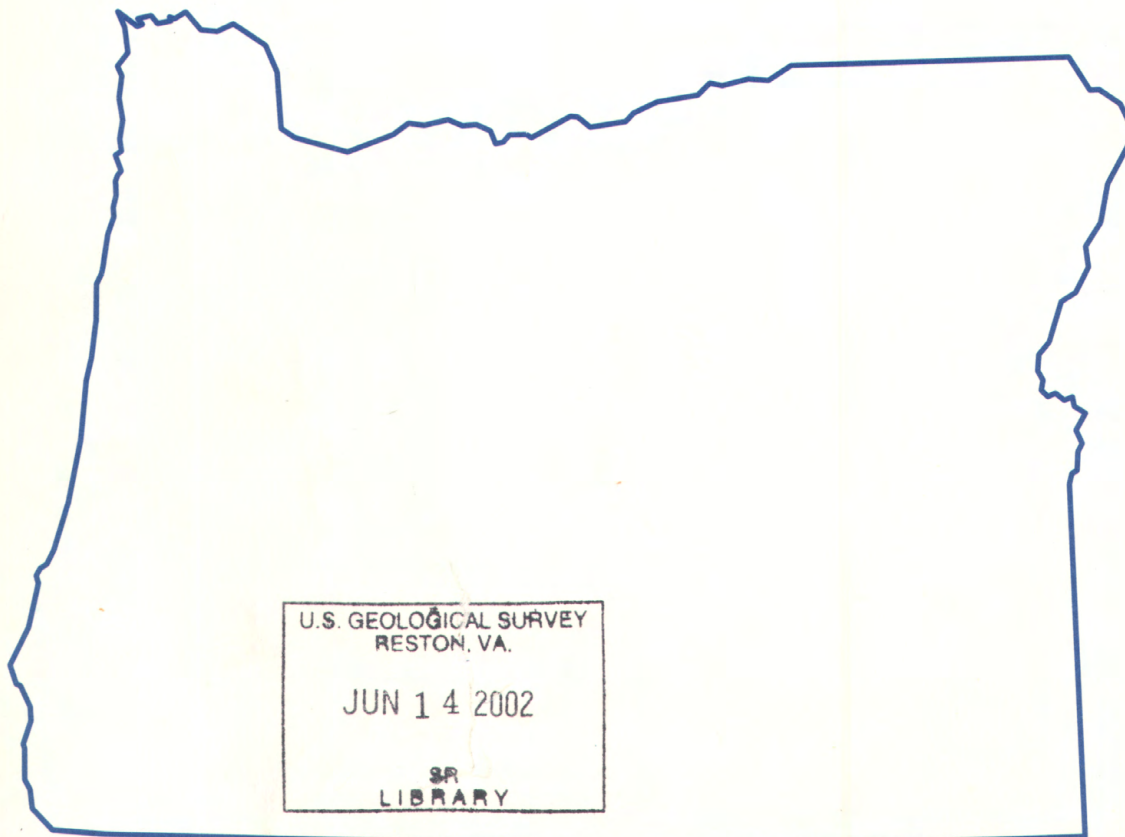
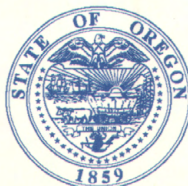


Water Resources Data Oregon Water Year 2001

Water-Data Report OR-01-1



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



Prepared in cooperation with other agencies

CALENDAR FOR WATER YEAR 2001

2000

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

2001

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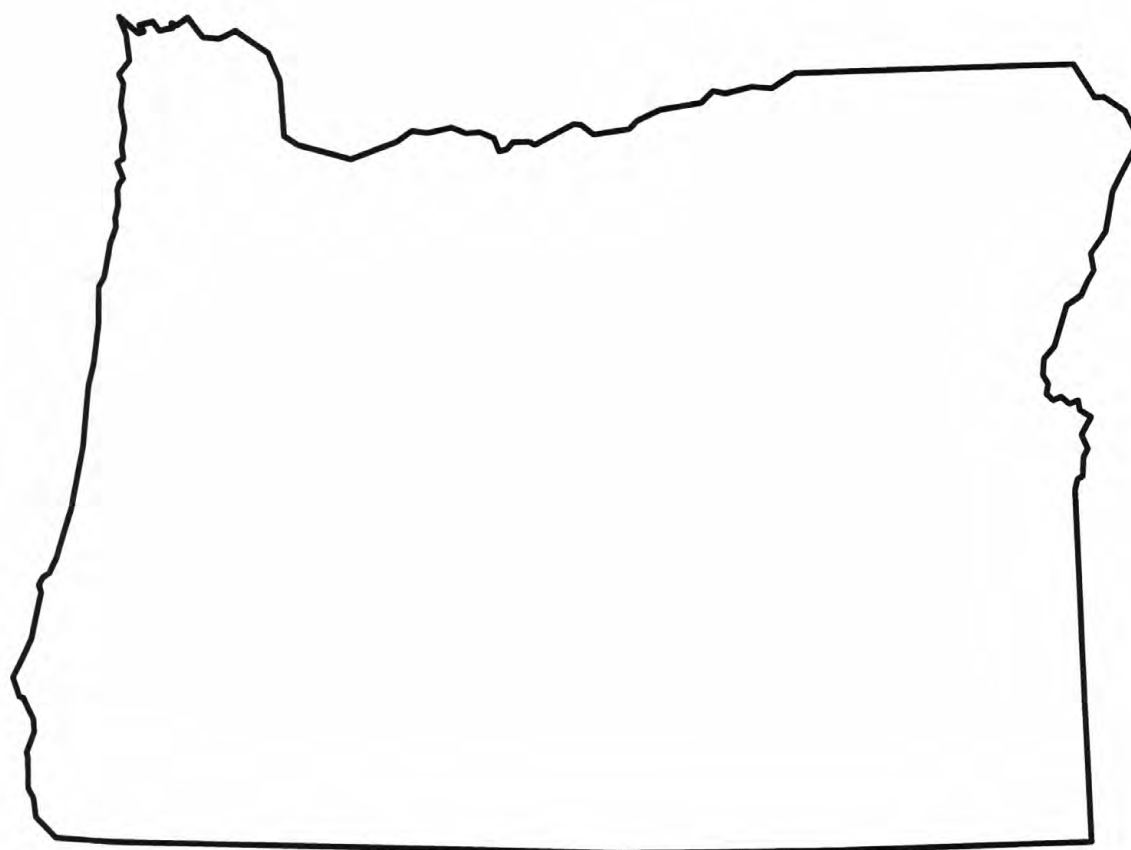
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8	9	10	11	12	13	14	6	7	8	9	10	11	12	3	4	5	6	7	8	9
15	16	17	18	19	20	21	13	14	15	16	17	18	19	10	11	12	13	14	15	16
22	23	24	25	26	27	28	20	21	22	23	24	25	26	7	18	19	20	21	22	23
29	30						27	28	29	30	31			24	25	26	27	28	29	30

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

Water Resources Data Oregon Water Year 2001

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

Water-Data Report OR-01-1



U.S. DEPARTMENT OF THE INTERIOR

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See additional USGS information on water resources of
Oregon
on the World Wide Web at
<http://oregon.usgs.gov>

2002

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:

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

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SURFACE-WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH
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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.

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ARE PUBLISHED IN THIS VOLUME

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GROUND-WATER LEVELS

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CLACKAMAS COUNTY

Well	452033122195901	Local number	02S/04E-29DAD	420,421
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DESCHUTES COUNTY

Well	434400121275801	Local number	21S/10E-25A1	422,423
Well	442242121405501	Local number	14S/09E-08ABA	424,425

JACKSON COUNTY

Well	420825123040401	Local number	39S/03E-33BBA1	426
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LINN COUNTY

Well	441508123053001	Local number	15S/03W-19ACD	427
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MARION COUNTY

Well	444956123031701	Local number	08S/03W-33DAB	428
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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
Ana River plus Summer Lake Canal, near Summer Lake (d)	10388001	--	1930-39;1940-42;1951-91
SUMMER LAKE BASIN			
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 Suintex (d)	10403500	260	1904-06;1909-12;1914-23; 1925-26
Chickahominy Creek near Suintex (d)	10404000	90	1917;1922
Rock Quarry Creek near Suintex (d)	10404500	--	1921;1922
Silver Creek below Suintex (d)	10405000	550	1912-13;1921-23
Silver Creek near Narrows (d)	10406000	630	1917;1919-23
ALVORD LAKE BASIN			
Trout Creek near Denio, NV (d)	10406500	88	1911-12;1922-23;1925-31; 1932-91
CATLOW VALLEY BASIN			
Home Creek near Beckley (Narrows) (d)	10406300	38	1911-12;1915-17;1930
ALVORD LAKE BASIN			
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
Warm Springs 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 Warm Springs, 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 near Post (d)	14079500	2,160	1909-11;1940-60;1969-73
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

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
DESCHUTES RIVER BASIN--Continued			
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
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

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
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
Winberry Creek near Lowell (d)	14150800	43.9	1964-81
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
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

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 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
Molalla River near Canby (d)	14200000	323	1929-59;1964-78
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 Mountindale (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	257,000	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
SILETZ RIVER BASIN			
Sunshine Creek near Valsetz (d)	14304350	6.70	1973-91
Big Rock Creek near Valsetz (d)	14304850	6.90	1986-89

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
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
Siuslaw River near Mapleton (d)	14307620	588	1968-94
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
COOS RIVER BASIN			
West Fork Millicoma River near Allegany (d)	14324500	46.9	1955-81
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

DISCONTINUED SURFACE-WATER DISCHARGE OR STAGE-ONLY STATIONS

Station name	Station number	Drainage area (mi ²)	Period of record
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
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	13277000	351	sed	1961
Powder River near Richland	13286700	1,310	t	1960-61
Eagle Creek above Smith 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	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
DESCHUTES RIVER BASIN				
Paulina Creek near La Pine	14063300	10.1	sc	1992-95
Deschutes River at Benham Falls	14064500	1,759	t	1968-80

WATER RESOURCES DATA FOR OREGON, 2001
DISCONTINUED SURFACE-WATER QUALITY STATIONS

Station name	Station number	Drainage area (mi ²)	Type of record	Period of record
DESCHUTES RIVER BASIN--Continued				
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 in 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
Middle Fork Willamette River near Dexter	14150000	1,001	t	1956-97
Fall Creek near Lowell	14150300	118	t	1964-87
Winberry Creek near Lowell	14150800	43.9	t	1964-81
Fall Creek below Winberry Creek, near Fall Creek	14151000	186	t	1951-97
Middle Fork Willamette River at Jasper	14152000	1,340	t	1954-87
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
McKenzie River below Trail Bridge Dam, near Belknap Springs	14158850	184	t, sc	1977-85
McKenzie River at McKenzie Bridge	14159000	348	t, sc	1977-85
Horse Creek near McKenzie Bridge	14159100	149	t	1963-69;1984
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
McKenzie River near Vida	14162500	930	t	1962-85
			sc	1977-85
Gate Creek at Vida	14163000	47.6	t	1984
McKenzie River at Leaburg Dam	14163100	--	t	1984
McKenzie River below Leaburg Dam, Near Leaburg	14363150	1,030	t	1993
McKenzie River near Walterville	14163900	1,081	t	1993-
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;1984
McKenzie River near Coburg	14165500	1,337	t	1964-75;1984
Willamette River at Harrisburg	14166000	3,420	t	1962-87
			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	1963-63;1967;1970-87

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
South Santiam River near Foster	14187200	557	t	1974-97
South Santiam River at Waterloo	14187500	640	t	1964-87
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
			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
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	1964-76
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 at Portland	14211720	11,100	t, sc	1976-81
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 Beaver Army Terminal, near Quincy	14246900	256,900	t	1968-70
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 sed	1980-81 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 sc sed	1968-75;1978-81 1978-81 1968-75
UMPQUA RIVER BASIN				
South Umpqua River at Days Creek	14308600	641	t tb	1971-82;1991-92 1973-82
South Umpqua River near Roseburg	14312260	1,798	sc, ph, do sc ph do	1991-92 1971-95 1972-95 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 sed	1968 1968-70
ROGUE RIVER BASIN				
South Fork Rogue River south of Prospect	14334700	246	t sed	1969-92 1977-81
Rogue River at McLeod	14335075	689	sc,ph,t,do sed,tb	1977-81 1977-2000
Big Butte Creek near McLeod	14337500	245	t tb	1971-2000 2000
Elk Creek near Cascade Gorge	14337800	78.8	t tb	1974-2000 2000
West Branch Elk Creek near Trail	14337870	14.2	temp	1977-2000
Rogue River at Trail	14338100	ND	temp tb	1989-2000 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 sed	1978-87 1978-80
Carberry Creek near Copper	14361700	68.9	t sed	1978-87 1981
Rogue River near Merlin	14370400	3,268	t	1975-87
Rogue River at Marial	14372250	3,812	t	1975-87
Rogue River near Agness	14372300	3,939	t	1961-87
Illinois River near Selma	14378000	665	t	1962-68

INTRODUCTION

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

This report includes records on both surface and ground water in the State and contains discharge records for 186 stream-gaging stations, stage only records for 6 gaging stations, 51 partial-record or miscellaneous streamflow stations, and 171 low-flow discharge at partial record stations and miscellaneous sites; 3 crest-stage partial-record streamflow stations; stage and content records for 26 lakes and reservoirs; water-quality records for 67 streamflow-gaging stations; water-quality for 2 atmospheric deposition stations, and 6 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-00-1". 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 Inquiry telephone number is (703) 487-4650.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at The address given on back of title page or by telephone (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://oregon.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 URL: <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,
Martha O. Pagel, Director.
State of Oregon Department of Fish and

Wildlife, Rudy Rosen, Director.
 State of Oregon Department of Environmental Quality, Debrah Marriott, Director.
 State of Oregon Forestry Department, Eastern Lane District, Daniel L. Shults, District Forester.
 Benton County Sheriff's Office, Jim Swinyard, Undersheriff.
 Clackamas County, Helene K. Lichtman, Director.
 Coos Bay-North Bend Water Board, Robert K. Schab, General Manager.
 Coos County, Board of Commissioners, Beverly Owen, Chair.
 Douglas County, Natural Resources Division of Public Works, Frank M. Nielsen, Division Manager.
 Eugene Water and Electric Board, Everett Jordan, General Manager.
 City of Albany, Steve Bryant, City Manager.
 City of Ashland, Department of Public Works, Paula C. Brown, Director.
 City of Brookings, Beverly Adams, Finance Director and Recorder.
 City of Gresham, Department of Environmental Services, Mel Miracle.
 City of Lake Oswego, Mark Schoening, City Engineer.
 City of McMinnville, Kent Taylor, City Manager.
 City of Milwaukie, Ruthanne Bennett, Project Coordinator.
 City of Portland, Bureau of Environmental Services, Dean Marriott, Director.
 City of Portland, Bureau of Water Works, Michael F. Rosenberger, Administrator.
 City of Salem, Frank Mauldin, Director of Public Works.
 City of Troutdale, Public Works, Travis Hultin, Civil Engineer.
 City of West Linn, David Monson, Director of Public Works.
 City of Woodburn, Frank Tiwari, Director of Public Works.
 Nez Perce Tribe, Samuel Penny, Chairman.
 The Confederated Tribes of the Umatilla Indian Reservation, Antone Minthorn, Chairman.
 The Confederated Tribes of the Warm Springs Indian Reservation, Olney Patt, Jr., Chairman.
 Tillamook County Performance Partnership, Richard Felley, Director.
 Unified Sewage Agency, Bill Gaffi, General Manager.

Wallowa Soil and Water Conservation,
 Cynthia Warnock, District Manager.

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

The following organizations aided in collecting records for stations under Federal Energy Regulatory Commission licenses: Eugene Water & Electric Board; Grayco Resources, Inc.; Idaho Power Co.; Pacific Power Co.; 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, with most of the runoff and flooding on both large and small streams being caused by winter rains. Major floods have occurred when winter rains combine with melting snow.

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

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

Surface-water Conditions

A number of basins throughout Oregon set record low annual mean streamflows for the 2001 water year due to a persistent high pressure ridge off the Pacific Northwest coast during the winter months. 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 61 percent of average for the Lower Deschutes and Hood River Basins in north-central Oregon to a low of 25 percent of average for the Umpqua, Rogue, Klamath and Goose Lake Basins located in southeastern Oregon. Precipitation across Oregon for the water year, as reported by the State Climatologist, ranged from a high of 95 percent of normal in the Owyhee Basin of southeastern Oregon to a low of 54 percent of normal in the Umpqua and Rogue Basins of southwestern Oregon. According to the State Climatologist, the total precipitation in most parts of Oregon for the 2001 water year was either the driest or the second driest of the last 100 years.

The water year began with above average precipitation for most of the state in October, with streamflow above normal in the east and below normal in the west. In early November a high pressure ridge settled in just off the Pacific Northwest coast and remained there throughout the winter blocking most of the wet Pacific storms. Streamflow for Oregon ran well below normal through the winter and spring of the 2001 water year with the greatest

impact in western Oregon. In March 2001, about half of the reporting gages on the current streamflow map for Oregon indicated new record lows. April brought some minor relief with above average precipitation. A significant number of streams in western Oregon that typically have their annual peaks in the winter ended up with their annual peaks occurring in the spring. However, many reservoirs in western Oregon failed to fill and/or were quickly drawn down to provide adequate streamflow for irrigators, fisheries, and maintain water-quality standards. Competing interests for a limited water resource left some users without enough to operate. Detroit Lake, in western Oregon, failed to fill and was subsequently drawn down leaving businesses that depend on recreation literally high and dry. Klamath Lake in southwest Oregon did fill but most irrigators had their water shut off to provide adequate lake elevations and outflow for endangered fish species. A few rain events in northwestern Oregon during summer helped prevent further decline of flows in that area.

A review of the data indicated that the 2001 water year in general experienced a drought of high flows rather than a low flow drought. The Columbia River at The Dalles, Oregon, had an annual mean flow for the 2001 water year that was the lowest in 123 years of record. Other sites such as the Wilson River near Tillamook set a new low annual mean in 71 years of record and the Siletz River at Siletz was tied with a previous low annual mean over an 80 year period. Other rivers in western Oregon experienced their second lowest annual mean flows for periods of record ranging from 75 to 106 years.

Table 1. Maximum stage, discharge and recurrence interval for the 2001 water year at selected gaging stations.

[mi², square miles; ft, feet; ft³/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 Frenchglen	200	1911-2001	04/26/78	7.15	4,270	05/15/01	4.34	1,070	<2
11502500	Williamson River below Sprague River, near Chiloquin	3,000	1917-2001	01/05/97	10.27	17,100	03/27/01	4.52	1,310	<2
13181000	Owyhee River near Rome	8,000	1950-2001	03/18/93	20.11	55,700	03/22/01	8.38	8,580	regulated
13292000	Imnaha River at Imnaha	622	1928-2001	01/01/97	11.44	20,200	05/15/01	3.70	1,300	<2
13333000	Grande Ronde River at Troy	3,275	1944-2001	02/09/96	13.76	51,800	05/15/01	7.01	8,060	<2
14033500	Umatilla River near Umatilla	2,290	1904-2001	01/30/65	10.75	19,800	04/28/01	4.32	1,830	regulated
14046500	John Day River at Service Creek	5,090	1925-2001	12/23/64	17.85	40,200	04/28/01	7.34	6,540	<2
14120000	Hood River at Tucker Bridge, near Hood River	279	1898-2001	02/07/96	17.11	23,300	04/30/01	6.83	3,120	<2
14137000	Sandy River near Marmot	263	1911-2001	12/22/64	--	61,400	04-30-01	734.06	5,230	<2
14301000	Nehalem River near Foss	667	1940-2001	02/08/96	29.56	70,300	12/23/00	8.33	6,980	<2
14305500	Siletz River at Siletz	202	1906-2001	11/26/99	28.62	53,800	12/22/00	9.21	5,980	<2
14316700	Steamboat Creek near Glide	227	1956-2001	12/22/64	25.60	51,000	05/16/01	5.61	3,260	<2
14320700	Calapooya Creek near Oakland	210	1956-2001	11/18/96	21.62	27,100	12/22/00	5.43	1,350	<2
14321000	Umpqua River near Elkton	3,683	1906-2001	12/23/64	51.95	265,000	03/29/01	9.54	14,200	<2
14327250	Elk River above Anvil Creek, near Port Orford	83.4	1994-2001	11/18/96	22.58	28,900	12/14/00	9.21	2,720	<2
14357500	Bear Creek at Medford	289	1915-2001	01/01/97	14.69	17,600	03/28/01	1.67	233	regulated
14361500	Rogue River at Grants Pass	2,459	1939-2001	12/23/64	35.15	152,000	05/31/01	3.52	4,070	regulated
14372300	Rogue River near Agness	3,939	1961-2001	12/23/64	68.03	290,000	12/22/00	5.12	5,900	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 once by the annual maximum discharge. The recurrence interval is inversely related to the chance of a specific flood discharge being exceeded by 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

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 2001, 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 Collection of Basic Records (CBR) network of wells. These are wells that show a high correlation to climatic variability.

The normal water level for a season is defined as being within one-half the standard deviation of the seasonal mean for the period of record. The seasons are defined as: FALL, October to December; WINTER, January to March; SPRING, April to June; and SUMMER, July to September.

The water-table levels in the Oregon CBR network were generally declining throughout the 2001 water year. The Clackamas County well was normal Fall through Winter before declining to below normal for the rest of the water year. The northern Deschutes County well was above normal through Winter and declining to normal for the rest of the year. The southern Deschutes County well was normal through Winter, below normal in Spring, and back to normal in Summer. The Jackson County well was above normal through Fall before declining to normal. The Linn County well was normal through Winter then declined to below normal for the rest of the year, and the Marion County well was normal in the Fall, below normal in Winter, and rose back to normal for the remainder of the water year.

SPECIAL NETWORKS AND PROGRAMS

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

National Stream-Quality Accounting Network (NASQAN) monitors the water quality of large rivers within four of the Nation's largest river basins--the Mississippi, Columbia, Colorado, and Rio Grande. The network consists of 39 stations. 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 Program (NAWQA); (3) to characterize processes unique to large-river systems such as storage and remobilization 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.

The National Atmospheric Deposition Program/National Trends Network (NADP/NTN) provides continuous measurement and assessment of the chemical climate of precipitation throughout the United States. As the lead federal agency, the USGS works together with over 100 organizations to accomplish the following objectives; (1) Provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of 191 precipitation chemistry monitoring sites. (2) Provide the mechanism to evaluate the effectiveness of the significant reduction in SO₂ emissions that began in 1995 as implementation of the Clean Air Act Amendments (CAAA) occurred. (3) Provide the scientific basis and nationwide evaluation mechanism for implementation of the Phase II CAAA emission reductions for SO₂ and NO_x scheduled to begin in 2000.

Data from the network, as well as information about individual sites, are available through the world wide web at:

<http://nadp.nrel.colostate.edu/NADP>

The National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey 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; provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 53 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 will be 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 decision making by water-resources managers 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 is available through the world wide web at:

http://www.rvares.er.usgs.gov/nawqa/nawqa_home.html

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 2000 water year that began October 1, 1999, and ended September 30, 2000. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, and water-quality data for surface water. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

Each data station in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to

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

Downstream Order System

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

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

Latitude-Longitude System

The identification numbers for wells and miscellaneous surface-water sites are assigned according to the grid system of latitude and longitude (figure 1). The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the wells or other sites within a one-second grid. This

site-identification number, once assigned, is a pure number, and has no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description.

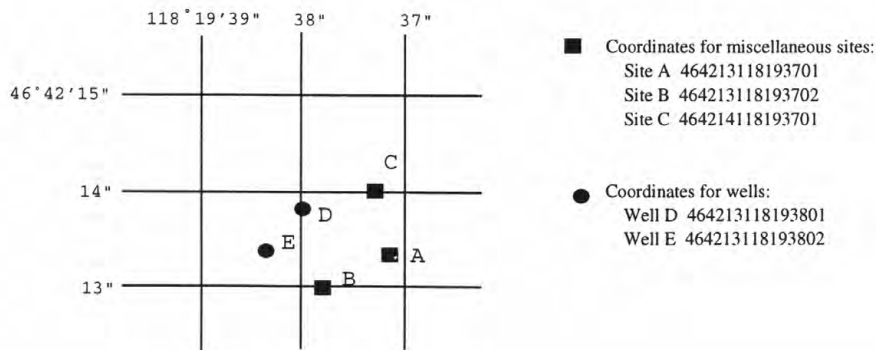


Figure 1. System for numbering wells and miscellaneous sites (latitude and longitude).

Local Identifier Well-Numbering System

In addition to the latitude-longitude based site identification number, wells in Oregon are assigned local well numbers (figure 2). The State is divided into 36 square mile townships numbered according to their location relative to the east-west Willamette baseline and a north-south Willamette meridian. The position of a township is given by its north-south "Township" position relative to the baseline and its east-west "Range" position relative to the meridian. Each township is divided into 36 sections approximately one-square-mile, (640-acre) in area and numbered from 1 to 36. For 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.

Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for

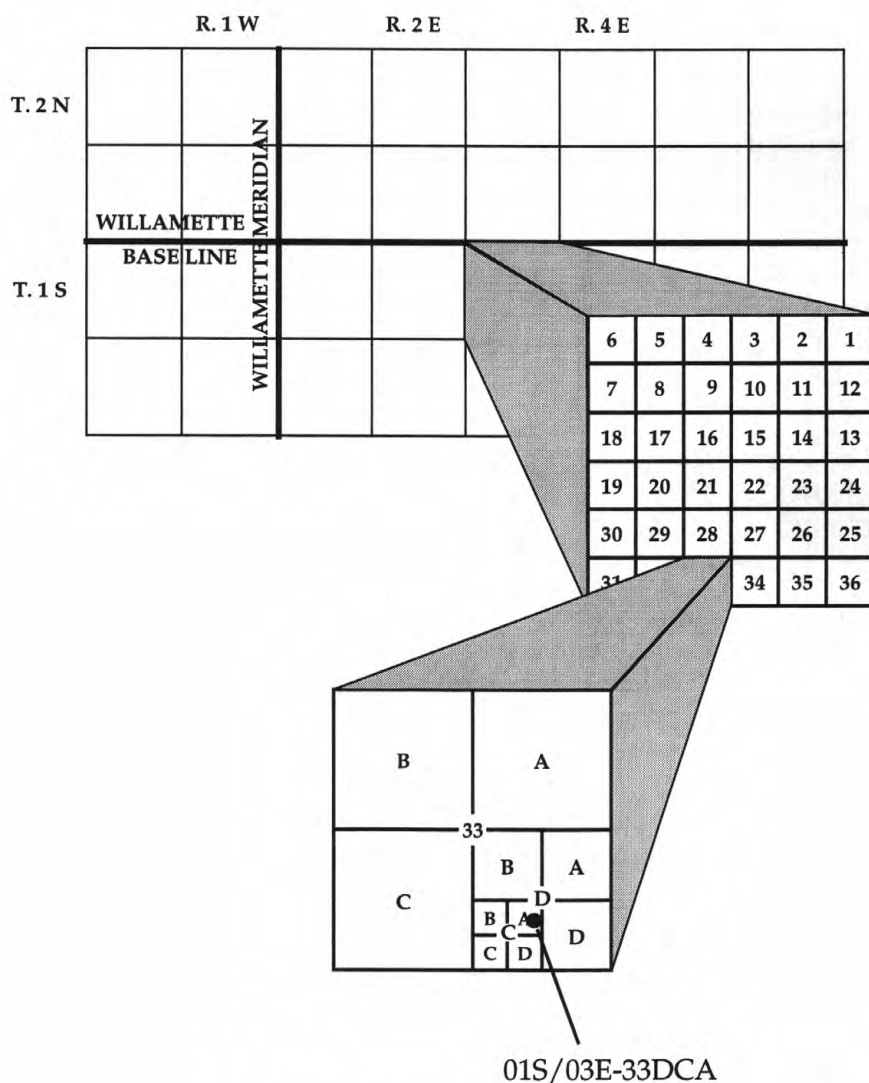


Figure 2. Local identifier well-numbering system.

any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

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

Data Collection and Computation

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

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

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

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

At some stream-gaging stations the stage-

discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some gaging stations, acoustic velocity meter (AVM) systems are used to compute discharge. The AVM system measures the stream's velocity at one or more paths in the cross section. Coefficients are developed to relate this path velocity to the mean velocity in the cross section. Because the AVM sensors are fixed in position, the adjustment coefficients generally vary with stage. Cross-sectional area curves are developed to relate stage, recorded as noted above, to cross section area. Discharge is computed by multiplying path velocity by the appropriate stage related coefficient and area.

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

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

Data Presentation

Streamflow data in this report are presented in a new format that is considerably different from the

format in data reports prior to the 1991 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table and less information is provided in the text or station manuscript above the table. These changes represent the results of a pilot program to reformat the annual water data report to meet current user needs and data preferences.

The records published for each continuous-record surface-water discharge station (gaging station) now consist of four parts, the manuscript or station description; the data table of daily mean values of discharges for the current water year with summary data; a tabular statistical summary of monthly mean flow data for a designated period by water year; and 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. Summary statistics were not included for certain sites where these data would be misleading. Contact the District Office for further information concerning summary statistics for these sites.

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 to follow clarify information presented under the various headings of the station description.

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

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

PERIOD OF RECORD.--This indicates the period for which there are published records for the

station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not, and whose location was such that records from it can reasonably be considered equivalent with records from the present station.

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

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

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

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

AVERAGE DISCHARGE.--The discharge value given is the arithmetic average of the water-year mean discharges. Average discharge is computed only for stations having at least 2 water years of complete record; water years with incomplete record are not included in the computation. The mean-discharge value that uses all published data may differ from that given in the summary statistics data, which is based only on computer-stored data. The summary data does not

include values of monthly or yearly data that were determined by various methods for the series of Water-Supply Papers entitled "Compilation of Records of Surface Water of the United States". The average-discharge value is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water projects that significantly alter flow at a station are put into use after the station has been in operation for a period of years, the new average is computed as soon as 2 water years of record have accumulated after the project began.

EXTREMES FOR PERIOD OF RECORD.--

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

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

EXTREMES FOR CURRENT YEAR.--

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

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

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

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

Data table of daily mean values

The daily table 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 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 the month. Discharge for the month also is usually expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN."), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversion data or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

Statistics of monthly mean data

A tabular summary of the mean (line headed "MEAN"), maximum (line headed "MAX"), and minimum (line headed "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 figures. The designated period will be expressed as "FOR WATER YEAR _____-_____, 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. It will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be 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 and daily 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 record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be 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 computerized data for 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 extremes in the designated-period column may not be within the selected water years listed in the heading. When this occurs, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration curve statistics and runoff data are also given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage basin.

The following summary statistics data, as appropriate, are provided with each continuous record of discharge. Comments to 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. At some stations the annual total discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

ANNUAL MEAN.--The arithmetic mean of the individual daily mean discharges for the year noted or for the designated period. At some stations the yearly mean discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes. At least 5 complete years of record must be available before this statistic is published 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.)

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 equal to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

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

Inches (INCHES) indicates 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 is exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.--The discharge that is exceeded 50 percent of the time for the designated period.

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

Identifying Estimated Daily Discharge

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

Accuracy of the Records

The accuracy of streamflow records depends

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

The accuracy attributed to the records is indicated under the "REMARKS" paragraph. "Excellent" means that about 95 percent of the daily discharges are within 5 percent of the true; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned, are rated "poor." Different accuracies may be attributed to different parts of a given record. Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft³/s; the nearest tenth between 1.0 and 10 ft³/s; whole numbers between 10 and 1,000 ft³/s; and 3 significant figures for more than 1,000 ft³/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

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

Other Records Available

Monthly records for several ungaged sites are given in a separate section following the gaged sites. The accuracy of records for ungaged sites is generally lower than that for gaged sites, depending on the precision of the computation method and the accuracy of data used in the computations. For most gaging stations, unpublished, detailed information, on file in the Oregon office, includes discharge measurements, gage-height records, and rating tables. Many gaging-station records in Oregon through 1987 have been analyzed to determine several statistical summaries: (1) The number of days in each year that the daily discharge was between selected limits (duration tables); (2) the lowest mean discharge for selected numbers of consecutive days in each year; and (3) the highest

mean discharge for selected numbers of consecutive days in each year.

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

Records of Surface-Water Quality

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

Classification of Records

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

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

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby

surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

On-site Measurements and Sample Collection

In obtaining water-quality data, it is important that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, treating the samples to prevent changes in quality pending analysis, and shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations, "Book 1, Chap. D2; Book 3, Chap. A1, A3, and A4; Book 9, Chap. A1-A9". These methods are consistent with ASTM standards and generally follow ISO standards. Also, detailed information on collecting, treating, and shipping samples may be obtained from the Geological Survey Oregon office.

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

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species

(carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

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

Water Temperature

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

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

Sediment

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

During periods of rapidly changing flow or rapidly changing suspended-sediment concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times

mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge. Methods used in the computation of sediment records are described in the TWRI Book 3, Chapters C1 and C3. These methods are consistent with ASTM standards and generally follow ISO standards.

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

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

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (BOD), samples for identification of biological populations, samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the Geological Survey laboratory in Arvada, Colorado. Methods used to analyze sediment samples and to compute sediment records are described in the TWRI Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, A4, and A5. These methods are consistent with ASTM standards and generally follow ISO standards.

In March 1989, the National Water-Quality Laboratory discovered a bias in the turbidimetric method for sulfate analysis, indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1989. Sulfate values in this report have not been corrected for this bias.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record,

type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

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

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

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

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

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

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

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

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

REVISIONS.--If errors in published water-quality records are discovered after publication,

appropriate updates are made in the U.S. Geological Survey's distributed data system, NWIS, and subsequently to its web-based National data system, NWISWeb [<http://water.usgs.gov/nwis/nwis>]. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from NWIS or NWISWeb to ensure the most recent updates. Updates to NWISWeb are currently 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 report:

<u>PRINTED OUTPUT</u>	<u>REMARK</u>
E	Estimated value
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (non-ideal colony count)
ND	Materials specifically analyzed for but not detected
V	Analyte was detected in both the environmental sample and the associated blanks.

Water-Quality-Control Data

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 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.

Blank Sample

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated by 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. There are many types of blank samples possible, each 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 all 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 whose 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. There are many types of replicate samples 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 sequential samples. Sequential samples are 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 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.

Records of Ground-Water Levels

Water-level records for selected wells are included in this report. These wells are part of the U.S. Geological Survey's nationwide Collection of Basic Records (CBR) network of observation wells. The primary purpose of the network is to monitor the effect of climatic variability on the nation's regional aquifers. Well locations are shown in Figure 36.

Ground-water level records obtained through cooperative efforts of many Federal, State, and local agencies for many observation wells throughout Oregon are not included in this report. These records may be in computer storage, published in reports, or kept in files. Information about the availability of ground-water data may be obtained from the District Chief, Oregon District, U.S. Geological Survey, 10615 S.E. Cherry Blossom Drive, Portland, Oregon 97216.

Data Collection and Computation

Measurements of water levels are made in many types of wells under varying conditions, but the

methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well ensure that measurements at each well are of consistent accuracy and reliability.

The water-level data tables and hydrographs are published in alphabetical order by county and then in ascending order of latitude within the county. Each well is identified by means of (1) a 15-digit site identification number that is based on the grid system of latitude and longitude, and (2) a local designation based on the official system for the rectangular subdivision of public lands, referenced to the Willamette base line and meridian. Both of these identification number systems are described in the "Station Identification Numbers" section.

Water-level measurements are reported in feet below the land-surface datum (LSD). The land-surface datum is a horizontal plane coincident with land surface at each well. The altitude of the land-surface datum at each well has been estimated from U.S. Geological Survey 7.5 minute quadrangle topographic maps and is relative to the National Geodetic Vertical Datum (NGVD) of 1929.

The measuring point (MP) is reported in feet above the land-surface datum at each well and is the point at which measurements are taken.

Water levels are published to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error of 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.

Data Presentation

Each well record consists of three parts, a station description, a table of water levels for the entire period of record through the current water year, and a hydrograph of that record. Topical headings of the station description section are explained below.

WELL NUMBER.--This entry reports the 15-digit site identification number and the local well number previously mentioned and explained more completely in the section entitled, "Station Identification Numbers" under the headings, "Latitude-Longitude system" and "Local identifier well numbering system".

LOCATION.--This paragraph reports the

latitude and longitude (given in degrees, minutes, and seconds); the hydrologic unit number; the distance and direction from a geographic point of reference; and the owner's name.

AQUIFER.--This entry designates by name and geologic age the aquifer open to the well.

WELL CHARACTERISTICS.--This entry describes the well in terms of depth, diameter, casing depth and (or) screened interval, method of construction, use, and additional information such as casing breaks, collapsed screen, and other changes since construction.

INSTRUMENTATION.--This paragraph provides information on both the frequency of measurement (periodic or continuous) and the collection method used.

DATUM.--This entry describes both the land-surface elevation at the well and the measuring point. The elevation of the land-surface datum is described in feet above the National Geodetic Vertical Datum of 1929 or mean sea level and is reported with a precision respective to the method of determination. The measuring point's physical description and height, in feet, relative to the land-surface datum is also noted.

REMARKS.--This entry describes factors that may influence the water level in a well or the measurement of the water level. It may be used to acknowledge the assistance of local observers.

PERIOD OF RECORD.--This entry indicates the period for which there are published records for the well. It reports the month and year of the start of publication of water-level records by the U.S. Geological Survey and the words "to current year" if the records are to be continued into the following year.

EXTREMES FOR PERIOD OF RECORD.--This entry contains the highest and lowest water levels of the record, with respect to the land-surface datum, and the dates of their occurrence.

EXTREMES FOR CURRENT YEAR.--For wells equipped with a recorder, this entry contains the highest and lowest water levels of the year measured by the recorder. Because all values are not published for wells with recorders the extremes may be values not listed in the table following the station description.

A table of water levels follows the station description for each well. Water levels are reported in feet below the land-surface datum. For wells equipped with a recorder a table of the daily means is

given. Missing records are indicated with a triple hyphen (---) in place of the water level.

A tabular summary of the mean (line headed "MEAN"), maximum (line headed "MAX"), and minimum (line headed "MIN") of monthly mean water levels for each month is provided below the mean values table.

Following the tabular summary of water levels is a hydrograph of the measurements. The water levels, in feet below land surface, are on the ordinate (y-axis) which has been reversed to imply depth. The dates, in calendar years, are on the abscissa (x-axis). The hydrograph is provided to aid the reader in better understanding the fluctuations of the water levels seasonally and over time. The first point on these hydrographs is usually the driller's reported static water level. A note on the hydrograph will state the driller's reported water level if it was drilled some years prior to development of the water level record. Also, breaks in the graph line correspond to extended breaks of time in collecting water level measurements at the site.

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 internet. These data may be accessed at:

<http://water.usgs.gov>

Some water-quality and ground-water data also are available through the internet. In addition, data can be provided in various machine-readable formats on magnetic tape or 3-1/2 inch floppy disk. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division District Offices (see address on the back of the title page).

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 on the inside of the back cover.

Acid neutralizing capacity (ANC) is the equivalent sum of all bases or base-producing materials, sol-

utes 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.

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.

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 to 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 polychlorinated 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 weight percent of the hydrogen substituted chlorine.

Artificial substrate is a device that is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multi-plate 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 the 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")

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

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 peaks per year will be published.

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.

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

Bedload discharge (tons per day) is 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-sedi-

ment 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" and "Sediment")

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

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 which are autotrophic (plants). This is also called the Autotrophic Index.

Blue-green algae (*Cyanophyta*) are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water. Concentrations are expressed as a number of cells per milliliter (cells/mL) of sample. (See also "Phytoplankton")

Bottom material (See "Bed material")

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 are generally reported as cells or units per milliliter (mL) or liter (L).

Cells volume (biovolume) determination is one of several common methods used to estimate biomass of algae in aquatic systems. Cell members of algae are frequently used 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 on 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:

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

π is the ratio of the circumference to the diameter of a circle; $\pi = 3.14159\dots$

From cell volume, total algal biomass expressed as biovolume ($\mu\text{m}^3/\text{mL}$) is thus determined by multiplying the number of cells of a given species by its average cell volume and then summing these volumes over all species.

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

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 warm-blooded animals. Clostridial spores are being used experimentally as an indicator of past fecal contamination and 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 waters 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 com-

puted 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 downstream from a gaging station that physically influences 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-feet" sometimes is used synonymously with "cubic feet per second" but is now obsolete.

Cubic foot per second-day (CFS-DAY, Cfs-day, $[(\text{ft}^3/\text{s})/\text{d}]$) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.98347 acre-feet, 646,317 gallons, or 2,446.6 cubic meters. The daily-mean discharges reported in the daily-value data tables are numerically 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, $(\text{ft}^3/\text{s})/\text{mi}^2$] is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area. (See also "Annual runoff")

Daily mean suspended-sediment concentration is the time-weighted concentration of suspended sediment passing a stream cross section during a 24-hour day. (See also "Mean concentration of suspended sediment," "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 periodic sample or 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 are usually 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 UTM coordinates. (See also "Gage datum," "Land-surface datum," "National Geodetic Vertical Datum of 1929," and "North American Vertical Datum of 1988")

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

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 sediments or other constituents suspended or dissolved in the water) that passes a cross section in a stream channel, canal, pipeline, etc., 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 chemical constituents, 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, tem-

perature, 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:

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

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")

Enterococcus bacteria are commonly found in the feces of humans and other warm-blooded 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 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 are generally considered pollution sensitive, the index usually decreases with pollution.

Escherichia coli (*E. coli*) are bacteria present in the intestine and feces of warm-blooded 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. 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 qualitatively identified 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 (<).

Euglenoids (*Euglenophyta*) are a group of algae that are usually free-swimming and rarely creeping. They have the ability to grow either photosyntheti-

cally 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 semi-volatile and extractable by ethyl acetate from air-dried streambed sediments. 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 sediments.

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

Fecal streptococcal bacteria are present in the intestine of warm-blooded 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 larger than the maximum depth of water. Because the gage datum itself is not an actual physical object, the datum usually is 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 is often 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. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is computed.

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.

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

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 is commonly 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 which uses tolerance values to weight taxa abundances; usually increases with pollution. It is calculated as follows:

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

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 benchmark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a benchmark station may be used to separate effects of natural from human-induced changes in other basins that have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped benchmark basin.

Hydrologic index stations referred to in this report are four 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.), 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 uniformly distributed on it. (See also "Annual runoff")

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

Laboratory Reporting Level (LRL) is generally 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 non-detection 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 collects qual-

ity-control data from selected analytical methods on a continuing basis to determine LT-MDLs and to establish LRLs. These values are reevaluated annually based on the most current quality-control data and may, therefore, change. [Note: In several previous NWQL documents (Connor and others, 1998; NWQL Technical Memorandum 98.07, 1998), the LRL was called the non-detection value or NDV—a term that is no longer used.)

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

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

$$I = I_0 e^{-\lambda L},$$

where I_0 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

$$\lambda = -\frac{1}{L} \log_e \frac{I}{I_0}.$$

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 macro-

phytes are the rooted vascular plants that are usually 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.

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.

Methylene blue active substances (MBAS) are apparent detergents. The determination depends on

the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram (UG/G, $\mu\text{g/g}$) 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, $\mu\text{g/kg}$) 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, $\mu\text{g/L}$) 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, $\mu\text{S/cm}$) 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 mg/L 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 (Timme, 1995).

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 of 1929) is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling. It was formerly 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 Vertical Datum of 1988 (NAVD 1988) is a fixed reference adopted as the official civilian vertical datum for elevations determined by Federal surveying and mapping activities in the U.S. This datum was established in 1991 by minimum-constraint adjustment of the Canadian, Mexican, and U.S. 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 sediments. May be reported as dissolved

organic carbon (DOC), particulate organic carbon (POC), or total organic carbon (TOC).

Organic mass or volatile mass of the 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 (m²), 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 utilizes the principle of Stokes Law to calculate sediment particle sizes. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube, Sedi-graph) 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 analysis	Size (mm)	Method of analysis
Clay	0.00024 - 0.004	Sedimentation
Silt	0.004 - 0.062	Sedimentation
Sand	0.062 - 2.0	Sedimenta-
tion/sieve		
Gravel	2.0 - 64.0	Sieve

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

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 to 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 determined by using a clinometer to estimate left and right bank shading. The values are added together and divided by 180 to determine percent shading relative to a horizontal surface.

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. While 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 are termed "acidic," and solutions with a pH greater than 7 are termed "basic." Solutions with a pH of 7 are neutral. The presence and concentration of many dissolved chemical constituents found in water are, in part, influenced by the hydrogen-ion activity of water. Biological processes including growth, distribution of organisms, and toxicity of the water to organisms are also influenced, in part, by the hydrogen-ion activity of water.

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

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

Primary productivity (carbon method) is expressed as milligrams of carbon per area per unit time [$\text{mg C}/(\text{m}^2/\text{time})$] for periphyton and macrophytes or per volume [$\text{mg C}/(\text{m}^3/\text{time})$] for phytoplankton. 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 in unenriched waters. 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 [$\text{mg O}/(\text{m}^2/\text{time})$] for periphyton and macrophytes or per volume [$\text{mg O}/(\text{m}^3/\text{time})$] for phytoplankton. 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 an element 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.

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 non-exceedance 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 non-exceedances of the $7Q_{10}$ occur less than 10 years after the previous non-exceedance, half occur less than 7 years after, and about one-eighth occur more than 20 years after the previous non-exceedance. 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")

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 used to denote location along a river.

Runoff is the quantity of water that is discharged ("runs off") from a drainage basin in 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. See conversion of units page (inside back cover) for identification of the datum used in this report.

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 influenced by environmental and land-use factors. Some major factors are topography, soil characteristics, land cover, and depth and intensity of precipitation.

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-run 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 "Recurrence interval" and "Annual 7-day minimum")

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.

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/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 waters, to evaluate mixing of different waters, 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 (<2mm, sand or finer). Below are the class categories expressed as percent covered by fine sediment:

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

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 ft) of the bed material such as that material which is sampled using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is operationally defined 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, based on 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 ft 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/day) 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 (ft³/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, 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, based on determinations of (1) dissolved and (2) total concentrations of the constituent. (See also "Suspended")

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.

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 richness is the total number of distinct species or groups and usually decreases with pollution. (See also "Percent Shading")

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

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

Temperature preferences:

Cold – preferred water temperature for the species is less than 20 °C or spawning temperature preference less than 16 °C and native distribution is

considered to be predominantly north of 45° N. latitude.

Warm – preferred water temperatures for the species is greater than 20 °C or spawning temperature preference greater than 16 °C and native distribution is considered to be predominantly south of 45° N. latitude.

Cool – intermediate between cold and warm water temperature preferences.

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 bed-load that passes a stream section during a 24-hour period. It is equivalent to 2,000 pounds per day, or 0.9072 metric tons 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 warm-blooded 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 mL 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 "Sediment," "Suspended sediment," "Suspended-Sediment Concentration," "Bedload," and "Bed-load discharge")

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")

Trophic group:

Filter feeder – diet composed of suspended plant and/or animal material.

Herbivore – diet composed predominantly of plant material.

Invertivore – diet composed predominantly of invertebrates.

Omnivore – diet composed of at least 25-percent plant and 25-percent animal material.

Piscivore – diet composed predominantly of fish.

Turbidity is the reduction in the transparency of a solution due to 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 EPA 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. Consequently, the method of measurement and type of instrument used to derive turbidity records should be included in the "REMARKS" column of the Annual Data Report.

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 pathlength of UV light through a sample.

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 are often 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 (U.S. Environmental Protection Agency, 1996).

Water table is the level in the saturated zone at which the pressure is equal to the atmospheric pressure.

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

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, 2001, is called the "2001 water year."

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

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

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 are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers. (See also "Plankton")

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

The reports listed below are for sale by the U.S. Geological Survey, Branch of Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

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, Chapter D1. 1975. 65 pages.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W. Wood: USGS-TWRI Book 1, Chapter D2. 1976. 24 pages.

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, Chapter D1. 1974. 116 pages.
- 2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F.P. Haeni: USGS-TWRI Book 2, Chapter D2. 1988. 86 pages.

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, Chapter E1. 1971. 126 pages.
- 2-E2. *Borehole geophysics applied to ground-water investigations*, by W.S. Keys: USGS-TWRI Book 2, Chapter E2. 1990. 150 pages.

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, Chapter F1. 1989. 97 pages.

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, Chapter A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M.A. Benson: USGS-TWRI Book 3, Chapter A2. 1967. 12 pages.
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- 3-A6. *General procedure for gaging streams*, by R.W. Carter and Jacob Davidian: USGS-TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. *Stage measurement at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS-TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. *Discharge measurements at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS-TWRI Book 3, Chapter A8. 1969. 65 pages.
- 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, Chapter A9. 1989. 27 pages.

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- 3-A11. *Measurement of discharge by the moving-boat method*, by G.F. Smoot and C.E. Novak: USGS-TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-A12. *Fluorometric procedures for dye tracing*, Revised, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS-TWRI Book 3, Chapter A12. 1986. 34 pages.
- 3-A13. *Computation of continuous records of streamflow*, by E.J. Kennedy: USGS-TWRI Book 3, Chapter A13. 1983. 53 pages.
- 3-A14. *Use of flumes in measuring discharge*, by F.A. Kilpatrick and V.R. Schneider: USGS-TWRI Book 3, Chapter A14. 1983. 46 pages.
- 3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS-TWRI Book 3, Chapter A15. 1984. 48 pages.
- 3-A16. *Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS-TWRI Book 3, Chapter A16. 1985. 52 pages.
- 3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS-TWRI Book 3, Chapter A17. 1985. 38 pages.
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- 3-A19. *Levels at streamflow gaging stations*, by E.J. Kennedy: USGS-TWRI Book 3, Chapter A19. 1990. 31 pages.
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- 3-A21. *Stream-gaging cableways*, by C. Russell Wagner: USGS-TWRI Book 3, Chapter A21. 1995. 56 pages.
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- 3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G.D. Bennett: USGS-TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J.E. Reed: USGS-TWRI Book 3, Chapter B3. 1980. 106 pages.
- 3-B4. *Regression modeling of ground-water flow*, by R.L. Cooley and R.L. Naff: USGS-TWRI Book 3, Chapter B4. 1990. 232 pages.
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- 3-B8. *System and boundary conceptualization in ground-water systems with uniform flow*, by T.E. Reilly: USGS-TWRI book 3, chap. B8. 2001. 29p.

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- 3-C1. *Fluvial sediment concepts*, by H.P. Guy: USGS-TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. *Field methods for measurement of fluvial sediment*, by T.K. Edwards and G.D. Glysson: USGS-TWRI Book 3, Chapter C2. 1999. 89 pages.

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- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS-TWRI Book 3, Chapter C3. 1972. 66 pages.

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, Chapter A1. 1968. 39 pages.
- 4-A2. *Frequency curves*, by H.C. Riggs: USGS-TWRI Book 4, Chapter A2. 1968. 15 pages.

Section B. Surface Water

- 4-B1. *Low-flow investigations*, by H.C. Riggs: USGS-TWRI Book 4, Chapter B1. 1972. 18 pages.
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- 4-D1. *Computation of rate and volume of stream depletion by wells*, by C.T. Jenkins: USGS-TWRI Book 4, Chapter D1. 1970. 17 pages.

Book 5. Laboratory Analysis

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- 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, Chapter A1. 1989. 545 pages.
- 5-A2. *Determination of minor elements in water by emission spectroscopy*, by P.R. Barnett and E.C. Mallory, Jr.: USGS-TWRI Book 5, Chapter A2. 1971. 31 pages.
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- 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, Chapter A4. 1989. 363 pages.

- 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, Chapter A5. 1977. 95 pages.

- 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, Chapter A6. 1982. 181 pages.

Section C. Sediment Analysis

- 5-C1. *Laboratory theory and methods for sediment analysis*, by H.P. Guy: USGS-TWRI Book 5, Chapter C1. 1969. 58 pages.

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, Chapter A1. 1988. 586 pages.
- 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, Chapter A2. 1991. 68 pages.
- 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, Chapter A3. 1993. 136 pages.
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- 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. 1996. 125 pages.

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Book 7. Automated Data Processing and
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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, Chapter C1. 1976. 116 pages.
- 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, Chapter C2. 1978. 90 pages.
- 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, Chapter C3. 1981. 110 pages.

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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, Chapter A1. 1968. 23 pages.
- 8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS-TWRI Book 8, Chapter A2. 1983. 57 pages.

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, Chapter B2. 1968. 15 pages.

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 Gibbs, and R.T. Iwatsubo: USGS-TWRI Book 9, Chapter A1. 1998. 47 pages.

- 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 Gibbs, and R.T. Iwatsubo: USGS-TWRI Book 9, Chapter A2. 1998. 94 pages.
- 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 Gibbs, and R.T. Iwatsubo: USGS-TWRI Book 9, Chapter A3. 1998. 75 pages.
- 9-A4. *National Field Manual for the Collection of Water-Quality Data*, edited by F.D. Wilde, D.B. Radtke, Jacob Gibbs, and R.T. Iwatsubo: USGS-TWRI book 9, chap. A4. 1999. 156 pages.
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- 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 pages.
- 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 pages.

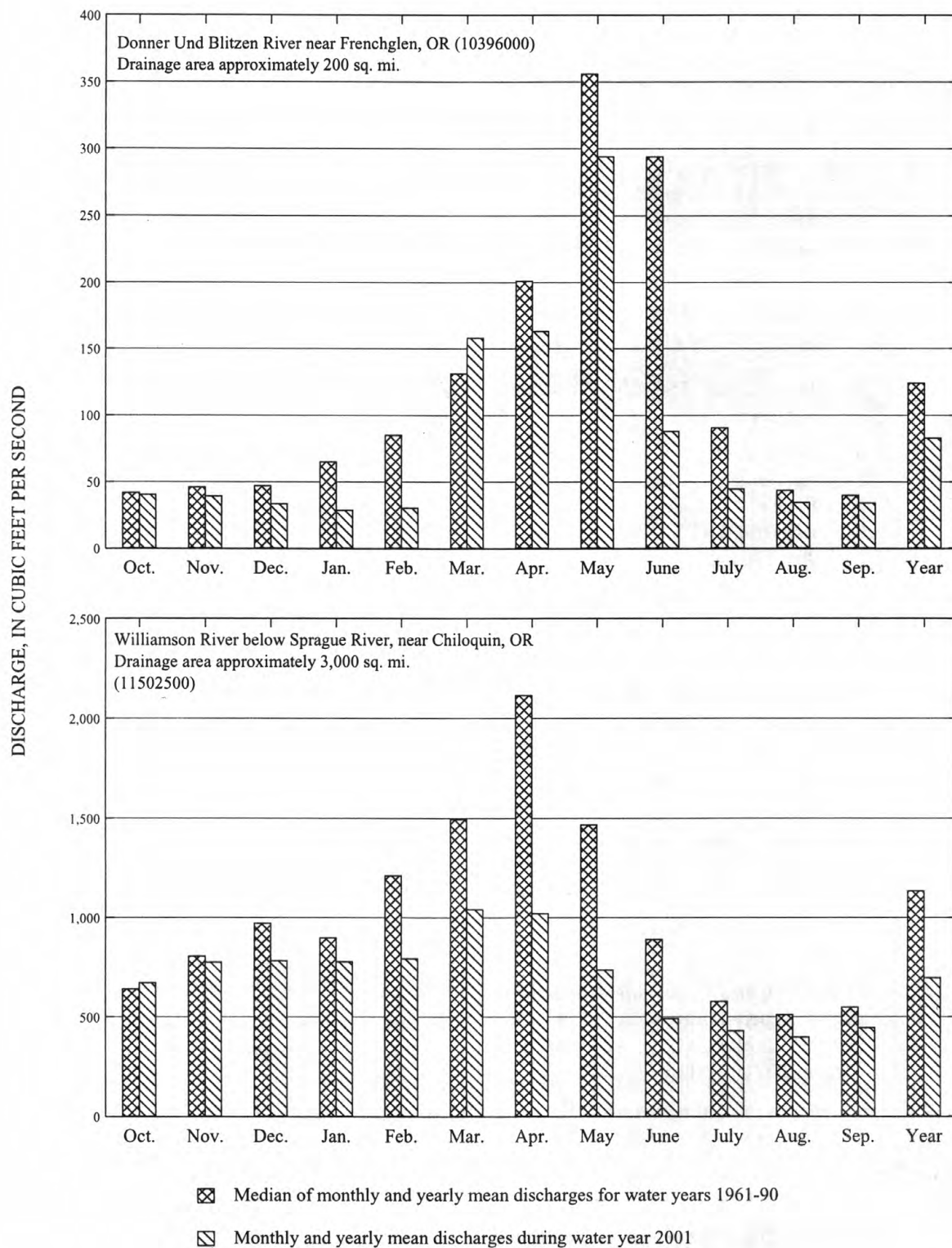


Figure 3. Discharge during 2001 water year compared with median discharge for period 1961-90 for two representative gaging stations in Eastern Oregon.

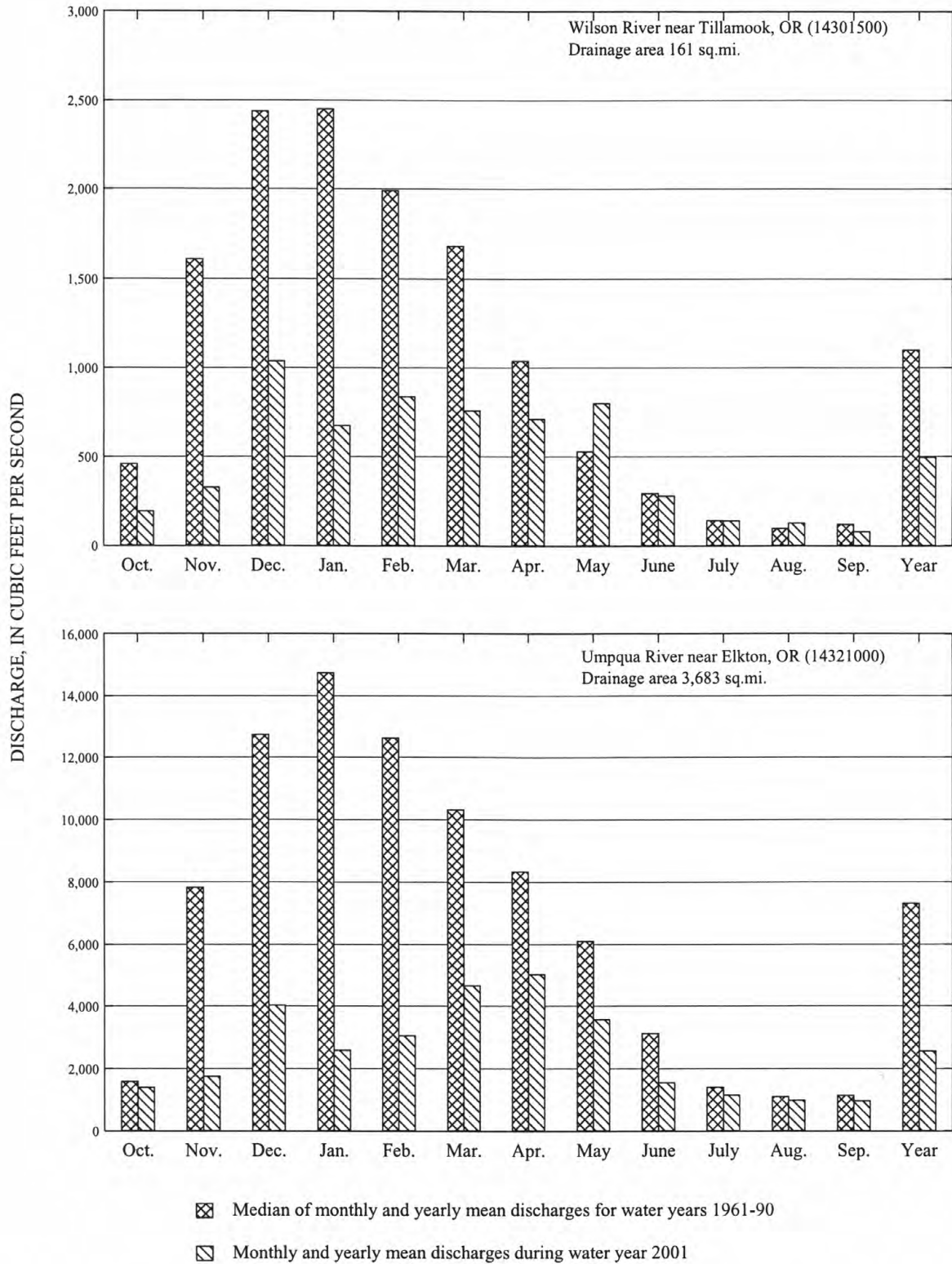


Figure 4. Discharge during 2001 water year compared with median discharge for period 1961-90 for two representative gaging stations in Western Oregon.

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	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.

Dissolved Trace-Element Concentrations

*NOTE.-- Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter (ug/L) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Data above the ug/L level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols at some stations in water year 1994.

Change in National Trends Network Procedures

*NOTE.-- Sample handling procedures at all National Trends Network stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences based on a special intercomparison study, is available from the NADP/NTN Coordination Office, Colorado State University, Fort Collins, CO 80523 (Telephone: 303-491-5643).

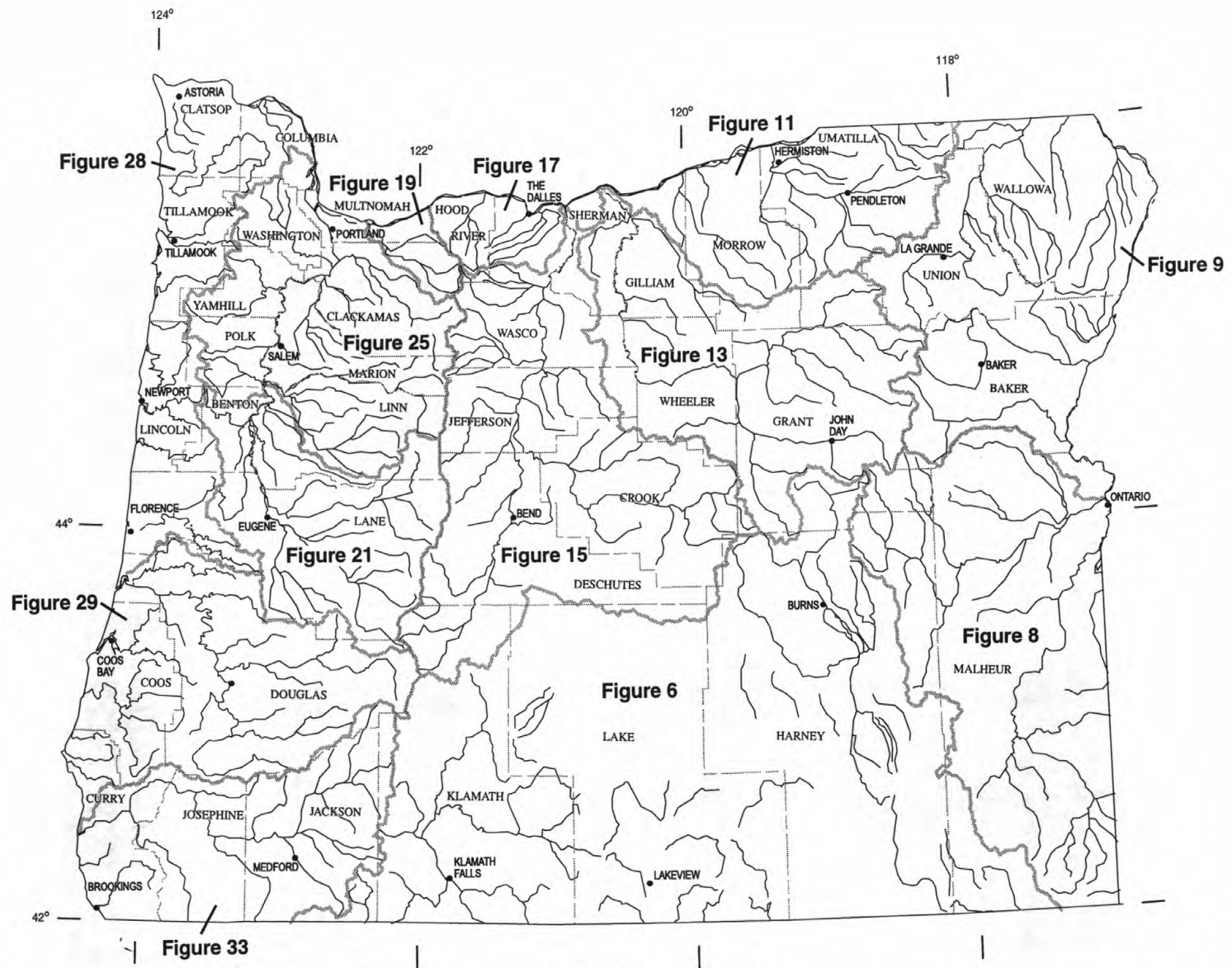


Figure 5. Location map of major drainage basins in Oregon.

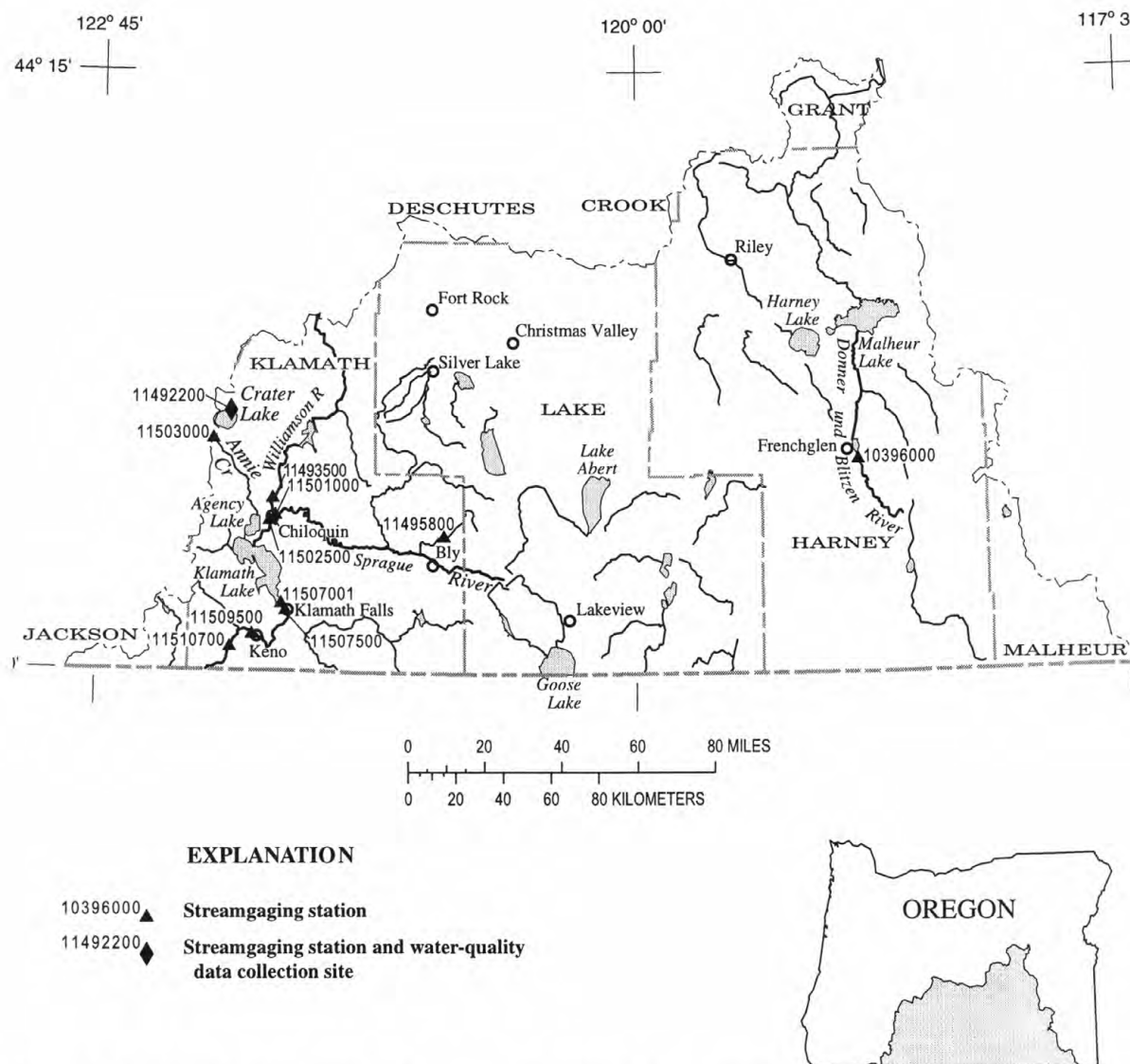


Figure 6. Location of surface-water and water-quality stations in The Great Basin and the Klamath River Basin.

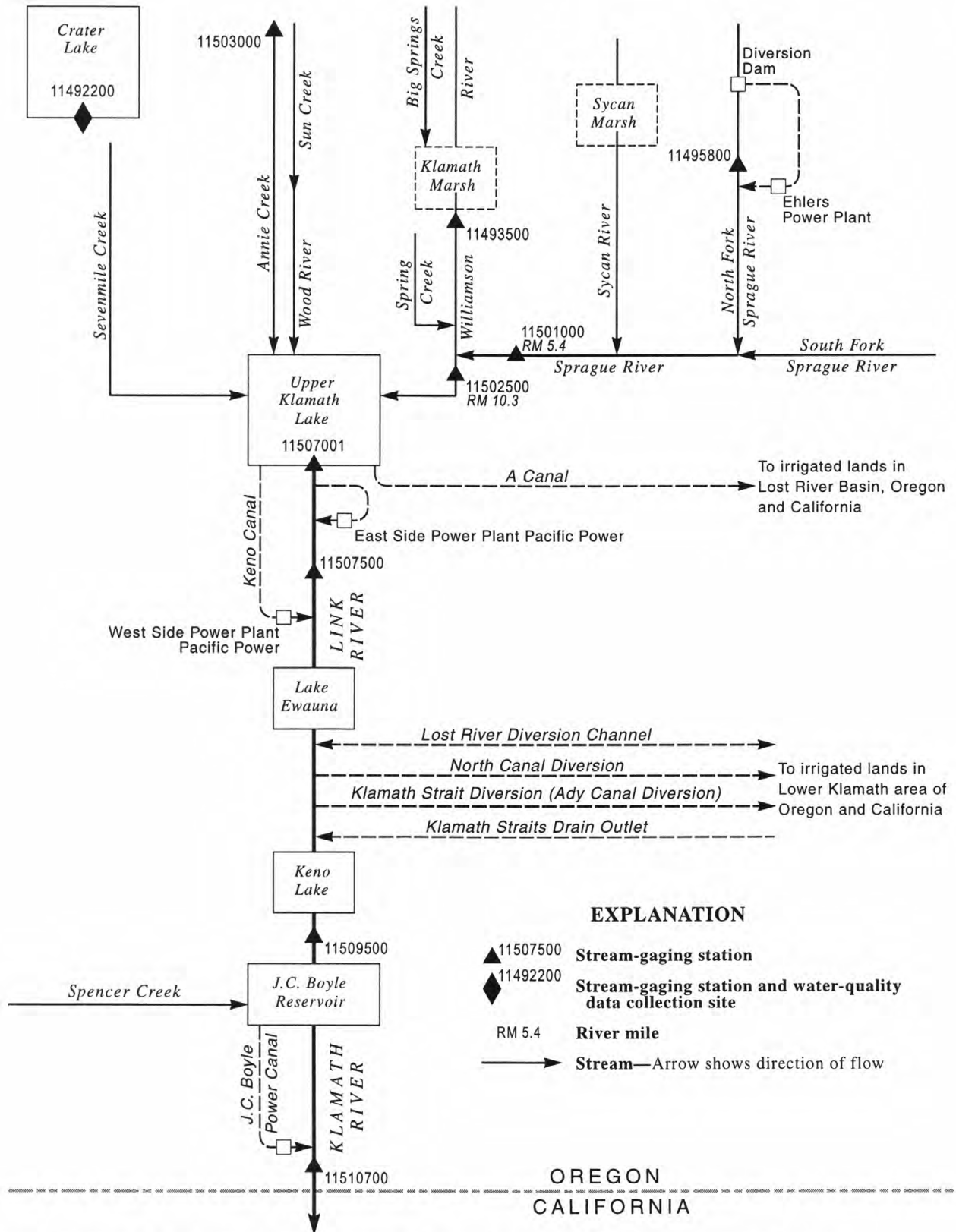


Figure 7. Schematic diagram showing gaging stations and major diversions in the Klamath Basin in Oregon.

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.

