	8.0	11.5	7.3	9.7
6	6.4	4.7	6.0	8.8	8.1	8.3	8.6	7.4	8.0	11.1	8.5	10.1
7	6.3	4.1	5.7	8.3	7.7	8.0	10.9	7.9	9.1	11.3	7.7	10.3
8	6.2	2.4	5.4	8.9	7.4	8.0	11.4	9.1	10.3	11.0	9.4	10.2
9	5.6	4.9	5.2	8.9	8.4	8.6	12.2	9.8	11.0	10.3	7.1	9.5
10	5.5	3.7	5.2	10.3	6.5	9.0	11.8	9.3	10.7	12.1	9.0	10.2
11	5.6	3.9	5.2	10.3	9.2	9.7	11.2	7.1	10.2	11.9	10.1	10.7
12	6.0	5.1	5.4	10.1	9.1	9.5	10.4	8.9	9.6	12.9	8.1	11.2
13	6.7	6.0	6.4	10.1	8.9	9.3	9.8	7.8	9.2	14.4	10.0	12.4
14	7.9	6.6	7.1	9.7	7.5	9.0	11.1	8.7	9.7	14.6	10.3	13.2
15	7.9	6.8	7.3	9.8	9.1	9.5	10.4	7.0	9.4	14.3	10.8	12.9
16	7.3	6.4	6.9	9.4	6.3	8.9	11.0	9.5	10.2	12.8	10.6	11.8
17	7.5	7.1	7.3	9.2	7.6	8.8	11.1	10.0	10.6	12.5	10.3	11.5
18	7.7	7.1	7.4	9.1	7.5	8.4	11.1	9.8	10.4	12.6	10.0	11.3
19	8.1	7.3	7.7	8.8	7.3	7.9	11.5	9.5	10.5	13.3	10.4	11.9
20	8.0	7.3	7.6	9.4	7.4	8.2	11.4	9.0	10.8	14.5	11.2	12.6
21	8.1	7.3	7.6	9.3	6.9	8.8	11.1	10.2	10.5	14.9	11.9	13.4
22	8.2	7.2	7.9	8.8	8.4	8.6	11.4	8.2	10.4	15.3	12.1	13.8
23	8.1	6.8	7.3	9.0	7.2	8.2	11.2	9.1	10.7	15.2	12.7	14.0
24	7.7	6.6	7.1	8.8	7.1	8.1	10.7	8.8	9.9	15.0	12.8	13.8
25	7.7	6.7	7.1	8.7	7.8	8.1	9.7	7.8	8.8	14.0	11.8	13.1
26	7.2	5.8	6.3	9.0	7.7	8.3	10.3	7.8	9.2	14.7	12.1	13.2
27	7.1	5.7	6.3	8.9	6.6	7.8	10.6	9.5	10.0	15.1	12.4	13.7
28	7.1	5.9	6.2	9.4	7.0	8.2	11.3	9.9	10.5	14.8	12.9	13.9
29	---	---	---	9.5	7.2	8.4	11.2	9.6	10.5	15.0	12.8	14.0
30	---	---	---	10.3	8.2	9.1	12.6	9.9	11.0	14.9	13.0	14.2
31	---	---	---	10.8	8.9	10	---	---	---	15.1	12.7	13.8
MONTH	8.2	2.4	6.7	10.8	6.1	8.4	12.6	7.0	9.8	15.3	7.1	12.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15.2	12.5	13.9	16.1	13.9	15.0	17.6	15.2	16.3	16.9	15.0	16.0
2	15.2	12.8	14.2	15.9	13.3	14.8	16.6	14.2	15.5	17.1	15.0	16.1
3	15.2	12.6	14.0	16.1	13.5	14.7	17.1	13.8	15.0	17.2	15.3	16.3
4	15.4	12.5	14.1	15.8	13.8	14.8	17.7	15.5	16.6	16.7	15.1	16.0
5	15.8	12.9	14.3	16.1	14.0	15.1	17.8	15.9	16.8	17.5	15.5	16.4
6	16.0	13.0	14.6	16.2	14.0	15.1	17.4	15.6	16.5	17.6	15.2	16.3
7	16.0	13.3	14.7	16.4	14.4	15.4	17.4	15.4	16.4	16.7	14.7	15.5
8	16.1	13.5	14.8	16.3	14.5	15.4	17.5	15.8	16.6	15.2	13.6	14.4
9	16.0	13.1	14.5	16.5	14.6	15.6	17.5	16.0	16.8	15.1	13.5	14.3
10	15.6	12.9	14.0	16.8	15.0	16.0	17.6	16.0	16.8	15.5	13.6	14.5
11	14.9	12.0	13.3	16.9	15.2	16.1	17.4	15.9	16.7	15.8	13.9	14.8
12	14.4	11.7	12.8	17.0	15.2	16.1	17.4	15.6	16.4	15.9	14.4	15.2
13	13.8	11.7	12.7	16.8	15.0	16.0	17.3	15.6	16.5	15.8	13.8	14.8
14	14.2	11.9	13.0	16.6	14.7	15.8	17.5	15.7	16.6	15.4	13.8	14.7
15	14.6	11.8	13.2	16.8	15.0	15.9	17.5	15.4	16.6	15.7	14.4	15.0
16	14.9	12.2	13.5	17.0	15.2	16.0	17.3	15.3	16.4	15.7	14.0	14.8
17	15.3	12.5	13.8	16.8	14.9	15.9	17.4	15.3	16.4	14.6	12.9	13.7
18	15.3	12.7	13.7	17.0	15.1	16.0	17.9	16.0	16.9	14.5	13.5	14.0
19	14.0	12.2	13.1	16.9	15.0	15.9	18.1	16.0	17.0	15.1	13.0	14.6
20	14.0	12.0	13.0	16.8	14.6	15.7	17.5	15.2	16.5	15.4	14.6	15.0
21	13.9	12.2	13.0	16.7	14.8	15.8	17.5	15.3	16.4	15.5	14.6	14.9
22	14.3	12.1	13.1	17.0	11.2	16.0	16.7	15.3	16.0	15.1	14.5	14.7
23	14.3	11.6	13.0	17.2	11.4	16.0	17.2	14.9	15.9	14.9	14.2	14.5
24	14.2	10.8	12.7	17.0	15.2	16.0	17.5	15.3	16.5	14.5	13.7	14.2
25	14.8	12.2	13.4	16.7	14.4	15.3	17.6	15.5	16.6	14.4	13.8	14.1
26	15.6	12.8	14.1	17.0	15.1	16.0	17.6	15.1	16.4	14.3	13.7	13.9
27	16.1	13.5	14.7	17.2	15.2	16.2	17.1	15.1	16.3	14.6	13.8	14.1
28	16.4	13.6	15.1	17.4	15.3	16.4	17.4	15.2	16.4	14.8	14.3	14.5
29	16.6	13.9	15.3	17.5	15.5	16.5	17.5	15.3	16.4	14.7	13.4	14.1
30	16.3	13.7	15.0	17.8	15.7	16.7	17.2	15.1	16.2	13.4	12.5	12.9
31	---	---	---	17.8	15.5	16.7	17.2	14.8	16.2	---	---	---
MONTH	16.6	10.8	13.8	17.8	11.2	15.8	18.1	13.8	16.4	17.6	12.5	14.8
YEAR	18.1	2.4	10.9									

14361500 ROGUE RIVER AT GRANTS PASS, OR

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.

DRAINAGE AREA.--2,459 mi^2.

PERIOD OF RECORD.--October 1938 to current year. Prior to January 1939 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 884.28 ft above NGVD 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.

REMARKS.--Records good. Flow regulated since February 1977 by Lost Creek Lake (station 14355040), slight regulation by Fish Lake and Emigrant Lake. Large fluctuations at times caused by Savage Rapids Dam 5.5 mi upstream from station. Many diversions from Rogue River and tributaries upstream from station, the largest of which is at Savage Rapids Dam of Grants Pass Irrigation District, 5.5 mi upstream from station. Continuous water-quality records for the period August 1973 to September 1987 have been collected at this location. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--39 years (water years 1939-77), 3,543 ft^3/s, 2,566,000 acre-ft/yr.
26 years (water years 1978-2003), 3,246 ft^3/s, 2,352,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 152,000 ft^3/s Dec. 23, 1964, gage height, 35.15 ft, present datum, from rating curve extended above 93,000 ft^3/s; minimum discharge, 195 ft^3/s Jan. 30, 1961; minimum daily, 606 ft^3/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, 34,800 ft^3/s Dec. 28, gage height, 14.20 ft, from high-water mark; minimum discharge, 1,090 ft^3/s Oct. 30, result of regulation at Savage Rapids Dam.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1160	1120	1160	9440	7780	1890	7160	4100	2770	1880	1530	1980
2	1200	1120	1160	6200	7370	1820	6240	4170	2710	1890	1570	1970
3	1180	1110	1140	6560	6160	1770	5920	4470	2670	1870	1660	1940
4	1170	1110	1140	6060	4940	1800	6020	5700	2690	1880	1700	1960
5	1200	1110	1130	4980	3820	1730	6470	6370	2800	1880	1670	1990
6	1160	1120	1130	4050	3330	1680	7630	5450	2780	1860	1650	1990
7	1140	1160	1140	3180	2940	1730	7990	5170	2910	1760	1860	2020
8	1250	1240	1140	3230	2450	1840	6540	5170	3010	1680	1790	2090
9	1420	1510	1140	3090	2200	1880	5850	5350	3050	1640	1700	2410
10	1270	2540	1160	2640	2080	2040	6080	4790	3010	1630	1670	2540
11	1180	1970	1180	2380	1980	2150	6220	4580	3060	1640	1660	2290
12	1160	1510	1180	2320	1900	2030	7110	4800	3210	1640	1660	2160
13	1140	1450	1270	2580	1910	1960	6230	4670	3240	1660	1650	2010
14	1180	1350	2300	4290	2440	3230	5930	4250	3220	1670	1660	1880
15	1180	1290	6020	4350	2360	4960	5720	4180	3230	1680	1770	1750
16	1180	1260	e9980	3350	5930	4740	5000	4200	3270	1630	1890	1600
17	1180	1250	4780	2820	4960	3840	4880	3470	3270	1570	1920	1540
18	1170	1260	2770	2760	4250	3910	5070	3570	3270	1560	1940	1480
19	1160	1230	1910	2610	4120	3620	4540	3330	3290	1560	1920	1380
20	1160	1210	1730	2470	3790	3590	4140	3080	3270	1550	1910	1320
21	1150	1200	2200	2270	3350	3640	4580	2940	3110	1560	1910	1250
22	1150	1200	2170	2180	3060	4040	4380	2890	3050	1540	1930	1210
23	1150	1190	1850	2250	2840	4930	4160	3130	2940	1530	1980	1190
24	1150	1190	1650	3050	2610	4740	5460	3310	2850	1530	1960	1180
25	1150	1190	1550	5070	2370	6370	6570	3480	2680	1560	1940	1170
26	1150	1180	1530	4790	2170	12200	5470	3410	2500	1560	1910	1160
27	1150	1190	e10200	9480	2040	12900	4880	3190	2350	1560	1910	1160
28	1170	1190	e30700	9610	1920	10200	4190	3130	2250	1560	1920	1160
29	1150	1170	14700	7390	---	8980	4240	3100	2140	1540	1940	1180
30	1090	1170	10000	6750	---	6960	3880	3060	1990	1530	1960	1190
31	1100	---	17600	6450	---	5830	---	3100	---	1520	1970	---
TOTAL	36400	38790	138710	138650	97070	133000	168550	125610	86590	51120	56110	50150
MEAN	1174	1293	4475	4473	3467	4290	5618	4052	2886	1649	1810	1672
MAX	1420	2540	30700	9610	7780	12900	7990	6370	3290	1890	1980	2540
MIN	1090	1110	1130	2180	1900	1680	3880	2890	1990	1520	1530	1160
AC-FT	72200	76940	275100	275000	192500	263800	334300	249100	171800	101400	111300	99470

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2003, BY WATER YEAR (WY)

MEAN	1475	2629	4822	4824	4488	4104	4079	3710	2810	2140	2131	1801
MAX	2282	7669	17620	16600	10960	8119	6843	6428	4572	3485	3080	2642
(WY)	1984	1985	1997	1997	1983	1983	1983	1998	1993	1999	1984	1983
MIN	1008	1160	1557	1348	1250	1099	1211	1857	1549	1059	1620	1333
(WY)	1995	1988	1990	2001	2001	1992	1994	1992	1992	1992	1994	1980

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1978 - 2003	
ANNUAL TOTAL	872210		1120750			
ANNUAL MEAN	2390		3071		3246	
HIGHEST ANNUAL MEAN					5840	1997
LOWEST ANNUAL MEAN					1538	1992
HIGHEST DAILY MEAN	30700	Dec 28	30700	Dec 28	69000	Jan 1 1997
LOWEST DAILY MEAN	1040	Sep 24	1090	Oct 30	744	Oct 10 1994
ANNUAL SEVEN-DAY MINIMUM	1060	Sep 23	1110	Oct 30	799	Sep 22 1994
ANNUAL RUNOFF (AC-FT)	1730000		2223000		2352000	
10 PERCENT EXCEEDS	3770		6040		6050	
50 PERCENT EXCEEDS	1810		2040		2260	
90 PERCENT EXCEEDS	1160		1160		1300	

e Estimated

14361900 APPLEGATE 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 mi^2.

PERIOD OF RECORD.--December 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is NGVD 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. U.S. Army Corps of Engineers satellite telemeter at station.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 82,610 acre-ft May 11, 1997, elevation, 1,987.41 ft; minimum contents since first filling, 7,230 acre-ft Jan. 11, 1991, elevation, 1,855.1 ft, from graph of gage readings furnished by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 82,250 acre-ft May 1, 3, 13-15, elevation, 1,987.05 ft; minimum observed contents, 13,030 acre-ft Dec. 12, 13, elevation, 1,877.29 ft.

Elevation above NGVD 1929, feet
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1934.73	1912.67	1884.21	1889.04	1901.72	1937.72	1964.86	1987.01	1986.96	1981.94	1970.21	1954.11
2	1934.09	1911.86	1883.19	1888.89	1904.01	1938.59	1965.76	1987.03	1986.97	1981.69	1969.77	1953.51
3	1933.47	1911.04	1882.15	1889.05	1906.98	1939.33	1966.26	1987.00	1986.97	1981.43	1969.35	1952.91
4	1932.86	1910.21	1881.17	1889.93	1909.81	1939.93	1966.78	1986.97	1986.97	1981.15	1968.93	1952.33
5	1932.25	1909.37	1880.35	1890.52	1912.16	1940.48	1967.67	1987.01	1987.00	1980.87	1968.46	1951.74
6	1931.62	1908.47	1879.68	1889.99	1914.15	1941.00	1968.61	1986.97	1986.97	1980.56	1967.99	1951.16
7	1930.96	1907.91	1879.16	1889.89	1915.89	1941.51	1969.55	1986.97	1986.88	1980.25	1967.53	1950.57
8	1930.31	1907.80	1878.61	1889.83	1917.53	1941.99	1970.55	1986.96	1986.78	1979.94	1967.07	1949.98
9	1929.64	1907.53	1878.08	1889.09	1918.98	1942.67	1971.31	1986.96	1986.62	1979.63	1966.58	1949.38
10	1928.97	1907.31	1877.81	1889.06	1920.29	1943.63	1972.19	1986.99	1986.53	1979.28	1966.10	1948.79
11	1928.29	1906.39	1877.48	1889.06	1921.25	1944.69	1972.88	1986.98	1986.57	1978.94	1965.60	1948.21
12	1927.61	1905.49	1877.29	1889.66	1921.65	1945.86	1973.73	1987.00	1986.59	1978.59	1965.11	1947.65
13	1926.91	1904.22	1879.57	1891.67	1921.55	1947.47	1974.39	1987.03	1986.57	1978.24	1964.59	1947.09
14	1926.22	1902.15	1891.59	1894.00	1921.01	1950.05	1975.03	1987.05	1986.51	1977.89	1964.07	1946.51
15	1925.50	1899.93	1893.63	1893.73	1921.80	1952.40	1975.80	1986.94	1986.42	1977.52	1963.54	1945.94
16	1924.80	1897.60	1899.97	1892.44	1922.97	1952.45	1976.58	1986.94	1986.29	1977.15	1963.01	1945.35
17	1924.07	1895.46	1892.71	1891.63	1923.75	1952.57	1977.35	1986.94	1986.13	1976.77	1962.47	1944.78
18	1923.34	1894.18	1888.47	1891.59	1924.40	1953.21	1978.20	1986.93	1985.96	1976.37	1961.94	1944.19
19	1922.61	1893.24	1888.57	1891.37	1925.50	1954.21	1979.04	1986.97	1985.77	1975.99	1961.40	1943.59
20	1921.87	1892.66	1888.54	1890.65	1927.05	1955.04	1979.80	1986.97	1985.54	1975.58	1960.87	1942.99
21	1921.13	1892.25	1888.62	1889.93	1928.53	1955.75	1980.32	1987.04	1985.29	1975.16	1960.32	1942.38
22	1920.40	1891.75	1888.68	1890.41	1929.95	1957.60	1981.08	1987.01	1985.03	1974.75	1959.77	1941.75
23	1919.65	1891.15	1888.70	1890.41	1931.27	1959.34	1981.95	1986.97	1984.73	1974.32	1959.23	1941.13
24	1918.91	1890.44	1888.75	1890.28	1932.52	1959.61	1982.51	1986.93	1984.43	1973.90	1958.67	1940.49
25	1918.15	1889.70	1888.79	1892.41	1933.68	1959.03	1983.20	1986.95	1984.11	1973.46	1958.12	1939.85
26	1917.39	1888.89	1889.09	1894.12	1934.78	1960.48	1984.04	1986.96	1983.75	1973.02	1957.55	1939.19
27	1916.60	1887.99	1903.48	1899.29	1935.81	1960.61	1984.81	1987.00	1983.39	1972.56	1957.00	1938.51
28	1915.83	1887.07	1905.85	1899.43	1936.79	1960.80	1985.58	1987.00	1983.01	1972.10	1956.43	1937.84
29	1915.04	1886.14	1898.23	1895.63	---	1961.48	1986.31	1987.00	1982.57	1971.64	1955.89	1937.16
30	1914.25	1885.19	1892.14	1895.47	---	1962.35	1987.00	1986.95	1982.19	1971.16	1955.29	1936.47
31	1913.46	---	1892.32	1898.63	---	1963.53	---	1986.94	---	1970.69	1954.71	---
MAX	1934.73	1912.67	1905.85	1899.43	1936.79	1963.53	1987.00	1987.05	1987.00	1981.94	1970.21	1954.11
MIN	1913.46	1885.19	1877.29	1888.89	1901.72	1937.72	1964.86	1986.93	1982.19	1970.69	1954.71	1936.47
(†)	27590	15640	18260	20800	40940	60920	82200	82150	77540	67040	53830	40730
(‡)	-12420	-11950	+2620	+2540	+20140	+19980	+21280	-50	-4610	-10500	-13210	-13100

CAL YR 2002 MAX 1986.99 MIN 1877.29 AC-FT‡ +810
WTR YR 2003 MAX 1987.05 MIN 1877.29 AC-FT‡ +720

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

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 mi^2.

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 NGVD of 1929. Prior to Oct. 1, 1977, at site 0.6 mi upstream at datum 12.15 ft higher.

REMARKS.--No estimated daily discharges. 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. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--43 years (water years 1939-81), 438 ft^3/s, 317,300 acre-ft/yr.
22 years (water years 1982-2003, 432 ft^3/s, 313,100 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,800 ft^3/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 ft^3/s on basis of four slope-area measurements of peak flows made in 1950, 1955, 1964, and 1974; minimum discharge, 1.5 ft^3/s Dec. 20, 1980, result of regulation at Applegate dam, 0.6 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,400 ft^3/s Dec. 29, gage height, 7.97 ft; minimum discharge, 98 ft^3/s Feb. 27 to Mar. 2.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	240	239	241	2520	1010	99	553	746	699	270	269	273
2	239	240	240	1280	771	100	573	751	665	270	269	273
3	237	239	240	1210	384	138	654	867	667	270	269	272
4	241	239	228	1310	254	170	580	883	634	270	270	272
5	235	239	201	1420	255	170	346	753	590	271	271	272
6	238	251	180	1320	248	170	263	773	590	271	271	272
7	240	302	152	1080	237	169	263	702	589	271	270	271
8	240	350	151	972	203	172	262	722	562	270	270	270
9	239	451	150	1010	204	181	424	657	544	270	269	270
10	239	454	150	810	204	179	441	614	468	270	269	269
11	240	452	150	739	263	177	584	637	359	269	268	269
12	240	450	150	1050	400	177	544	607	359	269	269	269
13	240	494	151	1530	572	177	562	684	358	269	273	268
14	241	598	345	1550	667	288	495	784	356	268	272	268
15	241	596	1500	1550	402	1100	355	881	359	269	272	267
16	240	595	2240	1430	403	1280	310	741	360	270	272	268
17	240	549	2930	1220	404	931	278	674	360	270	271	269
18	241	353	1560	1140	403	580	203	620	359	270	271	269
19	242	270	494	1160	279	400	173	570	359	269	271	269
20	242	240	486	1160	103	403	244	624	359	269	271	268
21	242	239	432	1140	102	404	454	683	358	269	271	271
22	240	239	371	1160	101	405	275	885	358	269	270	271
23	240	238	337	1610	101	423	278	1010	358	269	269	271
24	239	240	285	1340	102	835	680	1050	360	268	269	270
25	238	241	260	1230	102	1400	518	907	360	271	269	272
26	238	240	275	1530	102	1590	378	835	361	272	268	272
27	241	244	1910	1440	101	1460	379	794	361	271	268	272
28	241	244	3580	1830	99	1160	380	848	361	270	268	273
29	240	243	4020	2330	---	816	381	905	360	270	269	273
30	239	243	3820	1770	---	714	381	931	348	270	274	274
31	239	---	3360	1340	---	626	---	800	---	269	273	---
TOTAL	7432	10012	30589	42181	8476	16894	12211	23938	13181	8363	8375	8117
MEAN	240	334	987	1361	303	545	407	772	439	270	270	271
MAX	242	598	4020	2520	1010	1590	680	1050	699	272	274	274
MIN	235	238	150	739	99	99	173	570	348	268	268	267
AC-FT	14740	19860	60670	83670	16810	33510	24220	47480	26140	16590	16610	16100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2003, BY WATER YEAR (WY)

MEAN	324	376	559	700	537	516	417	624	401	236	226	271
MAX	506	1033	2374	3542	1685	1481	909	1416	1026	376	389	435
(WY)	1984	1985	1982	1997	1983	1998	1982	1983	1983	1999	1999	1983
MIN	77.6	79.2	121	115	112	100	118	134	69.0	58.1	65.7	65.4
(WY)	2002	2002	1995	1991	2001	2002	1994	2001	2001	2001	2001	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1982 - 2003	
ANNUAL TOTAL	137680		189769			
ANNUAL MEAN	377		520		432	
HIGHEST ANNUAL MEAN					829	1983
LOWEST ANNUAL MEAN					127	2001
HIGHEST DAILY MEAN	4020	Dec 29	4020	Dec 29	15500	Jan 2 1997
LOWEST DAILY MEAN	99	Mar 3	99	Feb 28	51	Jul 1 2001
ANNUAL SEVEN-DAY MINIMUM	99	Mar 3	101	Feb 24	55	Jul 1 2001
ANNUAL RUNOFF (AC-FT)	273100		376400		313100	
10 PERCENT EXCEEDS	546		1160		879	
50 PERCENT EXCEEDS	240		272		264	
90 PERCENT EXCEEDS	101		218		120	

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: September 1980 to September 1987.
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.--Record good. Temperatures are affected 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, 16.4°C July 7: minimum, 4.8°C Feb. 11.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	13.5	13.0	13.2	7.7	7.1	7.4	8.1	7.8	7.9	6.3	6.1	6.2
2	13.5	12.8	13.2	7.8	7.2	7.4	8.0	7.7	7.8	6.3	6.2	6.2
3	13.4	11.8	12.8	7.8	7.4	7.6	7.9	7.6	7.7	6.4	6.3	6.4
4	12.3	11.8	12.0	7.9	7.5	7.7	7.8	7.5	7.7	6.6	6.4	6.5
5	12.4	11.2	11.9	8.2	7.6	7.9	7.7	7.4	7.5	6.7	6.5	6.6
6	12.1	10.1	11.0	8.5	6.8	7.9	7.6	7.3	7.4	6.9	6.7	6.8
7	11.3	10.5	10.9	7.0	6.8	6.9	7.7	7.3	7.4	6.8	6.2	6.5
8	11.5	10.7	11.1	7.2	6.8	7.0	7.6	7.3	7.4	6.3	6.1	6.2
9	11.6	10.9	11.3	7.4	7.1	7.3	7.6	7.3	7.5	6.1	5.8	5.9
10	11.8	8.3	10.0	7.9	7.4	7.7	7.3	7.1	7.2	5.8	5.7	5.7
11	9.2	8.3	8.8	8.4	7.8	8.2	7.3	7.0	7.1	5.8	5.7	5.8
12	9.2	8.6	8.9	8.6	8.4	8.5	7.4	7.0	7.2	6.0	5.8	5.9
13	9.0	8.4	8.6	8.6	8.4	8.6	7.3	7.0	7.2	6.3	6.0	6.1
14	8.8	8.2	8.5	8.9	8.6	8.7	7.9	7.2	7.5	6.4	6.2	6.3
15	8.9	8.3	8.5	8.9	8.7	8.8	7.8	7.6	7.7	6.5	6.4	6.5
16	8.9	8.4	8.6	9.1	8.8	8.9	7.8	7.0	7.4	6.6	6.3	6.5
17	9.0	8.4	8.6	9.2	9.0	9.1	7.1	7.0	7.0	6.4	6.2	6.3
18	9.0	8.1	8.5	9.3	9.0	9.1	7.0	6.9	7.0	6.2	6.0	6.1
19	8.7	8.2	8.3	9.2	8.8	9.0	7.0	6.7	6.8	6.2	6.0	6.1
20	8.7	8.2	8.4	9.0	8.7	8.8	6.9	6.4	6.7	6.3	6.1	6.2
21	8.6	6.9	7.7	9.0	8.7	8.8	6.5	5.7	6.1	6.2	5.9	6.1
22	7.5	6.8	7.0	9.0	8.7	8.8	5.7	5.4	5.5	6.5	6.0	6.2
23	7.4	6.8	7.0	8.9	8.6	8.7	5.5	5.3	5.4	6.5	6.1	6.4
24	7.4	6.8	7.0	8.9	8.7	8.8	5.6	5.3	5.4	6.6	6.4	6.5
25	7.4	6.8	7.0	8.9	8.6	8.7	5.7	5.4	5.5	6.7	6.5	6.7
26	7.5	6.6	7.1	8.9	8.5	8.7	5.9	5.5	5.6	6.8	6.4	6.7
27	7.4	7.0	7.1	8.9	8.4	8.7	6.1	5.9	6.0	6.9	6.7	6.8
28	7.5	7.0	7.2	8.5	8.1	8.3	6.0	5.9	5.9	7.0	6.8	6.9
29	7.4	7.1	7.2	8.3	7.9	8.0	6.0	5.9	5.9	6.9	6.6	6.7
30	7.5	7.1	7.2	8.2	7.9	8.0	6.0	5.9	5.9	6.7	6.5	6.6
31	7.6	7.0	7.3	---	---	---	6.2	6.0	6.1	6.9	6.5	6.7
MONTH	13.5	6.6	9.1	9.3	6.8	8.3	8.1	5.3	6.8	7.0	5.7	6.4

14362000 APPLEGATE RIVER NEAR COPPER, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6.9	6.7	6.8	6.9	5.5	5.9	7.0	6.7	6.8	9.6	7.6	9.1
2	7.0	6.8	6.9	6.9	5.4	5.9	7.3	6.6	6.8	9.4	9.0	9.2
3	7.0	6.5	6.7	6.3	5.4	5.7	7.0	6.7	6.8	9.1	8.3	8.6
4	6.8	6.2	6.4	6.6	5.6	5.9	7.0	6.7	6.8	9.4	8.6	8.9
5	6.4	5.8	6.1	6.8	5.5	6.0	7.1	6.7	6.8	8.8	8.0	8.5
6	6.2	5.5	5.8	7.0	5.6	6.3	7.3	6.8	7.0	9.0	8.4	8.7
7	5.8	5.3	5.5	7.8	6.2	7.0	7.5	6.8	7.0	8.8	8.2	8.5
8	5.8	5.2	5.4	7.4	5.8	6.7	7.5	6.8	7.1	9.1	8.3	8.8
9	5.6	5.0	5.3	6.8	6.0	6.4	7.4	6.6	7.0	8.9	8.5	8.7
10	5.5	4.9	5.1	6.8	5.7	6.2	7.2	6.6	6.8	9.6	8.5	8.9
11	5.3	4.8	5.0	6.7	5.6	5.9	7.2	6.6	6.9	10.2	9.3	9.7
12	5.2	4.9	5.0	6.2	5.6	5.9	6.8	6.6	6.6	9.7	9.3	9.5
13	5.1	5.0	5.0	6.0	5.6	5.8	6.9	6.6	6.7	10.5	9.6	10.0
14	5.2	5.0	5.0	7.0	5.7	6.4	7.2	6.6	6.9	10.3	9.5	9.9
15	5.2	5.0	5.0	6.6	5.7	5.8	7.8	7.0	7.4	10.2	9.2	9.6
16	5.3	5.0	5.1	6.0	5.8	5.9	8.1	7.6	7.8	10.9	9.1	9.9
17	5.3	5.1	5.2	6.1	5.9	6.0	8.3	7.6	7.8	10.1	9.1	9.6
18	5.5	5.2	5.3	6.7	6.0	6.2	8.4	7.5	7.8	10.4	9.3	9.8
19	6.9	5.2	5.8	6.9	6.5	6.7	8.7	7.4	7.9	10.8	9.6	10.2
20	6.9	6.2	6.5	7.0	6.6	6.7	8.1	7.7	7.8	10.6	9.6	10.1
21	6.9	6.1	6.4	7.0	6.6	6.7	7.9	7.6	7.7	11.5	9.8	10.8
22	7.3	5.8	6.3	7.0	6.7	6.8	8.3	7.7	8.0	11.7	9.6	10.6
23	7.1	5.8	6.2	6.9	6.6	6.7	8.8	7.7	8.2	10.9	9.6	10.2
24	7.2	5.8	6.2	7.0	6.3	6.5	8.9	7.9	8.3	10.5	9.8	10.2
25	7.2	5.7	6.1	6.6	6.4	6.5	9.7	8.1	8.7	10.8	10.2	10.5
26	6.3	5.6	5.9	6.6	6.5	6.6	9.1	8.4	8.7	11.4	10.2	10.8
27	6.9	5.6	6.0	7.3	6.5	6.6	8.7	8.1	8.3	10.9	10.1	10.5
28	6.2	5.5	5.8	6.8	6.6	6.7	8.8	8.1	8.5	11.0	10.0	10.6
29	---	---	---	6.9	6.6	6.7	9.2	8.4	8.8	11.3	10.3	10.8
30	---	---	---	6.9	6.6	6.7	8.9	8.1	8.5	11.5	10.3	10.9
31	---	---	---	7.0	6.7	6.8	---	---	---	12.4	10.7	11.4
MONTH	7.3	4.8	5.8	7.8	5.4	6.3	9.7	6.6	7.5	12.4	7.6	9.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	13.0	11.7	12.3	15.0	13.4	14.1	16.1	15.0	15.5	15.3	14.6	14.9
2	13.1	11.6	12.4	15.2	14.0	14.6	15.3	14.5	14.9	15.6	14.8	15.1
3	13.2	12.0	12.6	15.2	14.3	14.7	15.4	14.7	15.0	15.7	14.9	15.3
4	13.4	12.2	12.8	15.4	14.5	15.0	15.6	14.1	14.7	15.5	14.3	14.9
5	13.6	12.5	13.0	15.5	14.6	15.2	14.9	14.0	14.3	14.8	14.3	14.4
6	13.5	12.5	13.0	15.7	14.9	15.4	15.0	13.9	14.5	14.8	14.2	14.5
7	13.6	12.5	13.1	16.4	15.0	15.6	15.1	14.0	14.7	14.6	14.0	14.3
8	13.8	11.9	12.9	15.9	14.2	14.9	15.6	14.3	14.8	14.6	13.9	14.2
9	13.9	12.0	12.7	15.8	14.8	15.4	15.3	14.5	15.0	14.3	13.9	14.1
10	13.3	12.3	12.8	15.6	15.1	15.4	15.6	14.5	15.1	14.4	13.7	14.0
11	13.4	12.1	12.7	15.7	14.8	15.3	15.8	14.9	15.2	14.4	13.8	14.0
12	13.4	12.2	12.9	16.3	13.7	15.3	15.5	13.8	14.6	14.6	13.7	14.1
13	14.5	12.4	13.3	15.2	13.7	14.5	15.2	13.8	14.4	14.5	13.7	14.0
14	13.4	12.1	12.6	15.3	14.6	15.0	15.4	14.2	14.8	14.5	13.6	14.0
15	13.4	12.5	12.9	15.5	14.7	15.1	15.1	14.4	14.8	14.7	13.8	14.1
16	13.5	12.8	13.2	15.7	14.2	15.0	15.5	14.6	15.0	14.5	13.6	14.1
17	13.6	12.8	13.3	15.5	14.6	15.1	15.8	14.7	15.2	14.7	13.7	14.1
18	13.7	12.7	13.2	15.7	14.8	15.3	16.1	14.7	15.3	14.5	13.6	14.1
19	13.8	13.0	13.4	15.9	14.1	15.0	15.9	13.7	14.8	14.6	13.8	14.1
20	14.1	13.2	13.6	15.4	14.4	14.9	15.1	14.0	14.5	14.7	13.8	14.2
21	14.2	13.3	13.7	15.5	14.7	15.1	15.0	14.4	14.7	14.8	14.0	14.4
22	14.9	13.8	14.2	15.8	14.8	15.3	15.0	14.6	14.8	14.9	14.0	14.4
23	15.0	13.9	14.5	15.9	14.9	15.5	15.3	14.5	14.9	15.0	14.2	14.6
24	14.9	13.8	14.5	15.9	14.5	15.3	15.4	14.8	15.1	14.9	14.2	14.6
25	15.5	14.5	14.8	15.6	14.7	15.1	15.8	14.3	14.9	15.1	14.2	14.7
26	15.3	14.6	14.9	15.6	14.7	15.2	14.8	14.0	14.4	15.2	14.3	14.7
27	15.1	14.4	14.8	15.2	14.5	14.9	15.0	14.2	14.5	15.4	14.6	14.8
28	15.1	14.7	14.9	15.3	14.6	15.0	15.3	14.3	14.7	15.0	13.9	14.5
29	16.2	14.5	15.2	15.6	14.8	15.1	15.4	14.4	14.8	15.0	13.8	14.3
30	15.2	13.7	14.2	15.8	15.0	15.3	15.3	14.4	14.8	15.0	13.7	14.3
31	---	---	---	16.0	15.0	15.4	15.3	14.6	14.8	---	---	---
MONTH	16.2	11.6	13.5	16.4	13.4	15.1	16.1	13.7	14.8	15.7	13.6	14.4
YEAR	16.4	4.8	9.8									

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 mi^2.

PERIOD OF RECORD.--July 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,667.04 ft above NGVD of 1929.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--20 years (water years 1984-2003), 5.27 ft^3/s, 3,820 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,050 ft^3/s Jan. 1, 1997, gage height, 5.43 ft; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
unknown	unknown	*465	a*4.10	No other peak greater than base discharge.			

Minimum discharge, no flow October, 1-4.
a From high-water mark.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.00	0.51	0.94	e80	14	5.7	14	18	4.4	1.9	0.42	0.26
2	0.00	0.53	0.94	76	14	5.4	14	17	4.3	2.0	0.57	0.25
3	0.00	0.55	0.92	53	13	5.2	12	17	4.2	1.9	0.97	0.21
4	0.09	0.55	0.89	42	13	5.0	13	15	4.0	1.8	0.97	0.25
5	0.28	0.55	0.89	33	12	4.7	14	14	3.8	1.7	0.84	0.47
6	0.31	0.55	0.91	25	11	4.5	14	13	3.7	1.6	0.83	0.63
7	0.30	1.3	0.90	19	9.5	4.4	14	12	3.6	1.5	1.1	0.53
8	0.28	3.8	0.89	16	8.7	4.2	14	12	3.5	1.5	0.92	0.54
9	0.26	5.5	0.89	14	7.9	4.2	14	11	3.4	1.5	0.81	0.64
10	0.24	8.6	1.1	13	7.2	4.1	14	10	3.4	1.4	0.75	0.69
11	0.25	5.0	1.2	11	6.7	3.9	12	10	3.3	1.3	0.70	0.64
12	0.29	3.1	1.2	9.7	6.3	3.9	12	9.9	3.3	1.2	0.69	0.60
13	0.33	2.4	3.2	10	6.3	4.4	12	9.2	3.3	1.2	0.67	0.56
14	0.33	1.9	e40	15	5.9	22	11	8.7	3.2	1.2	0.63	0.51
15	0.30	1.7	e30	16	7.1	56	10	8.2	3.1	1.1	0.54	0.49
16	0.25	1.4	e80	15	15	45	9.7	7.7	3.0	1.1	0.52	0.50
17	0.22	1.4	30	13	15	31	9.3	7.3	2.9	1.1	0.50	0.66
18	0.20	1.3	11	12	14	22	8.7	7.1	2.8	0.98	0.48	0.67
19	0.20	1.2	5.7	10	13	19	8.2	6.8	2.9	0.92	0.45	0.62
20	0.25	1.2	e70	9.2	12	16	8.2	6.5	2.8	0.86	0.43	0.63
21	0.32	1.2	e10	8.3	11	14	15	6.3	2.8	0.82	0.42	0.60
22	0.35	1.2	4.3	8.2	9.8	14	20	6.1	2.7	0.76	0.41	0.58
23	0.29	1.1	3.4	8.0	9.3	12	20	5.8	2.7	0.71	0.42	0.54
24	0.31	1.1	2.7	7.2	8.8	11	23	5.7	2.7	0.67	0.46	0.49
25	0.35	1.1	2.2	7.0	7.9	12	29	5.7	2.5	0.66	0.43	0.42
26	0.40	1.0	2.1	6.7	7.2	17	30	5.4	2.4	0.65	0.38	0.39
27	0.43	0.99	e20	12	6.6	21	29	5.1	2.2	0.63	0.39	0.37
28	0.45	0.99	e200	19	6.0	20	27	4.9	2.1	0.56	0.41	0.34
29	0.46	0.99	e90	18	---	17	24	4.7	2.0	0.50	0.36	0.36
30	0.48	0.97	e200	15	---	15	20	4.7	1.9	0.46	0.31	0.50
31	0.49	---	e300	13	---	14	---	4.5	---	0.42	0.28	---
TOTAL	8.71	53.68	1116.27	614.3	278.2	437.6	475.1	279.3	92.9	34.60	18.06	14.94
MEAN	0.28	1.79	36.0	19.8	9.94	14.1	15.8	9.01	3.10	1.12	0.58	0.50
MAX	0.49	8.6	300	80	15	56	30	18	4.4	2.0	1.1	0.69
MIN	0.00	0.51	0.89	6.7	5.9	3.9	8.2	4.5	1.9	0.42	0.28	0.21
AC-FT	17	106	2210	1220	552	868	942	554	184	69	36	30

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2003, BY WATER YEAR (WY)

MEAN	0.81	3.05	9.26	12.6	12.2	11.2	7.08	3.64	1.91	0.88	0.46	0.41
MAX	1.98	18.0	50.7	75.3	49.3	34.0	19.6	9.08	6.07	3.11	1.61	1.09
(WY)	1984	1985	1997	1997	1999	1999	1995	1998	1998	1998	1998	1998
MIN	0.021	0.23	0.87	1.13	1.30	0.95	1.00	0.22	0.012	0.000	0.000	0.000
(WY)	1993	1993	1990	1992	2001	1992	1994	1992	1992	1994	1988	1991

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1984 - 2003	
ANNUAL TOTAL	1883.00		3423.66			
ANNUAL MEAN	5.16		9.38		5.27	
HIGHEST ANNUAL MEAN					15.1	1997
LOWEST ANNUAL MEAN					0.60	1992
HIGHEST DAILY MEAN	300	Dec 31	300	Dec 31	621	Jan 1 1997
LOWEST DAILY MEAN	0.00	Jul 7	0.00	Oct 1	0.00	Aug 10 1987
ANNUAL SEVEN-DAY MINIMUM	0.00	Jul 7	0.14	Oct 1	0.00	Aug 21 1987
ANNUAL RUNOFF (AC-FT)	3730		6790		3820	
10 PERCENT EXCEEDS	6.3		18		13	
50 PERCENT EXCEEDS	1.2		3.3		1.5	
90 PERCENT EXCEEDS	0.00		0.39		0.06	

e Estimated

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 mi^2.

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 NGVD of 1929. Prior to Dec. 23, 1938, nonrecording gage at same site and datum.

REMARKS.--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. U.S. Army Corps of Engineers satellite telemeter at station.

AVERAGE DISCHARGE.--42 years (water years 1939-80), 548 ft^3/s, 397,000 acre-ft/yr.
23 years (water years 1981-2003), 524 ft^3/s, 379,600 acre-ft/yr, regulated.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,200 ft^3/s Jan. 15, 1974, gage height, 20.41 ft, from rating curve extended above 18,000 ft^3/s on basis of slope-area measurements of flow at gage heights 18.00 ft and 19.57 ft; minimum discharge, 4.6 ft^3/s Sept. 22-25, 1979. Minimum since first filling of Applegate Lake, 22 ft^3/s July 24, 2001.

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, 7,480 ft^3/s Dec. 28, gage height, 8.18 ft; minimum discharge, 165 ft^3/s Dec. 8, 9, 11, 12.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	230	252	263	3840	1340	224	853	948	932	298	237	256
2	231	257	262	2230	1170	218	772	1010	880	286	242	255
3	230	256	260	1790	704	232	936	1140	865	284	251	256
4	237	255	259	1850	490	278	822	1150	830	282	252	257
5	232	255	222	1880	468	272	649	1000	775	281	253	257
6	233	254	214	1770	443	270	487	1010	768	282	255	256
7	235	346	168	1460	426	268	489	929	760	281	264	256
8	233	406	167	1260	378	263	492	941	735	281	254	257
9	232	542	165	1290	369	273	592	889	706	275	254	262
10	233	566	171	1070	361	272	704	830	622	266	254	259
11	235	523	167	966	363	269	780	852	484	261	249	258
12	234	507	167	1170	533	270	789	847	461	255	245	257
13	231	519	184	1800	638	281	790	866	452	254	248	258
14	231	656	376	1910	900	451	761	1020	443	254	247	257
15	230	647	1920	1870	564	1520	579	1130	434	254	246	257
16	230	645	3370	1760	684	1730	518	977	430	253	249	257
17	230	642	3270	1510	646	1360	481	905	422	253	249	260
18	230	414	2070	1390	626	910	401	851	417	253	250	260
19	232	326	717	1400	563	651	353	759	415	252	245	260
20	233	271	638	1400	304	638	388	818	408	253	247	259
21	234	270	601	1350	289	620	704	854	404	249	248	262
22	231	270	488	1360	278	631	627	1070	402	247	246	261
23	241	267	451	1810	270	630	556	1270	400	247	246	258
24	249	265	384	1630	263	931	979	1380	397	245	245	258
25	249	269	353	1460	255	1580	942	1210	390	252	242	258
26	251	265	329	1730	246	1960	738	1090	384	251	242	259
27	252	266	2860	1860	239	1870	719	1040	378	250	242	260
28	251	269	6600	2100	228	1550	707	1090	375	247	243	258
29	249	267	5100	2690	---	1150	687	1150	374	245	245	258
30	251	266	4940	2120	---	993	664	1200	373	244	251	260
31	252	---	5870	1730	---	906	---	1070	---	243	254	---
TOTAL	7352	11213	43006	53456	14038	23471	19959	31296	16116	8078	7695	7746
MEAN	237	374	1387	1724	501	757	665	1010	537	261	248	258
MAX	252	656	6600	3840	1340	1960	979	1380	932	298	264	262
MIN	230	252	165	966	228	218	353	759	373	243	237	255
AC-FT	14580	22240	85300	106000	27840	46550	39590	62080	31970	16020	15260	15360

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 2003, BY WATER YEAR (WY)

MEAN	314	416	736	899	766	709	571	747	456	229	202	251
MAX	507	1261	3077	4904	2552	1892	1304	1705	1237	441	413	425
(WY)	1983	1985	1982	1997	1983	1995	1982	1983	1983	1998	1999	1983
MIN	51.6	97.8	149	133	141	142	139	155	48.2	35.2	36.9	43.7
(WY)	1981	1981	1995	2001	2001	1992	1992	2001	2001	2001	2001	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1981 - 2003	
ANNUAL TOTAL	165178		243426			
ANNUAL MEAN	453		667		524	
HIGHEST ANNUAL MEAN					1072	1983
LOWEST ANNUAL MEAN					139	2001
HIGHEST DAILY MEAN	6600	Dec 28	6600	Dec 28	24400	Jan 1 1997
LOWEST DAILY MEAN	158	Apr 28	165	Dec 9	17	Oct 8 1980
ANNUAL SEVEN-DAY MINIMUM	167	Mar 14	170	Dec 7	21	Oct 4 1980
ANNUAL RUNOFF (AC-FT)	327600		482800		379600	
10 PERCENT EXCEEDS	659		1420		1140	
50 PERCENT EXCEEDS	235		369		273	
90 PERCENT EXCEEDS	174		238		138	

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.

REMARKS.--Records good.

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 during winter periods most years. Maximum since full operation of Applegate Lake, 25.5°C July 5, 1984, July 16, 19, 27, 1992; minimum, 0.0°C on several days during winter periods most years.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 23.4°C July 22; minimum, 3.3°C Feb. 8.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.2	12.2	13.5	7.2	4.0	5.6	7.3	5.6	6.5	7.4	6.8	7.1
2	14.6	10.6	12.6	7.7	4.4	6.1	6.9	5.5	6.3	7.8	6.7	7.3
3	13.2	11.1	12.3	8.4	5.3	6.8	6.8	5.5	6.3	8.1	7.4	7.7
4	15.2	12.9	13.9	8.5	5.6	7.1	8.1	6.4	7.2	8.3	7.3	7.7
5	15.9	12.7	14.1	9.0	6.1	7.5	7.6	6.3	7.0	7.8	6.8	7.3
6	15.6	12.3	13.8	9.4	6.8	8.1	7.4	6.5	7.0	7.6	6.4	6.9
7	15.0	11.0	13.0	9.0	8.3	8.7	7.1	5.6	6.3	7.3	6.2	6.7
8	14.4	10.8	12.7	9.1	7.6	8.3	6.1	4.8	5.4	6.8	5.7	6.2
9	14.1	10.5	12.3	8.4	7.5	7.9	7.4	5.3	6.3	6.7	5.8	6.2
10	13.2	10.7	12.0	8.9	7.6	8.3	7.6	7.0	7.4	6.6	5.6	6.1
11	11.6	8.4	10.1	9.5	8.1	8.8	8.0	6.9	7.4	6.8	6.0	6.4
12	11.6	7.6	9.6	10.1	8.5	9.2	8.3	6.5	7.4	7.4	6.5	6.9
13	11.6	7.9	9.8	9.3	8.3	8.9	8.2	7.7	8.0	7.0	6.5	6.8
14	11.7	8.0	9.9	9.9	8.4	9.1	8.4	7.8	8.1	7.5	6.8	7.0
15	11.8	8.2	10.0	9.7	8.0	8.8	8.2	7.6	7.9	7.2	6.6	6.9
16	11.8	8.2	10.0	9.8	7.6	8.7	8.2	7.5	7.9	7.3	6.3	6.7
17	12.0	8.4	10.2	10.4	8.8	9.5	7.7	7.2	7.4	7.4	6.1	6.6
18	11.4	8.5	10.0	9.4	7.7	8.7	7.5	6.8	7.2	7.3	5.9	6.5
19	11.8	8.4	10.1	10.4	8.6	9.4	6.9	6.4	6.7	7.1	6.0	6.4
20	11.6	8.9	10.4	10.0	7.8	8.9	7.2	6.1	6.6	7.1	5.8	6.4
21	12.0	9.3	10.5	9.4	7.9	8.7	7.4	6.3	6.7	7.7	6.2	6.7
22	10.6	7.7	9.3	8.9	7.7	8.5	7.0	6.0	6.5	7.5	6.4	6.9
23	10.2	7.1	8.7	9.3	8.4	8.9	6.5	5.3	5.9	7.5	6.7	7.0
24	9.6	7.2	8.4	9.8	8.8	9.3	6.6	5.2	5.8	7.3	6.8	7.1
25	9.8	6.8	8.3	9.3	7.2	8.2	6.4	5.2	5.9	8.0	7.1	7.5
26	9.2	7.0	8.0	7.8	5.6	6.8	7.0	6.0	6.5	8.0	7.3	7.6
27	8.7	6.2	7.6	8.2	5.9	7.0	7.2	6.8	7.0	8.2	6.9	7.6
28	9.9	6.8	8.2	8.6	6.4	7.4	7.0	6.8	6.9	7.7	6.5	7.0
29	8.2	6.4	7.4	8.0	6.2	7.1	7.1	6.6	6.8	7.5	6.9	7.2
30	8.1	5.3	6.7	7.4	5.6	6.6	7.0	6.6	6.7	8.1	7.2	7.6
31	7.6	4.5	6.0	---	---	---	7.6	6.9	7.2	8.5	7.3	7.8
MONTH	15.9	4.5	10.3	10.4	4.0	8.1	8.4	4.8	6.8	8.5	5.6	7.0