WATER-ELEVATION RECORDS

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

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 FOR CURRENT YEAR.--Maximum elevation, 6.175.28 ft Oct. 1; minimum elevation, 6.172.18 Sept. 30.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6175.24	6174.89	6174.61	6174.56	6174.22	6174.07	6174.07	6173.96	6173.88	6173.71	6173.23	6172.65
2	6175.23	6174.87	6174.60	6174.56	6174.24	6174.07	6174.06	6173.93	6173.87	6173.69	6173.20	6172.62
3	6175.21	6174.86	6174.59	6174.54	6174.27	6174.05	6174.05	6173.92	6173.85	6173.69	6173.18	6172.59
4	6175.19	6174.85	6174.58	6174.53	6174.26	6174.06	6174.03	6173.91	6173.85	6173.67	6173.16	6172.58
5	6175.17	6174.83	6174.56	6174.51	6174.24	6174.06	6174.03	6173.90	6173.85	6173.66	6173.14	6172.56
6	6175.16	6174.79	6174.55	6174.49	6174.23	6174.05	6174.05	6173.89	6173.83	6173.64	6173.12	6172.55
7	6175.15	6174.79	6174.54	6174.44	6174.20	6174.04	6174.05	6173.88	6173.82	6173.63	6173.11	6172.48
8	6175.13	6174.87	6174.54	6174.46	6174.20	6174.03	6174.03	6173.87	6173.81	6173.62	6173.10	6172.46
9	6175.12	6174.85	6174.51	6174.48	6174.19	6174.02	6174.01	6173.86	6173.80	6173.60	6173.09	6172.44
10	6175.11	6174.83	6174.49	6174.43	6174.17	6174.00	6174.02	6173.85	6173.78	6173.61	6173.07	6172.43
11	6175.09	6174.81	6174.50	6174.44	6174.18	6173.99	6174.03	6173.84	6173.82	6173.60	6173.06	6172.41
12	6175.07	6174.79	6174.48	6174.43	6174.17	6173.98	6174.02	6173.84	6173.79	6173.59	6173.04	6172.39
13	6175.05	6174.76	6174.62	6174.46	6174.14	6173.96	6174.00	6173.82	6173.77	6173.57	6173.02	6172.40
14	6175.03	6174.77	6174.68	6174.44	6174.13	6173.94	6173.99	6173.95	6173.75	6173.56	6173.01	6172.40
15	6175.01	6174.74	6174.70	6174.41	6174.11	6173.95	6173.96	6174.06	6173.75	6173.54	6172.99	6172.41
16	6174.99	6174.73	6174.71	6174.39	6174.08	6173.93	6173.95	6174.04	6173.73	6173.52	6172.98	6172.40
17	6174.96	6174.72	6174.69	6174.38	6174.08	6173.98	6173.95	6174.03	6173.71	6173.50	6172.95	6172.39
18	6174.94	6174.70	6174.68	6174.37	6174.07	6174.01	6173.97	6174.02	6173.70	6173.47	6172.92	6172.37
19	6174.92	6174.68	6174.66	6174.36	6174.06	6173.98	6173.98	6174.02	6173.68	6173.46	6172.90	6172.35
20	6175.04	6174.64	6174.63	6174.32	6174.07	6173.97	6173.97	6174.00	6173.67	6173.44	6172.88	6172.33
21	6175.00	6174.63	6174.66	6174.33	6174.10	6173.96	6173.95	6173.99	6173.66	6173.42	6172.85	6172.31
22	6174.96	6174.62	6174.68	6174.30	6174.13	6173.96	6173.94	6173.99	6173.64	6173.40	6172.83	6172.29
23	6174.95	6174.64	6174.70	6174.31	6174.10	6173.96	6173.93	6173.98	6173.63	6173.38	6172.82	6172.27
24	6174.93	6174.61	6174.69	6174.30	6174.10	6173.97	6173.92	6173.97	6173.61	6173.36	6172.79	6172.25
25	6174.91	6174.62	6174.67	6174.31	6174.09	6173.99	6173.91	6173.97	6173.60	6173.35	6172.77	6172.28
26	6174.90	6174.61	6174.66	6174.30	6174.07	6173.97	6173.90	6173.96	6173.71	6173.34	6172.76	6

KLAMATH RIVER BASIN

47

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; 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, 17.4°C Aug. 17; minimum, 2.7°C Feb. 13.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	12.5	12.1	12.3	8.4	8.2	8.3	5.7	5.6	5.7	4.3	4.2	4.3
2	12.3	12.1	12.2	8.4	8.2	8.3	5.7	5.6	5.6	4.4	4.2	4.3
3	12.2	11.9	12.0	8.5	8.2	8.3	5.6	5.6	5.6	4.3	4.2	4.3
4	12.1	11.9	12.0	8.3	8.0	8.2	5.6	5.5	5.6	4.3	4.2	4.2
5	12.0	11.8	11.9	8.0	7.9	8.0	5.6	5.5	5.6	4.3	4.2	4.2
6	11.8	11.6	11.7	8.0	7.8	7.9	5.6	5.5	5.6	4.3	4.2	4.3
7	11.9	11.7	11.8	7.9	7.8	7.8	5.6	5.5	5.5	4.3	4.1	4.2
8	12.0	11.8	11.9	7.8	7.5	7.7	5.5	5.4	5.5	4.2	4.1	4.1
9	11.9	11.6	11.8	7.5	7.3	7.4	5.4	5.3	5.4	4.1	4.0	4.1
10	11.6	11.2	11.5	7.3	7.1	7.2	5.4	5.2	5.3	4.1	4.0	4.0
11	11.3	11.1	11.1	7.2	7.1	7.1	5.3	5.2	5.3	4.2	4.0	4.1
12	11.1	10.7	10.9	7.1	6.9	7.0	5.3	5.2	5.2	4.1	4.0	4.0
13	10.8	10.6	10.7	6.9	6.8	6.9	5.2	4.9	5.1	4.1	3.9	4.0
14	10.7	10.5	10.6	6.8	6.7	6.7	5.0	4.9	5.0	4.0	3.9	3.9
15	10.7	10.5	10.6	6.8	6.6	6.7	4.9	4.8	4.8	3.9	3.8	3.9
16	10.6	10.3	10.5	6.7	6.5	6.6	4.8	4.6	4.8	3.9	3.8	3.8
17	10.5	10.3	10.5	6.6	6.4	6.6	4.7	4.5	4.6	4.0	3.8	3.9
18	10.3	10.2	10.3	6.6	6.4	6.5	4.7	4.6	4.6	4.0	4.0	4.0
19	10.3	10.1	10.2	6.5	6.4	6.5	4.7	4.5	4.6	4.0	3.9	4.0
20	10.2	10.0	10.1	6.5	6.4	6.4	4.6	4.5	4.6	4.0	3.8	3.9
21	10.0	9.8	9.9	6.4	6.3	6.4	4.6	4.4	4.5	3.9	3.8	3.9
22	9.8	9.4	9.6	6.4	6.3	6.3	4.5	4.4	4.4	4.0	3.8	3.8
23	9.6	9.2	9.4	6.3	6.1	6.2	4.5	4.3	4.4	3.9	3.8	3.8
24	9.4	9.2	9.3	6.2	6.1	6.2	4.4	4.3	4.3	3.9	3.7	3.8
25	9.2	9.1	9.2	6.2	6.0	6.1	4.4	4.3	4.4	3.8	3.7	3.7
26	9.2	9.0	9.1	6.0	6.0	6.0	4.4	4.3	4.4	3.8	3.5	3.6
27	9.1	8.9	9.0	6.0	5.9	6.0	4.4	4.3	4.4	3.7	3.4	3.6
28	8.9	8.7	8.8	6.0	5.9	5.9	4.4	4.3	4.4	3.7	3.6	3.7
29	8.7	8.4	8.5	5.9	5.7	5.8	4.4	4.4	4.4	3.8	3.6	3.7
30	8.6	8.3	8.4	5.8	5.7	5.7	4.4	4.3	4.3	3.6	3.5	3.6
31	8.5	8.3	8.4	---	---	---	4.4	4.3	4.3	3.6	3.4	3.5
MONTH	12.5	8.3	10.5	8.5	5.7	6.9	5.7	4.3	4.9	4.4	3.4	3.9

KLAMATH RIVER BASIN

11492200 CRATER LAKE NEAR CRATER LAKE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	3.7	3.5	3.6	3.3	3.0	3.2	3.7	3.5	3.6	3.9	3.6	3.7
2	3.7	3.6	3.7	3.4	3.2	3.3	3.6	3.5	3.5	3.8	3.4	3.6
3	3.7	3.6	3.7	3.3	2.9	3.0	3.6	3.5	3.5	4.0	3.5	3.7
4	3.8	3.5	3.6	3.0	2.8	2.9	3.6	3.4	3.5	4.0	3.9	3.9
5	3.7	3.5	3.6	3.1	3.0	3.0	3.8	3.5	3.6	4.2	3.6	3.9
6	3.6	3.4	3.5	3.3	2.9	3.1	3.6	3.4	3.5	4.1	3.8	4.0
7	3.4	3.2	3.3	3.3	3.1	3.2	3.5	3.2	3.3	4.0	3.8	4.0
8	3.5	3.4	3.4	3.3	3.1	3.2	3.7	3.3	3.5	4.3	4.0	4.1
9	3.5	3.4	3.5	3.3	3.1	3.2	3.6	3.4	3.5	4.5	4.1	4.3
10	3.4	3.3	3.4	3.4	3.1	3.2	3.6	3.5	3.5	5.1	4.5	4.8
11	3.3	3.0	3.2	3.5	3.1	3.3	3.6	3.4	3.5	5.3	4.8	5.1
12	3.2	2.8	3.0	3.5	3.2	3.4	3.7	3.4	3.5	6.5	5.0	5.7
13	3.1	2.7	2.9	3.7	3.3	3.5	3.7	3.5	3.5	6.7	5.0	5.8
14	3.2	2.9	3.0	3.6	3.3	3.4	3.6	3.4	3.5	5.0	4.0	4.3
15	3.2	2.8	3.1	3.6	3.3	3.5	3.6	3.4	3.5	4.7	4.1	4.5
16	3.2	2.8	3.1	3.4	3.3	3.3	3.5	3.3	3.4	4.6	4.2	4.4
17	3.1	2.9	3.0	3.4	3.3	3.3	3.6	3.4	3.5	5.0	4.5	4.8
18	3.2	3.0	3.1	3.5	3.3	3.3	3.5	3.4	3.5	5.1	4.5	4.7
19	3.1	3.0	3.1	3.5	3.3	3.4	3.7	3.4	3.5	5.2	4.6	4.9
20	3.1	3.0	3.1	3.5	3.3	3.4	3.7	3.5	3.6	5.5	5.0	5.3
21	3.2	3.1	3.1	3.6	3.3	3.5	3.6	3.4	3.5	5.3	4.9	5.1
22	3.2	3.0	3.1	3.7	3.5	3.6	3.7	3.5	3.6	5.4	5.2	5.3
23	3.2	2.9	3.1	3.8	3.5	3.6	3.7	3.5	3.6	5.7	5.2	5.4
24	3.3	3.0	3.2	3.6	3.4	3.4	3.8	3.7	3.8	5.9	5.2	5.6
25	3.3	3.1	3.2	3.5	3.4	3.4	3.9	3.7	3.8	8.2	5.6	7.4
26	3.2	2.9	3.1	3.6	3.4	3.5	4.0	3.7	3.8	7.8	6.4	7.3
27	3.2	2.9	3.1	3.6	3.4	3.5	4.0	3.7	3.9	8.8	6.1	7.4
28	3.1	3.0	3.1	3.8	3.4	3.5	3.8	3.6	3.7	9.1	8.1	8.6
29	---	---	---	3.6	3.4	3.5	3.7	3.5	3.6	8.7	7.8	8.4
30	---	---	---	3.6	3.4	3.5	3.7	3.6	3.6	7.8	7.1	7.4
31	---	---	---	3.7	3.5	3.5	---	---	---	7.1	6.6	6.9
MONTH	3.8	2.7	3.2	3.8	2.8	3.3	4.0	3.2	3.6	9.1	3.4	5.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	7.0	6.6	6.8	10.4	9.2	10.1	14.3	13.6	13.9	15.8	15.3	15.6
2	7.7	6.9	7.3	10.4	9.8	10.1	14.1	13.6	13.9	15.5	15.1	15.3
3	7.6	7.2	7.4	10.2	9.7	10.0	14.0	13.7	13.9	15.4	15.1	15.3
4	7.4	6.8	7.2	10.2	10.0	10.1	13.9	13.7	13.8	15.2	14.9	15.1
5	7.2	6.8	7.0	12.2	10.0	11.5	13.9	13.6	13.8	15.1	14.7	14.8
6	7.5	7.1	7.3	13.1	10.8	12.4	14.0	13.7	13.9	14.7	14.4	14.6
7	7.6	7.2	7.4	12.4	10.8	11.6	14.3	13.9	14.1	14.7	14.3	14.5
8	7.6	7.3	7.5	13.1	10.7	12.0	14.7	14.1	14.4	14.7	14.2	14.3
9	8.4	7.0	7.8	13.3	11.7	12.6	14.8	14.4	14.6	14.5	14.1	14.3
10	8.5	7.6	8.1	12.9	10.6	11.8	15.5	14.5	14.9	14.3	14.1	14.2
11	7.9	7.5	7.7	12.5	11.9	12.3	15.7	14.5	15.3	14.4	14.1	14.2
12	7.6	7.2	7.4	12.8	12.3	12.6	16.7	15.0	16.0	14.3	14.2	14.2
13	7.5	7.0	7.2	12.9	11.5	12.4	16.0	15.2	15.6	14.3	14.1	14.2
14	7.3	6.9	7.1	13.3	11.6	12.8	15.7	15.2	15.5	14.3	14.0	14.2
15	8.1	7.1	7.6	14.3	12.3	13.6	16.6	15.5	16.0	14.4	14.1	14.3
16	8.1	7.3	7.7	14.0	13.6	13.9	16.6	15.5	16.1	14.4	14.0	14.2
17	8.9	7.5	8.2	14.0	13.8	13.8	17.4	16.4	16.9	14.4	14.1	14.3
18	8.8	7.9	8.4	13.8	12.9	13.5	17.0	16.3	16.8	14.5	14.1	14.3
19	8.7	8.1	8.4	13.3	12.8	13.1	16.3	15.7	15.9	14.5	14.0	14.3
20	9.0	8.2	8.7	13.5	13.0	13.4	16.1	15.7	15.9	14.5	14.3	14.4
21	9.0	8.4	8.7	13.6	13.3	13.5	16.0	15.6	15.8	14.7	14.1	14.4
22	10.2	8.7	9.7	13.5	12.9	13.2	15.8	15.4	15.7	14.5	14.3	14.4
23	11.7	9.7	11.0	13.4	12.6	13.1	15.4	14.9	15.1	14.6	14.3	14.5
24	11.0	9.5	10.6	13.6	12.4	13.4	15.0	14.7	14.9	14.5	14.3	14.4
25	9.8	9.3	9.5	13.6	12.3	13.2	15.1	14.8	15.0	14.3	13.8	14.0
26	9.5	9.2	9.4	14.2	13.3	13.9	14.9	14.6	14.7	13.8	13.5	13.6
27	9.2	9.0	9.2	14.6	13.8	14.2	15.1	14.6	14.9	13.5	13.2	13.4
28	9.2	8.8	9.0	15.0	13.6	14.2	15.1	14.6	14.9	13.3	13.0	13.1
29	8.9	8.6	8.7	15.0	14.2	14.6	15.0	14.8	14.9	13.2	12.9	13.1
30	9.4	8.6	9.1	14.5	14.0	14.2	15.5	14.9	15.2	13.3	12.9	13.1
31	---	---	---	14.0	13.6	13.8	16.1	15.2	15.7	---	---	---
MONTH	11.7	6.6	8.2	15.0	9.2	12.7	17.4	13.6	15.1	15.8	12.9	14.3

YEAR	17.4	2.7	7.7
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KLAMATH RIVER BASIN

49

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 mi², 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 sea level. 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.--44 years (water years 1955-95, 1999-2001), 185 ft³/s, 134,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 1,590 ft³/s Mar. 13, 1910, gage height, 3.7 ft, site and datum then in use, from rating curve extended above 800 ft³/s; maximum gage height, 5.75 ft Mar. 3, 1958; no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 416 ft³/s Mar. 24, 29, gage height, 4.61 ft; minimum discharge, no flow July 21 to Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	107	127	150	e125	214	387	247	80	23	.00	.00
2	6.3	110	127	150	e120	229	378	253	77	20	.00	.00
3	7.5	113	129	149	e120	235	380	248	79	17	.00	.00
4	9.7	109	130	148	e130	242	379	238	74	13	.00	.00
5	12	113	130	148	e140	253	367	234	70	11	.00	.00
6	13	118	131	150	e150	263	358	232	72	9.4	.00	.00
7	15	120	131	150	e155	270	357	227	72	7.2	.00	.00
8	16	119	131	151	e155	276	348	222	69	5.9	.00	.00
9	20	123	130	152	e150	292	350	219	66	5.1	.00	.00
10	25	127	130	152	e145	303	337	214	63	4.7	.00	.00
11	30	129	132	154	e140	313	331	207	61	3.2	.00	.00
12	31	129	130	154	e135	320	320	196	62	2.0	.00	.00
13	36	129	132	154	e130	323	317	191	60	1.2	.00	.00
14	40	131	134	152	e130	335	316	183	55	.76	.00	.00
15	43	131	133	152	e135	341	312	182	54	.32	.00	.00
16	46	130	134	152	e140	353	300	181	51	.25	.00	.00
17	49	129	135	152	e145	357	294	180	49	.12	.00	.00
18	52	127	136	152	e150	368	300	182	50	.09	.00	.00
19	56	126	136	152	e155	377	303	178	49	.09	.00	.00
20	59	125	138	150	e160	387	302	175	47	.02	.00	.00
21	68	125	140	148	e165	396	301	169	44	.00	.00	.00
22	72	123	141	147	176	402	293	161	41	.00	.00	.00
23	74	121	146	145	183	409	290	144	37	.00	.00	.00
24	76	122	147	144	187	402	289	129	34	.00	.00	.00
25	79	120	147	e140	193	398	285	120	35	.00	.00	.00
26	82	121	147	e135	198	403	278	112	34	.00	.00	.00
27	82	121	149	e135	202	405	267	103	29	.00	.00	.00
28	84	123	150	e130	206	400	258	94	32	.00	.00	.00
29	93	121	150	e130	---	408	256	94	28	.00	.00	.00
30	100	125	150	e125	---	406	242	91	24	.00	.00	.00
31	104	---	150	e125	---	395	---	86	---	.00	.00	---
TOTAL	1484.4	3667	4253	4528	4320	10475	9495	5492	1598	124.35	0.00	0.00
MEAN	47.9	122	137	146	154	338	316	177	53.3	4.01	.000	.000
MAX	104	131	150	154	206	409	387	253	80	23	.00	.00
MIN	3.9	107	127	125	120	214	242	86	24	.00	.00	.00
AC-FT	2940	7270	8440	8980	8570	20780	18830	10890	3170	247	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 2001, BY WATER YEAR (WY)

	MEAN	42.1	120	220	223	292	430	445	262	124	44.9	14.6	12.9
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	1958
MIN	.000	.000	.000	.000	.000	58.6	22.3	7.35	.000	.000	.000	.000	.000
(WY)	1962	1965	1991	1992	1993	1994	1992	1992	1992	1981	1961	1960	1960

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1955 - 2001

ANNUAL TOTAL	80325.70	45436.75	185	
ANNUAL MEAN	219	124	468	1956
HIGHEST ANNUAL MEAN			7.84	1992
LOWEST ANNUAL MEAN				
HIGHEST DAILY MEAN	599	Mar 5	1250	Mar 1 1958
LOWEST DAILY MEAN	.36	Sep 2	.00	Jul 23 1960
ANNUAL SEVEN-DAY MINIMUM	.58	Aug 28	.00	Jul 23 1960
ANNUAL RUNOFF (AC-FT)	159300	90120	134100	
10 PERCENT EXCEEDS	532	307	481	
50 PERCENT EXCEEDS	140	125	110	
90 PERCENT EXCEEDS	2.9	.00	.00	

e Estimated

KLAMATH RIVER BASIN

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 mi².

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

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

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

AVERAGE DISCHARGE.--8 years (water years 1994-2001), 74.2 ft³/s, 53,730 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,180 ft³/s Apr. 24, 1996, gage height, 7.12 ft; minimum discharge, 12 ft³/s Dec. 10, 1993.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 181 ft³/s May 15, gage height, 5.20 ft; minimum discharge, 18 ft³/s Oct. 15, Apr. 3, 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	30	42	40	40	36	43	38	36	38	32	30
2	29	29	42	42	42	37	31	35	35	37	32	30
3	29	29	44	41	42	34	26	35	34	37	32	30
4	27	29	43	42	42	40	35	36	34	37	32	30
5	27	30	42	41	42	38	37	36	35	36	32	30
6	27	29	43	41	40	38	35	35	35	35	31	30
7	27	31	43	41	37	40	35	32	35	35	29	30
8	27	31	42	43	39	38	36	31	36	34	30	30
9	26	32	46	41	43	36	44	36	35	34	30	30
10	26	39	37	41	42	39	36	47	35	35	30	30
11	26	44	31	42	41	38	35	37	35	36	29	29
12	26	40	33	38	39	39	36	37	34	36	29	30
13	26	43	33	40	39	40	35	37	35	34	29	34
14	26	46	34	42	41	39	36	41	35	35	29	31
15	23	46	41	42	41	39	35	127	35	38	29	31
16	24	42	44	40	40	38	36	92	35	35	29	31
17	26	40	44	38	40	39	41	43	35	34	29	30
18	26	42	40	41	40	36	39	32	37	34	29	30
19	28	43	43	43	40	35	36	41	40	34	29	30
20	30	46	44	41	41	34	33	39	40	35	29	30
21	29	46	44	42	35	35	35	37	39	34	29	30
22	30	44	43	42	35	43	36	37	39	34	29	30
23	30	43	43	41	36	55	39	37	38	33	30	30
24	29	46	42	42	36	44	43	37	38	33	31	30
25	30	44	38	41	38	68	47	37	39	33	30	33
26	29	46	41	40	35	37	41	37	42	32	30	32
27	29	45	42	40	36	33	40	37	53	32	30	31
28	30	45	42	37	35	66	53	36	46	32	30	31
29	29	47	41	42	---	53	38	35	41	33	30	31
30	29	45	41	38	---	71	38	36	39	35	30	30
31	30	---	41	39	---	45	---	37	---	33	30	---
TOTAL	854	1192	1269	1264	1097	1303	1130	1290	1125	1073	929	914
MEAN	27.5	39.7	40.9	40.8	39.2	42.0	37.7	41.6	37.5	34.6	30.0	30.5
MAX	30	47	46	43	43	71	53	127	53	38	32	34
MIN	23	29	31	37	35	33	26	31	34	32	29	29
AC-FT	1690	2360	2520	2510	2180	2580	2240	2560	2230	2130	1840	1810

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2001, BY WATER YEAR (WY)

	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	37.0	41.3	44.0	57.4	43.6	54.5	147	238
MAX	51.2	75.7	81.4	211	83.1	91.4	271	425
(WY)	1997	1997	1996	1997	1996	1998	2000	1999
MIN	27.5	29.5	29.7	32.4	30.3	33.5	37.7	41.6
(WY)	2001	1995	2000	2000	1999	1999	2001	2001

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1994 - 2001
ANNUAL TOTAL	25412	13440	
ANNUAL MEAN	69.4	36.8	74.2
HIGHEST ANNUAL MEAN			93.4
LOWEST ANNUAL MEAN			36.8
HIGHEST DAILY MEAN	339	127	735
LOWEST DAILY MEAN	22	23	16
ANNUAL SEVEN-DAY MINIMUM	22	25	22
ANNUAL RUNOFF (AC-FT)	50400	26660	53730
10 PERCENT EXCEEDS	210	43	205
50 PERCENT EXCEEDS	33	36	37
90 PERCENT EXCEEDS	24	29	29

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.

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."

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

AVERAGE DISCHARGE.--80 years (water years 1922-2001), 586 ft³/s, 424,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,900 ft³/s Dec. 26, 1964, gage height, 10.37 ft; minimum daily discharge, 50 ft³/s May 26, 1926.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 606 ft³/s Mar. 27, 28, gage height, 2.22 ft; minimum discharge, 97 ft³/s Sept. 7, 8.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	260	349	365	329	315	352	528	405	189	196	180	160
2	257	342	362	326	318	349	506	399	192	179	169	147
3	252	341	350	326	332	347	501	402	186	158	166	143
4	247	352	343	327	351	357	486	373	185	148	151	136
5	249	342	342	328	358	350	462	360	197	144	137	124
6	249	339	340	335	363	351	441	347	199	139	142	116
7	262	334	337	333	356	357	440	325	201	133	121	104
8	271	344	334	334	339	356	444	301	208	141	106	104
9	285	347	338	339	324	359	446	286	206	133	114	116
10	295	349	340	347	327	368	435	287	207	140	128	120
11	304	352	350	346	346	365	415	284	192	160	154	128
12	321	349	344	344	341	364	409	274	173	187	179	133
13	354	339	336	351	333	360	407	269	178	200	188	151
14	349	339	354	345	322	361	403	260	174	186	173	156
15	329	342	357	332	315	374	403	311	177	178	152	185
16	321	349	348	e320	323	393	386	334	171	158	154	195
17	326	342	352	e310	330	393	382	426	164	161	146	204
18	336	330	343	e320	338	378	380	484	166	201	131	196
19	332	318	341	330	340	373	395	400	174	180	118	197
20	333	318	319	329	347	383	457	361	172	167	115	192
21	339	329	336	348	351	459	492	319	168	157	118	189
22	344	342	353	337	361	493	491	284	152	153	117	180
23	354	344	358	340	365	478	467	261	146	157	120	182
24	341	341	360	346	365	504	440	244	145	156	128	180
25	332	338	353	353	368	531	432	234	151	139	149	184
26	330	347	341	357	363	538	424	217	146	130	145	186
27	334	346	322	345	359	573	417	209	167	128	137	209
28	349	349	324	339	358	586	403	239	191	121	132	253
29	351	356	336	334	---	543	404	241	203	109	138	247
30	360	358	331	318	---	547	423	219	211	110	152	243
31	360	---	329	326	---	551	---	197	---	152	158	---
TOTAL	9726	10267	10638	10394	9608	13093	13119	9552	5391	4801	4418	5060
MEAN	314	342	343	335	343	422	437	308	180	155	143	169
MAX	360	358	365	357	368	586	528	484	211	201	188	253
MIN	247	318	319	310	315	347	380	197	145	109	106	104
AC-FT	19290	20360	21100	20620	19060	25970	26020	18950	10690	9520	8760	10040

MEAN	295	345	468	541	694	950	1272	1147	615	280	217	236
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	125
(WY)	1934	1995	1933	1937	1933	1992	1977	1992	1992	1994	1992	1992

ANNUAL TOTAL	206654			106067					
ANNUAL MEAN	565			291				586	
HIGHEST ANNUAL MEAN								1395	1956
LOWEST ANNUAL MEAN								199	1992
HIGHEST DAILY MEAN	2510	Apr 23		586	Mar 28		14500		Dec 26 1964
LOWEST DAILY MEAN	130	Aug 6		104	Sep 7		50		May 26 1926
ANNUAL SEVEN-DAY MINIMUM	139	Aug 2		116	Sep 5		65		Aug 5 1992
ANNUAL RUNOFF (AC-FT)	409900			210400			424300		
10 PERCENT EXCEEDS				1160				130	
50 PERCENT EXCEEDS				349				345	
90 PERCENT EXCEEDS				182				200	

e Estimated

KLAMATH RIVER BASIN

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 mi², 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 sea level. 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.--83 years (water years 1918-22, 1924-2001), 1,048 ft³/s, 759,600 acre-ft/yr, includes monthly data published in WSP 1315-B.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,100 ft³/s Jan. 5, 1997, gage height, 10.27 ft; minimum discharge, 285 ft³/s Aug. 6, 8, 9, 1994.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,310 ft³/s Mar. 27, 28, gage height, 4.52 ft; minimum discharge, 361 ft³/s Aug. 8, 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	567	769	796	776	746	853	1200	903	519	499	464	419
2	572	769	796	773	747	864	1160	901	515	474	437	413
3	568	772	785	770	760	865	1160	907	510	446	428	405
4	561	779	778	772	783	881	1140	878	517	434	417	403
5	558	770	777	772	798	884	1120	851	526	422	401	390
6	559	770	776	780	815	891	1090	831	531	417	405	386
7	572	772	773	779	805	899	1080	801	540	408	390	382
8	586	780	769	782	785	905	1070	772	553	415	367	374
9	615	786	772	786	775	919	1070	754	548	411	370	389
10	635	790	771	797	774	945	1050	749	551	416	381	389
11	639	795	786	797	796	958	1020	742	519	438	401	402
12	656	792	780	796	786	966	1000	723	493	456	424	405
13	690	781	780	803	776	970	995	706	493	472	430	428
14	696	785	794	796	763	977	987	692	485	479	421	434
15	681	783	798	782	756	1000	984	747	484	462	400	469
16	675	788	784	776	762	1030	965	761	476	427	400	482
17	682	781	790	759	769	1040	932	845	468	426	395	491
18	695	769	776	768	777	1030	937	913	469	464	381	485
19	697	755	783	771	783	1040	951	834	472	450	370	484
20	714	753	762	768	797	1050	1010	787	470	439	367	480
21	719	763	776	790	804	1130	1050	745	463	427	368	475
22	725	770	797	776	823	1170	1050	704	451	423	369	465
23	740	772	806	779	834	1170	1020	665	444	424	374	464
24	733	769	809	788	836	1190	993	629	441	424	375	463
25	728	768	802	789	844	1220	972	607	447	412	397	475
26	728	772	791	799	846	1220	956	583	451	399	399	469
27	732	772	775	780	850	1260	942	567	466	395	393	482
28	764	777	769	772	850	1280	920	576	479	387	390	523
29	762	790	787	772	---	1230	911	578	489	380	398	532
30	773	788	782	747	---	1230	926	558	501	380	409	530
31	775	---	777	755	---	1230	---	536	---	430	417	---
TOTAL	20797	23280	24297	24150	22240	32297	30661	22845	14771	13336	12338	13388
MEAN	671	776	784	779	794	1042	1022	737	492	430	398	446
MAX	775	795	809	803	850	1280	1200	913	553	499	464	532
MIN	558	753	762	747	746	853	911	536	441	380	367	374
AC-FT	41250	46180	48190	47900	44110	64060	60820	45310	29300	26450	24470	26560

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1918 - 2001, BY WATER YEAR (WY)

	MEAN	652	760	944	1019	1247	1622	1979	1664	1008	609	536	563
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1918 - 2001

ANNUAL TOTAL	389793	254400	
ANNUAL MEAN	1065	697	1048
HIGHEST ANNUAL MEAN			2187
LOWEST ANNUAL MEAN			483
HIGHEST DAILY MEAN	3040	1280	16000
LOWEST DAILY MEAN	447	367	288
ANNUAL SEVEN-DAY MINIMUM	462	372	294
ANNUAL RUNOFF (AC-FT)	773200	504600	759600
10 PERCENT EXCEEDS	1880	985	2000
50 PERCENT EXCEEDS	789	764	750
90 PERCENT EXCEEDS	503	405	506

KLAMATH RIVER BASIN

53

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 sea level (National Park Service bench mark).

REMARKS.--No estimated daily discharges. Records good. 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.--24 years (water years 1978-2001), 2.89 ft³/s, 2,090 acre-ft/yr, adjusted for diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18 ft³/s July 6, 1984, gage height, 1.56 ft; minimum daily discharge, 0.28 ft³/s Mar. 2-5, 1993.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3.1 ft³/s May 25-28, gage height, 3.02 ft; minimum daily discharge, 0.38 ft³/s Sept. 25, 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	1.6	1.4	1.2	.98	.85	1.0	1.1	2.8	1.4	.98	.73
2	1.9	1.6	1.4	1.2	.97	.85	1.0	1.1	2.7	1.4	.97	.73
3	1.8	1.6	1.4	1.1	.97	.83	1.0	1.2	2.7	1.3	.95	.74
4	1.9	1.6	1.4	1.1	.96	.82	1.0	1.2	2.6	1.3	.92	.68
5	1.9	1.6	1.3	1.1	.95	.83	1.0	1.2	2.6	1.3	.91	.70
6	1.8	1.6	1.3	1.1	.94	.82	1.0	1.3	2.5	1.3	.93	.68
7	1.7	1.6	1.3	1.1	.93	.82	1.0	1.3	2.4	1.3	.89	.66
8	1.8	1.5	1.3	1.1	.94	.82	1.0	1.4	2.3	1.3	.89	.68
9	1.9	1.5	1.3	1.1	.94	.80	1.0	1.5	2.3	1.3	.88	.68
10	1.8	1.5	1.3	1.1	.93	.80	1.0	1.6	2.2	1.3	.87	.66
11	1.8	1.5	1.3	1.1	.92	.80	.99	1.7	2.1	1.3	.86	.69
12	1.8	1.5	1.3	1.1	.92	.78	.97	1.8	2.1	1.2	.84	.69
13	1.8	1.5	1.3	1.1	.94	.77	.94	1.9	2.0	1.2	.85	.62
14	1.7	1.5	1.3	1.1	.93	.77	.94	2.1	2.0	1.2	.83	.66
15	1.8	1.5	1.3	1.1	.93	.77	.94	2.2	1.9	1.2	.84	.66
16	1.7	1.5	1.3	1.1	.90	.77	.91	2.4	1.9	1.1	.83	.63
17	1.7	1.5	1.3	1.1	.90	.79	.89	2.6	1.8	1.1	.84	.63
18	1.7	1.4	1.3	1.1	.91	.76	.88	2.8	1.7	1.1	.82	.61
19	1.7	1.4	1.3	1.1	.90	.77	.88	2.9	1.7	1.1	.80	.61
20	1.7	1.5	1.3	1.1	.88	.77	.88	2.9	1.7	1.1	.79	.62
21	1.7	1.5	1.2	1.1	.89	.77	.86	3.0	1.7	1.1	.80	.61
22	1.7	1.4	1.2	1.1	.88	.79	.84	3.0	1.6	1.1	.80	.60
23	1.7	1.4	1.2	1.0	.88	.80	.81	3.0	1.6	1.1	.79	.60
24	1.7	1.4	1.2	1.0	.88	.82	.82	3.0	1.6	1.0	.80	.60
25	1.7	1.4	1.2	1.0	.88	.84	.82	3.1	1.5	1.0	.82	.51
26	1.7	1.4	1.2	1.0	.88	.85	.85	3.1	1.5	1.1	.76	.49
27	1.7	1.4	1.2	1.0	.86	.87	.91	3.1	1.5	1.0	.77	.58
28	1.6	1.4	1.2	1.0	.85	.89	.97	3.1	1.5	1.0	.77	.60
29	1.7	1.4	1.2	1.0	---	.92	1.0	3.0	1.5	.96	.76	.58
30	1.7	1.4	1.2	.98	---	.93	1.1	3.0	1.4	1.0	.77	.58
31	1.6	---	1.2	.98	---	.98	---	2.9	---	.97	.73	---
TOTAL	54.3	44.6	39.6	33.36	25.64	25.45	28.20	69.5	59.4	36.13	26.06	19.11
MEAN	1.75	1.49	1.28	1.08	.92	.82	.94	2.24	1.98	1.17	.84	.64
MAX	1.9	1.6	1.4	1.2	.98	.98	1.1	3.1	2.8	1.4	.98	.74
MIN	1.6	1.4	1.2	.98	.85	.76	.81	1.1	1.4	.96	.73	.49
AC-FT	108	88	79	66	51	50	56	138	118	72	52	38
MEAN†	1.81	1.50	1.29	1.09	0.93	0.83	0.96	2.28	2.05	1.27	0.94	0.75
AC-FT†	111	89	79	67	51	51	57	140	122	78	58	45

CAL YR 2000 TOTAL 1019.50 MEAN 2.79 MAX 8.7 MIN .86 AC-FT 2020 MEAN† 2.83 AC-FT† 2050
WTR YR 2001 TOTAL 461.35 MEAN 1.26 MAX 3.1 MIN .49 AC-FT 915 MEAN† 1.31 AC-FT† 949

† Adjusted for diversion by pumping.

KLAMATH RIVER BASIN

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 mi², approximately, including 26.2 mi² 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 sea level, 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, 4,143.15 ft May 1; minimum weighted daily, 4,139.49 ft Oct. 9.

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 (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4139.57	4139.74	4140.40	4140.91	4141.34	4141.92	4142.90	4143.15	4142.64	4141.62	4141.04	4139.71
2	4139.59	4139.76	4140.43	4140.92	4141.44	4142.00	4142.92	4143.14	4142.61	4141.61	4140.98	4139.68
3	4139.58	4139.78	4140.45	4140.92	4141.37	4142.02	4142.94	4143.10	4142.56	4141.59	4140.93	4139.68
4	4139.58	4139.79	4140.47	4140.93	4141.41	4141.98	4142.96	4143.09	4142.49	4141.58	4140.88	4139.67
5	4139.56	4139.81	4140.49	4140.93	4141.44	4142.05	4142.96	4143.09	4142.45	4141.57	4140.82	4139.65
6	4139.54	4139.85	4140.52	4140.94	4141.52	4142.09	4142.98	4143.07	4142.42	4141.56	4140.78	4139.61
7	4139.52	4139.84	4140.54	4140.94	4141.52	4142.12	4143.03	4143.06	4142.38	4141.52	4140.74	4139.61
8	4139.50	4139.87	4140.56	4140.92	4141.48	4142.15	4142.99	4143.06	4142.35	4141.52	4140.68	4139.60
9	4139.49	4139.88	4140.59	4140.92	4141.49	4142.19	4143.03	4143.04	4142.32	4141.50	4140.63	4139.56
10	4139.53	4139.92	4140.60	4140.91	4141.52	4142.21	4143.02	4143.01	4142.27	4141.48	4140.56	4139.55
11	4139.52	4139.94	4140.63	4140.94	4141.54	4142.24	4143.09	4142.98	4142.23	4141.51	4140.50	4139.55
12	4139.50	4139.94	4140.66	4140.97	4141.60	4142.24	4143.05	4142.94	4142.23	4141.52	4140.44	4139.53
13	4139.51	4139.96	4140.63	4140.97	4141.65	4142.26	4143.07	4142.93	4142.16	4141.50	4140.38	4139.55
14	4139.52	4140.00	4140.66	4141.00	4141.64	4142.29	4143.06	4142.88	4142.13	4141.50	4140.34	4139.55
15	4139.53	4140.04	4140.73	4141.02	4141.63	4142.31	4143.05	4142.93	4142.10	4141.47	4140.30	4139.57
16	4139.53	4140.08	4140.75	4141.04	4141.64	4142.36	4143.02	4142.97	4142.06	4141.45	4140.24	4139.57
17	4139.54	4140.09	4140.80	4141.03	4141.62	4142.36	4143.07	4142.97	4142.04	4141.40	4140.17	4139.58
18	4139.54	4140.11	4140.81	4141.04	4141.68	4142.40	4143.12	4142.97	4142.00	4141.38	4140.11	4139.58
19	4139.56	4140.12	4140.82	4141.06	4141.70	4142.44	4143.12	4142.96	4141.98	4141.37	4140.05	4139.58
20	4139.56	4140.14	4140.83	4141.08	4141.72	4142.48	4143.13	4142.93	4141.94	4141.38	4139.99	4139.57
21	4139.63	4140.16	4140.83	4141.10	4141.72	4142.52	4143.15	4142.92	4141.90	4141.37	4139.92	4139.57
22	4139.64	4140.18	4140.82	4141.12	4141.78	4142.55	4143.13	4142.90	4141.86	4141.36	4139.86	4139.56
23	4139.62	4140.18	4140.85	4141.14	4141.82	4142.59	4143.12	4142.90	4141.83	4141.36	4139.82	4139.54
24	4139.60	4140.21	4140.88	4141.18	4141.83	4142.56	4143.13	4142.88	4141.80	4141.34	4139.82	4139.53
25	4139.60	4140.24	4140.89	4141.17	4141.88	4142.65	4143.13	4142.86	4141.76	4141.33	4139.82	4139.53
26	4139.63	4140.26	4140.90	4141.23	4141.94	4142.71	4143.13	4142.84	4141.68	4141.30	4139.81	4139.56
27	4139.61	4140.28	4140.90	4141.27	4141.95	4142.70	4143.12	4142.79	4141.62	4141.27	4139.80	4139.58
28	4139.60	4140.32	4140.90	4141.26	4141.94	4142.78	4143.14	4142.77	4141.68	4141.21	4139.79	4139.57
29	4139.67	4140.30	4140.90	4141.29	---	4142.82	4143.10	4142.74	4141.68	4141.16	4139.78	4139.58
30	4139.72	4140.38	4140.91	4141.30	---	4142.85	4143.10	4142.70	4141.64	4141.15	4139.75	4139.59
31	4139.73	---	4140.91	4141.32	---	4142.88	---	4142.66	---	4141.09	4139.73	---
MEAN	4139.57	4140.04	4140.71	4141.06	4141.64	4142.38	4143.06	4142.94	4142.09	4141.42	4140.27	4139.58
MAX	4139.73	4140.38	4140.91	4141.32	4141.95	4142.88	4143.15	4143.15	4142.64	4141.62	4141.04	4139.71
MIN	4139.49	4139.74	4140.40	4140.91	4141.34	4141.92	4142.90	4142.66	4141.62	4141.09	4139.73	4139.53
(†)	243000	290400	327900	360700	407800	488100	510100	467800	386000	340000	240000	234000
(‡)	+10400	+47400	+37500	+32800	+47100	+80300	+22000	-42300	-81800	-46000	-99800	-6200

CAL YR 2000 MEAN 4141.34 MAX 4143.44 MIN 4139.32 AC-FT† -36700
WTR YR 2001 MEAN 4141.23 MAX 4143.15 MIN 4139.49 AC-FT† +1400

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

‡ Change in contents, in acre-feet.

KLAMATH RIVER BASIN

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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 mi², approximately, including 26.2 mi² 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 sea level, 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.--No estimated daily discharges. 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 ft³/s, 1,154,000 acre-ft/yr, not adjusted for "A" Canal. 18 years (water years 1984-2001), 1,282 ft³/s, 928,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,400 ft³/s May 12, 1904, gage height at Main Street Bridge, 7.30 ft, datum then in use, from floodmarks; minimum daily discharge, 17 ft³/s Dec. 13, 1937.

EXTREMES FOR CURRENT YEAR.-- Maximum discharge, 2,500 ft³/s Aug. 9; minimum, 225 ft³/s July 18, result of regulation from Upper Klamath Lake, minimum daily, 498 ft³/s Mar. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	650	662	789	1130	690	532	549	890	1610	735	1620	888
2	990	607	724	1240	656	543	672	746	1540	634	1610	886
3	822	621	738	1180	689	562	688	1030	1530	622	1560	879
4	750	635	747	1150	625	524	776	974	1570	678	1550	801
5	769	633	571	1210	751	524	639	1110	1680	748	1610	763
6	777	612	525	1190	759	522	507	999	1750	888	1500	782
7	844	582	559	1170	753	655	836	1100	1750	703	1300	696
8	788	608	815	1220	783	815	719	1420	1730	730	1160	757
9	789	531	714	1440	622	667	738	1590	1560	757	1820	787
10	774	502	737	1610	532	687	798	1580	1580	765	1820	782
11	794	521	1090	1040	529	703	831	1580	1580	649	1530	771
12	819	699	1220	716	540	850	839	1590	1530	667	1560	825
13	808	790	955	1240	625	569	926	1540	1570	766	1570	716
14	812	734	529	863	637	564	850	1330	1550	773	1350	694
15	852	675	531	606	808	629	711	1140	1550	806	1390	642
16	925	768	525	724	830	623	627	1170	1370	885	1370	635
17	804	813	583	714	788	673	1190	1240	1300	862	1280	627
18	742	802	580	626	842	646	1110	1250	1270	776	1300	671
19	907	854	596	541	770	638	1190	1300	1330	906	1280	611
20	889	1010	672	695	751	522	1220	1300	1310	673	1240	724
21	837	1020	743	905	827	536	1220	981	1310	648	1160	734
22	1010	958	1010	615	723	498	1220	1120	1300	696	1170	756
23	869	882	1120	739	909	540	1210	1110	1150	767	927	747
24	778	883	1120	888	740	653	972	1240	1240	756	709	737
25	878	656	1110	591	916	637	1070	1240	1230	823	672	807
26	869	753	1130	849	791	535	1060	1260	1150	1040	706	701
27	805	703	1150	714	571	615	1030	1280	1190	1480	699	678
28	753	607	1200	744	542	587	1080	1280	1350	1400	876	622
29	598	582	1100	765	---	568	1110	1280	1270	1480	1020	611
30	770	573	1190	676	---	631	905	1360	1200	1640	924	607
31	690	---	1240	767	---	589	---	1480	---	1610	892	---
TOTAL	25162	21276	26313	28558	19999	18837	27293	38510	43050	27363	39175	21937
MEAN	812	709	849	921	714	608	910	1242	1435	883	1264	731
MAX	1010	1020	1240	1610	916	850	1220	1590	1750	1640	1820	888
MIN	598	502	525	541	529	498	507	746	1150	622	672	607
AC-FT	49910	42200	52190	56640	39670	37360	54140	76380	85390	54270	77700	43510

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2001, BY WATER YEAR (WY)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	959	1135	1343	1490	1613	2034	1887	1442	1107	831	815	744						
MAX	2125	3739	4075	5832	4797	5261	3801	3338	1998	1197	1264	1205						
(WY)	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1984 - 2001

ANNUAL TOTAL	503953	337473	
ANNUAL MEAN	1377	925	1282
HIGHEST ANNUAL MEAN			2200
LOWEST ANNUAL MEAN			547
HIGHEST DAILY MEAN	3650	1820	6920
LOWEST DAILY MEAN	160	498	95
ANNUAL SEVEN-DAY MINIMUM	163	536	96
ANNUAL RUNOFF (AC-FT)	999600	669400	928400
10 PERCENT EXCEEDS	2580	1480	2730
50 PERCENT EXCEEDS	1200	806	925
90 PERCENT EXCEEDS	572	585	417

KLAMATH RIVER BASIN

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 mi², 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 sea level (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.--81 years (water years 1905-13, 1930-2001), 1,647 ft³/s, 1,193,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,300 ft³/s Feb. 28, 1986, gage height, 12.82 ft, caused by regulation from Keno powerplant 0.9 mi upstream; minimum discharge, 26 ft³/s Sept. 23, 1956; minimum daily, 60 ft³/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 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,860 ft³/s June 6, 8, gage height, 6.63 ft; minimum discharge, 279 ft³/s Jan. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	903	911	839	918	837	788	817	1080	1740	875	633	708
2	905	909	838	916	788	849	817	1090	1750	747	633	703
3	979	909	837	919	786	1020	822	1180	1750	747	633	702
4	1040	909	834	919	788	1020	822	1290	1750	752	633	699
5	1030	909	737	902	842	1020	822	1290	1810	753	633	698
6	1030	909	605	895	885	1030	823	1290	1840	726	633	695
7	1020	911	732	895	893	1020	1270	1290	1840	658	637	693
8	1040	878	833	1150	847	1040	1290	1650	1830	657	757	694
9	1040	793	823	1290	735	1050	1260	1720	1750	660	715	698
10	1040	793	822	1340	702	1040	1270	1720	1740	702	658	698
11	1040	792	1480	1090	701	1040	1290	1720	1740	726	637	700
12	1050	788	1560	477	698	947	1280	1720	1730	766	637	701
13	1050	791	1180	914	698	831	1280	1720	1740	725	638	690
14	1060	793	841	921	792	841	1280	1480	1740	696	641	685
15	1060	793	840	919	875	839	997	1370	1740	800	641	685
16	1010	793	841	919	932	837	794	1440	1500	798	643	685
17	944	846	841	919	929	836	1410	1480	1430	803	646	685
18	900	895	840	916	922	834	1520	1490	1420	799	642	685
19	897	895	841	898	921	831	1520	1450	1420	742	643	689
20	898	1020	886	892	918	831	1520	1280	e1380	723	646	689
21	896	1100	909	891	987	831	1520	1290	e1350	726	646	689
22	901	1100	909	895	1030	831	1530	1290	e1450	726	643	689
23	901	924	911	892	1030	831	1460	1410	1410	733	637	689
24	900	897	914	890	1030	830	1340	1490	1410	672	643	752
25	899	836	915	888	1020	831	1340	1490	1410	633	662	697
26	902	793	915	885	1030	831	1340	1480	1410	630	676	652
27	903	798	916	883	1030	831	1340	1480	1400	628	676	630
28	907	806	916	880	923	831	1340	1490	1400	628	700	613
29	908	819	919	844	---	831	1340	1490	1400	628	729	600
30	905	831	916	869	---	819	1220	1490	1400	628	729	596
31	909	---	917	868	---	817	---	1620	---	629	722	---
TOTAL	29867	26141	28107	28694	24569	27658	36674	44770	47680	22116	20442	20489
MEAN	963	871	907	926	877	892	1222	1444	1589	713	659	683
MAX	1060	1100	1560	1340	1030	1050	1530	1720	1840	875	757	752
MIN	896	788	605	477	698	788	794	1080	1350	628	633	596
AC-FT	59240	51850	55750	56910	48730	54860	72740	88800	94570	43870	40550	40640

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1904 - 2001, BY WATER YEAR (WY)

	1379	1630	1884	2032	2207	2599	2311	1769	1177	841	943	1161
MEAN	1379	1630	1884	2032	2207	2599	2311	1769	1177	841	943	1161
MAX	3055	4673	5732	7702	7564	8197	6594	5258	7075	4177	2513	2214
(WY)	1957	1985	1984	1965	1965	1972	1956	1956	1904	1904	1904	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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1904 - 2001
ANNUAL TOTAL	544529	357207	
ANNUAL MEAN	1488	979	1647
HIGHEST ANNUAL MEAN			3582
LOWEST ANNUAL MEAN			340
HIGHEST DAILY MEAN	4200	Mar 10	9780
LOWEST DAILY MEAN	422	Jul 4	60
ANNUAL SEVEN-DAY MINIMUM	551	Jun 30	78
ANNUAL RUNOFF (AC-FT)	1080000	708500	1193000
10 PERCENT EXCEEDS	2850	1480	3240
50 PERCENT EXCEEDS	1030	895	1270
90 PERCENT EXCEEDS	621	658	421

e Estimated

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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.

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

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

REMARKS.--No estimated daily discharges. 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft³/s Feb. 21, 1996, gage height, 9.50 ft; minimum discharge, 283 ft³/s Feb. 17, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,120 ft³/s Nov. 7, Mar. 4, gage height, 5.92 ft; minimum discharge, 354 ft³/s Mar. 13-15, Apr. 16.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1180	1220	1040	1160	976	521	1150	1370	1940	859	830	950
2	1220	1160	1200	1250	1220	1310	1140	1320	1830	1100	843	938
3	1280	1210	1040	1140	1120	1230	900	1210	1920	963	878	935
4	1320	1150	1080	1220	1120	1180	1160	1630	1930	1270	907	940
5	1270	1130	1170	1170	1060	1340	1150	1530	2100	990	904	947
6	1310	1160	566	1200	1090	1220	1140	1450	2200	939	947	955
7	1340	1270	1200	1240	1100	1420	1290	1460	2190	946	835	927
8	1240	1270	1200	1330	1050	1420	1490	1930	1770	924	1070	936
9	1350	1030	1160	1530	1200	1140	1660	1980	2130	905	890	949
10	1350	1060	1090	1640	996	1260	1510	1890	1840	1030	924	945
11	1320	1060	1560	1630	996	1410	1530	2080	2040	968	916	950
12	1320	1080	1750	578	993	1280	1480	1860	2120	1040	858	958
13	1320	1060	1370	1130	611	1190	1530	2010	1790	985	926	967
14	1310	1070	1160	1030	1130	1080	1520	1760	1860	1040	940	927
15	1320	1060	1180	1300	1200	1070	1770	1770	2170	1040	847	949
16	1320	1020	1150	1230	1150	1150	564	1760	1410	882	884	936
17	1410	1200	1160	1140	1140	1160	1670	1760	1630	946	902	945
18	915	1260	1120	1150	1130	1150	1810	1750	1910	976	902	947
19	1480	908	984	1150	1140	1130	1780	1620	1660	1010	886	942
20	1260	1500	1200	1150	1210	1150	1770	1370	1660	1060	847	944
21	1110	1320	1200	1180	1660	1160	1780	1370	1640	1050	894	933
22	1110	1350	1130	1160	1250	1150	1780	1800	1710	967	957	936
23	1110	1360	1140	1180	1120	1140	1730	1740	1670	1030	951	909
24	1330	1030	1150	1160	1180	1140	1600	1700	1670	888	1040	824
25	1450	1110	1190	1120	1180	1130	1600	1710	1640	831	866	1030
26	667	1090	1180	1170	1320	1150	1660	1760	1660	833	828	854
27	1420	1150	1170	1140	1450	1140	1570	1750	1650	854	996	824
28	1240	1120	1190	1250	1500	1160	1590	1730	1660	838	932	832
29	1220	1070	1260	1050	---	1150	1580	1740	1650	975	931	847
30	1230	1130	1160	1220	---	1140	1790	1780	1690	872	933	863
31	1190	---	1210	1140	---	1150	---	1780	---	811	1040	---
TOTAL	38912	34608	36360	37138	32292	36421	44694	52370	54740	29822	28304	27739
MEAN	1255	1154	1173	1198	1153	1175	1490	1689	1825	962	913	925
MAX	1480	1500	1750	1640	1660	1420	1810	2080	2200	1270	1070	1030
MIN	667	908	566	578	611	521	564	1210	1410	81		

MEAN	1524	1888	2318	2502	2600	3057	2524	1817	999	687	898	1188
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

WATER YEARS 1960 - 2001

ANNUAL TOTAL	652054			453400					
ANNUAL MEAN	1782			1242				1830	
HIGHEST ANNUAL MEAN								3024	1984
LOWEST ANNUAL MEAN								564	1992
HIGHEST DAILY MEAN	4460	Mar	9	2200				10800	Mar 5 1972
LOWEST DAILY MEAN	566	Dec	6	521	Mar	1		302	Aug 30 1995
ANNUAL SEVEN-DAY MINIMUM	829	Jun	29	859	Jul	26		338	Aug 30 1992
ANNUAL RUNDOWN (AC-FT)	1293000			899300				1326000	
10 PERCENT EXCEEDS	3130			1760				3490	
50 PERCENT EXCEEDS	1340			1160				1320	
90 PERCENT EXCEEDS	872			902				618	

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.

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 sea level (levels by Pacific Corp., 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 ft³/s Dec. 22, 1964, gage height, 13.63 ft. from rating curve extended above 15,000 ft³/s, on basis of slope-area measurement of peak flow; minimum daily discharge, 389 ft³/s Aug. 25-28, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,280 ft³/s May 18, gage height, 4.28 ft; minimum daily discharge, 977 ft³/s July 2.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1320	1330	1290	1300	1290	1280	1300	1660	2070	1280	1010	1020
2	1320	1330	1290	1300	1290	1290	1300	1660	2100	977	1020	1030
3	1310	1340	1290	1290	1290	1280	1300	1660	2090	977	1020	1030
4	1320	1340	1300	1290	1300	1280	1300	1660	2110	981	1020	1030
5	1320	1340	1300	1290	1300	1290	1300	1660	2120	979	1020	1030
6	1330	1340	1290	1290	1300	1290	1370	1660	2110	981	1020	1020
7	1320	1340	1290	1290	1300	1280	1670	1660	2100	980	1020	1030
8	1330	1340	1290	1290	1300	1280	1670	1660	2100	979	1020	1020
9	1340	1340	1290	1290	1300	1280	1670	1660	2090	977	1030	1020
10	1330	1340	1290	1290	1300	1280	1670	1670	2090	981	1030	1030
11	1320	1330	1290	1290	1300	1280	1670	1690	2100	995	1030	1030
12	1320	1330	1290	1290	1300	1280	1670	1970	2100	1010	1030	1020
13	1320	1330	1290	1290	1300	1280	1670	2070	2100	1010	1030	1020
14	1320	1330	1290	1290	1300	1290	1680	2010	2100	1010	1030	1020
15	1320	1320	1290	1290	1300	1280	1680	1880	2110	1010	1030	1020
16	1320	1300	1290	1290	1300	1290	1670	1760	2010	1010	1020	1020
17	1330	1300	1290	1300	1300	1290	1670	1810	1750	1010	1020	1030
18	1330	1300	1290	1290	1300	1290	1680	1950	1670	1020	1020	1030
19	1330	1290	1290	1290	1300	1290	1680	1710	1670	1020	1030	1020
20	1340	1300	1290	1290	1300	1290	1670	1660	1670	1020	1030	1020
21	1330	1300	1290	1290	1300	1290	1670	1660	1670	1020	1020	1020
22	1330	1300	1290	1290	1300	1290	1670	1660	1660	1020	1030	1020
23	1330	1300	1290	1290	1300	1290	1660	1660	1660	1010	1030	1020
24	1320	1300	1290	1300	1300	1290	1660	1660	1660	1010	1020	1020
25	1320	1310	1290	1300	1300	1300	1670	1660	1660	1010	1020	1040
26	1320	1310	1290	1290	1290	1300	1670	1660	1670	1020	1020	1030
27	1330	1310	1290	1290	1270	1300	1660	1670	1660	1020	1020	1030
28	1340	1300	1290	1290	1280	1300	1660	1670	1670	1020	1020	1030
29	1330	1300	1290	1290	---	1300	1660	1670	1670	1020	1020	1030
30	1330	1290	1290	1290	---	1300	1660	1670	1680	1020	1020	1040
31	1330	---	1290	1290	---	1300	---	1740	---	1010	1020	---
TOTAL	41100	39530	40010	40040	36310	39950	47930	53500	56920	31387	31720	30770
MEAN	1326	1318	1291	1292	1297	1289	1598	1726	1897	1012	1023	1026
MAX	1340	1340	1300	1300	1300	1300	1680	2070	2120	1280	1030	1040

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2001, BY WATER YEAR (WY)

MEAN	1632	2088	2693	2986	3145	3650	3021	2157	1158	796	983	1292
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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1961 - 2001
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ANNUAL TOTAL	720350		489167						
ANNUAL MEAN	1968		1340				2128		
HIGHEST ANNUAL MEAN							3657		1965
LOWEST ANNUAL MEAN							641		1992
HIGHEST DAILY MEAN	5060	Mar 8	2120	Jun 5		25000		Dec 22	1964
LOWEST DAILY MEAN	1040	Jun 20	977	Jul 2		389		Aug 25	1992
ANNUAL SEVEN-DAY MINIMUM	1040	Jul 1	979	Jul 2		390		Aug 24	1992
MAXIMUM PEAK FLOW			2280	May 18		29400		Dec 22	1964
MAXIMUM PEAK STAGE			4.28	May 18		13.63		Dec 22	1964
INSTANTANEOUS LOW FLOW						389		Aug 25	1992
ANNUAL RUNOFF (AC-FT)	1429000		970300			1542000			
10 PERCENT EXCEEDS	3630		1670			4200			
50 PERCENT EXCEEDS	1340		1300			1410			
90 PERCENT EXCEEDS	1060		1020			734			

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 mi², 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 sea level. 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 excellent. 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.--84 years (water years 1918-2001), 119,500 ft³/s, 86,540,000 acre-ft/yr, unadjusted.
42 years (water years 1960-2001), 119,800 ft³/s, 86,780,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 692,600 ft³/s June 12, 1948, gage height, 59.35 ft, site and datum then in use; minimum discharge, 4,120 ft³/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 ft³/s Feb. 1-7, 1930, site and datum then in use; minimum daily discharge after completion of Rock Island Dam (1932), 20,000 ft³/s Jan. 31 to Feb. 10, 1937, site and datum then in use; minimum discharge since completion of Priest Rapids Dam (1959), 16,300 ft³/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 ft³/s, based on a rating extension for a Weather Bureau gage at Wenatchee.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 181,000 ft³/s Nov. 15, elevation, 410.31 ft; minimum discharge, 35,400 ft³/s Aug. 20, elevation, 396.23 ft; minimum daily discharge, 36,900 ft³/s Aug. 20, 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51100	101000	111000	69000	71800	114000	66500	68200	88400	85700	53900	59600
2	101000	93500	98200	107000	67300	97700	65700	65500	75000	81500	64000	47300
3	86200	106000	77300	135000	67300	75400	65300	64400	68300	98500	52400	67700
4	77800	96500	99900	117000	67100	67900	65200	65900	84200	60200	51000	81700
5	57200	73700	125000	110000	73000	77200	64600	65500	101000	53000	43500	85600
6	83800	91500	125000	111000	99400	94500	64400	67300	84800	58300	59400	73900
7	59700	101000	126000	112000	102000	87900	64400	64800	109000	48700	103000	42900
8	53900	101000	131000	129000	116000	98500	64300	60300	123000	55300	89100	42300
9	81800	102000	107000	127000	106000	92000	64400	55500	83000	61900	65700	45500
10	89200	111000	104000	130000	105000	74200	64400	54000	67600	69900	74100	67300
11	93000	91700	118000	119000	73600	67400	80900	62900	98400	49600	68300	99300
12	101000	81800	129000	97200	93200	80100	91900	54000	107000	38300	62600	85600
13	83600	92300	126000	99700	113000	80100	78300	38400	77500	57200	69800	78300
14	77900	102000	139000	79900	107000	89500	68600	40800	82900	58300	92400	62400
15	49800	115000	118000	91800	92800	94900	65400	51800	102000	44400	80300	47500
16	73300	116000	104000	110000	105000	77900	66300	40700	74900	45700	81500	42000
17	74000	108000	85100	115000	76900	68800	65100	50900	62500	65600	74100	53800
18	72900	106000	114000	98600	67800	66300	64700	46300	86900	58100	67700	61600
19	86800	67000	128000	88100	67300	66500	65800	43800	109000	58200	57800	66400
20	99700	89400	132000	101000	67600	71400	65400	37800	104000	58400	60100	83800
21	59800	91300	120000	67600	76700	78100	65100	58100	115000	45600	63700	78600
22	42800	116000	98600	114000	113000	79800	64900	102000	100000	38200	65600	57900
23	85200	103000	98000	78500	121000	70500	64800	77200	85900	65700	68600	60700
24	79500	72600	69900	85600	93300	66500	70100	87300	58900	52500	66000	68600
25	83400	80100	68300	101000	88400	66400	64900	82500	87100	55200	73600	81500
26	84600	79500	89500	93300	122000	66500	65000	58700	89600	54700	62600	70200
27	76000	99300	121000	86300	114000	66700	65100	49600	101000	62200	94600	68200
28	82400	119000	128000	73400	121000	67800	64400	45900	92000	43700	103000	73100
29	69600	116000	128000	79200	---	66200	64700	71300	94600	36800	83800	53400
30	78300	124000	108000	98700	---	66600	65700	90100	87300	42300	82700	64800
31	99300	---	87200	82100	---	66900	---	95500	---	52300	86700	---
TOTAL	2394600	2947200	3414000	3107000	2588500	2404200	2016300	1917000	2700800	1756000	2221600	1971500
MEAN	77250	98240	110100	100200	92450	77550	67210	61840	90030	56650	71660	65720
MAX	101000	124000	139000	135000	122000	114000	91900	102000	123000	98500	103000	99300
MIN	42800	67000	68300	67600	67100	66200	64300	37800	58900	36800	43500	42000
AC-FT	4750000	5846000	6772000	6163000	5134000	4769000	3999000	3802000	5357000	3483000	4407000	3910000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2001, BY WATER YEAR (WY)

	MEAN	181580	890800	101200	107700	111500	109600	117000	163300	206500	157300	111400	80940
MAX	118300	121200	163800	168400	195000	201800	189100	271700	461400	294300	191000	126700	
(WY)	1998	1991	1996	1996	1996	1983	1996	1997	1961	1964	1976	1976	
MIN	61550	56100	52570	55070	72700	58170	57920	61840	78810	56650	66740	60050	
(WY)	1964	1964	1962	1964	1964	1962	1993	2001	1977	2001	1985	1994	

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1960 - 2001

ANNUAL TOTAL	43915500	29438700		
ANNUAL MEAN	120000	80650		119800
HIGHEST ANNUAL MEAN				165600
LOWEST ANNUAL MEAN				80650
HIGHEST DAILY MEAN	233000	Apr 25	139000	Dec 14
LOWEST DAILY MEAN	42800	Oct 22	36800	Jul 29
ANNUAL SEVEN-DAY MINIMUM	71500	Oct 3	44600	May 14
ANNUAL RUNOFF (AC-FT)	87110000		58390000	86780000
10 PERCENT EXCEEDS	167000		114000	190000
50 PERCENT EXCEEDS	118000		77900	105000
90 PERCENT EXCEEDS	75900		53600	64800

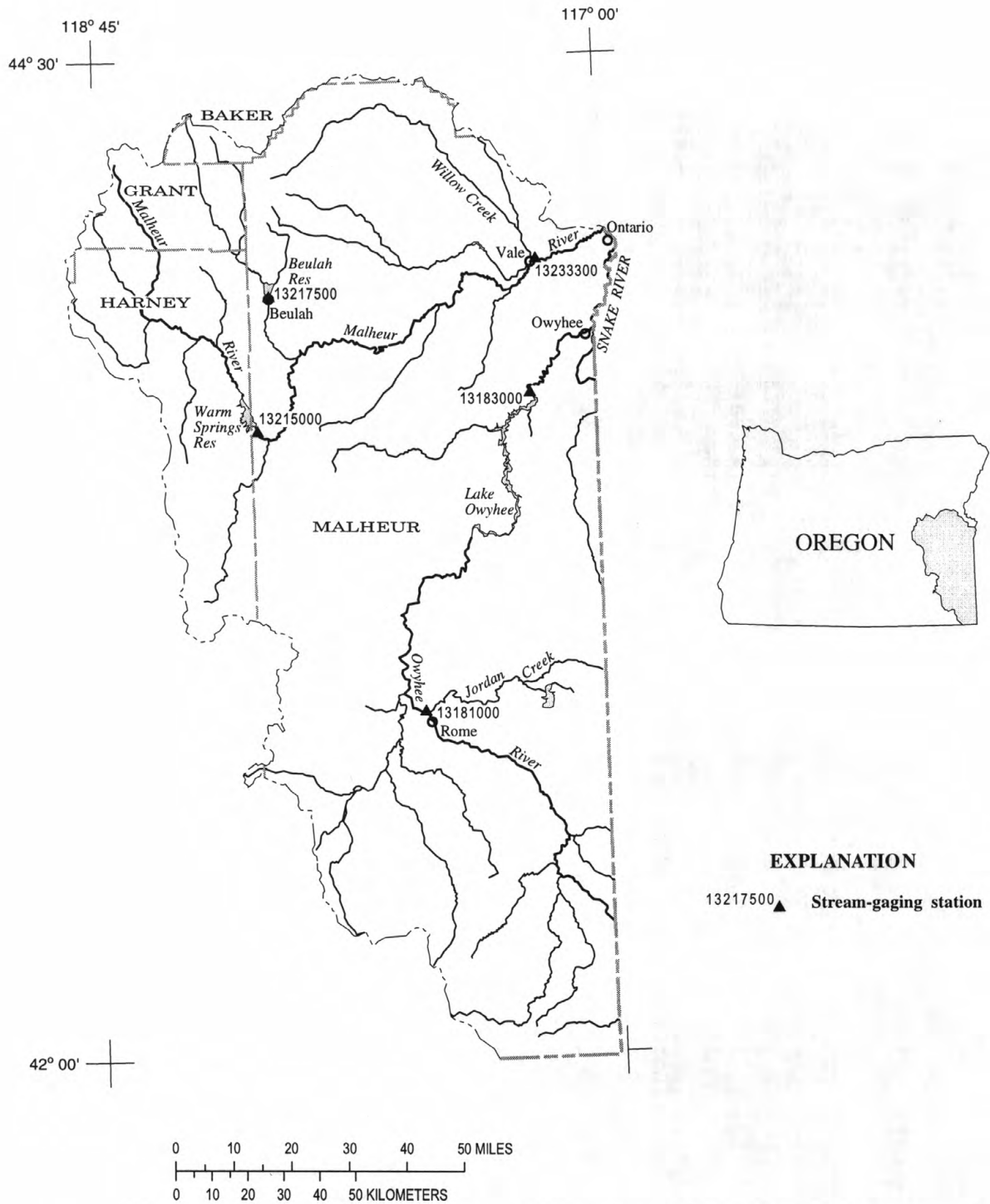


Figure 8. Location of surface-water stations in the Owyhee and Malheur River Basins.

OWYHEE RIVER BASIN

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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 mi².

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

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

REMARKS.--Records good except for estimated daily discharges, which are fair. 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.--52 years (water years 1950-2001), 950 ft³/s, 688,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 55,700 ft³/s Mar. 18, 1993, gage height, 20.11 ft; minimum discharge, 42 ft³/s Aug. 12, 1954, July 28, Aug. 5, 1961, July 31, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,580 ft³/s Mar. 22, gage height, 8.38 ft; minimum daily discharge, 57 ft³/s Aug. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107	167	176	179	160	260	1320	974	231	131	100	66
2	105	166	172	173	187	255	1140	901	224	126	100	66
3	106	170	167	173	179	261	1000	788	221	120	102	62
4	108	172	161	166	188	247	912	749	211	117	102	64
5	108	172	159	169	205	261	886	722	210	113	99	65
6	108	168	166	167	214	506	863	688	208	105	106	75
7	108	164	162	167	230	843	834	647	206	99	98	72
8	108	163	165	167	219	1730	840	609	205	97	87	72
9	109	162	167	181	223	2160	786	587	203	111	79	71
10	127	163	e170	179	242	2150	798	542	190	129	77	74
11	134	162	e140	184	250	1950	766	524	211	130	76	73
12	150	158	e160	197	238	1490	754	471	230	143	77	75
13	177	154	188	203	222	1170	800	438	236	136	76	75
14	176	150	176	e200	220	1240	927	410	231	137	72	75
15	212	145	174	e170	217	1520	1180	391	233	136	70	76
16	192	142	175	e130	198	1430	1710	414	237	129	75	77
17	169	148	155	e85	201	1200	1650	435	225	126	74	82
18	160	154	e120	e130	195	1020	1330	393	226	117	71	82
19	152	131	e130	179	204	1070	1030	398	206	119	69	81
20	145	150	131	e160	309	2930	952	400	192	128	72	84
21	146	137	138	178	350	5160	1200	385	177	110	75	84
22	144	150	168	e170	393	7050	1440	375	171	106	72	88
23	141	154	173	e150	437	5120	1700	356	171	106	67	91
24	141	150	206	e160	413	4040	1520	342	158	104	66	91
25	142	161	206	182	364	3550	1330	328	150	103	63	94
26	150	162	198	190	340	2880	1240	310	154	102	63	101
27	156	159	183	e170	304	2450	1190	292	164	103	62	97
28	151	167	191	e170	278	1780	1130	270	158	101	58	93
29	155	168	179	180	---	2010	1110	259	150	96	58	89
30	153	171	175	176	---	2190	1070	250	143	95	57	88
31	161	---	177	170	---	1680	---	241	---	99	62	---
TOTAL	4401	4740	5208	5255	7180	61603	33408	14889	5932	3574	2385	2383
MEAN	142	158	168	170	256	1987	1114	480	198	115	76.9	79.4
MAX	212	172	206	203	437	7050	1710	974	237	143	106	101
MIN	105	131	120	85	160	247	754	241	143	95	57	62
AC-FT	8730	9400	10330	10420	14240	122200	66260	29530	11770	7090	4730	4730

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2001, BY WATER YEAR (WY)

MEAN	163	215	383	681	1238	2505	2872	1989	890	256	152	138
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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1950 - 2001	
ANNUAL TOTAL	169417		150958		950	
ANNUAL MEAN	463		414		3400	
HIGHEST ANNUAL MEAN					162	
LOWEST ANNUAL MEAN					1992	
HIGHEST DAILY MEAN	3770		7050		46900	
LOWEST DAILY MEAN	63		57		44	
ANNUAL SEVEN-DAY MINIMUM	65		60		47	
ANNUAL RUNOFF (AC-FT)	336000		299400		688600	
10 PERCENT EXCEEDS	1390		1120		2520	
50 PERCENT EXCEEDS	176		170		234	
90 PERCENT EXCEEDS	93		77		108	

e Estimated

OWYHEE RIVER BASIN

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 mi², 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 sea level (levels by Bureau of Reclamation).

REMARKS.--No estimated daily values. 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.--69 years (water years 1933-2001), 417 ft³/s, 301,900 acre-ft/yr, not adjusted for storage or diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,900 ft³/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 discharge, 250 ft³/s Oct. 12, gage height, 2.23 ft; minimum daily discharge, 9.9 ft³/s Oct. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	247	13	16	15	15	15	18	194	202	203	201	199
2	248	13	16	15	14	15	18	194	202	201	201	201
3	248	14	16	16	14	15	18	194	202	201	201	201
4	248	13	16	16	15	14	18	193	202	201	197	202
5	248	13	16	16	15	13	18	194	202	201	201	201
6	248	13	16	16	15	14	18	194	201	201	201	204
7	248	13	16	16	15	15	18	194	201	201	201	204
8	248	14	16	16	15	15	18	194	201	201	201	204
9	248	13	16	16	15	15	17	194	201	201	201	201
10	248	14	16	16	15	15	17	194	202	201	200	201
11	248	13	16	16	15	15	18	195	204	201	201	201
12	248	14	16	15	15	15	17	196	202	201	201	202
13	248	14	17	15	15	16	18	197	202	201	200	202
14	248	14	16	14	15	16	17	197	203	196	200	201
15	248	14	16	14	15	16	84	197	204	201	200	201
16	248	14	15	14	15	16	199	197	203	201	199	201
17	248	15	15	14	15	15	199	197	204	200	199	201
18	248	15	15	14	15	15	199	199	203	201	199	199
19	248	15	15	14	15	16	199	199	203	201	199	199
20	87	15	15	14	15	16	197	199	204	201	199	199
21	9.9	15	15	15	15	16	197	199	204	201	199	199
22	11	15	15	15	14	16	197	199	204	200	199	196
23	12	15	15	15	14	17	197	199	204	201	199	194
24	12	15	15	14	15	18	194	199	204	201	199	194
25	13	15	15	14	15	18	194	200	204	201	199	196
26	13	15	15	15	15	18	186	201	204	201	198	196
27	13	15	15	15	15	18	194	201	204	201	196	194
28	13	15	15	14	15	18	194	201	204	202	197	194
29	13	16	15	14	---	18	194	201	204	202	197	193
30	13	16	15	14	---	18	194	201	204	201	196	192
31	13	---	15	15	---	18	---	201	---	201	197	---
TOTAL	4933.9	428	481	462	416	495	3266	6114	6088	6228	6178	5972
MEAN	159	14.3	15.5	14.9	14.9	16.0	109	197	203	201	199	199
MAX	248	16	17	16	15	18	199	201	204	203	201	204
MIN	9.9	13	15	14	14	13	17	193	201	196	196	192
AC-FT	9790	849	954	916	825	982	6480	12130	12080	12350	12250	11850

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2001, BY WATER YEAR (WY)

	MEAN	68.9	9.79	24.2	146	395	1053	1666	857	334	174	156	130
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	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	1948

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1933 - 2001

ANNUAL TOTAL	58331.3	41061.9	417
ANNUAL MEAN	159	112	2991
HIGHEST ANNUAL MEAN			22.3
LOWEST ANNUAL MEAN			21800
HIGHEST DAILY MEAN	280	248	Apr 16 1952
LOWEST DAILY MEAN	9.0	9.9	Oct 21 1952
ANNUAL SEVEN-DAY MINIMUM	9.3	12	Oct 18 1952
ANNUAL RUNOFF (AC-FT)	115700	81450	301900
10 PERCENT EXCEEDS	271	203	654
50 PERCENT EXCEEDS	248	194	85
90 PERCENT EXCEEDS	11	14	2.7

SNAKE RIVER BASIN

63

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 mi², 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 sea level, 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.--24 years (water years 1976-86, 1989-2001), 14,400 ft³/s, 10,430,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 57,900 ft³/s Apr. 19, 1984, gage height, 13.34 ft; minimum discharge, 4,110 ft³/s June 7, 1992, gage height, 4.32 ft.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 13,400 ft³/s Oct. 13; minimum daily discharge, 5,630 ft³/s June 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11500	10500	9210	8360	8410	8860	7890	7900	7280	6310	6960	7140
2	11000	10900	8950	8480	8670	9040	8470	7750	6460	6200	6080	7190
3	11100	11000	9210	8370	8190	8300	8210	7790	6580	5870	6090	7420
4	10900	10500	8720	9020	8620	8550	8270	7270	6770	5900	6420	7570
5	11200	10400	9100	8440	8490	8780	7780	7420	7000	5940	6230	7420
6	11000	10400	9020	8230	8570	9130	7890	7360	7250	5900	6200	7520
7	10900	9610	9520	8370	8560	8820	7800	7340	6900	5840	6350	7340
8	11200	10200	9370	8430	8310	8280	7520	7290	6720	6110	6080	7800
9	11300	10600	8740	9010	8680	9110	7890	7020	6730	6410	5810	7910
10	11300	9750	8570	8310	8840	9110	7590	7450	6970	6680	6050	7960
11	11600	10400	8910	8470	8340	8940	8290	7020	6460	6400	6380	7870
12	12100	10500	10100	8760	7980	9090	8810	6970	6380	6380	6580	7780
13	13400	10500	11700	8940	8510	9630	8150	6650	6500	6490	6880	8020
14	12900	9720	12400	8820	8130	9190	8650	7020	6630	6670	6110	7900
15	12300	10300	9610	8560	8740	8860	8750	8640	6570	6740	6040	7540
16	12500	9450	9300	8780	8630	9170	8660	9060	6670	6750	6360	8030
17	12200	9550	8730	8670	8490	9020	9350	8830	6360	6540	6490	8030
18	12500	10100	8350	8700	8250	9040	9400	9660	6240	6550	6400	8560
19	11700	9770	8860	8910	8470	8830	8080	10500	5910	6760	6460	8580
20	10600	9660	8990	8460	8630	9130	8110	10400	5650	6710	6440	7840
21	10300	9780	8270	8310	9060	9160	8630	9210	5870	6520	6610	7860
22	10500	9620	8840	8570	8720	8860	8650	9780	5750	6380	6830	7770
23	10100	9710	8690	8730	8530	8740	8390	7720	5670	6310	6750	8310
24	10700	9340	8410	8600	8760	8760	8300	8030	5630	6490	6950	7930
25	10200	9260	8500	8420	8720	8470	8220	7700	5800	6350	7050	8210
26	10700	9210	8810	8290	8450	8840	7460	7850	5920	6180	7030	7950
27	10800	9390	8650	8940	8720	8670	7380	7800	6130	5830	7200	7900
28	10800	9760	8610	8870	8730	8070	7330	7640	6360	6060	7030	8030
29	10900	9590	8520	8070	---	8430	7370	7240	5810	5980	7150	8020
30	9610	9950	8410	8810	---	8340	7320	7120	6220	6060	7050	7890
31	10000	---	8470	8280	---	8120	---	7400	---	6300	7140	---
TOTAL	347810	299420	281540	265980	239200	273340	244610	246830	191190	195610	203200	235290
MEAN	11220	9981	9082	8580	8543	8817	8154	7962	6373	6310	6555	7843
MAX	13400	11000	12400	9020	9060	9630	9400	10500	7280	6760	7200	8580
MIN	9610	9210	8270	8070	7980	8070	7320	6650	5630	5830	5810	7140
AC-FT	689900	593900	558400	527600	474500	542200	485200	489600	379200	388000	403000	466700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2001, BY WATER YEAR (WY)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	12420	12960	13470	14710	15760	18340	20850	19670	16860	8924	8788	10730															
MAX	21360	24660	24320	30290	38580	40010	43970	49060	41100	16480	12620	17110															
(WY)	1985	1985	1984	1984	1984	1984	1984	1984	1984	1983	1997	1997															
MIN	8102	8924	8902	8580	8543	8018	6033	5367	5223	5546	5075	6664															
(WY)	1993	1993	1993	2001	2001	1991	1992	1992	1992	1992	1992	1992															

SUMMARY STATISTICS

	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1976 - 2001
ANNUAL TOTAL	4052290	3024020	
ANNUAL MEAN	11070	8285	14400
HIGHEST ANNUAL MEAN			26260
LOWEST ANNUAL MEAN			7365
HIGHEST DAILY MEAN	18200	13400	57400
LOWEST DAILY MEAN	6440	5630	4240
ANNUAL SEVEN-DAY MINIMUM	6680	5750	4520
ANNUAL RUNOFF (AC-FT)	8038000	5998000	10430000
10 PERCENT EXCEEDS	16000	10400	26800
50 PERCENT EXCEEDS	10400	8360	11100
90 PERCENT EXCEEDS	7890	6330	7350

MALHEUR RIVER BASIN

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 Warm Springs Dam, 3.0 mi upstream from South Fork, 4.0 mi northwest of Riverside, and at mile 113.

DRAINAGE AREA.--1,100 mi², 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 Warm Springs 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 and concrete control. Elevation of gage is 3,305 ft above sea level, by barometer. See WSP 1317 or 1737 for history of changes prior to Sept. 29, 1949.

REMARKS.--Records good except for those below 40 ft³/s and estimated daily discharges, which are poor. Flow completely regulated since November 1919 by Warm Springs Reservoir (station 13214500). Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--82 years (water years 1920-2001), 191 ft³/s, 138,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 7,200 ft³/s Mar. 1, 1910, gage height, 10.7 ft, site and datum then in use, from rating curve extended above 820 ft³/s; maximum discharge since storage began November 1919, 3,150 ft³/s Mar. 22, 1984, gage height, 9.70 ft, from floodmark; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 560 ft³/s Apr. 27, gage height, 5.09 ft; minimum discharge, no flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	292	.12	.02	.00	.00	e.05	.12	371	392	436	404	.59
2	276	.12	.02	.00	.00	e.05	.10	385	412	435	404	.45
3	270	.11	.02	.00	.00	e.05	.09	420	420	430	393	.28
4	263	.11	.01	.00	.00	e.08	.09	458	405	426	381	.20
5	258	.10	.00	.00	.00	e.14	.08	483	392	443	353	.15
6	258	.09	.00	.00	.00	.26	.07	487	373	432	309	.16
7	261	.09	.00	.00	.00	.24	.10	458	360	426	250	.09
8	258	.10	.00	.00	.00	.24	.11	462	352	423	159	.06
9	258	.11	.00	.00	.00	.23	.10	489	366	421	56	.03
10	240	.10	.00	.00	.00	.23	.09	493	371	455	18	.00
11	193	.09	.00	.00	.00	.20	.13	526	382	473	7.5	.00
12	161	.08	.00	.00	.00	.19	.18	538	381	447	3.4	.00
13	51	.08	.00	.00	.00	.18	.18	536	377	444	2.2	.14
14	.08	.08	.03	.00	.00	.17	.15	533	367	445	2.1	.18
15	.04	.06	.08	.00	.00	.17	.13	515	363	429	1.6	.28
16	.04	.06	.08	.00	.00	.19	.12	511	367	397	1.3	.53
17	.08	.06	.05	.00	.00	.18	.09	513	369	399	1.2	1.3
18	.08	.05	.04	.00	.00	.19	.08	495	372	399	1.2	3.9
19	.08	.04	.02	.00	.00	.19	.75	491	391	398	1.1	6.8
20	.08	.03	.01	.00	.08	.18	104	491	419	395	1.1	7.5
21	.09	.02	.01	.00	e.20	.18	104	490	419	398	1.1	8.5
22	.08	.01	.01	.00	e.28	.16	175	475	415	396	.99	9.7
23	.08	.00	.02	.00	e.20	.16	206	468	449	410	.84	9.1
24	.08	.00	.02	.00	e.10	.14	221	476	461	424	.57	9.0
25	.08	.00	.02	.00	e.08	.17	255	481	460	422	.62	9.7
26	.11	.00	.00	.00	e.08	.17	273	482	451	416	.65	10
27	.11	.02	.00	.00	e.06	.16	370	482	443	409	.63	12
28	.12	.03	.00	.00	e.05	.17	358	482	426	417	.68	20
29	.16	.02	.00	.00	---	.17	375	425	419	427	.70	22
30	.15	.02	.00	.00	---	.15	373	388	430	421	.64	19
31	.13	---	.00	.00	---	.13	---	383	---	416	.60	---
TOTAL	3040.67	1.80	0.46	0.00	1.13	5.17	2891.01	14687	12004	13109	2757.72	151.64
MEAN	98.1	.060	.015	.000	.040	.17	96.4	474	400	423	89.0	5.05
MAX	292	.12	.08	.00	.28	.26	375	538	461	473	404	.22
MIN	.04	.00	.00	.00	.00	.05	.07	371	352	395	.57	.00
AC-FT	6030	3.6	.9	.00	2.2	10	5730	29130	23810	26000	5470	301

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 2001, BY WATER YEAR (WY)

	MEAN	36.0	.78	7.03	18.5	39.0	87.0	324	428	349	435	357	201
	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	.000	.000	.000	.000	.000	.000	.000	31.4	92.0	30.3	.041	.000
	(WY)	1934	1933	1933	1933	1933	1933	1935	1932	1942	1992	1988	1988

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1920 - 2001

ANNUAL TOTAL	100992.82	48649.60	
ANNUAL MEAN	276	133	191
HIGHEST ANNUAL MEAN			566
LOWEST ANNUAL MEAN			46.8
HIGHEST DAILY MEAN	1230	538	3030
LOWEST DAILY MEAN	.00 Apr 14	.00 May 12	.00 Mar 22 1984
ANNUAL SEVEN-DAY MINIMUM	.00 Nov 23	.00 Nov 23	.00 Oct 5 1932
ANNUAL RUNOFF (AC-FT)	.00 Dec 5	.00 Dec 5	.00 Oct 5 1932
200300	96500	138400	
10 PERCENT EXCEEDS	577	439	506
50 PERCENT EXCEEDS	290	.18	4.0
90 PERCENT EXCEEDS	.03	.00	.00

e Estimated

65

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.