14366000 APPLEGATE RIVER NEAR APPLEGATE, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.3	7.2	7.6	9.7	6.3	7.6	9.5	7.4	8.3	12.7	7.8	10.1
2	8.0	6.7	7.3	9.3	5.5	7.3	8.1	6.4	7.1	11.5	8.9	10.2
3	7.8	6.3	7.0	9.3	6.8	7.9	9.5	6.3	7.5	10.2	8.9	9.6
4	7.2	5.2	6.1	8.7	5.8	7.2	9.5	6.5	7.8	11.6	8.5	9.8
5	6.6	4.2	5.4	9.1	5.3	7.1	8.6	6.4	7.5	12.4	7.8	9.8
6	6.4	4.0	5.2	7.8	6.8	7.3	8.6	6.8	7.7	10.8	8.0	9.3
7	6.2	3.5	4.8	8.4	6.6	7.5	12.0	7.2	9.3	11.5	7.2	9.6
8	6.1	3.3	4.6	10.3	6.4	8.2	12.8	7.6	10.0	11.3	8.1	9.4
9	6.3	3.4	4.8	9.3	7.6	8.5	11.9	8.3	10.0	10.2	7.7	9.2
10	6.5	3.4	4.9	10.6	7.7	9.1	10.9	7.6	9.1	13.5	8.3	10.3
11	6.4	3.5	4.9	10.8	7.6	9.2	10.5	7.3	8.8	11.4	8.7	10.1
12	6.6	4.0	5.4	10.8	7.6	9.3	9.2	7.7	8.4	13.7	9.5	11.3
13	6.8	5.7	6.2	9.5	7.7	8.5	9.2	7.0	8.1	15.1	9.3	11.8
14	7.5	5.8	6.4	10.5	7.3	8.7	10.6	7.1	8.7	14.6	9.9	11.9
15	6.6	5.2	5.9	8.8	6.3	7.6	9.4	6.3	8.1	13.3	10.0	11.3
16	7.6	5.8	6.5	7.8	6.1	6.8	11.2	7.6	9.3	13.7	9.0	11.0
17	6.8	5.0	5.9	8.6	6.2	7.1	11.3	8.1	9.7	13.0	8.8	10.5
18	7.5	5.6	6.5	9.0	5.6	7.1	11.7	7.6	9.5	13.6	8.0	10.5
19	8.0	6.1	7.0	8.0	5.7	6.9	12.6	6.9	9.7	14.4	8.3	11.1
20	8.0	6.0	7.1	9.7	6.8	8.1	11.4	8.8	10.2	14.8	9.1	11.8
21	9.0	6.9	7.8	9.0	7.3	8.3	10.2	8.1	8.7	15.4	9.9	12.4
22	9.4	6.4	7.6	9.1	7.5	8.3	11.9	8.0	9.4	15.5	10.5	12.7
23	8.2	5.1	6.6	9.5	6.2	7.7	11.1	8.2	9.6	15.4	10.1	12.5
24	8.9	5.2	6.8	9.3	5.6	7.3	10.3	8.1	9.1	12.8	10.4	11.6
25	8.4	4.9	6.5	7.8	6.9	7.2	9.8	7.4	8.5	14.0	10.6	11.9
26	6.2	4.2	5.3	8.5	6.9	7.5	11.6	7.2	9.2	15.0	10.6	12.4
27	8.9	5.6	6.8	9.0	6.6	7.4	10.0	8.3	9.2	14.6	10.6	12.4
28	6.9	4.9	6.0	9.5	6.2	7.6	11.0	7.8	9.6	14.4	10.7	12.4
29	---	---	---	10.5	6.6	8.2	10.6	8.2	9.4	15.2	10.9	12.9
30	---	---	---	11.0	7.0	8.7	12.8	8.2	10.1	15.8	11.2	13.1
31	---	---	---	10.5	7.7	9.0	---	---	---	15.4	11.0	12.9
MONTH	9.4	3.3	6.2	11.0	5.3	7.9	12.8	6.3	8.9	15.8	7.2	11.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	16.3	11.2	13.5	20.1	13.4	17.2	21.6	17.1	19.5	20.0	15.0	17.6
2	16.9	11.6	14.0	20.5	14.2	17.4	20.2	17.3	18.1	20.7	15.6	18.1
3	17.3	11.7	14.3	20.7	14.5	17.6	20.5	16.6	18.2	18.9	16.0	17.8
4	17.7	12.0	14.6	21.2	14.7	18.0	22.1	16.6	19.2	18.7	16.0	17.4
5	18.2	12.3	14.9	21.4	15.3	18.6	20.9	16.5	18.7	19.4	16.3	17.7
6	18.5	12.7	15.3	21.7	15.3	18.5	20.7	16.2	18.3	19.5	14.9	17.0
7	18.6	13.2	15.7	21.4	15.6	18.5	20.7	15.9	18.2	17.5	15.2	16.3
8	18.8	13.3	15.7	20.9	15.2	18.1	20.3	15.9	18.2	16.9	13.6	15.4
9	17.6	12.2	14.8	21.9	15.2	18.6	21.2	16.5	18.7	17.8	14.5	15.9
10	17.9	12.0	14.7	21.9	15.8	18.9	20.7	15.6	18.2	18.3	13.9	15.9
11	18.1	12.0	15.0	21.7	15.8	18.8	20.5	15.3	18.0	18.6	13.9	16.1
12	17.2	12.1	14.9	21.8	15.8	18.8	20.5	15.1	17.9	18.4	14.6	16.5
13	17.8	12.2	14.9	21.2	16.4	18.8	20.6	15.0	17.9	17.9	13.3	15.7
14	18.1	13.2	15.5	21.8	15.8	18.8	20.9	15.2	18.2	17.8	12.9	15.5
15	18.7	12.4	15.5	22.1	16.1	19.1	20.1	15.1	17.8	18.0	14.0	16.1
16	19.4	12.6	16.0	21.8	16.2	19.0	20.5	15.1	17.9	16.2	13.7	15.1
17	20.0	13.5	16.7	22.1	15.8	19.0	20.9	15.1	18.0	16.7	12.4	14.5
18	18.5	13.9	16.2	22.4	16.3	19.4	21.8	16.1	18.9	17.1	12.3	14.6
19	18.7	13.6	15.9	22.6	16.6	19.7	21.5	16.4	19.0	17.6	13.1	15.3
20	18.4	13.0	15.6	22.4	16.4	19.5	21.0	15.6	18.4	17.8	13.3	15.6
21	18.6	13.3	15.8	22.9	16.7	19.8	19.7	15.9	18.1	17.7	13.2	15.5
22	18.4	13.1	15.7	23.4	17.5	20.4	19.7	16.2	17.8	17.9	13.4	15.7
23	16.6	13.0	14.9	22.5	17.8	20.2	20.8	15.7	18.1	18.0	13.6	15.9
24	18.8	12.5	15.6	21.6	17.5	19.5	21.0	15.8	18.4	18.2	13.8	16.0
25	20.2	13.0	16.6	22.4	16.6	19.4	21.2	15.8	18.5	18.1	13.7	15.9
26	20.9	14.0	17.5	22.4	16.5	19.6	19.5	15.5	17.8	18.0	13.4	15.7
27	21.4	14.7	18.0	22.7	17.0	19.9	20.1	15.4	17.7	18.7	14.2	16.4
28	21.6	14.7	18.2	22.6	16.8	19.8	20.1	15.4	17.9	18.0	14.4	16.3
29	21.2	15.3	18.3	23.0	16.8	19.9	20.2	15.5	17.9	16.8	14.1	15.4
30	20.4	15.4	17.8	23.1	17.1	20.2	20.4	14.7	17.9	16.8	12.8	14.9
31	---	---	---	22.7	17.1	20.0	19.9	15.6	17.9	---	---	---
MONTH	21.6	11.2	15.7	23.4	13.4	19.1	22.1	14.7	18.2	20.7	12.3	16.1
YEAR	23.4	3.3	11.3									

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 mi^2.

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 NGVD 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. 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 ft^3/s 0.3 mi upstream and at the mouth of Jackson Creek. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--19 years (water years 1939-55, 1979, 1980), 717 ft^3/s, 519,500 acre-ft/yr.
23 years (water years 1981-2003), 718 ft^3/s, 520,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,500 ft^3/s Jan. 18, 1953, gage height, 18.3 ft, from floodmark, site and datum then in use, from rating curve extended above 12,000 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 0.78 ft^3/s Aug. 22-24, 1979. Minimum since first filling of Applegate Lake, 7.0 ft^3/s July 26-28, Aug. 11, 12, 2001.

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 ft^3/s, from rating curve extended above 12,000 ft^3/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, 13,300 ft^3/s Dec. 28, gage height, 10.91 ft; minimum discharge, 203 ft^3/s Dec. 8, 9.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	224	268	295	5250	1750	406	1220	1130	952	334	236	240
2	219	285	292	3280	1640	388	1090	1260	895	279	235	237
3	220	275	290	2630	1170	379	1220	1320	866	269	243	227
4	227	270	288	2500	883	419	1180	1380	835	257	247	231
5	232	266	269	2400	811	416	1090	1250	767	254	235	235
6	228	270	250	2230	760	407	885	1220	752	258	236	236
7	228	324	224	1900	712	400	891	1150	739	252	249	236
8	228	458	206	1620	644	392	881	1120	729	249	244	240
9	228	610	204	1580	594	407	881	1100	692	249	238	258
10	238	1050	212	1400	565	418	1070	1020	640	251	243	254
11	244	903	218	1250	543	405	1000	1010	518	245	245	251
12	247	687	218	1260	668	402	1120	1020	471	237	239	248
13	243	644	279	1870	720	419	1070	988	450	228	223	245
14	242	705	1060	2230	1040	849	1080	1130	449	229	224	241
15	241	713	2680	2120	787	1850	893	1210	437	227	225	238
16	236	701	6470	2010	981	2160	811	1090	431	225	227	237
17	228	695	3990	1760	1010	1800	761	1040	419	224	232	241
18	229	567	2790	1600	972	1300	680	957	409	227	234	237
19	240	419	1290	1560	957	997	593	870	421	225	227	236
20	244	346	1000	1550	705	935	571	887	415	228	226	238
21	247	329	1110	1490	609	883	917	911	402	232	234	253
22	244	322	893	1490	569	918	1000	1070	396	227	234	263
23	243	315	775	1790	540	1010	855	1220	388	218	226	257
24	252	310	662	1810	515	1060	1200	1330	382	221	222	244
25	255	309	584	1640	483	1750	1350	1240	383	221	221	237
26	257	305	547	1780	459	2850	1210	1150	379	227	217	230
27	260	300	3830	2270	439	2570	1190	1080	368	226	214	232
28	265	303	11600	2280	416	2120	1140	1090	362	224	217	229
29	262	299	6870	2820	---	1680	1080	1130	365	220	220	229
30	270	297	6610	2390	---	1400	1010	1200	367	220	222	229
31	270	---	8910	2050	---	1280	---	1070	---	235	231	---
TOTAL	7491	13545	64916	63810	21942	32670	29939	34643	16079	7418	7166	7209
MEAN	242	452	2094	2058	784	1054	998	1118	536	239	231	240
MAX	270	1050	11600	5250	1750	2850	1350	1380	952	334	249	263
MIN	219	266	204	1250	416	379	571	870	362	218	214	227
AC-FT	14860	26870	128800	126600	43520	64800	59380	68710	31890	14710	14210	14300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 2003, BY WATER YEAR (WY)

MEAN	342	584	1168	1386	1292	1088	832	823	482	216	182	246
MAX	569	2099	4769	6633	4241	2715	2177	1916	1333	439	393	482
(WY)	1984	1985	1997	1997	1983	1983	1982	1983	1983	1998	1999	1983
MIN	80.4	156	196	187	190	209	173	147	32.9	17.2	17.9	34.5
(WY)	1981	1981	1991	2001	2001	2001	1994	2001	2001	2001	2001	2001

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1981 - 2003	
ANNUAL TOTAL	217453		306828			
ANNUAL MEAN	596		841		718	
HIGHEST ANNUAL MEAN					1546	1983
LOWEST ANNUAL MEAN					160	2001
HIGHEST DAILY MEAN	11600	Dec 28	11600	Dec 28	36500	Jan 1 1997
LOWEST DAILY MEAN	174	Jul 24	204	Dec 9	7.7	Jul 27 2001
ANNUAL SEVEN-DAY MINIMUM	179	Jul 22	219	Dec 6	9.9	Jul 5 2001
ANNUAL RUNOFF (AC-FT)	431300		608600		520000	
10 PERCENT EXCEEDS	908		1750		1600	
50 PERCENT EXCEEDS	324		421		346	
90 PERCENT EXCEEDS	190		227		143	

14369500 APPLEGATE RIVER NEAR WILDERVILLE, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: September 1978 to current year.

INSTRUMENTATION.--Temperature recorder.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 29.0°C June 22, 1992; minimum, 0.0°C Feb. 6, 7, 1989.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 26.3°C July 22; minimum, 5.6°C Nov. 1, 2, Feb. 9-11.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	15.7	11.2	14.4	7.3	5.6	6.5	7.4	6.7	7.0	8.1	7.3	7.7
2	15.2	13.1	14.0	7.3	5.6	6.6	7.1	6.7	6.9	8.4	7.2	7.7
3	13.9	13.0	13.5	7.8	5.8	7.0	6.9	6.5	6.7	9.1	8.3	8.7
4	15.3	13.5	14.4	8.2	6.3	7.5	7.8	6.6	7.2	9.4	8.4	8.9
5	17.1	14.6	15.6	8.8	6.9	8.0	8.3	7.6	7.9	8.8	7.7	8.2
6	17.0	15.2	16.0	9.2	7.6	8.5	8.3	7.9	8.1	8.0	6.8	7.4
7	16.8	14.9	15.7	9.6	8.6	9.1	8.1	7.6	7.8	7.7	6.4	7.1
8	16.3	14.2	15.2	10.0	9.1	9.6	7.6	7.1	7.3	7.1	6.1	6.6
9	15.6	13.8	14.7	9.8	8.6	9.1	7.9	6.8	7.2	6.8	6.1	6.5
10	14.8	13.4	14.1	9.2	8.3	8.8	7.9	7.3	7.7	7.0	6.6	6.7
11	13.7	11.8	12.8	9.9	9.0	9.4	8.5	7.8	8.2	7.6	6.7	7.1
12	12.9	10.9	12.0	10.2	9.3	9.7	9.0	8.2	8.6	8.6	7.5	8.0
13	12.9	10.8	11.9	9.9	9.5	9.7	9.0	8.8	8.9	8.3	7.4	7.8
14	13.0	10.9	12.0	9.9	9.1	9.5	9.5	8.8	9.2	8.6	8.0	8.2
15	13.2	11.1	12.1	9.5	8.7	9.1	8.8	8.0	8.4	8.1	7.4	7.8
16	13.2	11.2	12.2	9.9	8.2	8.9	8.7	8.1	8.5	7.9	7.0	7.5
17	13.3	11.3	12.3	10.4	9.4	9.9	8.1	7.6	7.9	7.7	7.0	7.3
18	12.8	11.3	12.1	9.7	8.6	9.1	7.9	7.2	7.6	7.8	6.9	7.4
19	13.3	11.3	12.3	10.6	9.2	9.9	7.6	7.0	7.3	7.7	7.0	7.3
20	13.5	12.2	12.8	10.4	9.1	9.8	7.6	6.8	7.1	7.5	6.9	7.2
21	13.5	11.8	12.6	10.1	9.3	9.7	8.1	7.4	7.7	8.3	7.0	7.6
22	13.0	11.4	12.2	9.9	9.4	9.7	8.0	7.3	7.6	8.3	7.6	7.9
23	12.3	10.6	11.5	9.9	9.4	9.6	7.7	6.8	7.2	8.5	7.6	8.1
24	11.5	10.6	11.0	10.4	9.6	10.0	7.4	6.5	6.9	8.3	7.7	8.0
25	11.2	9.5	10.4	10.4	8.6	9.6	7.2	6.4	6.9	9.1	8.2	8.6
26	11.4	10.2	10.8	8.6	6.6	7.4	8.1	7.2	7.6	9.1	8.6	8.9
27	10.3	8.9	9.6	7.3	6.0	6.8	8.6	7.5	8.2	9.4	8.6	8.9
28	10.8	9.3	9.9	7.8	6.3	7.1	7.5	7.2	7.4	8.6	7.5	8.0
29	10.1	8.8	9.4	7.8	6.8	7.4	7.8	7.2	7.5	8.5	7.5	8.0
30	8.9	7.3	8.1	7.6	6.9	7.3	7.8	7.1	7.4	9.4	8.2	8.8
31	8.1	6.3	7.2	---	---	---	8.2	7.4	7.8	9.6	8.8	9.2
MONTH	17.1	6.3	12.3	10.6	5.6	8.7	9.5	6.4	7.7	9.6	6.1	7.8

14369500 APPLEGATE RIVER NEAR WILDERVILLE, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.5	8.9	9.1	8.8	7.4	7.9	10.8	9.1	10.0	13.1	9.8	11.4
2	8.9	8.0	8.4	9.0	7.7	8.3	9.7	8.0	8.8	12.8	10.6	11.8
3	8.6	7.7	8.2	9.2	8.3	8.8	10.2	7.0	8.5	11.8	10.3	10.8
4	8.2	7.2	7.6	9.0	7.7	8.4	10.6	7.6	9.0	11.7	9.3	10.4
5	7.7	6.3	7.1	9.5	8.0	8.7	9.7	7.9	8.9	13.1	9.0	11.0
6	7.3	6.3	6.8	9.4	8.6	9.1	9.2	8.2	8.7	12.1	9.6	10.7
7	7.1	6.1	6.6	10.0	8.5	9.2	12.8	8.5	10.3	12.7	9.8	11.2
8	6.8	5.8	6.3	10.2	8.5	9.3	13.2	9.5	11.4	12.5	9.7	11.0
9	6.6	5.6	6.1	10.2	9.2	9.6	12.7	10.5	11.3	11.9	9.8	10.7
10	6.7	5.6	6.2	11.6	9.6	10.4	12.9	10.2	11.6	13.4	9.3	11.0
11	6.6	5.6	6.2	11.6	10.1	10.8	11.7	9.4	10.6	13.1	10.7	11.6
12	7.0	5.8	6.3	11.6	10.3	11.0	11.0	9.5	10.3	14.8	10.7	12.4
13	7.7	7.0	7.2	11.4	10.2	10.6	10.1	8.6	9.4	15.9	11.7	13.7
14	8.3	7.3	7.7	10.8	9.5	10.1	11.9	8.8	10.1	15.7	12.2	14.0
15	8.0	7.3	7.5	10.4	9.1	9.8	10.6	9.0	9.7	14.6	11.7	13.3
16	8.0	7.3	7.5	9.2	7.8	8.5	12.1	8.9	10.4	14.4	10.7	12.6
17	7.9	7.5	7.7	9.6	7.7	8.6	11.9	9.8	10.8	13.4	10.6	12.1
18	8.4	7.5	7.8	9.6	7.6	8.6	13.0	9.7	11.2	13.9	10.0	11.9
19	8.8	8.0	8.3	9.1	8.0	8.4	13.4	9.2	11.3	14.9	10.7	12.7
20	8.6	7.9	8.3	10.2	8.3	9.0	13.3	10.4	11.9	15.6	12.0	13.7
21	9.2	8.0	8.5	10.0	9.3	9.6	12.7	9.4	10.3	16.1	12.7	14.4
22	9.2	8.2	8.8	9.9	9.5	9.7	12.7	9.2	10.5	16.7	13.2	14.9
23	9.1	7.6	8.2	10.0	8.4	9.2	11.9	10.0	11.0	16.8	13.0	15.0
24	8.6	7.4	8.0	9.7	8.4	9.0	10.9	9.5	10.2	16.1	12.7	14.0
25	8.6	7.3	7.9	9.4	8.4	8.7	10.1	8.2	9.2	14.6	12.4	13.5
26	8.2	6.7	7.1	9.4	8.2	8.7	11.1	8.2	9.5	16.2	12.5	14.3
27	8.2	6.8	7.4	10.2	7.4	8.7	10.6	9.5	10.1	16.1	12.7	14.5
28	8.1	7.0	7.4	10.6	7.0	8.7	11.8	9.3	10.5	16.4	13.2	14.8
29	---	---	---	11.4	7.7	9.6	11.0	9.6	10.3	17.2	13.4	15.3
30	---	---	---	12.2	8.7	10.4	12.7	9.4	10.9	17.4	13.8	15.6
31	---	---	---	11.5	9.5	10.7	---	---	---	17.1	13.3	15.3
MONTH	9.5	5.6	7.5	12.2	7.0	9.3	13.4	7.0	10.2	17.4	9.0	12.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	17.6	13.3	15.5	21.9	18.5	20.3	24.5	22.4	23.5	21.7	18.9	20.3
2	18.2	14.4	16.3	22.1	18.1	20.2	23.6	20.6	22.2	22.2	19.2	20.6
3	18.5	14.6	16.5	22.3	18.3	20.5	22.1	20.0	20.8	21.2	19.9	20.6
4	19.1	14.9	17.0	22.9	18.8	21.0	23.7	21.0	22.1	22.0	19.1	20.5
5	19.7	15.8	17.7	23.4	19.5	21.6	23.2	21.2	22.2	21.5	19.2	20.4
6	20.2	16.2	18.2	23.6	19.7	21.7	23.0	20.7	21.7	21.6	19.5	20.5
7	20.7	17.1	18.8	23.6	19.9	21.7	22.5	19.6	21.1	20.2	18.2	19.1
8	20.4	17.1	18.8	23.0	19.3	21.3	22.6	19.9	21.3	18.4	16.5	17.6
9	19.3	16.3	17.9	23.8	19.9	21.8	22.8	19.8	21.2	18.7	16.5	17.6
10	19.2	15.8	17.6	23.8	20.2	22.1	22.6	19.9	21.2	19.3	16.5	18.0
11	19.7	15.8	17.9	24.1	20.1	22.1	22.2	19.2	20.6	20.1	17.1	18.6
12	18.9	16.1	17.6	23.5	20.3	21.9	22.1	18.9	20.5	20.2	17.9	19.0
13	18.6	15.5	17.1	23.9	20.6	22.1	22.8	19.5	21.0	19.2	16.6	18.1
14	20.0	15.8	17.9	24.2	20.6	22.3	23.0	19.9	21.3	19.2	16.5	17.9
15	20.3	16.1	18.4	24.4	21.1	22.7	22.2	19.2	20.8	19.7	17.3	18.5
16	21.0	16.6	18.9	24.1	20.8	22.4	22.7	19.5	21.0	18.6	16.3	17.2
17	21.8	17.7	19.9	24.4	20.6	22.4	22.6	19.4	21.0	17.2	14.5	15.9
18	20.9	17.5	19.1	24.7	21.3	22.9	23.6	20.3	21.8	17.6	14.8	16.3
19	20.0	17.0	18.7	25.2	21.6	23.3	23.5	20.7	22.0	18.5	15.6	17.0
20	20.0	16.4	18.4	25.0	21.5	23.2	23.3	20.2	21.7	18.9	16.3	17.6
21	19.6	16.3	18.1	25.6	22.2	23.8	23.4	20.5	21.8	18.5	15.9	17.4
22	19.6	16.3	18.0	26.3	23.0	24.5	22.8	20.5	21.5	18.7	16.1	17.5
23	18.5	15.8	17.0	25.7	23.1	24.3	22.7	19.6	21.0	18.9	16.4	17.7
24	19.6	14.6	17.1	23.9	21.9	22.8	23.0	19.9	21.3	19.1	16.5	17.9
25	21.0	16.2	18.7	24.7	20.9	22.5	23.1	20.0	21.5	19.2	16.6	18.0
26	22.2	17.4	19.9	24.8	21.4	23.0	22.2	19.9	21.1	18.8	16.4	17.7
27	23.0	18.5	20.9	25.6	21.9	23.6	22.4	19.6	20.8	19.5	16.9	18.2
28	23.5	18.8	21.4	25.9	22.4	24.0	22.2	19.6	20.8	19.2	17.1	18.3
29	23.1	19.7	21.7	26.1	22.6	24.2	22.4	19.4	20.8	18.4	17.0	17.7
30	23.1	18.7	21.7	26.0	22.9	24.3	22.4	19.5	20.9	17.5	15.5	16.6
31	---	---	---	25.6	22.7	24.1	22.1	19.8	20.9	---	---	---
MONTH	23.5	13.3	18.4	26.3	18.1	22.5	24.5	18.9	21.3	22.2	14.5	18.3
YEAR	26.3	5.6	13.1									

14372300 ROGUE RIVER NEAR AGNESS, OR

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 mi^2.

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 NGVD of 1929 (levels by U.S. Bureau of Public Roads).

REMARKS.--No estimated daily discharges. Records good except those for the period June 6 to Aug. 9, which are fair. 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. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--16 years, (water years 1961-76), 6,622 ft^3/s, 4,797,000 acre-ft/yr.
27 years (water years 1977-2003), 5,333 ft^3/s, 3,864,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 290,000 ft^3/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 ft^3/s July 9, 10, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 69,300 ft^3/s Dec. 31, gage height, 19.66 ft; minimum discharge, 1,260 ft^3/s Sept. 27, 28.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1340	1390	1640	33000	11700	3860	9230	7410	4460	2520	1750	2140
2	1410	1440	1630	20900	13000	3720	9960	7550	4150	2430	1750	2150
3	1470	1460	1620	21700	10600	3570	9190	7570	4080	2360	1920	2140
4	1460	1440	1610	18500	8990	3500	9890	8600	3990	2360	2010	2120
5	1480	1440	1610	15000	7480	3460	10600	9450	4010	2330	2080	2140
6	1500	1430	1560	12300	6380	3340	11000	8860	3950	2310	2010	2160
7	1440	1650	1540	10200	5760	3370	12600	8120	3950	2300	2010	2150
8	1420	2550	1520	8760	5210	3480	11200	7720	3970	2180	2230	2200
9	1600	3200	1500	7790	4570	4060	10300	7770	4000	2120	2110	2370
10	1840	4920	1680	7100	4270	4420	9880	7410	3950	2070	2020	2750
11	1510	5400	1740	6250	4060	4350	9670	6860	3870	2070	2000	2600
12	1440	3840	1870	5940	3900	4150	10200	6750	3830	2040	1960	2410
13	1410	3120	3500	6700	3910	4140	9930	6880	3910	2030	1960	2310
14	1400	2810	10200	9810	4110	6950	9200	6510	3890	2050	1920	2190
15	1450	2600	17900	10700	4770	12900	8810	6290	3860	2040	1940	2070
16	1440	2430	33800	9160	6720	13700	8020	6300	3850	2030	2060	1940
17	1430	2400	20500	7930	11800	10700	7540	5650	3890	1960	2140	1850
18	1430	2340	11500	7070	10600	8750	7520	5420	3810	1880	2170	1790
19	1410	2150	8130	6490	9770	7830	7050	5200	3840	1880	2170	1720
20	1420	1960	7310	6110	8540	7570	6430	4860	3840	1870	2140	1600
21	1420	1840	9840	5850	7360	7400	6420	4690	3750	1860	2140	1500
22	1410	1800	8190	5780	6610	8310	7140	4620	3620	1850	2150	1400
23	1410	1760	6370	6750	6070	9430	6790	4860	3550	1820	2170	1370
24	1410	1740	5320	7600	5590	9110	8150	5200	3450	1780	2190	1340
25	1420	1720	4540	8630	5090	9540	10700	5360	3340	1830	2180	1310
26	1420	1690	4500	10000	4630	15700	11000	5330	3180	1820	2130	1290
27	1430	1680	14800	12600	4310	18600	10700	5000	2990	1820	2110	1280
28	1450	1690	56500	17600	4040	15900	9430	4770	2870	1820	2100	1290
29	1470	1680	44800	13600	---	13200	8550	4760	2770	1810	2110	1300
30	1440	1650	31200	12900	---	11000	7900	4790	2690	1770	2130	1330
31	1360	---	62700	12100	---	9530	---	4750	---	1730	2130	---
TOTAL	44940	67220	381120	344820	189840	245540	275000	195310	111310	62740	63890	56210
MEAN	1450	2241	12290	11120	6780	7921	9167	6300	3710	2024	2061	1874
MAX	1840	5400	62700	33000	13000	18600	12600	9450	4460	2520	2230	2750
MIN	1340	1390	1500	5780	3900	3340	6420	4620	2690	1730	1750	1280
AC-FT	89140	133300	756000	684000	376500	487000	545500	387400	220800	124400	126700	111500

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2003, BY WATER YEAR (WY)

MEAN	1938	4478	9127	9748	9554	7729	6440	5093	3453	2356	2235	2065
MAX	3497	16650	37410	33800	30280	17750	15090	8905	6292	3849	3370	3187
(WY)	1983	1985	1997	1997	1983	1983	1982	1996	1993	1999	1984	1983
MIN	1090	1386	1555	1623	1550	2023	1479	2124	1293	935	897	1346
(WY)	2002	1988	1977	1977	1977	2001	1977	1992	1977	1977	1977	1980

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1977 - 2003	
ANNUAL TOTAL	1661640		2037940			
ANNUAL MEAN	4552		5583		5333	
HIGHEST ANNUAL MEAN					10180	1997
LOWEST ANNUAL MEAN					1583	1977
HIGHEST DAILY MEAN	62700	Dec 31	62700	Dec 31	194000	Jan 2 1997
LOWEST DAILY MEAN	1160	Sep 25	1280	Sep 27	773	Aug 4 1977
ANNUAL SEVEN-DAY MINIMUM	1210	Sep 24	1310	Sep 24	817	Aug 12 1977
ANNUAL RUNOFF (AC-FT)	3296000		4042000		3864000	
10 PERCENT EXCEEDS	8000		10700		10800	
50 PERCENT EXCEEDS	3210		3840		2990	
90 PERCENT EXCEEDS	1450		1450		1590	

14372300 ROGUE RIVER NEAR AGNESS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: October 1960 to September 1987, January 1995 to current year.

INSTRUMENTATION.--Temperature recorder.

REMARKS.--Records good.

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, Dec. 23, 24, 1999.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 26.3°C July 22, 30; minimum, 4.3°C Nov. 4.

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	16.8	14.9	15.7	7.9	5.7	6.8	6.6	5.5	6.2	8.2	7.5	7.8
2	15.8	13.6	14.7	7.3	4.9	6.2	6.6	5.7	6.1	7.9	7.3	7.7
3	14.7	13.2	14.0	6.7	4.5	5.7	6.6	5.7	6.1	9.0	7.7	8.3
4	15.2	13.2	14.1	6.6	4.3	5.5	6.5	5.6	6.1	9.4	8.5	9.0
5	15.6	13.1	14.2	6.9	4.6	5.8	6.7	5.7	6.2	9.4	8.3	8.9
6	15.6	13.1	14.3	7.3	5.3	6.3	7.0	6.1	6.5	8.7	7.5	8.2
7	15.9	13.5	14.7	7.7	6.1	7.0	7.4	6.2	6.7	7.8	6.8	7.4
8	16.3	14.1	15.0	8.8	7.2	8.1	7.0	6.2	6.6	7.1	6.2	6.7
9	16.0	13.8	14.9	9.1	8.0	8.5	6.9	6.2	6.6	6.7	6.0	6.3
10	15.5	14.0	14.7	9.4	8.5	8.9	7.1	6.2	6.6	6.6	5.8	6.2
11	14.7	13.1	13.9	9.3	8.6	9.0	7.3	6.4	6.8	7.1	6.2	6.6
12	14.2	12.5	13.2	9.6	8.7	9.2	7.8	6.8	7.3	7.7	6.7	7.2
13	13.5	11.4	12.5	9.9	9.1	9.4	8.6	7.5	7.9	8.4	7.3	7.8
14	13.2	11.1	12.0	10.3	9.1	9.6	9.4	8.1	8.9	8.8	8.0	8.4
15	13.0	10.3	11.7	10.0	8.9	9.6	9.4	8.6	9.0	8.7	7.9	8.3
16	12.8	10.5	11.5	9.8	8.8	9.3	9.3	8.6	8.9	8.4	7.4	8.0
17	12.8	10.8	11.6	10.2	8.9	9.5	8.8	7.3	8.1	7.9	7.0	7.5
18	12.9	10.7	11.8	9.9	8.9	9.4	8.1	7.0	7.6	7.7	7.0	7.4
19	13.3	11.1	12.1	10.0	8.8	9.3	7.6	7.0	7.3	7.7	7.0	7.4
20	13.2	11.4	12.1	9.7	8.4	9.1	7.6	6.7	7.1	7.6	6.8	7.2
21	13.3	11.2	12.2	10.2	8.8	9.3	7.7	7.1	7.4	7.6	6.9	7.2
22	13.4	11.6	12.4	9.8	9.0	9.4	8.0	7.0	7.6	8.3	7.0	7.7
23	13.2	11.5	12.2	10.0	9.0	9.5	7.9	7.0	7.4	8.6	7.7	8.1
24	12.7	11.3	12.0	9.9	9.1	9.5	7.5	6.7	7.1	8.8	8.1	8.4
25	12.8	11.0	11.8	9.5	8.0	9.0	7.2	6.3	6.7	9.1	8.3	8.6
26	12.2	10.3	11.3	8.7	7.5	8.1	7.6	6.5	7.0	9.6	8.5	9.1
27	11.2	9.5	10.6	8.1	7.0	7.7	8.8	7.1	8.0	10.1	9.2	9.6
28	11.3	9.3	10.4	7.6	6.4	7.0	8.6	6.7	7.6	9.6	8.7	9.1
29	10.5	8.9	9.9	6.9	6.0	6.4	7.4	6.7	7.0	8.9	7.8	8.3
30	10.0	7.9	9.2	6.8	6.0	6.4	8.1	7.0	7.5	8.9	7.9	8.4
31	9.1	6.9	8.1	---	---	---	8.3	7.6	8.0	9.5	8.6	9.1
MONTH	16.8	6.9	12.5	10.3	4.3	8.2	9.4	5.5	7.2	10.1	5.8	7.9

14372300 ROGUE RIVER NEAR AGNESS, OR--Continued

Temperature, water, degrees Celsius
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.6	8.8	9.3	8.5	6.9	7.6	11.3	10.0	10.9	12.7	10.5	11.6
2	9.3	8.2	8.8	8.5	7.3	7.9	10.8	9.0	9.9	13.6	11.6	12.4
3	8.7	7.1	7.9	9.2	7.8	8.3	9.3	8.0	8.7	13.0	11.8	12.4
4	7.7	6.6	7.2	9.3	8.0	8.7	9.1	7.8	8.4	12.0	10.8	11.5
5	7.2	6.1	6.7	9.6	8.5	8.9	9.3	8.1	8.7	11.9	10.6	11.2
6	6.7	5.4	6.0	9.6	8.7	9.1	8.9	8.2	8.6	11.9	10.7	11.4
7	6.1	4.8	5.6	9.7	8.8	9.3	9.5	8.4	8.9	12.1	10.8	11.4
8	6.0	4.6	5.4	10.2	9.1	9.6	10.7	9.3	10.1	12.2	10.8	11.5
9	5.9	4.6	5.3	10.1	9.3	9.8	11.7	10.6	11.3	12.1	10.7	11.4
10	6.2	4.7	5.4	10.8	9.6	10.2	12.5	11.1	11.7	12.4	10.7	11.3
11	6.3	4.8	5.5	11.3	9.9	10.6	12.2	10.8	11.7	12.3	10.5	11.4
12	6.5	5.1	5.9	11.5	10.6	11.1	11.6	10.7	11.1	14.0	11.4	12.6
13	7.0	5.7	6.3	11.2	10.4	10.9	11.1	9.8	10.5	14.9	12.1	13.4
14	8.0	6.6	7.3	10.9	9.9	10.4	10.4	9.6	10.0	16.3	13.6	14.8
15	8.6	7.3	8.0	10.2	9.5	10	10.8	9.7	10.2	16.2	14.3	15.1
16	8.3	7.5	7.9	10.0	9.2	9.7	10.7	9.9	10.4	15.1	13.6	14.3
17	8.1	7.3	7.7	9.8	8.8	9.3	12.0	9.9	10.7	14.8	12.8	13.6
18	8.6	7.7	8.1	10.0	8.7	9.3	12.3	10.3	11.3	14.2	11.9	13.0
19	9.1	8.0	8.5	9.7	8.8	9.2	12.5	10.5	11.4	14.6	11.9	13.3
20	9.0	8.0	8.6	9.5	8.4	9.0	12.2	10.5	11.2	15.5	12.4	14.0
21	9.2	8.2	8.7	10.0	8.7	9.3	12.1	10.6	11.3	16.5	13.7	15.2
22	9.4	8.3	8.8	10.4	9.4	9.9	11.8	10.2	11.0	17.6	15.0	16.3
23	9.0	7.6	8.4	10.1	8.9	9.5	11.2	10.0	10.6	18.7	16.0	17.4
24	8.7	7.6	8.2	9.9	8.7	9.2	11.2	9.8	10.4	18.3	17.1	17.7
25	8.5	7.3	7.9	9.8	8.8	9.2	10.4	9.0	9.9	17.6	16.5	16.9
26	7.8	6.8	7.4	9.4	8.8	9.1	9.5	8.6	9.1	17.1	15.2	16.2
27	8.0	6.8	7.4	9.5	8.6	9.1	10.1	8.7	9.6	17.7	14.8	16.3
28	7.7	6.6	7.2	9.7	8.4	9.0	11.1	9.4	10.2	18.2	15.8	16.9
29	---	---	---	10.2	8.8	9.6	11.0	9.9	10.4	18.7	16.6	17.7
30	---	---	---	10.8	9.7	10.3	11.6	10.4	11.0	18.6	17.3	17.9
31	---	---	---	11.3	10.5	10.9	---	---	---	19.3	17.2	18.2
MONTH	9.6	4.6	7.3	11.5	6.9	9.5	12.5	7.8	10.3	19.3	10.5	14.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	19.3	16.8	18.1	22.4	19.5	21.2	25.7	22.8	24.2	22.6	20.2	21.1
2	19.0	16.6	17.9	22.5	19.7	20.9	24.6	22.8	23.5	22.6	19.7	20.9
3	19.4	17.2	18.4	22.4	19.6	20.8	24.4	21.8	23.1	21.9	19.9	20.8
4	20.1	17.5	18.9	22.8	19.8	21.1	23.9	21.2	22.6	22.6	19.4	20.7
5	20.7	18.4	19.6	23.0	19.9	21.3	22.8	21.0	21.9	22.0	19.6	20.6
6	21.0	18.6	19.9	23.5	20.4	21.8	22.5	20.3	21.3	22.2	20.0	20.7
7	21.2	19.1	20.2	23.3	20.7	21.7	23.4	20.3	21.8	21.2	19.6	20.2
8	21.5	19.5	20.6	23.7	20.4	21.8	23.3	20.5	21.8	20.7	18.7	19.5
9	20.9	19.3	20.3	24.1	20.4	21.9	23.4	20.5	21.8	19.0	17.6	18.3
10	20.5	18.5	19.7	24.4	20.6	22.2	23.5	20.4	21.8	19.0	17.6	18.1
11	20.2	18.4	19.4	24.7	20.8	22.7	23.5	20.3	21.7	19.0	17.1	17.9
12	19.4	17.9	18.5	24.3	21.2	22.7	23.4	20.0	21.5	19.0	17.5	18.1
13	18.2	16.9	17.5	24.6	21.4	22.9	23.0	20.0	21.4	19.2	17.3	18.1
14	18.3	16.2	17.2	24.8	20.8	22.7	23.6	20.1	21.7	19.4	17.0	18.1
15	19.0	16.4	17.7	24.7	21.2	22.8	23.5	20.3	21.8	19.7	17.5	18.3
16	19.7	17.4	18.7	24.7	20.7	22.7	23.4	20.1	21.8	18.3	17.0	17.6
17	20.4	18.3	19.3	24.8	20.9	22.8	23.9	20.4	22.0	18.5	16.1	17.2
18	19.8	18.6	19.3	25.2	21.4	23.1	23.9	20.8	22.1	17.9	15.3	16.7
19	19.4	17.6	18.8	25.5	21.7	23.4	23.8	20.9	22.1	18.5	15.7	16.9
20	19.0	17.6	18.4	25.4	21.6	23.5	24.1	20.8	22.2	18.2	16.2	17.2
21	18.2	16.6	17.6	25.6	22.3	23.9	24.0	21.0	22.2	18.4	16.3	17.3
22	18.2	16.3	17.3	26.3	22.7	24.2	23.0	21.1	21.8	18.9	17.0	17.8
23	17.5	16.5	17.0	26.2	22.9	24.4	23.4	20.2	21.6	19.4	16.9	18.1
24	18.2	16.0	17.0	25.1	22.7	23.9	23.3	20.2	21.5	19.8	17.2	18.4
25	19.1	16.6	17.7	25.0	22.1	23.5	23.0	20.2	21.5	20.1	17.2	18.5
26	20.3	17.7	18.9	24.8	21.3	23.1	23.0	20.1	21.3	20.2	17.2	18.6
27	21.8	19.0	20.2	25.6	21.6	23.6	23.0	20.1	21.2	20.1	17.3	18.5
28	22.7	19.9	21.1	26.0	22.2	24.0	22.8	20.1	21.1	19.7	17.4	18.5
29	22.9	19.5	21.6	26.1	22.2	24.2	22.6	19.9	21.0	19.3	17.5	18.4
30	24.3	20.9	21.7	26.3	22.9	24.5	22.5	19.8	21.0	19.3	17.0	18.1
31	---	---	---	26.0	23.1	24.5	22.7	20.1	21.2	---	---	---
MONTH	24.3	16.0	18.9	26.3	19.5	22.8	25.7	19.8	21.9	22.6	15.3	18.6
YEAR	26.3	4.3	13.3									

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 mi^2.

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,198.8 ft above NGVD 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. National Weather Service telephone telemeter at station.

AVERAGE DISCHARGE.--42 years (water years 1962-2003), 1,260 ft^3/s, 45.04 in/yr, 912,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92,200 ft^3/s Dec. 22, 1964, gage height, 45.28 ft, from floodmark, site and datum then in use, from rating curve extended above 30,000 ft^3/s on basis of slope-area measurement of peak flow; minimum discharge, 12 ft^3/s Aug. 24, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 14	2000	16,200	20.36	Dec. 27	1930	18,800	21.89
Dec. 16	0630	*21.900	*23.66	Dec. 30	1900	18,200	21.57

Minimum discharge, 23 ft^3/s Sept. 4.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	52	166	6190	3240	926	1990	2340	669	155	33	26
2	27	52	157	4210	2690	857	1970	2120	624	160	38	26
3	28	52	152	5020	2230	815	2140	2000	598	149	49	25
4	28	52	148	4730	1910	772	3010	2400	577	138	56	25
5	29	52	145	4270	1670	727	2810	2430	549	131	54	30
6	29	52	141	3190	1480	684	2790	2050	516	131	52	34
7	29	67	137	2600	1310	675	2820	1790	491	131	56	35
8	28	337	132	2200	1190	748	2960	1630	463	127	56	37
9	27	1140	132	1920	1080	1180	3010	1500	434	125	56	40
10	26	3770	204	1710	986	1970	2880	1350	400	119	54	46
11	26	2300	533	1570	918	1440	2670	1270	377	116	49	50
12	26	1270	797	2050	857	1270	2650	1210	361	116	50	47
13	27	1100	2930	3750	818	1420	2810	1170	355	115	61	42
14	25	725	9600	5400	781	5250	2490	1200	340	112	41	41
15	25	534	9110	3590	970	6710	2180	1160	320	104	41	36
16	25	430	15200	2730	3610	4810	1950	1060	304	99	41	32
17	27	528	5730	2260	4070	3190	1850	982	285	97	42	33
18	29	524	3470	2050	3620	2410	1680	914	273	93	46	34
19	30	428	2510	1870	3120	2080	1500	856	268	91	31	32
20	31	371	2780	1680	2590	2540	1370	826	264	82	30	32
21	31	348	4570	1650	2140	2250	1310	823	253	67	27	29
22	31	319	2840	1820	1900	3520	1220	874	242	60	28	29
23	32	289	2040	2960	1700	4190	1290	920	231	54	29	31
24	33	260	1660	2810	1510	2840	3020	968	229	47	29	32
25	34	238	1370	4670	1340	3020	2760	911	217	45	29	32
26	35	220	1980	3500	1200	6690	3540	849	204	44	29	32
27	35	204	12100	5760	1090	4670	3260	791	188	45	29	31
28	36	191	14700	4600	994	3340	2940	785	179	44	30	30
29	36	182	7430	3230	---	2620	2810	796	165	38	30	30
30	37	173	11100	3360	---	2200	2660	820	159	35	29	30
31	47	---	12400	3600	---	1970	---	745	---	33	27	---
TOTAL	935	16260	126364	100950	51014	77784	72340	39540	10535	2903	1252	1009
MEAN	30.2	542	4076	3256	1822	2509	2411	1275	351	93.6	40.4	33.6
MAX	47	3770	15200	6190	4070	6710	3540	2430	669	160	61	50
MIN	25	52	132	1570	781	675	1220	745	159	33	27	25
AC-FT	1850	32250	250600	200200	101200	154300	143500	78430	20900	5760	2480	2000
CFSM	0.08	1.43	10.7	8.57	4.79	6.60	6.35	3.36	0.92	0.25	0.11	0.09
IN.	0.09	1.59	12.37	9.88	4.99	7.61	7.08	3.87	1.03	0.28	0.12	0.10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2003, BY WATER YEAR (WY)

MEAN	212	1434	2648	2941	2570	2309	1585	910	365	98.4	46.5	61.5
MAX	1771	6344	9242	7184	6686	4867	4518	2439	1214	280	116	358
(WY)	1963	1974	1965	1970	1986	1983	1982	1963	1993	1983	1976	1978
MIN	25.0	82.4	115	236	358	508	433	315	82.7	36.5	19.0	15.5
(WY)	1988	1988	1977	1977	1977	1988	1977	1992	1992	1987	1992	1992

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1962 - 2003	
ANNUAL TOTAL	402984		500886			
ANNUAL MEAN	1104		1372		1260	
HIGHEST ANNUAL MEAN					2372	1974
LOWEST ANNUAL MEAN					275	1977
HIGHEST DAILY MEAN	15200	Dec 16	15200	Dec 16	64000	Dec 22 1964
LOWEST DAILY MEAN	14	Sep 21	25	Oct 14	13	Aug 22 1992
ANNUAL SEVEN-DAY MINIMUM	15	Sep 20	26	Oct 10	14	Sep 8 1992
ANNUAL RUNOFF (AC-FT)	799300		993500		912600	
ANNUAL RUNOFF (CFSM)	2.91		3.61		3.31	
ANNUAL RUNOFF (INCHES)	39.45		49.03		45.04	
10 PERCENT EXCEEDS	2750		3400		3110	
50 PERCENT EXCEEDS	339		534		496	
90 PERCENT EXCEEDS	25		30		38	

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 mi^2.

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 50 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except for the period Sept. 1-30 and those above 10,000 ft^3/s, which are fair . No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--34 years (water years 1970-2003), 2,250 ft^3/s, 112.81 in/yr, 1,630,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,100 ft^3/s Nov. 19, 1996, gage height, 28.56 ft; minimum discharge, 42 ft^3/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 ft^3/s, from rating curve extended above 45,000 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 14	1830	29,500	15.28	Dec. 31	0000	31,400	16.20
Dec. 27	1030	*36,800	*17.41				

Minimum discharge, 61 ft^3/s Nov 3.

Discharge, cubic feet per second
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	62	321	12400	7540	1390	2290	4270	488	211	118	88
2	65	62	305	9140	5790	1260	2310	3630	466	207	118	87
3	65	62	292	11500	4330	1180	2590	3140	445	201	129	86
4	65	62	289	11200	3440	1090	4000	3750	425	197	129	87
5	66	63	282	9110	2860	1000	3740	3580	408	193	127	87
6	66	63	263	6240	2460	960	5110	2890	394	189	136	87
7	65	112	248	4650	2170	1220	5130	2440	385	187	128	93
8	64	1940	236	3660	1930	1760	4900	2150	374	189	122	101
9	63	4980	250	3020	1720	3300	4910	1890	361	185	119	117
10	63	7770	1020	2590	1540	5280	5240	1680	349	180	116	149
11	63	5750	2150	2580	1390	3760	5430	1550	339	176	114	119
12	62	3370	2980	4320	1260	3600	4820	1420	331	172	112	102
13	62	2630	7020	6710	1170	4120	4710	1310	334	172	111	95
14	62	1740	20700	6970	1080	7910	4020	1230	331	169	110	90
15	62	1280	20500	5080	1470	10500	3640	1140	315	165	107	88
16	62	1220	21500	3880	4190	8960	3440	1050	303	163	105	88
17	63	1800	11600	3160	5930	6520	3280	972	293	160	104	89
18	63	1420	8320	2660	6750	4770	2920	906	287	156	102	89
19	63	1120	6790	2320	6030	4070	2540	854	279	153	100	87
20	64	939	8620	2050	4830	5110	2270	804	274	150	99	87
21	63	804	10400	2460	3760	4680	2050	762	268	145	97	e87
22	63	703	6880	3370	3250	9680	1810	728	260	144	97	e86
23	63	623	5000	5760	2760	9040	2160	693	254	141	99	e86
24	63	563	3940	5350	2380	5830	4940	661	248	137	100	e86
25	64	503	3180	8100	2090	5580	4460	648	242	134	98	e85
26	64	452	6470	7630	1870	8600	5660	618	234	134	96	e85
27	64	417	26100	10600	1680	6170	5200	587	226	132	95	e85
28	63	388	17300	7190	1510	4650	4520	567	217	129	94	e84
29	63	361	11200	5110	---	3680	4560	547	212	124	94	e84
30	63	340	18500	8460	---	2990	5150	530	216	121	93	e84
31	62	---	24400	8240	---	2530	---	512	---	119	91	---
TOTAL	1968	41599	247056	185510	87180	141190	117800	47509	9558	5035	3360	2768
MEAN	63.5	1387	7970	5984	3114	4555	3927	1533	319	162	108	92.3
MAX	66	7770	26100	12400	7540	10500	5660	4270	488	211	136	149
MIN	62	62	236	2050	1080	960	1810	512	212	119	91	84
AC-FT	3900	82510	490000	368000	172900	280100	233700	94230	18960	9990	6660	5490
CFSM	0.23	5.12	29.4	22.1	11.5	16.8	14.5	5.66	1.18	0.60	0.40	0.34
IN.	0.27	5.71	33.91	25.46	11.97	19.38	16.17	6.52	1.31	0.69	0.46	0.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2003, BY WATER YEAR (WY)

MEAN	540	3209	5128	5211	4600	3812	2375	1186	573	193	115	184
MAX	2540	10230	13350	13150	11500	7041	6956	3495	2121	442	310	1531
(WY)	1982	1974	1997	1970	1986	1989	1982	1996	1993	1983	1983	1978
MIN	48.3	107	121	479	619	859	674	430	221	121	69.1	54.9
(WY)	1988	1994	1977	1977	1977	1988	1977	1973	1992	2002	1987	1987

SUMMARY STATISTICS	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1970 - 2003	
ANNUAL TOTAL	774931		890533			
ANNUAL MEAN	2123		2440		2250	
HIGHEST ANNUAL MEAN					3911	1982
LOWEST ANNUAL MEAN					549	1977
HIGHEST DAILY MEAN	26100	Dec 27	26100	Dec 27	57000	Nov 19 1996
LOWEST DAILY MEAN	62	Oct 12	62	Oct 12	44	Oct 22 1991
ANNUAL SEVEN-DAY MINIMUM	62	Oct 10	62	Oct 10	46	Oct 19 1974
ANNUAL RUNOFF (AC-FT)	1537000		1766000		1630000	
ANNUAL RUNOFF (CFSM)	7.83		9.00		8.30	
ANNUAL RUNOFF (INCHES)	106.37		122.24		112.81	
10 PERCENT EXCEEDS	5580		6730		5980	
50 PERCENT EXCEEDS	417		623		776	
90 PERCENT EXCEEDS	65		66		82	

e Estimated

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 (discontinued) (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. Refer to WDR OR-92-1 for further description of instrumentation.