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

GAGE.--Water-stage recorder. Datum of gage is 3,261.20 ft above sea level. 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.

AVERAGE DISCHARGE.--66 years (water years 1936-2001), 145 ft³/s, 105,000 acre-ft/yr, regulated period.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 423 ft³/s Aug. 7, gage height, 3.56 ft; minimum daily discharge, no flow Jan. 16-19, 27-29, Feb. 8, 9, 13, 14.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	100	.47	.37	e.10	e.05	e.05	1.1	311	253	254	272	34
2	100	.47	.35	e.10	e.05	e.10	.89	308	263	252	282	34
3	93	.47	.33	e.05	e.10	e.10	.85	307	266	250	303	34
4	86	.47	.30	e.05	e.10	e.20	1.0	309	264	249	310	37
5	73	.47	.28	e.05	e.15	e.20	1.4	309	255	251	307	39
6	66	.47	.28	e.05	e.10	e.20	1.5	308	237	249	310	39
7	66	.47	e.25	e.05	e.05	e.20	1.3	306	229	248	382	39
8	66	.52	e.20	e.05	e.00	e.20	1.2	302	227	246	389	39
9	59	.48	e.20	e.10	e.00	e.20	1.2	302	238	244	31	39
10	55	.44	e.20	e.10	e.10	e.20	1.4	302	244	206	42	39
11	55	.39	e.15	e.10	e.10	e.20	1.4	300	251	195	42	39
12	55	.34	e.20	e.10	e.10	e.25	1.3	289	255	220	42	40
13	55	.33	.28	e.05	e.00	e.25	1.3	269	255	235	42	37
14	55	.33	.33	e.05	e.00	e.25	1.4	255	253	240	44	31
15	55	.33	.37	e.05	e.05	e.25	1.4	232	262	219	45	31
16	20	.33	.37	e.00	e.10	e.25	1.5	205	272	213	40	31
17	.64	.33	.37	e.00	e.15	e.25	1.5	185	280	236	38	34
18	.26	e.25	e.30	e.00	e.15	.28	1.7	180	278	240	41	35
19	.16	e.20	e.25	e.00	e.15	.29	2.0	185	283	238	41	35
20	.28	e.25	e.25	e.05	e.20	.33	34	185	284	242	39	35
21	.47	.30	e.25	e.05	e.20	.42	89	173	277	244	35	35
22	.46	.28	.28	e.10	e.20	.47	99	167	285	244	35	30
23	.42	.28	.31	e.10	e.15	2.6	106	184	309	240	37	34
24	.42	.29	.33	e.10	e.15	1.7	115	185	295	235	37	34
25	.42	.33	e.25	e.10	e.15	1.9	119	185	272	246	35	34
26	.48	.34	e.20	e.05	e.10	1.8	177	185	272	266	34	35
27	.47	.40	e.20	e.00	e.10	1.7	301	185	264	285	34	35
28	.51	.42	e.20	e.00	e.10	1.5	302	186	258	288	34	35
29	.56	.38	e.15	e.00	---	1.4	278	239	256	288	34	35
30	.48	.37	e.15	e.05	---	1.3	300	265	255	289	34	35
31	.47	---	e.15	e.05	---	1.2	---	258	---	277	34	---
TOTAL	1065.50	11.20	8.10	1.70	2.85	20.24	1945.34	7561	7892	7629	3425	1063
MEAN	34.4	.37	.26	.055	.10	.65	64.8	244	263	246	110	35.4
MAX	100	.52	.37	.10	.20	2.6	302	311	309	289	389	40
MIN	.16	.20	.15	.00	.00	.05	.85	167	227	195	31	30
AC-FT	2110	22	16	3.4	5.7	40	3860	15000	15560	15130	6790	2110

MEAN	36.9	.99	1.66	10.5	29.7	88.6	301	355	284	275	216	136
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	.086	.000	.000	.000	.000	.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

ANNUAL TOTAL	59656.20		30624.93						
ANNUAL MEAN	163		83.9					145	
HIGHEST ANNUAL MEAN								335	1983
LOWEST ANNUAL MEAN								54.6	1936
HIGHEST DAILY MEAN	807	Apr 14	389	Aug 8		3700			May 7 1942
LOWEST DAILY MEAN	.15	Dec 11	.00	Jan 16		.00		.00	Dec 22 1935
ANNUAL SEVEN-DAY MINIMUM	.19	Dec 25	.02	Jan 13		.00		.00	Dec 22 1935
ANNUAL RUNOFF (AC-FT)	118300		60740			105000			
10 PERCENT EXCEEDS	340		274			367			
50 PERCENT EXCEEDS	104		1.9			48			
90 PERCENT EXCEEDS	.31		.10			.10			

e Estimated

MALHEUR RIVER BASIN

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 mi², 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 sea level, from topographic map. Prior to Nov. 17, 1930, at datum 1.00 ft higher.

REMARKS.--No estimated daily discharges. 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. Gillemann-Frohman Canal diverts on left bank in sec.8 T.19 S., R.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 Warm Springs Reservoir and, since December 1935, by Beulah Reservoir.

AVERAGE DISCHARGE.--8 years (water years 1994-2001), 297 ft³/s, 214,900 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,530 ft³/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 ft³/s. Flood of Mar. 19, 1993 reached a stage of 13.31 ft, discharge 16,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 729 ft³/s Mar. 20, gage height, 2.87 ft; minimum daily discharge, 0.53 ft³/s Sept. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	219	190	157	135	93	106	100	41	11	11	52	3.7
2	225	188	159	133	93	106	99	29	7.7	20	36	2.3
3	228	185	153	129	98	105	97	11	6.7	22	17	1.2
4	229	183	154	122	97	103	91	6.8	31	16	13	1.1
5	224	186	149	112	97	102	84	9.2	56	13	20	.96
6	226	185	148	118	97	115	79	19	73	11	18	2.2
7	223	181	151	117	93	130	78	45	65	25	18	1.1
8	223	184	152	118	93	168	78	41	43	31	12	.72
9	225	188	152	131	94	236	79	18	34	40	9.7	.83
10	233	187	153	133	91	264	48	12	17	44	9.7	1.6
11	255	182	149	134	98	264	69	12	14	36	6.4	.88
12	301	181	145	149	93	266	62	32	32	29	6.3	.59
13	296	180	149	169	92	228	48	82	43	27	6.1	.53
14	289	180	147	150	90	248	45	94	41	37	2.6	1.7
15	276	180	154	143	90	286	46	86	43	51	1.9	4.5
16	220	177	150	128	90	263	51	98	32	75	1.6	5.8
17	194	171	147	115	91	197	46	86	27	64	1.5	5.0
18	177	166	139	123	93	164	21	58	33	40	1.5	4.3
19	185	166	137	130	97	147	22	50	32	33	1.5	3.5
20	183	169	143	117	116	476	14	45	22	51	1.2	1.6
21	178	159	144	110	156	434	14	72	12	57	1.2	1.9
22	174	158	145	106	158	328	11	72	8.2	54	1.2	2.9
23	177	158	141	105	147	237	65	54	7.1	63	.97	4.9
24	217	164	150	102	141	210	32	30	7.8	41	.96	4.8
25	187	166	142	104	146	195	43	14	16	39	.82	3.9
26	214	167	133	102	138	178	24	11	35	30	.82	3.3
27	214	173	135	100	125	164	9.4	23	35	25	1.6	4.4
28	197	169	135	96	112	134	5.4	29	33	24	3.0	4.2
29	199	162	134	94	---	123	82	28	22	19	2.6	5.9
30	193	162	134	91	---	111	51	13	9.8	20	2.7	5.9
31	192	---	134	94	---	101	---	11	---	26	3.6	---
TOTAL	6773	5247	4515	3710	3019	6189	1593.8	1232.0	849.3	1074	255.47	86.21
MEAN	218	175	146	120	108	200	53.1	39.7	28.3	34.6	8.24	2.87
MAX	301	190	159	169	158	476	100	98	73	75	52	5.9
MIN	174	158	133	91	90	101	5.4	6.8	6.7	11	.82	.53
AC-FT	13430	10410	8960	7360	5990	12280	3160	2440	1680	2130	507	171

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2001, BY WATER YEAR (WY)

	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	181	151	155	347	531	658	661	323
MAX	228	175	314	1589	1322	1881	1695	988
(WY)	2000	2001	1997	1997	1999	1999	1998	1998
MIN	74.1	100	78.9	120	94.2	65.9	41.5	39.7
(WY)	1995	1995	1995	2001	1994	1994	1994	2001

SUMMARY STATISTICS FOR 2000 CALENDAR YEAR FOR 2001 WATER YEAR WATER YEARS 1994 - 2001

	2000	2001	1994-2001
ANNUAL TOTAL	110262	34543.78	297
ANNUAL MEAN	301	94.6	535
HIGHEST ANNUAL MEAN			87.0
LOWEST ANNUAL MEAN			6230
HIGHEST DAILY MEAN	1990	Apr 16	476
LOWEST DAILY MEAN	84	Aug 12	.53
ANNUAL SEVEN-DAY MINIMUM	97	Aug 11	.89
ANNUAL RUNOFF (AC-FT)	218700	68520	214900
10 PERCENT EXCEEDS	726	194	746
50 PERCENT EXCEEDS	180	91	158
90 PERCENT EXCEEDS	106	3.7	46

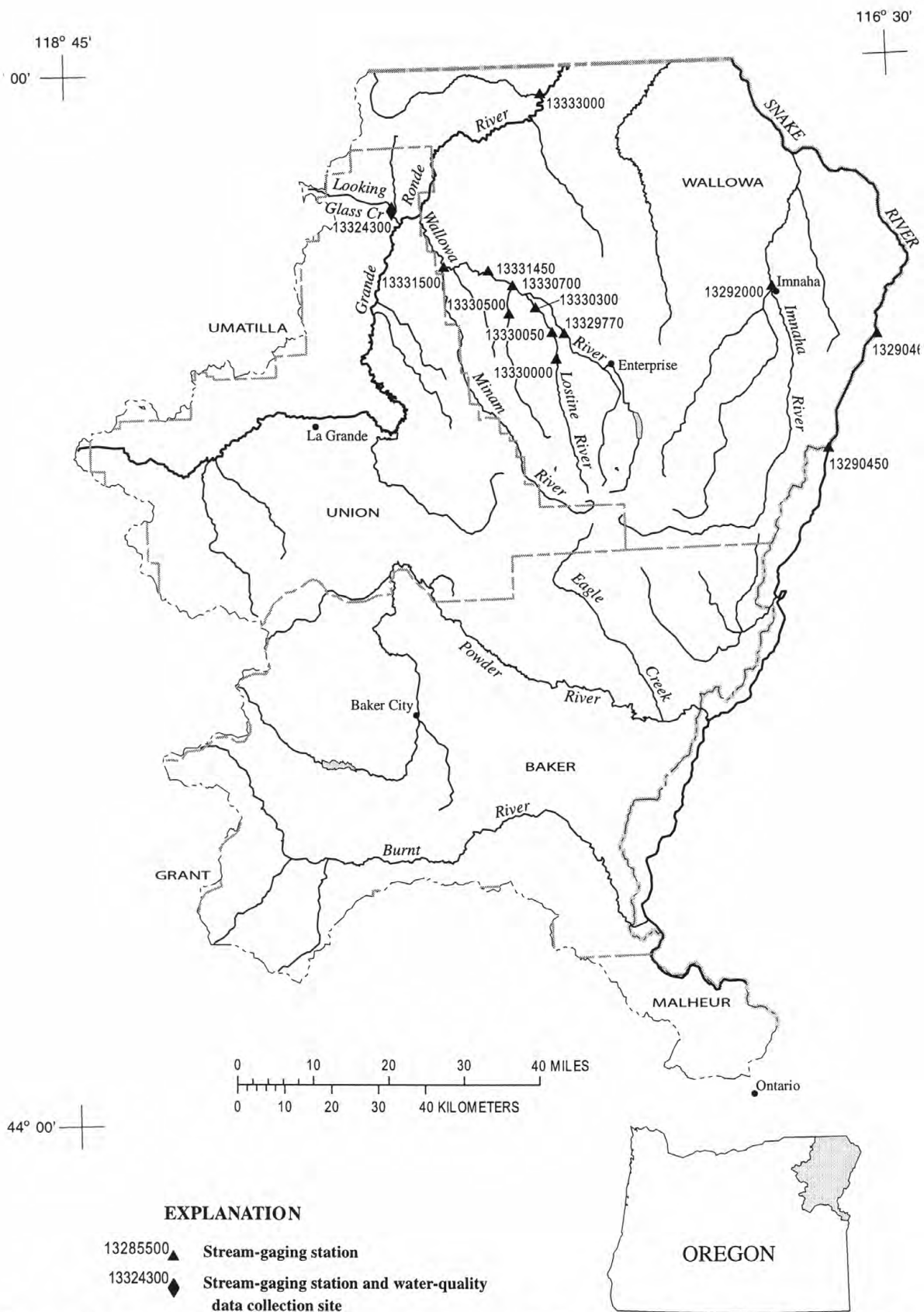


Figure 9. Location of surface-water and water-quality stations in the Powder River, Snake River Main Stem, Pine Creek, Imnaha River, and Grande Ronde River Basins.

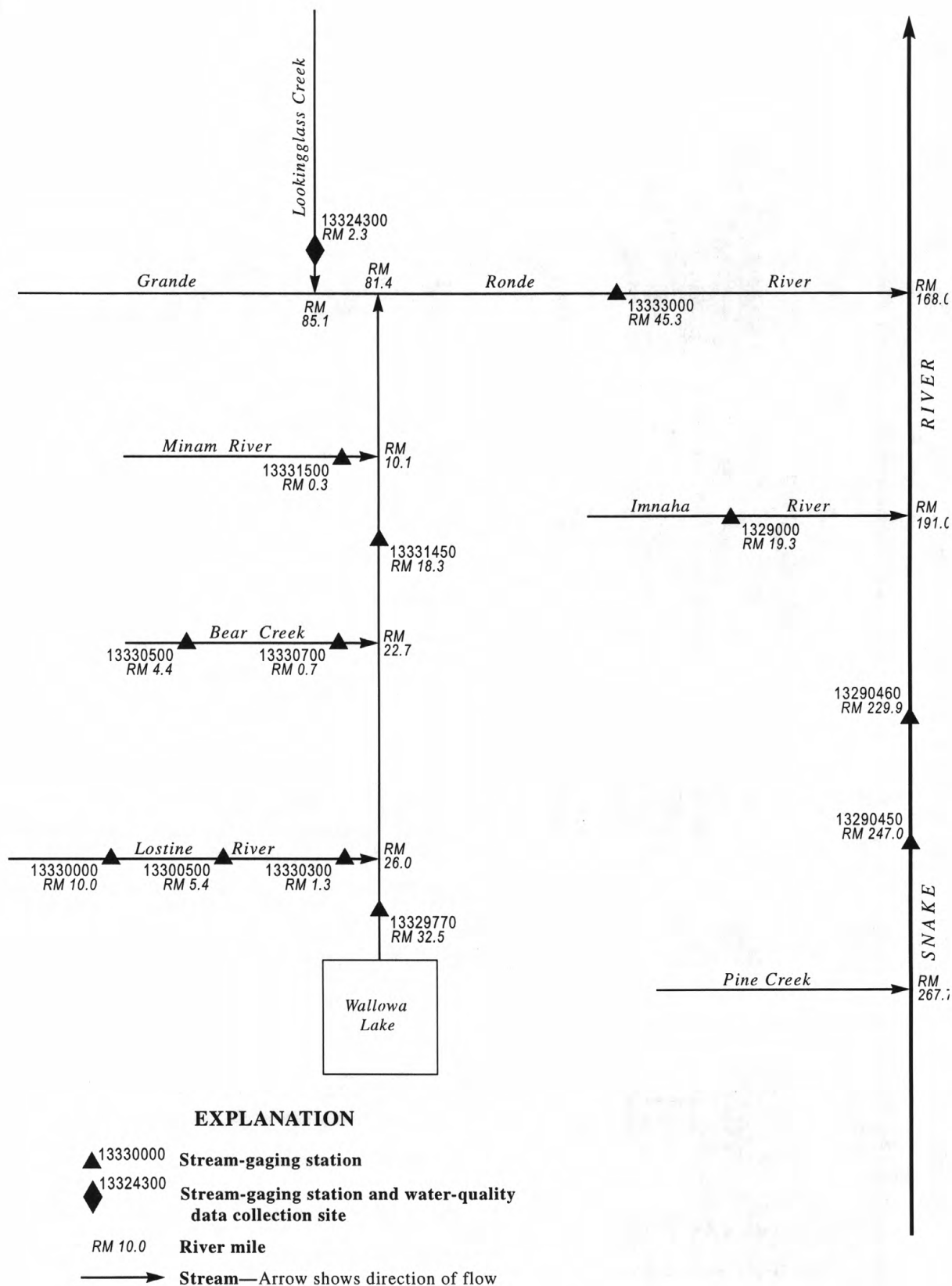


Figure 10. Schematic diagram showing gaging stations in the Imhaha and Grande Ronde River Basins, and Snake River Main Stem.

SNAKE RIVER MAIN STEM

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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 mi², 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 sea level (levels by Idaho Power Company).

REMARKS.--No estimated daily discharges. Records good. 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.--46 years (water years 1966-2001), 20,600 ft³/s, 14,920,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 103,000 ft³/s Jan. 2, 1997, gage height, 86.17 ft; minimum discharge, 1,580 ft³/s Mar. 19, 1967, gage height, 59.9 ft; minimum daily discharge, 4,360 ft³/s May 8, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 29,400 ft³/s Jan. 17, gage height, 71.84 ft; minimum discharge, 5,110 ft³/s Sept. 30, gage height, 62.75 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11700	9810	9990	8760	13500	8770	8950	10300	10400	7080	10500	7610
2	15600	9900	9950	8800	10500	11300	14800	9230	8600	9220	11300	7520
3	13800	9940	9970	8740	8900	12800	14500	9740	8610	9200	10300	10200
4	20900	9950	12000	8740	8920	8910	13300	14000	8010	11100	7610	11200
5	21100	9970	15300	8780	9150	9310	14400	9070	7670	10700	8670	13700
6	20800	9820	13200	8860	11400	12500	13200	8510	8870	8200	13300	10400
7	19900	9840	13300	8900	14300	11200	10900	12900	13100	7490	13700	9230
8	14200	9890	12800	8830	17200	12100	9910	11400	13300	6960	13900	7630
9	9460	9890	10500	10900	14300	12300	13100	9940	8700	7190	10500	7220
10	9470	9870	9290	9640	12200	8760	13200	11500	7600	8500	13100	12400
11	9430	9890	15500	14600	9020	8750	9700	10900	8070	9170	10600	10400
12	9400	9860	17600	13900	11600	11400	11300	8570	7810	7730	9580	11200
13	9470	9820	14000	8750	16400	14600	12000	8590	7750	8830	10300	9800
14	9430	9840	12000	8840	17700	14100	10400	11000	7910	7620	10700	8300
15	9420	9880	9360	11300	13700	16300	9140	12200	10800	7070	8390	7540
16	9450	9830	11400	14200	10500	14400	13700	15900	7670	7730	12800	7040
17	9470	9710	12700	21300	10700	12200	15900	19800	8060	7730	12400	9040
18	9460	9820	14800	17300	8910	8850	12200	19200	8000	8250	8910	13000
19	9480	9850	11300	16800	8830	12900	11900	19300	7780	8530	7160	9940
20	9440	9840	11400	13600	8790	16700	13300	13400	9550	11000	8900	14200
21	9490	9850	8990	10600	8770	15800	12000	13800	8140	7880	9260	13000
22	9470	9890	8840	13600	8840	11400	14500	13800	7670	8440	8280	8150
23	9490	9870	8770	9980	13000	13000	12400	14100	7510	15100	9760	7060
24	9700	9870	8750	10100	8870	8900	12300	13000	7000	14500	8320	13300
25	9870	9860	8690	8910	8780	8930	14300	14400	7780	15700	7650	10900
26	9890	9840	8790	12700	10200	15500	13100	8970	7750	14000	8850	10300
27	9840	9870	8820	15500	11400	17400	12400	8790	7610	14400	12900	7870
28	9820	9980	8720	17100	10100	17800	7440	14200	7790	8180	10400	7840
29	9840	10000	8690	17100	---	18600	7400	11300	7600	7800	11200	7680
30	9770	10000	8730	13000	---	17900	12900	14000	7660	7690	9850	7310
31	9850	---	8790	10500	---	16700	---	14900	---	7700	9590	---
TOTAL	364410	296250	342940	370630	316480	400080	364540	386710	254770	290690	318680	290980
MEAN	11760	9875	11060	11960	11300	12910	12150	12470	8492	9377	10280	9699
MAX	21100	10000	17600	21300	17700	18600	15900	19800	13300	15700	13900	14200
MIN	9400	9710	8690	8740	8770	8750	7400	8510	7000	6960	7160	7040
AC-FT	722800	587600	680200	735100	627700	793600	723100	767000	505300	576600	632100	577200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2001, BY WATER YEAR (WY)

MEAN	15550	15510	18110	22490	24590	29120	30390	27330	24680	14300	11480	14070
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	9962	9193	9391	11960	11300	10600	7371	6401	5868	6901	6583	6887
(WY)	1989	1993	1993	2001	2001	1991	1988	1977	1992	1977	1992	1977

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1966 - 2001

ANNUAL TOTAL	6237120	3997160	
ANNUAL MEAN	17040	10950	
HIGHEST ANNUAL MEAN			20600
LOWEST ANNUAL MEAN			36560
HIGHEST DAILY MEAN			9746
LOWEST DAILY MEAN			98100
ANNUAL SEVEN-DAY MINIMUM			4360
ANNUAL RUNOFF (AC-FT)	12370000	7928000	14920000
10 PERCENT EXCEEDS	27000	14800	39100
50 PERCENT EXCEEDS	16600	9890	16600
90 PERCENT EXCEEDS	9290	7770	9140

SNAKE RIVER MAIN STEM

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 mi², 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 sea level (levels by Corps of Engineers.)

REMARKS.--Records good. 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 gage height, 10.23 ft Jan. 17; minimum recorded gage height, 4.45 ft June 24.

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

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.86	5.51	5.55	5.18	6.38	5.18	5.50	5.88	5.92	4.65	5.62	4.93
2	6.88	5.53	5.55	5.19	5.82	5.86	6.64	5.43	5.22	5.28	6.01	4.77
3	8.06	5.53	5.54	5.18	5.24	6.27	7.02	5.51	5.22	5.32	5.73	5.57
4	8.36	5.55	5.99	5.17	5.23	5.33	6.50	6.73	5.04	5.86	4.87	5.88
5	8.41	5.55	6.88	5.18	5.29	5.35	6.72	5.46	4.91	5.86	5.00	6.67
6	8.36	5.49	6.64	5.20	5.76	6.16	6.54	5.19	5.23	5.09	6.48	5.79
7	8.29	5.50	6.43	5.22	6.66	5.93	5.86	6.42	6.30	4.83	6.62	5.41
8	6.83	5.52	6.41	5.20	7.52	6.20	5.57	6.01	6.45	4.63	6.63	4.89
9	5.38	5.52	5.71	5.61	6.86	6.22	6.38	5.69	5.41	4.69	5.76	4.71
10	5.38	5.50	5.25	5.49	6.17	5.26	6.44	6.06	4.81	5.12	6.39	6.23
11	5.37	5.51	7.02	6.66	5.30	5.19	5.63	5.92	5.07	5.35	5.81	5.63
12	5.36	5.50	7.45	6.83	5.85	5.86	5.93	5.27	4.94	4.93	5.52	---
13	5.38	5.49	6.79	5.24	7.21	6.82	6.11	5.27	4.92	5.23	5.75	---
14	5.37	5.49	6.21	5.20	7.68	6.70	5.75	5.93	4.97	4.88	5.74	5.14
15	5.37	5.50	5.31	5.84	6.69	7.15	5.35	6.29	5.76	4.65	5.16	4.87
16	5.38	5.49	5.91	6.62	5.74	6.92	6.41	7.22	5.00	4.91	6.20	4.66
17	5.38	5.45	6.27	8.36	5.76	6.25	7.29	8.11	4.93	---	6.25	5.20
18	5.38	5.50	6.91	7.68	5.23	5.31	6.30	8.05	4.98	---	5.30	6.51
19	5.37	5.51	6.02	7.40	5.21	6.27	6.24	8.21	4.97	---	4.75	5.63
20	5.38	5.51	5.92	6.54	5.19	7.29	6.42	6.71	5.30	---	5.06	6.62
21	5.38	5.51	5.28	5.88	5.18	7.22	6.28	6.67	5.17	5.07	5.50	6.45
22	5.37	5.51	5.20	6.53	5.20	6.05	6.91	6.64	4.87	5.10	5.09	5.14
23	5.38	5.51	5.17	5.54	6.24	6.41	6.20	6.87	4.84	6.95	5.42	4.70
24	5.43	5.51	5.17	5.56	5.35	5.31	6.27	6.61	4.62	6.94	5.18	6.27
25	5.50	5.52	5.14	5.22	5.18	5.28	6.74	6.88	4.91	7.10	4.88	5.86
26	5.50	5.51	5.18	6.12	5.52	6.88	6.61	5.43	4.91	6.85	5.08	5.70
27	5.51	5.51	5.20	7.00	5.91	7.54	6.31	5.29	4.86	6.93	6.35	4.98
28	5.51	5.55	5.17	7.47	5.70	7.67	4.94	6.62	4.92	5.16	5.76	4.89
29	5.52	5.56	5.16	7.53	---	7.77	4.85	6.05	4.85	4.99	5.89	4.86
30	5.48	5.57	5.16	6.49	---	7.80	6.29	6.80	4.87	4.95	5.63	4.76
31	5.51	---	5.19	5.77	---	7.39	---	6.85	---	4.89	5.43	---
MEAN	5.99	5.51	5.83	6.07	5.90	6.35	6.20	6.32	5.14	---	5.64	---
MAX	8.41	5.57	7.45	8.36	7.68	7.80	7.29	8.21	6.45	---	6.63	---
MIN	5.36	5.45	5.14	5.17	5.18	5.18	4.85	5.19	4.62	---	4.75	---

CAL YR 2000 MEAN 7.38 MAX 11.26 MIN 4.08

GRANDE RONDE RIVER BASIN

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 mi².

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 sea level, from topographic map.

REMARKS.--Records poor. Records include a diversion by the fish hatchery 0.3 mi upstream from station of up to 50 ft³/s that is returned through the fish ladder to the gage pool.

AVERAGE DISCHARGE.--19 years (water years 1983-2001), 138 ft³/s, 100,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,120 ft³/s Feb. 9, 1996, gage height, 7.41 ft, from rating curve extended above 1,000 ft³/s; minimum discharge, 25 ft³/s Oct. 11, 1983, result of regulation at fish hatchery upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 380 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 30	1800	*543	*5.71	May 14	2345	492	5.57

Minimum daily discharge, 44 ft³/s Jan. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	55	54	53	e50	58	199	441	119	62	49	55
2	56	55	53	52	e50	58	172	385	113	61	48	54
3	54	53	53	55	e50	57	149	334	115	61	48	54
4	54	66	53	55	e52	56	147	343	107	60	48	53
5	55	63	53	57	e58	57	143	344	105	59	49	54
6	49	66	61	55	e60	60	126	330	101	59	49	55
7	52	60	63	54	e58	69	124	332	96	58	55	56
8	60	62	63	52	e56	71	112	350	93	58	58	55
9	51	62	63	52	e54	87	111	396	91	58	56	55
10	60	60	63	53	e56	76	110	398	89	61	58	55
11	66	61	54	55	e54	76	109	385	87	60	57	55
12	61	68	52	56	e52	78	103	408	87	59	57	55
13	59	59	52	54	e52	81	100	423	87	58	57	56
14	66	55	54	52	e50	68	102	432	83	55	57	56
15	56	57	54	50	e50	59	100	466	79	55	54	55
16	60	57	57	50	e51	56	107	463	78	54	54	55
17	56	60	57	50	e52	65	124	405	78	54	55	54
18	56	55	55	49	e52	73	142	336	74	53	56	55
19	66	60	61	50	e53	118	141	296	70	53	56	54
20	60	56	55	50	e54	104	145	286	70	53	57	54
21	64	54	52	50	57	106	149	268	69	53	56	54
22	60	54	54	50	60	100	154	241	67	52	57	54
23	59	53	55	50	56	99	164	230	66	52	57	54
24	57	53	57	e48	55	104	202	217	64	52	57	54
25	59	53	56	e47	54	128	264	212	66	51	57	54
26	57	53	58	e48	55	131	330	200	66	51	56	53
27	62	55	59	e46	61	118	414	192	77	50	56	53
28	63	53	62	e44	60	142	423	180	68	50	55	55
29	67	54	57	e46	---	138	389	146	65	50	55	54
30	56	54	56	e48	---	144	429	135	64	49	55	54
31	54	---	56	e50	---	154	---	126	---	50	55	---
TOTAL	1863	1726	1752	1581	1522	2791	5484	9700	2494	1711	1694	1634
MEAN	60.1	57.5	56.5	51.0	54.4	90.0	183	313	83.1	55.2	54.6	54.5
MAX	108	68	63	57	61	154	429	466	119	62	58	56
MIN	49	53	52	44	50	56	100	126	64	49	48	53
AC-FT	3700	3420	3480	3140	3020	5540	10880	19240	4950	3390	3360	3240

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2001, BY WATER YEAR (WY)

	53.5	72.3	83.2	87.7	136	198	329	365	161	67.9	53.7	52.4
MEAN	53.5	72.3	83.2	87.7	136	198	329	365	161	67.9	53.7	52.4
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	1994	1994	1994	1994

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1983 - 2001

ANNUAL TOTAL	53954	33952	138
ANNUAL MEAN	147	93.0	227
HIGHEST ANNUAL MEAN			93.0
LOWEST ANNUAL MEAN			1997
HIGHEST DAILY MEAN	686	466	1740
LOWEST DAILY MEAN	49	44	35
ANNUAL SEVEN-DAY MINIMUM	51	47	35
ANNUAL RUNOFF (AC-FT)	107000	67340	100000
10 PERCENT EXCEEDS	384	175	333
50 PERCENT EXCEEDS	66	57	70
90 PERCENT EXCEEDS	53	51	50

e Estimated

GRANDE RONDE RIVER BASIN

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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 good.

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.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 18.6°C July 4; minimum recorded, 0.0°C Jan. 27, Feb. 8.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	11.7	8.3	10.1	6.2	3.8	5.2	3.9	3.0	3.4	4.1	3.3	3.6
2	9.9	6.3	7.9	6.1	3.5	4.6	5.0	2.8	3.8	3.8	2.4	3.2
3	9.0	5.1	7.0	7.2	4.4	5.6	4.9	3.6	4.3	3.7	1.5	2.6
4	9.1	5.1	6.9	5.9	3.7	4.8	4.6	3.2	3.9	4.2	3.3	3.7
5	8.5	4.7	6.5	6.5	5.0	5.6	3.5	2.5	3.0	4.8	3.3	3.8
6	8.2	4.1	6.1	6.0	4.3	5.2	3.3	2.2	2.8	3.8	1.4	2.7
7	8.4	4.3	6.3	5.5	3.2	4.4	3.6	1.8	2.8	2.4	.3	1.4
8	8.8	4.7	6.6	4.7	2.0	3.5	4.0	2.7	3.3	4.1	2.0	3.1
9	8.3	5.0	6.7	5.5	2.8	4.1	4.2	3.3	3.7	4.7	2.8	3.8
10	7.8	6.7	7.2	4.3	2.4	3.4	3.8	2.1	3.2	5.0	2.7	3.8
11	9.1	7.0	7.8	4.2	1.8	2.7	2.3	.6	1.4	3.9	3.4	3.6
12	8.8	6.7	7.6	3.6	1.8	2.7	1.9	.1	1.0	4.5	3.1	3.8
13	8.2	7.1	7.6	3.3	.8	2.2	3.3	1.8	2.5	4.5	3.4	3.9
14	9.4	7.1	8.2	4.4	2.0	3.0	3.1	2.4	2.9	4.4	2.7	3.4
15	8.9	5.4	7.1	4.6	2.4	3.4	3.1	2.4	2.7	4.2	1.7	3.1
16	9.5	6.0	7.6	2.7	.8	1.8	3.7	2.3	3.0	1.7	.2	1.2
17	9.1	5.6	7.3	3.4	1.1	2.4	4.0	2.7	3.3	2.1	.9	1.6
18	8.8	6.2	7.4	3.1	.8	1.9	2.7	.8	1.7	3.4	1.7	2.5
19	8.7	6.4	7.6	2.7	.7	1.7	3.5	1.8	2.9	3.1	2.2	2.7
20	8.0	6.5	7.2	3.5	1.6	2.4	2.9	.8	2.0	3.3	2.3	2.7
21	7.5	5.6	6.9	3.6	1.2	2.3	4.1	2.6	3.3	3.4	2.5	2.9
22	6.6	4.5	5.4	2.6	.9	1.8	3.9	1.5	3.1	4.8	3.1	3.9
23	6.2	3.5	4.8	3.4	.7	2.1	4.8	3.6	4.1	3.8	2.4	3.1
24	6.6	3.7	5.1	5.1	3.1	3.9	5.1	3.7	4.2	3.3	1.8	2.6
25	7.0	4.0	5.4	4.7	3.2	3.9	3.9	2.9	3.4	5.0	3.1	3.8
26	7.2	5.1	6.1	5.4	3.6	4.3	3.6	2.3	3.0	3.8	1.2	2.9
27	8.3	6.2	7.0	4.9	3.6	4.3	4.4	2.8	3.4	1.9	.0	.9
28	7.1	5.6	6.3	3.6	2.3	2.9	3.6	2.5	3.0	2.1	.5	1.3
29	7.9	5.6	6.4	4.1	2.3	3.2	3.8	2.3	3.0	3.2	.7	1.8
30	6.8	4.5	5.5	4.4	3.2	3.8	4.0	2.1	3.2	4.4	2.6	3.4
31	5.7	3.7	4.8	---	---	---	4.3	3.6	3.9	4.8	2.3	3.4
MONTH	11.7	3.5	6.8	7.2	.7	3.4	5.1	.1	3.1	5.0	.0	2.9

GRANDE RONDE RIVER BASIN

13324300 LOOKINGGLASS CREEK NEAR LOOKING GLASS, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4.1	1.5	2.7	5.5	1.6	3.5	5.7	3.3	4.3	5.3	3.2	4.0
2	3.7	1.7	2.8	6.7	3.5	4.6	5.3	3.3	4.1	7.2	3.3	4.7
3	5.7	3.5	4.3	5.6	1.8	3.7	6.2	3.1	4.2	8.4	2.8	5.3
4	5.0	3.4	4.2	6.2	3.2	4.5	7.0	2.2	4.0	9.4	3.3	5.9
5	5.1	3.0	4.2	6.9	3.9	5.3	7.7	2.0	4.5	6.5	4.0	5.2
6	4.1	1.4	2.8	7.1	2.8	4.6	6.4	4.1	5.0	8.3	2.9	5.3
7	2.1	.1	1.0	7.1	2.7	4.5	5.0	3.4	4.1	9.7	3.2	6.1
8	2.3	.0	1.1	5.4	3.0	4.2	7.1	2.9	4.4	9.1	4.4	6.5
9	3.2	1.7	2.4	6.3	3.3	4.6	7.2	1.9	4.2	8.8	4.3	6.2
10	3.5	1.8	2.6	5.8	3.0	4.3	6.7	2.8	4.6	9.2	3.8	6.1
11	4.2	2.1	3.0	7.1	3.3	4.7	7.0	2.6	4.5	10.1	4.0	6.7
12	4.6	1.8	3.0	7.2	2.9	4.7	7.3	3.5	5.0	9.8	5.3	7.3
13	4.6	1.9	3.0	7.5	3.3	5.1	7.1	3.1	4.7	9.8	6.0	7.7
14	3.4	.7	2.1	6.4	2.6	4.2	8.5	2.2	5.0	6.8	5.8	6.3
15	3.1	2.0	2.5	6.1	2.3	4.1	9.8	2.7	5.8	7.6	5.5	6.4
16	5.5	2.7	3.8	6.7	3.3	4.6	10.8	3.3	6.5	7.5	5.0	6.2
17	5.3	2.2	3.7	6.4	3.3	4.7	9.0	4.9	6.5	8.5	4.4	6.4
18	5.9	3.3	4.3	6.3	4.2	5.0	5.8	4.2	5.1	9.9	5.1	7.2
19	5.5	2.3	3.8	6.9	4.0	5.4	8.0	3.5	5.4	10.3	4.9	7.3
20	5.8	2.6	4.2	6.5	2.6	4.3	8.0	3.1	5.1	10.5	5.7	7.7
21	6.2	3.6	4.7	6.8	2.3	4.3	8.7	3.6	5.5	11.4	4.8	8.0
22	6.1	3.5	4.7	7.1	2.2	4.4	7.3	3.6	5.5	13.3	6.6	9.6
23	5.3	3.3	4.3	7.6	2.7	4.9	8.1	4.6	6.0	14.2	7.4	10.5
24	6.3	2.9	4.5	7.1	3.4	5.1	10.5	3.7	6.3	14.9	9.0	11.5
25	5.6	1.9	3.5	6.5	4.3	5.1	10.5	3.7	6.3	14.8	8.9	11.5
26	5.4	1.5	3.3	6.5	3.1	4.5	9.5	4.4	6.2	14.7	8.8	11.4
27	4.9	1.2	3.0	6.1	2.6	4.1	8.6	4.5	5.8	15.1	9.1	11.3
28	4.9	1.0	3.0	6.6	3.5	4.9	5.4	3.8	4.6	13.5	8.2	10.6
29	---	---	---	7.3	3.7	5.0	5.7	3.0	4.4	12.4	6.6	9.1
30	---	---	---	7.3	3.4	5.0	5.2	3.6	4.5	13.2	5.8	9.3
31	---	---	---	5.1	3.0	4.1	---	---	---	15.0	7.6	11.0
MONTH	6.3	.0	3.3	7.6	1.6	4.6	10.8	1.9	5.1	15.1	2.8	7.7
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	15.1	8.4	11.1	17.6	9.5	13.3	15.1	7.5	11.1	14.0	7.5	10.5
2	11.7	7.7	9.3	17.8	8.8	13.0	16.6	8.0	12.1	14.2	7.1	10.5
3	11.3	7.0	8.6	18.2	9.1	13.5	16.6	8.4	12.2	14.0	7.2	10.4
4	12.3	6.7	8.8	18.6	10.6	14.3	12.6	8.9	10.6	14.0	7.0	10.3
5	9.9	7.2	8.3	15.9	11.2	13.3	16.4	7.8	11.8	11.2	7.8	9.2
6	11.8	7.1	9.3	16.7	9.2	12.4	17.2	8.6	12.6	11.7	6.3	8.8
7	13.9	7.9	10.3	17.3	8.1	12.6	17.6	9.1	13.0	11.7	6.2	8.6
8	14.5	8.4	11.1	18.2	9.8	13.5	16.9	8.3	12.4	11.6	4.9	8.1
9	14.4	9.2	11.3	18.3	9.3	13.7	16.2	8.2	12.0	12.1	5.2	8.6
10	10.4	8.1	9.4	15.7	9.6	12.6	16.2	7.9	11.9	12.5	5.9	9.0
11	11.0	7.1	9.0	15.8	9.9	12.5	16.5	8.4	12.1	12.8	6.1	9.3
12	8.8	6.6	7.9	16.9	10.0	12.9	16.1	8.7	12.0	13.2	7.4	10.1
13	12.1	6.2	8.8	17.4	9.4	13.1	14.6	8.9	11.5	12.8	8.4	10.4
14	12.4	6.5	9.3	17.2	8.9	12.8	16.4	8.7	12.2	13.2	7.1	10.0
15	14.6	6.6	10.3	16.2	8.9	12.2	16.0	8.7	12.2	12.9	7.0	9.9
16	15.0	6.6	10.4	13.1	9.3	11.1	16.1	8.5	12.1	12.3	8.3	10.0
17	11.6	6.7	9.1	14.5	8.2	10.9	16.0	8.7	12.1	12.5	6.9	9.4
18	14.6	6.3	10.1	13.2	7.8	10.6	15.5	8.3	11.5	11.8	6.6	9.1
19	15.4	6.9	11.0	15.8	7.9	11.6	14.8	7.2	10.6	11.4	6.2	8.6
20	16.1	7.5	11.6	14.6	9.1	11.6	14.6	6.3	10.2	10.9	5.2	8.1
21	17.4	8.3	12.6	14.7	8.1	11.2	14.5	6.7	10.4	10.4	5.6	7.9
22	17.5	8.9	12.9	15.5	8.0	11.7	14.0	8.0	10.7	11.3	5.9	8.4
23	16.1	9.2	12.3	16.2	8.1	12.0	13.0	8.2	10.6	11.3	6.2	8.6
24	10.9	8.9	10.0	17.0	8.4	12.4	13.8	7.2	10.3	11.3	6.5	8.9
25	14.2	7.0	10.5	17.0	8.3	12.4	14.1	6.5	10.2	9.7	6.3	8.2
26	13.8	8.9	11.1	16.8	8.1	12.1	14.9	7.2	10.9	10.7	6.4	8.4
27	12.6	9.5	10.7	16.5	7.3	11.9	15.3	8.0	11.3	10.9	7.4	8.9
28	14.7	9.3	11.6	14.1	8.5	10.8	13.6	7.2	10.3	10.8	6.3	8.6
29	17.2	8.7	12.6	9.8	7.3	8.9	14.6	7.4	10.8	10.1	4.6	7.2
30	17.6	9.5	13.2	10.3	8.1	9.0	14.7	7.4	10.8	10.4	4.8	7.4
31	---	---	---	14.8	7.7	10.9	14.5	7.8	10.8	---	---	---
MONTH	17.6	6.2	10.4	18.6	7.3	12.1	17.6	6.3	11.4	14.2	4.6	9.0
YEAR	18.6	.0	6.7									

GRANDE RONDE RIVER BASIN

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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.42 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 mi².

PERIOD OF RECORD.--April 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,330 ft above sea level, from topographic map.

REMARKS.--Records fair except for 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.--6 years (water years 1996-2001), 283 ft³/s, 205,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,590 ft³/s July 9, 1997, gage height, 4.17 ft; maximum gage height, 4.27 ft May 16, 1997; minimum discharge, 92 ft³/s Sept. 5, 2001.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 1	1330	*592	*2.79				
Minimum discharge, 92 ft ³ /s Sept. 5.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	380	215	172	188	178	154	173	263	187	190	177	109
2	354	208	171	183	180	162	177	225	220	185	164	108
3	288	206	170	184	181	153	175	207	175	181	155	106
4	268	205	169	185	180	156	176	197	154	171	146	102
5	255	216	168	184	183	160	171	195	143	199	164	98
6	240	209	168	178	176	178	169	190	139	204	150	104
7	234	203	165	174	172	193	186	186	141	180	142	102
8	229	206	169	169	161	202	184	190	140	174	135	103
9	226	208	169	175	170	200	181	206	158	169	129	104
10	225	208	169	179	165	199	184	193	172	161	120	106
11	244	200	162	180	167	214	182	197	172	161	117	105
12	241	190	158	190	167	202	186	214	177	175	117	105
13	239	191	153	187	e165	203	184	287	190	166	117	106
14	233	191	162	185	e159	223	174	310	190	160	117	112
15	226	191	169	186	166	193	170	369	189	159	116	108
16	221	186	155	180	168	184	170	323	175	171	113	107
17	215	182	168	175	164	174	169	305	173	179	112	108
18	210	180	e159	176	167	180	173	286	178	181	109	107
19	210	177	176	181	165	204	185	278	179	182	109	103
20	207	181	181	180	165	224	183	248	178	173	113	104
21	220	180	181	186	163	189	191	231	180	187	109	105
22	213	179	184	189	164	182	181	e221	179	197	109	105
23	203	174	185	182	160	180	174	e250	180	183	112	105
24	207	177	190	185	163	180	172	e280	183	166	114	107
25	208	177	186	188	158	183	166	e310	184	159	113	108
26	207	177	186	183	158	180	177	e270	192	155	110	113
27	233	181	188	189	157	171	215	e237	200	150	110	117
28	220	173	184	184	151	173	269	e250	250	156	109	119
29	222	172	184	188	---	175	263	e223	198	167	112	119
30	217	174	186	174	---	170	231	e208	191	174	108	118
31	211	---	188	178	---	166	---	191	---	191	109	---
TOTAL	7306	5717	5375	5645	4673	5707	5591	7540	5367	5406	3837	3223
MEAN	236	191	173	182	167	184	186	243	179	174	124	107
MAX	380	216	190	190	183	224	269	369	250	204	177	119
MIN	203	172	153	169	151	153	166	186	139	150	108	98
AC-FT	14490	11340	10660	11200	9270	11320	11090	14960	10650	10720	7610	6390

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2001, BY WATER YEAR (WY)

	1996	1997	1998	1999	2000	2001
MEAN	233	223	222	205	217	233
MAX	294	272	356	233	297	323
(WY)	1998	1996	1996	1997	1996	1997
MIN	200	191	173	180	167	179
(WY)	1997	2001	2001	1998	2001	2001

SUMMARY STATISTICS

	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1996 - 2001
ANNUAL TOTAL	83978	65387	
ANNUAL MEAN	229	179	
HIGHEST ANNUAL MEAN			283
LOWEST ANNUAL MEAN			358
HIGHEST DAILY MEAN	468	380	1140
LOWEST DAILY MEAN	146	98	98
ANNUAL SEVEN-DAY MINIMUM	157	103	103
ANNUAL RUNOFF (AC-FT)	166600	129700	205300
10 PERCENT EXCEEDS	336	225	478
50 PERCENT EXCEEDS	213	179	227
90 PERCENT EXCEEDS	170	112	170

e Estimated

GRANDE RONDE RIVER BASIN

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 mi².

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 sea level, 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.--Records good except those for the periods Dec. 17 to Jan. 29 and June 10, 11, which are fair. 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.--72 years (water years 1913,1926-91, 1996-2001), 192 ft³/s, 139,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,550 ft³/s June 16, 1974, gage height, 8.59 ft, present datum; minimum discharge, 7.5 ft³/s Mar. 2, 1966, result of freezeup; minimum daily, 10 ft³/s Nov. 28-30, 1936.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 25	2100	*1,080	*6.20				
Minimum discharge, 14 ft ³ /s Feb. 28.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	233	71	44	32	30	25	84	342	580	258	71	35
2	193	63	43	30	29	27	82	280	587	237	65	34
3	124	66	43	36	29	21	77	238	516	217	62	33
4	104	67	42	35	29	25	72	219	406	205	60	32
5	92	66	41	34	30	23	70	234	347	211	70	30
6	84	66	40	33	29	23	74	224	316	193	60	30
7	79	57	40	25	26	24	75	218	292	168	57	29
8	74	65	39	33	26	27	71	259	309	148	55	27
9	70	62	39	35	28	28	63	339	388	143	53	27
10	67	60	38	33	28	26	69	334	e413	131	51	25
11	73	54	34	33	26	27	67	351	e364	124	49	24
12	73	50	28	34	27	27	66	447	351	146	48	24
13	71	50	33	34	26	28	64	654	309	128	46	24
14	71	54	39	33	26	33	60	729	279	115	45	27
15	72	56	38	32	27	30	61	821	267	107	44	25
16	67	45	32	e21	26	31	61	635	279	118	43	25
17	65	43	40	e22	26	29	69	495	313	115	48	25
18	63	41	36	e24	26	30	75	443	294	102	53	25
19	64	45	38	e27	25	41	81	454	290	96	52	24
20	62	46	39	e23	25	53	81	431	300	90	51	23
21	84	42	40	29	25	46	81	407	322	100	49	22
22	75	43	39	31	25	45	80	444	366	90	48	22
23	69	40	39	28	25	50	80	553	373	85	47	21
24	70	46	39	31	25	61	84	762	343	81	47	21
25	69	45	35	32	22	75	106	939	270	77	45	20
26	67	45	37	27	22	84	157	920	254	74	44	24
27	80	48	39	e23	24	78	273	798	316	71	41	24
28	76	41	33	e19	23	78	385	886	406	69	40	23
29	79	47	37	26	---	79	322	745	311	67	39	23
30	77	46	35	29	---	76	281	578	284	68	38	22
31	70	---	35	30	---	74	---	535	---	78	36	---
TOTAL	2617	1570	1174	914	735	1324	3271	15714	10445	3912	1557	770
MEAN	84.4	52.3	37.9	29.5	26.2	42.7	109	507	348	126	50.2	25.7
MAX	233	71	44	36	30	84	385	939	587	258	71	35
MIN	62	40	28	19	22	21	60	218	254	67	36	20
AC-FT	5190	3110	2330	1810	1460	2630	6490	31170	20720	7760	3090	1530

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1926 - 2001, BY WATER YEAR (WY)

MEAN	56.6	64.6	59.5	50.2	48.1	55.7	160	512	782	384	86.3	49.9
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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1926 - 2001
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ANNUAL TOTAL	64209		44003						
ANNUAL MEAN	175		121				192		
HIGHEST ANNUAL MEAN							288		1974
LOWEST ANNUAL MEAN							90.9		1977
HIGHEST DAILY MEAN	1020	Jun 15	939	May 25			2290	Jun 17	1974
LOWEST DAILY MEAN	28	Dec 12	19	Jan 28			10	Nov 28	1936
ANNUAL SEVEN-DAY MINIMUM	35	Dec 10	22	Sep 19			11	Nov 26	1936
ANNUAL RUNOFF (AC-FT)	127400		87280				139400		
10 PERCENT EXCEEDS	523		340				600		
50 PERCENT EXCEEDS	66		53				64		
90 PERCENT EXCEEDS	42		25				28		

e Estimated

GRANDE RONDE RIVER BASIN

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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 mi².

PERIOD OF RECORD.--April 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,360 ft above sea level, from topographic map.

REMARKS.--Records 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.--6 years (water years 1996-2001), 178 ft³/s, 128,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,100 ft³/s June 1, 1997, gage height, 6.73 ft; maximum gage height, 7.28 ft June 16, 1999, from high-water mark; minimum discharge, 5.2 ft³/s Aug. 20, 2001.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 25	1915	*921	*6.52				

Minimum discharge, 5.2 ft³/s Aug. 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	199	62	40	31	e29	e25	60	264	534	145	19	7.6
2	102	57	40	30	e29	27	59	207	530	125	15	7.7
3	78	56	40	33	e29	25	55	171	400	109	10	7.7
4	74	55	39	33	29	27	52	160	290	99	9.3	7.5
5	70	55	38	32	29	26	51	175	238	101	12	7.5
6	64	56	39	e30	28	26	53	161	200	81	9.8	7.5
7	60	51	39	e26	26	27	53	162	197	73	8.5	7.0
8	56	56	37	e32	e25	29	52	215	232	63	8.2	6.6
9	54	54	37	e35	e26	29	50	274	317	55	7.8	6.6
10	54	51	37	32	e26	29	52	270	315	47	7.4	6.5
11	57	48	e33	31	e25	30	53	316	271	41	6.8	6.3
12	57	48	e28	33	e25	30	52	451	259	50	7.2	6.1
13	55	49	e33	32	e25	31	51	635	200	45	8.2	6.4
14	57	48	e38	31	e25	33	49	664	167	39	8.3	6.7
15	56	49	38	30	e25	32	50	663	162	35	8.0	6.4
16	53	48	e32	e23	e25	31	51	550	174	48	8.1	6.5
17	52	44	38	e24	e24	31	57	437	186	48	22	6.5
18	54	42	e32	e25	e23	30	63	416	156	46	17	6.4
19	56	53	e33	e27	e22	39	68	400	155	47	8.3	6.4
20	56	43	e35	e24	e22	40	68	410	167	46	10	6.3
21	69	57	35	e28	e22	37	70	388	203	51	9.5	6.2
22	61	45	35	e31	e23	37	69	428	238	46	7.5	6.2
23	61	46	35	28	e22	39	71	578	228	41	7.4	6.2
24	63	42	34	e34	e22	47	74	738	192	34	6.9	6.0
25	63	41	34	30	e22	56	87	826	133	19	6.6	5.9
26	63	42	e35	27	e22	59	126	778	136	17	7.7	6.0
27	65	42	34	e23	e23	56	240	740	249	17	8.5	6.0
28	64	41	e32	e20	e24	57	308	758	251	15	7.9	6.0
29	65	42	36	e26	---	56	238	625	192	14	7.7	5.8
30	64	40	33	e28	---	53	244	503	167	15	7.7	6.0
31	60	---	33	e29	---	54	---	484	---	20	7.7	---
TOTAL	2062	1463	1102	898	697	1148	2626	13847	7139	1632	296.0	196.5
MEAN	66.5	48.8	35.5	29.0	24.9	37.0	87.5	447	238	52.6	9.55	6.55
MAX	199	62	40	35	29	59	308	826	534	145	22	7.7
MIN	52	40	28	20	22	25	49	160	133	14	6.6	5.8
AC-FT	4090	2900	2190	1780	1380	2280	5210	27470	14160	3240	587	390

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2001, BY WATER YEAR (WY)

	1996	1997	1998	1999	2000	2001
MEAN	45.1	73.4	69.3	59.0	68.4	70.4
MAX	66.5	172	170	118	166	118
(WY)	2001	1996	1996	1997	1996	2000
MIN	23.0	36.9	35.5	29.0	24.9	37.0
(WY)	2000	1999	2001	2001	2001	2001

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1996 - 2001

ANNUAL TOTAL	54831	33106.5	178
ANNUAL MEAN	150	90.7	235
HIGHEST ANNUAL MEAN			90.7
LOWEST ANNUAL MEAN			1997
HIGHEST DAILY MEAN	909	Jun 14	1600
LOWEST DAILY MEAN	12	Aug 30	5.8
ANNUAL SEVEN-DAY MINIMUM	14	Aug 26	6.0
ANNUAL RUNOFF (AC-FT)	108800	65670	128700
10 PERCENT EXCEEDS	502	242	550
50 PERCENT EXCEEDS	52	40	61
90 PERCENT EXCEEDS	34	7.7	26

e Estimated

GRANDE RONDE RIVER BASIN

13330300 LOSTINE RIVER AT BAKER ROAD, NEAR LOSTINE, OR

LOCATION.--Lat 45°32'14", long 117°28'43", in NW 1/4 SW 1/4 sec.29, T.1 N., R.42 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 mi².

PERIOD OF RECORD.--June 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,050 ft above sea level, from topographic map.

REMARKS.--Records good except those for the period July through September, which are fair 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.--6 years (water years 1996-2001), 182 ft³/s, 132,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,970 ft³/s June 9, 1996, gage height, 6.88 ft; minimum discharge, 6.3 ft³/s Aug. 22, 1995.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 25	2345	*1,090	*5.38				

Minimum discharge, 10 ft³/s Sept. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	299	92	44	31	e27	29	84	351	481	197	42	27
2	199	85	43	30	28	23	84	281	594	167	40	27
3	146	86	43	33	28	20	77	233	443	133	33	29
4	123	88	42	34	28	22	70	212	329	117	24	28
5	113	87	41	32	29	21	67	221	240	101	25	29
6	107	88	39	e30	27	22	69	213	189	102	23	13
7	97	78	39	e26	25	23	72	203	173	90	29	14
8	90	88	39	32	e24	25	66	230	191	65	19	14
9	86	85	39	36	e25	25	61	324	256	49	16	14
10	85	82	38	33	25	26	65	320	311	27	13	14
11	93	74	37	31	24	26	65	338	310	36	13	18
12	92	66	e31	34	e24	26	65	429	286	51	13	23
13	87	62	35	32	25	31	63	680	239	54	13	22
14	87	66	42	31	e24	40	58	748	205	48	15	30
15	85	67	39	30	e25	36	56	865	194	28	15	29
16	79	57	33	e23	25	36	55	659	193	35	14	31
17	77	55	40	e24	24	35	60	509	211	48	40	33
18	78	58	36	e26	24	35	67	456	186	53	73	31
19	81	56	e35	e27	23	47	77	428	166	59	21	27
20	79	55	36	e25	23	51	77	417	175	67	17	27
21	106	57	38	28	23	44	78	397	185	104	25	24
22	90	58	38	32	24	43	76	428	223	126	17	15
23	86	55	38	27	23	47	75	520	242	110	27	13
24	89	61	38	34	23	57	78	714	223	46	32	13
25	87	67	34	29	22	73	94	915	165	39	27	11
26	87	67	36	26	21	79	137	907	140	39	32	15
27	101	65	36	e23	23	e78	245	733	180	36	33	21
28	93	45	32	e20	23	e78	389	827	340	32	30	22
29	98	49	36	e26	---	78	328	698	260	52	31	28
30	94	46	34	e27	---	74	274	506	227	53	26	30
31	90	---	34	28	---	71	---	439	---	46	25	---
TOTAL	3204	2045	1165	900	689	1321	3132	15201	7557	2210	803	672
MEAN	103	68.2	37.6	29.0	24.6	42.6	104	490	252	71.3	25.9	22.4
MAX	299	92	44	36	29	79	389	915	594	197	73	33
MIN	77	45	31	20	21	20	55	203	140	27	13	11
AC-FT	6360	4060	2310	1790	1370	2620	6210	30150	14990	4380	1590	1330

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2001, BY WATER YEAR (WY)

	MEAN	75.2	97.6	85.2	67.2	77.2	68.5	168	468	647	315	66.3	51.7
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	37.6	29.0	24.6	42.6	104	308	252	71.3	25.9	22.4	
(WY)	1997	1999	2001	2001	2001	2001	2001	1999	2001	2001	2001	2001	

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1996 - 2001

ANNUAL TOTAL	62437	38899		
ANNUAL MEAN	171	107	182	
HIGHEST ANNUAL MEAN			251	1996
LOWEST ANNUAL MEAN			107	2001
HIGHEST DAILY MEAN	1060	Jun 15	915	May 25
LOWEST DAILY MEAN	29	Aug 10	11	Sep 25
ANNUAL SEVEN-DAY MINIMUM	35	Dec 25	14	Aug 10
ANNUAL RUNOFF (AC-FT)	123800		77160	
10 PERCENT EXCEEDS	470		277	
50 PERCENT EXCEEDS	75		47	
90 PERCENT EXCEEDS	42		23	

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 mi², 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 sea level, 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 for 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.--67 years (water years 1925-85, 1996-2001), 115 ft³/s, 82,960 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,730 ft³/s June 15, 1974, gage height, 3.58 ft; maximum gage height, 5.38 ft Jan. 24, 1984 (result of ice jam); minimum daily discharge, 3 ft³/s Jan. 20, Feb. 1, 1937.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 15	0115	*808	*3.50	May 24	2045	664	3.34

Minimum discharge, 7.9 ft³/s Sept. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	95	31	19	14	e13	e16	91	453	283	60	19	9.2
2	82	29	20	13	e16	e18	89	375	304	54	17	9.1
3	50	28	19	e12	e13	14	82	291	239	48	17	9.1
4	41	28	19	15	15	14	75	253	192	44	16	8.9
5	35	29	19	15	16	14	70	255	165	42	20	8.9
6	31	27	e21	e14	15	15	69	241	153	41	17	9.0
7	29	24	e22	e11	e12	15	68	240	141	36	16	8.9
8	26	26	e21	e18	e10	17	62	271	154	33	15	8.8
9	25	26	20	e16	e10	21	55	325	188	31	14	8.8
10	23	26	17	e15	e14	22	57	314	186	29	14	8.7
11	25	24	e13	e17	e14	23	57	318	159	28	13	8.5
12	25	e24	e11	18	e12	23	57	403	152	29	13	8.5
13	24	e26	e13	17	e10	24	56	552	132	28	13	8.6
14	25	e27	e17	16	e8.0	27	54	588	123	26	12	9.0
15	26	e25	e20	16	e8.0	26	53	699	116	23	12	8.6
16	24	25	e22	e14	e14	27	52	594	115	27	12	8.7
17	23	e25	e21	e13	e14	26	61	471	122	31	11	9.2
18	22	e21	e16	e17	14	26	73	400	110	26	11	8.6
19	22	e23	e17	e19	14	32	87	369	105	24	11	8.4
20	22	e21	e17	e14	14	43	90	343	102	23	11	8.4
21	34	e21	e17	e17	14	46	90	319	102	33	11	8.3
22	30	e24	e20	e19	14	49	83	325	106	27	10	8.2
23	28	e26	24	20	14	55	80	386	100	24	10	8.2
24	29	e29	16	20	14	65	83	489	90	22	10	8.2
25	29	e26	15	22	14	85	119	562	78	21	10	8.0
26	29	e25	e13	21	e14	100	197	522	72	19	10	9.0
27	34	e25	15	e20	e14	93	353	451	82	18	9.7	8.8
28	34	e23	e15	e12	e13	90	477	459	105	18	9.5	9.3
29	35	e23	e14	e10	---	86	372	366	78	17	9.5	8.9
30	33	e21	15	e12	---	79	308	292	68	18	9.4	8.7
31	32	---	15	e13	---	74	---	267	---	20	9.3	---
TOTAL	1022	758	543	490	367.0	1265	3520	12193	4122	920	392.4	261.5
MEAN	33.0	25.3	17.5	15.8	13.1	40.8	117	393	137	29.7	12.7	8.72
MAX	95	31	24	22	16	100	477	699	304	60	20	9.3
MIN	22	21	11	10	8.0	14	52	240	68	17	9.3	8.0
AC-FT	2030	1500	1080	972	728	2510	6980	24180	8180	1820	778	519

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1925 - 2001, BY WATER YEAR (WY)

	MEAN	25.3	41.1	50.7	44.7	48.6	66.8	170	373	397	120	20.2	15.8
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1925 - 2001

ANNUAL TOTAL	35509	25853.9	115	
ANNUAL MEAN	97.0	70.8	178	
HIGHEST ANNUAL MEAN			46.2	1977
LOWEST ANNUAL MEAN				
HIGHEST DAILY MEAN	548	May 23	1480	Jun 17 1974
LOWEST DAILY MEAN	11	Dec 12	3.0	Jan 20 1937
ANNUAL SEVEN-DAY MINIMUM	12	Aug 26	3.9	Jan 19 1937
ANNUAL RUNOFF (AC-FT)	70430	51280	82960	
10 PERCENT EXCEEDS	293	240	350	
50 PERCENT EXCEEDS	37	23	43	
90 PERCENT EXCEEDS	16	9.6	11	

e Estimated

GRANDE RONDE RIVER BASIN

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 current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,900 ft above sea level, from topographic map.

REMARKS.--Records fair except for 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.--6 years (water years 1996-2001), 112 ft³/s, 80,960 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,410 ft³/s May 16, 1997, June 15, 1999; maximum gage height, 6.53 ft, June 15, 1999; minimum discharge, 2.3 ft³/s Sept. 7, 1998, Sept. 7-9, 2001.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 15	0400	*1,160	*6.35	May 24	2115	767	5.99

Minimum discharge, 2.3 ft³/s Sept. 7-9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115	22	12	8.7	e11	e10	93	407	340	39	6.8	2.8
2	69	20	12	8.1	e11	11	90	331	327	34	6.8	2.8
3	45	20	11	9.4	e10	e11	83	263	238	28	6.6	2.8
4	36	e20	10	9.1	e11	9.8	76	230	188	24	7.8	2.9
5	30	e21	11	8.8	e12	9.7	70	233	164	25	10	3.9
6	26	e19	11	e8.5	11	10	69	201	144	26	10	3.5
7	23	e17	15	e8.0	e10	11	69	189	141	24	8.0	2.6
8	21	e18	13	e10	e9.0	13	62	224	162	23	7.1	2.5
9	19	18	11	e9.5	e9.0	15	59	281	210	19	6.7	2.5
10	19	17	9.9	e9.0	e10	17	58	258	190	14	6.4	2.6
11	21	15	e10	e10	e11	18	62	276	151	12	6.1	2.7
12	20	15	e9.5	11	e10	19	60	397	147	13	6.0	2.8
13	20	15	e13	10	e9.0	22	59	577	122	12	5.8	3.1
14	20	15	e14	9.7	e7.0	23	56	643	113	11	6.3	2.7
15	21	15	e14	9.3	e9.0	21	52	895	107	10	6.1	2.6
16	19	15	e14	e9.0	e9.0	22	49	688	106	12	5.9	2.7
17	18	15	e13	10	e9.0	21	62	450	111	11	6.0	2.8
18	17	11	e12	e12	e9.0	21	75	416	95	10	6.2	2.8
19	17	13	e13	e13	e9.0	29	82	385	87	10	4.2	2.8
20	15	12	e13	e12	9.1	36	83	354	76	10	4.4	2.8
21	27	12	e13	e13	8.2	38	80	321	75	12	4.2	2.9
22	21	14	e14	e14	8.2	43	75	335	77	9.7	5.0	5.3
23	20	16	14	14	8.2	55	73	414	69	9.1	6.1	5.1
24	20	17	11	15	8.4	66	78	535	58	8.8	6.7	6.2
25	20	15	8.8	15	e9.0	91	119	573	46	8.7	6.9	6.1
26	20	14	10	14	e9.0	101	226	507	44	8.0	6.5	2.8
27	25	14	9.8	13	e9.0	89	413	470	63	7.0	5.1	2.9
28	24	13	12	e11	e8.0	89	513	466	63	5.7	3.6	3.1
29	26	13	11	e9.0	---	82	369	375	52	5.8	3.0	3.0
30	23	12	9.5	e10	---	77	354	296	44	6.4	2.8	2.9
31	22	---	8.9	e11	---	79	---	291	---	6.7	2.8	---
TOTAL	839	473	363.4	334.1	263.1	1159.5	3669	12281	3810	454.9	185.9	97.0
MEAN	27.1	15.8	11.7	10.8	9.40	37.4	122	396	127	14.7	6.00	3.23
MAX	115	22	15	15	12	101	513	895	340	39	10	6.2
MIN	15	11	8.8	8.0	7.0	9.7	49	189	44	5.7	2.8	2.5
AC-FT	1660	938	721	663	522	2300	7280	24360	7560	902	369	192
CFSM	.37	.22	.16	.15	.13	.51	1.68	5.44	1.74	.20	.08	.04
IN.	.43	.24	.19	.17	.13	.59	1.87	6.28	1.95	.23	.09	.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2001, BY WATER YEAR (WY)

	1996	1997	1998	1999	2000	2001
MEAN	17.8	57.2	71.0	51.0	69.8	77.6
MAX	33.0	164	202	114	224	100
(WY)	1996	1996	1996	1997	1997	1997
MIN	6.34	15.8	11.7	10.8	9.40	37.4
(WY)	1999	2001	2001	2001	2001	1998

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1996 - 2001

ANNUAL TOTAL	35747.2	23929.9	112
ANNUAL MEAN	97.7	65.6	149
HIGHEST ANNUAL MEAN			1997
LOWEST ANNUAL MEAN			2001
HIGHEST DAILY MEAN	631 May 22	895 May 15	1080 Jun 15 1999
LOWEST DAILY MEAN	5.2 Aug 20	2.5 Sep 8	2.5 Sep 8 2001
ANNUAL SEVEN-DAY MINIMUM	5.6 Aug 19	2.7 Sep 7	2.7 Sep 7 2001
ANNUAL RUNOFF (AC-FT)	70900	47460	80960
ANNUAL RUNOFF (CFSM)	1.34	.90	1.54
ANNUAL RUNOFF (INCHES)	18.27	12.23	20.86
10 PERCENT EXCEEDS	331	225	333
50 PERCENT EXCEEDS	33	14	45
90 PERCENT EXCEEDS	8.5	5.2	7.0

e Estimated

GRANDE RONDE RIVER BASIN

81

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 mi².

PERIOD OF RECORD.--August 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,760 ft above sea level, from topographic map.

REMARKS.--Records 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.--6 years (water years 1996-2001), 685 ft³/s, 496,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,640 ft³/s Feb 9, 1996, gage height, 4.76 ft; minimum discharge, 102 ft³/s July 29, 1998.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 15	1300	*2,120	*2.84				
Minimum discharge, 107 ft ³ /s Aug. 22.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	811	386	322	249	232	228	520	1110	836	472	238	127
2	644	372	318	249	235	243	520	920	919	426	221	127
3	519	379	317	252	234	233	493	809	706	379	215	147
4	471	400	314	253	235	236	471	747	547	356	190	150
5	448	397	311	255	242	243	453	750	443	372	216	149
6	428	385	308	251	234	264	454	685	393	360	206	134
7	415	369	308	229	227	288	490	644	389	315	207	129
8	402	388	312	243	208	308	477	683	420	292	184	137
9	393	391	311	260	222	319	471	795	557	259	165	137
10	392	386	312	246	223	335	476	787	603	189	158	131
11	410	371	296	244	220	369	518	827	569	181	139	139
12	401	357	277	253	220	388	530	1050	577	222	134	159
13	393	355	286	249	221	482	504	1490	548	256	135	163
14	383	358	312	248	216	524	471	1620	514	232	141	180
15	379	362	311	246	222	438	450	1840	473	201	142	190
16	372	345	291	229	227	419	435	1550	458	241	135	201
17	382	336	313	209	223	398	446	1280	487	256	168	201
18	359	332	278	222	223	419	464	1150	446	257	192	190
19	360	329	e286	242	229	530	487	1070	414	254	150	191
20	355	336	271	234	230	541	480	1010	415	281	154	192
21	397	330	271	241	227	476	483	944	429	348	124	182
22	376	332	269	245	231	461	457	985	478	361	115	167
23	368	324	272	235	229	466	447	1190	523	332	126	156
24	379	337	276	236	232	483	446	1480	504	271	133	166
25	377	332	269	241	232	521	477	1640	429	255	121	165
26	379	328	269	233	231	527	608	1490	415	249	121	177
27	408	339	272	214	233	488	921	1320	528	223	120	190
28	390	326	266	218	221	568	1180	1390	682	213	129	207
29	397	330	268	219	---	529	975	1130	554	246	133	203
30	392	329	270	230	---	488	949	850	517	254	124	208
31	376	---	246	235	---	476	---	777	---	270	119	---
TOTAL	12956	10641	9002	7410	6359	12688	16553	34013	15773	8823	4855	4995
MEAN	418	355	290	239	227	409	552	1097	526	285	157	166
MAX	811	400	322	260	242	568	1180	1840	919	472	238	208
MIN	355	324	246	209	208	228	435	644	389	181	115	127
AC-FT	25700	21110	17860	14700	12610	25170	32830	67460	31290	17500	9630	9910

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2001, BY WATER YEAR (WY)

	1996	1997	1998	1999	2000	2001
MEAN	370	447	477	434	541	606
MAX	436	743	864	747	1124	830
(WY)	1998	1996	1996	1997	1996	1997
MIN	318	336	290	239	227	409
(WY)	1997	1999	2001	2001	2001	2001

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1996 - 2001
ANNUAL TOTAL	211747	144068	
ANNUAL MEAN	579	395	685
HIGHEST ANNUAL MEAN			952
LOWEST ANNUAL MEAN			395
HIGHEST DAILY MEAN	2050	1840	3900
LOWEST DAILY MEAN	200	115	109
ANNUAL SEVEN-DAY MINIMUM	207	123	123
ANNUAL RUNOFF (AC-FT)	420000	285800	496300
10 PERCENT EXCEEDS	1120	693	1560
50 PERCENT EXCEEDS	409	324	449
90 PERCENT EXCEEDS	256	166	258

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 mi².

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 sea level. 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.--Records fair. Flow slightly regulated by Wallowa Lake and small reservoirs. Diversions for irrigation upstream from station, chiefly in vicinity of La Grande, Enterprise, and Wallowa; one transbasin diversion from Big Sheep Creek and tributaries in Imnaha River basin for irrigation in Wallowa Valley. U.S. Geological Survey satellite telemeter and National Weather Service telemeter at station.

AVERAGE DISCHARGE.--57 years (water years 1945-2001), 3,075 ft³/s, 2,228,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,800 ft³/s Feb. 9, 1996, gage height, 13.76 ft, from rating curve extended above 20,000 ft³/s; minimum discharge, 321 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 15	1100	*8,060	*7.01				

Minimum discharge, 376 ft³/s Sept. 1-3, 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1390	1010	874	831	805	1020	4450	6950	3000	1290	622	385
2	1740	983	850	796	818	1100	4360	6340	3080	1190	578	386
3	1230	958	852	761	814	1100	4070	5780	2720	1100	561	385
4	1110	975	836	798	833	1070	3650	5410	2390	1020	547	394
5	1060	1010	822	820	943	1070	3310	5230	2130	972	544	396
6	1000	973	809	806	984	1160	3110	4880	1980	1000	558	398
7	959	955	791	789	944	1330	3080	4660	1830	918	535	391
8	936	1000	796	764	917	1580	2970	4610	1810	843	532	386
9	914	1060	825	809	888	1800	2870	4840	1890	800	511	391
10	904	1030	832	863	868	1900	2850	4820	2000	751	482	392
11	927	968	824	839	903	1910	2970	4740	1980	687	469	387
12	943	930	788	867	878	1890	3250	4990	1940	680	452	387
13	956	887	809	855	876	1970	3170	5700	1900	722	446	392
14	952	895	905	858	860	2440	3040	6110	1820	697	445	394
15	954	911	989	829	840	2490	2880	7460	1730	656	445	415
16	942	914	895	802	859	2350	2820	7040	1620	655	442	422
17	917	845	875	720	859	2170	2990	6270	1590	701	433	437
18	902	819	833	747	849	2070	3470	5590	1560	684	452	434
19	899	796	816	792	870	2390	3790	5180	1430	671	468	427
20	902	845	807	816	877	3360	3800	4800	1360	663	440	425
21	994	898	815	807	904	3370	3750	4480	1360	692	437	425
22	1050	856	842	816	964	3190	3550	4300	1360	756	426	417
23	972	853	878	820	1080	3160	3390	4340	1400	732	421	407
24	966	869	919	782	1090	3350	3400	4780	1400	701	432	398
25	960	916	937	793	1100	3730	3750	5180	1310	646	432	403
26	947	896	886	809	1090	4180	4440	5080	1180	614	416	410
27	998	e890	859	752	1070	3950	5420	4620	1310	595	412	430
28	1070	e880	830	725	1040	4050	6430	4670	1720	564	407	463
29	1110	856	814	779	---	4190	6150	4160	1520	569	402	452
30	1090	874	820	776	---	4030	5830	3490	1380	600	403	443
31	1040	---	823	818	---	3850	---	3100	---	614	396	---
TOTAL	31734	27552	26251	24839	25823	77220	113010	159600	53700	23783	14546	12272
MEAN	1024	918	847	801	922	2491	3767	5148	1790	767	469	409
MAX	1740	1060	989	867	1100	4190	6430	7460	3080	1290	622	463
MIN	899	796	788	720	805	1020	2820	3100	1180	564	396	385
AC-FT	62940	54650	52070	49270	51220	153200	224200	316600	106500	47170	28850	24340

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2001, BY WATER YEAR (WY)

	MEAN	882	1244	2001	2198	3220	4316	6301	7377	5652	2164	846	767
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	685	702	769	888	2257	2368	1501	520	438	409	
(WY)	1988	1988	1945	1979	1977	1977	1968	1977	1992	1977	1992	2001	

SUMMARY STATISTICS

	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1945 - 2001
ANNUAL TOTAL	1078269	590330	
ANNUAL MEAN	2946	1617	
HIGHEST ANNUAL MEAN			3075
LOWEST ANNUAL MEAN			5253
HIGHEST DAILY MEAN	11200	7460	1136
LOWEST DAILY MEAN	603	385	1977
ANNUAL SEVEN-DAY MINIMUM	606	389	42200
ANNUAL RUNOFF (AC-FT)	2139000	1171000	344
10 PERCENT EXCEEDS	6730	4180	361
50 PERCENT EXCEEDS	1460	914	2228000
90 PERCENT EXCEEDS	756	434	7450

e Estimated

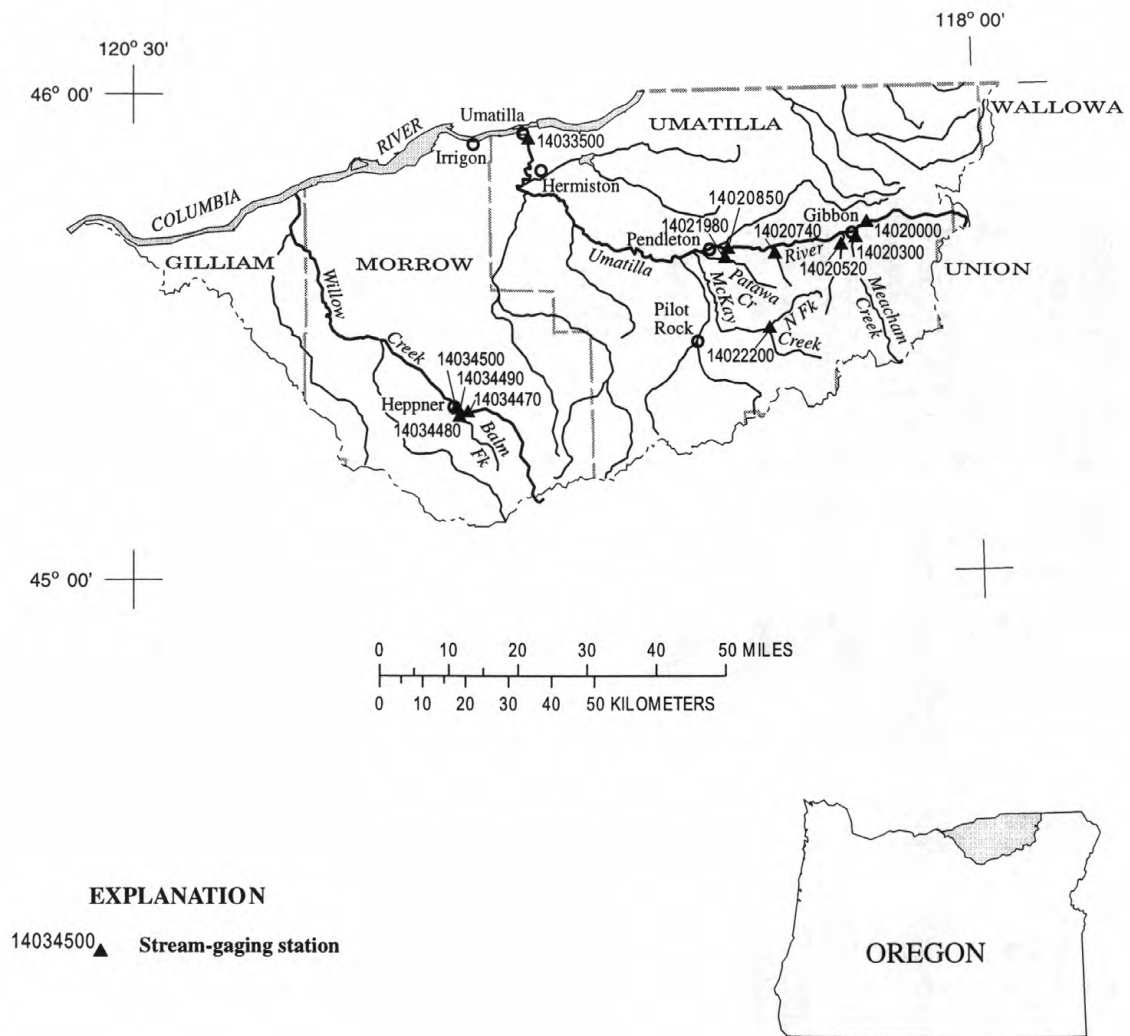


Figure 11. Location of surface-water stations in the Umatilla and Willow Creek Basins.