REMARKS.--The sample collector is located in the restricted access area of the city of Portland's Bull Run River Watershed. Samples are collected by Bull Run Headworks Water Quality Laboratory personnel and analyzed by the Illinois supply Central Analytical Laboratory.

WATER-QUALITY DATA

Date	Precip-itation total for defined period, inches (00193)	pH, wet atm dep unfltrd field, std units (83106)	pH wet atm dep unfltrd lab, std units (83107)	Specif. conduc-tance, wet dep unfltrd field, uS/cm (83154)	Specif. conduc-tance, wet dep unfltrd lab, uS/cm (83156)	Calcium wet atm dep fltrd, mg/L (82932)	Magnes-ium, wet atm dep fltrd, mg/L (83002)	Potas-sium, wet atm dep fltrd, mg/L (83120)	Sodium, wet atm dep fltrd, mg/L (83138)	Chlor-ide, wet atm dep fltrd, mg/L (82944)	Sulfate wet atm dep fltrd, mg/L (83160)	Ammonia wet atm dep fltrd, mg/L as NH4 (83047)	Nitrate wet atm dep fltrd, mg/L (83071)
OCT 2002													
01-08	.93	4.8	5.1	8.6	7.6	.02	.011	.014	.103	.19	.49	.25	.82
OCT													
08-15	.05	5.1	5.0	14.3	13.2	.06	.073	.028	.614	.97	1.08	.23	.90
OCT													
15-22	.00	--	--	--	--	--	--	--	--	--	--	--	--
OCT													
22-29	.27	5.0	5.1	17.9	20.9	.16	.178	.083	1.55	2.83	1.28	.40	1.23
OCT 29-													
NOV 05	.00	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
05-12	1.95	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
12-19	2.05	--	--	--	--	--	--	--	--	--	--	--	--
NOV													
19-26	.07	--	--	--	--	--	--	--	--	--	--	--	--
NOV 26-													
DEC 03	.00	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
03-10	.30	5.1	5.3	9.3	8.2	.10	.071	.032	.626	1.16	.36	.08	.31
DEC													
10-17	4.61	5.3	5.5	5.6	4.4	.06	.035	.018	.312	.58	.17	.03	.12
DEC													
17-24	1.91	5.5	5.2	4.3	3.6	.01	.003	.004	.040	.08	.12	.03	.30
DEC													
24-31	3.80	5.8	5.3	4.1	3.5	<.01	.010	<.003	.050	.21	.11	<.02	.18
DEC 31 2002-													
JAN 07 2003	1.80	5.3	5.3	4.2	4.1	.03	.022	.007	.216	.40	.13	<.02	.14
JAN													
07-14	1.40	5.6	5.3	3.4	2.3	<.01	<.003	<.003	.017	.04	.05	<.02	.12
JAN													
14-21	.00	--	--	--	--	--	--	--	--	--	--	--	--
JAN													
21-28	3.10	5.7	5.2	4.1	4.3	<.01	.009	.008	.139	.25	.23	.02	.14
JAN 28-													
FEB 04	7.85	5.3	5.4	4.5	3.0	<.01	.009	.005	.105	.19	.09	.02	.14
FEB													
04-11	.02	--	4.9	--	16.8	.09	.120	.037	1.07	1.91	.90	.27	1.54
FEB													
11-18	2.15	5.4	5.2	4.5	4.2	.01	.014	.005	.136	.24	.15	.03	.21
FEB													
18-25	2.35	5.2	5.4	4.6	4.9	.05	.027	.023	.232	.40	.24	.10	.28
FEB 25-													
MAR 04	.65	5.1	5.1	7.7	7.1	.04	.020	.016	.129	.21	.50	.26	.73
MAR													
04-11	5.98	5.3	5.6	4.2	3.0	.01	.010	.008	.089	.14	.16	.08	.16
MAR													
11-18	1.55	5.0	5.5	6.6	6.3	.09	.050	.049	.403	.71	.30	.09	.34
MAR													
18-25	3.60	5.4	5.4	3.6	3.4	.04	.018	.012	.158	.29	.16	.04	.14
MAR 25-													
APR 01	2.60	5.4	5.4	5.1	6.0	.05	.040	.017	.333	.61	.33	.13	.30
APR													
01-08	2.50	5.4	5.4	4.9	4.6	.03	.016	.017	.149	.27	.30	.12	.26
APR													
08-15	1.60	5.2	5.4	4.7	3.9	.04	.009	.017	.037	.06	.22	.13	.38
APR													
15-22	2.60	5.1	5.0	10.7	11.6	.08	.045	.043	.338	.55	1.02	.41	1.17
APR													
22-29	1.30	5.5	5.5	4.1	4.1	.03	.014	.078	.055	.10	.23	.12	.38
APR 29-													
MAY 06	1.16	5.3	5.5	6.6	7.1	.03	.025	.018	.237	.40	.40	.20	.34
MAY													
06-13	.53	4.9	4.9	11.7	11.5	.06	.027	.035	.196	.25	.94	.40	1.29
MAY													
13-20	1.40	5.0	5.2	10.8	10.4	.06	.064	.038	.536	.92	.77	.28	.56
MAY													
20-27	.35	5.5	5.8	5.3	4.8	.04	.008	.010	.036	.06	.27	.30	.37
MAY 27-													
JUN 03	.03	--	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

SANDY RIVER BASIN

452650122091801 BULL RUN RESERVOIR NUMBER TWO, OR
WATER-QUALITY DATA

Date	Precip-itation total for defined period, inches (00193)	pH, wet atm dep unfltrd field, std units (83106)	pH wet atm dep unfltrd lab, std units (83107)	Specif. conduc-tance, wet dep unfltrd field, uS/cm (83154)	Specif. conduc-tance, wet dep unfltrd lab, uS/cm (83156)	Calcium wet atm dep fltrd, mg/L (82932)	Magnes-ium, wet atm dep fltrd, mg/L (83002)	Potas-sium, wet atm dep fltrd, mg/L (83120)	Sodium, wet atm dep fltrd, mg/L (83138)	Chlor-ide, wet atm dep fltrd, mg/L (82944)	Sulfate wet atm dep fltrd, mg/L (83160)	Ammonia wet atm dep fltrd, mg/L as NH4 (83047)	Nitrate wet atm dep fltrd, mg/L (83071)
JUN 2003 03-10	<.01	--	--	--	--	--	--	--	--	--	--	--	--
JUN 10-17	.16	4.9	5.2	6.5	3.8	.02	.005	.008	.027	.06	.17	.10	.34
JUN 17-24	1.15	5.1	5.0	8.2	8.9	.04	.025	.017	.233	.41	.60	.24	.66
JUN 24-JUL 01	.00	--	--	--	--	--	--	--	--	--	--	--	--
JUL 01-08	.03	--	5.1	--	7.4	.07	.020	.017	.149	.25	.68	.30	.50
JUL 08-15	.05	--	5.6	--	7.5	.16	.038	.049	.117	.31	.63	.44	.78
JUL 15-22	.00	--	--	--	--	--	--	--	--	--	--	--	--
JUL 22-29	.00	--	--	--	--	--	--	--	--	--	--	--	--
JUL 29-AUG 05	.00	--	--	--	--	--	--	--	--	--	--	--	--
AUG 05-12	.10	4.7	4.7	16.4	16.0	.25	.048	.082	.203	.32	.95	.48	2.57
AUG 12-19	.00	--	--	--	--	--	--	--	--	--	--	--	--
AUG 19-26	.03	--	4.3	--	37.4	.47	.085	.025	.343	.48	2.16	.99	5.83
AUG 26-SEP 02	.00	--	--	--	--	--	--	--	--	--	--	--	--
SEP 02-09	1.50	5.2	5.1	7.2	5.8	.04	.017	.010	.155	.27	.40	.09	.32
SEP 09-16	.97	5.1	5.2	9.6	9.8	.07	.062	.030	.559	.93	.75	.28	.59
SEP 16-OCT 06	1.07	--	--	--	--	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

SILVER LAKE BASIN

430701121040001 SILVER LAKE RANGER STATION, OR

LOCATION.--Lat 43°07'01", Long 121°04'00", in NE 1/4 SW 1/4 sec.21, T.28 S., R.14 E., Lake County, Hydrologic Unit 17120005, at Silver Lake Ranger Station, 0.5 mi south of State Highway 31, and 1 mi southwest of town of Silver Lake.

PERIOD OF RECORD.--August 1983 to current year (weekly composite).

INSTRUMENTATION.--The wet-deposition sample collector is an Aerochem Metrics Model 301 wet/dry deposition collector. Refer to WDR OR-92-1 for further description of instrumentation.

REMARKS.--Inches of precipitation obtained from an on-site recording weighing-bucket gage. Samples are collected by Silver Lake Ranger Station personnel and analyzed by the Illinois State Water Survey Central Analytical Laboratory.

WATER-QUALITY DATA

Date	Precip-itation total for defined period, inches (00193)	pH, wet atm dep unfltrd field, std units (83106)	pH wet atm dep unfltrd lab, std units (83107)	Specif. conduc-tance, wet dep unfltrd field, uS/cm (83154)	Specif. conduc-tance, wet dep unfltrd lab, uS/cm (83156)	Calcium wet atm dep fltrd, mg/L (82932)	Magnes-ium, wet atm dep fltrd, mg/L (83002)	Potas-sium, wet atm dep fltrd, mg/L (83120)	Sodium, wet atm dep fltrd, mg/L (83138)	Chlor-ide, wet atm dep fltrd, mg/L (82944)	Sulfate wet atm dep fltrd, mg/L (83160)	Ammonia wet atm dep fltrd, mg/L as NH4 (83047)	Nitrate wet atm dep fltrd, mg/L (83071)
OCT 2002 01-08	.25	5.5	5.6	2.8	2.1	.02	<.003	<.003	<.003	.02	.03	.05	.04
OCT 08-15	.00	--	--	--	--	--	--	--	--	--	--	--	--
OCT 15-22	.00	--	--	--	--	--	--	--	--	--	--	--	--
OCT 22-29	.02	--	--	--	--	--	--	--	--	--	--	--	--
OCT 29-NOV 05	.00	--	--	--	--	--	--	--	--	--	--	--	--
NOV 05-12	.45	5.3	5.5	2.5	2.0	.02	<.003	.007	.003	.03	.02	<.02	.13
NOV 12-19	.03	--	5.6	--	3.9	.03	<.008	.025	.016	.08	<.03	.25	.45
NOV 19-26	.10	5.0	5.4	6.3	3.0	.02	.004	.003	.013	.03	.12	.07	.17
NOV 26-DEC 03	.00	--	--	--	--	--	--	--	--	--	--	--	--
DEC 03-10	.04	--	5.5	--	2.5	.05	.005	<.003	.019	.04	<.01	.08	.13
DEC 10-16	.79	5.0	5.6	2.5	2.2	.01	<.003	.003	.003	.01	<.01	<.02	.11
DEC 16-23	.06	--	5.8	--	3.0	.07	.019	.024	.014	.07	<.05	.22	.47
DEC 23-30	1.83	5.0	5.3	2.5	2.5	.01	<.003	<.003	<.003	<.00	<.01	<.02	.20
DEC 30 2002-JAN 07 2003	.10	5.1	5.1	4.2	4.1	.01	<.003	<.003	.003	.01	<.01	.05	.18
JAN 07-14	.22	5.3	5.3	2.7	3.0	.03	.004	<.003	<.003	.02	<.01	.03	.17
JAN 14-21	.04	--	5.6	--	3.6	.03	<.003	<.003	.005	.04	.05	.24	.43
JAN 21-27	.53	5.0	5.4	3.0	3.5	<.01	<.003	<.003	<.003	.01	.04	.02	.05
JAN 27-FEB 04	.58	5.1	5.4	4.3	2.3	<.01	<.003	<.003	<.003	.01	.04	.02	.09
FEB 04-11	.00	--	--	--	--	--	--	--	--	--	--	--	--
FEB 11-18	.13	5.4	5.3	3.3	2.9	<.01	<.003	<.003	<.003	.02	<.01	.06	.20
FEB 18-26	.05	5.3	5.3	7.3	5.7	.06	.007	.108	.127	.32	.10	.18	.76
FEB 26-MAR 04	.11	5.1	5.6	5.0	2.1	.03	.003	<.003	.005	.03	.06	.03	.15
MAR 04-11	.02	--	--	--	--	--	--	--	--	--	--	--	--
MAR 11-18	.57	5.5	5.6	2.5	1.9	.03	.003	.004	.019	.04	.04	.04	.10
MAR 18-25	.21	5.0	5.4	3.6	3.2	.02	<.003	<.003	.004	.02	.06	.09	.10
MAR 25-APR 01	.24	5.2	5.3	2.8	3.6	.04	.004	.003	.012	.04	.07	.06	.13
APR 01-08	.05	--	--	--	--	--	--	--	--	--	--	--	--
APR 08-15	.12	5.3	5.4	3.1	4.1	.03	.005	.014	.004	.03	.06	.10	.21
APR 15-22	.18	5.2	5.7	4.4	4.2	.14	.016	.006	.015	.04	.20	.22	.42
APR 22-29	.27	5.0	5.2	3.3	3.5	.03	.004	<.003	.005	.02	.05	.07	.14
APR 29-MAY 06	.16	4.9	5.5	7.6	5.9	.12	.021	.070	.035	.08	.24	.18	.72
MAY 06-13	.41	5.1	6.3	6.7	10.3	.08	.039	.375	.049	.08	.40	.17	.45
MAY 13-20	.00	--	--	--	--	--	--	--	--	--	--	--	--
MAY 20-27	.01	--	--	--	--	--	--	--	--	--	--	--	--
MAY 27-JUN 03	.30	4.8	5.4	13.4	9.8	.15	.022	.022	.066	.11	.94	.72	1.59

< Actual value is known to be less than the value shown.

SILVER LAKE BASIN

430701121040001 SILVER LAKE RANGER STATION, OR
WATER-QUALITY DATA

Date	Precip-itation total for defined period, inches (00193)	pH, wet atm dep unfltrd field, std units (83106)	pH wet atm dep unfltrd lab, std units (83107)	Specif. conduc-tance, wet dep unfltrd field, uS/cm (83154)	Specif. conduc-tance, wet dep unfltrd lab, uS/cm (83156)	Calcium wet atm dep fltrd, mg/L (82932)	Magnes-ium, wet atm dep fltrd, mg/L (83002)	Potas-sium, wet atm dep fltrd, mg/L (83120)	Sodium, wet atm dep fltrd, mg/L (83138)	Chlor-ide, wet atm dep fltrd, mg/L (82944)	Sulfate wet atm dep fltrd, mg/L (83160)	Ammonia wet atm dep fltrd, mg/L as NH4 (83047)	Nitrate wet atm dep fltrd, mg/L (83071)
JUN 2003 03-10	.00	--	--	--	--	--	--	--	--	--	--	--	--
JUN 10-17	.00	--	--	--	--	--	--	--	--	--	--	--	--
JUN 17-24	.10	--	--	--	--	--	--	--	--	--	--	--	--
JUN 24-JUL 01	.00	--	--	--	--	--	--	--	--	--	--	--	--
JUL 01-08	.07	--	--	--	--	--	--	--	--	--	--	--	--
JUL 08-15	.00	--	--	--	--	--	--	--	--	--	--	--	--
JUL 15-22	.07	4.2	5.0	39.0	15.0	.59	.090	.188	.230	.24	1.12	.45	2.39
JUL 22-29	.52	5.5	5.3	7.4	7.1	.19	.026	.068	.299	.11	.47	.20	.97
JUL 29-AUG 05	.25	4.8	5.0	8.3	7.0	.06	.007	.037	.021	.09	.34	.23	.81
AUG 05-12	.00	--	--	--	--	--	--	--	--	--	--	--	--
AUG 12-19	.00	--	--	--	--	--	--	--	--	--	--	--	--
AUG 19-26	.45	5.3	5.0	5.5	5.9	.02	.004	.005	.010	.04	.25	.12	.54
AUG 26-SEP 02	.00	--	--	--	--	--	--	--	--	--	--	--	--
SEP 02-10	1.31	4.9	5.2	4.2	5.1	.06	.008	.009	.017	.04	.24	.16	.68
SEP 10-17	.01	--	--	--	--	--	--	--	--	--	--	--	--
SEP 17-23	.00	--	--	--	--	--	--	--	--	--	--	--	--
SEP 23-30	.00	--	--	--	--	--	--	--	--	--	--	--	--
SEP 30-OCT 07	.02	--	5.2	--	13.0	.34	.047	.032	.082	.17	.97	.59	1.89

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usuable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to these events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at crest-stage partial-record stations are presented in the following table. Discharge measurements made at low-flow partial-record sites and at miscellaneous sites and for special studies are given in separate tables.

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 2003

Station name and number	Location and drainage area	Period of record	Water year 2003 maximum			Period of record maximum		
			Date	Gage height (ft)	Discharge (ft^3/s)	Date	Gage height (ft)	Discharge (ft^3/s)
			WILLAMETTE RIVER BASIN					
Wilson Creek near Hazelia (14207100)	Lat 45°22'56", long 122°40'49", in SE 1/4 SE 1/4 sec.72, T.2 S., R.1E., Clackamas County, Hydrologic Unit 17090010, at Long Farm Road, 0.7 mi southeast of Hazelia. Drainage area is1.24 mi^2.	2002-03	01/31/03	8.26	44	01/31/03	8.26	44
Rock Creek at Sunnyside Road, near Damascus (14210830)	Lat 45°25'38", long 122°29'31", in NW 1/4 SW 1/4 sec.6, T.2 S.,R.3E., Clackamas County, Hydrologic Unit 17090011, at private bridge 300 ft north of Sunnyside Road, 2 mi northwest of Damascus, and 1.75 upstream from confluence with Clackamas River. Drainage area is 6.46 mi^2.	2002-03	01/31/03	7.63	838	01/31/03	7.63	838
Rock Creek near Carver (14210850)	Lat 45°24'35", long 122°30'18", in SE 1/4 SE 1/4 sec.12, T.2 S., R.3E., Clackamas County, Hydrologic Unit 17090011, on private land adjacent to Hwy 212/224, 0.3 mi east of 142nd, 0.2 mi upstream from confluence with Clackamas River. Drainage area 9.59 mi^2.	2002-03	01/31/03	7.11	520	01/31/03	7.11	520
Kellogg Creek above Mt. Scott Creek near Milwaukie (14211330)	Lat 45°25'18", long 122°36'01", in NE 1/4 SW 1/4 sec.55, T.2 S., R. 2E., Clackamas County, Hydrologic Unit 17090012, on Parmenter Ct., 250 ft downstream from culvert. Drainage area is 2.26 mi^2.	2002-03	01/31/03	8.48	97	01/31/03	8.48	97
Mt. Scott Creek near Milwaukie (14211350)	Lat 45°25'37", long 122°36'30", in SW 1/4 SW 1/4 sec.54, T. 2 S., R.2E., Clackamas County, Hydrologic Unit 17090012, in North Clackamas Central Park, south of highway 224. Drainage area is 11.82 mi^2.	2002-03	01/31/03	8.60	nd	01/31/03	8.60	nd

nd - Not deterimined at time of publication.

Annual maximum discharge at crest-stage partial-record stations during water year 2003--Continued

Station name and number	Location and drainage area	Period of record	Water year 2003 maximum Date	Gage height (ft)	Discharge (ft^3/s)	Period of record maximum Date	Gage height (ft)	Discharge (ft^3/s)
			NESTUCCA RIVER BASIN					
Walker Creek near Fairdale (14302850)	Lat 45°18'12", long 123°24'51", in SW 1/4 SW 1/4 sec.15, T. 3 S., R.6 W., Yamhill County, Hydrologic Unit 17100203, at culvert, 5.3 mi southwest of Fairdale, and at mile 0.5. Drainage area is 2.72 mi^2.	1992-2003	01/31/03	4.05	194	02-08-96	unknown	450
			UMPQUA RIVER BASIN					
Elk Creek near Drew (14308500)	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, 100 ft downstream from Dixon Creek, 0.1 mi upstream from Drew Creek, 1.3 mi northwest of Drew, Drew, 3.3 mi south of Tiller, and at mile 4.1. Drainage area is 54.4 mi ^{2}.	1955-82 1987-2003	12/27/02	7.59	2,930	01/09/95	11.09	9,120
Lookingglass Creek at Brockway (14311500)	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 is 158 mi^2.	1956-2003	12/31/02	12.03	6,800	12/26/55	24.93	35,000

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 made at miscellaneous sites during water year 2003.

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		KLAMATH RIVER BASIN				
Keno Power Canal	Link River	Lat 42°13'16", long 121°47'35", in SW 1/4 NW 1/4 sec.32, T.38 S., R.9 E., Klamath County, HydrologicUnit 18010204, 600 ft downstream from Link River gage, and 1,200 ft upstream from Main Street Bridge.	3,810	1961-2002	10/22/02	204
		UMATILLA RIVER BASIN				
14020760 Cottonwood Creek near Mission	Umatilla River	Lat 45°39'38", long 118°33'52", in SW 1/4 SW 1/4 sec.8 T.2 N., R.34 E., Umatilla County, Hydrologic Unit 17070103, Umatilla Indian Reservation, on right bank, on downstream side of county road crossing, 4.5 mi west of Mission, and at mile 1.3.	4.01	1992-97‡ 1998-2002	11/06/02 04/08/03	no flow 7.2
		DESCHUTES RIVER BASIN				
14095600 Badger Creek near Warm Springs	Warm Springs River	Lat 44°57'00", long 121°28'30", in NE 1/4 SW 1/4 sec.20 T.7 S., R.11 E., Wasco County, Hydrologic Unit 17070306	37.2	1973, 1977 1987,2002	10/21/02 04/10/03	8.5 42
		SANDY RIVER BASIN				
14131400 Zig Zag River near Rhododendron	Sandy River	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 Mt. Hood National Forest, at bridge, 0.5 mi upstream from Devil Canyon Creek, 1.2 mi downstream from Lady Creek, and 2.8 mi southeast of Rhododendron.	14.8	1981-93‡ 1999-2002	04/07/03	87
		WILLAMETTE RIVER BASIN				
Coast Fork Willamette River near London	Middle Fork Willamette River	Lat 43°38'56", long 122°04'54", in NE 1/4 SE 1/4 sec.42, T.22 S., R.3 W., Lane County, Hydrologic Unit 17090002, at London Road bridge, at London School (C.F. Willamette River at London-14142500).	75.2	2002	07/21/03	14
14207100 Wilson Creek near Hazelia	Tualatin River	Lat 45°22'56", long 122°40'49", in SE 1/4 SE 1/4 sec.72, T.2 S., R.1E, Clackamas County, Hydrologic Unit 17090010, at Long Farm Road, 0.7 mi southeast of Hazelia.	1.24	2001-02	01/31/03	44
14208000 Clackamas River at Big Bottom	Willamette River	Lat 45°01'00", long 121°55'10", in NW 1/4 SE 1/4 sec.26, T.6 S., R.7 E., Clackamas County, Mount Hood National Forest, on right bank at lower end of Big Bottom, 0.5 mi downstream from Pot Creek, 28 mi southeast of Estacada, and at mile 65.1.	136	1920-70‡, 1997-2002	01/30/03 01/30/03	1,920 2,020
14210830 Rock Creek at Sunnyside Road, near Damascus	Clackamas River	Lat 45°25'38", long 122°29'31", in NW 1/4 SW 1/4 sec.6, T.2 S., R.3 E., Clackamas County, Hydrologic Unit 17090011, at private bridge, 300 ft north of Sunnyside Road, 2 mi northwest of Damascus and 1.75 mi upstream from confluence with Clackamas River.	6.46	2001-02	01/30/03 01/31/03	280 439
14210850 Rock Creek near Carver	.....do.....	Lat 45°24'35", long 122°30'18", in SE 1/4 SE 1/4, sec.12, T.2 S., R.3 E., Clackamas County, Hydrologic unit 17090011, on private land adjacent to Hwy 212/224, 0.3 mi east of 142nd, 0.2 mi upstream from confluence with Clackamas River.	9.59	2001-02	01/31/03 02/21/03 02/27/03	520 64 9.45
14211330 Kellogg Creek above Mt. Scott Creek, near Milwaukie	Willamette River	Lat 45°25'18", long 122°36'01", in NE 1/4 SW 1/4 sec.55, T.2 S., R.2 E., Clackamas County, Hydrologic unit 17090012 on Parmenter Ct., 250 ft downstream from culvert.	2.26	2001-02	01/31/03	77
Errol Spring	Johnson Creek	Lat 45°27'49", long 122°37'00", Multnomah County, Hydrologic Unit 17090012, at SE 44th Avenue between SE Umatilla Street and SE Harney Street in Portland, at mouth.	---	1988, 1998-2002	09/04/03	0.35
Crystal Springs Creek	.....do	Lat 45°28'56", long 122°38'00", Multnomah County, Hydrologic Unit 17090012, on Reed College Campus in Portland, 0.1 mi downstream from Reed Lake, and at mile 1.8.	---	1997-2001	09/04/03	1.08
14211546 Crystal Springs Creek	.....do	Lat 45°27'39", long 122°38'30", Multnomah County, Hydrologic Unit 17090012, at mouth.	---	1987-90 1997-2002	09/04/03	10

‡ Operated as a continuous record gaging station.