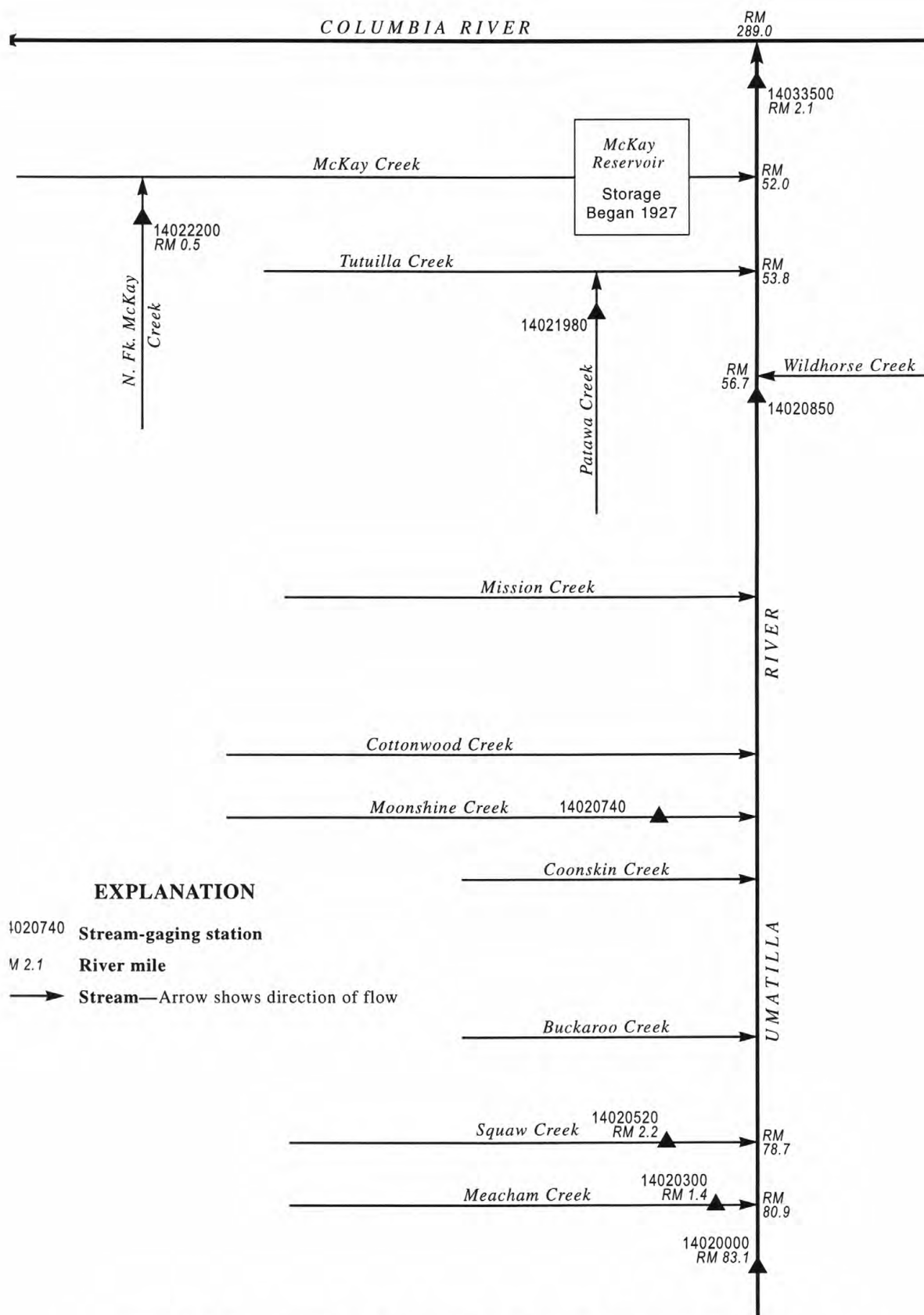


Figure 12. Schematic diagram showing gaging stations in the Umatilla River Basin.

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 mi².

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 sea level. 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.--68 years (water years 1934-2001), 227 ft³/s, 23.50 in/yr, 164,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,220 ft³/s Nov. 28, 1995, gage height, 9.40 ft (high-water mark), from rating curve extended above 3,500 ft³/s; maximum gage height, 9.50 ft Jan. 29, 1965; minimum discharge, 16 ft³/s Nov. 9, 1965, momentary regulation from unknown source.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 27	2030	*978	*5.08				

Minimum discharge, 37 ft³/s Aug. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	266	83	123	104	93	145	613	793	104	58	45	40
2	138	81	122	98	103	152	556	659	101	56	44	40
3	98	79	121	96	113	142	469	564	109	55	43	41
4	83	84	116	94	170	136	426	521	105	54	44	40
5	74	85	109	96	314	148	401	494	100	53	44	40
6	68	87	103	104	289	192	393	432	99	52	43	41
7	65	84	99	109	228	240	391	404	92	52	42	40
8	62	e86	94	112	e189	306	371	401	89	51	41	40
9	e60	e94	92	109	166	330	354	397	85	50	41	40
10	e64	e110	90	108	149	290	349	368	83	49	41	40
11	68	e120	85	106	135	253	417	347	82	49	40	41
12	67	e110	81	107	124	228	467	349	91	50	40	42
13	65	e100	80	106	115	227	429	337	96	50	41	42
14	65	92	82	109	109	264	369	335	87	48	40	42
15	63	91	84	103	107	258	335	422	81	47	40	42
16	62	87	80	98	103	250	349	379	76	47	40	43
17	63	85	96	94	98	232	489	320	73	47	39	44
18	68	81	93	94	99	235	561	288	72	47	40	43
19	68	e80	92	95	100	444	531	261	68	47	40	43
20	71	e80	89	92	104	587	483	237	66	48	40	42
21	84	80	86	100	114	472	425	216	65	49	40	42
22	78	80	92	116	144	402	404	198	63	46	40	42
23	76	79	132	118	174	381	396	183	61	46	42	42
24	75	83	223	122	175	420	453	169	62	45	42	42
25	74	83	205	118	165	612	590	157	67	45	40	44
26	75	92	167	114	156	569	728	146	64	44	40	47
27	80	121	146	108	152	445	850	140	73	43	40	46
28	84	145	132	103	148	446	834	137	74	44	40	47
29	89	139	122	101	---	496	641	124	65	46	40	45
30	87	128	115	97	---	461	651	116	61	48	40	45
31	85	---	109	95	---	463	---	109	---	48	40	---
TOTAL	2525	2829	3460	3226	4136	10226	14725	10003	2414	1514	1272	1268
MEAN	81.5	94.3	112	104	148	330	491	323	80.5	48.8	41.0	42.3
MAX	266	145	223	122	314	612	850	793	109	58	45	47
MIN	60	79	80	92	93	136	335	109	61	43	39	40
AC-FT	5010	5610	6860	6400	8200	20280	29210	19840	4790	3000	2520	2520
CFSM	.62	.72	.85	.79	1.13	2.52	3.75	2.46	.61	.37	.31	.32
IN.	.72	.80	.98	.92	1.17	2.90	4.18	2.84	.69	.43	.36	.36

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2001, BY WATER YEAR (WY)

MEAN	57.5	130	237	263	329	392	539	447	188	64.4	47.1	46.8
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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1934 - 2001
ANNUAL TOTAL	77235	57598	227
ANNUAL MEAN	211	158	415
HIGHEST ANNUAL MEAN			114
LOWEST ANNUAL MEAN			114
HIGHEST DAILY MEAN	978	850	5130
LOWEST DAILY MEAN	41	39	28
ANNUAL SEVEN-DAY MINIMUM	41	40	31
ANNUAL RUNOFF (AC-FT)	153200	114200	164200
ANNUAL RUNOFF (CFSM)	1.61	1.20	1.73
ANNUAL RUNOFF (INCHES)	21.93	16.36	23.50
10 PERCENT EXCEEDS	462	418	550
50 PERCENT EXCEEDS	126	94	118
90 PERCENT EXCEEDS	49	42	44

e Estimated

UMATILLA RIVER BASIN

87

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 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,803.05 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--26 years (water years 1976-2001), 203 ft³/s, 15.71 in/yr, 147,400 acre-ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,930 ft³/s Nov. 28, 1995, gage height, 7.67 ft, from rating curve extended above 4,600 ft³/s; maximum gage height, 8.16 ft, from floodmark; minimum discharge, 6.6 ft³/s Aug. 29, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 25, 1975, reached a stage of 7.21 ft, from floodmark, discharge, about 8,200 ft³/s.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 25	2345	*838	*3.88				

Minimum discharge, 8.0 ft³/s Aug. 27 to Sept. 5, Sept. 9-19, 23, 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	35	67	83	73	124	740	571	53	22	12	8.5
2	38	34	67	e74	76	128	691	525	52	21	12	8.4
3	34	33	67	e70	83	124	596	474	51	19	11	8.6
4	32	33	66	e72	113	119	529	425	49	18	12	8.4
5	29	33	64	e74	143	117	486	390	49	18	12	8.3
6	27	35	62	e78	168	134	466	332	48	18	11	8.9
7	25	35	59	e82	168	196	453	292	45	17	11	9.1
8	24	51	57	e84	146	312	425	269	43	16	10	8.9
9	22	77	55	e82	134	393	411	254	41	16	10	8.7
10	26	76	55	81	126	359	420	230	40	15	10	8.5
11	28	68	53	80	119	313	488	209	38	15	9.7	8.4
12	27	62	50	81	109	275	528	200	42	17	9.6	8.4
13	28	57	47	80	101	275	512	191	45	17	9.6	8.4
14	27	54	49	87	94	345	469	185	43	15	9.5	8.5
15	27	52	51	83	89	354	442	227	40	15	9.3	8.3
16	26	50	51	78	84	335	472	211	37	16	9.2	8.3
17	25	48	67	72	79	295	615	184	35	14	9.0	8.4
18	24	46	69	70	76	282	709	160	34	14	8.8	8.3
19	24	45	66	72	75	429	684	142	31	14	9.0	8.6
20	25	43	63	70	75	599	600	131	29	15	9.1	8.9
21	26	42	59	73	80	552	520	117	27	15	8.9	11
22	26	41	63	88	91	502	470	105	25	14	8.7	8.8
23	26	40	80	90	107	504	431	96	24	14	11	8.6
24	26	40	119	93	119	552	435	88	24	14	9.0	8.4
25	26	40	128	96	123	783	489	81	25	13	8.6	9.3
26	26	43	121	95	123	771	557	75	24	13	8.6	11
27	30	52	114	90	122	609	627	73	25	12	8.7	11
28	32	58	103	85	122	651	599	72	27	12	8.4	10
29	34	63	96	83	---	706	487	66	25	13	8.7	9.7
30	36	65	90	79	---	640	445	61	23	14	8.5	9.8
31	36	---	88	75	---	600	---	56	---	13	8.4	---
TOTAL	893	1451	2246	2500	3018	12378	15796	6492	1094	479	301.3	268.4
MEAN	28.8	48.4	72.5	80.6	108	399	527	209	36.5	15.5	9.72	8.95
MAX	51	77	128	96	168	783	740	571	53	22	12	11
MIN	22	33	47	70	73	117	411	56	23	12	8.4	8.3
AC-FT	1770	2880	4450	4960	5990	24550	31330	12880	2170	950	598	532
CFSM	.16	.27	.41	.46	.61	2.27	2.99	1.19	.21	.09	.06	.05
IN.	.19	.31	.47	.53	.64	2.62	3.34	1.37	.23	.10	.06	.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2001, BY WATER YEAR (WY)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	16.3	81.4	207	242	395	510	542	314	99.5	24.1	12.6	12.1														
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	13.2	8.48	8.95														
(WY)	1988	1988	1977	1977	1977	1977	1986	1992	1992	1977	1986	2001														

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1976 - 2001

ANNUAL TOTAL	69734.9	46916.7	203
ANNUAL MEAN	191	129	352
HIGHEST ANNUAL MEAN			1997
LOWEST ANNUAL MEAN			1977
HIGHEST DAILY MEAN	1170	783	4820
LOWEST DAILY MEAN	9.4	8.3	7.5
ANNUAL SEVEN-DAY MINIMUM	9.5	8.4	7.7
ANNUAL RUNOFF (AC-FT)	138300	93060	147400
ANNUAL RUNOFF (CFSM)	1.08	.73	1.16
ANNUAL RUNOFF (INCHES)	14.74	9.92	15.71
10 PERCENT EXCEEDS	573	467	554
50 PERCENT EXCEEDS	78	55	70
90 PERCENT EXCEEDS	13	9.1	11

e Estimated

UMATILLA RIVER BASIN

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 mi².

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,850 ft above sea level, from topographic map.

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

AVERAGE DISCHARGE.--3 years (water years 1999-2001), 29.3 ft³/s, 12.20 in/yr, 21,210 acre-ft/yr

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 900 ft³/s Dec. 30, 1998, gage height, 3.71 ft, from highwater mark, from rating curve extended above 300 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 0.55 ft³/s Aug. 11, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 139 ft³/s Apr. 12, gage height, 1.92 ft; minimum discharge, 0.55 ft³/s Aug. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	11	23	18	14	20	74	47	2.7	1.6	1.6	.93
2	11	10	22	16	17	23	73	45	3.0	1.5	1.4	.97
3	8.0	9.4	21	15	22	22	73	40	3.3	1.4	1.4	.91
4	6.2	9.8	20	14	43	23	79	35	3.0	1.4	1.4	.86
5	5.2	9.3	18	14	82	27	73	30	3.3	1.4	1.3	.92
6	4.6	9.4	17	14	64	40	67	26	3.1	1.4	1.2	.97
7	4.1	9.3	15	14	47	47	68	22	2.8	1.3	1.1	.96
8	3.7	19	14	14	37	64	71	19	2.6	1.2	1.1	.95
9	3.5	32	13	14	30	73	73	17	2.6	1.1	1.1	.91
10	5.2	30	13	e13	26	59	72	14	2.6	1.2	1.0	.88
11	6.0	26	12	13	23	52	105	13	2.5	1.1	.96	.91
12	6.8	23	10	13	20	47	132	11	3.8	1.1	.98	.92
13	7.2	21	9.9	13	18	50	115	10	4.8	1.1	.98	.93
14	7.2	19	10	15	16	57	92	11	3.9	1.0	.94	.96
15	7.1	18	11	14	15	53	76	13	3.3	1.0	.92	.93
16	6.6	16	12	13	14	50	68	11	2.9	1.1	.91	.90
17	6.2	15	23	13	13	47	68	9.6	2.7	1.1	.89	.98
18	5.9	14	25	13	12	50	67	8.6	2.4	1.1	.87	1.0
19	5.5	13	23	13	12	99	64	7.9	2.2	1.1	.96	1.0
20	6.1	12	20	13	12	108	57	7.2	2.0	1.6	.97	1.0
21	6.7	12	18	17	13	87	48	6.5	1.8	1.5	.94	1.0
22	6.4	11	20	31	16	72	41	6.0	1.7	1.4	.96	1.0
23	6.4	10	37	31	21	64	35	5.5	1.6	1.3	1.1	1.1
24	6.4	10	60	31	22	66	32	5.1	1.8	1.2	1.1	1.0
25	6.4	10	50	28	23	84	29	4.7	2.0	1.2	.99	1.3
26	6.4	13	38	25	22	73	27	4.3	1.7	1.2	.93	1.7
27	9.1	25	31	22	22	58	27	4.2	2.3	1.2	.91	1.8
28	11	31	27	20	21	69	27	4.0	2.4	1.3	.91	1.6
29	13	27	24	18	---	70	24	3.5	1.9	1.7	.93	1.5
30	13	23	22	16	---	61	31	3.2	1.8	2.0	.92	1.4
31	12	---	20	15	---	60	---	2.9	---	1.8	.90	---
TOTAL	233.9	498.2	678.9	533	697	1775	1888	447.2	78.5	40.6	32.57	32.19
MEAN	7.55	16.6	21.9	17.2	24.9	57.3	62.9	14.4	2.62	1.31	1.05	1.07
MAX	21	32	60	31	82	108	132	47	4.8	2.0	1.6	1.8
MIN	3.5	9.3	9.9	13	12	20	24	2.9	1.6	1.0	.87	.86
AC-FT	464	988	1350	1060	1380	3520	3740	887	156	81	65	64
CFSM	.23	.51	.67	.53	.76	1.76	1.93	.44	.08	.04	.03	.03
IN.	.27	.57	.77	.61	.80	2.03	2.15	.51	.09	.05	.04	.04

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2001, BY WATER YEAR (WY)

	MEAN	3.70	17.7	59.8	44.3	62.8	95.3	44.3	15.1	5.73	1.44	1.04	1.32
MAX	7.55	20.5	88.9	76.7	98.1	144	62.9	20.7	11.2	1.67	1.09	1.91	
(WY)	2001	1999	1999	2000	2001	2000	2001	1999	2000	2000	1999	2000	2000
MIN	1.14	16.1	21.9	17.2	24.9	57.3	34.6	10.3	2.62	1.31	.97	.99	
(WY)	2000	2000	2001	2001	2001	2001	2000	2000	2001	2001	2000	1999	

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1999 - 2001

ANNUAL TOTAL	11745.37	6935.06	
ANNUAL MEAN	32.1	19.0	29.3
HIGHEST ANNUAL MEAN			35.5
LOWEST ANNUAL MEAN			19.0
HIGHEST DAILY MEAN	285	132	830
LOWEST DAILY MEAN	.91	.86	.86
ANNUAL SEVEN-DAY MINIMUM	.94	.92	.92
ANNUAL RUNOFF (AC-FT)	23300	13760	21210
ANNUAL RUNOFF (CFSM)	.98	.58	.90
ANNUAL RUNOFF (INCHES)	13.40	7.91	12.20
10 PERCENT EXCEEDS	103	59	73
50 PERCENT EXCEEDS	12	11	11
90 PERCENT EXCEEDS	1.2	1.0	.99

e Estimated

UMATILLA RIVER BASIN

89

14020740 MOONSHINE CREEK NEAR MISSION, OR

LOCATION.--Lat 45°39'37", long 118°35'42", 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 west of Mission, and at mile 1.1.

DRAINAGE AREA.--4.62 mi².

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 sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records poor. No known regulation.

AVERAGE DISCHARGE.--10 years (water years 1992-2001), 3.14 ft³/s, 2,270 acre-ft per year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 247 ft³/s Feb. 7, 1996, gage height, 6.67 ft, from rating curve extended above 75 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 11	1700	*36	*5.62	No other peak greater than base discharge.			
Minimum discharge, 0.12 ft ³ /s July 23-27, Aug. 17, 18, Sept. 14-16.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.17	1.7	3.9	3.8	2.9	2.8	4.7	4.8	.53	.32	.17	.14
2	.14	1.5	3.7	3.4	3.2	3.3	5.5	4.6	.50	.32	.17	.14
3	.14	1.4	3.6	3.1	3.7	3.2	6.8	4.3	.50	.32	.17	.14
4	.14	1.4	3.2	2.9	7.0	3.2	8.1	4.0	.50	.32	.17	.14
5	.14	1.3	2.9	2.7	12	3.3	8.4	3.6	.50	.26	.16	.14
6	.14	1.2	2.7	2.8	9.4	3.5	9.0	3.3	.50	.25	.16	.14
7	.14	1.2	2.5	2.7	6.9	3.8	10	2.9	.50	.25	.15	.15
8	.14	6.3	2.2	2.6	5.5	5.0	11	2.5	.50	.25	.15	.15
9	.14	10	2.1	2.5	4.7	5.7	10	2.1	.48	.25	.15	.15
10	.20	8.1	2.0	2.4	4.3	5.2	9.8	1.8	.45	.25	.14	.15
11	.18	5.6	1.8	2.3	3.8	4.9	25	1.6	.45	.22	.14	.14
12	.16	4.3	1.6	2.5	3.4	4.7	26	1.4	.45	.22	.14	.14
13	.16	3.6	1.6	2.8	2.9	4.9	20	1.3	.45	.22	.14	.14
14	.17	3.0	1.8	4.9	2.6	5.2	15	1.4	.45	.20	.14	.14
15	.18	2.6	2.5	4.8	2.4	4.8	13	1.4	.45	.19	.14	.14
16	.20	2.3	2.6	4.2	2.1	4.7	12	1.3	.45	.19	.14	.14
17	.21	2.1	2.8	3.5	1.9	4.6	11	1.1	.45	.17	.14	.14
18	.28	2.0	2.9	3.2	1.7	5.3	11	1.0	.45	.17	.14	.14
19	.37	1.8	3.0	3.5	1.6	8.7	10	.95	.43	.17	.15	.14
20	.50	1.6	2.8	3.9	1.6	8.2	8.9	.86	.40	.14	.16	.14
21	.56	1.5	2.7	6.2	1.7	7.1	7.7	.84	.39	.14	.16	.14
22	.62	1.4	3.7	11	2.2	6.1	6.5	.78	.36	.14	.16	.15
23	.78	1.3	5.9	8.2	2.7	5.3	5.4	.72	.36	.12	.17	.14
24	.87	1.4	10	6.7	3.1	5.1	4.5	.67	.36	.12	.15	.15
25	.88	1.5	9.5	6.0	3.3	5.2	3.9	.63	.36	.13	.15	.17
26	1.0	2.6	7.5	5.2	3.2	4.5	3.5	.61	.36	.13	.14	.19
27	1.4	4.4	6.4	4.8	3.0	4.1	3.2	.58	.36	.13	.14	.19
28	1.9	4.7	5.8	4.3	2.8	4.2	3.3	.55	.36	.15	.14	.19
29	2.1	4.1	5.0	3.7	---	4.0	3.0	.55	.36	.22	.14	.19
30	2.0	3.9	4.8	3.3	---	3.7	4.3	.55	.33	.21	.14	.19
31	1.9	---	4.3	3.0	---	4.1	---	.55	---	.18	.14	---
TOTAL	17.91	89.8	117.8	126.9	105.6	148.4	280.5	53.24	12.99	6.35	4.65	4.54
MEAN	.58	2.99	3.80	4.09	3.77	4.79	9.35	1.72	.43	.20	.15	.15
MAX	2.1	10	10	11	12	8.7	26	4.8	.53	.32	.17	.19
MIN	.14	1.2	1.6	2.3	1.6	2.8	3.0	.55	.33	.12	.14	.14
AC-FT	36	178	234	252	209	294	556	106	26	13	9.2	9.0

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2001, BY WATER YEAR (WY)

	MEAN	1.97	5.36	6.23	7.57	8.03	4.23	3.43	.57	.13	.096	.074
MAX	.58	4.46	14.2	9.67	25.1	15.4	9.35	12.6	1.39	.23	.19	.15
(WY)	2001	1992	1997	1996	2000	2001	1995	2000	2000	1995	1995	2001
MIN	.000	.22	.48	1.93	1.90	2.41	.58	.13	.000	.002	.001	.000
(WY)	1992	2000	1994	1992	1994	1992	1992	1992	1992	1992	1992	1992

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1992 - 2001

ANNUAL TOTAL	1294.52	968.68	
ANNUAL MEAN	3.54	2.65	
HIGHEST ANNUAL MEAN			3.14
LOWEST ANNUAL MEAN			4.95
HIGHEST DAILY MEAN	32	26	164
LOWEST DAILY MEAN	.08	.12	.00
ANNUAL SEVEN-DAY MINIMUM	.09	.13	.00
ANNUAL RUNOFF (AC-FT)	2570	1920	2270
10 PERCENT EXCEEDS	9.9	6.3	8.2
50 PERCENT EXCEEDS	1.4	1.6	.74
90 PERCENT EXCEEDS	.14	.14	.06

UMATILLA RIVER BASIN

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 Reservation, 1.6 mi upstream from Wildhorse Creek, 2.5 mi east of Post Office in Pendleton, and at mile 58.3.

DRAINAGE AREA.--440 mi².

PERIOD OF RECORD.--October 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,130 ft above sea level, from topographic map.

REMARKS.--Records good. No known regulation. Many diversions for irrigation upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--6 years (water years 1996-2001), 568 ft³/s, 411,600 acre-ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft³/s Feb. 9, 1996, gage height, 11.64 ft; minimum discharge, 36 ft³/s Aug. 25, 26, 30, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,770 ft³/s Apr. 28, gage height, 5.64 ft; minimum discharge, 38 ft³/s Aug. 27, 28, Sept. 1-3, 6, 24, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	260	112	245	248	223	336	1530	1590	187	73	48	39
2	239	108	244	232	227	358	1530	1430	178	69	47	40
3	154	104	241	218	270	e360	1350	1230	179	67	45	39
4	118	103	235	209	370	e330	1230	1100	177	64	46	e39
5	99	110	e220	204	663	e340	1140	1050	163	61	47	e39
6	87	110	e210	211	674	e390	1090	925	163	62	44	e39
7	81	120	e200	221	581	544	1100	837	145	59	43	39
8	78	143	e190	227	494	717	1070	794	141	57	42	40
9	75	314	e190	230	438	904	1030	773	134	54	42	39
10	83	314	e180	225	392	839	1020	721	132	53	42	39
11	92	275	e170	221	353	756	1260	667	128	53	41	39
12	87	241	161	229	322	676	1520	647	132	54	41	39
13	85	221	152	229	295	647	1410	629	144	58	40	39
14	82	195	153	251	271	732	1210	611	121	53	40	39
15	82	194	163	257	255	763	1080	739	108	51	40	39
16	80	184	159	240	242	754	1050	697	102	49	40	39
17	78	175	193	226	227	690	1270	618	97	49	40	39
18	76	168	228	216	218	662	1510	552	96	49	40	39
19	76	160	224	220	214	879	1520	497	92	49	40	39
20	78	152	213	218	213	1380	1370	445	87	50	39	40
21	88	146	201	219	222	1250	1180	408	83	54	39	40
22	87	142	200	304	271	1080	1070	375	78	51	40	40
23	83	137	258	327	322	1030	990	348	76	48	41	39
24	82	140	440	325	356	1050	998	323	77	47	43	39
25	82	139	500	318	361	1470	1130	303	82	46	42	39
26	83	147	435	306	351	1600	1370	286	81	45	40	45
27	94	180	376	292	343	1290	1580	270	82	45	39	45
28	99	254	338	272	336	1250	1650	265	94	44	39	46
29	112	261	309	255	---	1390	1340	237	85	47	39	45
30	115	252	289	241	---	1310	1130	221	78	51	39	44
31	114	---	267	231	---	1220	---	203	---	52	39	---
TOTAL	3129	5301	7584	7622	9504	26997	37728	19791	3522	1664	1287	1205
MEAN	101	177	245	246	339	871	1258	638	117	53.7	41.5	40.2
MAX	260	314	500	327	674	1600	1650	1590	187	73	48	46
MIN	75	103	152	204	213	330	990	203	76	44	39	39
AC-FT	6210	10510	15040	15120	18850	53550	74830	39260	6990	3300	2550	2390

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2001, BY WATER YEAR (WY)

	1996	1997	1998	1999	2000	2001
MEAN	69.9	330	743	814	1146	1289
MAX	101	717	1186	1360	2801	1971
(WY)	2001	1996	1997	1997	1996	1997
MIN	54.2	164	245	246	339	871
(WY)	2000	1998	2001	2001	2001	1998

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1996 - 2001

ANNUAL TOTAL	176979	125334	568
ANNUAL MEAN	484	343	777
HIGHEST ANNUAL MEAN			343
LOWEST ANNUAL MEAN			11700
HIGHEST DAILY MEAN	2160	1650	37
LOWEST DAILY MEAN	40	39	38
ANNUAL SEVEN-DAY MINIMUM	41	39	411600
ANNUAL RUNOFF (AC-FT)	351000	248600	1370
10 PERCENT EXCEEDS	1360	1080	272
50 PERCENT EXCEEDS	258	195	45
90 PERCENT EXCEEDS	48	40	

e Estimated

UMATILLA RIVER BASIN

91

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 mi², excludes about 1 mi² 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 sea level, from topographic map.

REMARKS.--Records poor. No known regulation.

AVERAGE DISCHARGE.--10 years (water years 1992-2001), 5.66 ft³/s, 4,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 378 ft³/s Feb. 7, 1996, gage height, 7.94 ft; minimum discharge, 0.01 ft³/s July 22, 23, 27, 28, July 30 to Aug. 1, 1999.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 57 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 11	0415	*100	*5.15	No other peak greater than base discharge.			
Minimum discharge, 0.04 ft ³ /s part or all of each day Nov. 24-27.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.48	2.6	.95	4.0	5.2	3.9	8.6	19	.73	.50	.60	e.18
2	.39	2.3	1.0	3.5	5.4	3.9	12	16	.73	.50	.59	e.18
3	.37	2.1	.85	3.1	7.9	3.8	11	14	.71	.49	.59	e.18
4	.39	2.1	.82	2.9	15	3.8	15	12	.67	.47	.61	e.18
5	.41	2.0	.78	2.5	26	3.9	17	11	.72	.45	.59	e.18
6	.45	2.0	.74	2.1	19	4.0	18	9.4	.70	.47	.57	e.18
7	.47	2.0	.74	2.0	14	4.1	23	8.1	.71	.45	.57	e.20
8	.47	4.4	.69	1.9	11	5.2	24	7.2	.72	.45	.64	e.20
9	.51	12	.62	1.7	9.9	5.9	24	6.3	.73	.47	.63	e.20
10	.81	7.5	.57	1.5	8.7	5.4	23	5.5	.73	.51	.63	e.20
11	.57	4.8	.46	1.4	7.7	5.2	72	4.9	.73	.54	.62	e.18
12	.65	3.4	.37	2.0	6.8	5.1	63	4.4	.79	.60	.59	e.16
13	.66	2.5	.36	4.1	6.1	4.7	51	4.0	.79	.62	.61	e.14
14	.70	1.8	.31	5.5	5.5	4.4	42	4.1	.73	.62	.61	e.13
15	.76	1.3	.29	6.2	5.0	4.2	38	4.0	.68	.62	.56	e.13
16	.80	.90	.42	5.1	4.6	4.9	34	e3.7	.67	.64	.51	e.13
17	.83	.61	1.2	4.4	4.2	5.2	26	e3.4	.64	.63	.48	e.13
18	.90	.53	1.7	4.4	4.0	5.1	31	2.9	.60	.64	.47	e.13
19	1.0	.38	2.2	5.3	3.9	6.4	30	2.6	.60	.63	e.46	e.13
20	1.4	.21	2.3	7.6	3.6	7.3	26	2.3	.57	.66	e.48	e.13
21	1.2	.14	2.3	10	3.4	7.3	22	2.1	.53	.63	e.50	.18
22	1.2	.08	2.4	22	5.4	6.9	18	1.8	.51	.67	e.50	.19
23	1.3	.06	3.7	18	6.6	6.2	16	1.5	.49	.66	e.52	.16
24	1.3	.06	7.9	14	6.7	5.6	14	1.3	.51	.63	e.44	.17
25	1.4	.04	8.1	12	6.3	5.4	12	1.2	.53	.61	e.44	.19
26	1.4	.05	7.5	10	5.6	5.4	10	1.0	.54	.62	e.30	.20
27	1.5	.06	6.7	8.9	4.8	5.3	9.9	.96	.59	.60	e.18	.22
28	1.5	.75	5.9	7.9	4.2	7.8	10	.92	.66	.61	e.18	.20
29	2.9	1.0	5.5	7.0	---	7.0	9.5	.82	.54	.69	e.18	.20
30	3.8	.87	5.0	6.0	---	6.5	15	.76	.52	.69	e.18	.14
31	3.5	---	4.4	5.5	---	7.1	---	.71	---	.61	e.18	---
TOTAL	34.02	58.54	76.77	192.5	216.5	166.9	725.0	157.87	19.37	17.98	15.01	5.12
MEAN	1.10	1.95	2.48	6.21	7.73	5.38	24.2	5.09	.65	.58	.48	.17
MAX	3.8	12	8.1	22	26	7.8	72	19	.79	.69	.64	.22
MIN	.37	.04	.29	1.4	3.4	3.8	8.6	.71	.49	.45	.18	.13
AC-FT	67	116	152	382	429	331	1440	313	38	36	30	10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2001, BY WATER YEAR (WY)

	MEAN	2.11	5.10	10.2	12.0	14.8	10.4	9.51	1.81	.75	.53	.45
MAX	1.10	5.88	14.5	21.8	34.6	26.7	24.2	37.0	3.67	1.45	.98	.89
(WY)	2001	1992	1997	1997	1996	1997	2001	1995	1998	1997	1997	1993
MIN	.25	.64	.54	1.30	2.84	5.19	1.81	1.01	.48	.22	.13	.17
(WY)	1999	2000	2000	1992	1992	1992	1992	1992	1992	1992	1999	2001

SUMMARY STATISTICS

	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1992 - 2001
ANNUAL TOTAL	1372.12	1685.58	
ANNUAL MEAN	3.75	4.62	5.66
HIGHEST ANNUAL MEAN			10.6
LOWEST ANNUAL MEAN			2.08
HIGHEST DAILY MEAN	37	72	218
LOWEST DAILY MEAN	.04	.04	.03
ANNUAL SEVEN-DAY MINIMUM	.07	.07	.04
ANNUAL RUNOFF (AC-FT)	2720	3340	4100
10 PERCENT EXCEEDS	13	12	15
50 PERCENT EXCEEDS	1.4	1.3	1.5
90 PERCENT EXCEEDS	.17	.20	.29

e Estimated

UMATILLA RIVER BASIN

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 mi².

PERIOD OF RECORD.--May 1973 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,870 ft above sea level, from topographic map.

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

AVERAGE DISCHARGE.--28 years (water years 1974-2001), 43.0 ft³/s, 31,160 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,980 ft³/s Jan. 25, 1975, gage height, 8.48 ft, from floodmark, from rating curve extended above 150 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 0.22 ft³/s June 26, 1985 (result of temporary construction upstream).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 290 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 11	1700	*251	*2.86				

Minimum discharge, 0.67 ft³/s Aug. 15, 17, 22, 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	28	50	34	32	43	149	107	5.1	2.7	1.2	.78
2	28	24	48	31	40	47	146	95	5.4	2.4	1.1	.81
3	18	21	46	29	58	45	153	83	6.0	2.2	1.0	.82
4	14	21	42	27	e90	45	172	72	5.2	2.0	1.0	.83
5	11	21	38	27	e115	58	165	61	5.3	1.8	1.1	.85
6	9.0	20	35	29	e110	e85	167	53	5.5	1.7	.94	.90
7	7.7	19	32	29	e100	e95	175	45	5.0	1.6	.90	.93
8	6.7	32	29	28	e85	e110	169	39	4.7	1.5	.87	.92
9	6.1	58	26	27	72	e120	157	34	4.7	1.4	.85	.89
10	11	60	25	26	61	e110	152	29	4.8	1.3	.85	.79
11	28	53	e24	26	53	e95	223	26	4.8	1.3	.81	.81
12	28	49	e23	26	46	e90	233	23	7.9	1.3	.78	.81
13	29	45	e22	26	40	e85	215	20	11	1.3	.78	.84
14	27	42	e21	29	36	e90	188	22	7.5	1.3	.78	.88
15	25	38	21	28	35	e95	181	25	6.2	1.3	.74	.86
16	21	36	22	27	31	e95	177	22	5.5	1.3	.75	.89
17	18	34	36	e27	29	e95	171	19	5.1	1.3	.74	.90
18	16	31	37	27	27	e90	179	17	4.8	1.3	.75	.87
19	14	29	36	26	27	e120	170	15	4.3	1.3	.78	.92
20	15	27	34	27	27	e170	146	14	3.9	1.5	.81	.95
21	22	25	31	43	29	155	123	12	3.6	1.4	.80	.97
22	23	23	33	83	39	135	105	11	3.2	1.3	.79	.95
23	23	21	47	76	47	125	91	9.8	3.1	1.2	.83	.95
24	22	21	83	68	50	129	79	8.7	3.2	1.2	.92	.96
25	20	23	82	59	52	152	69	7.9	3.6	1.1	.85	1.3
26	19	34	69	53	51	137	60	7.2	3.3	1.1	.80	1.8
27	32	61	59	46	49	119	63	6.8	3.6	1.1	.75	1.9
28	38	72	52	41	47	153	63	7.7	3.8	1.1	.77	1.7
29	41	60	46	37	---	139	60	6.3	3.4	1.3	.77	1.5
30	36	52	41	33	---	121	79	5.7	3.0	1.4	.78	1.4
31	32	---	38	31	---	129	---	5.2	---	1.4	.78	---
TOTAL	701.5	1080	1228	1126	1478	3277	4280	909.3	146.5	45.4	26.37	30.68
MEAN	22.6	36.0	39.6	36.3	52.8	106	143	29.3	4.88	1.46	.85	1.02
MAX	61	72	83	83	115	170	233	107	11	2.7	1.2	1.9
MIN	6.1	19	21	26	27	43	60	5.2	3.0	1.1	.74	.78
AC-FT	1390	2140	2440	2230	2930	6500	8490	1800	291	90	52	61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2001, BY WATER YEAR (WY)

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	3.14	23.0	56.6	75.9	94.4	116	83.1	47.5	14.3	2.28	1.10	1.23																
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	.89	1.30	3.11	5.01	4.39	29.3	16.2	5.08	2.26	.73	.53	.78																
(WY)	1999	1988	1977	1977	1977	1992	1992	1992	1992	1985	1998	1987																

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1974 - 2001
ANNUAL TOTAL	16818.56	14328.75	
ANNUAL MEAN	46.0	39.3	43.0
HIGHEST ANNUAL MEAN			72.5
LOWEST ANNUAL MEAN			10.7
HIGHEST DAILY MEAN	344	Mar 23	1070
LOWEST DAILY MEAN	.79	Aug 11	.34
ANNUAL SEVEN-DAY MINIMUM	.82	Aug 9	.41
ANNUAL RUNOFF (AC-FT)	33360	28420	31160
10 PERCENT EXCEEDS	112	112	122
50 PERCENT EXCEEDS	26	26	12
90 PERCENT EXCEEDS	1.2	.89	1.0

e Estimated

93

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.

GAGE.--Water-stage recorder. Datum of gage is 330.47 ft above sea level. Oct. 21, 1903, to Jan. 25, 1931, nonrecording gage.

AVERAGE DISCHARGE.--74 years (water years 1928-2001), 477 ft³/s, 345,300 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 CURRENT YEAR.--Peak discharges greater than base discharge of 3,100 ft³/s and maximum (*):

Minimum discharge, 2.5 ft³/s July 12, 16, 17, 19, 20.

ANNUAL TOTAL	191460		135879.4						
ANNUAL MEAN	523		372			477			
HIGHEST ANNUAL MEAN						1026			1997
LOWEST ANNUAL MEAN						77.5			1977
HIGHEST DAILY MEAN	2750	Apr 5	1580	May 2	15600			Jan 30	1965
LOWEST DAILY MEAN	40	Jul 13	2.8	Jul 19	.00			Apr 20	1930
ANNUAL SEVEN-DAY MINIMUM	48	Jul 10	3.2	Jul 15	.00			Oct 18	1931
ANNUAL RUNOFF (AC-FT)	379800		269500		345300				
10 PERCENT EXCEEDS	1610		1000		1330				
50 PERCENT EXCEEDS	310		301		154				
90 PERCENT EXCEEDS	65		22		6.1				

WILLOW CREEK BASIN

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 mi².

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 sea level (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.--19 years (water years 1983-2001), 22.2 ft³/s, 16,050 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 544 ft³/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 Sept. 30, 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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 19	0200	*90	*6.40				

Minimum discharge, no flow part of or all of each day Aug. 27 to Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	4.1	5.2	7.4	9.0	8.2	55	58	4.7	3.9	.89	.00
2	6.8	4.0	5.2	7.1	9.1	7.9	51	54	5.9	3.5	.85	.00
3	e6.5	3.8	5.5	7.3	9.5	6.0	48	48	7.2	3.2	.77	.00
4	1.3	3.9	5.4	7.4	11	7.3	44	41	6.3	2.9	.79	.00
5	e1.5	5.3	5.2	8.0	19	7.3	39	35	4.1	2.5	1.1	.00
6	e3.0	4.6	5.0	8.6	19	8.5	39	30	4.4	2.1	.87	.00
7	3.2	4.4	5.1	6.5	14	7.8	37	26	4.2	1.7	.50	.00
8	3.1	6.4	5.1	9.0	17	14	35	22	4.4	1.6	.51	.00
9	3.1	e5.8	5.4	7.8	15	21	31	19	4.9	1.4	.48	.00
10	7.2	e5.6	5.2	7.3	13	19	28	16	6.3	.94	.44	.00
11	13	e5.2	3.9	7.1	12	17	44	14	6.7	.94	.28	.00
12	7.5	e5.6	3.3	7.5	11	16	41	13	10	1.6	.10	.00
13	5.7	e5.8	4.1	7.2	10	16	43	12	12	1.9	.09	.00
14	5.0	e5.6	5.5	7.3	9.5	17	40	13	10	1.6	.09	.00
15	4.6	e5.0	5.8	6.7	9.8	18	41	15	8.3	1.4	.08	.00
16	4.3	e4.0	5.2	5.2	9.2	17	49	13	7.5	1.1	.10	.00
17	3.9	4.8	5.8	3.8	8.7	16	64	13	6.8	.71	.12	.00
18	3.8	3.1	4.2	8.0	8.4	20	80	12	6.4	.72	.25	.00
19	4.0	4.1	5.5	8.1	8.2	34	83	12	5.9	.82	.34	.00
20	4.5	4.5	4.8	8.1	7.9	44	80	11	5.4	.94	.41	.00
21	5.7	4.0	4.8	8.5	8.0	38	71	11	4.8	1.1	.42	.00
22	4.9	3.5	5.0	15	8.8	28	63	9.7	4.3	.87	.49	.00
23	4.4	3.4	6.2	16	8.9	26	53	10	4.2	.75	.69	.00
24	4.3	5.0	8.6	15	8.5	20	48	10	4.3	.75	.88	.00
25	4.1	4.7	7.4	14	8.4	47	51	8.9	5.5	.89	.56	.00
26	4.0	5.4	7.7	13	7.9	53	60	7.0	4.9	.87	.09	.00
27	4.0	5.5	7.8	11	7.2	44	63	6.0	5.3	.79	.03	.00
28	4.1	5.3	8.0	11	7.0	46	72	8.8	6.2	.74	.00	.00
29	5.2	5.4	7.7	11	---	49	59	10	5.4	.98	.00	.00
30	4.5	5.4	7.6	9.9	---	47	56	9.2	4.5	1.2	.00	.00
31	4.2	---	7.6	9.5	---	47	---	8.0	---	1.1	.00	---
TOTAL	143.2	143.4	178.8	279.3	295.0	767.0	1568	575.6	180.8	45.51	12.22	0.00
MEAN	4.62	4.78	5.77	9.01	10.5	24.7	52.3	18.6	6.03	1.47	.39	.000
MAX	13	6.4	8.6	16	19	53	83	58	12	3.9	1.1	.00
MIN	1.3	3.1	3.3	3.8	7.0	6.0	28	6.0	4.1	.71	.00	.00
AC-FT	284	284	355	554	585	1520	3110	1140	359	90	24	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2001, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	3.34	8.17	16.1	22.2	37.5	60.7	51.2	42.9	17.5	4.26	1.46	1.50							
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	.20	2.79	4.02	6.68	7.52	9.81	11.9	2.73	1.60	.88	.010	.000							
(WY)	1989	1988	1991	1990	1994	1988	1992	1992	1992	1985	1988	2001							

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1983 - 2001

ANNUAL TOTAL	5335.50	4188.63	22.2
ANNUAL MEAN	14.6	11.5	44.3
HIGHEST ANNUAL MEAN			6.84
LOWEST ANNUAL MEAN			450
HIGHEST DAILY MEAN	100	Mar 23	450
LOWEST DAILY MEAN	.00	Aug 11	.00
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 11	.00
ANNUAL RUNOFF (AC-FT)	10580	8310	16050
10 PERCENT EXCEEDS	50	39	60
50 PERCENT EXCEEDS	5.5	5.7	8.6
90 PERCENT EXCEEDS	.29	.09	.70

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 mi².

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

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 sea level (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.--19 years (water years 1983-2001), 2.75 ft³/s, 1,990 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 190 ft³/s Mar. 4, 1983, gage height, 4.90 ft, from rating curve extended above 82 ft³/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.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, about 36,000 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 22	1200	(a)	*3.46	Apr. 20	1600	*7.7	3.39

Minimum discharge, no flow part of or all of each day Aug. 5, 8, 14-22, 29-31, Sept. 1-14, 18-26.

(a) Backwater from debris.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.07	.13	.44	.90	.99	1.1	2.7	.23	.09	.01	.00
2	.05	.07	.14	.45	1.0	1.0	1.3	2.5	.27	.08	.01	.01
3	.05	.07	.14	.45	1.2	.98	1.5	2.4	.36	.07	.01	.00
4	.05	.07	.14	.46	1.5	1.0	1.8	1.8	.37	.07	.01	.00
5	.05	.07	.15	.46	2.7	.93	1.7	.88	.42	.06	.01	.00
6	.05	.08	.15	.49	2.9	.89	1.7	1.1	.35	.06	.01	.00
7	.05	.08	.16	.51	2.1	.88	1.9	1.1	.33	.06	.01	.00
8	.05	.12	.17	.54	2.0	1.1	1.8	1.1	.35	.05	.01	.00
9	.05	.11	.16	.53	1.8	.96	1.9	1.4	.31	.05	.01	.00
10	.10	.11	.16	.53	1.5	1.1	2.3	1.7	.46	.05	.01	.00
11	.08	.10	.18	.54	1.4	1.1	3.5	1.9	.60	.05	.02	.00
12	.07	.11	.17	.55	1.2	1.2	3.6	1.7	.69	.05	.02	.00
13	.06	.11	.19	.54	1.1	1.1	5.6	1.5	.65	.07	.01	.00
14	.06	.11	.20	.55	1.0	1.2	3.4	1.5	.56	.06	.01	.00
15	.06	.11	.26	.55	1.0	1.3	2.8	1.4	.50	.04	.01	.01
16	.06	.11	.22	.55	.95	1.4	3.3	1.3	.45	.03	.01	.01
17	.06	.12	.22	.55	.95	1.3	3.9	1.2	.42	.03	.00	.01
18	.06	.11	.23	.55	.95	1.3	4.0	1.3	.34	.03	.00	.01
19	.06	.12	.43	.59	.91	1.4	4.5	1.3	.15	.03	.00	.00
20	.08	.12	.30	.61	.89	1.7	6.2	1.3	.13	.03	.00	.00
21	.08	.12	.29	.65	.87	2.1	6.3	1.2	.12	.04	.00	.00
22	.07	.12	.30	.85	.94	2.4	5.0	.98	.11	.03	.01	.00
23	.07	.12	.34	1.1	.94	2.2	4.3	1.0	.10	.03	.01	.00
24	.07	.13	.34	1.2	.94	2.1	3.8	1.1	.13	.02	.01	.00
25	.08	.13	.37	1.2	.90	2.3	3.4	.97	.13	.02	.02	.00
26	.08	.13	.41	1.2	.93	2.1	3.0	.68	.12	.02	.02	.01
27	.08	.12	.37	1.3	.90	1.3	2.9	.56	.14	.02	.02	.02
28	.08	.13	.41	1.3	.95	.50	3.2	.50	.15	.01	.01	.03
29	.07	.14	.45	1.1	---	.57	3.1	.42	.11	.02	.01	.02
30	.07	.13	.45	1.0	---	.69	2.8	.27	.09	.02	.01	.02
31	.07	---	.43	.97	---	.98	---	.23	---	.01	.01	---
TOTAL	2.03	3.24	8.06	22.31	35.32	40.07	95.6	38.99	9.14	1.30	0.31	0.15
MEAN	.065	.11	.26	.72	1.26	1.29	3.19	1.26	.30	.042	.010	.005
MAX	.10	.14	.45	1.3	2.9	2.4	6.3	2.7	.69	.09	.02	.03
MIN	.05	.07	.13	.44	.87	.50	1.1	.23	.09	.01	.00	.00
AC-FT	4.0	6.4	16	44	70	79	190	77	18	2.6	.6	.3

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2001, BY WATER YEAR (WY)

	MEAN	.33	.91	2.57	3.49	5.98	8.79	4.61	4.13	1.65	.39	.15	.19
MAX	1.53	3.97	20.1	12.3	19.2	21.0	16.4	13.0	5.95	1.24	.51	1.02	
(WY)	1985	1997	1997	1997	1996	1993	1984	1995	1998	1993	1984	1984	
MIN	.000	.002	.038	.28	.66	.47	.29	.24	.077	.034	.010	.005	
(WY)	1992	1992	1991	1991	1990	1992	1992	1992	1992	1992	2001	2001	

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1983 - 2001

ANNUAL TOTAL	432.34	256.52	
ANNUAL MEAN	1.18	.70	2.75
HIGHEST ANNUAL MEAN			6.23
LOWEST ANNUAL MEAN			.24
HIGHEST DAILY MEAN	13	Mar 9	80
LOWEST DAILY MEAN	.01	Aug 2	.00
ANNUAL SEVEN-DAY MINIMUM	.01	Aug 2	.00
ANNUAL RUNOFF (AC-FT)	858	509	1990
10 PERCENT EXCEEDS	4.0	1.9	7.8
50 PERCENT EXCEEDS	.31	.23	.81
90 PERCENT EXCEEDS	.02	.01	.04

WILLOW CREEK BASIN

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 mi².

PERIOD OF RECORD.--February 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (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, 6,450 acre-ft Apr. 21, elevation, 2,077.74 ft; minimum contents, 4,320 acre-ft Jan. 17, elevation, 2,062.95 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 (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2071.71	2070.45	2063.85	2063.32	2063.01	2064.41	2073.80	2076.33	2075.84	2075.71	2074.31	2072.68
2	2071.72	2070.27	2063.69	2063.30	2062.99	2064.49	2074.27	2076.20	2075.88	2075.65	2074.28	2072.62
3	2071.70	2069.83	2063.54	2063.28	2063.03	2064.53	2074.71	2076.11	2075.89	2075.62	2074.24	2072.57
4	2071.67	2069.37	2063.39	2063.25	2063.12	2064.60	2075.11	2076.02	2075.89	2075.57	2074.21	2072.50
5	2071.63	2068.94	2063.23	2063.23	2063.24	2064.67	2075.47	2075.84	2075.91	2075.51	2074.18	2072.42
6	2071.62	2068.49	2063.07	2063.22	2063.34	2064.76	2075.84	2075.64	2075.91	2075.46	2074.14	2072.36
7	2071.61	2068.06	2063.04	2063.19	2063.33	2064.84	2076.18	2075.63	2075.91	2075.41	2074.10	2072.30
8	2071.59	2067.68	2063.08	2063.19	2063.37	2065.05	2076.51	2075.90	2075.91	2075.35	2074.05	2072.25
9	2071.59	2067.43	2063.11	2063.16	2063.40	2065.33	2076.56	2076.08	2075.92	2075.30	2074.00	2072.20
10	2071.62	2067.28	2063.13	2063.15	2063.40	2065.58	2076.54	2076.19	2075.94	2075.25	2073.95	2072.14
11	2071.58	2067.12	2063.13	2063.13	2063.36	2065.82	2076.73	2076.21	2075.97	2075.21	2073.89	2072.10
12	2071.46	2066.95	2063.13	2063.12	2063.31	2066.05	2076.83	2076.19	2076.07	2075.17	2073.82	2072.05
13	2071.31	2066.80	2063.15	2063.10	2063.24	2066.25	2076.93	2076.16	2076.19	2075.11	2073.76	2072.01
14	2071.15	2066.64	2063.21	2063.08	2063.22	2066.48	2076.96	2076.19	2076.25	2075.07	2073.69	2071.95
15	2071.00	2066.48	2063.24	2063.04	2063.24	2066.73	2076.99	2076.24	2076.30	2075.02	2073.63	2071.90
16	2070.83	2066.30	2063.27	2062.99	2063.33	2066.96	2077.06	2076.25	2076.32	2074.95	2073.56	2071.86
17	2070.64	2066.13	2063.30	2062.97	2063.43	2067.19	2077.22	2076.25	2076.33	2074.90	2073.49	2071.80
18	2070.45	2065.94	2063.31	2063.00	2063.51	2067.47	2077.44	2076.24	2076.35	2074.85	2073.41	2071.74
19	2070.27	2065.77	2063.34	2063.05	2063.60	2067.89	2077.59	2076.21	2076.36	2074.82	2073.35	2071.69
20	2070.17	2065.60	2063.33	2063.07	2063.67	2068.40	2077.70	2076.20	2076.36	2074.79	2073.29	2071.64
21	2070.20	2065.44	2063.32	2063.10	2063.79	2068.87	2077.71	2076.18	2076.35	2074.76	2073.25	2071.59
22	2070.23	2065.25	2063.33	2063.19	2063.88	2069.26	2077.62	2076.16	2076.29	2074.72	2073.21	2071.55
23	2070.24	2065.08	2063.35	2063.28	2063.97	2069.61	2077.41	2076.16	2076.20	2074.69	2073.17	2071.50
24	2070.28	2064.92	2063.40	2063.32	2064.05	2069.92	2077.17	2076.15	2076.13	2074.64	2073.12	2071.46
25	2070.29	2064.77	2063.42	2063.34	2064.13	2070.48	2076.95	2076.12	2076.07	2074.60	2073.08	2071.41
26	2070.30	2064.65	2063.45	2063.32	2064.20	2071.05	2076.85	2076.07	2076.01	2074.55	2073.02	2071.38
27	2070.33	2064.46	2063.45	2063.28	2064.26	2071.53	2076.83	2075.99	2075.98	2074.50	2072.96	2071.33
28	2070.35	2064.30	2063.43	2063.23	2064.33	2071.99	2076.81	2075.94	2075.94	2074.43	2072.91	2071.28
29	2070.38	2064.17	2063.41	2063.19	---	2072.43	2076.64	2075.92	2075.88	2074.42	2072.86	2071.24
30	2070.41	2064.01	2063.39	2063.11	---	2072.87	2076.45	2075.88	2075.80	2074.39	2072.80	2071.20
31	2070.43	---	2063.36	2063.03	---	2073.31	---	2075.88	---	2074.35	2072.74	---
MAX	2071.72	2070.45	2063.85	2063.34	2064.33	2073.31	2077.71	2076.33	2076.36	2075.71	2074.31	2072.68
MIN	2070.17	2064.01	2063.04	2062.97	2062.99	2064.41	2073.80	2075.63	2075.80	2074.35	2072.74	2071.20
(†)	5340	4460	4370	4330	4500	5760	6240	6150	6140	5920	5680	5450
(‡)	-180	-880	-90	-40	+170	+1260	+480	-90	-10	-220	-240	-230

CAL YR 2000 MAX 2077.17 MIN 2062.91 AC-FT‡ 4320
WTR YR 2001 MAX 2077.71 MIN 2062.97 AC-FT‡ 5520

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

WILLOW CREEK BASIN

97

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 mi².

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 sea level.

REMARKS.--No estimated daily discharges. Records fair. 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 ft³/s, 13,840 acre-ft/yr.
18 years (water years 1984-2001), 22.3 ft³/s, 16,160 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 812 ft³/s May 10, 1957, gage height, 6.15 ft, from rating curve extended above 230 ft³/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 ft³/s June 14, 1903, result of slope-area measurement (see WSP 96). Discharge for flood of Feb. 22, 1949, was 1,700 ft³/s, result of slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 68 ft³/s Apr. 28-30, May 1, gage height, 3.87 ft; minimum discharge, 1.6 ft³/s Mar. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	2.7	15	9.4	11	4.7	8.9	64	5.4	9.2	2.9	3.0
2	2.9	14	15	9.4	11	4.7	8.9	60	4.9	7.6	2.9	3.0
3	2.9	32	15	9.4	8.3	4.7	8.9	54	4.2	4.8	3.1	3.0
4	2.9	32	15	9.4	8.3	4.7	8.9	50	4.5	4.8	3.8	3.0
5	2.9	32	15	9.4	13	4.7	8.9	50	3.7	4.8	3.7	3.0
6	2.9	32	15	9.4	16	4.7	8.9	50	3.6	4.8	3.4	3.1
7	2.9	32	7.2	9.4	16	4.7	8.9	34	3.6	4.8	2.9	3.1
8	2.9	32	3.6	9.4	16	5.0	8.9	4.9	3.6	4.1	2.9	3.1
9	2.9	24	3.6	9.4	16	4.9	26	9.4	3.6	3.5	2.9	3.0
10	9.4	15	3.6	9.4	16	5.0	34	11	3.6	3.5	2.9	3.0
11	14	15	3.6	9.4	16	5.0	31	16	3.6	3.5	3.2	2.7
12	14	15	3.6	9.4	16	5.0	31	16	3.7	3.5	3.6	2.7
13	14	15	3.6	9.4	16	5.0	34	16	3.6	4.4	3.7	2.8
14	14	15	3.7	9.4	13	5.0	37	15	3.8	3.2	3.5	2.7
15	14	15	3.7	9.4	9.6	5.0	37	14	3.9	3.2	3.3	2.7
16	14	15	3.7	9.4	4.7	5.0	38	14	3.9	3.2	3.2	2.7
17	15	15	3.7	5.9	4.7	4.5	42	14	3.9	3.2	3.2	2.7
18	16	15	3.6	6.0	4.7	4.4	48	14	3.9	2.9	3.2	2.7
19	16	15	4.9	7.6	4.7	3.1	55	14	3.9	3.0	3.2	2.7
20	13	15	6.1	7.6	4.7	3.2	56	14	3.9	3.8	3.1	2.7
21	2.9	15	6.1	7.6	4.7	2.9	60	13	3.9	3.7	3.1	2.7
22	2.9	15	6.1	10	4.7	2.9	64	11	6.1	3.7	3.1	2.7
23	2.9	15	6.1	12	4.7	2.9	67	11	9.1	3.4	3.1	2.7
24	2.9	15	6.0	14	4.7	2.9	67	11	9.2	2.9	3.1	2.7
25	2.9	15	6.1	15	4.7	2.9	67	11	9.2	2.9	3.1	2.7
26	3.3	15	6.1	15	4.7	3.8	62	11	9.2	2.9	3.1	2.7
27	2.6	15	8.3	15	4.7	5.9	59	11	9.1	2.9	3.0	2.7
28	2.6	15	9.4	15	4.7	7.6	65	11	9.2	2.9	3.0	2.7
29	2.6	15	9.4	15	---	8.9	68	11	9.2	2.9	3.0	2.7
30	2.6	15	9.4	15	---	8.7	68	11	9.2	2.9	3.0	2.7
31	2.6	---	9.4	15	---	8.9	---	7.7	---	2.9	3.0	---
TOTAL	210.4	547.7	230.6	326.1	263.3	151.3	1187.2	654.0	162.2	119.8	98.2	84.4
MEAN	6.79	18.3	7.44	10.5	9.40	4.88	39.6	21.1	5.41	3.86	3.17	2.81
MAX	16	32	15	15	16	8.9	68	64	9.2	9.2	3.8	3.1
MIN	2.6	2.7	3.6	5.9	4.7	2.9	8.9	4.9	3.6	2.9	2.9	2.7
AC-FT	417	1090	457	647	522	300	2350	1300	322	238	195	167

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2001, BY WATER YEAR (WY)

	7.47	13.1	14.7	25.9	32.7	50.3	48.7	41.9	19.1	5.90	4.60	4.04
MEAN	7.47	13.1	14.7	25.9	32.7	50.3	48.7	41.9	19.1	5.90	4.60	4.04
MAX	15.6	26.3	48.3	110	110	113	152	127	54.2	10.5	14.3	12.4
(WY)	1994	1997	1997	1997	1996	1993	1984	1995	1984	1993	1992	1988
MIN	1.93	1.69	2.65	3.40	5.95	4.88	10.4	2.15	2.17	2.39	2.69	2.56
(WY)	1992	1992	1993	1991	1994	2001	1994	1992	1992	1987	1999	1991

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1984 - 2001

ANNUAL TOTAL	4863.3	4035.2	
ANNUAL MEAN	13.3	11.1	
HIGHEST ANNUAL MEAN			22.3
LOWEST ANNUAL MEAN			45.5
HIGHEST DAILY MEAN	59	Mar 21	7.79
LOWEST DAILY MEAN	2.6	Oct 27	298
ANNUAL SEVEN-DAY MINIMUM	2.7	Oct 26	1.4
ANNUAL RUNOFF (AC-FT)	9650		16160
10 PERCENT EXCEEDS	34		55
50 PERCENT EXCEEDS	8.3		10
90 PERCENT EXCEEDS	3.0		2.9

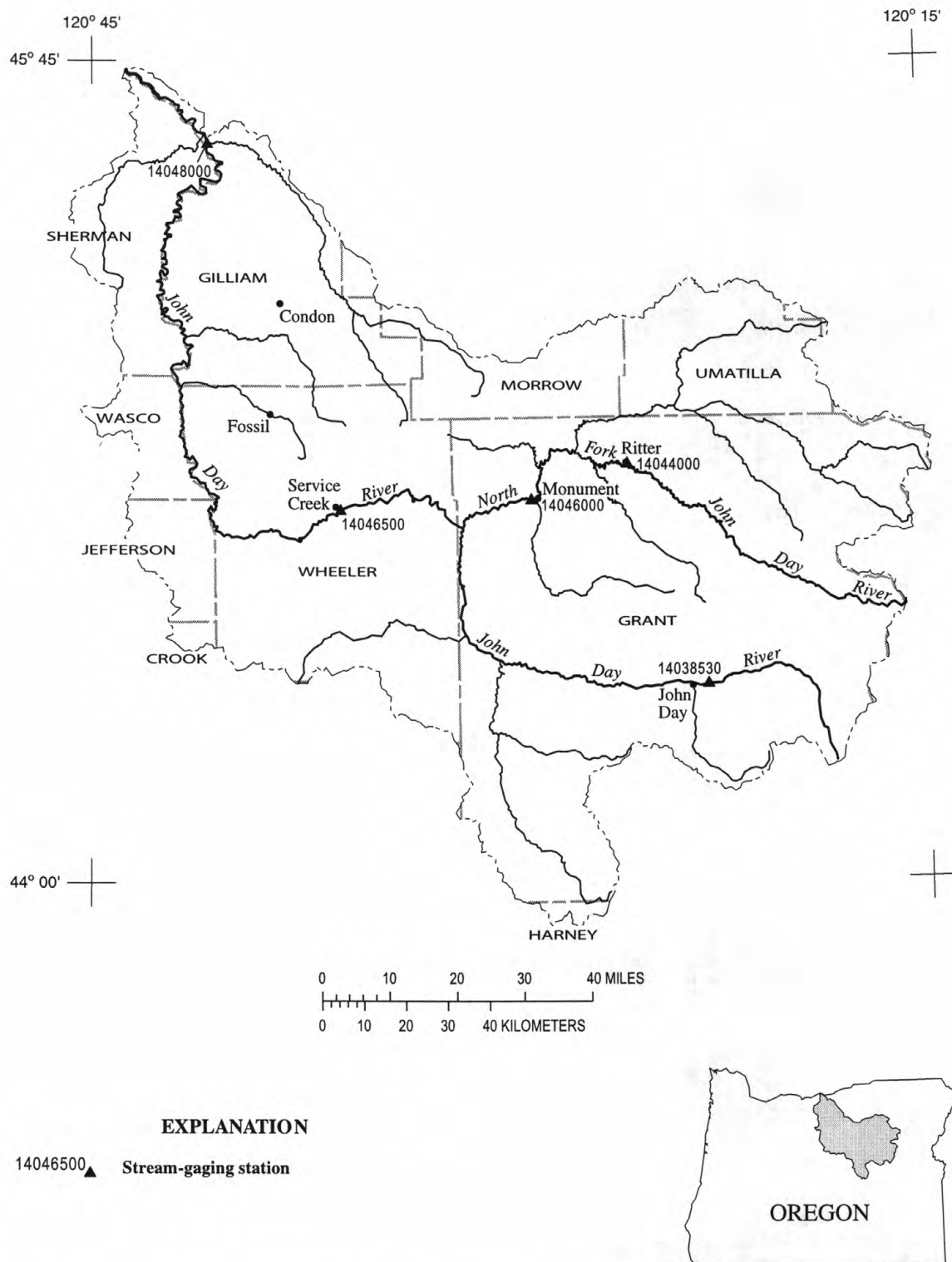


Figure 13. Location of surface-water and water-quality stations in the John Day River Basin.

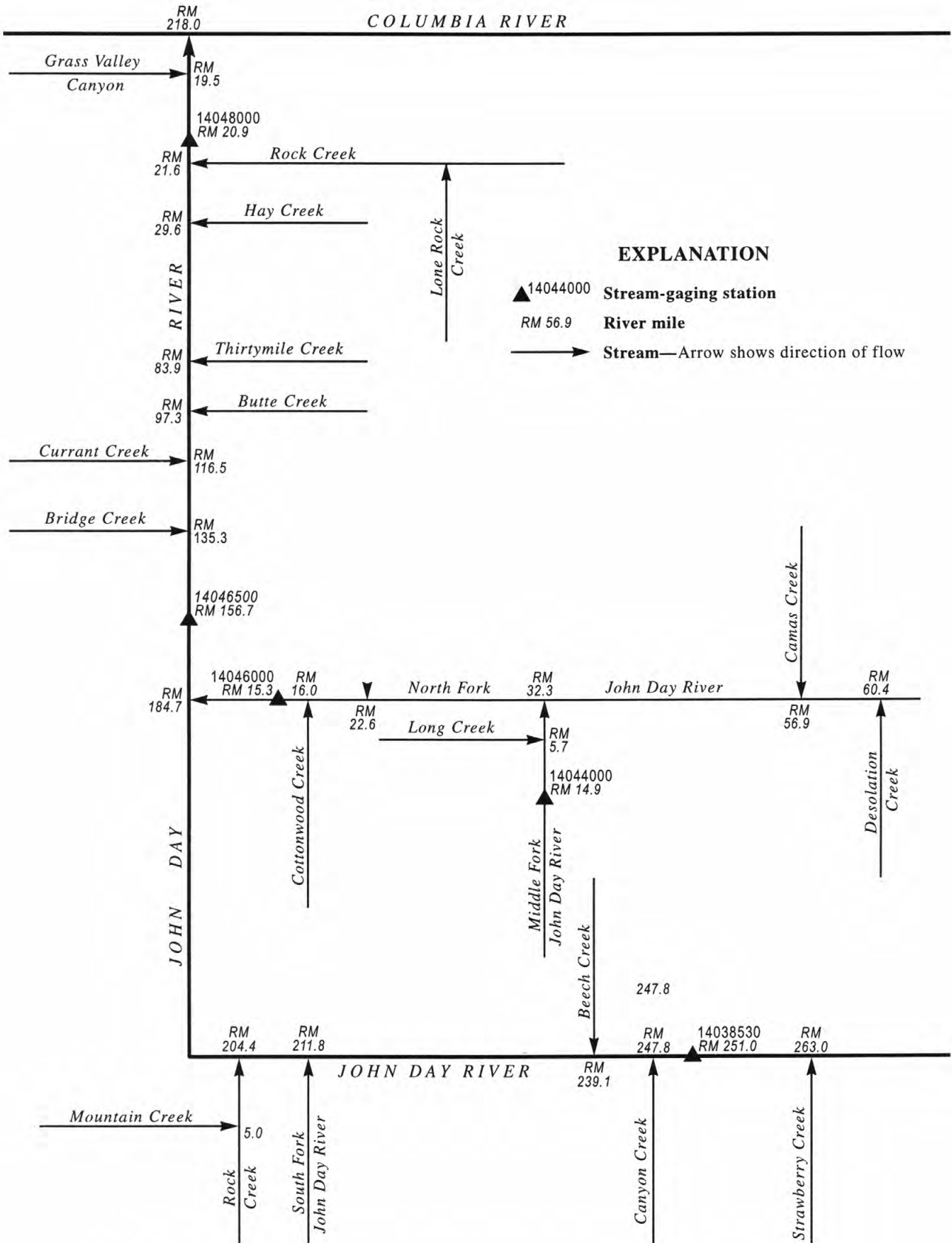


Figure 14. Schematic diagram showing gaging stations in the John Day River Basin.

(10)

JOHN DAY RIVER BASIN

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 mi².

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 sea level.

REMARKS.--No estimated daily discharges. Records fair except those below 10 ft³/s, which are poor. No regulation upstream. Many diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--31 years (water years 1969-94, 1997-2001), 203 ft³/s, 147,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,830 ft³/s June 9, 1969, gage height, 10.80 ft, from floodmark; minimum discharge, 3.5 ft³/s Aug. 26-28, 1969.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 28	1200	*440	*4.98				

Minimum discharge, 5.3 ft³/s Aug. 22, 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	107	111	102	100	105	201	355	101	55	42	8.7
2	118	107	108	102	107	109	200	320	101	51	38	9.0
3	114	107	108	102	116	104	191	286	107	48	37	11
4	108	108	107	104	136	104	181	262	118	43	34	11
5	104	108	104	106	142	105	170	246	105	49	42	9.2
6	100	110	104	104	127	109	172	235	114	56	38	11
7	98	108	103	102	106	112	185	223	95	49	32	14
8	95	117	103	104	96	121	178	222	89	47	29	17
9	95	116	103	107	111	126	173	234	84	49	25	18
10	124	113	101	106	108	119	165	237	81	45	24	19
11	135	107	99	108	104	115	188	213	91	50	26	19
12	118	103	100	111	103	113	197	226	140	50	25	21
13	114	109	101	108	101	113	221	271	168	56	21	30
14	109	108	105	107	98	115	205	292	129	55	20	30
15	106	107	106	104	102	116	204	365	105	51	20	31
16	104	102	102	99	102	121	194	366	88	54	20	49
17	101	100	110	80	105	116	207	300	84	56	17	44
18	100	98	98	118	118	119	230	266	80	53	12	40
19	100	107	103	112	115	139	252	248	74	54	9.2	39
20	103	103	104	105	123	153	245	226	68	62	8.3	38
21	123	101	106	105	123	146	232	206	63	63	7.4	39
22	111	100	114	109	123	146	219	189	55	55	5.7	40
23	108	103	122	106	117	152	209	192	51	52	6.0	40
24	107	102	126	107	110	164	214	203	53	53	7.8	36
25	105	102	111	108	107	191	236	212	58	52	7.9	42
26	111	106	113	105	105	187	291	200	56	49	8.1	53
27	109	111	108	100	101	171	362	191	62	44	7.9	57
28	110	106	106	88	99	175	428	176	77	44	8.3	59
29	113	114	106	107	---	193	387	149	66	38	8.4	56
30	108	118	105	105	---	178	347	129	62	44	8.0	60
31	107	---	105	102	---	174	---	115	---	50	7.4	---
TOTAL	3350	3208	3302	3233	3105	4211	6884	7355	2625	1577	602.4	950.9
MEAN	108	107	107	104	111	136	229	237	87.5	50.9	19.4	31.7
MAX	135	118	126	118	142	193	428	366	168	63	42	60
MIN	92	98	98	80	96	104	165	115	51	38	5.7	8.7
AC-FT	6640	6360	6550	6410	6160	8350	13650	14590	5210	3130	1190	1890

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2001, BY WATER YEAR (WY)

MEAN	96.0	127	161	207	229	315	340	435	321	109	42.8	55.7
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	87.5	90.0	88.1	88.8	88.6	88.1	85.4	53.9	25.9	10.4	24.2
(WY)	1989	1979	1989	1977	1977	1977	1977	1992	1992	1973	1973	1990

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1969 - 2001

ANNUAL TOTAL	62096		40403.3		203	
ANNUAL MEAN	170		111		393	1984
HIGHEST ANNUAL MEAN					73.5	1977
LOWEST ANNUAL MEAN					2640	May 19 1991
HIGHEST DAILY MEAN	597	Apr 14	428	Apr 28	3.5	Aug 27 1969
LOWEST DAILY MEAN	13	Aug 19	5.7	Aug 22	4.3	Aug 24 1969
ANNUAL SEVEN-DAY MINIMUM	14	Aug 13	7.3	Aug 21		
ANNUAL RUNOFF (AC-FT)	123200		80140		147300	
10 PERCENT EXCEEDS	360		206		454	
50 PERCENT EXCEEDS	116		105		129	
90 PERCENT EXCEEDS	39		30		40	

JOHN DAY RIVER BASIN

101

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 mi².

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 sea level.

REMARKS.--Records fair except those for the period Nov. 11 to Feb. 28, 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.--72 years (water years 1930-2001), 257 ft³/s, 186,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,730 ft³/s Jan. 30, 1965, gage height, 8.39 ft, from rating curve extended above 2,200 ft³/s; maximum gage height, 9.13 ft Feb. 1, 1963, ice jam; minimum discharge, 0.90 ft³/s Aug. 19, 20, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 28	0730	*999	*5.13				

Minimum discharge, 20 ft³/s part of or all of each day Aug. 28, 30, 31, Sept. 1-6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	52	58	44	64	79	403	683	152	56	36	20
2	59	52	57	49	58	89	384	569	143	52	32	21
3	49	51	57	42	62	80	350	483	148	49	29	20
4	45	52	56	53	69	79	307	464	151	47	29	20
5	43	54	51	66	64	86	272	480	136	46	39	20
6	43	54	50	58	81	128	273	450	134	49	36	21
7	42	54	52	49	72	151	301	438	122	43	30	22
8	41	57	53	59	70	176	290	472	114	41	28	22
9	41	61	53	60	65	175	272	500	111	40	26	23
10	51	58	56	62	66	152	268	475	102	40	25	23
11	65	53	53	62	71	143	308	471	104	39	25	22
12	58	47	54	59	71	143	326	523	134	43	25	22
13	52	49	55	60	67	172	346	549	154	43	24	27
14	54	57	57	59	64	192	300	537	146	38	24	43
15	54	59	59	e52	62	180	318	611	120	35	24	32
16	50	47	56	e48	62	169	357	575	106	35	24	33
17	48	43	57	e46	62	147	422	485	96	35	23	41
18	47	34	55	59	64	152	449	433	90	36	22	36
19	46	43	41	64	65	259	462	409	84	35	22	31
20	47	46	55	e58	75	362	445	383	79	37	22	29
21	67	48	64	55	85	292	392	351	74	40	22	28
22	70	52	61	57	113	271	369	337	70	37	23	27
23	57	53	66	64	114	296	368	331	66	34	23	27
24	55	54	71	60	89	318	389	328	65	32	24	26
25	55	58	55	e64	87	418	454	313	65	30	24	26
26	53	58	54	e58	85	403	595	277	66	28	22	31
27	55	e62	50	e54	80	324	831	252	70	27	21	34
28	55	e60	65	e50	72	340	895	237	78	27	20	32
29	60	54	54	67	---	437	707	201	68	27	21	32
30	57	57	53	e64	---	399	599	180	61	30	21	31
31	54	---	64	e62	---	349	---	165	---	37	20	---
TOTAL	1615	1579	1742	1764	2079	6961	12452	12962	3109	1188	786	822
MEAN	52.1	52.6	56.2	56.9	74.2	225	415	418	104	38.3	25.4	27.4
MAX	70	62	71	67	114	437	895	683	154	56	39	43
MIN	41	34	41	42	58	79	268	165	61	27	20	20
AC-FT	3200	3130	3460	3500	4120	13810	24700	25710	6170	2360	1560	1630

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2001, BY WATER YEAR (WY)

	44.5	73.9	130	165	249	474	748	708	348	80.6	32.5	32.4
MEAN	44.5	73.9	130	165	249	474	748	708	348	80.6	32.5	32.4
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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1930 - 2001
ANNUAL TOTAL	83338	47059	
ANNUAL MEAN	228	129	
HIGHEST ANNUAL MEAN			538
LOWEST ANNUAL MEAN			85.1
HIGHEST DAILY MEAN	1530	Apr 5	4360
LOWEST DAILY MEAN	23	Aug 17	1.90
ANNUAL SEVEN-DAY MINIMUM	24	Aug 24	1.1
ANNUAL RUNOFF (AC-FT)	165300		186000
10 PERCENT EXCEEDS	618		726
50 PERCENT EXCEEDS	70		91
90 PERCENT EXCEEDS	33		26

e Estimated

JOHN DAY RIVER BASIN

103

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 mi², 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 sea level. See WSP 1738 for history of changes prior to Feb. 24, 1957.