Discharge measurements made at miscellaneous sites during water year 2002--Continued

Stream	Tributary to	Location	Drainage area (mi^2)	Measured previously (water years)	Measurements	
					Date	Discharge (ft^3/s)
		NESTUCCA RIVER BASIN				
14302850 Walker Creek	Nestucca River	Lat 45°18'12", long 123°24'51", in SW 1/4 SW 1/4 sec.15, T.3 S., R.6 W., Yamhill County, Hydrologic Unit 17100203, 5.3 mi southwest of Fairdale, and at mile 0.5.	2.72	1991-2002	12/13/02 02/20/03 04/29/03	44 26 12
		UMPQUA RIVER BASIN				
14308500 Elk Creek near Drew	South Umpqua River	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, 100 ft downstream from Dixon Creek, 0.1 mi upstream from Drew Creek, 1.3 mi nowrthwest of Drew, 3.3 mi southeast of Tiller, and at mile 4.1.	54.4	1955-82‡, 1987-2001‡ 2002	04/30/03	106

‡ Operated as a continuous record gaging station.

Crooked River Seepage Investigation
Terrebonne, OR

Discharge measurements were made on March 24-27, 2003 on Crooked River to study channel gains and losses due to ground-water discharge and recharge. The reach studied is 12.2 miles in length and extends from river mile (RM) 18.99 at Eliot Trail to RM 6.77 downstream from Opal Springs. The measurements were made during a period of base flow. Tributary flow was considered a contribution and not a gain. Measurements were made with assistance from the Oregon Water Resources Department (OWRD) and the Bureau of Land Management (BLM).

Crooked River mile	Stream	Latitude	Longitude	Date	Measured discharge, in cubic feet per second (ft^3/s)	Specific Conductance in US/CM 25C (average	Water Temperature degrees Celcius (average)
6.77	Crooked River downstream from Opal Springs	44°29'34"	121°17'50"	3/24/03 3/25/03 3/26/03 3/27/03	1,280 1,270* 1,280 1,300	---	---
7.71	Crooked River upstream from Opal Springs	44°28'49"	121°18'03"	3/27/03	911	156	11.8
8.35	do	44°28'22"	121°17'51"	3/24/03	854	186	12.4
9.17	do	44°27'56"	121°17'12"	3/26/03	479	206	10.8
10.37	do	44°27'17"	121°16'26"	3/27/03	486	208	12.7
11.78	do	44°26'30"	121°15'13"	3/26/03	350	234	12.8
13.44	Crooked River downstream from Osborn Canyon	44°25'37"	121°14'02"	3/24/03	196	283	9.2
15.15	Crooked River upstream from Osborn Canyon	44°24'28"	121°13'52"	3/25/03	128	296	8.6
17.18	Crooked River downstream from Highway 97	44°23'41"	121°12'50"	3/25/03	120	302	8.9
18.99	Crooked River upstream from Highway 97	44°23'59"	121°11'11"	3/24/03	108	307	7.6
27.7	Crooked River near Terrebonne	44°21'30"	121°07'04"	3/24/03 3/25/03 3/26/03 3/27/03	128 126 146 159	---	---

* Daily mean value (regulated) below Opal Springs.

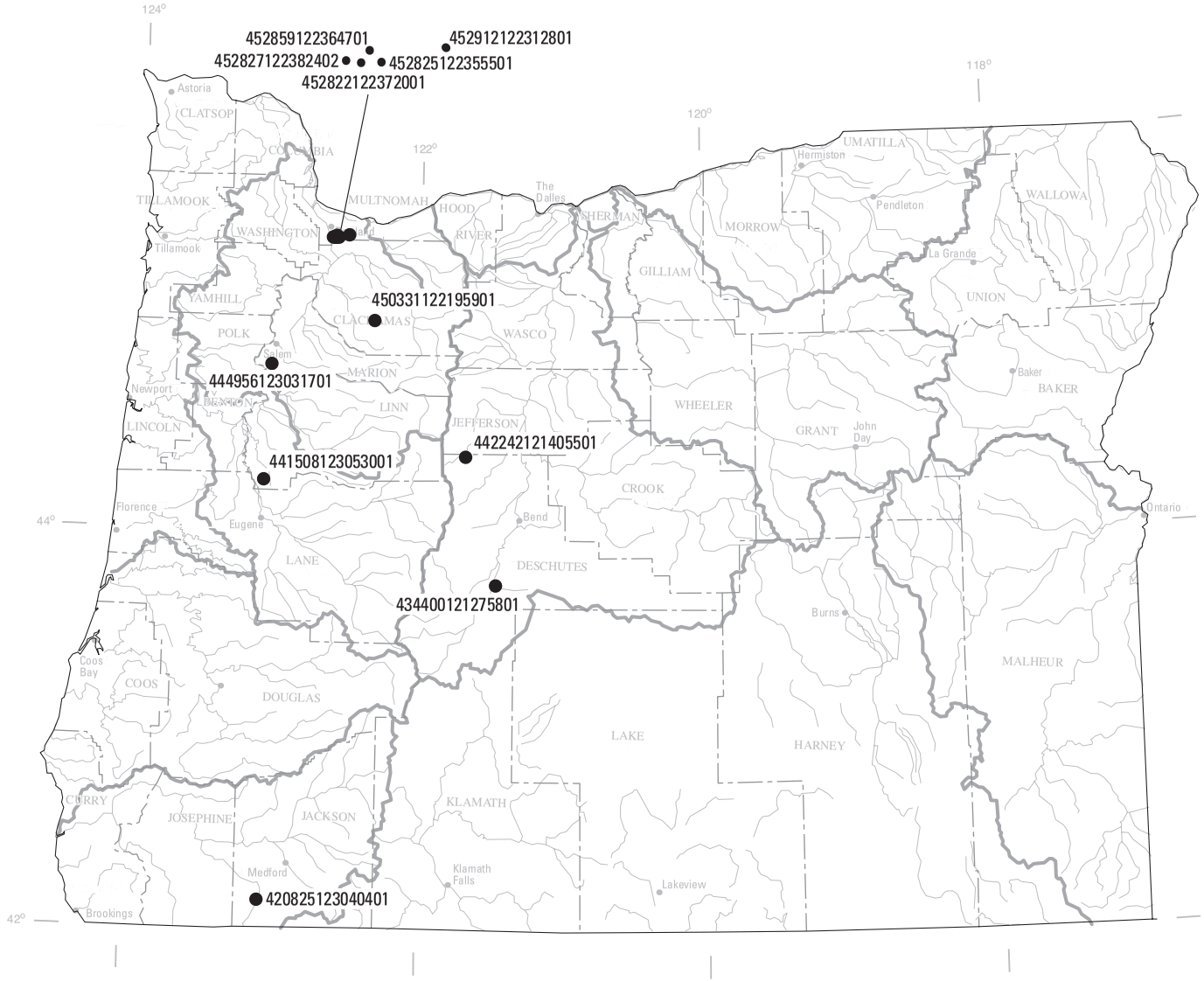


Figure 36. Location of observation wells in Oregon.

CLACKAMAS COUNTY

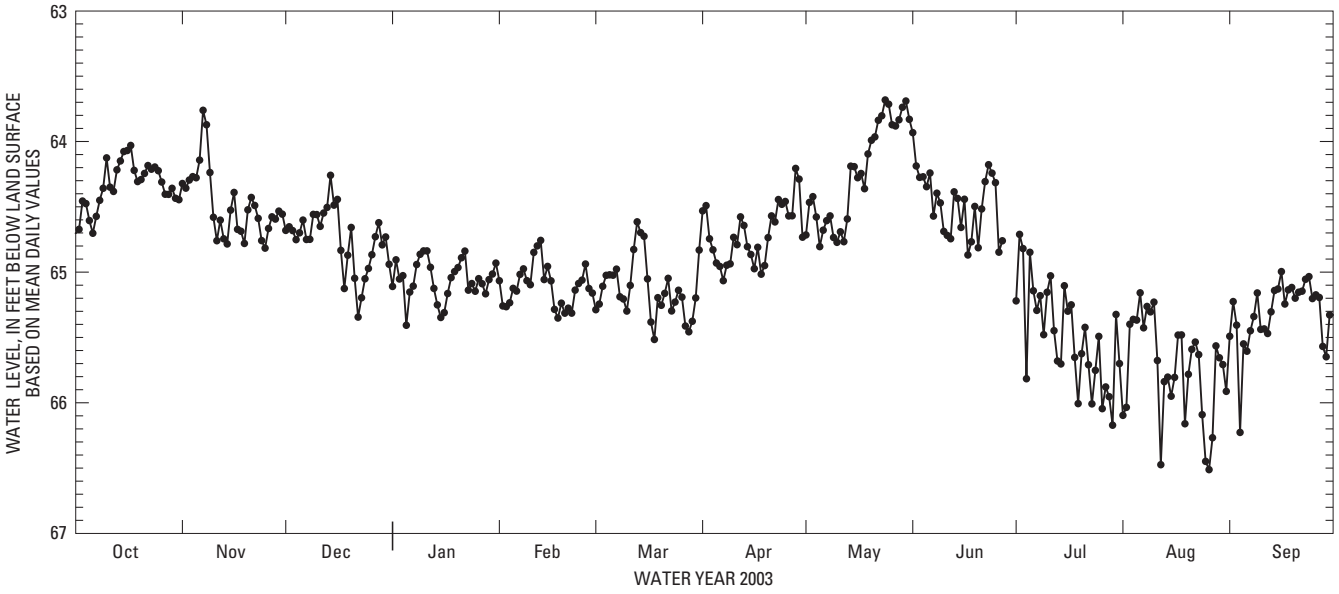
452033122195901. Local number, 02S/04E-29DAD
LOCATION.--Lat 45°21'56", long 122°20'04", Hydrologic Unit 17090011, 5 mi north of Estacada.
Owner: Polly and Michael Lohrey.
AQUIFER.--Sandy River Mudstone/Troutdale Gravel Aquifer. Tertiary.
WELL CHARACTERISTICS.--Drilled irrigation well, 6 inch casing to 176.3 ft, completed depth of 177 ft, perforated 95 to 110 ft, 129 to 149 ft.
INSTRUMENTATION.--Periodic measurements with chalked steel tape by USGS and Oregon Water Resources Department personnel from Feb. 1998 to Sept. 2001; periodic measurements using electric sounder tape and chalked steel tape by Oregon Water Resources Department personnel from Mar. 1962 to Jan. 1998; electronic data logger 120-minute interval, since Sept. 7,2001.
DATUM.--Elevation of land surface is 712 ft above National Geodetic Vertical Datum of 1929 (from topographic map). Measuring point: westside bottom of pump base, 0.4 ft above land-surface datum before recorder installed. After recorder installed, measuring point: top of measuring point hole in recorder shelf, 2.43 ft above land-surface datum.
REMARKS.--Unused. State observation well number 37. State well identification CLAC 6388 and CLAC 6389 (deepening). Entire record from May 1958 to September 1998 published in the 1998 Water Data Report (WDR-OR-98-1).
PERIOD OF RECORD.--May 1958, March 1962 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 54.17 ft below land-surface datum, October 27, 1998; lowest recorded, 91.96 ft below land-surface datum, July 20, 1970 (recovering).
EXTREMES FOR CURRENT YEAR.--Highest water level recorded, 63.54 ft below land-surface datum, May 30; lowest water level recorded, 67.42 ft below land-surface datum, July 26.

Depth to water level, feet below land surface
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64.70	64.32	64.68	65.11	65.07	65.29	64.53	64.72	63.93	65.22	66.10	65.49
2	64.67	64.36	64.65	64.91	65.26	65.24	64.49	64.47	64.19	64.71	66.03	65.23
3	64.46	64.30	64.68	65.05	65.26	65.11	64.74	64.42	64.27	64.82	65.40	65.41
4	64.48	64.27	64.75	65.03	65.23	65.02	64.83	64.58	64.27	65.82	65.36	66.23
5	64.61	64.28	64.70	65.41	65.12	65.02	64.93	64.80	64.35	64.85	65.37	65.55
6	64.70	64.14	64.60	65.15	65.14	65.02	64.96	64.68	64.24	65.14	65.16	65.61
7	64.57	63.76	64.75	65.11	65.02	64.98	65.07	64.61	64.57	65.29	65.43	65.45
8	64.45	63.87	64.75	64.94	64.97	65.19	64.95	64.57	64.40	65.18	65.26	65.34
9	64.36	64.24	64.56	64.86	65.07	65.21	64.94	64.73	64.47	65.48	65.30	65.16
10	64.13	64.58	64.56	64.84	65.10	65.30	64.73	64.77	64.69	65.15	65.23	65.44
11	64.35	64.76	64.65	64.84	64.85	65.10	64.79	64.69	64.72	65.03	65.68	65.43
12	64.38	64.60	64.55	64.96	64.80	64.83	64.58	64.77	64.74	65.45	66.47	65.47
13	64.22	64.75	64.50	65.12	64.76	64.61	64.64	64.59	64.39	65.68	65.84	65.30
14	64.15	64.78	64.26	65.25	65.06	64.70	64.81	64.19	64.44	65.70	65.80	65.14
15	64.08	64.53	64.49	65.35	64.96	64.73	64.86	64.19	64.66	65.10	65.95	65.13
16	64.07	64.39	64.44	65.31	65.07	65.05	64.97	64.28	64.44	65.30	65.81	65.00
17	64.03	64.67	64.83	65.16	65.28	65.38	64.81	64.25	64.87	65.25	65.48	65.24
18	64.22	64.69	65.13	65.04	65.35	65.52	65.02	64.36	64.77	65.65	65.48	65.14
19	64.31	64.78	64.87	65.00	65.24	65.20	64.95	64.10	64.50	66.01	66.16	65.12
20	64.29	64.52	64.66	64.97	65.31	65.25	64.74	63.99	64.81	65.62	65.78	65.20
21	64.24	64.43	65.05	64.89	65.28	65.16	64.57	63.96	64.52	65.42	65.59	65.15
22	64.18	64.49	65.34	64.84	65.31	65.05	64.62	63.84	64.31	65.71	65.54	65.15
23	64.21	64.59	65.20	65.14	65.14	65.30	64.44	63.80	64.18	66.01	65.63	65.05
24	64.20	64.76	65.05	65.09	65.09	65.23	64.48	63.68	64.24	65.75	66.09	65.03
25	64.22	64.82	64.97	65.15	65.06	65.14	64.46	63.71	64.31	65.49	66.45	65.20
26	64.31	64.67	64.87	65.05	64.94	65.19	64.57	63.87	64.85	66.05	66.51	65.17
27	64.40	64.58	64.73	65.09	65.13	65.41	64.57	63.88	64.76	65.88	66.27	65.19
28	64.40	64.59	64.62	65.17	65.16	65.46	64.21	63.83	---	65.95	65.56	65.57
29	64.36	64.53	64.79	65.06	---	65.38	64.29	63.74	---	66.17	65.66	65.65
30	64.43	64.56	64.73	65.01	---	65.20	64.73	63.69	---	65.32	65.71	65.33
31	64.45	---	64.94	64.93	---	64.83	---	63.83	---	65.70	65.91	---
MEAN	64.34	64.49	64.75	65.06	65.11	65.13	64.71	64.24	---	65.48	65.74	65.32
MAX	64.70	64.82	65.34	65.41	65.35	65.52	65.07	64.80	---	66.17	66.51	66.23
MIN	64.03	63.76	64.26	64.84	64.76	64.61	64.21	63.68	---	64.71	65.16	65.00

CAL YR 2002 MEAN 63.70 HIGH 61.99 LOW 65.84

Well identifier continued: 452033122195901. Local number, 02S/04E-29DAD



434400121275801. Local number, 21S/11E-19CCC. Formerly 21S/10E-25A1.
LOCATION.--Lat 43°44'00", long 121°28'01", Hydrologic Unit 17070302, 4.7 mi north of La Pine.
Owner: Luis Arena.
AQUIFER.--Valley-fill deposits. Quaternary.
WELL CHARACTERISTICS.--Drilled domestic well deepened from 37 to 100 ft in 1964, 6 inch casing 0 to 69.5 ft, completed depth of 100 ft, sounded depth of 92.5 ft on Feb. 26, 1998.
INSTRUMENTATION.--Periodic measurements with chalked steel tape by USGS and Oregon Water Resources Department personnel May 1998 to May 1999; periodic measurements using electric sounder tape and chalked steel tape by Oregon Water Resources Department personnel from October 1964 to March 1998; electronic data logger 120 minute interval May 14, 1999 to current year.
DATUM.--Elevation of land surface is 4220 ft above National Geodetic Vertical Datum of 1929 (from topographic map). Measuring point: top of recorder shelf, 2.42 ft above land surface datum.
REMARKS.--Unused. State observation well number 118. State well identification DESC 7620. Historical record prior to deepening available in USGS WSP 1845, pg. 77 and depicted on a hydrograph in USGS OFR 97-197, pg. 24, Figure 8. Entire historical record post-deepening, up to 1999 water year, available in the 1998 Water Data Report (WDR-OR-98-1).
PERIOD OF RECORD.--October 1964 to current year. Records between October 1964 and October 1965 are published in USGS WSP 1845, pg. 77; records between February 1966 and October 1970 are published in USGS WSP 1980, pg. 81; and records between January 1971 and October 1974 are published in USGS WSP 2161. Records between October 1964 and October 1997 are depicted on a hydrograph in USGS OFR 97-197, pg. 24, Fig. 8. Record for October 1985 is published in same OFR, pg. 65, Table 1.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 11.98 ft below land-surface datum, Oct.24, 1984; lowest recorded, 41.63 ft below land-surface datum, Oct. 23, 1964.
EXTREMES FOR CURRENT YEAR.--Highest water level recorded, 24.62 ft below land-surface datum, June 5-9; lowest recorded, 28.54ft below land-surface datum, Sept. 30.

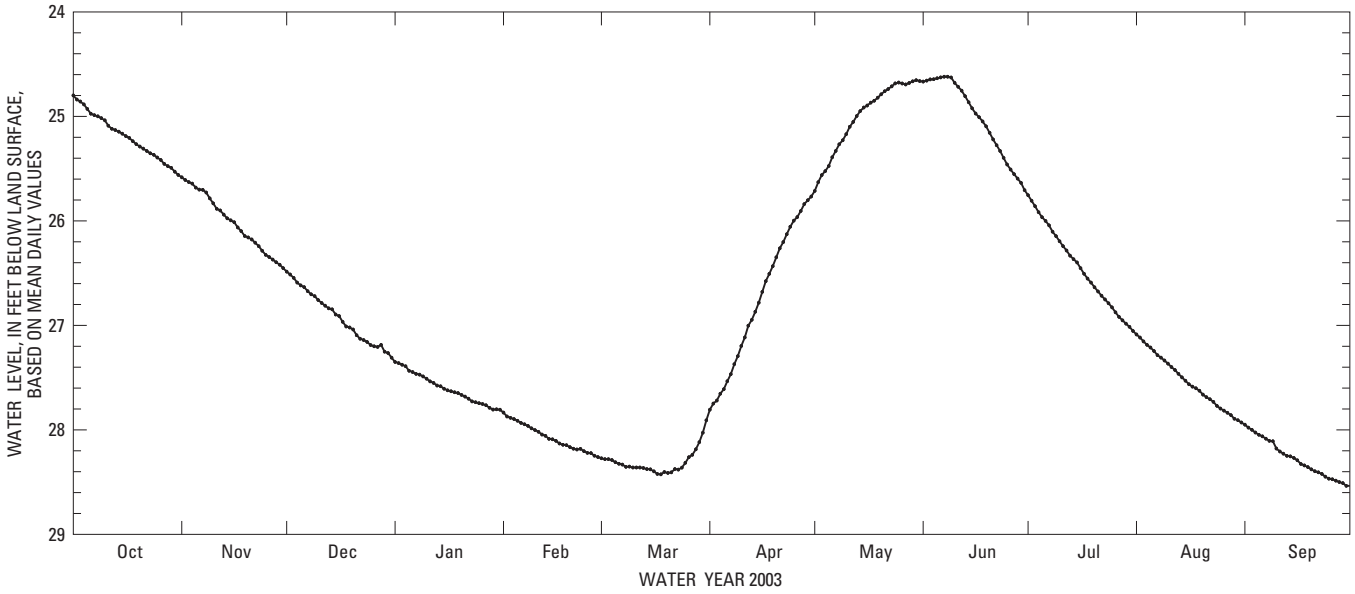
Depth to water level, feet below land surface
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.80	25.58	26.49	27.35	27.83	28.27	27.81	25.71	24.67	25.75	27.09	27.95
2	24.84	25.61	26.51	27.36	27.87	28.28	27.75	25.63	24.66	25.81	27.12	27.98
3	24.86	25.63	26.55	27.38	27.88	28.28	27.72	25.56	24.65	25.86	27.15	28.00
4	24.89	25.64	26.59	27.39	27.90	28.29	27.65	25.52	24.64	25.92	27.19	28.03
5	24.93	25.68	26.62	27.43	27.91	28.31	27.61	25.48	24.64	25.96	27.21	28.05
6	24.97	25.70	26.63	27.45	27.93	28.32	27.53	25.39	24.63	26.00	27.25	28.06
7	24.99	25.70	26.67	27.46	27.95	28.33	27.47	25.33	24.62	26.04	27.29	28.08
8	25.00	25.73	26.70	27.47	27.96	28.35	27.37	25.27	24.62	26.10	27.31	28.11
9	25.02	25.78	26.72	27.49	27.98	28.35	27.29	25.23	24.63	26.15	27.34	28.11
10	25.04	25.83	26.76	27.51	28.00	28.36	27.20	25.17	24.68	26.19	27.37	28.18
11	25.09	25.88	26.79	27.54	28.02	28.36	27.11	25.10	24.72	26.24	27.40	28.21
12	25.12	25.90	26.81	27.55	28.04	28.36	27.00	25.05	24.75	26.28	27.43	28.23
13	25.13	25.94	26.84	27.58	28.06	28.36	26.95	25.00	24.81	26.33	27.46	28.25
14	25.15	25.98	26.85	27.58	28.09	28.38	26.87	24.95	24.86	26.37	27.50	28.25
15	25.17	25.99	26.90	27.61	28.09	28.38	26.78	24.91	24.92	26.40	27.53	28.27
16	25.19	26.01	26.91	27.62	28.11	28.40	26.68	24.90	24.97	26.45	27.56	28.29
17	25.21	26.06	26.97	27.63	28.13	28.42	26.58	24.87	25.01	26.51	27.59	28.33
18	25.24	26.10	27.01	27.64	28.14	28.43	26.51	24.85	25.05	26.55	27.60	28.34
19	25.27	26.14	27.02	27.65	28.15	28.40	26.43	24.82	25.09	26.59	27.62	28.36
20	25.29	26.16	27.04	27.67	28.16	28.41	26.35	24.79	25.16	26.64	27.66	28.38
21	25.31	26.18	27.09	27.68	28.18	28.41	26.26	24.76	25.22	26.68	27.69	28.40
22	25.33	26.21	27.13	27.70	28.19	28.37	26.20	24.74	25.28	26.72	27.71	28.41
23	25.35	26.24	27.14	27.73	28.18	28.38	26.13	24.71	25.33	26.75	27.73	28.42
24	25.37	26.29	27.16	27.74	28.20	28.36	26.06	24.68	25.40	26.79	27.77	28.45
25	25.39	26.32	27.19	27.74	28.22	28.32	26.00	24.68	25.46	26.83	27.80	28.47
26	25.42	26.35	27.20	27.75	28.22	28.26	25.96	24.68	25.51	26.88	27.82	28.47
27	25.45	26.37	27.21	27.76	28.25	28.24	25.91	24.69	25.55	26.92	27.84	28.49
28	25.48	26.40	27.19	27.79	28.26	28.19	25.84	24.68	25.59	26.95	27.86	28.50
29	25.49	26.42	27.25	27.81	---	28.12	25.80	24.66	25.64	26.98	27.89	28.51
30	25.53	26.45	27.26	27.80	---	28.03	25.77	24.65	25.71	27.01	27.91	28.54
31	25.56	---	27.31	27.81	---	27.91	---	24.66	---	27.05	27.93	---
MEAN	25.19	26.01	26.92	27.60	28.07	28.31	26.75	25.00	25.02	26.44	27.54	28.27
MAX	25.56	26.45	27.31	27.81	28.26	28.43	27.81	25.71	25.71	27.05	27.93	28.54
MIN	24.80	25.58	26.49	27.35	27.83	27.91	25.77	24.65	24.62	25.75	27.09	27.95

CAL YR 2002 MEAN 25.40 HIGH 23.45 LOW 27.31
WTR YR 2003 MEAN 26.75 HIGH 24.62 LOW 28.54

DESCHUTES COUNTY--Continued

Well identifier continued: 434400121275801. Local number, 21S/11E-19CCC



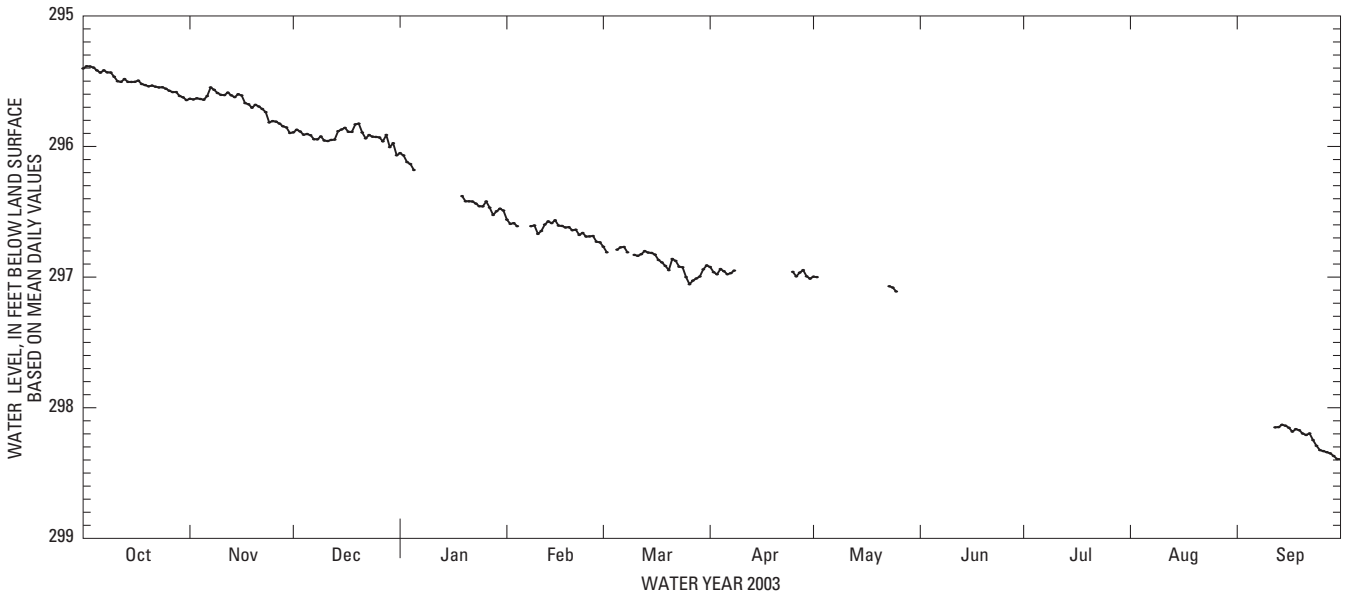
442242121405501. Local number, 14S/09E-08ABA
LOCATION.--Lat 44°22'42", long 121°40'59", Hydrologic Unit 17070301, 2.8 mi southwest of the peak of Black Butte.
Owner: Kiewit Pacific Company.
AQUIFER.--Volcanic rock. Quarternary.
WELL CHARACTERISTICS.--Drilled industrial well, 6 inch casing to 335 ft, completed depth of 403 ft.
INSTRUMENTATION.--Electronic data logger 120-minute interval by Oregon Water Resources Department personnel from November 1993 to May 1999 and by USGS personnel from May 1999 to current year.
DATUM.--Elevation of land surface is 3380 ft above National Geodetic Vertical Datum of 1929 (from topographic map). Measuring point: top of casing 1.65 ft above land-surface datum .
REMARKS.--Unused. State well identification DESC 1804. Water levels prior to Oct. 1, 1998 subject to variation of up to 0.32ft due to differences in measurement method. Mean monthly water level December 1993 to September 1998 available in 1998 Water Data Report (WDR-OR-98-1). A graph of unit value water levels from November 1993 to December 1996 is shown in USGS (Open File Report) OFR 97-197, pg. 10. Measurement August 1993 published in same publication, pg. 35, Table 1.
PERIOD OF RECORD.--May 1985; August 1993 to current year. Electronic data logger with 120-minute recording interval November 23 to December 16, 1993; 15-minute interval December 16, 1993 to February 2, 1994; 120-minute interval Feb. 2, 1994 to Aug. 13, 2002; 10-minute interval Aug. 13, 2002 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 284.20 ft below land-surface datum, Oct. 8, 1997; lowest recorded, 304.17 ft below land-surface datum, Feb. 1, 1995
EXTREMES FOR CURRENT YEAR.--Highest water level recorded, 295.34 ft below land-surface datum, Oct. 2, lowest recorded, 298.41 ft below land-surface datum, Sept. 30.

Depth to water level, feet below land surface
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	295.40	295.63	295.89	296.05	296.56	296.77	296.92	297.00	---	---	---	---
2	295.39	295.64	295.87	296.07	296.59	296.81	296.96	297.00	---	---	---	---
3	295.39	295.63	295.89	296.12	296.59	---	296.98	---	---	---	---	---
4	295.40	295.64	295.91	296.13	296.61	---	296.94	---	---	---	---	---
5	295.42	295.64	295.90	296.18	---	296.79	296.95	---	---	---	---	---
6	295.44	295.61	295.91	---	---	296.77	296.98	---	---	---	---	---
7	295.42	295.55	295.94	---	---	296.77	296.97	---	---	---	---	---
8	295.43	295.57	295.95	---	296.61	296.81	296.95	---	---	---	---	---
9	295.43	295.59	295.92	---	296.60	---	---	---	---	---	---	---
10	295.47	295.61	295.95	---	296.67	296.83	---	---	---	---	---	---
11	295.50	295.61	295.96	---	296.65	296.84	---	---	---	---	---	---
12	295.51	295.59	295.95	---	296.60	296.82	---	---	---	---	---	298.15
13	295.48	295.61	295.95	---	296.57	296.80	---	---	---	---	---	298.15
14	295.51	295.62	295.88	---	296.59	296.81	---	---	---	---	---	298.13
15	295.51	295.60	295.87	---	296.56	296.81	---	---	---	---	---	298.14
16	295.51	295.61	295.86	---	296.61	296.83	---	---	---	---	---	298.15
17	295.50	295.67	295.89	---	296.61	296.87	---	---	---	---	---	298.18
18	295.52	295.68	295.89	---	296.62	296.89	---	---	---	---	---	298.16
19	295.53	295.70	295.83	296.38	296.62	296.91	---	---	---	---	---	298.17
20	295.54	295.68	295.82	296.42	296.64	296.95	---	---	---	---	---	298.20
21	295.53	295.69	295.89	296.42	296.64	296.86	---	---	---	---	---	298.21
22	295.54	295.71	295.94	296.42	296.68	296.88	---	---	---	---	---	298.20
23	295.55	295.74	295.91	296.44	296.66	296.92	---	297.07	---	---	---	298.25
24	295.55	295.82	295.93	296.46	296.69	296.92	---	297.08	---	---	---	298.29
25	295.56	295.81	295.93	296.46	296.69	297.00	296.96	297.11	---	---	---	298.32
26	295.57	295.81	295.93	296.42	296.69	297.05	296.99	---	---	---	---	298.33
27	295.58	295.82	295.96	296.47	296.73	297.03	296.97	---	---	---	---	298.34
28	295.58	295.85	295.91	296.52	296.73	297.01	296.95	---	---	---	---	298.35
29	295.61	295.85	296.00	296.50	---	297.00	296.99	---	---	---	---	298.37
30	295.62	295.90	295.98	296.48	---	296.94	297.01	---	---	---	---	298.39
31	295.64	---	296.07	296.49	---	296.91	---	---	---	---	---	---
MEAN	295.50	295.68	295.92	---	---	---	---	---	---	---	---	---
MAX	295.64	295.90	296.07	---	---	---	---	---	---	---	---	---
MIN	295.39	295.55	295.82	---	---	---	---	---	---	---	---	---

CAL YR 2002 MEAN 295.06 HIGH 293.86 LOW 296.07

Well identifier continued: 442242121405501. Local number, 14S/09E-08ABA

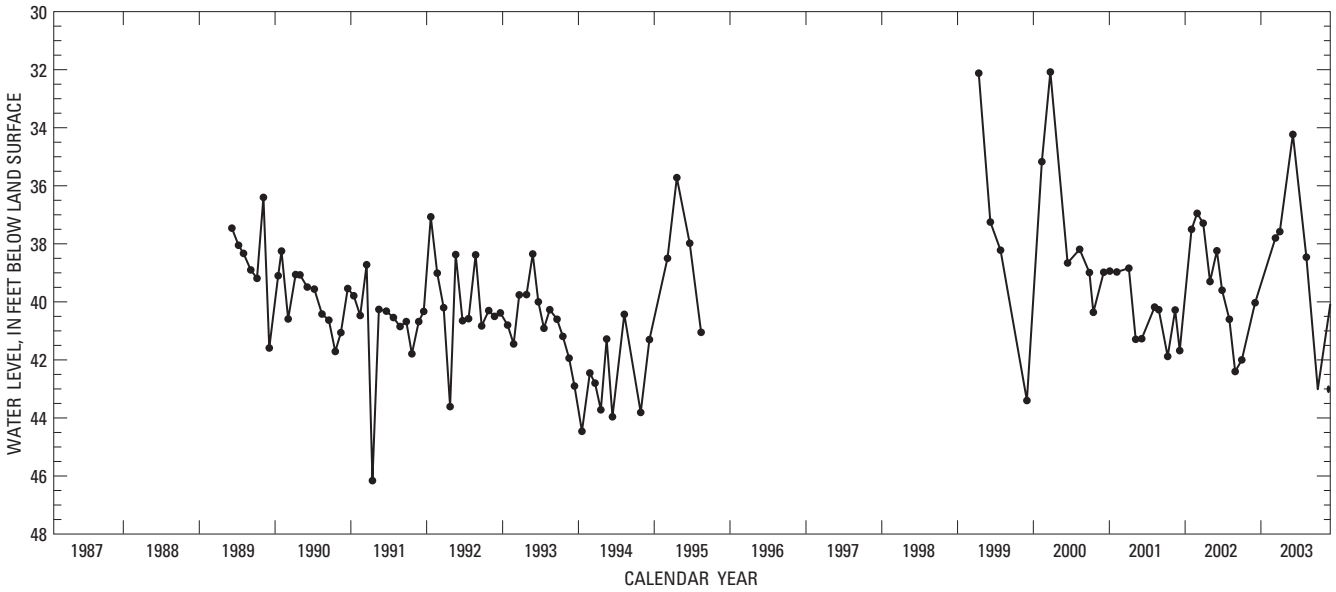


JACKSON COUNTY

420825123040401. Local number, 39S/03E-33BBA1.
LOCATION.--Lat 42°08'25", long 123°04'04", Hydrologic Unit 17100309, 1 mi north of McKee Bridge.
Owner: Jackson County Fire District.
AQUIFER.--Triassic and Permian volcanic and metavolcanic, rocks.
WELL CHARACTERISTICS.--Drilled domestic well, 6 inch casing 0 to 38 ft, completed depth of 260 ft.
INSTRUMENTATION.--Periodic measurements with chalked steel tape by USGS personnel since April 1999; periodic measurements with chalked steel tape by USGS personnel from June 1989 to August 1995.
DATUM.--Elevation of land surface is 1650 ft above National Geodetic Vertical Datum of 1929 (from topographic map). Measuring point: top of south bolt hole in cap, 1.10 ft above land surface datum.
REMARKS.--Used. State well identification JACK 18427. Entire record from June 1987 to July 1999 published in the 1999 Water Data Report (WDR-OR-99-1).
PERIOD OF RECORD.--June 1987, June 1989 to June 1995, April 1999 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 32.08 ft below land-surface datum, Mar.23, 2000; lowest recorded, 46.16 ft below land-surface datum, Apr. 15, 1991.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

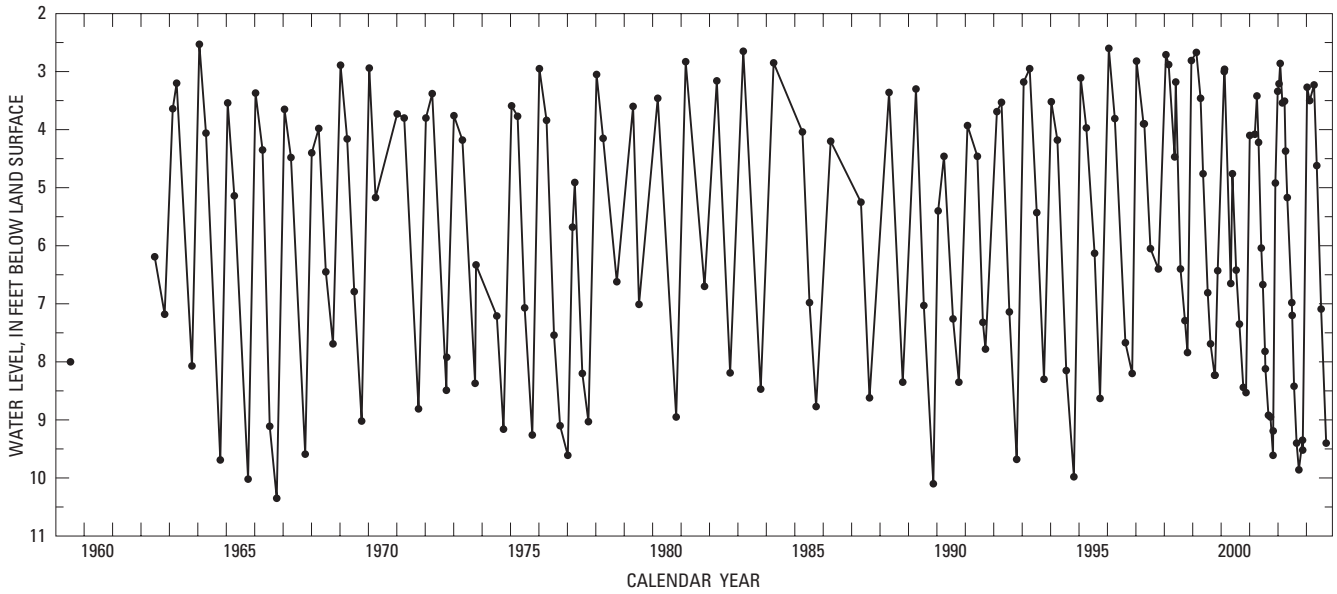
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 01	42.00	MAR 12	37.80	JUN 04	34.23	AUG 08	39.56
DEC 04	40.03	APR 02	37.58				



441508123053001. Local number, 15S/03W-19ACD
LOCATION.--Lat 44°15'08", long 123°05'35", Hydrologic Unit 17090003, 4 mi east of Harrisburg.
Owner: Roy Grimes.
AQUIFER.--Valley-fill deposits. Quarternary.
WELL CHARACTERISTICS.--Drilled irrigation well, 10 inch casing to 69 ft, completed depth of 98 ft, sounded depth of 82 ft on Sept. 23, 1998, perforated 21 to 29 ft, 34 to 65 ft.
INSTRUMENTATION.--Periodic measurements with chalked steel tape by USGS and Oregon Water Resources Department personnel since Feb. 1998; periodic measurements using electric sounder tape and steel tape by Oregon Water Resources Department personnel from June 1962 to January 1998.
DATUM.--Elevation of land surface is 327 ft above National Geodetic Vertical Datum of 1929 (from topographic map). Measuring point: southside top of casing 1.31 ft above land-surface datum.
REMARKS.--Unused. State observation well number 510. State well identification LINN 14047. Entire record from July 1959 to September 1998 published in the 1998 Water Data Report (WDR-OR-98-1).
PERIOD OF RECORD.--July 1959, June 1962 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.53 ft below land-surface datum, Jan. 21, 1964; lowest recorded, 10.35 ft below land-surface datum, Oct. 11, 1966.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

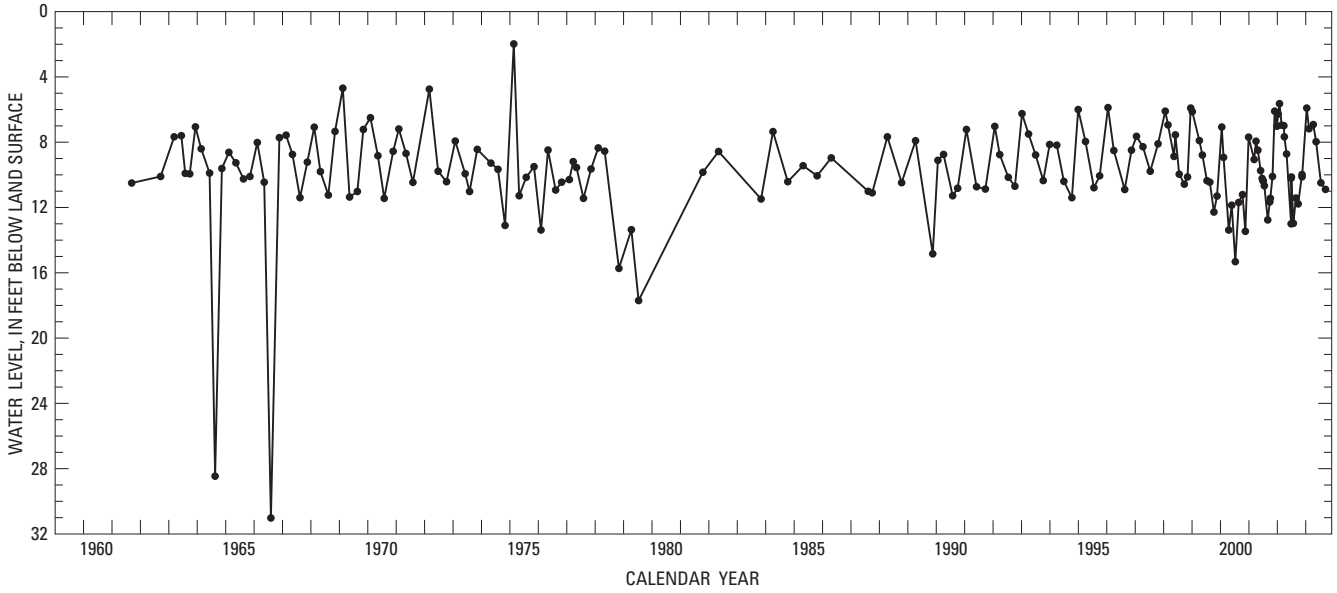
Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
NOV 12	9.35	JAN 10	3.27	APR 09	3.23	JUL 09	7.09
14	9.52	FEB 12	3.50	MAY 14	4.62	SEP 12	9.40



444956123031701. Local number, 08S/03W-33DAB
LOCATION.--Lat 44°49'55", long 123°03'21", Hydrologic Unit 17090007, 1 mile east of the summit of Bunker Hill.
Owner: Mr. and Mrs. Myers.
AQUIFER.--Columbia River Basalt. Tertiary.
WELL CHARACTERISTICS.--Drilled domestic well, 8 inch casing to 83 ft, completed depth of 125 ft, sounded depth of 125 ft on Feb. 26, 1998.
INSTRUMENTATION.--Periodic measurements with chalked steel tape by USGS and Oregon Water Resources Department personnel since Feb. 26, 1998; periodic measurements using electric sounder tape and steel tape by Oregon Water Resources Department personnel from Sept. 1962 to Jan. 1998.
DATUM.--Elevation of land surface is 615 ft above National Geodetic Vertical Datum of 1929 (from topographic map). Measuring point: eastside access porthole in steel cap atop casing, 0.6 ft above land-surface datum.
REMARKS.--Used for domestic supply year round. State observation well number 622. State well identification MARI 12958. Entire record from September 1961 to September 1998 published in the 1998 Water Data Report (WDR-OR-98-1).
PERIOD OF RECORD.--September 1961 to July 1979, October 1981 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.98 ft below land-surface datum, Feb. 20, 1975; lowest recorded, 31.02 ft below land-surface datum, Aug. 5, 1966 (recovering).

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
NOV 14	9.98	JAN 14	5.91	APR 08	6.92	JUL 15	10.49
15	10.12	FEB 12	7.18	MAY 14	7.97	SEP 12	10.89



452822122372001. Local number, 01.00S/01.00E-24ADB01.
LOCATION.--Lat 45°28'22", long 122°37'20", Hydrologic Unit 17090012, in Berkeley Park, in Portland.
AQUIFER.--Unconsolidated sediments.
WELL CHARACTERISTICS.--Open interval from 102 ft to 122 ft, completed depth 124 ft.
INSTRUMENTATION.--Electronic data logger with 60-minute interval.
DATUM.--Elevation of land surface is 198 ft above NGVD of 1929 (from 2-foot contour map, City of Portland).
Measuring point: top of casing, 0.4 ft below land-surface datum.
REMARKS.--Unused. State well identification MULT 63234.
PERIOD OF RECORD.--July 2001 through current year. Periodic measurements from February to July 2001 are available at the Oregon District office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 99.26 ft below land-surface datum, Sept. 28, 2003; lowest recorded, 101.25 ft below land-surface datum, April 14, 2002.
EXTREMES FOR CURRENT YEAR.--Highest water level recorded, 99.26 ft below land-surface datum, Sept. 28; lowest recorded, 100.57 ft below land-surface datum, Mar. 22, Apr.6.

Depth to water level, feet below land surface
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100.12	99.99	100.10	100.18	100.33	100.42	100.40	100.32	100.18	99.98	99.72	99.44
2	100.07	100.02	100.05	100.20	100.35	100.36	100.46	100.29	100.16	99.95	99.70	99.45
3	100.06	99.97	100.08	100.23	100.30	100.38	100.48	100.34	100.13	99.96	99.71	99.46
4	100.09	100.01	100.11	100.26	100.30	100.39	100.49	100.39	100.14	99.95	99.67	99.46
5	100.11	99.98	100.06	100.25	100.28	100.38	100.44	100.32	100.13	99.93	99.70	99.45
6	100.08	99.93	100.09	100.18	100.31	100.40	100.51	100.30	100.13	99.90	99.66	99.45
7	100.05	99.93	100.13	100.22	100.27	100.43	100.46	100.30	100.15	99.91	99.66	99.45
8	100.04	100.03	100.08	100.19	100.32	100.44	100.43	100.32	100.15	99.95	99.66	99.43
9	100.04	100.07	100.05	100.21	100.33	100.44	100.45	100.33	100.13	99.89	99.66	99.43
10	100.08	100.08	100.13	100.21	100.30	100.43	100.44	100.28	100.12	99.91	99.66	99.48
11	100.11	100.03	100.08	100.22	100.28	100.38	100.44	100.27	100.09	99.89	99.64	99.44
12	100.04	100.03	100.08	100.25	100.28	100.36	100.38	100.30	100.09	99.90	99.62	99.44
13	100.05	100.04	100.06	100.27	100.34	100.42	100.48	100.24	100.12	99.90	99.63	99.38
14	100.04	100.05	100.07	100.27	100.34	100.41	100.46	100.31	100.10	99.84	99.59	99.39
15	100.04	99.96	100.11	100.26	100.29	100.47	100.46	100.30	100.07	99.84	99.66	99.38
16	100.03	100.04	100.17	100.25	100.39	100.48	100.43	100.28	100.04	99.86	99.60	99.40
17	100.04	100.08	100.18	100.23	100.36	100.51	100.44	100.28	100.04	99.82	99.56	99.42
18	100.08	100.04	100.17	100.25	100.35	100.43	100.48	100.28	100.06	99.83	99.58	99.35
19	100.04	100.06	100.09	100.25	100.33	100.38	100.39	100.21	100.02	99.81	99.61	99.40
20	100.04	99.98	100.13	100.23	100.34	100.48	100.39	100.25	100.04	99.82	99.54	99.39
21	100.02	100.03	100.26	100.25	100.33	100.41	100.41	100.21	100.05	99.79	99.54	99.36
22	100.02	100.04	100.20	100.24	100.36	100.46	100.41	100.23	100.02	99.80	99.57	99.35
23	100.03	100.06	100.12	100.29	100.32	100.50	100.37	100.18	100.03	99.80	99.55	99.36
24	100.02	100.10	100.17	100.26	100.36	100.43	100.41	100.22	100.03	99.77	99.54	99.37
25	100.03	100.06	100.14	100.27	100.34	100.42	100.35	100.22	100.01	99.77	99.49	99.38
26	100.05	100.03	100.15	100.27	100.39	100.51	100.41	100.24	99.98	99.78	99.52	99.32
27	100.06	100.05	100.19	100.29	100.42	100.48	100.32	100.17	99.98	99.74	99.51	99.33
28	100.02	100.05	100.10	100.29	100.37	100.46	100.35	100.20	99.95	99.73	99.49	99.34
29	100.05	100.05	100.23	100.26	---	100.43	100.38	100.14	100.02	99.72	99.49	99.37
30	100.03	100.07	100.14	100.28	---	100.40	100.39	100.22	100.04	99.73	99.47	99.33
31	100.02	---	100.31	100.29	---	100.40	---	100.19	---	99.74	99.48	---
MEAN	100.05	100.03	100.13	100.25	100.33	100.43	100.42	100.26	100.07	99.85	99.60	99.40
MAX	100.12	100.10	100.31	100.29	100.42	100.51	100.51	100.39	100.18	99.98	99.72	99.48
MIN	100.02	99.93	100.05	100.18	100.27	100.36	100.32	100.14	99.95	99.72	99.47	99.32

CAL YR 2002 MEAN 100.55 HIGH 99.93 LOW 101.18
WTR YR 2003 MEAN 100.07 HIGH 99.32 LOW 100.51

452825122355501. Local number, 01.00S/02.00E-19AAD01
LOCATION.--Lat 45°28'25", long 122°35'55", Hydrologic Unit 17090012, in Brentwood Park, in Portland.
AQUIFER.--Unconsolidated sediments.
WELL CHARACTERISTICS.--Open interval from 134 ft to 154 ft, completed depth 156 ft.
INSTRUMENTATION.--Electronic data logger with 60-minute interval.
DATUM.--Elevation of land surface is 258 ft above NGVD of 1929 (from 2-foot contour map, City of Portland).
Measuring point: top of casing, 0.3 ft below land-surface datum.
REMARKS.--Unused. State well identification MULT 63294
PERIOD OF RECORD.--July 2001 to current year. Periodic measurements from February to July 2001 are available at the Oregon District office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 118.56 ft below land-surface datum, July 29, Aug. 2, 4, 6-9, 2003; lowest recorded, 124.35 ft below land-surface datum, Dec. 16, 2001.
EXTREMES FOR CURRENT YEAR.--Highest water level recorded, 118.56 ft below land-surface datum, July 29, Aug. 2, 4, 6-9; lowest recorded, 122.42 ft below land-surface datum, Feb. 2.