REMARKS.--Records good. 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.--72 years (water years 1930-2001), 1,944 ft³/s, 1,408,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,200 ft³/s Dec. 23, 1964, gage height, 17.85 ft, from rating curve extended above 14,000 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 6.0 ft³/s Aug. 23, 24, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 28	1700	*6,540	*7.34				
Minimum discharge, 48 ft ³ /s Sept. 4.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	167	458	433	409	465	560	2810	4800	957	368	111	50
2	208	440	421	400	439	584	3050	4710	898	320	114	50
3	275	433	413	372	478	682	2810	4070	868	284	119	50
4	425	425	401	393	488	646	2500	3520	865	257	113	50
5	384	426	412	419	576	622	2240	3270	888	236	101	50
6	353	435	405	441	e640	627	2040	3160	845	209	103	50
7	338	449	391	380	e620	781	2130	2940	839	197	105	51
8	329	470	359	348	e560	984	2130	2770	785	206	139	53
9	322	495	391	418	468	1350	2020	2840	760	183	117	54
10	338	524	385	492	504	1350	1920	2870	712	160	98	51
11	411	498	390	467	532	1190	1960	2720	676	157	87	51
12	483	464	368	479	526	1140	2100	2600	658	190	72	52
13	504	383	362	482	519	1150	2160	2720	791	262	64	51
14	452	359	384	475	517	1410	2180	2790	971	244	69	57
15	426	416	425	469	481	1560	1970	2990	943	221	69	68
16	432	459	436	454	489	1490	2010	3440	824	183	61	82
17	422	403	424	370	519	1370	2210	3210	733	161	58	125
18	398	298	423	332	513	1280	2720	2660	667	144	57	121
19	384	265	366	360	520	1740	3170	2350	597	137	61	125
20	381	257	370	497	551	3070	3160	2150	536	147	63	125
21	387	292	414	473	600	2900	3120	1980	501	170	62	101
22	409	323	444	476	667	2520	2880	1800	471	193	56	85
23	502	345	467	476	812	2480	2780	1690	427	209	55	82
24	471	350	502	457	845	2650	2760	1640	386	178	54	81
25	434	367	539	481	732	3000	3060	1590	377	149	54	83
26	439	388	492	474	678	3800	3800	1530	367	127	53	89
27	444	428	424	469	651	3290	4870	1410	382	107	53	92
28	441	434	446	441	610	2860	6190	1320	405	109	53	104
29	465	407	419	421	---	3000	5960	1280	441	101	52	115
30	477	433	445	384	---	3190	4800	1150	440	96	52	123
31	488	---	429	448	---	2850	---	1050	---	104	51	---
TOTAL	12389	12124	12980	13457	16000	56126	87510	79020	20010	5809	2376	2321
MEAN	400	404	419	434	571	1811	2917	2549	667	187	76.6	77.4
MAX	504	524	539	497	845	3800	6190	4800	971	368	139	125
MIN	167	257	359	332	439	560	1920	1050	367	96	51	50
AC-FT	24570	24050	25750	26690	31740	111300	173600	156700	39690	11520	4710	4600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2001, BY WATER YEAR (WY)

MEAN	331	596	1209	1594	2376	3774	5228	4933	2408	570	182	184
MAX	811	2284	5540	6553	8239	9773	10280	12050	8327	1850	594	862
(WY)	1985	1974	1965	1996	1983	1984	1948	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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1930 - 2001
ANNUAL TOTAL	606752	320122	
ANNUAL MEAN	1658	877	1944
HIGHEST ANNUAL MEAN			4116
LOWEST ANNUAL MEAN			619
HIGHEST DAILY MEAN	9960	Apr 14	36400
LOWEST DAILY MEAN	57	Aug 28	6.2
ANNUAL SEVEN-DAY MINIMUM	59	Aug -26	7.7
ANNUAL RUNOFF (AC-FT)	1203000	635000	1408000
10 PERCENT EXCEEDS	4750	2770	5410
50 PERCENT EXCEEDS	503	441	748
90 PERCENT EXCEEDS	122	82	135

e Estimated

JOHN DAY RIVER BASIN

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 mi², 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 sea level. Prior to Aug. 30, 1930, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good except those below 70 ft³/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.--95 years (water years 1906-96, 1998-2001), 2,080 ft³/s, 1,507,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,800 ft³/s Dec. 24, 1964, gage height, 13.59 ft, from floodmark, from rating curve extended above 11,000 ft³/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 ft³/s, from rating curve extended above 22,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,900 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 29	1845	*6,500	*6.06				

Minimum recorded discharge, 33 ft³/s Sept. 6, 7, 12, 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	165	476	455	490	463	697	3030	4980	1160	390	100	53
2	162	487	483	487	483	673	2870	4830	1030	426	107	48
3	159	473	478	470	526	632	3190	4860	931	393	102	45
4	159	457	469	466	517	639	3020	4270	876	336	97	43
5	192	442	464	441	541	713	2730	3740	867	286	89	39
6	296	440	454	444	551	701	2460	3470	868	265	86	37
7	394	450	465	466	622	679	2230	3370	875	239	96	37
8	369	467	459	488	748	685	2200	3120	811	223	110	39
9	356	470	449	468	728	851	2260	2890	805	196	100	42
10	363	475	433	420	619	1200	2160	2900	754	185	85	37
11	367	490	427	445	547	1500	2110	2990	720	188	81	35
12	370	510	485	536	559	1390	2070	2860	679	184	70	34
13	388	509	542	528	588	1290	2130	2690	649	167	95	39
14	445	484	492	534	586	1270	2240	2770	634	155	92	54
15	485	444	452	534	570	1360	2350	2870	729	161	84	49
16	467	405	462	525	560	1650	2160	2960	885	187	80	47
17	436	413	463	519	536	1660	2110	3520	867	227	67	45
18	434	459	481	506	525	1600	2210	3370	761	216	57	46
19	434	454	478	487	563	1500	2650	2860	691	189	48	48
20	429	400	474	421	559	1530	3250	2500	626	169	49	52
21	412	358	462	419	566	2760	3430	2300	560	155	54	65
22	402	335	432	509	591	3160	3360	2110	502	141	52	100
23	402	342	470	533	643	2690	3150	1920	457	130	54	102
24	409	373	492	538	703	2540	3040	1780	439	133	60	99
25	464	399	517	536	838	2700	2930	1690	423	154	59	102
26	498	419	540	519	865	2900	3120	1630	406	164	62	100
27	474	415	579	535	763	3720	3760	1570	406	159	62	94
28	459	430	556	533	717	3530	4790	1500	410	136	57	86
29	455	465	488	529	---	3020	6130	1390	387	115	54	90
30	454	485	496	511	---	3040	6030	1330	396	113	52	92
31	459	---	480	489	---	3290	---	1280	---	106	56	---
TOTAL	11758	13226	14877	15326	17077	55570	89170	86320	20604	6288	2317	1799
MEAN	379	441	480	494	610	1793	2972	2785	687	203	74.7	60.0
MAX	498	510	579	538	865	3720	6130	4980	1160	426	110	102
MIN	159	335	427	419	463	632	2070	1280	387	106	48	34
AC-FT	23320	26230	29510	30400	33870	110200	176900	171200	40870	12470	4600	3570

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 2001, BY WATER YEAR (WY)

	332	609	1187	1655	2649	4031	5642	5197	2695	656	196	183
MEAN	332	609	1187	1655	2649	4031	5642	5197	2695	656	196	183
MAX	892	2310	7030	6402	9736	11450	11900	13180	9531	2131	700	923
(WY)	1985	1974	1965	1996	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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1906 - 2001
ANNUAL TOTAL	639981	334332	
ANNUAL MEAN	1749	916	2080
HIGHEST ANNUAL MEAN			4724
LOWEST ANNUAL MEAN			603
HIGHEST DAILY MEAN	9620	Apr 15	39400
LOWEST DAILY MEAN	65	Sep 3	.00
ANNUAL SEVEN-DAY MINIMUM	69	Aug 24	.00
ANNUAL RUNOFF (AC-FT)	1269000	663100	1507000
10 PERCENT EXCEEDS	5000	2870	5820
50 PERCENT EXCEEDS	519	480	790
90 PERCENT EXCEEDS	115	69	143

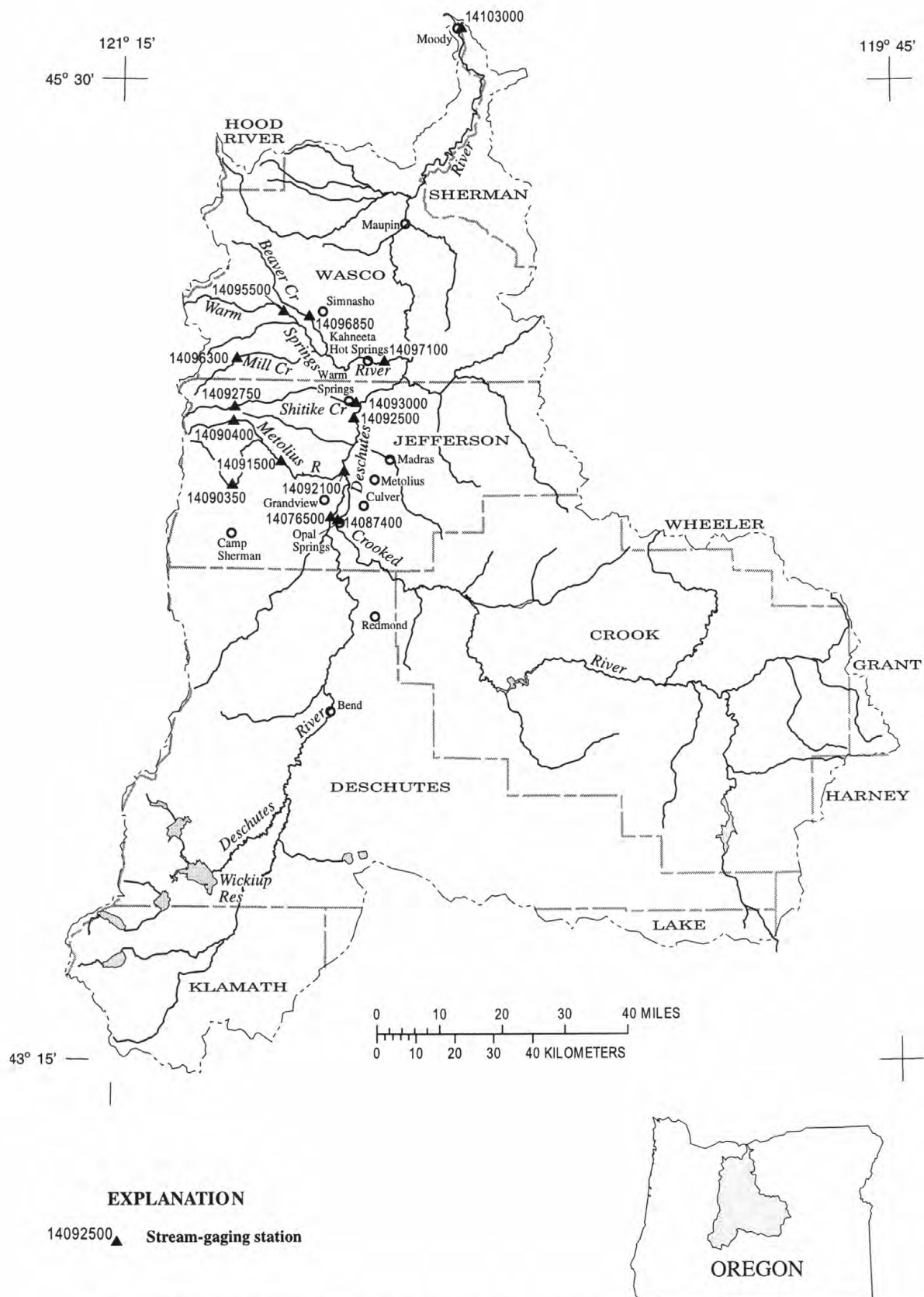


Figure 15. Locaton of surface-water and water-quality stations in the Deschutes River Basin.

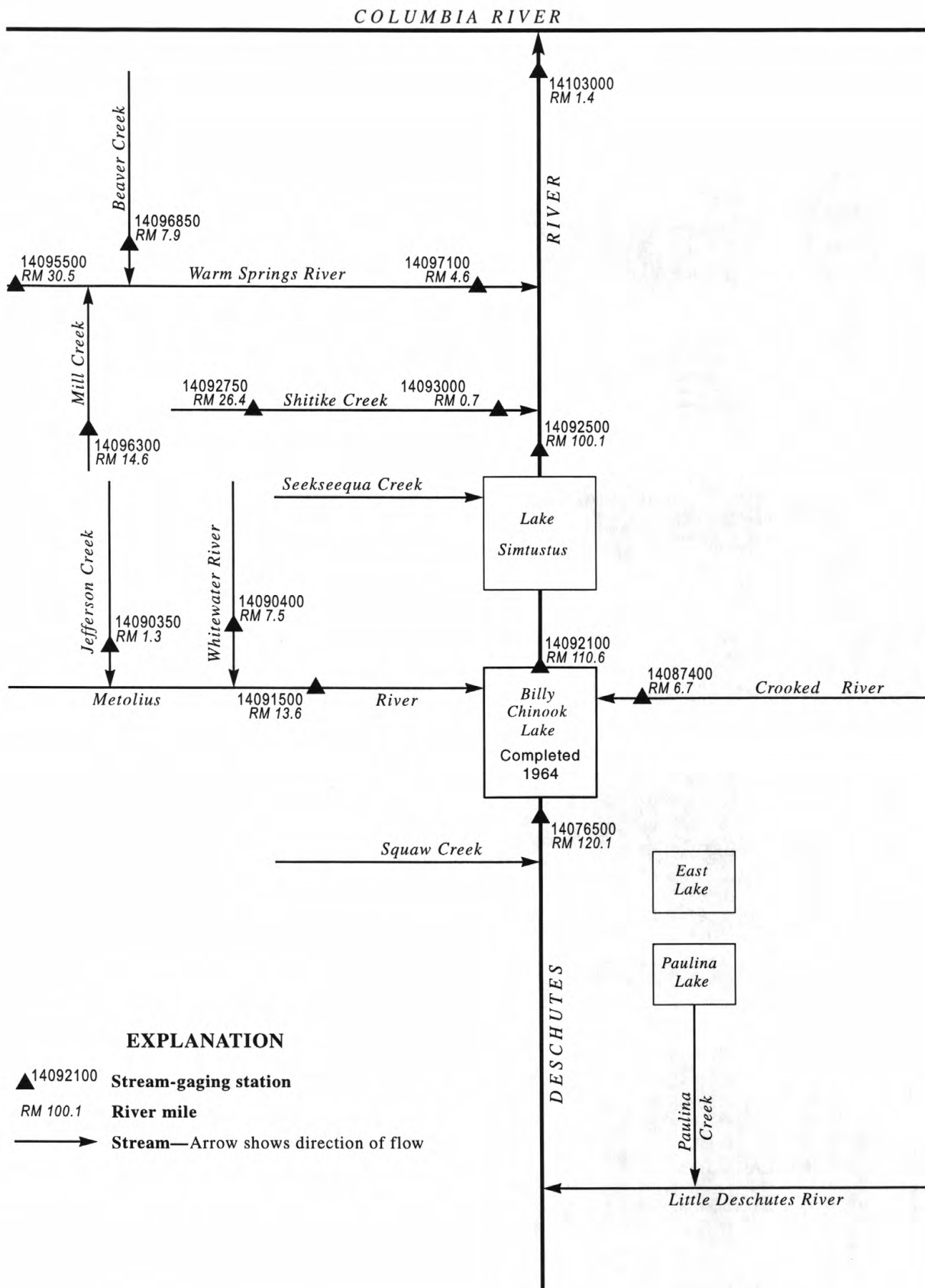


Figure 16. Schematic diagram showing gaging stations in the Deschutes River Basin.

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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.

PERIOD OF RECORD.--July 1952 to current year.

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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,680 ft³/s Dec. 24, 1964, gage height, 10.00 ft, from rating curve extended above 3,000 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 418 ft³/s July 7, 8, 1964.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2001, BY WATER YEAR (WY)

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1953 - 2001
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ANNUAL TOTAL	422341			322388					
ANNUAL MEAN	1154			883				928	
HIGHEST ANNUAL MEAN								1461	1997
LOWEST ANNUAL MEAN								677	1964
HIGHEST DAILY MEAN	2080	Feb 15		1390	Apr 2			4790	Dec 24 1964
LOWEST DAILY MEAN	553	Aug 6		499	Sep 12			425	Jul 7 1964
ANNUAL SEVEN-DAY MINIMUM	562	Aug 4		500	Sep 8			426	Jul 7 1964
ANNUAL RUNOFF (AC-FT)	837700			639500				672000	
10 PERCENT EXCEEDS	1920			1340				1650	
50 PERCENT EXCEEDS	1020			810				780	
90 PERCENT EXCEEDS	599			504				491	

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.

PERIOD OF RECORD.--October 1961 to current year.

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 500 ft 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.

EXTREMES FOR PERIOD OF RECORD: --Maximum discharge, 6,660 ft³/s Dec. 24, 1964, gage height, 9.36 ft; minimum daily discharge, 1,090 ft³/s May 11, 1981, minimum instantaneous discharge after October 1989, 656 ft³/s many days in the 1990 water year, prior to that date minimum instantaneous discharge was not determined.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2001, BY WATER YEAR (WY)

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1962 - 2001
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ANNUAL TOTAL	531020		461030			
ANNUAL MEAN	1451		1263		1562	
HIGHEST ANNUAL MEAN					2196	1984
LOWEST ANNUAL MEAN					1250	1992
HIGHEST DAILY MEAN	3610	Apr 12	1440	Jan 7	6130	Dec 24 1964
LOWEST DAILY MEAN	1190	Jun 29	1170	May 26	1090	May 11 1981
ANNUAL SEVEN-DAY MINIMUM	1200	Jun 27	1180	Aug 10	1100	May 10 1981
ANNUAL RUNOFF (AC-FT)	1053000		914500		1131000	
10 PERCENT EXCEEDS	1570		1330		2220	
50 PERCENT EXCEEDS	1310		1270		1350	
90 PERCENT EXCEEDS	1240		1190		1200	

DESCHUTES RIVER BASIN

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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 mi².

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,780 ft above sea level, from topographic map.

REMARKS.--Records good except for the period Nov 11 to Apr. 14 which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--18 years (water years 1984-2001), 94.3 ft³/s, 46.09 in/yr, 68,320 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 908 ft³/s Nov. 25, 1999, gage height, 4.38 ft, from high-water mark, not including approximately 400 ft³/s which flowed out of the channel 150 ft upstream of gage and flowed into Candle Creek; minimum daily discharge, 36 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16	0130	*272	*2.49				

Minimum discharge, 46 ft³/s Mar. 10, 11, 16, 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94	71	64	58	52	48	81	101	94	76	71	65
2	85	72	66	58	52	48	68	78	89	75	71	66
3	81	71	66	58	52	e48	62	73	83	74	74	64
4	79	75	64	59	59	48	59	72	80	74	75	64
5	78	73	64	61	59	48	58	73	81	74	73	62
6	78	71	63	59	55	48	57	71	84	73	75	61
7	77	70	63	58	e52	48	56	75	84	72	76	60
8	77	75	63	58	e53	49	55	86	86	72	74	60
9	78	72	63	57	53	48	53	88	90	72	73	60
10	77	71	62	57	52	47	53	84	83	72	73	60
11	78	68	e62	56	51	47	54	88	82	73	74	61
12	76	69	e62	56	51	47	52	101	96	73	75	62
13	75	70	63	56	e51	48	51	102	83	73	74	62
14	75	69	64	55	e51	48	51	104	82	73	73	61
15	75	69	62	54	50	47	51	161	82	73	73	61
16	74	67	64	e54	50	47	51	164	80	72	73	61
17	74	68	63	e56	49	47	52	106	79	71	73	60
18	77	67	61	55	49	51	52	98	78	72	71	59
19	74	67	62	55	49	72	52	98	78	73	68	59
20	88	67	62	54	49	63	52	101	78	73	67	58
21	84	66	63	56	49	56	51	101	80	73	67	58
22	77	66	63	56	49	55	51	107	80	73	69	57
23	75	70	62	54	48	57	52	117	78	73	71	57
24	75	69	61	54	e48	61	54	120	80	74	67	57
25	74	67	60	53	e48	70	62	109	80	72	67	62
26	74	66	60	53	e48	61	74	104	78	71	68	61
27	74	67	61	e52	e48	63	78	103	83	72	66	58
28	77	65	60	e53	e48	85	77	92	80	72	66	56
29	74	66	59	53	---	72	65	84	78	73	66	56
30	73	65	59	52	---	66	109	85	77	73	65	55
31	72	---	58	52	---	76	---	89	---	72	66	---
TOTAL	2399	2069	1929	1722	1425	1719	1793	3035	2466	2258	2194	1803
MEAN	77.4	69.0	62.2	55.5	50.9	55.5	59.8	97.9	82.2	72.8	70.8	60.1
MAX	94	75	66	61	59	85	109	164	96	76	76	66
MIN	72	65	58	52	48	47	51	71	77	71	65	55
AC-FT	4760	4100	3830	3420	2830	3410	3560	6020	4890	4480	4350	3580
CFSM	2.78	2.48	2.24	2.00	1.83	1.99	2.15	3.52	2.96	2.62	2.55	2.16
IN.	3.21	2.77	2.58	2.30	1.91	2.30	2.40	4.06	3.30	3.02	2.94	2.41

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2001, BY WATER YEAR (WY)

	MEAN	78.2	85.4	81.4	83.3	89.3	84.6	93.8	119	129	112	94.4	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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1984 - 2001

ANNUAL TOTAL	36471	24812	
ANNUAL MEAN	99.6	68.0	94.3
HIGHEST ANNUAL MEAN			137
LOWEST ANNUAL MEAN			66.8
HIGHEST DAILY MEAN	214	164	634
LOWEST DAILY MEAN	58	47	36
ANNUAL SEVEN-DAY MINIMUM	60	47	38
ANNUAL RUNOFF (AC-FT)	72340	49210	68320
ANNUAL RUNOFF (CFSM)	3.58	2.45	3.39
ANNUAL RUNOFF (INCHES)	48.80	33.20	46.09
10 PERCENT EXCEEDS	140	84	139
50 PERCENT EXCEEDS	92	67	86
90 PERCENT EXCEEDS	66	51	60

e Estimated

DESCHUTES RIVER BASIN

14090400 WHITEWATER RIVER NEAR CAMP SHERMAN, OR

LOCATION.--Lat 44°43'06", long 121°38'18", 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 right bank bridge abutment, 18 mi north of Camp Sherman, and at mile 7.5.

DRAINAGE AREA.--22.8 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,230 ft above sea level, from topographic map. July 1982 to Feb. 7, 1996, at comparable site 1/4 mi downstream, at different datum.

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

AVERAGE DISCHARGE.--19 years (water years 1983-2001), 85.6 ft³/s, 51.00 in/yr, 62,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,320 ft³/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 ft³/s Dec. 22, 1990, but could be less because of ice effect.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 1	0830	*158	6.22	May 16	0030	142	*6.28

Minimum discharge, 40 ft³/s Feb. 25-28, Mar. 1, 3, 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	118	48	48	44	41	41	69	83	94	73	62	59
2	73	49	49	44	43	41	64	74	87	71	67	56
3	64	49	48	44	42	41	61	71	78	72	73	54
4	56	52	48	45	44	41	59	70	74	76	71	56
5	52	50	48	47	45	41	58	70	73	79	71	50
6	51	49	48	46	43	41	58	69	76	75	77	47
7	50	49	47	46	42	41	57	69	75	73	76	47
8	51	52	47	46	42	42	56	73	77	75	71	47
9	52	50	47	45	42	42	56	75	85	76	70	49
10	50	49	47	44	42	41	56	74	78	78	73	50
11	51	48	47	44	42	42	56	76	76	76	74	50
12	50	48	47	44	42	42	55	83	81	74	74	53
13	50	48	47	44	42	44	55	85	72	73	73	54
14	51	48	49	44	42	43	54	86	73	72	72	54
15	52	48	49	43	42	43	53	106	73	69	70	55
16	52	47	49	43	42	42	53	111	72	65	70	53
17	52	47	49	44	42	42	54	91	71	63	66	51
18	52	47	47	43	42	46	55	85	69	62	61	50
19	51	47	47	43	41	54	54	84	69	63	56	47
20	78	47	47	43	41	51	54	87	71	63	55	47
21	66	47	47	44	42	50	53	88	75	62	52	46
22	52	47	49	43	42	50	53	95	77	65	58	48
23	51	49	49	43	41	52	53	106	75	67	61	50
24	50	49	47	43	41	54	53	113	73	68	52	49
25	50	48	45	42	41	62	54	106	68	67	54	53
26	50	48	45	42	41	57	63	100	67	66	57	51
27	50	49	45	42	40	59	68	101	79	66	56	46
28	52	48	44	42	40	69	68	91	77	67	58	43
29	50	49	44	42	---	66	64	82	74	64	57	43
30	49	49	44	42	---	62	87	83	74	64	57	44
31	49	---	44	41	---	67	---	90	---	62	57	---
TOTAL	1725	1455	1458	1352	1172	1509	1753	2677	2263	2146	2001	1502
MEAN	55.6	48.5	47.0	43.6	41.9	48.7	58.4	86.4	75.4	69.2	64.5	50.1
MAX	118	52	49	47	45	69	87	113	94	79	77	59
MIN	49	47	44	41	40	41	53	69	67	62	52	43
AC-FT	3420	2890	2890	2680	2320	2990	3480	5310	4490	4260	3970	2980
CFSM	2.44	2.13	2.06	1.91	1.84	2.13	2.56	3.79	3.31	3.04	2.83	2.20
IN.	2.81	2.37	2.38	2.21	1.91	2.46	2.86	4.37	3.69	3.50	3.26	2.45

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2001, BY WATER YEAR (WY)

	53.7	69.3	74.5	78.8	90.2	80.9	93.0	113	122	104	84.2	62.8
MEAN	53.7	69.3	74.5	78.8	90.2	80.9	93.0	113	122	104	84.2	62.8
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1983 - 2001

ANNUAL TOTAL	31076	21013	85.6
ANNUAL MEAN	84.9	57.6	142
HIGHEST ANNUAL MEAN			54.0
LOWEST ANNUAL MEAN			1400
HIGHEST DAILY MEAN	175	Jun 15	118
LOWEST DAILY MEAN	44	Dec 28	40
ANNUAL SEVEN-DAY MINIMUM	44	Dec 25	41
ANNUAL RUNOFF (AC-FT)	61640	41680	62000
ANNUAL RUNOFF (CFSM)	3.72	2.52	3.75
ANNUAL RUNOFF (INCHES)	50.70	34.28	51.00
10 PERCENT EXCEEDS	131	77	139
50 PERCENT EXCEEDS	79	52	74
90 PERCENT EXCEEDS	48	42	44

DESCHUTES RIVER BASIN

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14091500 METOLIUS RIVER NEAR GRANDVIEW, OR

LOCATION.--Lat 44°37'33", long 121°28'55", 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 mi², 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 sea level (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.--81 years (water years 1913, 1922-2001), 1,498 ft³/s, 1,085,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,430 ft³/s Feb. 7, 1996, gage height, 7.38 ft; minimum discharge, 1,080 ft³/s Feb. 17, 1932, Oct. 2-31, Nov. 6, 7, 10-14, 1942.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,980 ft³/s May 16, gage height, 1.86 ft; minimum discharge, 1,300 ft³/s Sept. 21, 24, 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1650	1480	1440	1410	1380	1380	1490	1640	1520	1430	1380	1340
2	1570	1480	1440	1410	1390	1380	1470	1550	1510	1420	1380	1340
3	1530	1480	1440	1410	1390	1370	1460	1520	1480	1420	1390	1340
4	1520	1490	1440	1410	1400	1380	1450	1500	1470	1430	1390	1350
5	1510	1480	1440	1420	1410	1380	1440	1490	1470	1440	1380	1350
6	1500	1470	1440	1420	1400	1380	1430	1470	1480	1430	1390	1340
7	1500	1470	1430	1410	1390	1380	1420	1480	1470	1420	1400	1340
8	1500	1500	1430	1410	1380	1380	1410	1510	1470	1420	1390	1330
9	1510	1490	1430	1410	1390	1370	1410	1530	1480	1420	1380	1330
10	1510	1480	1430	1410	1380	1360	1420	1520	1460	1430	1390	1340
11	1510	1460	1430	1410	1370	1360	1410	1520	1450	1430	1390	1330
12	1500	1460	1430	1410	1370	1370	1410	1540	1520	1420	1400	1340
13	1500	1460	1440	1400	1360	1380	1400	1570	1470	1420	1390	1340
14	1500	1460	1460	1400	1360	1380	1390	1570	1460	1420	1390	1340
15	1490	1460	1480	1400	1380	1380	1390	1800	1450	1410	1380	1340
16	1490	1450	1460	1390	1380	1370	1390	1850	1440	1410	1370	1340
17	1490	1450	1460	1390	1370	1370	1390	1670	1440	1400	1370	1330
18	1490	1450	1440	1400	1370	1370	1400	1610	1440	1400	1360	1330
19	1490	1450	1440	1400	1370	1420	1400	1580	1440	1400	1350	1330
20	1530	1450	1440	1400	1370	1420	1400	1590	1450	1410	1350	1320
21	1560	1450	1440	1400	1380	1400	1380	1560	1460	1400	1340	1320
22	1510	1440	1460	1400	1390	1390	1380	1550	1450	1400	1360	1320
23	1500	1460	1450	1400	1370	1380	1390	1590	1440	1400	1370	1320
24	1500	1460	1440	1390	1370	1380	1390	1630	1450	1400	1350	1320
25	1490	1450	1430	1390	1370	1420	1410	1610	1450	1390	1350	1330
26	1490	1450	1420	1390	1360	1400	1440	1570	1440	1380	1350	1340
27	1490	1460	1420	1390	1360	1410	1450	1580	1480	1370	1350	1320
28	1510	1450	1420	1380	1360	1490	1450	1540	1460	1380	1340	1310
29	1500	1450	1420	1390	---	1470	1440	1480	1440	1390	1340	1320
30	1490	1450	1420	1390	---	1440	1550	1480	1440	1390	1340	1320
31	1480	---	1420	1380	---	1450	---	1510	---	1380	1340	---
TOTAL	46810	43890	44580	43420	38570	43210	42660	48610	43880	43660	42450	39960
MEAN	1510	1463	1438	1401	1378	1394	1422	1568	1463	1408	1369	1332
MAX	1650	1500	1480	1420	1410	1490	1550	1850	1520	1440	1400	1350
MIN	1480	1440	1420	1380	1360	1360	1380	1470	1440	1370	1340	1310
AC-FT	92850	87060	88420	86120	76500	85710	84620	96420	87040	86600	84200	79260

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2001, BY WATER YEAR (WY)

	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
MEAN	1351	1401	1490	1524	1574	1544	1556	1611	1631	1518	1420	1369
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1913 - 2001

ANNUAL TOTAL	623930	521700	
ANNUAL MEAN	1705	1429	1498
HIGHEST ANNUAL MEAN			1949
LOWEST ANNUAL MEAN			1167
HIGHEST DAILY MEAN	2190	Apr 13	7100
LOWEST DAILY MEAN	1420	Dec 26	1080
ANNUAL SEVEN-DAY MINIMUM	1420	Dec 25	1080
ANNUAL RUNOFF (AC-FT)	1238000	1035000	1085000
10 PERCENT EXCEEDS	1980	1510	1810
50 PERCENT EXCEEDS	1700	1420	1450
90 PERCENT EXCEEDS	1450	1350	1230

DESCHUTES RIVER BASIN

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 mi², approximately.

PERIOD OF RECORD.--January 1964 to current year.

GAGE.--Nonrecording gage. Datum of gage is sea level (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 Sept. 16, elevation, 1,945.00 ft; minimum contents observed, 510,500 acre-ft Mar. 14, elevation, 1,938.76 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	1,944.31	532,000	--
Oct. 31.....	1,944.12	531,200	-800
Nov. 30.....	1,942.28	524,000	-7,200
Dec. 31.....	1,941.45	520,800	-3,200
CAL YR 2000.....	--	--	+600
Jan. 31.....	1,941.05	519,300	-1,500
Feb. 28.....	1,939.69	514,100	-5,200
Mar. 31.....	1,941.63	521,500	+7,400
Apr. 30.....	1,944.07	531,000	+9,500
May 31.....	1,944.12	531,200	+200
June 30.....	1,944.75	533,700	+2,500
July 31.....	1,944.28	531,900	-1,800
Aug. 31.....	1,944.27	531,800	-100
Sept. 30.....	1,944.14	531,300	-500
WTR YR 2001.....	--	--	-700

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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,720 ft³/s Dec. 11, 12, gage height, 3.53 ft; minimum discharge, 950 ft³/s (estimated) Apr. 13, result of regulation.

ANNUAL TOTAL	1808120			1535630			
ANNUAL MEAN	4940			4207		4708	
HIGHEST ANNUAL MEAN						5980	1997
LOWEST ANNUAL MEAN						3558	1964
HIGHEST DAILY MEAN	7230	Mar	31	5660	Dec	11	17800
LOWEST DAILY MEAN	3790	May	21	3550	Jul	11	2440
ANNUAL SEVEN-DAY MINIMUM	3980	May	19	3560	Jul	8	2590
ANNUAL RUNOFF (AC-FT)	3586000			3046000		3410000	
10 PERCENT EXCEEDS	5980			4830		6160	
50 PERCENT EXCEEDS	4700			4190		4370	
90 PERCENT EXCEEDS	4070			3610		3660	

DESCHUTES RIVER BASIN

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 mi².

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.--No estimated daily discharges. Records good. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--19 years (water years 1983-2001), 78.9 ft³/s, 46.84 in/yr, 57,190 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,430 ft³/s Feb. 7, 1996, gage height, 6.66 ft, from rating curve extended above 800 ft³/s on basis of slope area measurement of peak flow; minimum discharge, 17 ft³/s Dec. 22, 1990.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16	0300	*297	*2.07				
Minimum discharge, 20 ft ³ /s, Sept. 20-25.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	37	33	34	31	32	100	166	83	52	35	25
2	50	36	34	34	32	32	85	111	76	49	34	25
3	45	37	34	34	32	31	73	87	63	49	33	25
4	43	39	34	34	34	32	65	76	58	49	33	24
5	42	40	33	36	37	32	60	73	57	49	32	24
6	41	38	33	37	38	32	56	66	62	46	32	24
7	40	37	33	38	e40	32	52	63	65	44	31	24
8	40	40	32	37	e38	32	49	74	68	43	31	24
9	40	39	32	37	e36	32	47	86	78	43	31	23
10	41	38	32	36	36	32	45	83	66	42	30	23
11	42	37	32	35	35	32	44	84	59	42	30	23
12	42	35	31	35	35	33	43	101	76	41	29	22
13	40	35	32	34	34	35	41	115	59	41	29	22
14	40	35	33	34	33	35	40	110	60	40	29	22
15	40	35	34	33	33	35	39	207	61	40	29	22
16	39	34	34	32	33	34	38	241	58	39	29	22
17	38	33	36	e32	32	34	39	158	55	39	28	21
18	39	33	33	32	32	36	40	120	52	39	28	21
19	39	33	34	32	32	50	41	106	52	38	28	21
20	58	32	34	32	32	64	41	105	54	38	28	21
21	62	32	33	32	32	57	40	100	59	37	28	21
22	46	32	37	32	32	53	40	110	61	37	29	21
23	42	35	39	32	32	52	40	126	56	36	30	21
24	40	36	37	32	32	54	41	131	55	36	30	21
25	38	35	36	32	31	69	44	113	55	35	29	22
26	38	36	35	32	31	67	61	102	51	35	28	23
27	38	36	35	32	31	66	83	103	68	34	27	23
28	42	35	35	31	31	82	85	88	64	34	26	23
29	40	35	35	32	---	89	70	72	56	36	26	23
30	39	34	35	31	---	83	131	68	54	37	26	22
31	37	---	35	31	---	85	---	76	---	36	25	---
TOTAL	1334	1069	1055	1037	937	1464	1673	3321	1841	1256	913	678
MEAN	43.0	35.6	34.0	33.5	33.5	47.2	55.8	107	61.4	40.5	29.5	22.6
MAX	73	40	39	38	40	89	131	241	83	52	35	25
MIN	37	32	31	31	31	31	38	63	51	34	25	21
AC-FT	2650	2120	2090	2060	1860	2900	3320	6590	3650	2490	1810	1340
CFSM	1.88	1.56	1.49	1.46	1.46	2.06	2.44	4.68	2.68	1.77	1.29	.99
IN.	2.17	1.74	1.71	1.68	1.52	2.38	2.72	5.39	2.99	2.04	1.48	1.10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2001, BY WATER YEAR (WY)

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	40.2	72.0	78.3	81.7	97.8	86.4	101	125	113	72.5	46.6	35.5							
MAX	98.8	175	205	218	363	166	151	207	217	142	96.3	59.7							
(WY)	1998	1996	1996	1997	1996	1986	1997	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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1983 - 2001
ANNUAL TOTAL	28287	16578	
ANNUAL MEAN	77.3	45.4	78.9
HIGHEST ANNUAL MEAN			136
LOWEST ANNUAL MEAN			43.2
HIGHEST DAILY MEAN	251	241	2020
LOWEST DAILY MEAN	31	21	17
ANNUAL SEVEN-DAY MINIMUM	32	21	18
ANNUAL RUNOFF (AC-FT)	56110	32880	57190
ANNUAL RUNOFF (CFSM)	3.37	1.98	3.45
ANNUAL RUNOFF (INCHES)	45.95	26.93	46.84
10 PERCENT EXCEEDS	142	76	144
50 PERCENT EXCEEDS	61	36	60
90 PERCENT EXCEEDS	35	28	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 mi².

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 sea level, 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.--No estimated daily discharges. Records fair. No regulation. Some diversions for irrigation and municipal use.

AVERAGE DISCHARGE.--17 years (water years 1912-16, 1924-28, 1973-74, 1999-2001), 114 ft³/s, 14.96 in/yr, 82,930 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,000 ft³/s Jan. 15, 1974, gage height, 4.36 ft; minimum daily discharge, 20 ft³/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 ft³/s, from rating curve extended above 900 ft³/s on basis of runoff comparisons with nearby stations.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 1	0700	*381	*4.75				

Minimum discharge, 33 ft³/s Sept. 13-18, 20-24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	53	50	49	47	51	130	281	95	64	47	36
2	80	53	49	48	48	53	122	156	99	61	e45	36
3	64	53	49	48	49	49	105	126	86	59	e43	36
4	60	53	49	49	50	51	96	113	79	58	e43	36
5	57	58	49	49	54	52	88	107	77	60	e42	36
6	54	55	49	51	55	53	82	101	78	57	e42	37
7	51	54	48	52	56	53	76	95	79	55	e41	36
8	50	56	48	52	55	54	74	98	83	54	e41	36
9	52	58	48	51	56	53	70	112	88	53	e41	36
10	54	57	48	51	54	53	68	111	89	52	e40	35
11	55	54	47	51	54	54	67	108	76	52	e40	35
12	55	53	46	50	54	52	65	116	89	52	e39	35
13	53	52	45	50	52	53	63	134	79	52	e39	34
14	52	52	53	49	51	55	61	126	74	50	e39	34
15	52	52	57	48	52	54	60	180	77	50	e39	35
16	51	51	49	47	51	54	59	236	74	50	e39	35
17	49	50	54	50	50	53	59	209	72	50	e38	34
18	49	50	49	49	51	55	61	166	68	50	e38	34
19	50	50	48	48	51	62	63	141	65	50	e38	34
20	51	49	50	47	50	90	65	133	66	50	e38	34
21	81	49	49	47	52	86	62	123	69	49	e38	34
22	63	49	50	47	55	78	61	123	74	48	e39	34
23	58	50	55	47	52	74	62	133	72	47	e40	34
24	55	55	54	48	50	75	62	144	68	46	e40	34
25	54	53	52	48	50	89	62	133	70	46	e39	36
26	55	54	50	49	49	94	71	119	63	45	e38	38
27	55	54	50	48	49	89	100	119	74	45	e37	37
28	56	52	50	48	49	100	111	112	79	45	e37	37
29	57	52	50	48	---	115	106	97	71	48	37	36
30	55	51	50	48	---	110	110	87	66	51	37	36
31	53	---	49	47	---	109	---	91	---	49	37	---
TOTAL	1754	1582	1544	1514	1446	2123	2341	4130	2299	1598	1231	1060
MEAN	56.6	52.7	49.8	48.8	51.6	68.5	78.0	133	76.6	51.5	39.7	35.3
MAX	81	58	57	52	56	115	130	281	99	64	47	38
MIN	49	49	45	47	47	49	59	87	63	45	37	34
AC-FT	3480	3140	3060	3000	2870	4210	4640	8190	4560	3170	2440	2100
CFSM	.54	.51	.48	.47	.50	.66	.75	1.28	.74	.50	.38	.34
IN.	.63	.57	.55	.54	.52	.76	.84	1.48	.82	.57	.44	.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 2001, BY WATER YEAR (WY)

	MEAN	65.9	98.0	117	142	135	126	136	165	154	106	69.9	60.6
MAX	109	167	283	432	261	222	202	238	315	213	127	87.7	
(WY)	1998	1928	1997	1974	1916	1997	2000	1974	1974	1916	1999	1997	
MIN	41.5	50.1	49.8	48.8	51.6	64.7	66.4	86.2	68.9	46.7	36.2	35.3	
(WY)	1916	1926	2001	2001	2001	1973	1973	1973	1924	1924	1924	2001	

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1912 - 2001

ANNUAL TOTAL	39466	22622											
ANNUAL MEAN	108	62.0											
HIGHEST ANNUAL MEAN													
LOWEST ANNUAL MEAN													
HIGHEST DAILY MEAN	283	Jun 13					281	May 1		2300	Jan 15	1974	
LOWEST DAILY MEAN	45	Dec 13					34	Sep 13		20	Dec 8	1972	
ANNUAL SEVEN-DAY MINIMUM	47	Dec 7					34	Sep 17		20	Dec 8	1972	
ANNUAL RUNOFF (AC-FT)	78280	44870								82930			
ANNUAL RUNOFF (CFSM)	1.04	.60								1.10			
ANNUAL RUNOFF (INCHES)	14.12	8.09								14.96			
10 PERCENT EXCEEDS	188						100			200			
50 PERCENT EXCEEDS	94						52			91			
90 PERCENT EXCEEDS	51						38			50			

e Estimated

DESCHUTES RIVER BASIN

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, 3.03 mi upstream from Badger Creek, and 6.2 mi west of Simnasho, and at mile 30.5.

DRAINAGE AREA.--107 mi².

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 sea level. 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.--23 years (water years 1950-54, 1984-2001), 166 ft³/s, 21.08 in/yr, 120,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,670 ft³/s Feb. 7, 1996, gage height, 6.98 ft, from rating curve extended above 1,300 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 89 ft³/s Aug. 14, 1994, due to temporary diversion.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 350 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 30	2330	*161	*2.76				
Minimum discharge, 104 ft ³ /s Aug. 16, 17.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	139	130	125	123	121	121	152	158	119	112	106	106
2	137	131	125	123	123	121	149	150	119	111	106	106
3	136	130	125	123	125	120	144	146	120	110	106	106
4	136	132	125	123	126	122	140	144	120	110	106	106
5	136	131	123	125	130	121	139	142	120	109	106	106
6	136	131	123	124	125	121	139	141	119	109	106	106
7	136	130	123	123	124	121	135	138	118	109	106	106
8	134	137	123	123	123	122	133	134	118	108	105	105
9	136	135	123	124	123	123	130	135	117	108	105	106
10	136	132	123	123	123	123	130	134	117	108	105	106
11	137	127	123	123	122	123	133	134	117	108	105	106
12	135	126	122	123	122	124	130	132	119	110	105	106
13	134	126	124	123	121	126	128	131	117	110	105	106
14	134	126	126	123	120	126	127	132	116	109	105	106
15	134	126	133	122	121	126	126	148	116	109	105	106
16	134	126	129	121	122	126	126	149	115	109	105	106
17	134	126	135	122	120	125	126	142	115	109	105	106
18	134	126	126	122	121	126	127	136	115	109	105	108
19	133	125	126	122	120	129	129	132	114	109	105	108
20	136	125	127	122	120	129	132	129	114	109	105	108
21	145	125	126	122	122	128	130	128	113	108	105	108
22	135	123	127	122	123	128	128	126	113	108	108	108
23	133	125	128	122	122	128	129	125	113	107	108	108
24	133	127	128	122	122	128	129	123	114	107	106	108
25	133	126	125	122	121	133	131	122	115	106	106	110
26	134	128	125	122	120	134	135	121	115	106	106	110
27	133	127	125	121	120	136	138	121	116	106	106	110
28	135	125	125	120	120	145	140	121	115	106	106	110
29	134	126	125	122	---	144	140	121	114	107	106	109
30	132	125	125	121	---	145	147	120	113	109	106	109
31	131	---	124	120	---	147	---	119	---	107	107	---
TOTAL	4185	3835	3892	3793	3422	3971	4022	4134	3486	3362	3277	3215
MEAN	135	128	126	122	122	128	134	133	116	108	106	107
MAX	145	137	135	125	130	147	152	158	120	112	108	110
MIN	131	123	122	120	120	120	126	119	113	106	105	105
AC-FT	8300	7610	7720	7520	6790	7880	7980	8200	6910	6670	6500	6380
CFSM	1.26	1.19	1.17	1.14	1.14	1.20	1.25	1.25	1.09	1.01	.99	1.00
IN.	1.45	1.33	1.35	1.32	1.19	1.38	1.40	1.44	1.21	1.17	1.14	1.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2001, BY WATER YEAR (WY)

[illegible]

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1950 - 2001
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ANNUAL TOTAL	65456		44594				
ANNUAL MEAN	179		122			166	
HIGHEST ANNUAL MEAN						242	1997
LOWEST ANNUAL MEAN						107	1994
HIGHEST DAILY MEAN	374	Apr 15	158	May 1	3000		Feb 8 1996
LOWEST DAILY MEAN	122	Dec 12	105	Aug 8		93	Dec 14 1992
ANNUAL SEVEN-DAY MINIMUM	123	Dec 6	105	Aug 8		95	Jul 25 1994
ANNUAL RUNOFF (AC-FT)	129800		88450		120300		
ANNUAL RUNOFF (CFSM)	1.67		1.14			1.55	
ANNUAL RUNOFF (INCHES)	22.76		15.50			21.08	
10 PERCENT EXCEEDS	277		136			260	
50 PERCENT EXCEEDS	154		123			136	
90 PERCENT EXCEEDS	126		106			107	

DESCHUTES RIVER BASIN

117

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, and 19.3 mi northwest of Warm Springs, and at mile 14.6.

DRAINAGE AREA.--26.8 mi².

PERIOD OF RECORD.--October 1983 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 3,380 ft above sea level, from topographic map.

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

AVERAGE DISCHARGE.--18 years (water years 1984-2001), 69.4 ft³/s, 35.16 in/yr, 50,250 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,300 ft³/s Feb. 7, 1996, from rating curve extended above 800 ft³/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 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16	0800	*245	*5.78				

Minimum discharge, 30 ft³/s Sept. 17, 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	50	48	47	44	42	108	152	57	39	36	35
2	56	51	49	46	47	44	104	127	57	38	35	35
3	52	50	49	46	48	42	94	108	59	37	35	35
4	51	54	48	48	55	44	84	95	56	38	35	35
5	50	52	47	52	63	45	77	90	55	37	36	35
6	50	51	47	51	54	45	72	85	56	36	36	35
7	49	51	46	49	51	45	67	79	54	36	35	34
8	49	60	46	48	50	48	64	80	52	36	35	33
9	52	57	46	47	50	48	61	86	51	36	35	33
10	53	53	46	47	49	47	57	88	50	35	35	33
11	57	51	46	46	49	46	59	86	50	35	35	33
12	53	50	46	46	49	49	58	86	58	36	35	33
13	51	49	47	46	47	55	55	91	53	35	35	33
14	51	48	51	47	46	53	53	100	51	35	34	33
15	50	48	57	46	45	49	51	178	48	35	34	34
16	49	48	58	44	45	48	50	226	46	35	34	34
17	48	47	61	47	44	48	52	186	45	35	33	33
18	50	47	53	45	45	56	53	153	44	35	33	32
19	50	47	55	45	45	76	54	129	44	35	34	33
20	63	47	55	44	44	73	54	115	43	37	34	34
21	74	47	52	45	46	69	53	105	42	37	34	34
22	57	46	57	45	47	68	52	97	41	36	36	34
23	53	53	61	45	46	69	52	94	40	36	38	34
24	51	60	56	45	45	71	52	90	42	36	36	34
25	50	53	52	44	44	88	55	84	44	36	36	36
26	52	54	50	45	43	88	63	78	44	35	36	37
27	51	55	50	46	42	91	79	73	48	35	35	36
28	56	51	49	45	41	111	90	69	44	35	35	36
29	54	50	48	45	---	107	88	67	41	37	35	35
30	52	50	48	45	---	101	113	63	40	40	35	35
31	51	---	48	44	---	101	---	60	---	37	35	---
TOTAL	1658	1530	1572	1431	1324	1967	2024	3220	1455	1121	1085	1026
MEAN	53.5	51.0	50.7	46.2	47.3	63.5	67.5	104	48.5	36.2	35.0	34.2
MAX	74	60	61	52	63	111	113	226	59	40	38	37
MIN	48	46	46	44	41	42	50	60	40	35	33	32
AC-FT	3290	3030	3120	2840	2630	3900	4010	6390	2890	2220	2150	2040
CFSM	2.00	1.90	1.89	1.72	1.76	2.37	2.52	3.88	1.81	1.35	1.31	1.28
IN.	2.30	2.12	2.18	1.99	1.84	2.73	2.81	4.47	2.02	1.56	1.51	1.42

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2001, BY WATER YEAR (WY)

	45.8	71.0	79.1	80.1	89.0	78.7	88.2	94.9	74.5	49.1	42.2	41.3
MEAN	45.8	71.0	79.1	80.1	89.0	78.7	88.2	94.9	74.5	49.1	42.2	41.3
MAX	84.6	136	203	162	275	123	126	141	151	87.9	63.3	64.9
(WY)	1998	1996	1996	1996	1996	1997	2000	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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1984 - 2001
ANNUAL TOTAL	26540	19413	
ANNUAL MEAN	72.5	53.2	69.4
HIGHEST ANNUAL MEAN			114
LOWEST ANNUAL MEAN			46.5
HIGHEST DAILY MEAN	163	226	1060
LOWEST DAILY MEAN	46	32	25
ANNUAL SEVEN-DAY MINIMUM	46	33	25
ANNUAL RUNOFF (AC-FT)	52640	38510	50250
ANNUAL RUNOFF (CFSM)	2.71	1.98	2.59
ANNUAL RUNOFF (INCHES)	36.84	26.95	35.16
10 PERCENT EXCEEDS	121	84	110
50 PERCENT EXCEEDS	60	48	59
90 PERCENT EXCEEDS	48	35	36

DESCHUTES RIVER BASIN

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 mi².

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 sea level, from topographic map.

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

AVERAGE DISCHARGE.--18 years (water years 1984-2001), 86.4 ft³/s, 8.10 in/yr, 62,620 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,760 ft³/s, Feb. 7, 1996, gage height, 10.57 ft; minimum discharge, 4.5 ft³/s Jan. 7, 1991.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 29	0030	*77	*2.47				
Minimum discharge, 37 ft ³ /s Sept. 9-25.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	41	42	42	43	43	77	74	47	42	39	38
2	43	41	42	42	43	43	76	69	47	41	39	38
3	42	41	42	42	43	43	73	67	47	41	39	38
4	42	41	42	42	44	43	68	65	47	41	39	38
5	42	41	42	42	47	43	66	64	47	41	39	38
6	41	41	42	42	47	43	64	63	47	40	39	38
7	41	41	42	42	45	43	62	61	47	40	39	38
8	41	42	42	42	45	43	60	61	46	40	39	38
9	41	44	42	42	45	45	58	60	46	40	39	38
10	41	44	42	42	45	45	57	59	46	40	39	37
11	41	42	41	42	44	45	57	58	45	40	39	37
12	41	41	40	42	44	45	58	58	45	40	39	37
13	41	41	40	42	43	47	57	57	45	41	38	37
14	41	41	40	42	42	50	56	56	45	41	38	37
15	41	41	45	42	43	50	55	66	44	40	38	37
16	41	40	44	40	43	50	55	68	44	40	38	37
17	41	40	46	40	43	49	55	64	43	40	38	37
18	41	40	44	42	43	49	55	60	43	40	38	37
19	41	40	44	42	43	53	56	57	43	40	38	37
20	41	40	44	43	43	56	59	56	43	41	38	37
21	45	40	44	43	44	56	61	55	42	41	38	37
22	45	39	44	43	48	55	59	54	41	40	38	37
23	43	40	44	43	46	54	58	53	41	40	40	37
24	43	41	44	43	45	54	58	52	41	40	40	37
25	42	41	44	43	44	62	58	51	41	40	39	38
26	42	41	44	43	43	66	61	50	42	40	39	39
27	42	42	43	43	42	66	64	50	42	39	38	39
28	42	42	43	43	42	75	66	49	43	39	38	39
29	42	42	43	43	---	77	65	49	42	39	38	39
30	42	42	43	43	---	76	65	48	42	40	38	38
31	42	---	43	43	---	75	---	48	---	40	38	---
TOTAL	1296	1233	1327	1310	1232	1644	1839	1802	1324	1247	1196	1129
MEAN	41.8	41.1	42.8	42.3	44.0	53.0	61.3	58.1	44.1	40.2	38.6	37.6
MAX	45	44	46	43	48	77	77	74	47	42	40	39
MIN	41	39	40	40	42	43	55	48	41	39	38	37
AC-FT	2570	2450	2630	2600	2440	3260	3650	3570	2630	2470	2370	2240
CFSM	.29	.28	.30	.29	.30	.37	.42	.40	.30	.28	.27	.26
IN.	.33	.32	.34	.34	.32	.42	.47	.46	.34	.32	.31	.29

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2001, BY WATER YEAR (WY)

	MEAN	38.9	50.7	80.1	126	207	160	120	86.3	58.0	42.5	38.4	37.5
MAX	47.7	104	315	479	646	305	188	132	95.5	54.1	47.4	44.4	44.4
(WY)	1998	1985	1997	1997	1996	1986	2000	1999	1993	1999	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	30.4
(WY)	1995	1988	1986	2001	1994	2001	1994	1994	1994	1994	1994	1994	1994

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1984 - 2001

ANNUAL TOTAL	34428	16579	
ANNUAL MEAN	94.1	45.4	86.4
HIGHEST ANNUAL MEAN			166
LOWEST ANNUAL MEAN			41.6
HIGHEST DAILY MEAN	414	Feb 27	77
LOWEST DAILY MEAN	39	Nov 22	37
ANNUAL SEVEN-DAY MINIMUM	40	Nov 16	37
ANNUAL RUNOFF (AC-FT)	68290	32880	62620
ANNUAL RUNOFF (CFSM)	.65	.31	.60
ANNUAL RUNOFF (INCHES)	8.83	4.25	8.10
10 PERCENT EXCEEDS	229	59	168
50 PERCENT EXCEEDS	48	42	48
90 PERCENT EXCEEDS	40	38	36

DESCHUTES RIVER BASIN

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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 mi².

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,400 ft above sea level, from topographic map.

REMARKS.--Records good. No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--29 years(water years 1973-2001), 448 ft³/s, 11.56 in/yr, 324,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,600 ft³/s Feb. 7, 1996, gage height, 14.32 ft, from inside highwater mark and slope-area computation; minimum discharge, 149 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16	2230	*567	*2.06				
Minimum discharge, 223 ft ³ /s Sept. 10, 13, 14, 18-20.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	310	310	307	287	275	281	457	512	293	264	246	232
2	319	312	306	286	281	290	455	491	294	255	243	233
3	303	312	307	284	292	283	429	445	299	251	241	232
4	297	312	305	286	294	287	402	419	300	250	241	233
5	295	319	303	291	317	287	382	404	302	247	241	231
6	293	317	303	294	311	287	370	396	298	246	239	234
7	294	312	302	290	295	288	359	383	294	247	239	233
8	294	326	303	288	287	291	348	366	290	246	236	232
9	299	334	302	284	298	297	336	369	286	245	237	234
10	307	325	303	286	290	295	330	371	283	245	237	231
11	306	313	301	289	288	294	338	367	283	245	237	229
12	307	306	294	286	288	294	336	363	291	246	236	229
13	299	314	301	285	279	305	327	363	293	255	236	229
14	296	311	298	285	276	316	320	363	283	247	236	229
15	294	310	339	282	287	313	317	436	279	244	235	230
16	294	305	324	272	287	310	314	546	275	245	235	232
17	293	309	339	264	280	305	314	520	271	e244	233	230
18	293	307	308	287	282	308	319	456	270	e243	232	228
19	295	299	300	289	283	332	327	413	268	e243	234	228
20	297	300	307	281	281	354	343	387	266	e242	235	229
21	342	299	302	282	288	344	339	368	264	e241	236	229
22	338	295	301	282	310	337	327	358	262	e241	244	229
23	321	299	310	282	301	334	325	349	260	e240	252	230
24	316	326	312	283	293	337	326	340	265	e239	246	231
25	314	322	299	280	286	365	330	333	269	239	238	235
26	317	316	295	282	282	389	344	325	271	239	237	246
27	318	316	294	279	279	384	369	312	284	237	235	238
28	321	314	292	276	276	429	395	310	280	237	234	235
29	322	313	289	280	---	450	408	309	273	246	233	233
30	317	307	288	277	---	439	397	305	267	256	233	232
31	312	---	288	276	---	434	---	298	---	252	233	---
TOTAL	9523	9360	9422	8775	8086	10259	10683	11977	8413	7617	7370	6956
MEAN	307	312	304	283	289	331	356	386	280	246	238	232
MAX	342	334	339	294	317	450	457	546	302	264	252	246
MIN	293	295	288	264	275	281	314	298	260	237	232	228
AC-FT	18890	18570	18690	17410	16040	20350	21190	23760	16690	15110	14620	13800
CFSM	.58	.59	.58	.54	.55	.63	.68	.73	.53	.47	.45	.44
IN.	.67	.66	.67	.62	.57	.73	.76	.85	.59	.54	.52	.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2001, BY WATER YEAR (WY)

	MEAN	263	326	495	590	771	652	582	524	389	285	260	255
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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1973 - 2001
ANNUAL TOTAL	175790	108441	
ANNUAL MEAN	480	297	448
HIGHEST ANNUAL MEAN			786
LOWEST ANNUAL MEAN			246
HIGHEST DAILY MEAN	1100	Feb 27	15800
LOWEST DAILY MEAN	288	Dec 30	160
ANNUAL SEVEN-DAY MINIMUM	292	Dec 25	174
ANNUAL RUNOFF (AC-FT)	348700	215100	324200
ANNUAL RUNOFF (CFSM)	.91	.56	.85
ANNUAL RUNOFF (INCHES)	12.43	7.67	11.56
10 PERCENT EXCEEDS	865	363	754
50 PERCENT EXCEEDS	346	294	322
90 PERCENT EXCEEDS	297	235	229

e Estimated

DESCHUTES RIVER BASIN

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 mi², 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 sea level. 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 ft³/s, 4,239,000 acre-ft/yr.
45 years (water years 1957-2001), 5,831 ft³/s, 4,224,000 acre-ft/yr, regulated.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,300 ft³/s Feb. 8, 1996, gage height, 12.08 ft, from rating curve extended above 47,000 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 2,400 ft³/s Dec. 5, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,280 ft³/s Dec. 12, gage height, 3.10 ft; minimum discharge, 3,980 ft³/s Aug. 16, 17, 20, 28, 30, 31, Sept. 5-16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4900	5230	5680	5190	5020	5400	5310	4950	4360	4530	4210	4110
2	5080	5240	5680	5180	5030	5590	5310	5040	4370	4510	4190	4110
3	5120	5280	5690	5200	5080	5590	5230	5100	4380	4490	4180	4110
4	5180	5420	5680	5230	5200	5500	5160	5030	4390	4360	4180	4100
5	5090	5440	5680	5330	5240	5200	5100	4940	4410	4340	4190	4010
6	5000	5460	5710	5330	5270	5180	5060	4790	4480	4340	4170	4000
7	4960	5430	5840	5300	5240	5190	5050	4760	4450	4330	4150	4000
8	4870	5470	5840	5300	5210	5200	5000	4720	4470	4290	4140	4000
9	4890	5470	5840	5300	5240	5210	5000	4710	4610	4080	4130	3990
10	4950	5450	5880	5290	5230	5210	4970	4720	4590	4060	4110	4000
11	5130	5420	6030	5300	5210	5200	4950	4710	4590	4060	4100	4000
12	5230	5410	6250	5280	5220	5200	4880	4680	4600	4060	4110	3990
13	5210	5400	5890	5290	5420	5210	4820	4700	4590	4070	4100	3990
14	5200	5390	5430	5270	5590	5210	4690	4720	4450	4080	4040	4000
15	5230	5390	5210	5260	5590	5110	4690	4870	4400	4110	4020	3990
16	5320	5370	5090	5250	5600	4980	4650	5120	4280	4220	4020	4040
17	5310	5360	4980	5230	5570	4970	4650	5480	4270	4220	4020	4150
18	5310	5370	4960	5250	5450	4980	4680	5440	4270	4210	4010	4140
19	5320	5370	4920	5290	5330	5050	4660	5210	4270	4220	4030	4160
20	5350	5390	4900	5270	5290	5080	4650	5000	4250	4230	4020	4240
21	5410	5390	4820	5250	5150	4900	4670	4980	4230	4240	4030	4260
22	5520	5380	4810	5260	4950	4820	4690	4900	4220	4220	4060	4270
23	5450	5430	5070	5270	4970	4730	4710	4800	4230	4210	4090	4260
24	5430	5550	5080	5230	4920	4730	4680	4890	4260	4190	4080	4250
25	5450	5570	5070	5040	4860	4920	4660	4820	4260	4180	4060	4200
26	5460	5560	5090	5040	5100	5160	4690	4770	4190	4180	4040	4240
27	5450	5570	5200	5030	5180	5150	4760	4740	4250	4170	4030	4230
28	5420	5600	5190	5020	5170	5200	4760	4740	4340	4170	4020	4220
29	5270	5690	5190	5020	---	5310	4770	4720	4310	4190	4020	4180
30	5260	5690	5180	5030	---	5290	4740	4690	4320	4250	4010	4050
31	5240	---	5190	5020	---	5260	---	4610	---	4230	4020	---
TOTAL	162010	163190	167070	161550	146330	159730	145640	151350	131090	131040	126580	123290
MEAN	5226	5440	5389	5211	5226	5153	4855	4882	4370	4227	4083	4110
MAX	5520	5690	6250	5330	5600	5590	5310	5480	4610	4530	4210	4270
MIN	4870	5230	4810	5020	4860	4730	4650	4610	4190	4060	4010	3990
AC-FT	321300	323700	331400	320400	290200	316800	288900	300200	260000	259900	251100	244500

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2001, BY WATER YEAR (WY)

	MEAN	5860	7814	13150	14980	16980	13580	10930	8267	7643	5917	5359	4461
(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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1957 - 2001

ANNUAL TOTAL	2269770	1768870		
ANNUAL MEAN	6202	4846	5831	
HIGHEST ANNUAL MEAN			7969	1997
LOWEST ANNUAL MEAN			4290	1994
HIGHEST DAILY MEAN	10500	Apr 5	6250	Dec 12
LOWEST DAILY MEAN	4490	Aug 22	3990	Sep 9
ANNUAL SEVEN-DAY MINIMUM	4540	Aug 22	3990	Sep 9
ANNUAL RUNOFF (AC-FT)	4502000		3509000	4224000
10 PERCENT EXCEEDS	8730		5450	8130
50 PERCENT EXCEEDS	5500		4970	5190
90 PERCENT EXCEEDS	4710		4090	4200

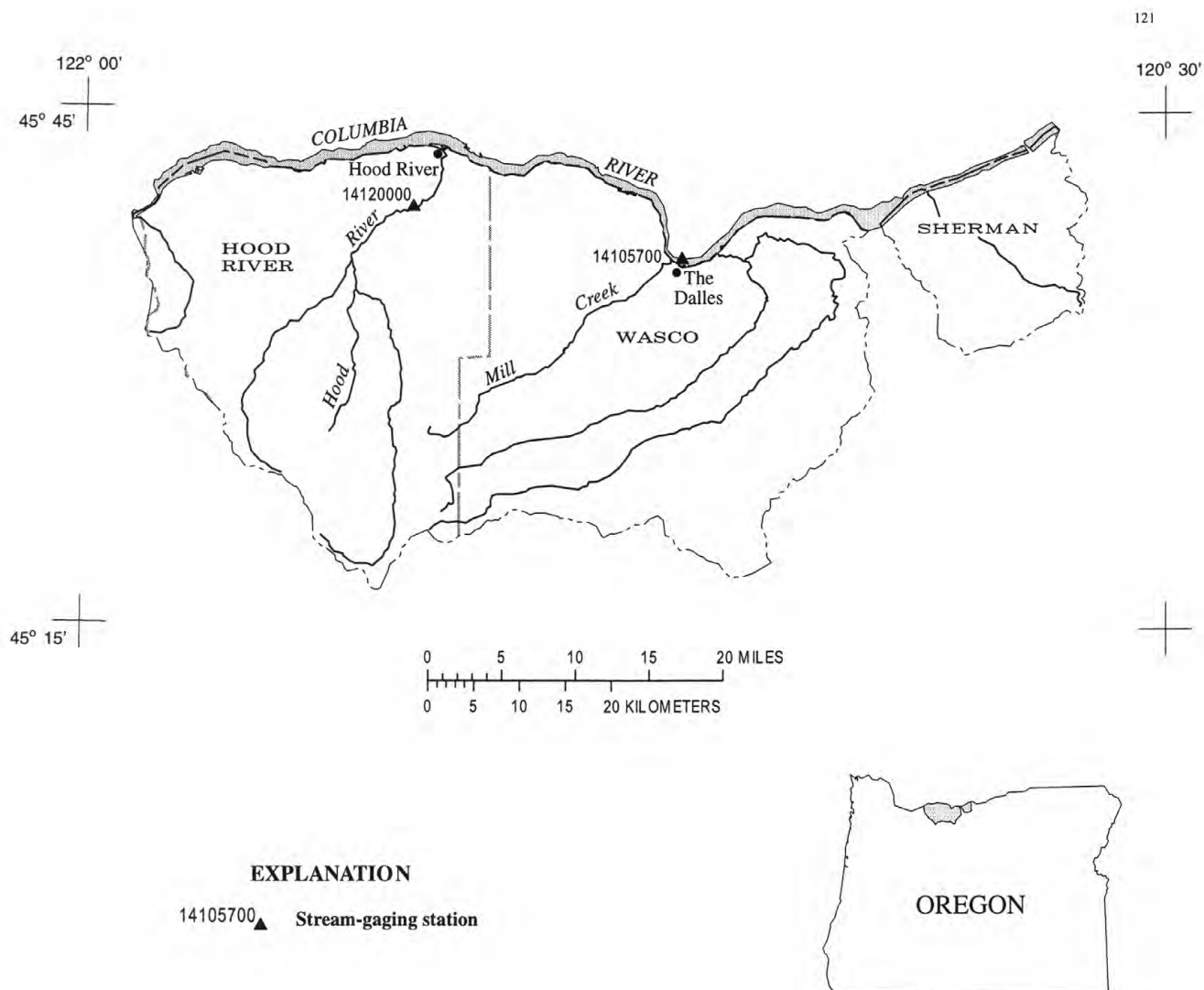
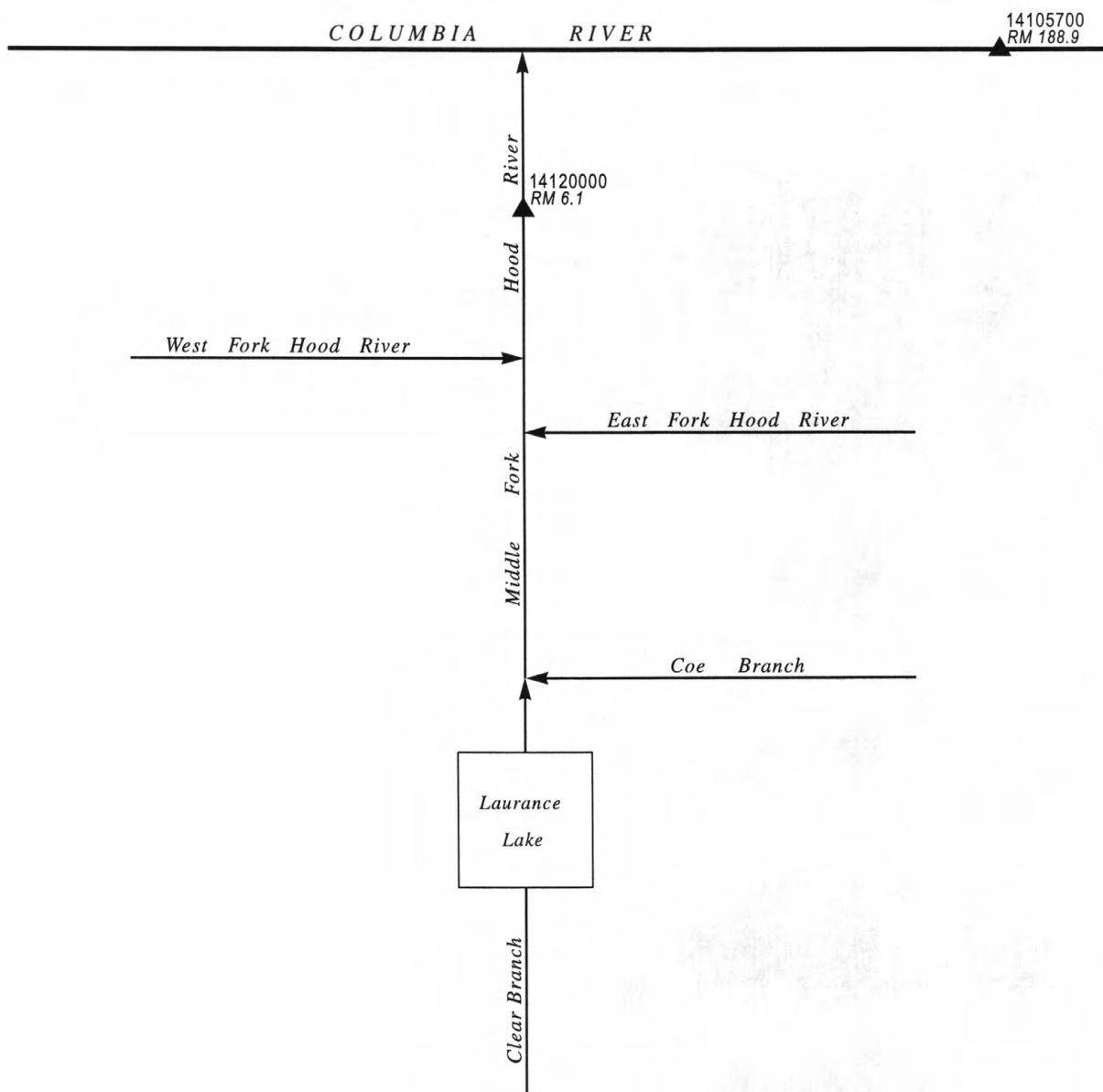


Figure 17. Location of surface-water stations in the Columbia River between the Deschutes River and Bonneville Dam and in the Hood River Basin.



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.

COLUMBIA RIVER MAIN STEM

123

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 mi², 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 sea level. 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.--No estimated daily discharges. 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.--123 years (water years 1879-2001), 191,400 ft³/s, 138,700,000 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (since 1858), 1,240,000 ft³/s June 6, 1894, elevation, 106.5 ft; minimum discharge (since 1878), 12,100 ft³/s Apr. 16, 1968 (due to closure of John Day dam, recorded by UVM).

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 181,000 ft³/s Dec. 13; maximum elevation, 78.44 ft May 15; minimum daily discharge, 62,800 ft³/s Sept. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	91600	127000	129000	127000	126000	127000	95400	150000	164000	84300	77600	89000
2	106000	133000	122000	123000	116000	119000	119000	164000	122000	128000	78100	86300
3	106000	114000	137000	143000	119000	119000	128000	142000	104000	124000	78300	89500
4	132000	124000	141000	143000	119000	107000	124000	139000	147000	98800	75700	79600
5	121000	116000	137000	136000	114000	134000	118000	130000	154000	83500	86100	92400
6	112000	124000	141000	124000	119000	128000	128000	137000	154000	82500	95100	81500
7	120000	131000	148000	129000	130000	113000	116000	136000	131000	84200	98200	71600
8	93300	121000	164000	140000	115000	99900	94200	119000	161000	74000	122000	70000
9	108000	126000	137000	138000	124000	124000	123000	118000	138000	98800	116000	71500
10	118000	134000	128000	118000	125000	113000	130000	102000	111000	98800	108000	79800
11	112000	134000	155000	140000	117000	112000	126000	120000	141000	102000	101000	82700
12	122000	128000	173000	129000	132000	114000	129000	118000	167000	80700	102000	107000
13	105000	126000	181000	124000	119000	110000	120000	104000	140000	73200	91200	96000
14	96800	124000	170000	118000	139000	122000	92700	121000	119000	69800	109000	91000
15	112000	139000	154000	125000	142000	123000	86800	132000	136000	63100	115000	72700
16	115000	139000	128000	133000	145000	137000	117000	144000	126000	83500	115000	62800
17	101000	129000	129000	134000	136000	115000	114000	173000	91500	86000	104000	75400
18	99000	133000	143000	139000	117000	107000	133000	169000	127000	107000	93300	66500
19	105000	119000	154000	146000	126000	107000	114000	124000	140000	86000	89900	83400
20	120000	110000	158000	127000	136000	123000	115000	119000	140000	80900	94500	87800
21	121000	154000	149000	101000	123000	127000	95200	135000	141000	86200	87000	83600
22	80200	118000	130000	155000	124000	141000	89100	144000	132000	69100	103000	94600
23	96700	126000	139000	140000	139000	143000	104000	163000	134000	90300	88900	77500
24	107000	125000	130000	122000	110000	91300	114000	163000	105000	88100	79500	86300
25	112000	123000	128000	125000	112000	90600	122000	149000	106000	87200	111000	103000
26	124000	116000	134000	126000	134000	119000	122000	140000	124000	91300	109000	102000
27	115000	122000	138000	126000	137000	137000	130000	119000	119000	91400	118000	92600
28	103000	129000	147000	124000	129000	116000	92600	113000	128000	78300	119000	82300
29	114000	136000	133000	114000	---	129000	140000	157000	144000	74700	116000	74500
30	119000	144000	147000	135000	---	140000	138000	164000	103000	73400	109000	76700
31	121000	---	140000	122000	---	113000	---	171000	---	80100	92700	---
TOTAL	3408600	3824000	4444000	4026000	3524000	3700800	3470000	4279000	3949500	2690200	3083100	2509600
MEAN	110000	127500	143400	129900	125900	119400	115700	138000	131600	86780	99450	83650
MAX	132000	154000	181000	155000	145000	143000	140000	173000	167000	128000	122000	107000
MIN	80200	110000	122000	101000	110000	90600	86800	102000	91500	63100	75700	62800
AC-FT	6761000	7585000	8815000	7986000	6990000	7341000	6883000	8487000	7834000	5336000	6115000	4978000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1879 - 2001, BY WATER YEAR (WY)

	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890
MEAN	104600	108200	116000	119000	128900	147200	204200	339100	436800	298400	172300	120000
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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1879 - 2001
ANNUAL TOTAL	64872900	42908800	
ANNUAL MEAN	177200	117600	191400
HIGHEST ANNUAL MEAN			313600
LOWEST ANNUAL MEAN			117600
HIGHEST DAILY MEAN	384000	Apr 23	181000
LOWEST DAILY MEAN	80200	Oct 22	62800
ANNUAL SEVEN-DAY MINIMUM	101000	Sep 27	76000
ANNUAL RUNOFF (AC-FT)	1287000000	851100000	1387000000
10 PERCENT EXCEEDS	258000	143000	382000
50 PERCENT EXCEEDS	174000	120000	142000
90 PERCENT EXCEEDS	111000	83600	80400

14120000 HOOD RIVER AT TUCKER BRIDGE, NEAR HOOD RIVER, OR

LOCATION.--Lat 45°39'20", long 121°32'50", in 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 mi².

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 sea level (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 the period Oct. 1 to June 14, Sept. 6-10, which are poor. 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.--41 years (water years 1898-99, 1914, 1916-17, 1966-2001), 1,018 ft³/s, 737,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,300 ft³/s Feb. 7, 1996, gage height, 17.11 ft, from rating curve extended above 8,700 ft³/s on basis of slope-area measurement of peak flow; minimum discharge recorded, 136 ft³/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 ft³/s, from rating curve extended above 1,500 ft³/s on basis of slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 30	1900	*3,120	*6.83				
Minimum daily discharge, 180 ft ³ /s Sept. 10.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2270	567	526	502	389	395	1410	1880	569	408	241	248
2	907	536	537	485	485	463	1160	1430	591	392	245	233
3	556	531	547	472	551	428	964	1210	692	382	292	214
4	481	588	517	491	763	419	835	1110	603	402	297	215
5	e450	554	497	599	1220	414	707	1140	544	416	274	211
6	430	512	483	622	937	416	721	1010	563	372	304	e200
7	395	466	475	570	757	439	678	952	507	339	321	e195
8	415	574	469	553	671	493	636	936	510	338	277	e190
9	468	628	465	544	612	562	596	897	543	341	249	e185
10	477	522	459	521	565	544	591	812	529	345	261	e180
11	472	468	443	496	529	516	742	749	547	346	256	181
12	447	447	420	484	511	507	653	824	829	339	272	194
13	450	435	423	491	489	548	622	987	653	312	297	214
14	461	422	476	534	473	615	586	1080	520	300	286	209
15	421	467	657	488	471	616	557	1820	471	297	302	227
16	404	422	538	460	474	625	537	1810	437	290	312	221
17	397	392	703	444	445	583	562	1340	418	263	304	202
18	437	398	568	438	440	776	602	1120	382	250	249	198
19	424	403	549	443	429	1800	594	1020	357	250	224	202
20	549	404	533	439	419	1320	642	951	345	251	208	194
21	933	395	512	448	434	1020	619	827	346	242	193	193
22	705	393	523	499	429	823	609	782	359	251	272	208
23	606	421	619	464	414	767	607	806	357	260	385	222
24	578	506	619	522	407	777	649	834	343	272	254	232
25	545	477	587	511	400	1080	773	845	366	263	221	237
26	585	546	557	484	391	1130	1030	714	322	249	229	311
27	672	764	548	422	386	977	1160	666	530	242	242	258
28	685	618	534	396	383	1420	1070	636	632	280	246	228
29	656	563	520	410	---	1300	929	602	497	281	254	221
30	598	556	515	403	---	1120	1820	557	439	278	239	224
31	572	---	508	393	---	1300	---	573	---	255	241	---
TOTAL	18446	14975	16327	15028	14874	24193	23661	30920	14801	9506	8247	6447
MEAN	595	499	527	485	531	780	789	997	493	307	266	215
MAX	2270	764	703	622	1220	1800	1820	1880	829	416	385	311
MIN	395	392	420	393	383	395	537	557	322	242	193	180
AC-FT	36590	29700	32380	29810	29500	47990	46930	61330	29360	18860	16360	12790

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 2001, BY WATER YEAR (WY)

	MEAN	486	1049	1453	1563	1588	1348	1314	1216	930	586	399	372
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1898 - 2001

ANNUAL TOTAL	317474	197425	
ANNUAL MEAN	867	541	
HIGHEST ANNUAL MEAN			1018
LOWEST ANNUAL MEAN			1664
HIGHEST DAILY MEAN	3410	Feb 2	2270
LOWEST DAILY MEAN	262	Sep 6	180
ANNUAL SEVEN-DAY MINIMUM	280	Sep 2	189
ANNUAL RUNOFF (AC-FT)	629700	391600	737300
10 PERCENT EXCEEDS	1530	934	1900
50 PERCENT EXCEEDS	704	484	780
90 PERCENT EXCEEDS	354	242	312

e Estimated

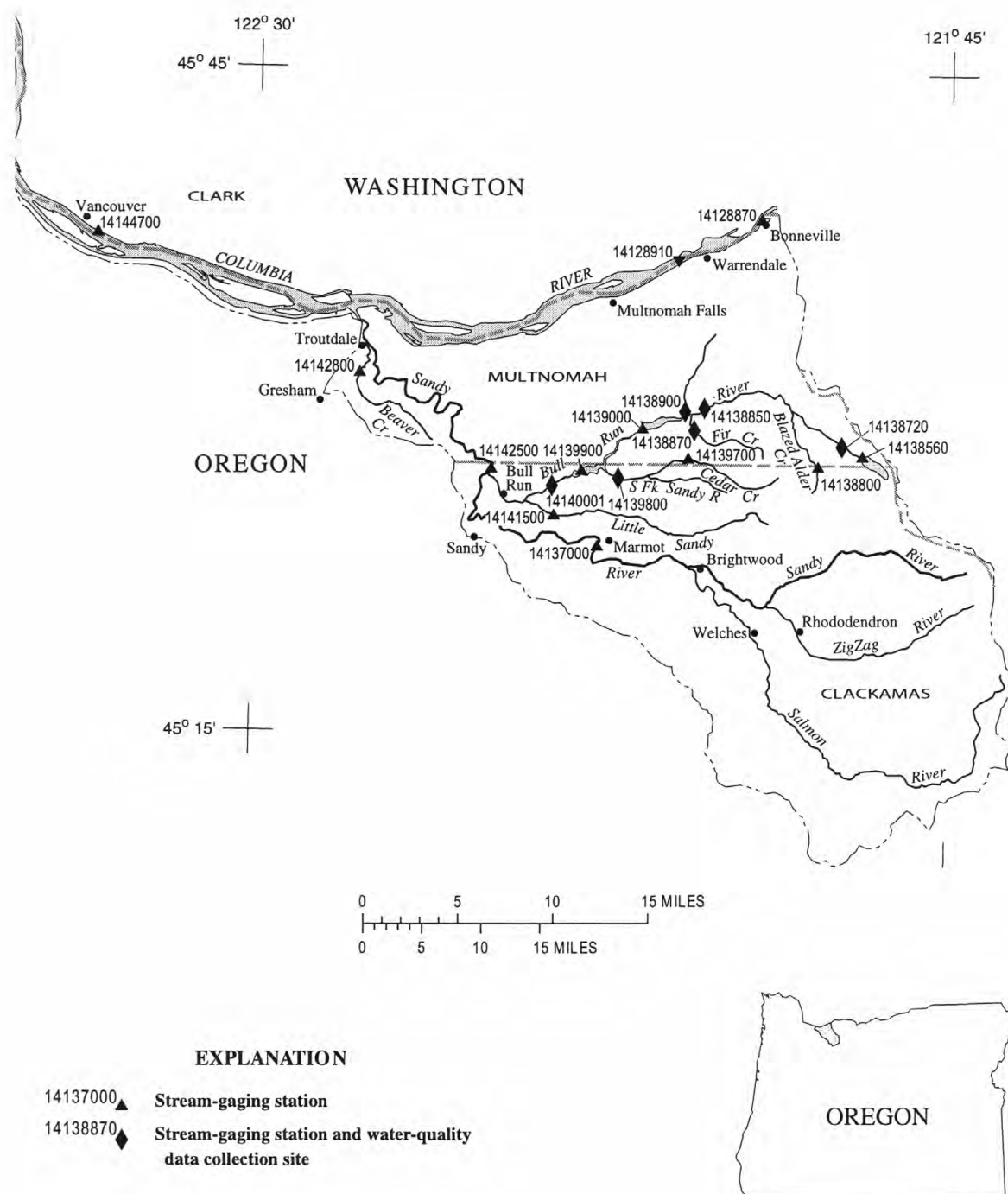


Figure 19. Location of surface-water and water-quality stations in the Columbia River between Bonneville Dam and confluence with the Willamette river and the Sandy River Basin.

COLUMBIA RIVER MAIN STEM

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 mi², approximately.

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

GAGE.--Water-stage recorder. Datum of gage is sea level. 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, 6.14 ft July 15, 16, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 19.08 ft Dec. 14; minimum, 6.14 ft July 15, 16.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	12.03	9.80	10.77	13.03	11.17	11.53	12.03	11.34	11.57	12.92	11.61	12.24
2	10.69	8.97	9.93	13.24	11.11	11.98	12.23	11.59	11.85	11.81	11.38	11.61
3	11.70	9.00	9.92	13.56	11.02	11.62	12.05	11.30	11.59	12.23	11.35	11.76
4	13.26	10.07	11.49	11.78	11.11	11.35	11.94	11.29	11.66	12.61	11.75	12.10
5	13.41	9.57	11.08	11.50	10.96	11.19	12.09	11.45	11.74	12.94	11.68	12.29
6	12.76	8.72	9.82	11.45	10.89	11.12	12.37	11.40	11.83	12.18	11.56	11.87
7	12.21	7.75	9.78	11.32	10.74	11.04	16.16	11.68	12.77	12.36	11.75	11.99
8	11.74	8.48	9.96	12.06	10.88	11.51	16.78	12.19	13.80	12.90	11.83	12.13
9	12.04	9.00	10.14	12.21	11.18	11.65	16.92	12.91	13.54	12.49	11.73	12.04
10	12.08	8.55	9.94	12.66	11.36	11.81	13.98	12.47	12.90	12.30	11.44	11.96
11	12.46	10.65	11.25	15.31	11.41	12.38	16.12	11.71	12.87	13.23	11.39	12.14
12	12.64	9.82	10.99	14.41	11.46	12.61	16.17	12.48	13.78	13.16	11.90	12.46
13	12.65	9.96	10.87	13.73	11.26	11.97	18.05	12.13	14.26	12.69	11.87	12.16
14	11.06	9.03	9.80	12.71	11.85	12.11	19.08	13.14	15.42	12.51	11.76	12.09
15	11.73	9.90	10.49	12.61	11.71	12.03	18.04	13.04	14.31	12.19	11.55	11.86
16	11.73	10.23	10.73	12.30	11.42	11.81	13.48	12.41	12.82	12.19	11.39	11.75
17	11.47	9.49	10.18	12.46	11.28	11.67	14.02	12.75	13.16	11.92	11.44	11.61
18	11.77	9.57	10.55	12.00	11.16	11.57	15.07	12.09	12.70	13.54	11.48	12.34
19	10.09	9.41	9.76	12.37	11.04	11.45	15.77	12.75	13.57	13.95	13.10	13.46
20	12.37	9.50	10.72	11.40	10.38	11.13	14.75	12.40	13.28	13.14	11.42	11.83
21	13.71	10.63	11.96	11.96	10.75	11.19	16.07	12.46	13.48	12.40	11.37	11.76
22	12.65	7.88	9.14	11.87	11.13	11.54	13.40	12.33	12.79	11.88	11.37	11.58
23	10.00	8.24	9.21	12.16	11.20	11.58	13.37	12.65	12.91	11.90	11.41	11.62
24	10.47	8.17	9.19	12.07	11.39	11.77	13.44	12.90	13.14	11.92	11.47	11.69
25	10.77	9.64	10.22	12.43	11.33	11.76	13.26	12.62	12.83	12.36	11.33	11.69
26	12.89	10.00	10.97	12.40	11.71	11.98	12.99	12.33	12.58	12.36	11.46	11.70
27	12.81	10.30	11.00	12.63	12.03	12.30	13.03	12.62	12.78	11.83	11.45	11.62
28	11.53	10.22	10.79	12.44	11.31	11.78	12.80	11.97	12.25	11.83	11.30	11.59
29	12.77	10.34	11.05	12.40	11.17	11.75	12.52	11.95	12.21	12.06	11.50	11.68
30	12.59	10.50	11.38	12.22	11.73	11.95	12.75	12.01	12.31	11.85	11.47	11.62
31	12.03	11.19	11.51	---	---	---	12.59	12.12	12.39	11.83	11.39	11.62
MONTH	13.71	7.75	10.47	15.31	10.38	11.70	19.08	11.29	12.87	13.95	11.30	11.93

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	11.83	11.46	11.62	11.84	11.27	11.60	11.37	9.80	10.69	15.32	12.07	14.36
2	12.02	11.38	11.63	12.12	11.44	11.65	12.54	8.22	11.15	16.06	11.54	14.27
3	11.86	11.44	11.63	11.71	11.28	11.42	13.73	9.75	12.09	15.19	13.05	13.89
4	12.02	11.46	11.63	11.53	11.30	11.38	13.17	10.30	12.07	14.81	11.42	13.02
5	11.81	11.46	11.59	11.57	11.08	11.38	12.96	9.83	11.19	13.49	11.99	12.70
6	11.95	11.42	11.59	11.65	11.22	11.40	13.76	10.94	12.33	14.03	12.38	13.39
7	11.93	11.33	11.57	11.63	11.12	11.33	12.40	11.16	11.89	14.14	11.18	12.86
8	11.95	11.36	11.59	11.76	10.99	11.25	12.17	9.47	10.63	14.33	11.66	12.55
9	12.04	11.32	11.61	11.56	11.02	11.27	12.72	9.64	11.46	13.03	9.99	11.81
10	11.84	11.35	11.59	11.51	10.99	11.23	14.04	10.19	12.56	12.22	8.79	10.77
11	11.98	11.29	11.59	11.68	10.77	11.19	14.27	10.53	12.73	12.40	8.73	10.52
12	12.45	11.45	11.78	11.49	11.01	11.19	14.45	10.19	12.27	12.58	9.94	11.37
13	12.03	11.55	11.79	11.52	10.88	11.17	13.53	10.38	11.94	11.96	9.82	10.54
14	13.86	11.66	12.77	11.33	10.98	11.15	10.57	9.10	9.72	12.58	8.22	11.22
15	13.44	11.72	12.63	11.44	11.00	11.15	10.46	6.87	9.13	14.15	8.92	11.96
16	13.15	12.53	12.93	12.96	11.06	11.98	10.94	6.80	9.87	15.16	12.02	14.05
17	12.55	11.42	11.65	13.10	10.45	11.35	12.09	9.03	10.77	15.49	13.80	15.01
18	11.84	11.50	11.62	11.22	10.10	10.69	13.16	10.48	12.11	16.33	14.61	15.30
19	12.18	11.37	11.60	14.21	9.39	12.05	13.18	10.43	11.36	14.91	12.16	12.82
20	11.95	11.47	11.63	14.05	10.72	12.12	12.63	10.49	11.44	13.05	10.63	11.50
21	11.96	11.47	11.67	12.74	10.73	11.64	12.57	9.47	10.74	13.47	11.75	12.61
22	12.11	11.44	11.68	13.26	10.19	12.29	10.18	8.20	9.24	14.10	11.03	12.35
23	12.01	11.43	11.65	14.33	10.76	13.05	10.75	7.19	9.54	16.15	12.93	14.60
24	11.79	11.46	11.62	13.15	9.33	10.19	12.61	8.58	10.97	16.26	12.67	14.60
25	11.94	11.37	11.61	10.95	9.20	9.92	13.37	9.04	11.46	15.13	12.35	14.14
26	11.95	11.40	11.65	14.08	8.75	11.21	13.44	10.18	11.93	14.46	12.20	13.21
27	11.96	11.43	11.62	14.28	9.11	12.26	13.74	9.73	12.18	13.87	10.79	12.54
28	12.01	11.45	11.65	13.79	9.43	12.10	13.88	9.40	10.88	12.66	9.75	11.28
29	---	---	---	13.46	11.53	12.58	13.68	10.32	12.46	14.27	10.03	13.06
30	---	---	---	15.16	10.16	13.01	13.95	12.41	13.40	15.11	13.80	14.72
31	---	---	---	14.99	10.61	11.98	---	---	---	15.66	13.18	14.48
MONTH	13.86	11.29	11.76	15.16	8.75	11.55	14.45	6.80	11.34	16.33	8.22	12.95

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	16.36	12.74	15.02	10.09	8.61	9.51	9.06	6.68	7.64	9.70	7.79	8.80
2	13.27	11.14	12.39	11.99	9.15	10.89	8.55	6.77	7.55	9.61	8.08	8.73
3	11.54	10.63	10.97	13.20	9.34	11.37	8.95	7.07	8.00	9.15	7.98	8.50
4	13.88	10.79	12.67	12.55	9.19	10.29	9.08	7.29	7.95	9.52	7.01	8.30
5	14.31	11.55	13.45	10.41	8.67	9.41	8.90	6.99	7.99	10.26	7.02	8.59
6	14.47	12.60	13.77	9.67	8.02	8.81	10.10	8.65	9.22	9.82	7.05	7.84
7	14.27	12.21	12.91	9.26	7.32	8.23	10.09	8.64	9.42	8.49	6.59	7.49
8	15.09	12.14	13.67	8.86	7.29	7.96	12.19	8.99	10.85	7.98	6.32	6.89
9	15.33	12.74	14.31	8.79	7.09	7.97	11.77	10.73	11.20	7.78	6.41	6.92
10	12.74	9.75	11.05	10.20	7.79	8.98	11.43	8.75	10.05	7.94	6.45	7.08
11	13.80	10.05	12.42	9.82	8.57	9.32	10.05	8.77	9.22	8.54	6.45	7.67
12	15.55	11.65	14.08	10.16	6.97	8.44	10.20	8.80	9.35	11.15	7.43	9.27
13	14.86	13.06	13.72	8.17	6.55	7.56	11.35	8.54	9.78	9.74	8.17	8.99
14	13.29	10.85	12.01	7.89	6.22	6.99	10.62	8.58	9.47	9.77	8.19	8.96
15	13.37	9.40	11.11	7.99	6.14	6.96	10.77	9.90	10.46	9.37	7.00	8.09
16	12.68	9.54	11.38	8.09	6.14	7.60	11.70	9.10	10.61	8.87	7.00	7.83
17	11.06	9.32	9.80	9.04	6.78	7.94	10.81	9.23	10.15	8.77	7.05	7.82
18	12.34	7.99	10.88	10.87	6.83	9.48	10.37	8.81	9.58	8.67	6.95	7.79
19	14.19	10.05	12.89	10.11	7.37	8.55	10.55	7.96	9.09	9.37	7.02	7.88
20	14.21	11.27	13.07	9.19	7.11	8.38	10.31	9.04	9.61	9.89	7.04	8.12
21	13.59	10.12	12.35	9.99	7.39	8.88	9.77	7.95	8.91	10.07	7.33	8.28
22	13.69	10.87	12.68	9.41	7.33	8.14	10.42	7.89	9.40	9.84	7.44	8.72
23	12.98	10.81	12.11	9.37	7.34	8.29	10.40	8.06	9.21	9.95	6.84	7.89
24	12.24	10.02	11.29	9.28	7.46	8.45	9.44	7.30	8.11	8.94	7.53	8.20
25	12.34	9.56	10.98	9.09	7.91	8.51	11.29	7.56	9.33	11.18	7.81	9.53
26	11.77	9.11	10.73	9.22	8.24	8.68	11.66	9.08	10.48	10.60	8.18	9.60
27	12.81	11.26	11.80	9.74	8.46	8.99	12.80	9.12	10.82	10.41	7.75	8.90
28	12.65	10.31	11.78	10.65	7.00	8.77	13.02	8.66	10.65	8.91	6.91	7.78
29	13.29	10.68	12.13	8.38	6.66	7.32	12.79	9.53	11.02	8.02	6.97	7.54
30	11.79	8.78	10.80	8.45	6.49	7.35	11.46	8.72	10.21	7.85	6.49	7.20
31	---	---	---	9.45	6.79	7.59	11.42	8.19	9.36	---	---	---
MONTH	16.36	7.99	12.27	13.20	6.14	8.57	13.02	6.68	9.51	11.18	6.32	8.17

YEAR	19.08	6.14	11.09									
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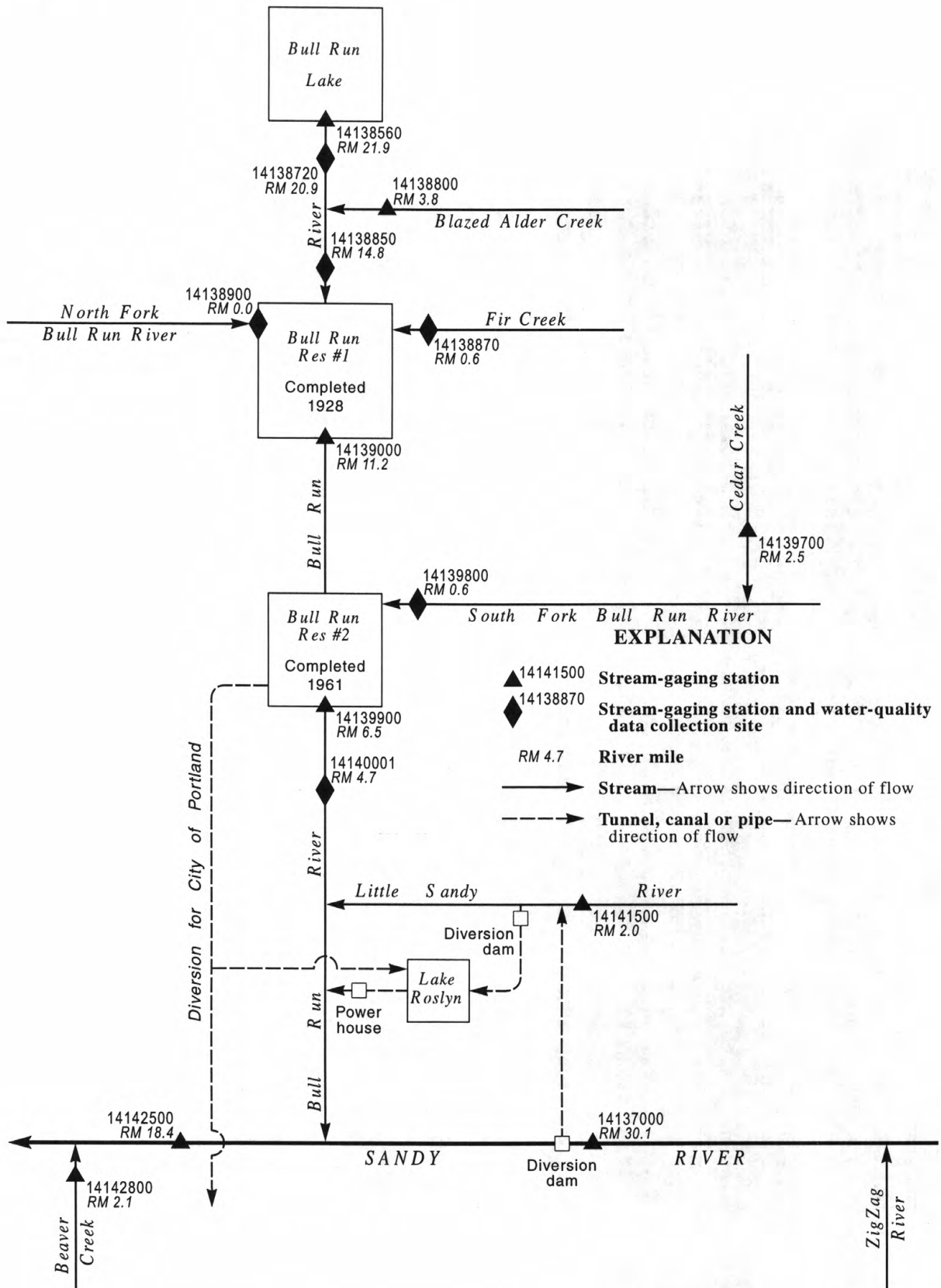


Figure 20. Schematic diagram showing gaging stations and diversions in the Sandy River Basin.

14137000 SANDY RIVER NEAR MARMOT, OR

LOCATION.--Lat 45°23'56", long 122°07'38", 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, 0.3 mi upstream from Marmot Dam of Portland General Electric Co., 7.2 mi downstream from Salmon River, and at mile 30.3.

DRAINAGE AREA.--263 mi².

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.

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 sea level (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.

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

AVERAGE DISCHARGE.--90 years (water years 1912-2001), 1,354 ft³/s, 69.91 in/yr, 981,000 acre-ft/yr, includes monthly discharges published in WSP 1318.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 61,400 ft³/s Dec. 22, 1964, gage height, 17.05 ft, site and datum then in use, from rating curve extended above 7,000 ft³/s; maximum gage height, 20.40 ft, Feb. 7, 1996, site and datum then in use; minimum, 190 ft³/s Oct. 13, 1994.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 30	2000	*5,230	*734.06				
Minimum daily discharge, 244 ft ³ /s Sept. 29.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2500	526	769	1060	695	354	2230	3410	882	577	376	285
2	1030	505	776	978	825	433	1580	2400	901	559	374	277
3	563	491	798	951	945	370	1180	1830	1070	553	385	272
4	450	608	737	961	1280	359	939	1460	956	560	379	276
5	387	661	707	1150	2430	366	802	1320	924	554	359	274
6	360	760	676	1130	1780	379	849	1060	881	524	371	262
7	346	720	673	1020	1410	398	759	925	812	504	378	260
8	337	987	687	957	1210	447	657	886	800	488	350	257
9	342	1140	739	917	1050	496	585	826	826	487	341	266
10	361	901	739	865	923	470	630	765	786	478	344	262
11	433	719	704	818	847	430	1370	724	926	475	335	259
12	377	603	683	789	783	392	1070	737	1520	464	334	264
13	392	554	732	820	728	394	843	726	1170	451	339	268
14	448	518	921	922	682	407	673	967	996	444	337	263
15	394	477	1570	836	651	444	580	2940	893	438	341	266
16	468	456	1400	765	620	549	e650	3600	767	459	341	258
17	430	e440	1900	724	576	612	e750	2410	705	438	324	254
18	470	e430	1520	719	543	1940	e850	1810	662	428	311	250
19	444	e420	1330	834	516	4160	755	1510	636	427	303	248
20	654	e410	1270	882	492	2450	740	1320	618	420	295	245
21	2140	391	1220	891	503	1670	692	1200	613	409	292	251
22	1330	377	1320	981	508	1250	636	1170	601	419	315	255
23	940	437	2280	e920	455	1040	598	1160	591	407	370	263
24	755	614	2370	e860	427	1000	610	1090	583	402	320	272
25	694	534	2000	e820	402	1370	799	1000	611	397	300	284
26	626	613	1710	789	377	1280	1040	966	559	386	302	376
27	609	944	1520	746	356	1240	999	956	725	378	297	334
28	682	843	1390	707	346	2590	877	940	771	401	303	282
29	601	845	1250	752	---	2350	734	913	646	398	309	244
30	556	833	1210	707	---	1750	2760	856	597	430	305	257
31	529	---	1160	687	---	2020	---	851	---	401	298	---
TOTAL	20648	18757	36761	26958	22360	33410	28237	42728	24028	14156	10328	8084
MEAN	666	625	1186	870	799	1078	941	1378	801	457	333	269
MAX	2500	1140	2370	1150	2430	4160	2760	3600	1520	577	385	376
MIN	337	377	673	687	346	354	580	724	559	378	292	244
AC-FT	40960	37200	72920	53470	44350	66270	56010	84750	47660	28080	20490	16030
CFSM	2.53	2.38	4.51	3.31	3.04	4.10	3.58	5.24	3.05	1.74	1.27	1.02
IN.	2.92	2.65	5.20	3.81	3.16	4.73	3.99	6.04	3.40	2.00	1.46	1.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1912 - 2001, BY WATER YEAR (WY)

	MEAN	654	1606	2091	2014	1876	1648	1865	1800	1218	644	428	414
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1912 - 2001

ANNUAL TOTAL	408394	286455										
ANNUAL MEAN	1116	785								1350		
HIGHEST ANNUAL MEAN										2018		1996
LOWEST ANNUAL MEAN										766		1977
HIGHEST DAILY MEAN			5910	Feb 2		4160	Mar 19			41400	Dec 22	1964
LOWEST DAILY MEAN			316	Sep 28		244	Sep 29			193	Oct 13	1994
ANNUAL SEVEN-DAY MINIMUM			323	Sep 23		252	Sep 16			196	Oct 7	1994
ANNUAL RUNOFF (AC-FT)	810000	568200								978200		
ANNUAL RUNOFF (CFSM)	4.24	2.98								5.13		
ANNUAL RUNOFF (INCHES)	57.77	40.52								69.76		
10 PERCENT EXCEEDS	2030	1380								2620		
50 PERCENT EXCEEDS	1020	657								994		
90 PERCENT EXCEEDS	390	304								352		

e Estimated

SANDY RIVER BASIN

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 mi².

PERIOD OF RECORD.--October 1992 to current year.

REVISED RECORDS.--WDR OR-95-1: 1993, 1994.

GAGE.--Water-stage recorder. Datum of gage is sea level, 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. U.S. Geological Survey satellite telemeter at station.

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, 40,430 acre-ft June 12, elevation, 3,167.21 ft; minimum contents, 37,130 acre-ft Sept. 30, elevation, 3,159.38 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		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3164.15	3163.04	3162.42	3162.34	3161.81	3161.31	3163.26	3165.05	3166.95	3166.37	3164.06	3161.64
2	3164.11	3162.98	3162.44	3162.31	3161.87	3161.35	3163.38	3165.17	3167.04	3166.31	3163.98	3161.56
3	3164.05	3162.92	3162.42	3162.27	3161.86	3161.29	3163.42	3165.24	3167.10	3166.23	3163.90	3161.48
4	3164.00	3162.96	3162.36	3162.26	3162.04	3161.23	3163.43	3165.30	3167.08	3166.16	3163.83	3161.39
5	3163.91	3162.97	3162.35	3162.32	3162.12	3161.18	3163.47	3165.42	3167.14	3166.08	3163.75	3161.31
6	3163.78	3162.97	3162.29	3162.29	3162.15	3161.12	3163.52	3165.46	3167.12	3166.00	3163.68	3161.23
7	3163.73	3162.95	3162.24	3162.32	3162.15	3161.09	3163.53	3165.50	3167.09	3165.92	3163.60	3161.15
8	3163.65	3163.11	3162.21	3162.30	3162.15	3161.13	3163.53	3165.56	3167.04	3165.84	3163.52	3161.06
9	3163.61	3163.09	3162.21	3162.28	3162.12	3161.10	3163.51	3165.60	3167.04	3165.76	3163.43	3160.98
10	3163.59	3163.05	3162.20	3162.22	3162.09	3161.07	3163.62	3165.64	3166.98	3165.67	3163.35	3160.90
11	3163.53	3163.01	3162.14	3162.23	3162.06	3161.03	3163.61	3165.70	3167.13	3165.59	3163.26	3160.82
12	3163.46	3162.95	3162.09	3162.23	3162.01	3160.99	3163.62	3165.78	3167.20	3165.50	3163.19	3160.74
13	3163.44	3162.89	3162.09	3162.30	3161.99	3160.98	3163.59	3165.84	3167.18	3165.41	3163.10	3160.67
14	3163.39	3162.83	3162.24	3162.30	3161.93	3160.98	3163.56	3166.25	3167.15	3165.32	3163.02	3160.59
15	3163.32	3162.77	3162.27	3162.25	3161.92	3161.00	3163.52	3166.59	3167.12	3165.24	3162.94	3160.51
16	3163.26	3162.71	3162.34	3162.20	3161.87	3160.99	3163.47	3166.88	3167.06	3165.19	3162.85	3160.43
17	3163.19	3162.63	3162.35	3162.15	3161.83	3161.01	3163.48	3166.98	3167.00	3165.12	3162.76	3160.35
18	3163.19	3162.58	3162.31	3162.09	3161.80	3161.27	3163.51	3167.04	3166.95	3165.05	3162.67	3160.26
19	3163.13	3162.50	3162.29	3162.09	3161.75	3161.57	3163.51	3167.07	3166.90	3164.97	3162.59	3160.18
20	3163.34	3162.44	3162.28	3162.05	3161.70	3161.66	3163.54	3167.08	3166.83	3164.89	3162.50	3160.09
21	3163.47	3162.35	3162.22	3162.11	3161.68	3161.69	3163.53	3167.12	3166.76	3164.81	3162.42	3160.01
22	3163.50	3162.29	3162.37	3162.07	3161.63	3161.71	3163.52	3167.13	3166.69	3164.73	3162.39	3159.93
23	3163.42	3162.37	3162.46	3162.08	3161.58	3161.74	3163.53	3167.16	3166.61	3164.66	3162.37	3159.85
24	3163.37	3162.37	3162.52	3162.06	3161.52	3161.83	3163.55	3167.16	3166.61	3164.57	3162.29	3159.77
25	3163.32	3162.37	3162.49	3162.01	3161.47	3162.01	3163.66	3167.15	3166.56	3164.48	3162.21	3159.76
26	3163.27	3162.42	3162.48	3161.99	3161.39	3162.16	3163.83	3167.13	3166.50	3164.40	3162.14	3159.72
27	3163.23	3162.49	3162.46	3161.94	3161.36	3162.32	3163.95	3167.08	3166.61	3164.32	3162.06	3159.64
28	3163.22	3162.46	3162.46	3161.90	3161.29	3162.62	3164.08	3167.10	3166.56	3164.30	3161.98	3159.55
29	3163.19	3162.47	3162.41	3161.93	---	3162.78	3164.23	3167.06	3166.51	3164.24	3161.90	3159.48
30	3163.13	3162.46	3162.40	3161.91	---	3162.87	3164.78	3167.02	3166.44	3164.22	3161.82	3159.39
31	3163.09	---	3162.39	3161.87	---	3163.14	---	3166.96	---	3164.14	3161.73	---
MEAN	3163.49	3162.71	3162.33	3162.15	3161.83	3161.56	3163.62	3166.36	3166.90	3165.21	3162.88	3160.48
MAX	3164.15	3163.11	3162.52	3162.34	3162.15	3163.14	3164.78	3167.16	3167.20	3166.37	3164.06	3161.64
MIN	3163.09	3162.29	3162.09	3161.87	3161.29	3160.98	3163.26	3165.05	3166.44	3164.14	3161.73	3159.39
(†)	38670	38400	38380	38160	37920	38690	39390	40320	40100	39110	38100	37130
(‡)	-300	-270	-20	-220	-240	+770	+700	+930	-220	-990	-1010	-970

CAL YR 2000 MEAN --- MAX --- MIN --- AC-FT† -5980
WTR YR 2001 MEAN 3163.30 MAX 3167.20 MIN 3159.39 AC-FT† -1840

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

‡ Change in contents, in acre-feet.

SANDY RIVER BASIN

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14138720 BULL RUN RIVER AT LOWER FLUME, NEAR BRIGHTWOOD, OR

LOCATION.--(revised)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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1992 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,840 ft above sea level, 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.--9 years (water years 1993-2001), 26.6 ft³/s, 19,240 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 148 ft³/s Feb. 7, 1996, gage height, 3.05 ft, from rating curve extended above 63 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 8.2 ft³/s Oct. 28, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 28 ft³/s Apr. 30, May 1, gage height, 1.35 ft; minimum discharge, 12 ft³/s Sept. 25, 28-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	15	17	18	17	16	24	27	21	18	15	13
2	16	15	17	18	17	16	24	26	21	18	15	13
3	15	15	17	18	17	16	23	26	21	18	15	13
4	15	15	16	18	18	16	23	25	21	17	15	13
5	14	15	17	18	20	16	23	25	21	17	15	13
6	14	15	17	18	19	16	23	25	21	17	14	13
7	14	15	16	18	19	16	23	25	21	17	14	13
8	14	15	16	18	19	16	22	24	20	17	14	13
9	14	16	16	18	18	16	22	24	20	17	14	13
10	14	16	16	18	18	16	22	24	20	17	14	13
11	14	16	16	18	18	16	22	24	20	17	14	13
12	14	15	16	18	18	16	21	24	20	17	14	13
13	14	15	16	18	18	16	21	24	20	16	14	13
14	14	15	17	18	18	16	21	24	20	16	14	13
15	14	15	17	18	17	16	20	25	20	16	14	13
16	14	15	17	17	17	16	20	26	20	16	14	13
17	14	15	17	17	17	16	20	26	20	16	14	13
18	14	15	17	17	17	18	21	26	19	16	14	13
19	14	15	17	17	17	23	21	25	19	16	14	13
20	14	15	17	17	17	21	20	25	19	16	14	13
21	16	15	17	17	17	20	20	24	19	16	14	13
22	16	15	17	18	17	20	20	24	19	16	14	13
23	15	15	19	18	17	19	20	23	19	16	14	13
24	15	16	19	18	16	19	20	23	18	15	14	13
25	15	16	19	17	16	20	20	23	18	15	14	13
26	15	16	19	17	16	20	21	23	18	15	14	13
27	15	17	19	17	16	20	21	22	18	15	14	13
28	15	17	19	17	16	22	21	22	18	15	14	12
29	15	17	18	17	---	23	21	22	18	15	13	12
30	15	17	18	17	---	23	25	22	18	15	13	12
31	15	---	18	17	---	23	---	22	---	15	13	---
TOTAL	456	464	534	545	487	563	645	750	587	503	436	387
MEAN	14.7	15.5	17.2	17.6	17.4	18.2	21.5	24.2	19.6	16.2	14.1	12.9
MAX	19	17	19	18	20	23	25	27	21	18	15	13
MIN	14	15	16	17	16	16	20	22	18	15	13	12
AC-FT	904	920	1060	1080	966	1120	1280	1490	1160	998	865	768

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2001, BY WATER YEAR (WY)

	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	16.2	21.8	29.5	32.9	31.3	31.9	31.6	33.9	28.4
MAX	22.8	37.0	49.1	67.3	55.8	62.7	57.6	67.0	42.7
(WY)	2000	1996	1996	1996	1997	1997	1997	1999	1999
MIN	10.5	11.9	16.4	15.3	15.6	18.2	21.5	21.2	18.5
(WY)	1993	1994	1993	1993	1993	2001	2001	1994	1994

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1993 - 2001

ANNUAL TOTAL	10236	6357	
ANNUAL MEAN	28.0	17.4	
HIGHEST ANNUAL MEAN			26.6
LOWEST ANNUAL MEAN			37.5
HIGHEST DAILY MEAN	64	Aug 21	17.4
LOWEST DAILY MEAN	14	Sep 23	130
ANNUAL SEVEN-DAY MINIMUM	14	Sep 23	8.4
ANNUAL RUNOFF (AC-FT)	20300	12610	8.6
10 PERCENT EXCEEDS	41	23	19240
50 PERCENT EXCEEDS	27	17	41
90 PERCENT EXCEEDS	15	14	24
			14

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 record excellent, water temperature record good.

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, 29 microsiemens many days throughout the year; minimum, 26 microsiemens

Oct. 4-9, Sept. 7-9.

WATER TEMPERATURE: Maximum, 8.8°C Oct. 1; minimum, 5.9°C Mar. 19.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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

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

SANDY RIVER BASIN

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14138720 BULL RUN RIVER AT LOWER FLUME, NEAR BRIGHTWOOD, OR--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	8.8	8.4	8.6	7.8	7.7	7.8	6.9	6.8	6.9	6.6	6.5	6.5
2	8.4	8.3	8.4	7.8	7.7	7.8	6.9	6.8	6.9	6.6	6.5	6.5
3	8.4	8.3	8.4	7.8	7.7	7.7	6.9	6.8	6.8	6.6	6.5	6.6
4	8.4	8.3	8.4	7.7	7.6	7.7	6.9	6.8	6.8	6.6	6.5	6.6
5	8.4	8.3	8.3	7.7	7.6	7.7	6.9	6.8	6.8	6.6	6.4	6.5
6	8.4	8.3	8.3	7.7	7.6	7.6	6.9	6.8	6.8	6.5	6.4	6.5
7	8.4	8.3	8.3	7.6	7.6	7.6	6.8	6.8	6.8	6.6	6.5	6.5
8	8.4	8.3	8.3	7.6	7.4	7.5	6.8	6.8	6.8	6.6	6.5	6.5
9	8.4	8.3	8.3	7.5	7.4	7.5	6.9	6.7	6.8	6.6	6.5	6.5
10	8.4	8.3	8.3	7.5	7.4	7.5	6.8	6.7	6.8	6.6	6.5	6.5
11	8.4	8.3	8.3	7.5	7.4	7.4	6.8	6.7	6.7	6.6	6.5	6.6
12	8.4	8.3	8.3	7.5	7.4	7.4	6.8	6.7	6.8	6.6	6.5	6.6
13	8.3	8.3	8.3	7.4	7.3	7.4	6.8	6.7	6.7	6.6	6.5	6.5
14	8.3	8.2	8.3	7.4	7.3	7.4	6.8	6.7	6.7	6.6	6.5	6.5
15	8.3	8.2	8.3	7.4	7.3	7.3	6.7	6.6	6.6	6.6	6.5	6.6
16	8.3	8.2	8.3	7.3	7.3	7.3	6.7	6.6	6.7	6.6	6.5	6.5
17	8.3	8.2	8.2	7.3	7.2	7.3	6.7	6.6	6.6	6.6	6.5	6.6
18	8.3	8.2	8.2	7.3	7.2	7.3	6.7	6.6	6.6	6.6	6.5	6.6
19	8.2	8.2	8.2	7.3	7.1	7.1	6.7	6.6	6.7	6.6	6.5	6.6
20	8.2	8.1	8.2	7.2	7.1	7.1	6.7	6.6	6.6	6.6	6.5	6.5
21	8.2	8.1	8.1	7.1	7.0	7.1	6.7	6.6	6.6	6.6	6.5	6.5
22	8.1	8.0	8.1	7.1	7.0	7.1	6.7	6.5	6.6	6.5	6.4	6.5
23	8.1	8.0	8.1	7.1	6.9	7.1	6.6	6.4	6.5	6.5	6.4	6.5
24	8.1	8.0	8.0	7.1	7.0	7.0	6.5	6.4	6.5	6.5	6.5	6.5
25	8.0	7.9	8.0	7.0	6.9	7.0	6.6	6.5	6.5	6.6	6.5	6.5
26	8.0	7.9	8.0	7.0	6.9	7.0	6.6	6.5	6.6	6.6	6.5	6.5
27	8.0	7.9	7.9	7.0	6.8	6.9	6.6	6.5	6.6	6.5	6.5	6.5
28	7.9	7.8	7.9	6.9	6.8	6.9	6.6	6.5	6.5	6.5	6.5	6.5
29	7.9	7.8	7.8	6.9	6.9	6.9	6.6	6.5	6.5	6.5	6.5	6.5
30	7.8	7.8	7.8	7.0	6.9	6.9	6.6	6.5	6.6	6.6	6.5	6.5
31	7.8	7.8	7.8	---	---	---	6.6	6.5	6.5	6.6	6.5	6.5
MONTH	8.8	7.8	8.2	7.8	6.8	7.3	6.9	6.4	6.7	6.6	6.4	6.5

SANDY RIVER BASIN

14138720 BULL RUN RIVER AT LOWER FLUME, NEAR BRIGHTWOOD, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	6.6	6.5	6.5	6.7	6.6	6.7	6.4	6.3	6.4	6.3	6.1	6.2
2	6.6	6.5	6.5	6.7	6.5	6.6	6.4	6.3	6.4	6.3	6.2	6.2
3	6.6	6.5	6.5	6.7	6.6	6.6	6.5	6.4	6.4	6.3	6.2	6.2
4	6.6	6.1	6.4	6.7	6.6	6.7	6.5	6.4	6.4	6.3	6.2	6.3
5	6.3	6.1	6.2	6.7	6.6	6.7	6.5	6.4	6.4	6.3	6.3	6.3
6	6.4	6.3	6.4	6.7	6.6	6.7	6.5	6.4	6.4	6.4	6.3	6.3
7	6.5	6.4	6.4	6.7	6.6	6.6	6.5	6.4	6.5	6.4	6.3	6.4
8	6.5	6.4	6.4	6.7	6.5	6.6	6.5	6.4	6.5	6.4	6.3	6.4
9	6.5	6.4	6.4	6.6	6.5	6.6	6.5	6.5	6.5	6.4	6.3	6.4
10	6.5	6.4	6.4	6.6	6.5	6.6	6.5	6.4	6.5	6.5	6.4	6.4
11	6.5	6.4	6.4	6.6	6.6	6.6	6.5	6.4	6.5	6.5	6.4	6.4
12	6.5	6.4	6.5	6.7	6.6	6.6	6.5	6.4	6.5	6.5	6.4	6.5
13	6.5	6.4	6.5	6.7	6.6	6.6	6.5	6.5	6.5	6.5	6.4	6.5
14	6.5	6.4	6.5	6.7	6.6	6.6	6.5	6.5	6.5	6.5	6.4	6.5
15	6.5	6.4	6.5	6.6	6.5	6.6	6.5	6.5	6.5	6.4	6.4	6.4
16	6.5	6.4	6.5	6.6	6.5	6.6	6.5	6.5	6.5	6.4	6.3	6.4
17	6.5	6.4	6.5	6.6	6.6	6.6	6.5	6.4	6.5	6.4	6.3	6.4
18	6.5	6.4	6.5	6.6	6.1	6.4	6.5	6.4	6.4	6.4	6.3	6.4
19	6.5	6.4	6.5	6.3	5.9	6.1	6.5	6.4	6.5	6.4	6.3	6.3
20	6.6	6.5	6.5	6.5	6.3	6.4	6.5	6.4	6.5	6.4	6.3	6.4
21	6.6	6.5	6.5	6.4	6.4	6.4	6.5	6.4	6.5	6.5	6.3	6.4
22	6.6	6.5	6.5	6.4	6.4	6.4	6.5	6.4	6.5	6.5	6.3	6.4
23	6.6	6.5	6.5	6.5	6.4	6.4	6.5	6.4	6.5	6.5	6.4	6.4
24	6.5	6.5	6.5	6.5	6.4	6.4	6.5	6.4	6.5	6.5	6.4	6.4
25	6.6	6.5	6.5	6.5	6.4	6.4	6.5	6.4	6.4	6.5	6.4	6.4
26	6.6	6.5	6.5	6.5	6.4	6.4	6.5	6.4	6.4	6.5	6.4	6.5
27	6.6	6.5	6.5	6.5	6.4	6.4	6.5	6.4	6.5	6.5	6.4	6.5
28	6.7	6.5	6.6	6.4	6.3	6.3	6.5	6.4	6.4	6.5	6.4	6.4
29	---	---	---	6.4	6.3	6.4	6.5	6.4	6.4	6.5	6.4	6.4
30	---	---	---	6.4	6.4	6.4	6.5	6.1	6.3	6.5	6.4	6.4
31	---	---	---	6.5	6.3	6.4	---	---	---	6.5	6.4	6.4
MONTH	6.7	6.1	6.5	6.7	5.9	6.5	6.5	6.1	6.5	6.5	6.1	6.4
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	6.5	6.4	6.4	6.5	6.4	6.4	6.5	6.3	6.4	6.5	6.4	6.5
2	6.5	6.4	6.4	6.5	6.4	6.4	6.5	6.3	6.4	6.5	6.4	6.5
3	6.4	6.3	6.4	6.5	6.4	6.4	6.4	6.3	6.4	6.5	6.4	6.5
4	6.4	6.4	6.4	6.5	6.4	6.4	6.4	6.3	6.4	6.5	6.4	6.5
5	6.4	6.3	6.4	6.5	6.4	6.4	6.5	6.3	6.4	6.5	6.4	6.4
6	6.4	6.3	6.4	6.5	6.4	6.4	6.5	6.3	6.4	6.5	6.4	6.4
7	6.5	6.3	6.4	6.5	6.4	6.4	6.4	6.3	6.4	6.5	6.4	6.4
8	6.4	6.3	6.4	6.5	6.4	6.4	6.5	6.3	6.5	6.5	6.4	6.4
9	6.5	6.3	6.4	6.5	6.4	6.4	6.6	6.4	6.5	6.5	6.4	6.5
10	6.5	6.4	6.5	6.5	6.4	6.4	6.5	6.4	6.5	6.5	6.4	6.5
11	6.5	6.4	6.5	6.5	6.4	6.4	6.5	6.4	6.5	6.5	6.4	6.5
12	6.5	6.4	6.4	6.5	6.4	6.4	6.6	6.4	6.5	6.5	6.4	6.5
13	6.5	6.4	6.4	6.5	6.4	6.4	6.6	6.4	6.5	6.5	6.4	6.5
14	6.5	6.4	6.4	6.5	6.4	6.4	6.5	6.4	6.5	6.5	6.4	6.5
15	6.5	6.4	6.4	6.5	6.4	6.4	6.5	6.5	6.5	6.5	6.4	6.5
16	6.5	6.4	6.4	6.5	6.4	6.4	6.5	6.4	6.5	6.5	6.4	6.4
17	6.5	6.4	6.4	6.4	6.4	6.4	6.5	6.4	6.5	6.5	6.4	6.4
18	6.5	6.4	6.4	6.4	6.4	6.4	6.5	6.5	6.5	6.5	6.4	6.4
19	6.5	6.4	6.4	6.4	6.4	6.4	6.5	6.4	6.5	6.5	6.4	6.4
20	6.5	6.4	6.4	6.4	6.4	6.4	6.5	6.4	6.5	6.5	6.4	6.4
21	6.5	6.4	6.4	6.4	6.3	6.4	6.5	6.4	6.5	6.5	6.4	6.4
22	6.5	6.4	6.4	6.5	6.3	6.4	6.5	6.4	6.5	6.5	6.4	6.4
23	6.5	6.4	6.4	6.5	6.3	6.4	6.5	6.4	6.5	6.5	6.4	6.5
24	6.5	6.4	6.4	6.4	6.3	6.4	6.5	6.4	6.5	6.5	6.4	6.5
25	6.5	6.4	6.4	6.5	6.3	6.4	6.5	6.4	6.5	6.5	6.4	6.4
26	6.5	6.4	6.4	6.5	6.3	6.4	6.5	6.4	6.5	6.5	6.4	6.4
27	6.5	6.4	6.4	6.5	6.4	6.4	6.5	6.4	6.5	6.5	6.4	6.4
28	6.5	6.4	6.4	6.4	6.3	6.4	6.5	6.4	6.5	6.5	6.4	6.4
29	6.5	6.4	6.4	6.4	6.4	6.4	6.5	6.4	6.5	6.5	6.4	6.4
30	6.5	6.4	6.4	6.4	6.4	6.4	6.5	6.4	6.5	6.5	6.4	6.5
31	---	---	---	6.4	6.3	6.4	6.5	6.4	6.5	---	---	---
MONTH	6.5	6.3	6.4	6.5	6.3	6.4	6.6	6.3	6.5	6.5	6.4	6.4
YEAR	8.8	5.9	6.7									

SANDY RIVER BASIN

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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 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 2,540 ft above sea level, from topographic map.

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

AVERAGE DISCHARGE.--38 years (water years 1964-2001), 58.1 ft³/s, 96.66 in/yr, 42,110 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,610 ft³/s Dec. 22, 1964, gage height, 8.25 ft, from rating curve extended above 330 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 1.1 ft³/s Sept. 24, 25, 2001.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 30	1430	*499	*3.48				

Minimum discharge, 1.1 ft³/s Sept. 24, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	264	12	32	31	15	12	167	243	14	13	5.9	2.5
2	58	11	38	29	26	14	100	153	21	13	5.6	2.5
3	24	10	35	31	28	12	62	105	82	12	5.3	2.4
4	16	26	28	38	101	11	44	80	45	11	5.3	2.2
5	12	28	25	88	192	12	37	82	38	11	5.0	2.2
6	9.9	43	23	68	93	14	39	57	41	9.9	4.6	2.2
7	8.2	32	20	45	50	18	30	48	29	9.5	4.5	2.0
8	7.4	96	18	34	35	28	27	48	24	9.3	4.1	2.0
9	7.3	80	22	30	28	34	24	43	27	8.8	3.8	1.8
10	8.3	43	19	27	24	29	37	36	23	8.1	3.7	1.8
11	11	28	16	23	21	25	53	35	59	7.7	3.5	1.8
12	8.1	22	15	23	18	23	38	39	115	7.5	3.3	1.8
13	14	19	15	22	16	25	31	36	76	7.3	3.3	1.6
14	15	16	48	23	16	30	27	104	47	6.9	3.2	1.6
15	12	15	84	19	15	36	25	246	33	6.5	3.0	1.6
16	9.9	13	62	17	16	36	28	252	26	7.5	3.0	1.6
17	8.6	12	80	16	13	39	44	152	22	7.4	2.9	1.6
18	16	11	41	16	13	169	66	90	19	7.0	2.7	1.4
19	12	10	31	23	12	338	60	58	16	6.6	2.7	1.4
20	53	9.6	27	23	12	151	55	43	15	6.1	2.7	1.4
21	151	9.5	24	44	13	78	49	34	13	6.1	2.7	1.4
22	67	9.1	80	52	13	51	46	30	13	5.7	3.4	1.4
23	35	19	168	39	12	42	47	28	12	5.6	6.2	1.4
24	24	40	147	30	11	52	55	25	15	5.3	4.6	1.1
25	19	34	80	25	11	105	99	22	15	5.0	3.4	2.7
26	16	52	52	22	10	95	129	20	12	4.9	3.0	4.5
27	15	182	45	19	10	103	99	18	23	4.5	2.7	3.0
28	22	84	41	18	9.7	241	88	19	24	6.9	2.7	2.2
29	16	50	35	18	---	170	70	18	17	5.9	2.7	1.8
30	14	44	35	16	---	112	291	15	15	11	2.7	1.7
31	13	---	34	16	---	179	---	14	---	7.1	2.5	---
TOTAL	966.7	1060.2	1420	925	833.7	2284	1967	2193	931	244.1	114.7	58.6
MEAN	31.2	35.3	45.8	29.8	29.8	73.7	65.6	70.7	31.0	7.87	3.70	1.95
MAX	264	182	168	88	192	338	291	252	115	13	6.2	4.5
MIN	7.3	9.1	15	16	9.7	11	24	14	12	4.5	2.5	1.1
AC-FT	1920	2100	2820	1830	1650	4530	3900	4350	1850	484	228	116
CFSM	3.82	4.33	5.61	3.65	3.64	9.02	8.03	8.66	3.80	.96	.45	.24
IN.	4.40	4.83	6.47	4.21	3.80	10.40	8.96	9.99	4.24	1.11	.52	.27

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2001, BY WATER YEAR (WY)

	30.9	90.3	107	102	84.3	68.5	78.6	72.8	38.6	11.0	5.43	10.3
MEAN	30.9	90.3	107	102	84.3	68.5	78.6	72.8	38.6	11.0	5.43	10.3
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	3.95	2.32	1.67
(WY)	1988	1994	1977	1985	1969	1992	1983	1992	1992	1992	2000	1991

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1964 - 2001

ANNUAL TOTAL	20218.6	12998.0	
ANNUAL MEAN	55.2	35.6	
HIGHEST ANNUAL MEAN			58.1
LOWEST ANNUAL MEAN			88.1
HIGHEST DAILY MEAN	526	Feb 1	338
LOWEST DAILY MEAN	1.6	Aug 29	1.1
ANNUAL SEVEN-DAY MINIMUM	1.6	Sep 23	1.4
ANNUAL RUNOFF (AC-FT)	40100	25780	42110
ANNUAL RUNOFF (CFSM)	6.76	4.36	7.11
ANNUAL RUNOFF (INCHES)	92.06	59.18	96.66
10 PERCENT EXCEEDS	142	86	132
50 PERCENT EXCEEDS	35	19	31
90 PERCENT EXCEEDS	2.3	2.7	3.5

SANDY RIVER BASIN

14138850 BULL RUN RIVER NEAR MULTNOMAH FALLS, OR

LOCATION.--(Revised) 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 mi².

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 sea level, from topographic map.

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

AVERAGE DISCHARGE.--35 years (water years 1967-2001), 410 ft³/s, 116.24 in/yr, 296,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,800 ft³/s Nov. 25, 1999, gage height, 14.46 ft; minimum discharge, 30 ft³/s Oct. 28-31, 1987.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 1	0900	*3,340	*8.49				

Minimum discharge, 34 ft³/s Sept. 23-25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1920	109	261	275	159	112	788	1260	124	138	67	42
2	479	101	283	252	307	157	552	813	165	127	62	43
3	261	94	270	247	351	130	440	579	351	118	60	42
4	175	183	229	262	787	124	373	464	260	109	62	41
5	128	224	199	378	1130	127	331	424	240	102	60	41
6	101	300	176	340	593	149	376	354	335	98	56	41
7	87	254	159	283	410	187	338	311	253	93	55	40
8	78	575	145	257	323	237	306	295	216	88	53	39
9	74	596	169	250	274	275	277	277	267	84	51	39
10	91	380	154	222	236	256	357	256	235	81	50	38
11	117	273	132	196	205	229	571	244	403	78	49	38
12	89	217	119	195	181	209	418	246	727	75	48	38
13	146	183	118	213	164	213	353	241	525	72	48	38
14	180	157	315	259	150	259	301	437	387	69	47	37
15	131	138	596	213	145	302	279	986	303	69	47	37
16	110	123	440	182	156	325	296	1070	260	75	46	37
17	96	110	588	163	135	336	372	653	219	76	46	36
18	142	102	391	163	131	1090	427	460	191	73	45	36
19	119	95	314	216	124	2030	386	369	170	70	45	36
20	313	89	283	229	117	812	371	307	154	66	44	36
21	715	84	250	297	131	506	344	268	140	66	44	35
22	417	80	497	386	144	387	324	249	130	63	53	35
23	288	172	937	312	129	328	319	232	123	61	94	35
24	218	399	816	267	121	326	323	212	136	59	59	35
25	173	293	518	238	114	442	395	193	153	58	51	46
26	147	334	401	203	108	489	451	177	122	56	48	67
27	135	770	356	180	104	548	411	162	203	55	46	51
28	205	451	321	163	100	1170	408	162	241	75	45	41
29	157	341	288	170	---	806	386	160	178	68	44	39
30	130	322	311	161	---	571	1730	135	153	118	44	37
31	115	---	298	157	---	826	---	124	---	80	43	---
TOTAL	7537	7549	10334	7329	7029	13958	13003	12120	7364	2520	1612	1196
MEAN	243	252	333	236	251	450	433	391	245	81.3	52.0	39.9
MAX	1920	770	937	386	1130	2030	1730	1260	727	138	94	67
MIN	74	80	118	157	100	112	277	124	122	55	43	35
AC-FT	14950	14970	20500	14540	13940	27690	25790	24040	14610	5000	3200	2370
CFSM	5.08	5.25	6.96	4.94	5.24	9.40	9.05	8.16	5.12	1.70	1.09	.83
IN.	5.85	5.86	8.03	5.69	5.46	10.84	10.10	9.41	5.72	1.96	1.25	.93

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2001, BY WATER YEAR (WY)

	244	617	721	683	613	505	510	440	283	115	81.7	119
MEAN	244	617	721	683	613	505	510	440	283	115	81.7	119
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1967 - 2001

ANNUAL TOTAL	123033	91551	
ANNUAL MEAN	336	251	
HIGHEST ANNUAL MEAN			410
LOWEST ANNUAL MEAN			643
HIGHEST DAILY MEAN	3930	2030	11900
LOWEST DAILY MEAN	34	35	30
ANNUAL SEVEN-DAY MINIMUM	35	35	31
ANNUAL RUNOFF (AC-FT)	244000	181600	296900
ANNUAL RUNOFF (CFSM)	7.02	5.24	8.55
ANNUAL RUNOFF (INCHES)	95.55	71.10	116.24
10 PERCENT EXCEEDS	655	483	862
50 PERCENT EXCEEDS	283	180	260
90 PERCENT EXCEEDS	56	46	59

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.--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.

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, 31 microsiemens Sept. 23-25; minimum recorded, 14 microsiemens Apr. 30

WATER TEMPERATURE: Maximum, 16.3°C July 12; minimum, 1.1°C Dec. 13, 14.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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

SANDY RIVER BASIN

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

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	12.3	10.1	11.5	7.6	6.9	7.2	5.1	4.3	4.6	4.4	3.7	3.9
2	10.1	9.3	9.7	8.0	7.4	7.7	5.6	4.3	4.9	4.4	3.7	4.0
3	9.3	8.5	9.0	8.0	7.8	7.9	5.4	4.4	4.9	4.6	3.8	4.2
4	9.1	8.0	8.5	7.8	7.0	7.5	4.4	4.0	4.1	5.4	4.6	5.1
5	8.9	8.3	8.6	7.0	6.9	6.9	4.0	3.7	3.8	5.6	5.1	5.4
6	8.5	8.0	8.3	7.0	6.5	6.9	3.7	3.2	3.3	5.3	3.5	4.1
7	8.7	8.0	8.3	6.7	5.6	6.2	3.8	3.4	3.5	4.0	3.7	3.8
8	8.7	8.1	8.4	6.7	5.6	6.3	3.8	3.1	3.3	4.4	3.7	3.9
9	9.1	8.5	8.8	5.8	5.5	5.6	4.4	3.8	4.1	4.4	3.5	3.8
10	9.1	8.7	8.9	5.5	4.0	4.8	4.1	3.5	3.8	4.1	3.8	4.0
11	9.7	8.7	9.1	4.0	3.1	3.5	3.5	1.6	2.6	4.4	4.0	4.2
12	9.5	9.3	9.3	3.4	2.8	3.2	1.6	1.2	1.4	4.6	4.4	4.5
13	9.5	9.1	9.3	3.6	3.3	3.5	1.9	1.1	1.6	4.6	2.3	3.2
14	9.5	8.5	9.1	3.3	3.0	3.1	3.1	1.1	1.8	3.2	2.3	2.8
15	8.5	7.0	7.6	3.3	3.0	3.1	3.5	3.1	3.3	3.4	3.1	3.2
16	9.1	7.8	8.2	3.0	2.5	2.7	4.4	3.5	3.9	3.1	2.2	2.4
17	9.1	8.3	8.7	2.5	2.2	2.4	4.1	3.4	3.8	2.8	1.8	2.2
18	9.9	9.1	9.5	2.4	1.9	2.1	3.8	3.4	3.6	3.5	2.8	3.2
19	9.7	8.5	9.0	2.5	1.9	2.2	4.0	3.5	3.8	4.0	3.5	3.7
20	9.7	8.9	9.4	2.4	2.2	2.3	3.8	3.4	3.7	3.5	3.2	3.3
21	8.9	7.8	8.2	2.5	2.1	2.3	3.4	2.9	3.1	4.0	3.2	3.5
22	7.8	6.3	7.0	2.5	2.0	2.2	4.0	3.2	3.6	3.8	3.5	3.7
23	7.4	6.7	7.0	3.7	2.2	2.8	4.6	4.0	4.3	3.7	3.2	3.4
24	7.6	6.5	7.0	4.6	3.4	4.1	4.8	4.1	4.5	3.8	3.4	3.5
25	8.1	7.4	7.7	4.9	3.8	4.2	4.4	4.0	4.2	3.7	3.2	3.5
26	8.3	7.8	8.1	5.4	4.9	5.2	4.9	4.3	4.6	3.5	3.2	3.3
27	8.5	8.1	8.4	5.4	4.4	5.1	4.6	4.1	4.4	3.2	2.6	2.8
28	8.5	7.8	8.0	4.4	4.0	4.2	4.3	3.8	4.1	2.6	2.0	2.4
29	8.0	7.4	7.7	4.8	4.0	4.3	4.0	3.4	3.6	2.8	2.5	2.7
30	7.4	6.5	6.8	5.4	4.8	5.0	4.6	4.0	4.4	2.8	2.5	2.6
31	7.0	6.3	6.6	---	---	---	4.6	3.8	4.1	3.2	2.6	2.9
MONTH	12.3	6.3	8.4	8.0	1.9	4.5	5.6	1.1	3.7	5.6	1.8	3.5

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
February				March			April			May		
1	3.8	2.9	3.3	3.8	2.8	3.3	5.3	4.3	4.7	5.0	4.5	4.8
2	4.0	3.8	3.8	3.8	2.6	3.1	4.3	3.4	3.9	6.7	4.5	5.4
3	4.4	3.8	4.1	3.5	2.5	2.9	4.5	3.1	3.8	7.6	4.5	5.9
4	5.1	4.3	4.6	3.8	2.9	3.4	5.2	3.1	4.0	8.2	5.7	6.8
5	4.3	3.7	4.0	4.8	3.7	4.1	5.2	3.4	4.3	7.2	5.7	6.3
6	3.7	3.2	3.4	5.4	4.0	4.6	5.0	3.6	4.0	8.0	4.5	6.0
7	3.4	2.3	2.6	5.9	4.8	5.3	4.2	3.3	3.7	9.3	5.8	7.4
8	2.9	2.0	2.5	5.8	4.4	5.4	4.5	3.6	4.0	9.5	7.0	8.3
9	2.8	2.3	2.6	4.4	3.2	3.9	4.7	4.0	4.3	9.1	7.2	8.1
10	2.3	1.9	2.1	4.3	3.8	4.0	4.5	4.2	4.3	9.3	6.5	7.8
11	2.5	1.8	2.2	4.4	4.1	4.3	4.8	3.4	4.1	10.6	7.0	8.3
12	2.6	2.2	2.4	4.9	4.4	4.7	4.3	3.6	4.0	11.2	8.7	9.8
13	2.8	2.2	2.4	5.1	4.6	4.8	4.7	3.6	4.1	10.3	8.5	9.5
14	3.2	2.2	2.6	4.9	4.1	4.5	5.2	3.6	4.3	9.3	7.6	8.3
15	3.5	2.8	3.1	4.4	3.7	4.0	6.3	3.9	5.0	7.6	6.9	7.2
16	3.7	3.1	3.5	4.0	3.4	3.6	6.7	5.0	5.8	7.4	6.2	6.7
17	3.1	2.3	2.6	4.6	3.7	4.0	6.7	5.5	6.1	7.4	5.6	6.5
18	3.4	2.0	2.7	5.6	4.4	4.8	6.3	5.3	5.8	8.9	6.3	7.4
19	3.8	2.9	3.4	4.9	4.0	4.6	6.0	4.8	5.3	8.7	6.3	7.5
20	4.0	3.2	3.6	5.3	3.4	4.2	5.5	4.5	4.9	9.3	6.3	7.7
21	4.4	3.8	4.1	5.3	3.4	4.3	6.5	4.8	5.5	11.3	7.1	8.9
22	4.3	3.5	3.8	5.6	3.5	4.4	5.8	5.2	5.6	13.1	9.4	10.9
23	3.8	3.4	3.6	6.3	3.8	4.9	6.2	5.3	5.7	13.8	10.6	12.1
24	3.8	3.1	3.4	7.0	5.3	6.1	8.5	5.3	6.7	13.6	10.9	12.1
25	3.5	2.6	3.0	6.6	5.3	6.0	9.3	6.0	7.6	13.3	10.4	11.8
26	3.1	2.2	2.6	5.3	4.4	4.7	9.5	6.9	8.0	13.6	10.4	11.8
27	3.2	2.6	2.9	4.8	4.0	4.4	8.2	6.2	7.0	12.4	10.4	11.1
28	3.4	2.3	2.9	5.4	4.8	5.1	7.0	5.2	6.1	10.9	8.8	9.8
29	---	---	---	5.7	4.6	5.1	6.0	4.8	5.2	10.4	7.7	8.9
30	---	---	---	6.0	5.2	5.5	6.2	5.0	5.8	11.7	7.9	9.6
31	---	---	---	5.8	5.3	5.6	---	---	---	13.4	9.4	11.2
MONTH	5.1	1.8	3.1	7.0	2.5	4.5	9.5	3.1	5.1	13.8	4.5	8.5

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
June				July			August			September		
1	12.6	9.8	11.1	13.9	11.0	12.2	13.3	11.5	12.4	14.1	13.1	13.5
2	9.8	8.1	8.8	13.9	10.7	12.2	14.8	12.4	13.3	13.1	12.4	12.9
3	8.2	7.0	7.7	14.4	11.6	12.9	14.6	13.3	13.7	13.1	12.2	12.7
4	8.8	7.3	8.0	15.5	12.7	14.0	13.3	12.6	12.8	12.9	12.4	12.6
5	8.4	7.9	8.2	14.9	12.5	13.7	14.3	11.7	12.8	12.4	11.5	11.8
6	11.1	7.9	9.3	14.7	12.0	13.2	15.1	12.9	13.9	11.5	10.9	11.2
7	12.0	8.8	10.2	14.2	11.6	13.0	15.6	14.3	15.0	12.1	11.2	11.5
8	13.3	10.2	11.5	14.9	11.6	13.2	15.6	13.6	14.6	11.9	11.0	11.4
9	12.0	9.8	10.7	15.5	12.5	13.9	15.9	13.6	14.8	11.9	11.0	11.4
10	9.8	8.8	9.3	15.5	13.2	14.3	16.2	14.3	15.3	12.1	11.2	11.6
11	9.4	8.2	8.9	15.7	13.4	14.6	15.9	14.6	15.4	12.1	11.2	11.7
12	8.2	7.3	7.7	16.3	13.9	15.0	15.9	14.3	15.1	13.0	11.8	12.3
13	10.6	7.5	8.7	15.7	13.4	14.6	16.2	14.8	15.5	13.2	12.5	12.8
14	9.6	8.2	9.0	14.7	12.7	13.8	16.2	14.8	15.5	13.2	12.5	12.9
15	11.1	8.2	9.5	14.2	11.6	12.5	15.6	14.6	15.2	14.0	13.0	13.4
16	10.9	8.1	9.3	11.6	11.0	11.3	15.6	14.6	14.9	13.7	13.2	13.4
17	9.6	8.2	8.9	11.4	10.7	11.0	14.8	13.6	14.3	13.2	11.8	12.3
18	11.5	8.2	9.6	11.6	10.7	11.1	14.6	13.3	13.9	11.8	11.2	11.5
19	12.6	9.0	10.6	13.7	11.0	12.1	13.6	12.4	13.1	11.9	11.2	11.4
20	13.6	10.2	11.7	13.4	11.6	12.1	13.6	12.4	13.0	11.2	10.3	10.6
21	14.6	11.1	12.7	12.7	11.2	11.9	13.1	12.2	12.6	10.5	9.9	10.3
22	13.6	11.5	12.6	14.2	11.2	12.5	12.6	12.4	12.5	11.2	10.1	10.6
23	12.6	10.9	11.6	14.9	12.5	13.7	12.9	12.2	12.5	11.6	11.0	11.2
24	11.5	9.8	10.5	15.5	13.4	14.5	13.3	11.9	12.5	11.9	11.2	11.5
25	11.6	9.1	10.1	16.0	14.2	15.1	13.3	11.9	12.7	11.9	11.4	11.7
26	11.4	10.1	10.8	15.5	13.4	14.6	14.1	12.4	13.2	11.4	11.0	11.1
27	12.1	10.7	11.4	14.9	13.4	14.3	14.1	13.1	13.6	11.0	10.1	10.4
28	11.8	11.0	11.3	14.7	12.5	13.5	14.3	13.1	13.8	10.1	9.3	9.6
29	13.0	9.9	11.2	12.5	12.0	12.3	14.3	13.1	13.7	9.5	8.9	9.2
30	12.1	10.5	11.4	12.3	11.6	11.9	14.3	13.3	13.9	10.1	9.3	9.7
31	---	---	---	13.3	11.5	12.3	14.3	13.6	14.0	---	---	---
MONTH	14.6	7.0	10.1	16.3	10.7	13.1	16.2	11.5	13.9	14.1	8.9	11.6

Year	16.3	1.1	7.5
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SANDY RIVER BASIN

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 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR OR-78-1: 1976. WDR OR-82-2: 1976(P), 1978-79(P), 1981, WDR OR-91-1: 1976.

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

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

AVERAGE DISCHARGE.--26 years (water years 1976-2001), 34.8 ft³/s, 86.60 in/yr, 25,210 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,290 ft³/s Dec. 2, 1977, gage height, 5.64 ft; minimum discharge, 1.5 ft³/s Oct. 19-21, 1991.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 30	1400	*167	*3.36				
Minimum discharge, 1.8 ft ³ /s Sept. 21-25.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	9.2	20	19	11	7.8	64	90	8.7	11	5.1	2.7
2	41	8.4	22	18	22	9.6	47	65	11	10	4.6	2.7
3	20	7.7	21	17	26	8.1	36	51	27	9.3	4.3	2.6
4	14	15	18	17	62	8.0	30	40	18	8.5	4.4	2.6
5	11	15	16	22	88	8.4	28	34	17	8.0	4.2	2.6
6	8.5	25	14	18	53	9.9	32	28	30	7.7	4.0	2.6
7	7.0	21	13	16	36	11	28	23	20	7.2	3.8	2.4
8	6.0	48	12	15	27	14	24	21	17	6.7	3.7	2.4
9	5.7	56	13	15	22	16	21	19	24	6.5	3.5	2.3
10	8.6	36	12	13	19	15	28	18	20	6.1	3.4	2.3
11	12	25	11	12	17	14	52	16	38	5.8	3.2	2.2
12	8.0	20	9.7	12	15	14	39	16	63	5.4	3.2	2.2
13	14	17	9.6	14	13	15	31	15	47	5.2	3.2	2.2
14	17	15	30	19	12	16	25	32	34	5.1	3.1	2.1
15	13	13	52	16	12	19	22	71	25	5.0	3.1	2.1
16	10	11	41	14	12	20	24	78	20	5.6	2.9	2.1
17	8.8	10	51	12	11	25	34	52	18	5.5	2.9	2.0
18	12	9.4	37	12	10	83	38	37	16	5.2	2.8	2.0
19	9.5	8.7	30	16	9.7	122	32	28	14	5.0	2.8	2.0
20	25	8.1	26	17	9.2	72	29	23	12	4.6	2.7	1.9
21	58	7.5	23	22	10	45	26	20	11	4.5	2.7	1.9
22	35	7.0	50	27	11	33	24	18	9.9	4.3	3.3	1.8
23	23	15	81	21	9.5	26	24	16	9.2	4.2	8.1	1.8
24	18	29	67	18	9.0	24	25	15	11	4.1	4.1	1.8
25	15	21	47	16	8.5	31	29	14	11	3.9	3.3	3.4
26	12	23	36	14	8.0	33	32	12	8.8	3.8	3.2	4.8
27	11	57	31	13	7.5	40	28	11	17	3.5	3.0	3.3
28	17	36	26	12	7.1	83	30	12	19	5.2	2.8	2.6
29	13	28	22	12	---	64	29	11	15	4.5	2.8	2.4
30	11	25	23	11	---	46	105	9.4	13	11	2.7	2.3
31	9.7	---	21	11	---	66	---	8.6	---	6.2	2.7	---
TOTAL	581.8	627.0	885.3	491	557.5	998.8	1016	904.0	604.6	188.6	109.6	72.1
MEAN	18.8	20.9	28.6	15.8	19.9	32.2	33.9	29.2	20.2	6.08	3.54	2.40
MAX	108	57	81	27	88	122	105	90	63	11	8.1	4.8
MIN	5.7	7.0	9.6	11	7.1	7.8	21	8.6	8.7	3.5	2.7	1.8
AC-FT	1150	1240	1760	974	1110	1980	2020	1790	1200	374	217	143
CFSM	3.44	3.83	5.23	2.90	3.65	5.90	6.20	5.34	3.69	1.11	.65	.44
IN.	3.96	4.27	6.03	3.35	3.80	6.81	6.92	6.16	4.12	1.28	.75	.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2001, BY WATER YEAR (WY)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	19.4	55.4	64.3	53.9	56.3	44.4	45.9	34.1	22.9	9.41	5.08	8.19														
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	2.95	2.40														
(WY)	1988	1994	1977	2001	1977	1992	1998	1992	1992	1992	1996	2001														

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1976 - 2001

	2000	2001	1976-2001
ANNUAL TOTAL	9466.3	7036.3	
ANNUAL MEAN	25.9	19.3	34.8
HIGHEST ANNUAL MEAN			53.5
LOWEST ANNUAL MEAN			19.3
HIGHEST DAILY MEAN	170	122	616
LOWEST DAILY MEAN	2.3	1.8	1.5
ANNUAL SEVEN-DAY MINIMUM	2.4	1.9	1.6
ANNUAL RUNOFF (AC-FT)	18780	13960	25210
ANNUAL RUNOFF (CFSM)	4.74	3.53	6.37
ANNUAL RUNOFF (INCHES)	64.50	47.94	86.60
10 PERCENT EXCEEDS	55	40	74
50 PERCENT EXCEEDS	22	14	22
90 PERCENT EXCEEDS	3.0	2.9	3.6

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 excellent. 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, 28 microsiemens several days in September; minimum, 15 microsiemens Apr. 30

WATER TEMPERATURE: Maximum, 14.3°C Aug. 13; minimum, 1.8°C Dec. 13.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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

SANDY RIVER BASIN

14138870 FIR CREEK NEAR BRIGHTWOOD, OR--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	24	22	23	23	22	22	25	24	25	27	26	27
2	23	22	22	23	22	22	26	25	25	27	26	26
3	22	20	20	23	22	23	26	25	25	27	26	26
4	21	20	21	24	23	23	26	24	25	27	26	26
5	21	20	21	23	22	23	26	25	25	27	25	26
6	21	19	20	23	22	23	26	25	26	26	25	26
7	21	20	20	24	23	23	26	25	26	27	26	26
8	21	21	21	24	23	24	26	25	26	27	26	26
9	21	20	20	24	23	24	26	25	26	27	26	27
10	21	20	20	24	24	24	27	26	26	27	26	27
11	21	18	20	24	24	24	27	26	26	27	27	27
12	19	18	18	25	24	24	27	26	26	28	27	27
13	19	19	19	25	24	24	27	26	26	27	27	27
14	20	19	20	24	23	24	27	26	26	28	27	27
15	21	20	20	24	23	24	27	26	26	28	27	28
16	21	20	21	24	23	24	27	25	26	28	27	27
17	21	21	21	24	23	24	26	26	26	27	26	27
18	22	21	21	25	24	24	27	25	26	27	26	27
19	22	21	22	25	24	25	26	25	26	27	26	26
20	23	22	22	25	24	25	26	25	26	27	26	27
21	23	22	22	25	24	25	27	25	26	27	26	27
22	23	22	22	25	24	25	27	26	27	27	27	27
23	23	22	22	26	25	25	26	25	26	27	27	27
24	23	22	22	26	25	25	27	26	26	28	27	27
25	23	22	22	26	25	25	27	26	26	28	27	27
26	23	22	23	26	25	25	27	26	27	28	27	28

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	11.1	9.4	10.5	7.3	6.9	7.0	5.0	4.5	4.7	4.7	4.2	4.3
2	9.4	8.7	9.0	7.5	7.1	7.3	5.3	4.7	5.1	4.8	4.2	4.5
3	8.7	8.4	8.5	7.5	7.1	7.4	5.1	4.5	4.9	5.0	4.3	4.7
4	8.4	7.8	8.2	7.3	6.7	7.1	4.7	4.3	4.5	5.5	5.0	5.2
5	8.4	8.0	8.2	6.8	6.6	6.7	4.7	4.3	4.5	5.5	5.0	5.4
6	8.4	7.8	8.0	6.7	6.2	6.6	4.3	3.9	4.1	5.0	4.0	4.3
7	8.4	7.8	8.1	6.6	5.9	6.2	4.5	4.0	4.3	4.2	3.9	4.1
8	8.6	8.0	8.3	6.6	5.6	6.1	4.3	3.9	4.2	4.5	4.0	4.3
9	8.8	8.4	8.5	6.2	5.7	5.9	4.5	4.2	4.4	4.3	3.7	4.0
10	8.6	8.2	8.4	5.7	4.6	5.2	4.2	3.4	3.8	4.2	4.0	4.2
11	8.6	8.2	8.4	4.6	4.1	4.3	3.4	2.1	2.8	4.3	4.0	4.2
12	8.6	8.4	8.6	4.3	3.8	4.1	2.4	2.0	2.1	4.5	4.3	4.4
13	8.8	8.4	8.5	4.3	4.0	4.2	2.7	1.8	2.3	4.3	2.7	3.3
14	8.6	7.8	8.3	4.0	3.8	3.9	3.3	2.0	2.7	3.6	3.0	3.4
15	7.8	7.1	7.5	4.0	3.7	3.8	4.0	3.3	3.7	3.9	3.4	3.7
16	8.4	7.6	8.0	3.7	3.4	3.5	4.5	4.0	4.3	3.4	2.8	3.0
17	8.4	7.8	8.1	3.4	3.1	3.2	4.3	3.6	4.1	3.5	2.8	3.2
18	9.0	8.4	8.6	3.2	2.9	3.1	4.3	4.0	4.2	3.8	3.4	3.6
19	8.6	8.2	8.4	3.5	2.9	3.2	4.3	4.0	4.3	4.0	3.7	3.8
20	8.9	8.2	8.7	3.4	3.2	3.3	4.3	4.2	4.2	4.0	3.5	3.7
21	8.2	7.5	7.8	3.4	2.9	3.2	4.2	3.6	3.9	4.3	3.7	3.9
22	7.5	6.6	7.0	3.0	2.7	2.8	4.3	4.0	4.3	4.0	3.7	3.9
23	7.1	6.7	7.0	3.9	2.8	3.3	4.7	4.2	4.4	3.8	3.5	3.7
24	7.5	6.9	7.1	4.3	3.9	4.0	4.8	4.3	4.6	4.0	3.7	3.8
25	7.8	7.3	7.6	4.8	4.0	4.3	4.8	4.3	4.6	4.0	3.5	3.8
26	8.0	7.6	7.8	5.1	4.8	5.0	5.1	4.7	4.9	3.8	3.4	3.6
27	8.0	7.8	7.9	5.1	4.3	4.8	4.8	4.3	4.7	3.4	2.9	3.1
28	7.8	7.3	7.5	4.5	4.2	4.4	4.8	4.2	4.5	3.4	2.6	3.0
29	7.6	6.9	7.3	4.8	4.3	4.5	4.5	3.9	4.2	3.5	2.8	3.2
30	6.9	6.6	6.7	5.1	4.8	5.0	4.8	4.3	4.6	3.2	3.1	3.1
31	6.9	6.4	6.7	---	---	---	4.8	4.3	4.6	3.5	3.1	3.3
MONTH	11.1	6.4	8.0	7.5	2.7	4.8	5.3	1.8	4.1	5.5	2.6	3.9

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TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	4.0	3.2	3.6	3.8	3.1	3.5	5.1	4.4	4.7	4.9	4.5	4.6
2	4.0	3.8	3.9	3.7	2.8	3.0	4.4	3.8	4.0	5.6	4.6	5.1
3	4.4	4.0	4.2	3.2	2.8	3.0	4.6	3.5	4.1	6.4	4.8	5.6
4	4.9	3.8	4.5	3.5	2.9	3.3	4.8	3.7	4.2	6.9	5.4	6.2
5	4.1	3.8	4.0	4.0	3.5	3.8	5.1	4.0	4.5	6.2	5.2	5.7
6	4.0	3.7	3.8	4.5	3.7	4.1	4.4	3.7	4.1	6.6	4.8	5.7
7	3.7	3.1	3.2	5.1	4.4	4.8	4.4	3.8	4.1	7.5	5.6	6.6
8	3.4	3.1	3.2	5.1	4.0	4.8	4.4	4.0	4.2	7.8	6.4	7.1
9	3.4	2.9	3.2	4.1	3.4	3.8	4.6	4.1	4.3	7.6	6.4	7.0
10	3.2	2.6	2.9	4.1	3.8	4.0	4.4	4.1	4.4	7.8	6.1	6.9
11	3.1	2.6	2.9	4.3	4.0	4.1	4.9	4.0	4.4	8.8	6.6	7.6
12	3.1	2.6	2.9	4.8	4.3	4.4	4.6	4.1	4.4	9.1	7.5	8.3
13	3.1	2.8	2.9	4.8	4.4	4.6	4.8	4.1	4.5	8.8	7.5	8.1
14	3.4	2.6	3.0	4.4	4.1	4.3	5.1	4.0	4.5	8.0	6.9	7.5
15	3.5	3.1	3.3	4.1	3.7	4.0	5.7	4.3	4.9	7.1	6.4	6.8
16	3.8	3.2	3.6	4.0	3.5	3.7	5.9	4.8	5.3	6.6	6.1	6.3
17	3.2	2.9	3.1	4.3	3.5	3.9	5.6	4.8	5.3	6.8	5.7	6.3
18	3.7	2.6	3.2	4.8	4.1	4.3	5.2	4.8	5.0	7.5	6.2	6.8
19	3.8	3.2	3.5	4.6	4.0	4.3	5.2	4.6	4.9	7.8	6.2	7.0
20	4.0	3.4	3.7	4.8	3.8	4.4	4.9	4.4	4.7	7.8	6.1	7.0
21	4.3	3.8	4.1	4.9	4.0	4.5	5.6	4.8	5.1	9.0	6.6	7.8
22	4.0	3.5	3.8	5.1	4.1	4.6	5.6	4.8	5.2	10.3	8.0	9.1
23	4.0	3.5	3.7	5.6	4.3	5.0	5.6	5.1	5.3	11.0	9.0	9.9
24	3.7	3.2	3.5	6.2	5.2	5.7	6.6	5.1	5.9	11.0	9.0	9.9
25	3.4	2.8	3.2	5.9	5.1	5.6	7.3	5.7	6.5	10.8	9.0	9.8
26	3.1	2.5	2.8	5.1	4.3	4.6	7.5	6.2	6.8	11.0	8.9	9.9
27	3.4	2.8	3.1	4.4	4.1	4.3	6.8	5.9	6.3	9.9	8.9	9.4
28	3.5	2.6	3.1	4.8	4.4	4.6	6.1	4.6	5.4	9.1	7.8	8.6
29	---	---	---	5.2	4.4	4.8	5.2	4.5	4.8	8.9	6.9	7.9
30	---	---	---	5.6	5.1	5.3	5.6	4.8	5.1	9.7	7.3	8.4
31	---	---	---	5.6	5.1	5.4	---	---	---	10.6	8.2	9.4
MONTH	4.9	2.5	3.4	6.2	2.8	4.3	7.5	3.5	4.9	11.0	4.5	7.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	10.1	8.6	9.3	11.0	9.1	9.9	11.4	9.9	10.6	12.2	11.9	12.0
2	8.6	7.3	7.9	11.2	9.1	10.0	12.1	10.5	11.3	12.2	11.5	11.8
3	7.5	6.7	7.2	11.4	9.5	10.6	11.6	11.2	11.4	11.9	11.1	11.6
4	8.0	6.9	7.4	12.1	10.3	11.1	11.4	10.8	11.0	11.7	11.3	11.5
5	7.6	7.1	7.4	11.8	10.1	10.8	11.8	10.3	11.1	11.5	10.6	11.0
6	8.8	7.1	7.9	11.6	9.9	10.6	12.5	11.0	11.7	10.9	10.4	10.6
7	9.7	7.6	8.6	11.6	9.5	10.6	13.0	11.8	12.3	11.3	10.4	10.8
8	10.5	8.6	9.4	11.8	9.9	10.9	12.7	11.2	12.1	10.9	10.0	10.5
9	9.5	8.4	9.0	12.5	10.3	11.4	13.4	11.8	12.7	11.1	10.2	10.7
10	8.4	7.8	8.1	12.5	11.0	11.8	13.7	12.5	13.1	11.1	10.4	10.9
11	8.2	7.5	7.9	12.7	11.0	11.9	13.8	12.5	13.2	11.5	10.4	11.0
12	7.5	6.9	7.1	13.0	11.4	12.1	14.0	12.6	13.4	11.9	11.1	11.6
13	8.4	6.7	7.6	12.5	11.0	11.8	14.3	13.1	13.7	12.2	11.5	11.8
14	8.2	7.5	7.8	12.3	10.5	11.4	13.8	12.8	13.4	12.4	11.5	12.0
15	8.8	7.5	8.0	11.2	10.3	10.6	13.8	12.8	13.3	12.8	12.2	12.6
16	8.4	7.3	7.9	10.3	9.9	10.0	13.5	12.6	12.9	12.8	11.9	12.4
17	8.2	7.3	7.7	9.9	9.5	9.8	13.1	11.9	12.5	11.9	11.3	11.5
18	9.1	7.3	8.2	10.1	9.5	9.9	12.6	11.9	12.3	11.5	10.6	11.1
19	10.1	7.8	8.9	10.8	9.5	10.1	12.4	11.3	11.8	11.3	10.4	10.9
20	10.8	8.8	9.7	10.5	9.9	10.1	12.1	11.1	11.6	10.6	9.8	10.2
21	11.4	9.1	10.2	10.5	9.7	10.2	11.5	10.9	11.3	10.4	9.8	10.1
22	10.8	9.5	10.0	11.6	9.7	10.6	11.5	11.5	11.5	10.9	9.8	10.4
23	10.1	9.1	9.6	12.1	10.3	11.2	11.5	10.6	11.1	11.1	10.4	10.8
24	9.5	8.6	9.0	12.3	11.0	11.6	11.5	10.6	11.1	11.5	10.6	11.1
25	9.5	7.8	8.7	12.7	11.4	12.0	11.9	10.6	11.3	11.3	10.6	11.0
26	9.5	8.8	9.2	12.5	11.0	11.8	12.4	11.1	11.8	10.9	10.2	10.5
27	9.9	9.1	9.5	12.5	11.0	11.7	12.4	11.5	12.0	10.2	9.6	9.9
28	9.7	9.1	9.4	11.6	10.5	11.2	12.6	11.5	12.1	9.6	9.2	9.4
29	10.1	8.6	9.4	10.8	10.3	10.6	12.6	11.5	12.1	9.8	9.0	9.4
30	10.1	8.9	9.5	10.8	9.9	10.4	12.6	11.9	12.3	10.1	9.4	9.8
31	---	---	---	11.2	9.9	10.5	12.6	11.9	12.3	---	---	---
MONTH	11.4	6.7	8.6	13.0	9.1	10.9	14.3	9.9	12.1	12.8	9.0	11.0

YEAR	14.3	1.8	7.0									
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SANDY RIVER BASIN

14138900 NORTH FORK BULL RUN RIVER NEAR MULTNOMAH FALLS, OR

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

DRAINAGE AREA.--8.32 mi².