Depth to water level, feet below land surface
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	120.25	120.78	121.39	122.02	122.39	---	121.61	120.58	119.57	118.87	118.59	118.68
2	120.25	120.81	121.41	122.05	122.40	---	121.58	120.55	119.54	118.85	118.58	118.69
3	120.26	120.81	121.43	122.06	122.38	---	121.55	120.51	119.50	118.84	118.58	118.72
4	120.28	120.83	121.46	122.08	122.38	---	121.53	120.49	119.47	118.83	118.58	118.77
5	120.31	120.85	121.47	122.08	122.37	122.06	121.49	120.45	119.44	118.81	118.58	118.79
6	120.32	120.86	121.50	122.08	122.36	---	121.48	120.42	119.41	118.79	118.58	118.79
7	120.33	120.89	121.52	122.11	122.36	---	121.43	120.37	119.39	118.77	118.58	118.80
8	120.35	120.91	121.54	122.11	122.37	---	121.39	120.35	119.38	118.76	118.58	118.81
9	120.36	120.93	121.55	122.13	122.35	---	121.36	120.31	119.34	118.75	118.58	118.82
10	120.39	120.96	121.59	122.14	122.34	---	121.32	120.27	119.31	118.74	118.59	118.84
11	120.42	120.98	121.60	122.15	122.32	---	121.29	120.24	119.28	118.73	118.60	118.85
12	120.44	121.00	121.63	122.17	122.30	---	121.24	120.21	119.25	118.73	118.59	118.86
13	120.45	121.01	121.64	122.18	122.30	---	121.22	120.17	119.22	118.73	118.59	118.87
14	120.47	121.04	121.68	122.19	122.29	---	121.17	120.15	119.20	118.70	118.59	118.87
15	120.49	121.06	121.71	122.20	122.28	---	121.15	120.11	119.17	118.69	118.62	118.88
16	120.50	121.09	121.73	122.21	122.28	---	121.10	120.08	119.14	118.68	118.62	118.89
17	120.52	121.11	121.75	122.22	122.27	121.90	121.07	120.05	119.12	118.66	118.60	118.91
18	120.53	121.13	121.77	122.24	122.26	---	121.04	120.02	119.10	118.66	118.61	118.92
19	120.55	121.14	121.80	122.24	122.26	---	120.99	119.98	119.07	118.65	118.62	118.94
20	120.58	121.16	121.83	122.25	122.24	---	120.95	119.95	119.06	118.66	118.61	118.95
21	120.59	121.17	121.85	122.27	122.23	---	120.92	119.90	119.03	118.65	118.61	118.96
22	120.61	121.20	121.87	122.27	---	---	120.89	119.88	119.01	118.64	118.63	118.96
23	120.63	121.22	121.87	122.28	---	---	120.85	119.84	118.99	118.63	118.62	118.98
24	120.65	121.26	121.89	122.29	122.19	---	120.83	119.81	118.98	118.62	118.64	118.99
25	120.66	121.28	121.91	122.30	122.19	---	120.78	119.77	118.96	118.62	118.62	119.02
26	120.70	121.30	121.92	122.31	---	---	120.76	119.75	118.96	118.62	118.64	119.01
27	120.72	121.32	121.94	122.32	---	121.72	120.72	119.71	118.94	118.61	118.65	119.02
28	120.73	121.33	121.97	122.34	---	121.72	120.68	119.69	118.91	118.61	118.65	119.04
29	120.76	121.35	122.00	122.34	---	121.70	120.66	119.66	118.92	118.60	118.67	119.06
30	120.76	121.38	122.00	122.36	---	121.66	120.62	119.64	118.90	118.60	118.67	119.07
31	120.77	---	122.02	122.37	---	121.63	---	119.60	---	118.60	118.68	---
MEAN	120.50	121.07	121.72	122.21	---	---	121.12	120.08	119.19	118.70	118.61	118.89
MAX	120.77	121.38	122.02	122.37	---	---	121.61	120.58	119.57	118.87	118.68	119.07
MIN	120.25	120.78	121.39	122.02	---	---	120.62	119.60	118.90	118.60	118.58	118.68

CAL YR 2002 MEAN 121.28 HIGH 119.63 LOW 124.28

452827122382401. Local number, 01.00S/01.00E-24BBC01.
LOCATION.--Lat 45°28'27", long 122°38'24", Hydrologic Unit 17090012, in Westmoreland Park, in Portland.
AQUIFER.--Unconsolidated sediments.
WELL CHARACTERISTICS.--Open interval from 20 ft to 25 ft, completed depth 27 ft.
INSTRUMENTATION.--Electronic data logger with 60-minute interval.
DATUM.--Elevation of land surface is 53 ft above NGVD of 1929 (from 2-foot contour map, City of Portland).
Measuring point: top of casing, 0.2 ft below land-surface datum.
REMARKS.--Unused. State well identification MULT 63238.
PERIOD OF RECORD.--January to September 2003. Periodic measurements from February to December 2002 are available at the Oregon District office.
EXTREMES FOR PERIOD JANUARY TO SEPTEMBER.-- Highest water level recorded, 2.51 ft below land-surface datum, Jan. 31; lowest recorded, 6.80 ft below land-surface datum, Sept. 4, 5.

Depth to water level, feet below land surface
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	3.21	5.30	4.96	5.07	5.74	6.08	6.52	6.67
2	---	---	---	---	3.76	5.32	5.01	5.11	5.75	6.08	6.49	6.69
3	---	---	---	3.87	4.04	5.35	4.99	5.17	5.77	6.09	6.47	6.71
4	---	---	---	3.73	4.29	5.35	4.95	5.20	5.79	6.11	6.46	6.73
5	---	---	---	4.01	4.49	5.38	5.01	5.22	5.82	6.11	6.50	6.75
6	---	---	---	4.29	4.69	5.37	4.84	5.26	5.84	6.12	6.49	6.74
7	---	---	---	4.51	4.82	4.32	4.80	5.28	5.86	6.15	6.51	6.72
8	---	---	---	4.68	4.95	4.00	4.77	5.20	5.88	6.16	6.52	6.65
9	---	---	---	4.81	5.05	3.82	4.82	5.26	5.85	6.18	6.51	6.50
10	---	---	---	4.92	5.13	4.06	4.86	5.30	5.84	6.20	6.51	6.44
11	---	---	---	5.01	5.18	4.34	4.93	5.34	5.86	6.22	6.51	6.43
12	---	---	---	4.87	5.24	4.46	4.53	5.39	5.86	6.25	6.50	6.46
13	---	---	---	4.70	5.30	4.28	4.06	5.41	5.85	6.28	6.51	6.49
14	---	---	---	4.56	5.36	4.24	4.29	5.45	5.87	6.28	6.54	6.50
15	---	---	---	4.72	5.35	4.33	4.52	5.46	5.91	6.28	6.55	6.50
16	---	---	---	4.88	5.00	4.25	4.69	5.47	5.93	6.30	6.53	6.47
17	---	---	---	4.99	4.11	4.40	4.25	5.44	5.95	6.31	6.55	6.48
18	---	---	---	5.08	3.70	4.57	4.36	5.42	5.96	6.33	6.58	6.49
19	---	---	---	5.16	4.08	4.63	4.56	5.45	5.96	6.35	6.60	6.49
20	---	---	---	5.21	4.31	4.61	4.72	5.49	5.97	6.39	6.59	6.50
21	---	---	---	5.26	4.46	4.65	4.81	5.51	5.96	6.41	6.61	6.52
22	---	---	---	5.20	4.58	4.06	4.91	5.54	5.93	6.41	6.60	6.55
23	---	---	---	5.02	4.71	4.10	4.85	5.57	5.94	6.42	6.57	6.57
24	---	---	---	5.00	4.84	4.32	4.42	5.59	5.98	6.41	6.60	6.59
25	---	---	---	4.93	4.96	4.51	4.57	5.62	6.00	6.41	6.61	6.62
26	---	---	---	4.48	5.05	4.54	4.64	5.64	6.01	6.43	6.61	6.63
27	---	---	---	4.50	5.16	4.61	4.74	5.67	6.02	6.45	6.59	6.66
28	---	---	---	4.72	5.22	4.74	4.85	5.67	6.04	6.47	6.61	6.69
29	---	---	---	4.59	---	4.84	4.94	5.67	6.07	6.49	6.62	6.65
30	---	---	---	3.57	---	4.91	5.02	5.69	6.08	6.51	6.65	6.62
31	---	---	---	2.86	---	4.95	---	5.71	---	6.52	6.67	---
MEAN	---	---	---	---	4.68	4.60	4.72	5.43	5.91	6.30	6.55	6.58
MAX	---	---	---	---	5.36	5.38	5.02	5.71	6.08	6.52	6.67	6.75
MIN	---	---	---	---	3.21	3.82	4.06	5.07	5.74	6.08	6.46	6.43

452827122382402. Local number, 01.00S/01.00E-24BBC02.
LOCATION.--Lat 45°28'27", long 122°38'24", Hydrologic Unit 17090012, in Westmoreland Park, in Portland.
AQUIFER.--Unconsolidated sediments.
WELL CHARACTERISTICS.--Open interval from 76 ft to 96 ft, completed depth 98 ft.
INSTRUMENTATION.--Electronic data logger with 60-minute interval.
DATUM.--Elevation of land surface is 53 ft above NGVD of 1929 (from 2-foot contour map, City of Portland).
Measuring point: top of casing, 0.3 ft below land-surface datum.
REMARKS.--Unused. State well identification MULT 63239.
PERIOD OF RECORD.--August 2001 to current year. Periodic measurements from February to July 2001 are available at the Oregon District office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 8.99 ft below land-surface datum, Jan. 30 to Feb. 1, 2003 lowest recorded, 11.96 ft below land-surface datum, Oct. 9, 2001.
EXTREMES FOR CURRENT YEAR.-- Highest water level recorded, 8.99 ft below land-surface datum, Jan. 30 to Feb. 1; lowest recorded, 11.44 ft below land-surface datum, Oct. 28, 31.

Depth to water level, feet below land surface
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.38	11.38	11.25	10.04	9.10	10.35	9.58	9.67	10.00	10.51	10.95	11.15
2	11.35	11.37	11.21	10.05	9.31	10.32	9.65	9.60	10.00	10.51	10.93	11.14
3	11.28	11.34	11.21	9.91	9.38	10.31	9.73	9.64	9.97	10.52	10.95	11.19
4	11.28	11.33	11.24	9.83	9.50	10.32	9.73	9.74	10.0	10.57	10.94	11.26
5	11.30	11.33	11.22	9.97	9.61	10.33	9.77	9.81	10.01	10.57	10.96	11.27
6	11.31	11.27	11.20	9.99	9.80	10.34	9.74	9.77	10.04	10.56	10.97	11.27
7	11.27	11.17	11.26	10.12	9.90	9.98	9.72	9.76	10.10	10.58	10.98	11.28
8	11.24	11.19	11.24	10.19	10.01	9.70	9.63	9.75	10.14	10.66	10.99	11.27
9	11.23	11.28	11.19	10.28	10.14	9.49	9.68	9.83	10.16	10.66	10.98	11.18
10	11.24	11.33	11.19	10.36	10.22	9.51	9.65	9.85	10.18	10.65	11.00	11.25
11	11.33	11.34	11.12	10.44	10.21	9.56	9.72	9.83	10.18	10.66	11.00	11.23
12	11.32	11.23	11.01	10.46	10.27	9.59	9.53	9.88	10.15	10.65	10.98	11.27
13	11.30	11.21	10.86	10.43	10.32	9.52	9.35	9.87	10.16	10.71	10.98	11.21
14	11.32	11.19	10.67	10.37	10.43	9.50	9.40	9.91	10.20	10.69	10.96	11.18
15	11.32	11.11	10.73	10.39	10.38	9.50	9.49	9.93	10.20	10.65	11.02	11.20
16	11.33	11.10	10.50	10.45	10.32	9.56	9.56	9.95	10.17	10.69	11.05	11.19
17	11.34	11.20	10.60	10.46	10.07	9.68	9.39	9.93	10.16	10.71	11.03	11.26
18	11.40	11.17	10.66	10.49	9.68	9.72	9.41	9.95	10.20	10.73	11.05	11.22
19	11.39	11.17	10.56	10.53	9.69	9.65	9.42	9.88	10.20	10.75	11.08	11.24
20	11.40	11.08	10.57	10.54	9.79	9.70	9.44	9.89	10.23	10.82	11.08	11.29
21	11.38	11.09	10.72	10.56	9.85	9.69	9.50	9.91	10.30	10.82	11.06	11.29
22	11.36	11.13	10.74	10.55	9.93	9.45	9.60	9.93	10.32	10.82	11.10	11.27
23	11.36	11.16	10.67	10.58	9.94	9.43	9.55	9.92	10.35	10.86	11.13	11.28
24	11.35	11.23	10.67	10.51	10.03	9.45	9.39	9.91	10.42	10.84	11.14	11.28
25	11.36	11.25	10.68	10.48	10.09	9.50	9.39	9.97	10.43	10.84	11.11	11.34
26	11.38	11.21	10.67	10.27	10.12	9.59	9.47	10.03	10.43	10.90	11.12	11.30
27	11.40	11.21	10.44	10.19	10.26	9.67	9.48	10.03	10.40	10.91	11.11	11.28
28	11.38	11.21	10.30	10.27	10.29	9.66	9.47	9.99	10.37	10.90	11.08	11.29
29	11.38	11.21	10.33	10.20	---	9.65	9.57	9.93	10.41	10.89	11.12	11.32
30	11.40	11.22	10.16	9.74	---	9.62	9.68	9.96	10.51	10.90	11.12	11.32
31	11.41	---	9.92	9.24	---	9.59	---	10.0	---	10.93	11.16	---
MEAN	11.34	11.22	10.80	10.25	9.95	9.74	9.56	9.87	10.21	10.72	11.04	11.25
MAX	11.41	11.38	11.26	10.58	10.43	10.35	9.77	10.03	10.51	10.93	11.16	11.34
MIN	11.23	11.08	9.92	9.24	9.10	9.43	9.35	9.60	9.97	10.51	10.93	11.14

CAL YR 2002 MEAN 10.55 HIGH 9.36 LOW 11.41
WTR YR 2003 MEAN 10.50 HIGH 9.10 LOW 11.41

452859122364701. Local number, 01.00S/02.00E-18CAB01
LOCATION.--Lat 45°28'59", long 122°36'47", Hydrologic Unit 17090012, in Woodstock Park, in Portland.
AQUIFER.--Unconsolidated sediments.
WELL CHARACTERISTICS.--Open interval from 147 ft to 167 ft, completed depth 169 ft.
INSTRUMENTATION.--Electronic data logger with 60-minute interval.
DATUM.--Elevation of land surface is 241 ft above NGVD of 1929 (from 2-foot contour map, City of Portland).
Measuring point: top of casing, 0.3 ft below land-surface datum.
REMARKS.--Unused. State well identification MULT 63237.
PERIOD OF RECORD.--July 2001 to current year. Periodic measurements from February to July 2001 are available at the Oregon District office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 130.04 ft below land-surface datum, July 12, 2001; lowest recorded, 133.26 ft below land-surface datum, Feb. 23, 2002.
EXTREMES FOR CURRENT YEAR.--Highest water level recorded, 130.26 ft below land-surface datum, Sept. 26; lowest recorded, 132.24 ft below land-surface datum, Mar. 7, 9.

Depth to water level, feet below land surface
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	131.30	131.35	131.58	131.81	132.07	132.19	132.02	131.76	131.40	130.99	130.63	130.37
2	131.26	131.39	131.55	131.85	132.09	132.14	132.06	131.73	131.37	130.96	130.61	130.37
3	131.25	131.35	131.58	131.86	132.05	132.15	132.05	131.75	131.35	130.96	130.61	130.39
4	131.27	131.38	131.60	131.90	132.06	132.16	132.06	131.80	131.34	130.95	130.58	130.39
5	131.31	131.37	131.56	131.88	132.05	132.14	132.01	131.73	131.32	130.92	130.60	130.39
6	131.28	131.33	131.59	131.83	132.07	132.16	132.07	131.71	131.32	130.89	130.57	130.38
7	131.27	131.33	131.63	131.87	132.04	132.18	132.02	131.71	131.32	130.90	130.57	130.38
8	131.26	131.41	131.59	131.86	132.09	132.18	131.98	131.71	131.31	130.91	130.56	130.36
9	131.26	131.45	131.58	131.88	132.09	132.18	131.99	131.70	131.29	130.87	130.54	130.36
10	131.31	131.47	131.64	131.88	132.07	132.17	131.98	131.65	131.27	130.88	130.54	130.41
11	131.34	131.43	131.61	131.89	132.06	132.13	131.97	131.64	131.23	130.85	130.53	130.38
12	131.29	131.43	131.61	131.93	132.06	132.10	131.93	131.66	131.23	130.86	130.51	130.38
13	131.30	131.45	131.60	131.94	132.11	132.15	132.00	131.60	131.24	130.86	130.52	130.34
14	131.29	131.46	131.61	131.95	132.10	132.12	131.97	131.64	131.22	130.81	130.48	130.34
15	131.29	131.40	131.65	131.95	132.07	132.18	131.96	131.63	131.19	130.82	130.54	130.33
16	131.29	131.47	131.71	131.94	132.15	132.18	131.92	131.61	131.15	130.82	130.50	130.36
17	131.31	131.51	131.72	131.92	132.12	132.20	131.92	131.60	131.15	130.77	130.47	130.38
18	131.34	131.48	131.71	131.95	132.12	132.13	131.95	131.59	131.15	130.77	130.48	130.32
19	131.32	131.50	131.66	131.95	132.11	132.08	131.86	131.53	131.12	130.76	130.50	130.36
20	131.33	131.44	131.71	131.95	132.11	132.16	131.87	131.56	131.13	130.76	130.44	130.35
21	131.32	131.48	131.81	131.97	132.11	132.09	131.88	131.51	131.12	130.74	130.45	130.33
22	131.32	131.50	131.76	131.97	132.12	132.13	131.87	131.52	131.08	130.73	130.48	130.32
23	131.33	131.52	131.71	132.00	132.10	132.16	131.84	131.48	131.08	130.72	130.45	130.33
24	131.34	131.56	131.75	131.99	132.14	132.10	131.88	131.50	131.08	130.70	130.44	130.35
25	131.35	131.53	131.72	131.99	132.11	132.08	131.82	131.49	131.05	130.70	130.41	130.37
26	131.37	131.50	131.74	132.01	132.16	132.14	131.87	131.51	131.03	130.70	130.43	130.32
27	131.39	131.53	131.77	132.02	132.18	132.11	131.79	131.44	131.01	130.66	130.41	130.31
28	131.36	131.53	131.70	132.02	132.15	132.09	131.81	131.46	130.99	130.65	130.40	130.33
29	131.39	131.53	131.81	132.00	---	132.06	131.82	131.40	131.04	130.64	130.41	130.36
30	131.38	131.56	131.76	132.02	---	132.03	131.82	131.45	131.03	130.65	130.40	130.34
31	131.38	---	131.91	132.03	---	132.02	---	131.42	---	130.64	130.40	---
MEAN	131.32	131.45	131.68	131.94	132.10	132.13	131.93	131.60	131.19	130.80	130.50	130.36
MAX	131.39	131.56	131.91	132.03	132.18	132.20	132.07	131.80	131.40	130.99	130.63	130.41
MIN	131.25	131.33	131.55	131.81	132.04	132.02	131.79	131.40	130.99	130.64	130.40	130.31

CAL YR 2002 MEAN 132.04 HIGH 131.23 LOW 133.18
WTR YR 2003 MEAN 131.41 HIGH 130.31 LOW 132.20

452912122312801 Local number, 01.00S/02.00E-14ABC01
LOCATION.--Lat 45°29'12", long 122°31'28", Hydrologic Unit 17090012, 1.0 mile west of Powell Butte.
AQUIFER.--Unconsolidated sediments.
WELL CHARACTERISTICS.--Unused domestic well, open interval from 50 ft to 58 ft, completed depth 59 ft.
INSTRUMENTATION.--Electronic data logger with 60-minute interval.
DATUM.--Elevation of land surface is 229 ft above National Geodetic Vertical Datum of 1929 (from 2-foot contour map, City of Portland).
Measuring point: top of instrument shelf, 1.4 ft above land-surface datum.
REMARKS.--Unused. State well identification MULT 2881.
PERIOD OF RECORD.--October 1998 to current year. Periodic measurements with steel tape from 1987-89, and 1998 are available at the Oregon District office.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 36.43 ft below land-surface datum, March 8, 1999; lowest recorded, 49.25 ft below land-surface datum, Dec. 1, 2002.
EXTREMES FOR CURRENT YEAR.--Highest water level recorded, 39.50 ft below land-surface datum, Apr. 25; lowest recorded, 49.25 ft below land-surface datum, Dec. 1.

Depth to water level, feet below land surface
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48.12	48.70	49.17	46.62	43.57	41.87	39.94	39.72	40.58	43.11	44.83	46.73
2	48.18	48.71	49.14	46.42	43.47	41.81	39.96	39.61	40.60	43.13	44.88	46.81
3	48.16	48.70	49.00	46.37	43.30	41.77	40.08	39.64	40.56	43.09	44.95	46.88
4	48.16	48.75	48.91	46.21	43.20	41.74	40.08	39.78	40.59	43.30	44.97	46.92
5	48.22	48.75	48.81	46.16	43.11	41.72	40.08	39.87	40.58	43.42	44.99	46.98
6	---	48.71	48.76	45.93	43.10	41.73	40.10	39.79	40.60	43.44	45.03	47.02
7	48.19	48.67	48.73	45.87	42.95	41.60	40.10	39.80	40.66	43.51	45.15	47.05
8	48.15	48.71	48.66	45.81	42.81	41.50	39.99	39.85	40.70	43.63	45.21	46.96
9	48.13	48.78	48.60	45.75	42.80	41.31	40.03	39.96	40.75	43.64	45.27	46.92
10	48.20	48.86	48.59	45.61	42.74	41.25	39.92	39.97	40.79	43.68	45.34	46.96
11	48.28	48.86	48.50	45.56	42.59	41.06	39.97	39.92	40.83	43.65	45.37	47.04
12	48.24	48.86	48.41	45.54	42.55	40.88	39.80	39.99	40.83	43.83	45.27	47.11
13	48.26	48.89	48.27	45.52	42.53	40.75	39.87	39.93	40.91	43.89	45.27	47.02
14	48.33	48.91	48.11	45.49	42.59	40.73	39.89	40.00	41.00	43.96	45.26	47.02
15	48.29	48.84	48.06	45.44	42.46	40.70	39.89	40.09	41.02	43.85	45.41	47.12
16	48.32	48.87	47.99	45.39	42.51	40.79	39.87	40.18	41.09	43.97	45.68	47.16
17	48.43	48.93	47.94	45.31	42.48	40.91	39.79	40.20	41.31	43.98	45.77	47.19
18	48.50	48.96	47.89	45.25	42.31	40.84	39.89	40.24	41.41	43.98	45.90	47.19
19	48.45	49.01	47.71	45.21	42.13	40.64	39.78	40.15	41.76	44.05	46.00	47.13
20	48.49	48.94	47.65	45.13	42.09	40.74	39.70	40.17	41.78	44.10	45.97	47.08
21	48.52	48.97	47.71	45.09	42.03	40.61	39.68	40.15	41.96	44.12	46.04	47.16
22	48.55	48.99	47.65	45.03	42.01	40.52	39.72	40.16	42.09	44.18	46.13	47.16
23	48.51	49.03	47.53	45.08	41.88	40.56	39.63	40.12	42.16	44.23	46.16	47.27
24	48.55	49.05	47.50	45.00	41.88	40.41	39.64	40.13	42.16	44.32	46.30	47.24
25	48.57	49.09	47.47	44.97	41.81	40.31	39.58	40.23	42.53	44.38	46.36	47.28
26	48.59	49.09	47.37	44.85	41.77	40.36	39.68	40.35	42.56	44.52	46.45	47.31
27	48.63	49.08	47.24	44.78	41.86	40.41	39.62	40.35	42.68	44.57	46.42	47.34
28	48.65	49.10	47.04	44.76	41.82	40.36	39.56	40.38	42.69	44.64	46.45	47.45
29	48.66	49.13	47.09	44.68	---	40.30	39.66	40.34	42.84	44.72	46.60	47.56
30	48.66	49.12	46.88	44.47	---	40.17	39.77	40.43	43.03	44.78	46.63	47.51
31	48.72	---	46.85	44.08	---	40.05	---	40.52	---	44.82	46.70	---
MEAN	---	48.90	48.04	45.40	42.51	40.92	39.84	40.07	41.44	43.95	45.70	47.12
MAX	---	49.13	49.17	46.62	43.57	41.87	40.10	40.52	43.03	44.82	46.70	47.56
MIN	---	48.67	46.85	44.08	41.77	40.05	39.56	39.61	40.56	43.09	44.83	46.73

CALENDAR FOR WATER YEAR 2003

2002

OCTOBER

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

NOVEMBER

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

DECEMBER

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

2003

JANUARY

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

FEBRUARY

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

MARCH

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

APRIL

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

MAY

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

JUNE

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

JULY

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

AUGUST

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

SEPTEMBER

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

USGS

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