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WDR OR-91-1: 1976.

GAGE.--Water-stage recorder. Elevation of gage is 1,060 ft above sea level, 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. Regulation at times since 1958 by North Fork Reservoir, capacity, about 1,030 acre-ft. No diversion upstream from station.

AVERAGE DISCHARGE.--36 years (water years 1966-2001), 73.3 ft³/s, 119.68 in/yr, 53,090 acre-ft/yr.

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

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 30	1600	*641	*3.53				
Minimum discharge, 9.3 ft ³ /s Sept. 24, 25.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	255	23	44	43	32	23	130	267	25	24	16	12
2	60	21	54	39	59	28	92	174	35	24	15	12
3	35	20	44	37	60	24	73	106	53	23	15	12
4	28	41	37	38	156	24	61	80	33	22	15	12
5	23	39	34	57	189	27	54	67	34	20	15	12
6	21	50	31	43	99	30	61	55	38	20	14	12
7	19	39	29	38	69	32	55	48	31	19	14	11
8	18	105	28	37	55	35	50	43	30	18	14	11
9	18	101	33	38	47	37	46	39	37	18	14	11
10	24	61	29	38	41	35	68	36	32	17	13	11
11	25	44	26	33	37	32	108	34	57	17	13	11
12	20	37	25	33	34	32	72	32	83	17	13	11
13	30	33	25	38	31	33	59	30	60	16	12	10
14	32	30	78	47	30	36	50	103	53	16	12	10
15	25	27	110	39	29	41	49	173	44	16	e12	10
16	22	25	77	34	32	43	53	160	40	17	e12	10
17	21	23	99	31	28	52	67	97	37	17	12	10
18	29	22	65	31	28	228	69	74	34	17	11	10
19	23	21	53	37	27	355	56	63	30	16	12	10
20	57	20	49	36	25	154	55	50	29	15	11	10
21	97	19	45	54	29	94	49	45	27	16	11	9.9
22	52	19	147	55	e30	70	47	41	26	15	18	9.8
23	36	42	255	44	26	59	48	38	24	15	32	9.8
24	31	61	187	39	25	56	45	35	28	14	17	9.7
25	27	42	110	36	24	74	46	33	30	14	14	17
26	25	46	79	33	23	87	50	31	24	15	13	23
27	25	120	63	31	22	105	48	28	44	15	13	17
28	40	62	53	29	21	219	60	31	37	20	13	13
29	30	55	46	31	---	132	56	28	29	17	12	12
30	25	60	61	31	---	96	348	25	26	28	12	12
31	23	---	50	31	---	162	---	23	---	18	12	---
TOTAL	1196	1308	2066	1181	1308	2455	2125	2089	1110	556	432	351.2
MEAN	38.6	43.6	66.6	38.1	46.7	79.2	70.8	67.4	37.0	17.9	13.9	11.7
MAX	255	120	255	57	189	355	348	267	83	28	32	23
MIN	18	19	25	29	21	23	45	23	24	14	11	9.7
AC-FT	2370	2590	4100	2340	2590	4870	4210	4140	2200	1100	857	697
CFSM	4.64	5.24	8.01	4.58	5.61	9.52	8.51	8.10	4.45	2.16	1.67	1.41
IN.	5.35	5.85	9.24	5.28	5.85	10.98	9.50	9.34	4.96	2.49	1.93	1.57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2001, BY WATER YEAR (WY)

	43.5	107	131	128	109	88.5	86.9	73.4	48.1	24.8	17.3	23.4
MEAN	43.5	107	131	128	109	88.5	86.9	73.4	48.1	24.8	17.3	23.4
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1966 - 2001

ANNUAL TOTAL	22410	16177.2	73.3
ANNUAL MEAN	61.2	44.3	121
HIGHEST ANNUAL MEAN			44.3
LOWEST ANNUAL MEAN			1910
HIGHEST DAILY MEAN	615	Feb 1	355
LOWEST DAILY MEAN	12	Aug 28	9.7
ANNUAL SEVEN-DAY MINIMUM	12	Sep 15	9.9
ANNUAL RUNOFF (AC-FT)	44450	32090	53090
ANNUAL RUNOFF (CFSM)	7.36	5.33	8.81
ANNUAL RUNOFF (INCHES)	100.20	72.33	119.68
10 PERCENT EXCEEDS	122	81	151
50 PERCENT EXCEEDS	46	32	47
90 PERCENT EXCEEDS	14	12	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 good.

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, 40 microsiemens several days in August and September; minimum, 12 microsiemens

Apr. 30.

WATER TEMPERATURE: Maximum recorded, 13.3°C Aug. 9, 10, 13; minimum, 2.0°C Dec. 13.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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

SANDY RIVER BASIN

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

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	12.3	10.1	11.6	7.4	6.8	7.1	4.8	4.3	4.6	4.3	3.9	4.1
2	10.1	9.1	9.6	7.8	7.0	7.4	5.1	4.4	4.8	4.8	4.0	4.4
3	9.7	8.7	9.1	7.9	7.5	7.7	5.1	4.4	4.8	4.7	4.2	4.4
4	9.3	7.7	8.6	7.6	6.9	7.3	4.8	4.4	4.6	5.3	4.7	4.9
5	9.3	8.1	8.5	6.9	6.7	6.8	4.8	4.3	4.5	5.3	4.7	5.0
6	8.9	7.7	8.2	6.9	6.4	6.8	4.4	4.1	4.3	4.7	3.7	4.1
7	9.1	7.7	8.3	6.7	6.0	6.4	4.6	4.1	4.3	4.2	3.9	4.0
8	9.1	7.9	8.5	6.6	6.0	6.4	4.3	3.8	4.1	4.3	4.0	4.2
9	8.7	8.3	8.5	6.0	5.5	5.8	4.3	4.1	4.2	4.2	3.5	3.9
10	8.5	8.3	8.3	5.5	4.2	5.0	4.1	3.5	3.8	4.2	3.9	4.1
11	8.9	8.3	8.6	4.4	3.7	4.0	3.5	2.3	2.9	4.3	4.0	4.2
12	8.5	8.3	8.5	4.2	3.4	3.8	2.6	2.2	2.3	4.5	4.3	4.4
13	9.1	8.3	8.6	4.2	3.7	4.0	2.9	2.0	2.6	4.3	2.9	3.3
14	9.1	7.9	8.7	4.2	3.6	3.9	3.1	2.2	2.6	3.4	3.1	3.3
15	7.9	7.2	7.6	4.4	3.4	3.9	3.5	3.1	3.4	3.7	3.1	3.4
16	8.9	7.7	8.3	3.9	3.3	3.6	4.3	3.5	3.9	3.1	2.5	2.8
17	9.1	7.9	8.4	3.7	3.1	3.4	4.0	3.4	3.7	3.2	2.3	2.8
18	9.5	8.7	8.9	3.6	2.8	3.2	3.9	3.4	3.6	3.9	3.2	3.6
19	8.9	8.3	8.7	3.8	3.0	3.4	4.0	3.7	3.9	4.0	3.5	3.8
20	9.3	8.7	9.0	3.9	3.4	3.6	4.0	3.9	3.9	3.9	3.4	3.6
21	8.9	7.6	8.3	3.9	3.3	3.6	3.9	3.5	3.7	4.1	3.6	3.9
22	7.8	6.8	7.3	3.7	2.9	3.3	4.0	3.7	3.8	4.0	3.5	3.7
23	7.9	6.8	7.3	4.0	3.3	3.7	3.9	3.6	3.7	4.0	3.5	3.7
24	8.1	6.8	7.4	4.4	3.7	4.1	4.0	3.7	3.8	3.8	3.6	3.7
25	8.3	7.2	7.8	4.8	4.0	4.3	4.3	3.5	3.9	3.8	3.3	3.6
26	8.1	7.6	7.9	5.1	4.6	4.9	4.7	4.2	4.4	3.8	3.2	3.5
27	8.3	7.9	8.0	5.1	3.8	4.4	4.8	4.0	4.4	3.5	2.9	3.2
28	8.1	7.6	7.9	4.3	3.6	4.0	4.5	3.9	4.1	3.3	2.6	3.0
29	7.9	7.2	7.6	4.4	4.1	4.3	4.3	3.7	4.0	3.5	3.0	3.3
30	7.6	6.7	7.1	5.1	4.4	4.7	4.8	4.2	4.4	3.0	3.0	3.0
31	7.0	6.7	6.9	---	---	---	4.5	4.0	4.3	3.6	2.9	3.2
MONTH	12.3	6.7	8.3	7.9	2.8	4.8	5.1	2.0	3.9	5.3	2.3	3.7

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4.1	3.0	3.6	4.2	3.2	3.8	5.7	4.9	5.2	5.8	4.8	5.2
2	4.0	3.7	3.8	3.9	3.1	3.4	4.9	3.9	4.3	6.8	4.9	5.8
3	4.3	3.7	3.9	3.9	3.0	3.4	4.9	3.8	4.3	7.9	5.6	6.7
4	4.3	3.8	4.1	3.9	3.3	3.7	5.4	3.9	4.6	8.6	6.8	7.7
5	3.8	3.3	3.5	5.2	3.9	4.4	5.6	4.3	4.9	7.9	6.6	7.2
6	3.3	2.9	3.1	5.7	4.2	4.8	5.1	3.9	4.4	8.2	5.8	6.9
7	3.0	2.3	2.6	6.0	4.5	5.2	4.4	3.6	3.9	9.6	6.8	8.0
8	2.9	2.3	2.6	5.5	4.2	5.1	4.6	3.8	4.1	10.0	7.9	8.8
9	3.2	2.6	2.8	4.7	3.8	4.2	4.7	4.1	4.4	9.6	7.7	8.5
10	2.9	2.1	2.6	4.4	3.9	4.1	4.6	4.1	4.4	9.8	7.7	8.5
11	2.9	2.3	2.7	4.5	4.1	4.3	5.2	3.8	4.4	10.6	7.9	9.2
12	3.2	2.3	2.8	5.2	4.4	4.6	4.7	3.9	4.3	11.3	9.2	10.0
13	3.3	2.6	2.9	5.2	4.5	4.7	5.0	4.0	4.4	10.6	9.2	9.8
14	3.7	2.4	3.0	5.0	4.1	4.5	5.3	3.9	4.6	9.6	8.8	9.2
15	3.6	3.0	3.4	4.3	3.7	4.0	6.3	4.2	5.2	8.8	8.1	8.4
16	4.1	3.3	3.6	4.0	3.5	3.8	6.5	5.2	5.8	8.3	7.4	7.8
17	3.5	2.9	3.2	4.3	3.7	4.0	6.5	5.3	6.0	8.1	6.9	7.6
18	4.0	3.0	3.5	5.0	4.0	4.4	6.7	5.7	6.0	9.1	7.6	8.1
19	4.3	3.3	3.7	4.6	3.8	4.2	6.3	5.5	5.9	9.1	7.6	8.3
20	4.4	3.6	4.0	5.1	3.2	4.2	5.8	5.5	5.6	9.5	7.0	8.2
21	4.4	4.0	4.2	5.3	3.7	4.5	6.5	5.5	6.0	10.9	7.8	9.2
22	4.4	3.6	4.0	5.5	3.8	4.7	6.5	5.5	6.0	12.5	9.5	10.7
23	4.1	3.6	3.8	6.3	4.3	5.3	6.7	5.8	6.3	13.0	10.7	11.6
24	4.4	3.3	3.8	7.0	5.8	6.3	8.3	5.8	7.1	12.7	10.7	11.6
25	4.1	3.0	3.5	6.7	5.5	6.1	9.7	7.2	8.3	12.7	10.3	11.3
26	4.1	2.7	3.3	5.5	4.6	4.9	10.4	8.9	9.5	12.5	10.1	11.2
27	4.1	3.0	3.5	4.8	4.3	4.5	9.2	8.2	8.7	11.2	10.1	10.6
28	4.0	2.9	3.4	5.3	4.6	5.0	8.2	6.6	7.4	10.3	9.1	9.7
29	---	---	---	5.9	4.6	5.3	6.8	6.3	6.5	10.1	8.1	9.0
30	---	---	---	6.2	5.7	6.0	7.1	5.8	6.6	10.7	7.9	9.3
31	---	---	---	6.2	5.7	6.2	---	---	---	11.8	8.9	10.2
MONTH	4.4	2.1	3.4	7.0	3.0	4.6	10.4	3.6	5.6	13.0	4.8	8.8
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	10.7	9.3	9.9	12.1	9.7	10.6	11.3	9.6	10.3	10.8	10.3	10.5
2	9.3	8.3	8.8	12.1	9.5	10.6	12.4	10.2	10.9	11.0	9.7	10.3
3	8.7	7.8	8.2	12.5	10.1	11.3	11.1	10.6	10.8	11.0	9.5	10.2
4	9.1	7.8	8.3	13.0	11.0	11.8	10.9	10.2	10.5	10.5	9.7	10.0
5	8.7	8.1	8.4	12.3	10.3	11.2	12.2	9.6	10.6	9.9	9.1	9.5
6	10.5	8.3	9.3	12.3	10.3	11.0	12.7	10.2	11.2	9.7	8.9	9.2
7	11.3	8.7	9.8	12.3	9.9	10.8	13.0	11.0	11.6	10.5	8.9	9.4
8	11.9	9.8	10.7	12.5	9.9	11.0	12.6	10.1	11.3	10.8	8.9	9.5
9	10.6	9.8	10.2	13.0	10.3	11.5	13.3	10.8	11.7	10.8	9.1	9.7
10	9.8	9.0	9.5	13.0	11.0	11.7	13.3	11.2	12.0	11.0	9.3	9.8
11	9.4	8.8	9.2	13.2	11.0	11.9	13.0	11.2	11.9	11.0	9.3	10.0
12	8.8	8.0	8.4	13.2	10.9	11.9	12.8	11.2	11.9	11.4	9.9	10.5
13	10.2	7.8	8.9	13.0	10.5	11.5	13.3	11.4	12.1	11.4	10.1	10.6
14	9.8	8.6	9.2	12.3	10.3	11.1	13.0	11.2	11.8	11.2	9.9	10.6
15	10.2	8.6	9.3	10.7	9.7	10.2	12.8	11.0	11.6	11.9	10.5	11.0
16	10.0	8.4	9.0	9.9	9.5	9.7	11.6	10.8	11.1	11.9	10.3	10.8
17	9.2	8.2	8.7	10.1	9.5	9.7	12.3	10.3	10.9	11.0	9.5	10.0
18	10.4	8.0	9.1	10.3	9.5	9.8	11.0	10.1	10.6	10.1	9.1	9.6
19	11.3	8.6	9.8	11.4	9.5	10.2	11.9	9.5	10.3	10.5	9.1	9.5
20	11.9	9.4	10.6	10.3	9.6	9.9	11.6	9.5	10.2	9.9	8.3	9.0
21	12.6	10.0	11.1	11.1	9.4	10.0	10.3	9.5	9.9	9.9	8.5	9.1
22	11.7	10.4	10.9	12.0	9.2	10.3	10.8	9.9	10.3	10.5	8.9	9.5
23	10.8	9.8	10.3	12.2	9.8	10.7	11.4	10.8	11.1	10.8	9.3	9.9
24	10.2	9.4	9.7	12.7	10.4	11.1	11.9	10.1	10.7	11.0	9.5	10.0
25	10.6	8.8	9.8	12.7	10.6	11.3	11.6	9.7	10.5	10.1	9.7	9.8
26	10.6	9.4	10.0	12.4	10.2	11.0	12.1	10.1	10.9	9.9	9.3	9.8
27	11.5	9.8	10.7	12.4	10.2	10.9	12.1	10.1	10.9	9.5	8.7	9.1
28	11.5	10.6	11.1	11.1	10.4	10.7	12.3	10.3	11.0	9.5	8.1	8.6
29	11.9	9.6	10.6	10.9	10.2	10.5	12.1	10.3	11.0	9.6	8.0	8.7
30	11.3	9.8	10.5	11.3	10.2	10.7	12.3	10.5	11.1	10.4	8.8	9.3
31	---	---	---	11.5	10.0	10.6	12.1	10.5	11.0	---	---	---
MONTH	12.6	7.8	9.7	13.2	9.2	10.8	13.3	9.5	11.0	11.9	8.0	9.8
YEAR	13.3	2.0	7.1									

SANDY RIVER BASIN

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 mi².

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

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

GAGE.--Water-stage recorder. Datum of gage is sea level (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 Mar. 28 to May 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 May 22, elevation, 1,045.51 ft; minimum contents, 9,610 acre-ft Sept. 30, elevation, 977.88 ft.

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

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

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	999.45	1034.43	1035.34	1034.97	1032.56	1026.29	1040.38	1044.18	1043.61	1045.19	1037.09	1006.22
2	1004.24	1034.75	1034.80	1035.21	1033.57	1026.38	1040.01	1043.83	1043.73	1045.15	1036.50	1004.85
3	1006.80	1034.31	1035.05	1034.85	1034.72	1026.06	1039.89	1043.45	1044.64	1044.83	1035.99	1003.45
4	1008.60	1034.27	1035.46	1034.87	1035.87	1026.06	1040.05	1043.47	1044.83	1045.10	1035.44	1002.30
5	1009.60	1034.68	1035.35	1035.24	1035.75	1026.16	1039.93	1043.24	1044.84	1044.81	1034.83	1000.26
6	1011.06	1034.73	1035.01	1034.81	1034.94	1026.29	1040.14	1042.99	1044.55	1044.92	1033.23	998.65
7	1011.70	1034.59	1034.73	1034.80	1035.01	1026.33	1040.20	1043.27	1044.91	1044.63	1032.02	997.39
8	1012.21	1035.70	1034.41	1034.66	1035.30	1026.91	1040.06	1043.28	1045.12	1044.80	1030.84	996.18
9	1013.38	1035.13	1034.77	1034.38	1035.01	1028.39	1039.92	1043.24	1045.39	1044.90	1029.88	994.95
10	1014.15	1034.91	1034.28	1034.17	1035.14	1029.42	1040.73	1043.99	1044.89	1045.01	1028.76	993.71
11	1015.68	1034.96	1034.01	1033.79	1034.79	1030.55	1040.17	1043.17	1045.18	1045.01	1027.66	991.87
12	1017.02	1035.06	1033.13	1032.61	1034.76	1031.05	1040.06	1043.51	1045.06	1045.05	1026.26	991.32
13	1017.69	1034.82	1032.29	1033.14	1034.65	1031.63	1040.20	1044.01	1044.75	1044.96	1024.79	990.89
14	1017.27	1034.30	1034.18	1033.40	1034.44	1032.43	1040.19	1044.46	1044.85	1044.96	1023.43	990.69
15	1011.39	1034.55	1035.43	1033.64	1034.23	1033.40	1039.77	1045.14	1045.23	1044.96	1022.18	991.14
16	1009.25	1034.89	1035.47	1033.67	1034.16	1034.95	1040.43	1044.76	1044.85	1044.96	1021.10	990.73
17	1010.33	1034.89	1035.23	1034.23	1033.53	1037.37	1040.46	1044.13	1044.85	1044.88	1020.20	990.64
18	1011.81	1034.39	1035.07	1033.91	1033.09	1041.76	1040.12	1044.63	1045.00	1044.94	1018.87	990.56
19	1013.03	1034.58	1034.93	1034.18	1032.20	1043.13	1039.93	1045.33	1045.11	1044.96	1017.81	987.87
20	1015.97	1034.50	1034.91	1034.23	1031.38	1041.68	1040.00	1044.77	1045.01	1044.89	1016.73	987.46
21	1021.82	1034.19	1034.49	1034.33	1030.66	1039.91	1040.09	1045.23	1044.86	1044.46	1015.75	987.90
22	1025.20	1033.61	1035.77	1035.05	1030.36	1039.71	1040.20	1045.11	1044.73	1043.90	1015.18	988.33
23	1027.54	1034.47	1035.73	1034.56	1029.51	1039.79	1039.95	1045.19	1044.63	1042.84	1014.75	987.45
24	1029.30	1035.45	1035.43	1034.72	1028.85	1039.97	1040.37	1044.80	1044.79	1041.99	1014.10	985.75
25	1030.72	1035.16	1035.20	1034.82	1027.80	1040.14	1040.31	1044.75	1044.66	1041.17	1013.61	985.84
26	1031.99	1035.25	1035.19	1034.77	1027.13	1040.09	1040.41	1044.46	1044.57	1040.02	1012.73	984.35
27	1033.17	1035.60	1034.85	1034.55	1026.41	1039.77	1039.99	1044.17	1045.39	1039.05	1011.94	982.62
28	1034.30	1035.60	1034.96	1034.51	1026.19	1040.89	1040.15	1044.17	1045.41	1039.28	1010.58	981.09
29	1034.26	1034.94	1034.91	1033.46	---	1039.91	1040.09	1044.12	1045.33	1037.86	1009.20	979.50
30	1034.30	1035.55	1035.12	1033.70	---	1039.77	1042.28	1043.32	1045.22	1037.77	1007.94	977.88
31	1034.59	---	1035.03	1033.27	---	1040.93	---	1042.75	---	1037.29	1006.60	---
MAX	1034.59	1035.70	1035.77	1035.24	1035.87	1043.13	1042.28	1045.33	1045.41	1045.19	1037.09	1006.22
MIN	999.45	1033.61	1032.29	1032.61	1026.19	1026.06	1039.77	1042.75	1043.61	1037.29	1006.60	977.88
(+)	9750	26400	26800	26600	25900	23300	28900	29400	29600	30700	27400	9610
(+)	+16650	+400	-200	-700	-2600	+5600	+500	+200	+1100	-3300	-10500	-7290
CAL YR 2000	MAX 1044.93	MIN 972.30	AC-FT† +50									
WTR YR 2001	MAX 1045.41	MIN 977.88	AC-FT† -140									

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

SANDY RIVER BASIN

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14139700 CEDAR CREEK NEAR BRIGHTWOOD, OR

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

DRAINAGE AREA.--7.93 mi².

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

REVISED RECORDS.--WDR OR 96-1: 1989(M), 1991 (M).

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

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

AVERAGE DISCHARGE.--36 years (water years 1966-2001), 65.9 ft³/s, 112.95 in/yr, 47,760 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,990 ft³/s Dec. 22, 1964, gage height, 7.20 ft, from rating curve extended above 940 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 4.7 ft³/s Oct. 28, 29, 1987.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 19	0530	*416	*3.46	Apr. 30	1600	416	3.46

Minimum discharge, 6.0 ft³/s Sept. 21-25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	251	21	45	37	25	19	123	196	19	26	14	8.0
2	70	19	50	34	49	27	88	134	26	24	13	8.0
3	39	18	44	32	54	22	71	90	95	23	12	7.8
4	28	33	35	31	122	21	58	69	48	21	12	7.5
5	22	32	31	44	185	22	51	62	44	20	12	7.6
6	18	55	28	35	97	23	69	50	66	19	11	7.6
7	16	41	25	30	68	25	56	43	43	18	11	7.5
8	14	115	23	28	51	31	48	38	37	17	10	7.3
9	14	123	31	29	42	40	44	34	49	17	10	7.1
10	19	73	27	27	37	37	76	31	40	16	9.8	7.0
11	28	51	24	24	32	35	123	29	82	16	9.6	6.9
12	19	40	21	24	28	32	82	27	125	15	9.6	6.7
13	32	33	22	28	26	32	67	25	83	15	9.4	6.6
14	35	29	67	39	24	36	54	65	60	14	9.1	6.6
15	25	25	118	30	23	48	46	147	48	14	9.0	6.6
16	22	23	84	26	26	52	46	158	41	16	8.8	6.6
17	20	21	112	23	23	60	55	94	36	16	8.8	6.6
18	28	19	69	23	22	161	63	67	31	15	8.6	6.3
19	23	18	56	33	21	299	55	52	28	15	8.6	6.3
20	60	17	54	34	20	138	55	43	26	14	8.4	6.3
21	127	16	49	48	23	83	49	37	24	14	8.4	6.3
22	69	15	104	56	25	60	45	32	22	13	9.7	6.0
23	48	37	176	45	21	48	45	29	21	13	21	6.0
24	37	60	147	39	20	45	43	27	26	12	12	6.0
25	30	44	90	35	19	57	46	25	29	12	10	10
26	26	53	68	30	18	73	48	23	23	12	9.4	15
27	24	143	57	27	17	87	43	22	45	11	8.8	11
28	41	77	48	25	17	190	55	23	47	15	8.7	7.9
29	28	62	41	27	---	120	56	24	33	14	8.4	7.2
30	24	58	44	26	---	84	237	20	29	24	8.2	6.7
31	21	---	41	26	---	145	---	19	---	17	8.0	---
TOTAL	1258	1371	1831	995	1135	2152	1997	1735	1326	508	317.3	223.0
MEAN	40.6	45.7	59.1	32.1	40.5	69.4	66.6	56.0	44.2	16.4	10.2	7.43
MAX	251	143	176	56	185	299	237	196	125	26	21	15
MIN	14	15	21	23	17	19	43	19	19	11	8.0	6.0
AC-FT	2500	2720	3630	1970	2250	4270	3960	3440	2630	1010	629	442
CFSM	5.12	5.76	7.45	4.05	5.11	8.75	8.39	7.06	5.57	2.07	1.29	.94
IN.	5.90	6.43	8.59	4.67	5.32	10.10	9.37	8.14	6.22	2.38	1.49	1.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 2001, BY WATER YEAR (WY)

	39.9	96.6	113	112	99.4	84.0	83.2	64.5	43.1	21.7	15.2	20.6
MEAN	39.9	96.6	113	112	99.4	84.0	83.2	64.5	43.1	21.7	15.2	20.6
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	8.68	7.43
(WY)	1988	1994	1977	1981	1993	1992	1998	1992	1992	1992	1970	2001

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1966 - 2001

ANNUAL TOTAL	19350.0	14848.3	
ANNUAL MEAN	52.9	40.7	65.9
HIGHEST ANNUAL MEAN			105
LOWEST ANNUAL MEAN			40.7
HIGHEST DAILY MEAN	489	Feb 1	299
LOWEST DAILY MEAN	6.6	Sep 27	6.0
ANNUAL SEVEN-DAY MINIMUM	6.8	Sep 23	6.2
ANNUAL RUNOFF (AC-FT)	38380	29450	47760
ANNUAL RUNOFF (CFSM)	6.67	5.13	8.31
ANNUAL RUNOFF (INCHES)	90.77	69.65	112.95
10 PERCENT EXCEEDS	111	83	141
50 PERCENT EXCEEDS	43	28	41
90 PERCENT EXCEEDS	9.9	8.8	12

SANDY RIVER BASIN

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 mi²

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 sea level, from topographic map.

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

AVERAGE DISCHARGE.--27 years (water years 1975-2001), 112 ft³/s, 98.45 in/yr, 80,840 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,630 ft³/s Feb. 7, 1996, gage height, 9.54 ft, from rating curve extended above 1,800 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 5.4 ft³/s Oct. 13, 1994.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 19	0530	*795	*5.81				

Minimum discharge, 9.3 ft³/s Sept. 23-25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	393	35	86	66	44	31	242	363	28	45	19	11
2	148	31	90	59	81	46	183	251	37	41	18	11
3	83	29	80	55	105	37	150	186	149	38	17	11
4	55	49	64	52	197	36	125	148	102	35	17	11
5	41	50	56	70	340	38	109	128	87	33	17	11
6	32	94	50	57	211	40	132	104	130	31	16	11
7	27	84	44	49	147	43	117	86	96	30	15	11
8	23	181	40	45	113	54	103	73	82	28	15	11
9	22	235	50	46	91	75	93	63	96	27	15	10
10	29	158	45	43	74	74	129	55	80	26	14	10
11	43	113	39	38	61	70	253	50	125	25	14	10
12	29	87	34	37	53	64	185	46	222	24	14	10
13	47	69	35	46	47	62	153	42	171	23	13	10
14	64	57	91	72	42	68	124	86	131	22	13	10
15	48	49	224	57	39	86	106	211	104	22	13	10
16	41	42	168	49	e41	105	99	253	85	24	13	9.9
17	36	37	221	44	e38	122	110	182	69	24	12	9.8
18	46	32	158	43	e37	286	125	138	59	23	12	9.7
19	39	29	127	56	e35	603	114	108	51	22	12	9.7
20	83	27	118	60	e37	300	114	88	46	21	12	9.6
21	211	25	109	78	39	188	104	72	42	20	12	9.5
22	146	23	180	102	44	138	95	61	39	19	14	9.4
23	104	45	306	89	38	109	93	53	36	19	28	9.4
24	77	102	285	79	37	95	87	e47	39	18	16	9.3
25	60	74	197	68	34	111	91	e43	48	18	14	13
26	50	92	148	58	32	133	96	e40	36	17	13	23
27	44	201	120	51	30	146	89	e39	66	17	12	15
28	71	142	99	46	29	326	104	e39	78	21	12	12
29	51	118	83	48	---	235	109	e36	56	20	12	11
30	41	109	84	45	---	174	395	e31	50	33	12	10
31	37	---	77	45	---	252	---	28	---	24	12	---
TOTAL	2221	2419	3508	1753	2116	4147	4029	3150	2440	790	448	328.3
MEAN	71.6	80.6	113	56.5	75.6	134	134	102	81.3	25.5	14.5	10.9
MAX	393	235	306	102	340	603	395	363	222	45	28	23
MIN	22	23	34	37	29	31	87	28	28	17	12	9.3
AC-FT	4410	4800	6960	3480	4200	8230	7990	6250	4840	1570	889	651
CFSM	4.65	5.24	7.35	3.67	4.91	8.69	8.72	6.60	5.28	1.65	.94	.71
IN.	5.37	5.84	8.47	4.23	5.11	10.02	9.73	7.61	5.89	1.91	1.08	.79

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2001, BY WATER YEAR (WY)

	63.9	168	201	182	181	146	142	105	72.1	32.6	21.3	30.2
MEAN	63.9	168	201	182	181	146	142	105	72.1	32.6	21.3	30.2
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	14.8	11.7	9.03
(WY)	1988	1994	1977	2001	1977	1992	1983	1992	1992	1992	1994	1994

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1975 - 2001

ANNUAL TOTAL	34867.7	27349.3	
ANNUAL MEAN	95.3	74.9	112
HIGHEST ANNUAL MEAN			171
LOWEST ANNUAL MEAN			74.9
HIGHEST DAILY MEAN	950	603	2880
LOWEST DAILY MEAN	9.9	9.3	5.6
ANNUAL SEVEN-DAY MINIMUM	10	9.5	5.7
ANNUAL RUNOFF (AC-FT)	69160	54250	80840
ANNUAL RUNOFF (CFSM)	6.19	4.87	7.25
ANNUAL RUNOFF (INCHES)	84.23	66.06	98.45
10 PERCENT EXCEEDS	202	162	236
50 PERCENT EXCEEDS	77	49	74
90 PERCENT EXCEEDS	12	12	16

e Estimated

SANDY RIVER BASIN

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

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1978 to current year.

pH: November 1980 to September 1981, 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 except for the period Nov. 30 to Dec. 22, which is poor. Water temperature records 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, 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, 41 microsiemens Aug. 13, Sept. 13; minimum, 16 microsiemens Mar. 19.

WATER TEMPERATURE: Maximum, 15.7°C Aug. 13; minimum, 1.9°C Dec. 13, but may have been lower during period of missing record Feb. 16-20.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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

SANDY RIVER BASIN

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

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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

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

SANDY RIVER BASIN

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

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	12.5	10.7	11.8	7.6	7.3	7.4	5.3	4.7	4.9	5.0	4.2	4.5
2	10.7	9.7	10.1	8.0	7.6	7.8	5.7	5.0	5.3	5.0	4.2	4.6
3	9.7	9.1	9.4	8.0	7.6	7.9	5.5	5.0	5.2	5.2	4.7	4.9
4	9.3	8.3	8.7	7.6	7.3	7.6	5.0	4.7	4.8	6.0	5.2	5.6
5	8.9	8.5	8.7	7.4	7.3	7.3	4.7	4.3	4.5	6.2	5.8	6.1
6	8.8	8.2	8.5	7.4	6.7	7.2	4.3	4.0	4.1	5.8	4.2	4.8
7	9.0	8.4	8.6	6.9	6.2	6.5	4.3	4.0	4.2	4.7	4.0	4.3
8	9.0	8.4	8.7	6.9	5.8	6.6	4.2	3.7	4.0	5.2	4.7	5.0
9	9.2	8.8	8.9	6.2	5.8	6.0	4.5	4.2	4.4	5.0	4.2	4.5
10	9.0	8.8	8.8	5.8	4.7	5.3	4.3	3.4	4.1	4.7	4.5	4.6
11	9.2	8.8	9.0	4.7	3.9	4.2	3.4	2.5	3.1	4.8	4.5	4.7
12	9.4	9.2	9.2	4.2	3.6	3.9	2.7	2.2	2.4	5.0	4.8	4.9
13	9.4	9.2	9.3	4.3	4.0	4.2	2.8	1.9	2.4	4.8	3.4	3.9
14	9.4	8.4	9.0	4.0	3.7	3.8	3.6	2.2	2.8	3.6	3.1	3.3
15	8.4	7.4	7.8	3.7	3.4	3.6	4.0	3.6	3.8	3.7	3.3	3.6
16	8.8	8.0	8.3	3.4	2.8	3.1	4.8	4.0	4.4	3.3	2.5	2.8
17	8.8	8.2	8.5	3.0	2.5	2.7	4.7	3.9	4.2	3.1	2.4	2.7
18	9.6	8.8	9.2	2.7	2.4	2.5	4.2	3.9	4.0	3.9	3.1	3.5
19	9.2	8.4	8.7	2.8	2.2	2.5	4.3	4.2	4.3	4.2	3.7	3.9
20	9.4	9.0	9.2	3.0	2.5	2.8	4.3	4.2	4.3	3.9	3.4	3.7
21	9.0	8.0	8.5	3.1	2.7	2.9	4.3	4.0	4.2	4.5	3.9	4.1
22	8.0	6.9	7.4	3.0	2.2	2.5	4.8	4.3	4.6	4.2	3.9	4.0
23	7.6	6.9	7.2	3.4	2.2	2.7	5.2	4.8	5.0	4.0	3.6	3.9
24	7.6	6.7	7.2	4.2	3.4	3.9	5.3	4.7	5.0	4.1	3.8	3.9
25	8.2	7.4	7.8	4.7	3.9	4.2	5.0	4.5	4.7	4.1	3.6	3.8
26	8.4	8.0	8.2	5.3	4.7	5.1	5.3	4.8	5.1	3.8	3.2	3.5
27	8.8	8.4	8.5	5.3	4.7	5.1	5.2	4.7	5.0	3.2	2.7	2.9
28	8.6	8.0	8.2	4.7	4.2	4.5	5.0	4.3	4.7	2.9	2.3	2.5
29	8.2	7.4	7.9	5.2	4.7	4.9	4.8	4.2	4.5	3.3	2.7	3.0
30	7.4	6.7	6.9	5.5	5.2	5.3	5.3	4.8	5.1	3.0	2.7	2.9
31	7.3	6.5	6.8	---	---	---	5.2	4.7	5.0	3.2	2.9	3.0
MONTH	12.5	6.5	8.5	8.0	2.2	4.8	5.7	1.9	4.3	6.2	2.3	4.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	3.6	2.9	3.3	3.5	2.7	3.1	6.0	5.1	5.5	5.9	5.4	5.6
2	3.9	3.6	3.9	3.5	2.6	2.9	5.1	4.1	4.6	7.1	5.4	6.0
3	4.4	3.8	4.1	3.0	2.4	2.7	5.3	4.3	4.6	7.8	5.2	6.5
4	5.2	4.4	4.8	3.6	2.7	3.2	5.4	4.0	4.7	8.2	6.4	7.3
5	4.6	4.1	4.3	4.2	3.6	3.9	5.6	4.3	4.9	7.8	6.6	7.1
6	4.1	3.6	3.9	4.7	3.9	4.3	5.4	4.1	4.6	8.2	5.5	6.8
7	3.8	2.9	3.3	5.3	4.5	4.9	4.8	3.8	4.3	9.4	6.7	8.0
8	3.3	2.9	3.1	5.5	4.5	5.3	4.9	4.1	4.6	9.6	8.0	8.8
9	3.3	2.9	3.2	4.5	3.7	4.1	5.1	4.6	4.8	9.4	7.8	8.6
10	3.0	2.6	2.8	4.4	4.0	4.2	4.9	4.6	4.9	9.4	7.6	8.5
11	3.0	2.7	2.8	4.5	4.2	4.4	5.3	3.8	4.6	10.4	8.2	9.3
12	2.9	2.4	2.6	5.2	4.5	4.8	4.9	4.3	4.6	11.3	9.6	10.4
13	2.6	2.4	2.5	5.2	4.8	5.0	5.1	4.1	4.6	10.8	9.8	10.4
14	2.7	2.3	2.5	5.0	4.7	4.8	5.6	4.1	4.9	10.4	8.4	9.5
15	3.2	2.6	2.9	4.7	4.2	4.5	6.5	4.5	5.4	8.4	7.8	8.1
16	---	---	---	4.2	3.7	4.0	6.8	5.4	6.2	8.2	7.3	7.6
17	---	---	---	4.7	3.9	4.2	7.0	6.0	6.5	7.8	6.6	7.3
18	---	---	---	5.5	4.7	5.0	6.8	6.0	6.4	9.2	7.1	7.9
19	---	---	---	5.3	4.5	5.0	6.3	5.4	5.9	8.8	7.1	8.1
20	3.9	---	---	5.5	4.0	4.7	6.0	5.3	5.6	9.4	7.1	8.3
21	4.4	3.8	4.1	5.5	4.0	4.8	6.7	5.4	6.0	10.8	7.8	9.3
22	4.3	3.6	3.9	5.5	4.0	4.8	6.5	5.6	6.1	12.1	9.6	10.9
23	3.9	3.6	3.8	6.0	4.2	5.1	6.7	6.0	6.3	12.8	11.0	12.1
24	3.8	3.2	3.4	6.7	5.5	6.2	8.1	5.9	7.0	13.1	11.5	12.4
25	3.2	2.7	2.9	6.7	6.0	6.5	9.3	7.0	8.1	13.1	11.2	12.3
26	2.7	2.1	2.4	6.0	4.8	5.3	9.6	8.1	8.8	---	---	---
27	2.7	2.3	2.5	5.2	4.5	4.8	9.0	7.6	8.0	---	---	---
28	3.0	2.3	2.6	5.5	5.2	5.3	7.8	5.5	6.8	---	---	---
29	---	---	---	6.0	5.0	5.5	6.2	5.4	5.7	---	---	---
30	---	---	---	6.6	5.7	6.1	6.7	5.9	6.4	11.4	---	---
31	---	---	---	6.5	6.0	6.2	---	---	---	12.4	10.0	11.3
MONTH	---	---	---	6.7	2.4	4.7	9.6	3.8	5.7	---	---	---

SANDY RIVER BASIN

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

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	12.2	10.4	11.4	12.3	10.3	11.3	12.7	11.3	12.1	13.5	13.1	13.3
2	10.4	8.8	9.6	12.5	10.5	11.6	13.6	12.2	12.8	13.5	12.8	13.1
3	8.8	7.4	8.1	13.3	11.4	12.3	13.4	12.9	13.1	13.1	12.1	12.7
4	8.8	7.6	8.2	13.7	12.1	13.0	12.9	12.4	12.8	12.8	12.3	12.6
5	8.6	8.0	8.3	13.2	11.8	12.7	13.4	11.7	12.7	12.6	11.6	12.0
6	10.4	8.0	9.0	13.2	11.8	12.5	14.1	12.4	13.3	11.9	11.4	11.7
7	11.1	8.6	9.8	13.2	11.6	12.5	14.7	13.6	14.1	11.9	11.4	11.7
8	11.5	9.8	10.6	13.5	11.6	12.7	14.9	13.1	14.1	11.9	11.0	11.5
9	11.1	9.6	10.2	14.2	12.3	13.3	15.2	13.4	14.4	11.9	11.0	11.5
10	9.6	8.8	9.2	14.5	13.0	13.7	15.5	14.1	14.8	11.9	11.2	11.6
11	9.2	8.4	8.9	14.8	13.0	13.9	15.5	14.1	14.9	12.1	11.2	11.7
12	8.4	7.8	8.0	15.0	13.5	14.3	15.5	14.1	14.9	12.6	11.6	12.1
13	10.0	7.4	8.6	14.5	13.2	14.0	15.7	14.7	15.1	12.8	12.1	12.4
14	9.6	8.2	8.9	14.0	12.8	13.3	15.5	14.7	15.0	13.1	12.1	12.6
15	10.2	8.4	9.2	13.2	12.1	12.6	15.5	14.4	14.9	13.5	12.8	13.1
16	10.0	8.4	9.1	12.1	11.4	11.7	14.9	14.1	14.6	13.3	12.8	13.1
17	9.2	8.2	8.7	11.4	10.9	11.2	14.7	13.6	14.1	12.8	12.1	12.3
18	10.4	8.4	9.3	11.6	11.0	11.2	14.1	13.6	13.9	12.1	11.6	11.9
19	11.5	9.2	10.3	12.3	11.0	11.6	13.9	12.9	13.4	11.9	11.4	11.6
20	12.4	10.4	11.4	12.1	11.6	11.8	13.4	12.4	13.0	11.4	10.5	10.9
21	13.1	11.3	12.2	12.1	11.2	11.6	13.2	12.2	12.8	11.0	10.3	10.7
22	12.6	11.5	11.9	13.0	11.2	12.0	12.9	12.7	12.8	11.2	10.3	10.8
23	11.5	10.8	11.2	13.7	12.1	12.9	12.7	12.2	12.4	11.4	10.7	11.1
24	11.1	9.8	10.6	14.2	12.8	13.5	12.7	12.0	12.3	11.6	11.0	11.3
25	10.8	9.0	10.0	14.8	13.2	14.0	12.9	11.7	12.4	11.6	11.2	11.4
26	11.0	10.3	10.7	14.5	13.2	13.9	13.4	12.2	12.9	11.2	10.7	11.0
27	11.2	10.5	10.9	14.2	13.0	13.6	13.4	12.7	13.1	10.8	10.2	10.5
28	10.7	10.3	10.5	13.6	12.7	13.2	13.8	12.9	13.3	10.2	9.6	9.9
29	11.6	9.5	10.6	12.7	12.0	12.3	13.8	12.8	13.3	10.0	9.4	9.6
30	11.4	10.3	10.9	12.0	11.5	11.8	13.8	13.1	13.4	10.2	9.4	9.8
31	---	---	---	12.4	11.3	11.8	13.8	13.1	13.5	---	---	---
MONTH	13.1	7.4	9.9	15.0	10.3	12.6	15.7	11.3	13.6	13.5	9.4	11.6

SANDY RIVER BASIN

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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 mi².

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

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

REMARKS.--Midnight elevations Nov. 9-14 furnished by Portland General Electric. 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, 21,610 acre-ft Mar. 19, elevation, 861.39 ft; minimum contents, 13,530 acre-ft Sept. 26, elevation, 840.69 ft.

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

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

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	852.34	850.86	859.14	859.28	858.76	858.10	859.84	859.76	858.32	859.87	849.51	849.18
2	852.17	850.72	859.61	858.89	858.85	858.19	858.94	859.70	858.12	859.67	849.56	849.46
3	851.63	851.41	859.40	859.24	858.96	858.24	859.09	859.65	858.88	859.62	849.34	849.70
4	851.02	852.53	859.15	859.33	859.68	858.18	858.85	859.16	859.33	858.91	849.16	849.61
5	850.27	853.35	859.43	859.62	859.93	858.27	859.07	859.24	859.63	858.79	849.01	850.10
6	849.40	855.24	859.58	859.29	859.55	858.30	859.42	859.37	859.50	858.35	849.71	850.39
7	848.51	856.58	859.53	858.50	859.51	858.57	859.32	858.85	859.41	858.17	849.76	850.46
8	847.53	859.38	859.46	858.39	859.40	858.87	859.34	859.03	859.41	857.52	849.75	850.44
9	846.66	859.14	858.90	858.60	859.37	858.77	859.48	859.25	859.62	856.74	849.56	850.36
10	845.94	859.17	858.94	858.77	859.22	858.82	859.65	858.60	859.82	855.93	849.48	850.20
11	845.20	859.24	858.69	858.81	859.36	858.68	859.14	859.52	859.94	855.17	849.27	850.20
12	844.32	858.80	858.81	859.55	859.25	858.87	859.42	859.64	859.58	854.33	849.36	849.64
13	843.67	858.72	858.99	859.32	859.07	858.97	859.62	859.57	859.75	853.61	849.59	849.02
14	844.81	858.74	858.54	859.64	858.89	859.15	859.37	859.19	859.74	852.82	849.72	848.29
15	850.41	858.75	858.95	859.55	858.70	859.63	859.34	858.54	859.47	852.14	849.73	847.03
16	852.53	858.59	859.27	859.43	858.46	859.69	859.39	859.42	859.68	851.59	849.62	846.29
17	851.84	858.47	859.84	858.74	858.46	859.29	859.40	859.08	859.69	851.13	849.35	845.34
18	851.23	858.70	859.41	858.78	858.37	860.54	859.50	859.78	859.81	850.53	849.63	844.36
19	850.58	858.44	859.01	858.67	858.58	860.85	859.57	859.39	859.72	849.97	849.74	845.24
20	850.32	858.37	859.05	858.78	858.57	859.78	859.60	859.73	859.75	849.42	849.70	844.59
21	850.78	858.34	859.15	859.24	858.74	859.93	859.17	859.64	859.72	849.21	849.50	843.36
22	850.78	858.69	859.27	859.49	858.53	859.61	858.86	859.73	859.62	849.07	849.50	842.08
23	850.54	858.68	859.59	859.72	858.66	859.51	859.13	859.37	859.45	849.30	849.72	841.58
24	850.16	859.56	859.47	859.38	858.58	859.25	859.30	859.65	859.38	849.14	849.69	841.63
25	849.73	859.37	859.38	859.23	858.75	859.38	859.83	859.57	859.67	848.97	849.48	840.94
26	849.22	859.60	859.00	859.12	858.52	859.21	859.67	859.62	859.71	849.29	849.59	841.43
27	848.71	859.61	859.40	859.06	858.57	859.61	859.63	859.66	859.75	849.42	849.44	841.94
28	848.84	859.41	859.29	858.75	858.39	859.73	859.63	859.63	859.48	848.65	849.60	842.25
29	849.69	859.65	859.26	859.16	---	859.82	859.22	859.39	859.54	849.53	849.64	842.57
30	850.28	859.56	859.53	858.51	---	859.52	861.30	859.63	859.79	849.65	849.63	842.83
31	850.47	---	859.40	858.55	---	859.20	---	859.59	---	849.76	849.71	---
MAX	852.53	859.65	859.84	859.72	859.93	860.85	861.30	859.78	859.94	859.87	849.76	850.46
MIN	843.67	850.72	858.54	858.39	858.37	858.10	858.85	858.54	858.12	848.65	849.01	840.94
(†)	16990	20810	20740	20360	20290	20650	21570	20820	20910	16710	16700	14260
(‡)	-80	+3820	-70	-380	-70	+360	+920	-750	+90	-4200	-10	-2440

CAL YR 2000 MAX 862.81 MIN 842.87 AC-FT† +100
WTR YR 2001 MAX 861.30 MIN 840.94 AC-FT† -2810

† 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 mi².

PERIOD OF DAILY RECORD.--December 2000 to September 2001.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Record fair.

EXTREMES FOR DECEMBER TO SEPTEMBER.--Maximum, 19.7°C Aug. 7; minimum, 2.8°C Feb. 12.

TEMPERATURE, WATER (DEG. C), DECEMBER 2000 TO SEPTEMBER 2001												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	---	---	---	---	---	---	5.3	4.3	4.9
2	---	---	---	---	---	---	---	---	---	5.6	4.3	5.0
3	---	---	---	---	---	---	---	---	---	5.8	4.2	5.1
4	---	---	---	---	---	---	---	---	---	6.0	4.6	5.4
5	---	---	---	---	---	---	---	---	---	6.1	4.9	5.4
6	---	---	---	---	---	---	---	---	---	5.6	4.1	4.9
7	---	---	---	---	---	---	---	---	---	5.7	4.0	4.9
8	---	---	---	---	---	---	---	---	---	5.8	4.5	5.1
9	---	---	---	---	---	---	---	---	---	5.6	4.2	4.9
10	---	---	---	---	---	---	---	---	---	5.6	4.5	5.0
11	---	---	---	---	---	---	---	---	---	6.0	4.4	5.1
12	---	---	---	---	---	---	---	---	---	5.8	4.6	5.2
13	---	---	---	---	---	---	---	---	---	5.4	4.5	4.9
14	---	---	---	---	---	---	---	---	---	5.4	4.5	5.0
15	---	---	---	---	---	---	---	---	---	5.3	4.0	4.8
16	---	---	---	---	---	---	---	---	---	4.9	4.0	4.4
17	---	---	---	---	---	---	---	---	---	5.1	3.8	4.5
18	---	---	---	---	---	---	---	---	---	5.3	4.3	4.8
19	---	---	---	---	---	---	5.6	4.3	5.0	5.3	4.2	4.9
20	---	---	---	---	---	---	5.6	4.5	5.0	5.1	4.2	4.6
21	---	---	---	---	---	---	5.7	4.0	4.8	5.2	4.2	4.7
22	---	---	---	---	---	---	5.6	4.0	4.9	5.4	4.0	4.7
23	---	---	---	---	---	---	5.7	4.2	4.9	5.1	3.8	4.4
24	---	---	---	---	---	---	5.6	4.2	4.9	5.0	3.9	4.5
25	---	---	---	---	---	---	5.3	4.0	4.8	5.2	3.8	4.4
26	---	---	---	---	---	---	5.6	4.0	5.0	4.9	3.5	4.3
27	---	---	---	---	---	---	5.8	4.5	5.0	4.8	3.5	4.1
28	---	---	---	---	---	---	5.5	4.3	4.9	4.8	3.4	4.1
29	---	---	---	---	---	---	5.7	4.2	4.9	4.9	3.7	4.4
30	---	---	---	---	---	---	5.5	4.6	5.1	4.7	3.8	4.3
31	---	---	---	---	---	---	5.8	4.4	5.0	4.9	3.6	4.3
MONTH	---	---	---	---	---	---	---	---	---	6.1	3.4	4.7
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5.1	3.8	4.4	5.5	3.8	4.6	6.7	5.3	6.0	9.1	6.7	7.9
2	5.1	4.2	4.7	5.4	4.1	4.6	6.5	5.2	6.0	8.2	6.5	7.4
3	5.2	4.1	4.7	5.6	3.8	4.7	6.8	5.4	6.1	8.7	6.6	7.5
4	5.1	3.8	4.6	5.5	4.2	4.8	7.2	5.5	6.1	8.5	6.5	7.5
5	5.2	3.2	4.3	6.4	4.3	5.2	6.8	5.4	6.1	8.4	6.3	7.5
6	4.9	3.7	4.3	7.4	4.3	5.6	7.2	5.5	6.1	8.9	6.7	7.6
7	5.0	3.8	4.3	7.0	4.8	5.8	6.7	5.2	6.1	9.4	6.4	7.9
8	4.7	4.0	4.3	6.1	4.7	5.5	7.1	5.6	6.2	10.9	6.6	8.5
9	4.8	3.9	4.3	6.3	4.6	5.4	6.9	5.6	6.2	10.6	6.8	8.5
10	4.8	3.2	4.1	6.1	4.6	5.3	6.8	5.7	6.2	10.8	6.9	8.6
11	4.7	3.2	4.1	6.1	4.6	5.4	7.0	5.6	6.3	11.4	7.2	9.1
12	4.8	2.8	4.0	6.7	4.8	5.6	7.0	5.7	6.3	11.5	7.8	9.3
13	4.9	3.1	4.1	6.2	4.9	5.6	7.2	5.5	6.2	11.4	7.6	9.2
14	5.8	3.4	4.1	6.9	5.0	5.7	7.0	5.3	6.2	9.4	7.7	8.4
15	5.2	3.4	4.3	6.0	5.0	5.5	7.4	5.5	6.5	9.4	7.7	8.7
16	5.1	3.6	4.5	6.0	4.9	5.5	8.3	5.4	6.9	10.0	8.1	9.1
17	4.9	3.5	4.1	6.2	4.9	5.6	7.3	5.6	6.6	10.1	8.2	9.3
18	5.1	3.5	4.3	6.6	5.0	5.8	7.4	5.8	6.5	11.4	8.5	9.7
19	5.2	3.6	4.4	6.8	4.6	5.7	7.7	5.6	6.5	10.6	8.5	9.5
20	5.3	3.9	4.6	6.6	5.0	5.7	7.1	5.7	6.5	11.2	8.4	9.8
21	5.4	4.2	4.7	6.3	4.7	5.5	7.2	5.9	6.6	13.1	8.6	10.6
22	5.3	4.0	4.6	6.7	4.7	5.6	7.4	5.7	6.6	13.3	9.3	10.9
23	5.2	3.8	4.6	6.6	4.9	5.7	7.4	6.1	6.8	14.0	9.5	11.3
24	5.4	3.6	4.4	6.9	5.2	5.9	9.3	6.1	7.4	13.6	9.6	11.2
25	5.5	3.2	4.2	6.5	5.1	5.8	8.9	6.3	7.4	13.5	9.4	11.0
26	5.5	3.2	4.2	6.6	5.0	5.7	8.3	6.1	7.1	13.5	9.5	11.0
27	5.7	3.8	4.6	6.2	5.1	5.8	7.9	6.0	6.9	11.9	9.2	10.4
28	5.6	3.7	4.5	6.6	5.1	5.9	7.5	6.2	6.8	11.1	9.4	10.2
29	---	---	---	6.9	5.6	6.0	7.6	6.1	6.8	13.0	8.9	10.6
30	---	---	---	6.7	5.0	6.0	8.9	6.4	7.3	13.5	9.1	11.0
31	---	---	---	6.8	5.1	6.0	---	---	---	14.1	9.6	11.3
MONTH	5.8	2.8	4.4	7.4	3.8	5.5	9.3	5.2	6.5	14.1	6.3	9.4

WILLAMETTE RIVER BASIN

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14140000 BULL RUN RIVER NEAR BULL RUN, OR--Continued

TEMPERATURE, WATER (DEG. C), DECEMBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	11.2	10.0	10.6	17.1	12.1	13.9	18.2	12.7	15.0	16.2	14.4	15.3
2	11.4	9.8	10.4	17.9	11.9	14.1	19.1	13.7	15.7	17.7	13.9	15.6
3	11.9	9.8	10.7	17.8	12.2	14.6	16.4	13.6	15.1	17.1	13.7	15.4
4	12.4	9.9	10.9	18.3	12.9	14.9	15.9	13.9	14.7	17.0	13.8	15.3
5	11.6	10.1	10.8	17.6	12.5	14.4	19.1	13.0	15.5	16.1	13.9	14.8
6	12.2	10.2	11.2	18.2	12.3	14.5	19.6	13.8	16.1	16.8	13.4	14.9
7	14.0	10.4	11.8	18.1	12.1	14.5	19.7	14.7	16.4	17.4	14.0	15.1
8	14.5	11.0	12.3	18.7	12.4	14.8	19.4	13.3	15.9	17.6	13.0	14.7
9	12.9	11.1	11.8	19.1	12.4	15.2	19.4	13.6	15.9	17.3	13.0	14.7
10	12.7	10.8	11.7	18.1	13.1	15.1	18.6	13.7	15.6	17.3	13.4	15.0
11	12.3	11.2	11.7	18.3	12.6	15.2	18.0	13.4	15.2	17.8	13.3	15.3
12	12.7	11.3	11.9	18.7	13.1	15.4	17.8	13.3	15.1	18.0	14.5	15.8
13	13.1	11.2	12.1	18.6	12.9	15.1	18.3	14.0	15.5	18.0	14.6	15.9
14	12.9	11.3	12.0	17.7	12.5	14.5	17.3	13.7	15.1	18.4	14.5	16.1
15	13.9	10.9	12.0	15.1	12.4	13.6	17.5	13.6	15.1	18.5	15.3	16.5
16	13.3	10.7	11.8	14.4	12.3	13.4	16.2	13.5	14.6	17.8	15.0	16.1
17	13.2	10.6	11.7	15.2	12.6	13.6	18.3	13.3	15.0	17.4	14.6	15.5
18	16.0	10.4	12.6	15.1	12.9	13.8	16.3	13.5	14.7	16.1	14.3	15.2
19	15.7	10.6	12.9	17.1	12.8	14.5	17.9	12.9	14.9	17.5	14.3	15.4
20	16.6	11.3	13.4	14.8	12.9	13.7	17.8	12.9	14.9	17.1	13.8	15.2
21	17.6	11.7	14.0	16.5	12.5	14.2	15.6	13.0	14.4	17.2	14.0	15.4
22	14.8	12.2	13.2	18.8	12.8	15.0	15.4	13.8	14.5	18.0	14.1	15.8
23	14.5	11.2	12.7	18.5	13.4	15.2	15.4	13.4	14.4	18.3	14.5	16.1
24	13.1	11.4	12.2	18.5	13.4	15.4	17.8	13.3	15.0	18.0	14.9	16.2
25	14.8	10.9	12.8	19.1	13.4	15.7	18.0	13.0	15.1	16.5	15.2	15.7
26	14.0	11.8	12.8	18.9	13.2	15.4	18.6	13.9	15.6	15.8	14.8	15.3
27	14.4	12.1	13.1	18.9	13.1	15.3	18.4	13.9	15.6	16.2	14.2	15.1
28	13.2	12.1	12.6	15.7	13.9	14.7	18.9	14.1	15.8	16.4	14.0	14.9
29	14.8	11.4	13.0	15.0	13.1	14.1	18.6	13.7	15.7	16.4	13.8	14.9
30	14.7	11.7	13.1	15.7	13.2	14.1	18.9	14.4	16.1	16.8	13.9	15.1
31	---	---	---	17.7	13.2	14.8	18.5	14.4	16.0	---	---	---
MONTH	17.6	9.8	12.1	19.1	11.9	14.6	19.7	12.7	15.3	18.5	13.0	15.4

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 mi².

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

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

GAGE.--Water-stage recorder. Datum of gage is 567.90 ft above sea level (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, 168,800 acre-ft of which 46,100 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.--94 years (water years 1908-2001), 777 ft³/s, 98.61 in/yr, 562,900 acre-ft/yr, adjusted for storage in Bull Run Reservoir Number One since 1929 and Bull Run Reservoir Number Two since 1961.

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

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

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 3,880 ft³/s Mar. 19, gage height, 9.07 ft; minimum discharge, 29 ft³/s Sept. 29, 30.

Combined flow, maximum discharge, 4,020 ft³/s (of which approximately 144 ft³/s were diverted for Portland water supply) Mar. 19; minimum daily, 172 ft³/s (of which approximately 127 ft³/s were diverted for Portland water supply) Oct. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	221	206	676	549	402	308	1410	2320	345	247	216	228
2	215	200	600	497	400	296	1390	1630	324	288	246	221
3	217	177	537	425	406	291	883	1260	297	309	249	236
4	201	178	438	410	999	286	768	999	287	301	256	252
5	210	182	379	468	2050	236	648	826	367	288	256	251
6	217	193	394	696	1500	233	663	682	645	261	277	238
7	211	185	416	632	874	238	704	630	386	276	314	231
8	225	269	400	459	656	231	642	482	333	280	314	232
9	206	1420	426	418	644	213	560	448	363	309	304	245
10	198	932	430	383	513	215	569	424	467	308	309	253
11	203	614	407	393	469	214	1510	375	580	308	321	287
12	207	604	407	400	418	226	919	294	1290	305	321	264
13	199	518	412	402	407	231	720	291	943	301	303	234
14	191	417	417	416	403	230	724	740	657	286	294	225
15	192	395	796	416	402	231	692	1580	533	266	299	244
16	194	283	864	417	402	247	474	1570	480	264	286	246
17	195	301	1160	409	402	248	673	1340	399	253	277	247
18	197	296	1010	395	406	726	799	564	295	248	253	243
19	189	268	857	394	403	3180	719	585	310	235	236	227
20	192	257	653	397	402	2220	663	599	300	252	258	229
21	193	264	635	401	396	1400	681	410	300	252	277	228
22	191	254	814	467	401	944	621	434	285	258	230	232
23	192	257	1860	589	401	674	543	465	282	294	221	246
24	190	320	1780	527	401	650	448	384	245	317	211	240
25	183	633	1220	444	398	735	515	358	236	309	216	233
26	183	561	986	411	401	904	688	357	231	281	209	216
27	199	1240	734	395	349	965	730	331	224	269	233	201
28	201	928	643	397	293	1760	652	304	446	268	259	185
29	201	776	592	461	---	1630	743	341	327	251	285	178
30	172	563	509	450	---	1170	1910	348	245	231	274	186
31	175	---	596	402	---	1390	---	350	---	225	260	---
TOTAL	6160	13691	22048	13920	15598	22522	23661	21721	12422	8540	8264	6978
MEAN	199	456	711	449	557	727	789	701	414	275	267	233
MAX	225	1420	1860	696	2050	3180	1910	2320	1290	317	321	287
MIN	172	177	379	383	293	213	448	291	224	225	209	178
AC-FT	12220	27160	43730	27610	30940	44670	46930	43080	24640	16940	16390	13840
MEAN†	468	527	707	432	509	824	813	692	434	154	96.0	69.1
CFSM†	4.38	4.93	6.60	4.03	4.76	7.70	7.60	6.47	4.06	1.44	0.90	0.65
IN.†	5.05	5.50	7.62	4.65	4.96	8.88	8.48	7.46	4.53	1.66	1.03	0.72
AC-FT†	28790	31380	43450	26530	28280	50640	48360	42540	25830	9440	5900	4110

CAL YR 2000 TOTAL 235840 MEAN 644 MAX 6170 MIN 170 AC-FT 467800 MEAN† 646 CFSM† 6.04 IN.† 82.02 AC-FT† 467950
WTR YR 2001 TOTAL 175525 MEAN 481 MAX 3180 MIN 172 AC-FT 348200 MEAN† 477 CFSM† 4.46 IN.† 60.52 AC-FT† 345250

† 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 mi².

PERIOD OF RECORD.--May to July 1911, October 1911 to March 1912, June 1912 to April 1913, July 1919 to current year. Monthly discharge only for some periods 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 sea level, 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 sea level (Portland General Electric Co. bench mark).

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

AVERAGE DISCHARGE.--82 years (water years 1920-2001), 144 ft³/s, 87.79 in/yr, 104,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,320 ft³/s Nov. 20, 1921, gage height, 9.18 ft, site and datum then in use, from rating curve extended above 2,200 ft³/s; minimum discharge, 8.0 ft³/s Aug. 20, Sept. 16, 17, 1940.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 1	1130	*870	*4.51				

Minimum daily discharge, 11 ft³/s Sept. 19-24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	525	38	81	93	56	44	296	366	47	57	25	14
2	137	36	88	83	79	61	216	288	73	51	22	14
3	68	33	82	81	101	52	169	230	251	48	21	13
4	47	61	67	79	214	49	142	187	146	44	21	13
5	35	66	59	113	367	54	131	171	122	42	21	13
6	28	113	53	93	221	58	144	137	149	40	20	13
7	24	88	50	74	152	64	128	119	112	38	19	13
8	22	212	45	68	119	78	118	110	98	36	19	13
9	21	225	54	72	101	95	111	100	115	34	18	12
10	33	145	53	63	87	87	144	90	100	33	18	12
11	59	105	46	57	77	79	291	84	156	31	18	12
12	37	83	41	55	69	74	227	80	284	30	17	12
13	74	69	43	67	62	77	180	75	204	28	17	12
14	94	59	94	80	58	81	147	124	145	27	16	12
15	59	52	182	69	56	96	132	282	116	27	16	12
16	47	46	145	64	57	109	131	303	98	34	16	12
17	39	41	210	60	54	125	154	206	86	33	16	12
18	55	37	146	59	53	383	185	149	76	30	15	12
19	48	35	125	76	50	637	158	121	67	29	15	11
20	117	33	119	80	47	337	152	104	62	27	15	11
21	361	31	117	86	56	219	137	91	58	26	15	11
22	175	30	156	109	61	159	129	82	53	25	18	11
23	107	47	282	90	53	129	130	74	51	24	32	11
24	78	103	266	81	50	128	130	67	55	23	22	11
25	61	71	185	74	47	173	155	63	69	23	18	17
26	52	94	140	66	45	159	171	60	52	21	16	32
27	48	198	121	59	42	168	142	55	85	21	15	20
28	73	128	107	56	41	404	143	56	106	25	15	15
29	55	106	95	59	---	275	134	60	73	26	15	14
30	44	100	106	57	---	205	384	51	62	46	14	13
31	39	---	104	54	---	315	---	46	---	33	14	---
TOTAL	2662	2485	3462	2277	2475	4974	5011	4031	3171	1012	559	403
MEAN	85.9	82.8	112	73.5	88.4	160	167	130	106	32.6	18.0	13.4
MAX	525	225	282	113	367	637	384	366	284	57	32	32
MIN	21	30	41	54	41	44	111	46	47	21	14	11
AC-FT	5280	4930	6870	4520	4910	9870	9940	8000	6290	2010	1110	799
CFSM	3.85	3.71	5.01	3.29	3.96	7.20	7.49	5.83	4.74	1.46	.81	.60
IN.	4.44	4.15	5.78	3.80	4.13	8.30	8.36	6.72	5.29	1.69	.93	.67

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 2001, BY WATER YEAR (WY)

	MEAN	210	246	237	210	185	193	162	102	39.7	23.2	37.7
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1920 - 2001

ANNUAL TOTAL	40551	32522	144
ANNUAL MEAN	111	89.1	223
HIGHEST ANNUAL MEAN			87.6
LOWEST ANNUAL MEAN			3500
HIGHEST DAILY MEAN	778	Feb 2	637
LOWEST DAILY MEAN	12	Sep 27	11
ANNUAL SEVEN-DAY MINIMUM	13	Sep 23	11
ANNUAL RUNOFF (AC-FT)	80430	64510	104400
ANNUAL RUNOFF (CFSM)	4.97	4.00	6.46
ANNUAL RUNOFF (INCHES)	67.65	54.25	87.79
10 PERCENT EXCEEDS	236	183	302
50 PERCENT EXCEEDS	94	63	97
90 PERCENT EXCEEDS	15	16	18

SANDY RIVER BASIN

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

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

DRAINAGE AREA.--436 mi².

PERIOD OF RECORD.--April 1910 to September 1914, October 1929 to September 1966, May 1984 to current year. Monthly discharge only for some periods 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 sea level, from topographic map. April 1910 to September 1914, staff gage at present site at different datum. October 1929 to September 1966, water-stage recorder at site 0.8 mi downstream at different datum.

REMARKS.--Records good except for the period Oct. 1 to Jan. 13, which are poor. 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 168,800 acre-ft from Bull Run River, of which 46,100 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 ft³/s, 1,681,000 acre-ft/yr.
54 years (water years 1930-66, 1985-2001), 2,287 ft³/s, 1,657,000 acre-ft/yr, regulated period.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,500 ft³/s Apr. 30, gage height, 12.83 ft; minimum discharge, 224 ft³/s Sept. 19, 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e3400	616	1540	e1650	1010	753	4380	5950	1010	791	494	360
2	e1700	592	1490	e1400	1140	899	3810	4530	1070	741	473	362
3	e800	587	1410	e1300	1290	826	2930	3760	1550	718	490	346
4	e600	670	1210	e1300	2100	803	2550	3150	1290	728	487	352
5	492	902	1070	e1600	4360	765	2260	2830	1250	713	466	357
6	483	1080	1050	e1800	3270	785	2340	2450	1580	663	476	338
7	473	1040	1030	e1600	2220	818	2240	2210	1220	622	486	325
8	465	1640	1050	e1300	1820	898	2070	1960	1070	603	450	300
9	450	3210	1060	e1200	1700	998	1930	1860	1100	640	438	371
10	513	2330	1070	e1150	1400	950	1880	1770	1200	603	447	295
11	655	e1600	985	e1100	1340	914	3890	1530	1380	599	441	343
12	520	e1400	949	e1050	1190	878	2940	1510	3010	549	439	328
13	543	e1200	986	e1100	1120	887	2500	1470	2320	580	440	306
14	737	e1050	1140	1280	1080	917	2290	2050	1770	549	439	358
15	515	e900	e2300	1170	1050	980	2120	4450	1490	562	454	353
16	516	e800	e2100	1110	1050	1160	1910	4670	1340	604	450	302
17	515	761	e3000	1060	999	1180	2280	3620	1140	564	434	352
18	545	733	e2500	1060	993	2590	2520	2420	936	535	405	333
19	566	707	e2100	1160	928	7050	2350	2170	924	572	391	239
20	855	658	e1800	1230	935	5000	2260	2000	863	527	381	324
21	2990	641	e1800	1200	971	3420	2240	1660	841	517	376	317
22	1820	618	e2000	1390	1010	2620	2060	1600	803	518	423	315
23	1230	725	e4100	1410	931	2070	1970	1550	788	511	564	318
24	965	1160	e4100	1360	900	2010	1860	1400	776	507	453	322
25	837	1310	e3200	1210	877	2510	2110	1270	899	498	395	321
26	749	1450	e2650	1110	893	2620	2550	1190	753	480	387	453
27	713	2580	e2200	1050	812	2570	2580	1140	989	465	392	404
28	843	2170	e1900	1010	730	4770	2390	1100	1380	497	382	341
29	743	1810	e1700	1110	---	4600	2330	1120	1030	531	380	309
30	656	1540	e1650	1080	---	3580	4660	1020	832	591	376	301
31	613	---	e1600	958	---	4030	---	993	---	539	372	---
TOTAL	27502	36480	56740	38508	38119	64851	76200	70403	36604	18117	13481	10045
MEAN	887	1216	1830	1242	1361	2092	2540	2271	1220	584	435	335
MAX	3400	3210	4100	1800	4360	7050	4660	5950	3010	791	564	453
MIN	450	587	949	958	730	753	1860	993	753	465	372	239
AC-FT	54550	72360	112500	76380	75610	128600	151100	139600	72600	35940	26740	19920

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2001, BY WATER YEAR (WY)

	MEAN	1129	3097	3827	3440	3411	2984	3279	2794	1781	800	495	514
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1930 - 2001

ANNUAL TOTAL	677863	487050	
ANNUAL MEAN	1852	1334	2287
HIGHEST ANNUAL MEAN			3456
LOWEST ANNUAL MEAN			1334
HIGHEST DAILY MEAN	14200	Feb 2	7050
LOWEST DAILY MEAN	334	Sep 27	239
ANNUAL SEVEN-DAY MINIMUM	344	Sep 23	308
ANNUAL RUNOFF (AC-FT)	1345000		966100
10 PERCENT EXCEEDS	3650		2580
50 PERCENT EXCEEDS	1640		1050
90 PERCENT EXCEEDS	434		392
			406

e Estimated

SANDY RIVER BASIN

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14142800 BEAVER CREEK AT TROUTDALE, OR

LOCATION.--Lat. 45°31'10", long 122°23'16" in Land Grant parcel number 50, T.1N., R.3E., Multnomah County, Hydrologic Unit 17080001, on right bank, 100 ft downstream from Stark Street culvert outlet, 2.1 mi upstream from mouth.

DRAINAGE AREA.--8.91 mi².

PERIOD OF RECORD.--October 1999 to current year.

Gage.--Water stage recorder. Datum of gage is 195 ft above sea level, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No known diversions. Kelly Creek, an upstream tributary, is impounded at Mt. Hood Community 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.--2 years (water year 2000-01), 17.0 ft³/s, 25.90 in/yr, 12,290 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 361 ft³/s Oct. 1, gage height, 8.90 ft; minimum discharge, 0.40 ft³/s Aug. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	2.5	12	8.0	8.5	17	28	43	11	1.8	1.4	.90
2	3.4	2.4	22	7.1	50	17	23	28	7.2	1.5	.95	.99
3	1.7	2.0	12	6.4	36	11	23	19	7.3	1.3	.92	1.0
4	1.3	5.4	8.2	6.2	86	11	15	14	3.5	1.1	.79	1.1
5	1.7	4.4	6.6	10	50	9.2	19	10	7.0	.90	.64	1.1
6	1.9	7.1	5.6	6.3	30	7.4	20	8.3	4.0	1.0	.67	1.1
7	2.1	e3.4	4.9	5.8	20	6.7	16	6.9	3.0	.89	.74	.91
8	1.7	50	4.4	6.6	16	19	13	5.9	2.8	.90	.57	.92
9	19	12	6.7	7.1	13	25	10	5.1	4.2	.90	.65	.93
10	7.7	e6.4	4.2	6.7	11	13	18	5.2	2.9	.87	.75	.84
11	2.7	e4.2	3.5	5.4	9.3	11	33	5.4	21	.82	.78	.79
12	1.6	e3.4	3.2	8.7	7.8	9.2	18	5.1	7.6	.75	.76	.82
13	3.6	e3.3	8.7	38	6.8	8.0	15	4.2	3.9	.63	.73	.68
14	2.0	e2.9	49	52	6.2	6.9	12	32	2.9	.71	.56	.74
15	1.4	2.6	51	27	7.8	20	10	18	2.9	.75	.58	.61
16	1.3	2.3	40	17	15	14	12	15	2.4	1.2	.56	.60
17	1.2	2.3	54	13	8.1	47	18	8.0	2.0	1.4	.70	.58
18	4.2	2.1	24	11	9.7	96	9.1	7.1	2.0	.80	.59	.63
19	1.7	1.9	29	12	7.4	92	7.8	5.7	2.0	.70	.53	.70
20	34	1.9	26	8.9	6.7	42	23	5.0	1.6	.66	.66	.75
21	16	2.2	41	16	15	26	11	4.6	1.4	.82	.50	.66
22	5.3	2.3	129	10	13	18	12	4.6	1.3	.62	30	.77
23	3.2	25	90	12	9.0	14	19	4.3	1.4	.62	9.9	.51
24	2.6	9.0	53	17	8.0	22	12	3.7	7.6	.64	2.3	.59
25	2.0	16	29	12	6.7	44	9.6	3.4	3.1	.69	1.7	17
26	2.5	14	21	9.9	5.7	34	8.0	3.6	4.7	.75	1.5	6.2
27	5.8	52	15	8.2	5.1	74	7.0	3.1	11	1.1	1.5	1.9
28	31	15	12	7.4	4.7	68	7.6	3.9	4.7	5.0	1.1	1.4
29	5.7	39	11	9.6	---	42	6.1	2.9	2.4	1.8	1.1	1.2
30	e3.2	26	12	12	---	27	89	2.7	2.1	6.5	1.1	1.2
31	e2.7	---	9.4	9.6	---	39	---	2.8	---	2.0	1.1	---
TOTAL	240.2	323.0	797.4	386.9	472.5	890.4	524.2	290.5	140.9	40.12	66.33	48.12
MEAN	7.75	10.8	25.7	12.5	16.9	28.7	17.5	9.37	4.70	1.29	2.14	1.60
MAX	66	52	129	52	86	96	89	43	21	6.5	30	17
MIN	1.2	1.9	3.2	5.4	4.7	6.7	6.1	2.7	1.3	.62	.50	.51
AC-FT	476	641	1580	767	937	1770	1040	576	279	80	132	95
CFSM	.87	1.21	2.89	1.40	1.90	3.23	1.96	1.05	.53	.15	.24	.18
IN.	1.00	1.35	3.33	1.62	1.97	3.72	2.19	1.21	.59	.17	.28	.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2001, BY WATER YEAR (WY)

	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001
MEAN	5.86	25.2	38.2	31.5	37.8	30.8	13.6	12.3	4.46	1.16	1.41	2.17
MAX	7.75	39.7	50.8	50.6	58.0	32.9	17.5	15.2	4.70	1.29	2.14	2.74
(WY)	2000	2000	2000	2000	2000	2000	2001	2000	2001	2001	2001	2000
MIN	3.97	10.8	25.7	12.5	16.9	28.7	9.72	9.37	4.23	1.02	.68	1.60
(WY)	2000	2001	2001	2001	2001	2001	2000	2001	2000	2000	2000	2001

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 2000 - 2001

ANNUAL TOTAL	6654.97	4220.57	17.0
ANNUAL MEAN	18.2	11.6	22.4
HIGHEST ANNUAL MEAN			11.6
LOWEST ANNUAL MEAN			11.6
HIGHEST DAILY MEAN	173	129	315
LOWEST DAILY MEAN	.08	.50	.08
ANNUAL SEVEN-DAY MINIMUM	.61	.59	.37
ANNUAL RUNOFF (AC-FT)	13200	8370	12290
ANNUAL RUNOFF (CFSM)	2.04	1.30	1.91
ANNUAL RUNOFF (INCHES)	27.82	17.64	25.90
10 PERCENT EXCEEDS	53	29	47
50 PERCENT EXCEEDS	6.1	6.1	6.6
90 PERCENT EXCEEDS	.73	.75	.70

e Estimated

COLUMBIA RIVER MAIN STEM

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 mi², approximately.

PERIOD OF RECORD.--October 1963 to June 1970 (discharge), February 1998 to current year (gage heights only).

GAGE.--Water-stage recorder. Datum of gage is 1.82 ft above sea level. Prior to February 1998, datum of gage was sea level.

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 Weather Bureau records.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 7.12 ft Dec. 14; minimum, -0.74 ft July 14.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	4.89	2.17	3.37	3.79	1.74	2.69	4.01	2.17	3.09	3.82	1.97	2.87
2	4.34	1.37	2.64	3.28	1.56	2.43	3.90	1.81	2.94	3.64	1.48	2.46
3	3.74	1.09	2.16	2.90	1.45	2.26	3.53	1.71	2.62	3.85	1.19	2.32
4	3.28	1.27	2.04	3.50	.88	2.29	3.22	1.23	2.22	4.40	1.36	2.62
5	3.14	1.02	1.82	3.09	.95	2.04	3.59	1.16	2.26	5.11	1.97	3.17
6	2.65	.32	1.38	3.33	.88	2.02	3.88	1.20	2.35	5.32	2.05	3.31
7	2.85	.23	1.69	3.52	.78	2.02	4.64	1.77	2.90	5.60	2.28	3.50
8	3.15	.70	1.95	4.50	1.36	2.69	5.27	2.26	3.52	6.37	2.53	4.13
9	3.80	1.10	2.43	4.75	1.90	3.11	5.72	2.76	3.99	6.41	2.80	4.17
10	3.95	.95	2.49	5.05	2.16	3.37	5.88	2.60	3.85	6.72	2.89	4.48
11	4.39	1.68	2.97	5.13	2.22	3.41	5.56	2.58	3.72	6.50	3.06	4.41
12	4.49	1.61	3.00	5.31	2.56	3.66	6.09	2.80	4.07	6.05	3.11	4.28
13	4.72	1.79	3.10	5.53	2.40	3.60	6.28	3.28	4.48	5.47	2.71	3.93
14	4.56	1.35	2.79	5.77	2.60	3.80	7.12	4.02	5.21	4.85	2.44	3.53
15	4.83	1.51	2.88	5.35	2.51	3.58	6.30	4.52	5.42	4.54	1.87	3.00
16	5.15	1.64	3.10	4.85	2.24	3.32	5.74	3.12	4.32	4.30	1.50	2.68
17	5.09	1.77	3.08	3.93	1.95	2.89	5.16	3.55	4.23	4.03	1.31	2.38
18	4.69	1.93	3.05	3.50	1.35	2.50	4.39	2.58	3.39	4.18	1.14	2.40
19	4.15	1.26	2.41	3.60	1.19	2.38	4.84	2.77	3.57	4.76	2.18	3.12
20	4.53	1.18	2.69	3.87	1.05	2.35	4.81	2.59	3.45	4.64	1.83	3.11
21	4.53	2.15	3.01	4.30	1.18	2.57	5.21	2.76	3.75	5.10	1.78	3.03
22	3.85	.98	2.26	4.64	1.60	2.93	6.25	2.86	4.28	4.73	---	---
23	3.53	.57	2.05	5.09	1.71	3.11	6.05	3.61	4.62	4.98	1.83	---
24	3.96	.70	2.36	5.15	2.16	3.37	6.00	3.88	4.78	5.07	1.99	3.30
25	4.73	1.33	2.89	5.40	2.15	3.43	5.69	3.92	4.61	5.03	1.95	3.28
26	5.43	1.77	3.39	5.63	2.40	3.74	5.60	3.57	4.35	4.98	2.14	3.39
27	5.89	2.53	3.92	5.48	2.69	3.90	5.23	3.24	4.06	4.51	2.07	3.20
28	---	2.53	---	4.98	2.64	3.59	4.76	2.92	3.66	4.18	1.81	2.95
29	5.66	2.66	---	5.41	2.29	3.63	4.41	2.43	3.32	4.83	1.71	3.18
30	5.10	2.56	3.63	4.57	2.50	3.53	---	2.20	---	3.85	1.47	2.52
31	4.55	2.16	3.14	---	---	---	3.97	2.13	---	3.81	1.14	2.26
MONTH	---	.23	---	5.77	.78	3.01	---	1.16	---	6.72	---	---

COLUMBIA RIVER MAIN STEM

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14144700 COLUMBIA RIVER AT VANCOUVER, WA--Continued

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	3.77	.99	2.13	4.44	1.57	2.80	3.91	1.49	2.64	4.89	3.55	4.15
2	4.53	1.31	2.54	4.81	1.97	3.00	3.97	1.70	2.60	---	---	---
3	4.29	1.48	2.50	4.47	1.65	2.72	3.97	1.89	2.79	4.82	2.80	---
4	4.76	1.61	2.77	4.63	1.63	2.79	4.14	1.91	2.89	5.48	2.60	3.76
5	5.13	1.89	3.25	4.71	1.57	2.86	4.66	1.74	3.02	5.44	2.68	3.83
6	5.47	2.05	3.40	4.85	1.63	2.96	5.28	2.09	3.70	5.40	2.86	3.92
7	5.47	2.18	3.40	5.38	1.63	3.32	5.23	2.65	3.89	5.60	2.60	3.84
8	5.45	2.11	3.39	5.44	1.96	3.44	5.28	2.20	3.56	5.60	2.58	3.68
9	5.72	2.20	3.65	5.31	1.98	3.44	5.03	2.18	3.43	5.06	2.06	3.33
10	5.35	2.41	3.69	5.07	1.92	3.31	5.26	2.54	3.73	4.58	1.62	2.81
11	5.11	2.32	3.65	4.71	1.74	3.10	5.47	3.07	4.04	4.18	1.14	2.64
12	4.95	2.16	3.35	4.62	1.59	2.88	---	2.35	---	4.32	1.80	2.91
13	4.67	1.84	2.96	4.66	1.44	2.87	4.37	2.08	3.21	3.58	.98	2.34
14	4.48	1.50	2.82	4.58	1.46	2.69	3.26	.90	2.19	3.78	1.44	2.55
15	4.43	1.76	2.76	4.26	1.33	2.43	2.74	.62	1.71	4.58	1.90	3.01
16	4.42	2.06	2.95	3.75	1.22	2.22	2.52	.76	1.55	4.58	3.02	3.77
17	3.63	1.39	2.53	3.34	.90	2.12	3.13	1.09	2.08	4.92	3.44	4.07
18	4.11	1.46	2.61	3.36	1.04	2.04	3.43	1.28	2.59	4.94	3.42	4.05
19	4.41	1.46	2.83	3.39	1.79	2.57	3.94	1.55	2.70	4.40	2.22	3.27
20	4.51	1.67	2.97	3.76	1.88	2.82	4.20	1.53	2.88	4.56	1.62	2.68
21	4.73	1.69	3.05	3.66	1.49	2.70	4.29	1.78	2.90	5.06	2.08	3.13
22	5.12	1.85	3.35	4.03	1.42	2.68	3.96	1.14	2.32	5.94	2.08	3.55
23	4.98	2.13	3.36	4.64	1.96	3.18	3.81	.78	2.23	6.14	3.46	4.54
24	5.08	2.05	3.41	4.55	1.90	3.16	4.30	1.32	2.68	6.14	3.70	4.67
25	4.51	2.12	3.21	4.54	1.50	2.94	4.72	1.74	3.09	5.98	3.30	4.37
26	4.11	1.79	2.89	4.41	1.62	2.93	5.24	2.26	3.46	5.76	2.82	4.06
27	4.06	1.64	2.71	4.45	1.99	3.20	4.93	2.11	3.32	5.70	2.40	3.79
28	4.32	1.54	2.72	5.15	2.67	3.68	4.98	1.81	3.25	4.70	1.94	3.23
29	---	---	---	4.95	2.59	3.51	4.45	1.82	2.92	4.34	2.14	3.23
30	---	---	---	4.61	2.49	3.38	4.81	2.87	3.64	4.72	2.54	3.52
31	---	---	---	4.70	2.28	3.39	---	---	---	5.64	2.64	3.72
MONTH	5.72	.99	3.03	5.44	.90	2.94	---	.62	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	---	4.20	.66	2.03	3.54	.00	1.66	3.92	.50	2.12
2	5.28	2.30	3.67	4.16	.82	2.27	3.78	.06	1.84	4.06	.64	2.26
3	5.30	1.92	3.23	4.58	1.10	2.64	4.00	.38	2.11	4.00	.58	2.18
4	5.06	1.82	3.39	5.00	1.22	2.80	4.16	.50	2.19	3.70	.54	2.08
5	5.50	2.52	3.77	4.30	.68	2.29	3.92	-.01	2.03	3.62	.22	1.87
6	5.68	2.86	3.97	4.06	.34	2.04	4.06	.78	2.26	3.28	.12	1.75
7	5.42	2.44	3.75	3.76	.14	1.83	3.94	.78	2.26	3.14	.04	1.46
8	5.12	2.48	3.62	3.54	-.04	1.64	4.00	.92	2.22	2.96	-.40	1.08
9	5.32	2.92	3.97	3.28	-.10	1.55	4.06	1.10	2.48	3.20	-.16	1.11
10	4.24	1.34	2.95	3.26	.26	1.70	3.90	.80	2.28	3.26	.02	1.22
11	3.94	1.56	2.58	3.32	.18	1.70	3.88	.34	1.83	3.26	-.10	1.20
12	3.94	2.24	3.01	3.26	-.18	1.47	3.88	.58	1.86	3.46	-.06	1.61
13	3.96	1.74	2.85	3.00	-.52	.98	4.02	.76	1.93	4.16	.34	2.01
14	3.86	1.02	---	2.78	-.74	.75	3.88	.54	1.78	4.20	.46	2.17
15	3.50	.54	1.71	2.70	-.58	.77	4.26	.82	2.23	4.40	.54	2.28
16	3.66	.78	1.81	2.96	-.28	1.08	4.54	.90	2.45	4.14	.54	2.25
17	3.74	.38	1.71	3.42	-.08	1.42	4.78	.94	2.62	4.06	.50	2.19
18	3.60	.50	1.80	3.78	.14	1.85	4.92	1.00	2.68	3.94	.42	2.14
19	4.36	1.08	2.63	4.70	.72	2.41	4.56	.70	2.46	3.94	.46	2.10
20	5.34	2.08	3.41	4.42	.54	2.30	4.76	1.10	2.73	4.10	.40	2.08
21	5.20	1.86	3.29	4.54	.80	2.49	4.44	.84	2.57	3.94	.46	2.07
22	5.46	2.14	3.49	4.54	.66	2.42	4.86	1.02	2.66	4.26	.66	2.04
23	5.36	1.96	3.40	4.22	.54	2.22	4.66	1.16	2.78	3.68	.64	1.97
24	5.20	1.62	3.19	4.14	.56	2.21	4.00	.46	2.19	3.62	.26	1.62
25	4.62	1.44	2.86	3.78	.32	1.96	4.50	.58	1.89	3.66	.26	1.84
26	4.34	1.18	2.69	3.78	.20	1.80	4.50	1.12	2.29	3.48	.42	2.10
27	4.50	1.70	3.05	3.78	.18	1.65	4.30	.74	2.03	3.36	.24	1.91
28	4.80	1.42	2.81	3.78	.24	1.67	4.00	.58	2.05	3.48	.12	1.74
29	4.66	1.44	2.68	3.48	-.06	1.26	4.30	1.02	2.48	3.30	-.02	1.62
30	4.72	1.12	2.60	3.46	.06	1.48	4.16	.68	2.30	3.34	.16	1.69
31	---	---	---	3.54	.06	1.57	4.22	.70	2.26	---	---	---
MONTH	---	---	---	5.00	-.74	1.81	4.92	-.01	2.24	4.40	-.40	1.86

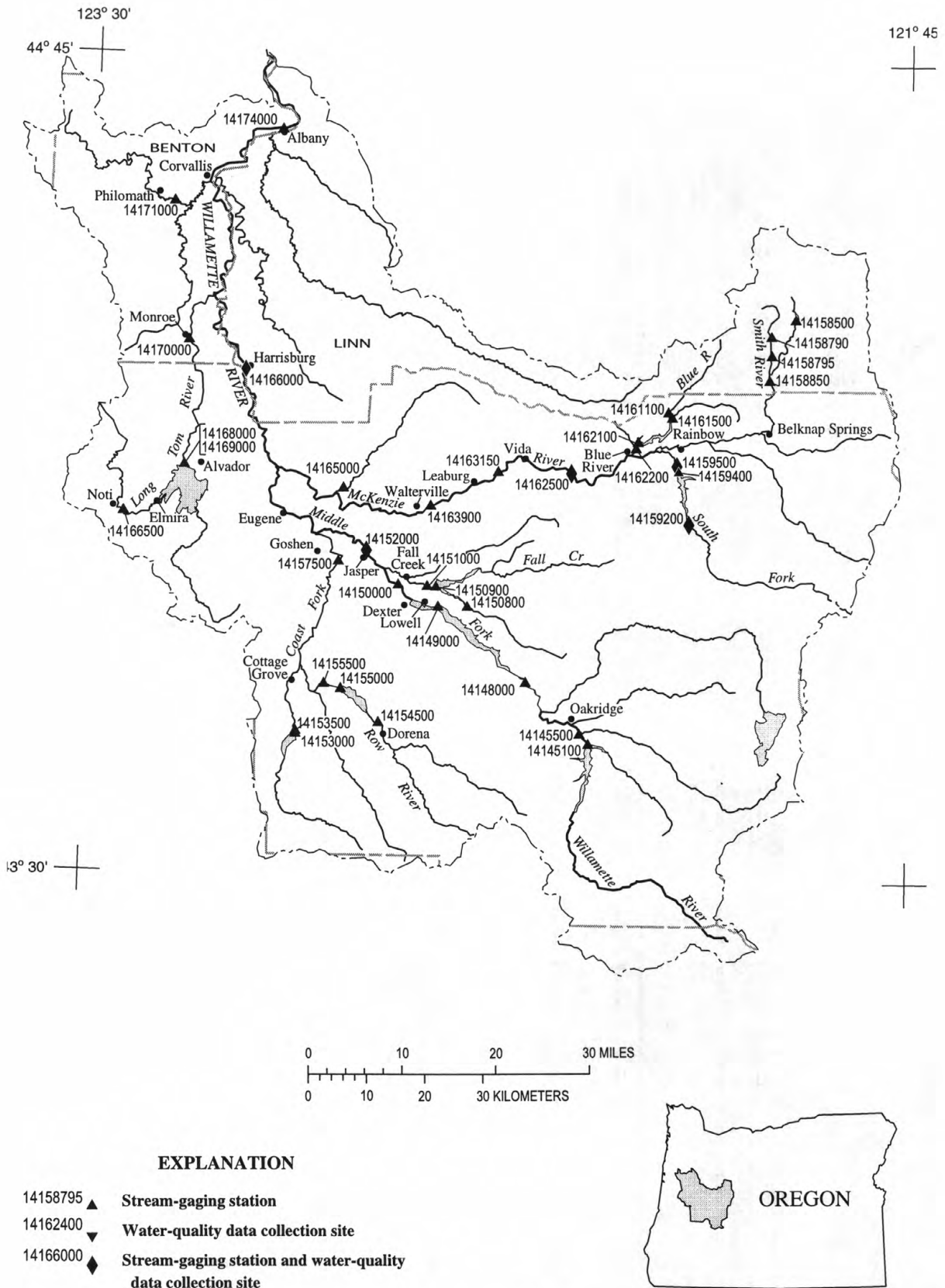


Figure 21. Location of surface-water and water-quality stations in the Willamette River Basin upstream from the Luckiamute River..

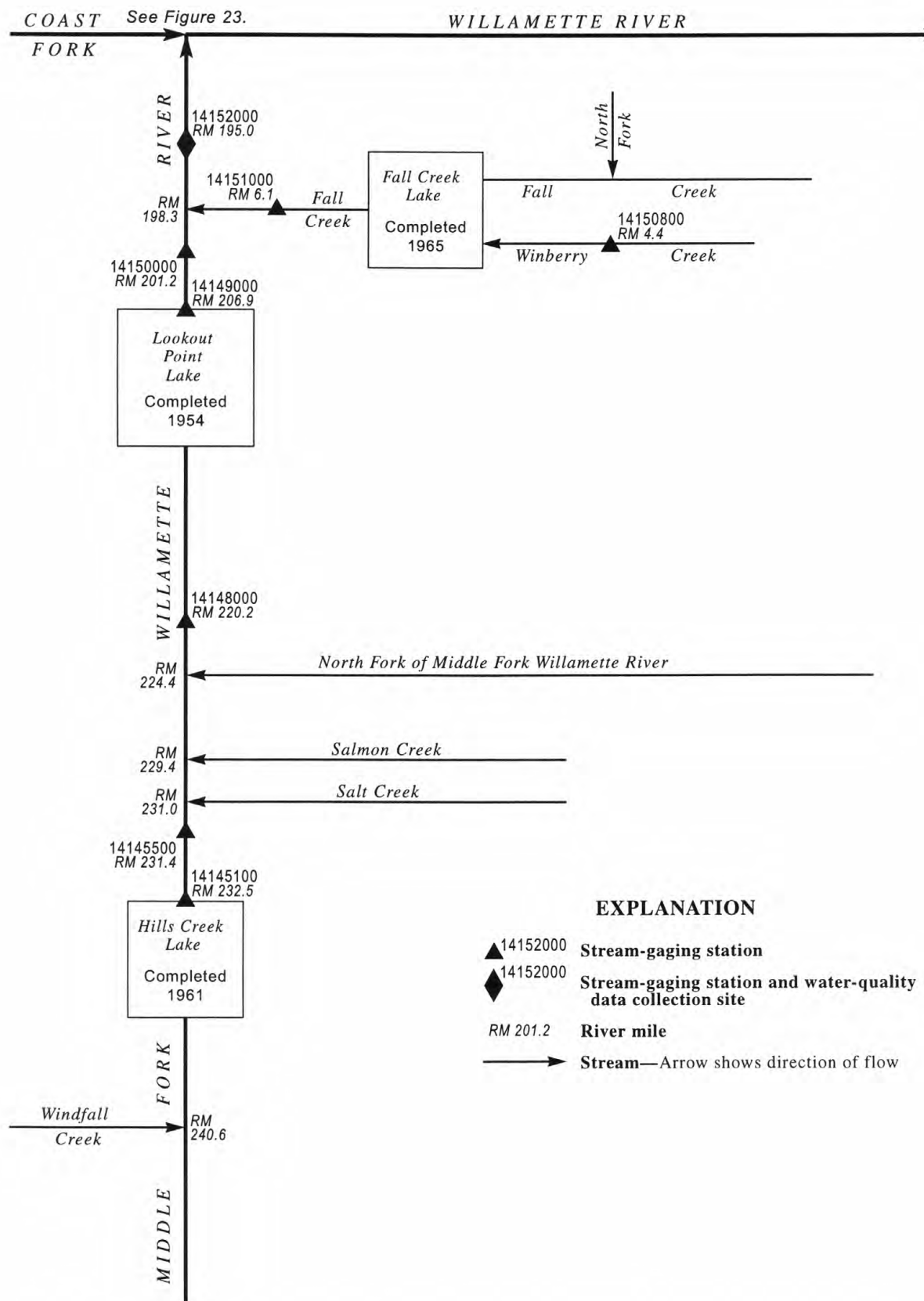


Figure 22. Schematic diagram showing gaging stations in the Middle Fork Willamette River Basin.

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 mi².

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

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Corps of Engineers).

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

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

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

EXTREMES FOR CURRENT YEAR.--Maximum contents, 289,700 acre-ft Oct. 1, elevation, 1,516.79 ft; minimum contents, 153,700 acre-ft Dec. 13, elevation, 1,446.93 ft.

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

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

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1516.11	1487.84	1449.12	1448.80	1452.54	1459.98	1480.91	1502.90	1504.67	1495.13	1493.40	1484.79
2	1515.39	1486.92	1448.57	1448.78	1452.75	1460.33	1481.82	1503.82	1504.22	1495.09	1493.32	1484.30
3	1514.58	1486.07	1447.99	1448.77	1453.09	1460.63	1482.21	1504.53	1503.78	1495.06	1493.13	1483.79
4	1513.74	1485.20	1447.78	1448.76	1453.69	1460.92	1482.62	1505.12	1503.32	1495.02	1492.88	1483.29
5	1512.92	1484.33	1447.80	1448.77	1454.29	1461.19	1483.22	1505.65	1502.89	1494.97	1492.62	1482.79
6	1512.10	1483.47	1447.84	1448.79	1454.81	1461.45	1483.84	1506.12	1502.43	1494.93	1492.38	1482.28
7	1511.26	1482.61	1447.86	1448.77	1455.22	1461.72	1484.42	1506.55	1501.93	1494.89	1492.11	1481.77
8	1510.43	1482.04	1447.88	1448.75	1455.58	1462.05	1484.97	1506.56	1501.43	1494.84	1491.85	1481.27
9	1509.67	1481.31	1447.87	1448.74	1455.90	1462.38	1485.54	1506.49	1500.92	1494.78	1491.59	1480.74
10	1508.88	1480.41	1447.84	1448.70	1456.19	1462.66	1486.21	1506.38	1500.40	1494.73	1491.33	1480.22
11	1508.11	1479.44	1447.11	1448.73	1456.46	1462.91	1486.94	1506.26	1499.89	1494.73	1491.08	1479.69
12	1507.29	1478.44	1446.94	1448.90	1456.67	1463.13	1487.66	1506.12	1499.45	1494.69	1490.81	1479.18
13	1506.48	1477.18	1447.25	1449.10	1456.85	1463.36	1488.33	1505.82	1498.94	1494.67	1490.54	1478.68
14	1505.66	1475.56	1447.89	1449.28	1457.04	1463.58	1488.95	1505.66	1498.40	1494.61	1490.26	1478.18
15	1504.86	1473.88	1448.50	1449.43	1457.17	1463.82	1489.54	1506.69	1497.85	1494.55	1489.98	1477.69
16	1504.12	1472.15	1448.57	1449.56	1457.32	1464.07	1490.17	1508.51	1497.29	1494.49	1489.69	1477.19
17	1503.36	1470.45	1448.77	1449.66	1457.46	1464.46	1490.97	1509.35	1496.72	1494.41	1489.40	1476.63
18	1502.62	1468.73	1448.82	1449.78	1457.62	1465.08	1491.83	1509.70	1496.14	1494.35	1489.11	1476.00
19	1501.84	1467.00	1448.88	1449.93	1457.75	1465.96	1492.79	1509.81	1495.71	1494.28	1488.82	1475.38
20	1501.15	1465.25	1448.91	1450.09	1457.88	1466.90	1493.74	1509.76	1495.28	1494.21	1488.52	1474.74
21	1500.29	1463.50	1449.07	1450.27	1458.05	1467.69	1494.62	1509.60	1495.00	1494.13	1488.23	1474.11
22	1499.26	1461.73	1449.69	1450.47	1458.29	1468.41	1495.42	1509.38	1494.99	1494.06	1487.96	1473.47
23	1498.10	1459.97	1449.69	1450.65	1458.56	1469.19	1496.17	1509.10	1494.97	1493.98	1487.71	1472.83
24	1496.84	1458.27	1449.25	1450.96	1458.86	1470.06	1496.89	1508.77	1494.97	1493.92	1487.44	1472.18
25	1495.55	1456.54	1448.80	1451.25	1459.13	1471.27	1497.72	1508.39	1494.98	1493.84	1487.15	1471.59
26	1494.27	1454.80	1448.71	1451.49	1459.38	1472.29	1498.58	1507.95	1495.05	1493.76	1486.86	1471.01
27	1493.05	1453.14	1448.69	1451.70	1459.59	1473.40	1499.36	1507.47	1495.10	1493.68	1486.57	1470.40
28	1492.09	1451.65	1448.69	1451.88	1459.78	1475.60	1500.20	1506.95	1495.13	1493.60	1486.28	1469.76
29	1491.00	1450.51	1448.73	1452.10	---	1477.38	1500.85	1506.40	1495.14	1493.55	1486.00	1469.12
30	1489.96	1449.73	1448.74	1452.25	---	1478.76	1501.71	1505.84	1495.14	1493.53	1485.70	1468.48
31	1488.87	---	1448.78	1452.40	---	1479.89	---	1505.25	---	1493.46	1485.28	---
MAX	1516.11	1487.84	1449.69	1452.40	1459.78	1479.89	1501.71	1509.81	1504.67	1495.13	1493.40	1484.79
MIN	1488.87	1449.73	1446.94	1448.70	1452.54	1459.98	1480.91	1502.90	1494.97	1493.46	1485.28	1468.48
(†)	228500	158100	156600	162400	174500	210800	255600	263400	241500	238000	221300	189600
(‡)	-61200	-70400	-1500	+5800	+12100	+36300	+44800	+7800	-21900	-3500	-16700	-31700

CAL YR 2000 MAX 1541.68 MIN 1446.94 AC-FT† +1200

WTR YR 2001 MAX 1516.11 MIN 1446.94 AC-FT† -100100

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

‡ Change in contents, in acre-feet.

WILLAMETTE RIVER BASIN

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

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

DRAINAGE AREA.--392 mi².

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 sea level (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.--67 years (water years 1914, 1936-2001), 1,149 ft³/s, 39.80 in/yr, 832,500 acre-ft/yr, adjusted for storage.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,080 ft³/s Nov. 21, gage height, 4.70 ft; minimum discharge, 71 ft³/s Apr. 9, 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1170	1480	987	516	295	286	276	304	1180	348	324	713
2	1170	1360	871	519	287	289	283	302	1010	346	341	711
3	1290	1270	874	518	282	288	629	367	1020	345	455	709
4	1310	1280	553	527	297	291	528	400	1020	347	509	705
5	1310	1280	356	514	299	288	282	400	1010	344	509	701
6	1310	1280	331	514	298	288	282	395	1010	345	505	703
7	1300	1280	335	516	295	293	281	408	1010	347	507	703
8	1300	1280	335	517	295	290	279	915	1000	343	505	706
9	1300	1340	338	518	297	293	200	994	997	343	504	716
10	1310	1410	372	518	296	292	96	990	997	343	500	718
11	1300	1420	958	433	295	293	100	987	994	344	498	712
12	1300	1410	477	291	296	295	104	1000	994	349	496	699
13	1300	1660	330	295	297	292	91	1200	993	343	507	694
14	1290	2030	359	296	296	291	83	1200	991	341	512	691
15	1260	2050	618	296	300	290	87	1210	989	342	514	688
16	1160	2040	779	298	295	292	94	1210	988	340	514	696
17	1170	2010	771	298	282	288	94	1210	985	345	515	752
18	1170	2000	654	297	283	288	96	1210	983	343	515	813
19	1200	1990	552	298	296	292	106	1200	806	343	516	812
20	1380	1980	550	297	297	264	109	1200	794	346	516	812
21	1620	1960	597	282	290	272	102	1200	642	343	515	811
22	1620	1970	1170	292	291	273	110	1190	331	343	514	809
23	1700	1960	1600	296	293	267	114	1180	340	341	515	809
24	1790	1950	1650	294	285	267	111	1180	344	335	514	805
25	1800	1950	1340	292	295	269	122	1180	343	330	514	813
26	1790	1940	847	295	282	266	193	1180	346	331	514	812
27	1690	1930	726	295	282	272	305	1190	347	329	514	812
28	1580	1740	653	295	285	278	303	1200	344	331	512	808
29	1580	1510	606	298	---	278	300	1200	348	332	509	807
30	1560	1240	590	298	---	278	303	1190	347	330	509	801
31	1520	---	528	298	---	280	---	1180	---	332	631	---
TOTAL	43550	50000	21707	11511	8181	8783	6063	30172	23503	10564	15523	22541
MEAN	1405	1667	700	371	292	283	202	973	783	341	501	751
MAX	1800	2050	1650	527	300	295	629	1210	1180	349	631	813
MIN	1160	1240	330	282	282	264	83	302	331	329	324	688
AC-FT	86380	99180	43060	22830	16230	17420	12030	59850	46620	20950	30790	44710
MEAN†	409	484	676	466	510	873	955	1100	416	284	229	219
CFSM†	1.04	1.23	1.72	1.19	1.30	2.23	2.44	2.81	1.06	0.72	0.58	0.56
IN.†	1.20	1.38	1.99	1.37	1.35	2.57	2.72	3.24	1.18	0.83	0.67	0.62
AC-FT†	25180	28780	41560	28630	28330	53720	56830	67650	24720	17450	14090	13010

CAL YR 2000 TOTAL 380582 MEAN 1040 MAX 3690 MIN 306 AC-FT 754900 MEAN† 1042 CFSM† 2.66 IN.† 36.16 AC-FT† 756100
WTR YR 2001 TOTAL 252098 MEAN 691 MAX 2050 MIN 83 AC-FT 500000 MEAN† 552 CFSM† 1.41 IN.† 19.13 AC-FT† 399900

† Adjusted for change in contents, in Hill Creek Lake.

WILLAMETTE RIVER BASIN

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

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

DRAINAGE AREA.--924 mi².

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

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

GAGE.--Water-stage recorder. Datum of gage is 934.76 ft above sea level. 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 ft³/s, 1,975,000 acre-ft/yr.
40 years (water years 1962-2001), 2,860 ft³/s, 2,072,000 acre-ft/yr, regulated period.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1861 and prior to March 1911, 17.0 ft in February 1890 at site used 1923-50, from information by local resident, discharge, about 55,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 7,120 ft³/s May 16, gage height, 4.74 ft; minimum discharge, 639 ft³/s Aug. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1620	1950	1810	1540	1070	1080	3320	4330	2130	921	713	1070
2	1630	1870	1610	1490	1110	1310	2970	3570	2020	898	719	1060
3	1730	1770	1590	1480	1230	1260	2970	3110	2120	883	816	1060
4	1750	1760	1250	1480	1640	1240	2720	2830	2060	870	901	1060
5	1740	1780	966	1480	1740	1210	2230	2650	2050	857	900	1050
6	1720	1810	892	1470	1690	1170	2290	2440	2120	849	888	1050
7	1720	1800	876	1440	1560	1180	2220	2300	2010	842	884	1050
8	1710	2270	856	1430	1460	1200	2080	2740	1940	826	880	1050
9	1730	2340	850	1440	1400	1270	1890	2850	1910	813	871	1060
10	1790	2180	856	1410	1340	1250	1680	2750	1880	804	866	1060
11	1830	2060	1500	1290	1290	1200	1940	2680	1860	808	856	1050
12	1780	1990	1040	1080	1230	1170	1950	2700	2020	817	850	1040
13	1750	2140	1020	1100	1170	1150	1810	2860	1930	870	860	1030
14	1750	2560	1400	1160	1130	1150	1670	2940	1870	807	865	1030
15	1730	2570	2180	1130	1100	1160	1600	4650	1830	794	866	1040
16	1610	2550	2150	1080	1080	1250	1600	6540	1800	785	864	1050
17	1610	2500	2370	1030	1040	1400	1840	5130	1770	788	860	1080
18	1610	2480	1920	1020	1030	1880	2000	4230	1740	785	856	1160
19	1640	2470	1610	1070	1020	2320	2180	3730	1560	775	858	1150
20	1930	2460	1520	1090	1010	2450	2220	3410	1510	769	855	1160
21	2620	2450	1640	1100	1040	2200	2110	3180	1370	765	855	1150
22	2260	2450	2810	1200	1090	2020	1970	3010	963	753	860	1140
23	2210	2460	3590	1180	1220	1960	1870	2880	943	745	917	1140
24	2270	2620	3670	1270	1230	1990	1830	2760	961	732	896	1130
25	2260	2560	3070	1270	1200	2460	1930	2620	1000	720	873	1170
26	2240	2620	2290	1230	1140	2380	2240	2520	991	711	864	1250
27	2160	2730	2050	1170	1110	2390	2510	2440	1030	705	853	1220
28	2170	2560	1900	1120	1080	5200	2630	2360	992	705	850	1180
29	2160	2320	1810	1160	---	4750	2400	2300	968	716	843	1170
30	2070	2130	1740	1120	---	3820	2820	2220	936	775	842	1160
31	1990	---	1620	1090	---	3280	---	2160	---	757	947	---
TOTAL	58790	68210	54456	38620	34450	59750	65490	96890	48284	24645	26628	33070
MEAN	1896	2274	1757	1246	1230	1927	2183	3125	1609	795	859	1102
MAX	2620	2730	3670	1540	1740	5200	3320	6540	2130	921	947	1250
MIN	1610	1760	850	1020	1010	1080	1600	2160	936	705	713	1030
AC-FT	116600	135300	108000	76600	68330	118500	129900	192200	95770	48880	52820	65590

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2001, BY WATER YEAR (WY)

MEAN	1909	3473	4916	4597	3384	3020	3166	3347	2411	1274	1173	1680
MAX	3035	7641	13540	10350	8460	7802	5606	5550	4969	1990	1753	2639
(WY)	1998	1997	1965	1997	1996	1992	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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1962 - 2001

ANNUAL TOTAL	988616	609283	2860	1997
ANNUAL MEAN	2701	1669	4710	1977
HIGHEST ANNUAL MEAN			1416	1977
LOWEST ANNUAL MEAN			43500	Dec 23 1964
HIGHEST DAILY MEAN	10600	Jan 11	6540	May 16
LOWEST DAILY MEAN	798	Aug 31	705	Jul 27
ANNUAL SEVEN-DAY MINIMUM	805	Aug 25	719	Jul 23
ANNUAL RUNOFF (AC-FT)	1961000		1209000	2072000
10 PERCENT EXCEEDS	4920		2640	5460
50 PERCENT EXCEEDS	2350		1490	2100
90 PERCENT EXCEEDS	895		856	1010

WILLAMETTE RIVER BASIN

169

14149000 LOOKOUT POINT LAKE NEAR LOWELL, OR

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

DRAINAGE AREA.--991 mi².

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

GAGE.--Water-stage recorder. Datum of gage is sea level (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, 260,600 acre-ft Oct. 1, elevation, 877.82 ft; minimum contents, 111,000 acre-ft Dec. 12, elevation, 821.21 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 (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	876.99	865.82	832.93	829.20	834.47	838.21	862.68	872.26	864.51	864.17	856.02	847.71
2	876.50	865.45	831.62	829.15	834.66	838.24	864.18	873.94	863.04	863.98	855.70	847.56
3	875.96	864.99	830.08	829.35	835.00	838.52	865.16	875.07	861.53	863.80	855.38	847.39
4	875.48	864.64	827.88	829.57	835.50	838.59	866.16	875.56	860.14	863.58	855.14	847.22
5	875.03	864.12	825.73	829.89	835.74	839.03	866.43	875.89	858.97	863.38	854.90	847.06
6	874.64	863.67	824.40	830.24	835.64	839.30	866.83	876.11	858.21	863.17	854.65	846.90
7	874.20	863.09	823.38	830.55	835.83	839.56	866.76	876.23	857.97	862.94	854.39	846.72
8	873.72	862.70	822.83	830.89	836.30	839.92	865.92	876.25	858.06	862.68	854.13	846.50
9	873.28	861.93	822.26	830.83	836.47	840.24	865.21	876.26	858.43	862.45	853.85	846.27
10	872.87	860.97	821.75	830.76	836.59	840.49	864.68	875.59	858.98	862.21	853.57	846.07
11	872.44	859.98	821.63	830.81	836.81	840.98	864.43	874.73	859.55	861.99	853.33	845.84
12	872.00	858.72	821.53	830.83	836.96	841.15	863.64	873.65	860.24	861.74	853.07	845.65
13	871.56	857.75	821.91	831.09	837.13	841.29	862.70	872.32	860.92	861.55	852.79	845.42
14	871.12	856.79	822.62	831.45	837.23	841.48	862.00	871.43	861.56	861.28	852.57	845.19
15	870.67	855.43	824.15	831.76	837.25	841.68	861.32	871.90	862.12	861.02	852.29	844.95
16	870.10	854.09	825.60	831.97	837.30	842.01	860.82	873.95	862.61	860.86	852.05	844.71
17	869.54	852.72	826.46	831.59	837.33	842.45	860.94	875.10	863.08	860.61	851.80	844.48
18	869.04	851.33	826.97	831.66	837.39	843.25	861.04	875.54	863.53	860.34	851.57	844.30
19	868.59	849.84	827.09	831.78	837.43	844.51	861.42	875.81	863.91	860.00	851.30	844.19
20	868.42	848.35	827.19	831.95	837.48	845.79	861.80	875.85	864.20	859.85	851.01	844.10
21	868.54	846.81	827.24	832.22	837.53	846.86	862.45	875.77	864.45	859.53	850.73	843.94
22	868.39	845.29	828.40	832.66	837.65	847.77	863.22	875.14	864.46	859.20	850.44	843.74
23	868.11	843.77	829.43	832.90	837.82	848.57	863.92	874.28	864.50	858.86	850.24	843.53
24	867.89	842.31	830.03	833.36	838.01	849.40	864.48	873.83	864.54	858.55	849.97	843.31
25	867.73	840.85	829.73	833.70	838.17	850.61	865.15	873.00	864.53	858.21	849.68	843.22
26	867.46	839.44	828.98	833.98	838.25	851.75	865.93	871.98	864.54	857.92	849.40	843.14
27	867.33	838.10	828.81	834.14	838.29	852.80	866.94	870.97	864.53	857.62	849.15	843.00
28	867.31	836.71	828.66	834.34	838.33	855.37	868.01	869.84	864.53	857.29	848.88	842.84
29	867.04	835.60	828.83	834.61	---	857.86	868.91	868.51	864.43	856.97	848.50	842.65
30	866.76	834.29	828.99	834.77	---	859.58	870.10	867.23	864.31	856.68	848.12	842.41
31	866.26	---	829.13	834.76	---	861.16	---	865.88	---	856.38	847.89	---
MAX	876.99	865.82	832.93	834.77	838.33	861.16	870.10	876.26	864.54	864.17	856.02	847.71
MIN	866.26	834.29	821.53	829.15	834.47	838.21	860.82	865.88	857.97	856.38	847.89	842.41
(†)	224000	139100	127600	140100	148500	208800	235900	222900	218200	195100	172200	158300
(+)	-35500	-84900	-11500	+12500	+8400	+60300	+27100	-13000	-4700	-23100	-22900	-13900

CAL YR 2000 MAX 927.17 MIN 821.53 AC-FT† +10000
WTR YR 2001 MAX 876.99 MIN 821.53 AC-FT† -101200

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

WILLAMETTE RIVER BASIN

14150000 MIDDLE FORK WILLAMETTE RIVER NEAR DEXTER, OR

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

DRAINAGE AREA.--1,001 mi².

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 sea level (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 ft³/s, 2,588,000 acre-ft/yr.
49 years (water years 1953-2001), 3,063 ft³/s, 2,219,000 acre-ft/yr, regulated.

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

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,810 ft³/s Dec. 4, gage height, 6.34 ft; minimum discharge, 865 ft³/s Dec. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2420	2620	3460	1640	1190	1410	1080	1110	4170	1320	1420	1470
2	2450	2480	2950	1600	1180	1500	1080	1110	4230	1330	1410	1480
3	2450	2490	3210	1340	1180	1100	1500	1560	4230	1320	1420	1480
4	2450	2490	3850	1280	1320	1090	1550	2170	4220	1320	1420	1480
5	2450	2490	3310	1290	1640	1070	1960	2120	3710	1330	1420	1480
6	2460	2510	2720	1310	1980	1060	2060	2150	3210	1340	1420	1480
7	2470	2730	1980	1340	1840	1050	2560	2150	2660	1340	1420	1480
8	2470	3000	1510	1350	1380	1050	3160	2700	1880	1340	1420	1490
9	2470	3350	1510	1460	1240	1060	3240	2810	1550	1340	1420	1510
10	2480	3580	1510	1470	1200	1060	2550	3620	1160	1330	1420	1500
11	2480	3530	1750	1300	1210	1060	2490	4190	1110	1330	1420	1500
12	2490	3570	1330	1290	1210	1060	3270	4390	1110	1330	1420	1500
13	2480	3580	1030	1050	1210	1060	3310	4500	1120	1340	1420	1500
14	2490	3820	1040	1100	1220	1070	2630	4500	1120	1350	1420	1500
15	2490	4280	1040	1100	1210	1080	2580	4180	1110	1350	1420	1490
16	2480	4310	1030	1100	1190	1080	2580	3450	1110	1230	1420	1490
17	2490	4320	1820	1460	1190	1080	2020	3400	1120	1220	1420	1530
18	2480	4310	1830	1040	1180	1080	1910	3400	1120	1360	1420	1510
19	2480	4310	1520	1020	1190	1080	1940	3360	1120	1370	1410	1540
20	2490	4310	1520	1050	1190	1070	1960	3340	1100	1370	1410	1550
21	2500	4320	1600	1110	1200	1080	1310	3350	1100	1370	1410	1550
22	2510	4320	1740	1100	1200	1080	1120	4180	1130	1370	1410	1550
23	2530	4310	2570	1100	1200	1080	1160	4170	1130	1360	1420	1520
24	2520	4290	2930	1100	1200	1070	1110	3460	1140	1360	1420	1510
25	2500	4300	3270	1100	1200	1070	1100	3490	1140	1370	1420	1510
26	2470	4300	3280	1090	1210	1070	1100	4160	1140	1380	1420	1510
27	2470	4290	2620	1100	1200	1080	1090	4150	1130	1380	1420	1520
28	2490	4060	2060	1090	1200	1730	1100	4110	1130	1380	1420	1520
29	2480	3770	1680	1100	---	1840	1090	4070	1270	1390	1490	1620
30	2490	3630	1630	1090	---	1290	1100	4070	1310	1460	1490	1610
31	2490	---	1620	1090	---	1080	---	4030	---	1420	1470	---
TOTAL	76870	109670	64920	37660	35760	35640	56710	103450	53780	41800	44160	45380
MEAN	2480	3656	2094	1215	1277	1150	1890	3337	1793	1348	1425	1513
MAX	2530	4320	3850	1640	1980	1840	3310	4500	4230	1460	1490	1620
MIN	2420	2480	1030	1020	1180	1050	1080	1110	1100	1220	1410	1470
AC-FT	152500	217500	128800	74700	70930	70690	112500	205200	106700	82910	87590	90010

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2001, BY WATER YEAR (WY)

	MEAN	2878	4519	5330	4986	2908	2358	2270	2881	2482	1696	1945	2472
MAX	5266	8779	12310	13510	7724	8084	4854	5464	5072	3145	2981	3932	
(WY)	1963	1985	1997	1965	1953	1957	1993	1996	1984	1999	1993	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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1953 - 2001
ANNUAL TOTAL	1027710	705800	
ANNUAL MEAN	2808	1934	3063
HIGHEST ANNUAL MEAN			4660
LOWEST ANNUAL MEAN			1392
HIGHEST DAILY MEAN	10300	Jan 19	4500
LOWEST DAILY MEAN	1030	Dec 13	1020
ANNUAL SEVEN-DAY MINIMUM	1250	Dec 10	1060
ANNUAL RUNOFF (AC-FT)	2038000		1400000
10 PERCENT EXCEEDS	4310		3620
50 PERCENT EXCEEDS	2470		1470
90 PERCENT EXCEEDS	1360		1090
			2219000
			6100
			2260
			1160

LOCATION.--Lat 43°54'50", 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 m upstream from Nelson Creek, 4.6 mi east of Lowell, and at mile 4.4.

PERIOD OF RECORD.--August 1963 to September 1981, October 2000 to September 2001.

GAGE.--Water-stage recorder. Datum of gage is 863.70 ft above sea level. Levels by U.S. Army Corps of Engineers (USACE).

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--19 years (water years 1964-1981, 2001), 115 ft³/s, 35.69 in/yr, 83,540 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,500 ft³/s Dec. 22, 1964, gage height, 8.07 ft; minimum discharge, 1.5 ft³/s Sept. 4, 5, 8-10, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 28	0030	*619	*3.50				
Minimum discharge, 2.8 ft ³ /s Sept. 22-25.							

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e5.0	10	e42	e48	e48	e58	248	211	25	16	9.2	3.7
2	e5.0	11	e35	e44	e51	e73	223	181	31	15	8.0	3.6
3	e5.0	13	e30	e40	e85	e72	212	149	51	14	7.5	3.5
4	e5.0	13	e26	e42	e154	e69	194	123	44	13	7.4	3.4
5	e5.0	17	23	e40	e160	e65	175	106	47	12	7.4	3.3
6	e5.0	17	20	e36	e138	e63	210	91	73	12	6.8	3.3
7	e5.0	16	19	e30	e119	e60	222	79	56	12	6.5	3.4
8	e4.0	105	17	e29	e99	60	188	71	45	11	6.3	3.4
9	e6.0	113	17	e30	e78	88	157	65	42	11	6.0	3.2
10	e10	59	17	e28	e69	103	139	59	38	10	5.7	3.1
11	e10	36	16	e25	e63	97	205	54	35	11	5.5	3.1
12	e7.0	26	23	e23	e56	87	204	49	54	11	5.4	3.1
13	6.1	21	75	e36	e54	87	172	45	45	9.7	5.2	3.1
14	7.5	18	145	e82	e54	82	145	50	39	9.2	5.1	3.2
15	7.0	e17	154	e77	e48	82	129	107	35	9.0	5.2	3.2
16	5.6	e14	145	e64	e40	94	128	219	32	9.8	5.1	3.2
17	5.1	e13	210	e53	e39	143	144	152	29	10	5.0	3.2
18	5.9	e12	133	e45	e38	197	149	116	26	9.1	5.0	3.1
19	6.8	e12	98	e54	e36	250	251	94	24	8.7	5.0	3.0
20	44	e11	78	e59	e39	236	219	78	22	8.7	4.8	3.0
21	62	e12	81	e63	e43	182	180	68	21	8.7	4.7	3.0
22	22	e12	142	e70	e54	143	153	60	20	8.1	5.0	2.9
23	13	e12	190	e64	e88	117	132	52	19	7.8	9.6	2.8
24	9.6	e26	204	e97	e97	103	119	46	19	7.5	8.1	2.8
25	8.0	e26	144	e119	e84	117	117	41	22	7.2	5.7	3.4
26	7.0	e38	108	e100	e74	118	116	37	21	7.0	5.0	8.5
27	7.7	e52	88	e81	e70	178	106	33	24	6.7	4.5	8.8
28	29	e56	75	e65	e62	525	109	31	20	6.7	4.1	5.2
29	25	52	66	e58	---	384	101	30	18	7.3	4.0	4.1
30	15	e51	e59	e62	---	265	139	27	17	17	3.9	3.8
31	12	---	e53	e58	---	231	---	25	---	13	3.8	---
TOTAL	370.3	891	2533	1722	2040	4429	4986	2549	994	319.2	180.5	110.4
MEAN	11.9	29.7	81.7	55.5	72.9	143	166	82.2	33.1	10.3	5.82	3.68
MAX	62	113	210	119	160	525	251	219	73	17	9.6	8.8
MIN	4.0	10	16	23	36	58	101	25	17	6.7	3.8	2.8
AC-FT	734	1770	5020	3420	4050	8780	9890	5060	1970	633	358	219
CFSM	.27	.68	1.86	1.27	1.66	3.25	3.79	1.87	.75	.23	.13	.08
IN.	.31	.76	2.15	1.46	1.73	3.75	4.23	2.16	.84	.27	.15	.09

MEAN	26.4	140	226	266	157	179	166	120	61.6	17.4	11.1	14.6
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	7.88	21.8	16.3	32.1	19.7	57.8	80.4	35.8	14.3	8.60	3.79	3.68
(WY)	1975	1977	1977	1977	1977	1978	1968	1966	1966	1973	1967	2008

WATER YEARS 1964 - 2001

ANNUAL TOTAL	21124.4				
ANNUAL MEAN	57.9			115	
HIGHEST ANNUAL MEAN				182	1972
LOWEST ANNUAL MEAN				57.9	2001
HIGHEST DAILY MEAN	525	Mar 28		3130	Dec 22 1964
LOWEST DAILY MEAN	2.8	Sep 23		2.0	Sep 9 1967
ANNUAL SEVEN-DAY MINIMUM	2.9	Sep 18		2.2	Aug 30 1967
ANNUAL RUNOFF (AC-FT)	41900			83540	
ANNUAL RUNOFF (CFSM)	1.32			2.63	
ANNUAL RUNOFF (INCHES)	17.90			35.69	
10 PERCENT EXCEEDS	149			267	
50 PERCENT EXCEEDS	35			59	
90 PERCENT EXCEEDS	5.0			7.0	

e Estimated

WILLAMETTE RIVER BASIN

14150900 FALL CREEK LAKE NEAR LOWELL, OR

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

DRAINAGE AREA.--184 mi².

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

GAGE.--Water-stage recorder. Datum of gage is sea level. Levels by U.S. Army Corps of Engineers (USACE).

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

COOPERATION.--Capacity table furnished by USACE.

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 July 23-25, 28, elevation, 830.62 ft, but may have been greater during period of missing record; minimum contents, 9,550 acre-ft Nov. 19, elevation, 727.85.

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 (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	803.39	761.39	728.43	729.44	748.69	772.06	803.82	816.94	828.80	830.37	829.95	814.97
2	802.17	759.83	728.09	729.64	749.43	772.90	805.16	817.92	828.92	830.37	829.66	814.32
3	800.93	758.13	727.99	729.68	750.87	773.58	805.72	818.70	829.12	830.43	829.37	813.72
4	799.69	756.19	728.29	729.72	753.13	774.20	806.06	---	829.20	830.46	829.05	813.13
5	798.39	754.21	728.59	729.67	755.27	774.80	806.20	---	829.28	830.48	828.72	812.49
6	797.17	752.17	728.81	729.67	756.99	775.28	806.54	820.68	829.54	830.49	828.43	811.84
7	795.89	750.03	729.05	729.59	758.37	775.72	806.62	821.16	829.70	830.49	828.09	811.09
8	794.57	748.99	729.15	729.45	759.51	776.16	806.52	821.18	829.80	830.49	827.82	810.31
9	793.35	747.87	729.27	729.43	760.43	776.82	806.42	821.14	829.92	830.54	827.48	809.56
10	791.49	745.83	729.33	729.37	761.25	777.46	806.88	821.32	829.98	830.54	827.07	808.79
11	790.07	743.59	729.33	729.37	761.95	778.10	807.96	821.54	830.10	830.55	826.64	808.01
12	788.73	740.59	729.39	729.65	762.57	778.62	808.26	821.70	830.30	830.55	826.16	807.20
13	787.39	737.87	---	730.33	763.11	779.06	808.24	821.98	830.27	830.55	825.71	806.33
14	786.01	734.25	---	731.89	763.57	779.54	808.06	822.30	830.32	830.58	825.16	805.51
15	784.65	730.89	731.50	733.25	764.06	780.00	808.14	823.28	830.32	830.58	824.60	804.76
16	783.39	729.51	730.18	734.27	764.46	780.60	808.26	824.92	830.34	830.59	824.05	803.92
17	782.11	728.49	729.26	735.01	764.88	781.64	808.36	825.90	830.35	830.59	823.47	803.11
18	780.83	727.95	728.92	735.65	765.32	783.12	808.32	826.54	830.31	830.60	822.82	802.06
19	779.47	727.87	728.96	736.51	765.66	785.14	809.18	827.02	830.30	830.60	822.23	800.78
20	778.63	727.89	729.00	737.37	765.98	787.00	810.12	827.40	830.28	830.60	821.63	799.45
21	777.87	727.91	728.96	738.21	766.46	788.30	811.02	827.72	830.32	830.61	821.22	798.14
22	776.45	727.95	729.48	739.33	766.98	789.28	811.68	827.82	830.33	830.61	820.71	796.76
23	774.91	727.99	729.02	740.21	767.90	789.96	812.74	828.02	830.41	830.62	820.17	795.47
24	773.31	728.53	729.16	741.51	769.00	790.62	812.24	828.18	830.44	830.62	819.64	794.07
25	771.67	728.99	728.92	743.05	769.74	791.46	813.24	828.34	830.44	830.60	819.07	792.64
26	770.11	729.27	728.84	744.21	770.46	792.34	813.66	828.48	830.47	830.61	818.47	791.35
27	768.59	729.35	728.90	745.15	771.04	793.58	814.06	828.62	830.49	830.61	817.86	789.87
28	767.35	729.09	728.90	745.93	771.58	797.02	814.52	828.70	830.47	830.60	817.30	788.48
29	765.95	728.59	728.84	746.65	---	799.36	814.88	828.72	830.44	830.58	816.71	787.13
30	764.47	728.59	728.96	747.45	---	800.94	815.68	828.72	830.36	830.48	816.10	785.55
31	762.95	---	729.18	748.03	---	802.22	---	828.74	---	830.15	815.52	---
MAX	803.39	761.39	---	748.03	771.58	802.22	815.68	---	830.49	830.62	829.95	814.97
MIN	762.95	727.87	---	729.37	748.69	772.06	803.82	---	828.80	830.15	815.52	785.55
(†)	32120	9900	10180	21450	39380	74010	93820	115600	118500	118100	93570	53730
(‡)	-45150	-22220	+280	+11270	+17930	+34630	+19810	+21780	+2900	-400	-24530	-39840

CAL YR 2000 MAX --- MIN --- AC-FT† +410

WTR YR 2001 MAX --- MIN --- AC-FT‡ -23540

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

‡ Change in contents, in acre-feet.

WILLAMETTE RIVER BASIN

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

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

DRAINAGE AREA.--186 mi².

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 sea level (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.--No estimated daily discharges. Records good. Flow regulated since 1966 by Fall Creek Lake (station 14150900). No diversion upstream from station.

AVERAGE DISCHARGE.--66 years (water years 1936-2001), 577 ft³/s, 42.13 in/yr, 418,000 acre-ft/yr, adjusted for storage in Fall Creek Lake since January 1965.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,450 ft³/s Dec. 17, gage height, 4.62 ft; minimum discharge, 34 ft³/s Feb. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	891	691	268	125	43	38	39	79	67	69	246	470
2	886	688	260	149	34	38	48	79	67	38	255	465
3	883	725	156	171	36	38	459	79	67	38	300	463
4	876	805	52	171	38	38	558	79	98	38	297	463
5	870	814	45	171	38	38	651	79	166	38	295	463
6	864	821	45	171	37	38	696	79	106	38	296	517
7	860	838	45	171	37	38	934	79	67	37	296	566
8	855	831	45	171	37	38	993	79	67	37	296	561
9	902	881	45	170	37	39	810	79	67	38	295	559
10	1110	945	64	170	37	40	345	62	67	38	365	557
11	942	933	111	116	37	39	346	51	89	38	407	561
12	845	917	141	55	37	39	777	51	131	38	406	565
13	841	942	169	57	37	39	941	51	131	38	404	560
14	837	1110	603	58	37	39	767	51	130	37	473	557
15	817	961	1270	58	37	39	503	102	130	38	507	557
16	718	415	1280	58	37	40	472	105	130	37	503	555
17	713	289	1390	58	37	42	630	48	131	37	502	553
18	746	189	782	58	37	42	715	48	130	37	500	754
19	760	76	462	59	37	43	198	48	131	37	499	860
20	760	49	390	59	38	38	136	48	88	38	498	854
21	841	49	390	59	37	36	77	67	60	38	394	850
22	847	49	638	59	38	35	77	161	60	38	454	843
23	838	50	1170	59	39	35	77	112	61	37	485	839
24	831	51	1100	60	38	35	77	67	61	39	483	827
25	824	51	803	59	38	36	77	67	61	38	479	823
26	755	163	557	57	38	35	77	67	85	37	482	819
27	717	308	402	51	38	38	77	67	133	37	479	814
28	714	403	361	51	38	40	77	67	134	37	477	805
29	708	380	314	52	---	39	77	122	134	103	475	796
30	703	268	235	52	---	38	78	164	134	159	474	790
31	698	---	171	52	---	39	---	107	---	306	472	---
TOTAL	25452	15692	13764	2887	1049	1189	11789	2444	2983	1653	12794	19666
MEAN	821	523	444	93.1	37.5	38.4	393	78.8	99.4	53.3	413	656
MAX	1110	1110	1390	171	43	43	993	164	166	306	507	860
MIN	698	49	45	51	34	35	39	48	60	37	246	463
AC-FT	50480	31130	27300	5730	2080	2360	23380	4850	5920	3280	25380	39010
MEAN†	86.7	150	449	276	360	601	726	433	148	46.8	13.8	-14.0
CFSM†	0.46	0.80	2.41	1.49	1.94	3.23	3.90	2.33	0.80	0.25	.074	-.075
IN.†	0.54	0.90	2.78	1.71	2.02	3.73	4.35	2.68	0.89	0.29	.09	-.08
AC-FT†	5330	8910	27580	17000	20010	36990	43190	26630	8820	2880	850	-830

CAL YR 2000 TOTAL 190997 MEAN 522 MAX 3770 MIN 45 AC-FT 378800 MEAN† 523 CFSM† 2.81 IN.† 38.23 AC-FT† 379200
WTR YR 2001 TOTAL 111362 MEAN 305 MAX 1390 MIN 34 AC-FT 220900 MEAN† 273 CFSM† 1.46 IN.† 19.90 AC-FT† 197400

† Adjusted for change in contents, in Fall Creek Lake.

Note--Negative adjusted values indicate that evaporation and undetermined losses exceeded inflow for the month of September.

WILLAMETTE RIVER BASIN

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 mi².

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 sea level. 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.--Records good. Flowregulated 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). Continuous water-quality records for the period October 1953 to September 1987 have been collected at this location.

AVERAGE DISCHARGE.--10 years (water years 1906-11, 1914-16, 1953), 3,866 ft³/s, 2,801,000 acre-ft/yr.
48 years (water years 1954-2001), 4,146 ft³/s, 3,003,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 94,000 ft³/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 ft³/s; minimum discharge, 366 ft³/s Dec. 5, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,960 ft³/s Dec. 4, gage height, 5.16 ft; minimum discharge, 1,070 ft³/s Dec. 12, 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3290	3380	3940	1920	1400	1530	1620	1730	4500	1420	1620	1880
2	3320	3230	3430	1890	1390	1810	1610	1620	4600	1360	1590	1890
3	3330	3260	3530	1650	1470	1350	2350	1950	4620	1350	1650	1880
4	3310	3350	4050	1560	1770	1310	2570	2510	4600	1350	1660	1880
5	3320	3390	3540	1570	2030	1270	2970	2470	4170	1350	1660	1880
6	3320	3400	2940	1570	2340	1230	3260	2470	3640	1350	1650	1930
7	3330	3660	2110	1600	2200	1210	4150	2450	2970	1350	1650	1990
8	3330	3980	1580	1610	1690	1200	4810	3000	2100	1350	1650	2000
9	3380	4460	1580	1720	1520	1260	4750	3160	1740	1340	1650	2010
10	3590	4710	1590	1740	1450	1280	3490	3910	1330	1330	1700	2000
11	3490	4630	1880	1540	1450	1260	3580	4530	1260	1330	1760	2000
12	3360	4630	1570	1430	1430	1240	4660	4750	1370	1340	1760	2000
13	3340	4660	1480	1270	1420	1220	4900	4890	1350	1330	1760	2000
14	3350	5050	2190	1460	1410	1220	4020	4940	1320	1330	1810	2000
15	3340	5410	3060	1440	1390	1240	3570	5060	1310	1340	1850	2000
16	3220	4970	2930	1380	1360	1270	3490	4520	1300	1230	1850	1990
17	3230	4800	3820	1670	1350	1370	3020	4110	1300	1200	1850	2020
18	3250	4720	3120	1300	1350	1520	2950	3970	1290	1320	1850	2160
19	3280	4590	2340	1250	1340	1670	2650	3850	1290	1360	1850	2340
20	3360	4550	2170	1280	1330	1650	2610	3780	1240	1360	1840	2340
21	3510	4550	2210	1370	1350	1540	1880	3770	1170	1360	1760	2340
22	3440	4550	2860	1430	1360	1450	1590	e4800	1200	1360	1800	2340
23	3440	4560	4630	1380	1480	1400	1560	e4700	1200	1350	1860	2310
24	3410	4580	4960	1520	1480	1350	1470	e3800	1210	1350	1850	2290
25	3370	4580	4820	1550	1450	1380	1430	3830	1220	1350	1840	2300
26	3280	4700	4410	1460	1410	1360	1400	4500	1240	1350	1840	2300
27	3220	4880	3490	1400	1390	1410	1370	4540	1320	1350	1840	2310
28	3310	4740	2740	1360	1370	2440	1400	4490	1300	1350	1830	2300
29	3280	4410	2240	1370	---	2540	1400	4480	1420	1420	1890	2360
30	3270	4140	2070	1350	---	1860	1480	4520	1470	1560	1900	2360
31	3250	---	1980	1330	---	1580	---	4420	---	1660	1880	---
TOTAL	103520	130520	89260	46370	42380	45420	82010	117520	60050	42150	54950	63400
MEAN	3339	4351	2879	1496	1514	1465	2734	3791	2002	1360	1773	2113
MAX	3590	5410	4960	1920	2340	2540	4900	5060	4620	1660	1900	2360
MIN	3220	3230	1480	1250	1330	1200	1370	1620	1170	1200	1590	1880
AC-FT	205300	258900	177000	91970	84060	90090	162700	233100	119100	83600	109000	125800

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 - 2001, BY WATER YEAR (WY)

MEAN	3684	6149	7671	7018	4265	3654	3292	3646	2937	1973	2284	3149
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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1954 - 2001
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ANNUAL TOTAL	1351260		877550			
ANNUAL MEAN	3692		2404		4146	
HIGHEST ANNUAL MEAN					6722	1997
LOWEST ANNUAL MEAN					1877	
HIGHEST DAILY MEAN	15400	Jan 19	5410	Nov 15	38600	Dec 27 1964
LOWEST DAILY MEAN	1480	Dec 13	1170	Jun 21	536	Apr 30 1977
ANNUAL SEVEN-DAY MINIMUM	1590	Jul 1	1210	Jun 20	555	Apr 24 1977
ANNUAL RUNOFF (AC-FT)	2680000		1741000		3003000	
10 PERCENT EXCEEDS	5420		4530		8530	
50 PERCENT EXCEEDS	3280		1880		2970	
90 PERCENT EXCEEDS	1950		1330		1520	

e Estimated

WILLAMETTE RIVER BASIN

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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 September 2001.

INSTRUMENTATION.--Temperature probe and data logger.

REMARKS.--Records good.

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, 21.4°C Aug. 9; minimum, 4.0°C Jan. 28, Feb. 14.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	13.8	13.2	13.5	9.3	8.5	8.8	7.3	6.1	6.5
2	---	---	---	14.1	13.4	13.6	9.5	8.7	9.0	7.3	6.2	6.6
3	---	---	---	14.7	13.4	13.7	9.5	8.7	9.1	6.6	5.7	6.3
4	---	---	---	14.3	12.9	13.6	9.3	9.0	9.1	7.9	6.4	7.0
5	---	---	---	13.8	12.9	13.3	9.0	8.6	8.9	8.2	6.6	7.2
6	15.8	13.4	14.2	14.0	12.6	13.2	8.7	8.2	8.5	7.2	6.5	6.8
7	15.9	13.5	14.3	13.2	12.5	12.9	8.4	7.8	8.1	6.5	6.2	6.4
8	15.9	13.6	14.4	12.9	12.1	12.6	8.4	7.6	7.9	7.1	6.3	6.5
9	14.7	13.9	14.2	12.4	11.6	12.0	8.5	7.9	8.1	6.3	5.6	6.1
10	14.3	13.9	14.1	12.0	11.2	11.6	8.4	7.5	8.0	6.4	5.6	6.0
11	15.1	14.1	14.5	11.9	11.0	11.3	7.8	7.3	7.5	7.0	5.4	6.1
12	14.8	14.2	14.5	11.9	10.9	11.2	7.6	6.4	7.2	7.0	6.0	6.4
13	15.3	14.5	14.9	11.6	10.9	11.1	7.1	6.3	6.9	6.9	6.0	6.4
14	15.5	14.7	15.0	11.5	10.7	11.0	7.4	6.7	7.1	6.8	6.1	6.4
15	15.7	14.7	15.1	11.6	10.7	11.0	7.1	6.7	6.8	7.1	5.6	6.2
16	16.4	14.4	15.1	11.3	10.3	10.7	7.3	6.6	7.0	6.1	4.7	5.3
17	15.9	14.4	15.0	10.6	10.1	10.3	7.2	6.2	6.8	6.0	4.4	5.2
18	15.8	15.0	15.2	10.6	9.9	10.1	7.0	6.0	6.4	6.3	5.2	5.8
19	16.4	14.7	15.3	10.3	9.7	10.0	7.2	6.4	6.7	7.4	5.8	6.4
20	15.5	14.4	15.0	10.2	9.8	10.0	7.3	6.8	7.1	6.3	5.1	5.7
21	15.8	14.0	14.7	10.2	9.5	9.8	7.6	6.9	7.2	7.0	5.8	6.4
22	15.2	13.6	14.1	10.3	9.4	9.6	7.5	7.1	7.3	6.9	6.3	6.6
23	15.1	13.5	14.0	10.0	9.3	9.6	7.2	6.9	7.1	6.5	5.9	6.2
24	15.4	13.5	14.1	10.0	9.4	9.6	7.3	6.6	6.9	6.9	6.1	6.4
25	14.5	13.8	14.1	10.0	9.4	9.6	7.2	6.4	6.7	6.6	5.5	6.0
26	15.1	13.8	14.2	9.8	9.3	9.5	7.0	6.3	6.6	6.7	4.9	5.6
27	14.9	14.0	14.3	10.0	8.8	9.4	7.3	6.5	6.8	6.5	4.3	5.2
28	14.7	13.6	14.0	9.3	8.6	8.9	6.9	6.4	6.7	6.0	4.0	5.0
29	14.8	13.6	14.0	9.5	8.7	9.0	7.2	6.4	6.7	6.7	5.4	5.8
30	14.8	13.2	13.8	9.8	8.8	9.2	7.3	5.9	6.5	6.8	4.9	5.6
31	14.6	13.0	13.6	---	---	---	7.6	6.3	6.8	6.6	4.3	5.3
MONTH	---	---	---	14.7	8.6	11.0	9.5	5.9	7.4	8.2	4.0	6.1

WILLAMETTE RIVER BASIN

14152000 MIDDLE FORK WILLAMETTE RIVER AT JASPER, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	6.4	4.6	5.4	6.4	5.2	5.9	9.5	8.1	8.7	11.1	8.6	9.6
2	7.1	5.9	6.4	8.0	5.4	6.5	9.7	7.3	8.2	12.4	8.1	10.0
3	6.8	6.1	6.4	7.2	4.8	5.8	9.4	7.1	7.8	13.6	8.6	10.7
4	7.8	6.4	7.0	6.4	5.3	5.8	10.3	6.3	7.9	13.0	9.7	11.1
5	7.7	5.9	6.9	9.2	6.0	7.1	9.5	6.9	8.0	13.4	10.2	11.3
6	6.5	5.2	5.8	10.1	5.5	7.3	8.3	7.5	7.9	13.7	9.5	11.1
7	6.6	4.7	5.4	10.9	6.0	7.9	8.9	7.2	7.8	14.3	9.9	11.7
8	5.6	4.4	5.0	8.7	7.2	7.7	8.4	7.4	7.7	13.6	10.8	11.8
9	6.5	4.8	5.4	8.0	6.9	7.3	8.9	6.9	7.8	13.3	10.6	11.6
10	6.2	5.2	5.6	8.4	6.7	7.4	8.6	7.5	8.0	13.1	10.5	11.5
11	5.6	4.8	5.3	9.1	6.5	7.5	9.6	7.5	8.2	13.2	10.8	11.7
12	6.9	4.7	5.3	10.3	6.0	7.8	8.2	7.4	7.7	13.1	10.6	11.5
13	5.8	4.1	4.8	10.8	6.4	8.2	9.1	7.2	7.9	13.0	10.7	11.6
14	7.1	4.0	5.0	10.9	7.2	8.4	9.4	6.9	8.0	11.7	11.1	11.4
15	6.8	4.2	5.3	8.1	7.2	7.6	10.3	7.2	8.5	11.3	10.7	11.0
16	6.8	5.3	5.9	7.6	6.3	6.9	10.4	7.9	9.0	12.0	10.2	10.9
17	6.2	5.2	5.6	8.0	6.7	7.3	10.9	8.0	9.2	12.1	10.0	10.8
18	7.4	5.3	6.2	9.1	7.6	8.3	10.4	8.3	9.1	13.1	10.2	11.3
19	7.0	5.3	6.0	9.2	7.6	8.5	10.8	8.4	9.3	13.6	10.6	11.7
20	6.9	5.1	5.8	9.4	6.8	7.9	11.6	8.3	9.5	13.7	10.9	11.9
21	8.3	5.9	6.7	10.5	6.8	8.2	11.8	8.2	9.7	14.2	11.0	12.3
22	6.9	5.8	6.3	11.1	6.8	8.6	10.7	7.9	9.3	---	11.5	---
23	7.4	5.8	6.4	11.9	7.3	9.2	12.1	8.8	10.0	---	---	---
24	7.7	5.0	6.2	10.3	8.0	9.1	13.9	8.5	10.8	14.6	---	---
25	8.7	5.3	6.6	10.3	8.4	9.2	15.0	9.4	11.8	14.7	12.0	13.0
26	8.4	5.0	6.2	9.9	7.9	8.7	15.4	10.4	12.5	14.4	12.1	13.0
27	8.6	4.7	6.2	8.6	7.8	8.3	11.7	9.7	10.6	13.6	12.2	12.7
28	7.5	4.6	5.9	9.6	8.3	8.8	12.0	9.4	10.4	13.0	11.9	12.4
29	---	---	---	10.2	8.5	9.1	10.6	9.0	9.8	14.0	11.6	12.5
30	---	---	---	11.1	8.2	9.4	11.2	9.8	10.2	14.7	11.8	12.9
31	---	---	---	9.3	8.7	9.0	---	---	---	15.1	12.2	13.4
MONTH	8.7	4.0	5.9	11.9	4.8	7.9	15.4	6.3	9.0	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	13.1	12.2	12.7	19.6	14.0	16.3	20.5	15.3	17.4	18.7	14.9	16.4
2	13.3	12.1	12.5	19.8	13.9	16.4	21.0	15.7	17.9	19.1	15.4	16.7
3	13.8	12.2	12.8	19.6	14.4	16.6	19.2	15.8	17.1	18.9	14.7	16.3
4	14.0	12.2	12.8	20.0	14.7	17.0	18.6	16.0	17.0	18.9	14.9	16.4
5	13.2	12.5	12.8	19.4	14.8	16.6	20.7	15.4	17.5	17.2	15.1	15.9
6	15.4	12.3	13.4	19.8	14.2	16.5	20.9	15.6	17.8	18.4	14.5	15.9
7	16.5	12.7	14.1	19.7	14.3	16.6	20.5	16.2	17.8	18.3	14.3	15.8
8	17.3	13.0	14.7	20.3	14.2	16.9	20.9	15.8	17.9	18.6	14.4	16.0
9	15.0	13.5	14.0	20.6	14.6	17.2	21.4	16.4	18.4	18.6	14.6	16.2
10	15.9	12.7	14.1	18.2	15.4	16.6	20.4	16.5	18.0	18.5	14.9	16.2
11	14.1	13.1	13.6	19.7	15.2	16.9	20.4	15.7	17.6	18.5	14.8	16.3
12	16.4	12.3	14.0	20.7	15.4	17.5	20.0	16.0	17.7	18.5	15.3	16.5
13	18.2	11.7	14.5	20.5	15.0	17.3	20.4	16.0	17.7	18.8	15.5	16.7
14	18.0	12.5	14.9	20.2	14.9	17.2	19.2	16.2	17.3	18.7	15.6	16.8
15	17.6	12.9	14.8	17.7	15.0	16.2	19.6	15.8	17.1	18.7	16.2	17.0
16	18.2	12.5	15.0	18.3	15.3	16.5	18.7	15.8	16.8	19.0	16.0	17.0
17	17.6	12.6	14.7	18.5	15.1	16.5	19.6	15.5	17.1	18.8	15.4	16.7
18	18.4	12.4	15.1	20.0	15.5	17.3	19.0	16.1	17.1	17.9	15.0	16.2
19	19.1	12.8	15.6	20.4	15.4	17.4	19.9	15.3	17.1	17.6	14.4	15.6
20	19.7	13.4	16.2	18.0	15.7	16.6	19.9	15.4	17.1	17.8	14.5	15.7
21	20.0	14.0	16.6	20.4	15.5	17.4	19.2	15.6	17.2	17.6	14.5	15.7
22	19.0	14.2	16.2	20.6	15.3	17.5	17.7	16.8	17.2	17.9	14.6	15.8
23	17.2	14.1	15.5	21.0	15.5	17.8	19.2	16.0	17.2	17.9	14.8	15.9
24	15.8	14.0	14.7	21.1	15.8	17.9	20.0	15.7	17.4	17.3	14.8	15.8
25	17.5	13.2	15.1	20.8	15.5	17.7	19.5	15.6	17.0	16.0	15.2	15.5
26	15.8	14.3	15.0	20.7	15.3	17.6	19.0	14.6	16.3	15.9	14.9	15.4
27	18.6	14.3	16.0	20.6	15.3	17.6	19.1	14.7	16.4	16.1	14.6	15.1
28	16.8	14.5	15.4	19.5	16.0	17.3	19.2	14.8	16.5	17.1	14.1	15.2
29	17.4	13.9	15.4	17.0	15.4	16.3	18.6	15.1	16.4	17.3	14.2	15.3
30	17.7	13.8	15.5	17.8	15.7	16.6	19.0	14.8	16.4	17.4	14.2	15.4
31	---	---	---	19.9	15.7	17.2	19.0	15.0	16.5	---	---	---
MONTH	20.0	11.7	14.6	21.1	13.9	17.0	21.4	14.6	17.2	19.1	14.1	16.0

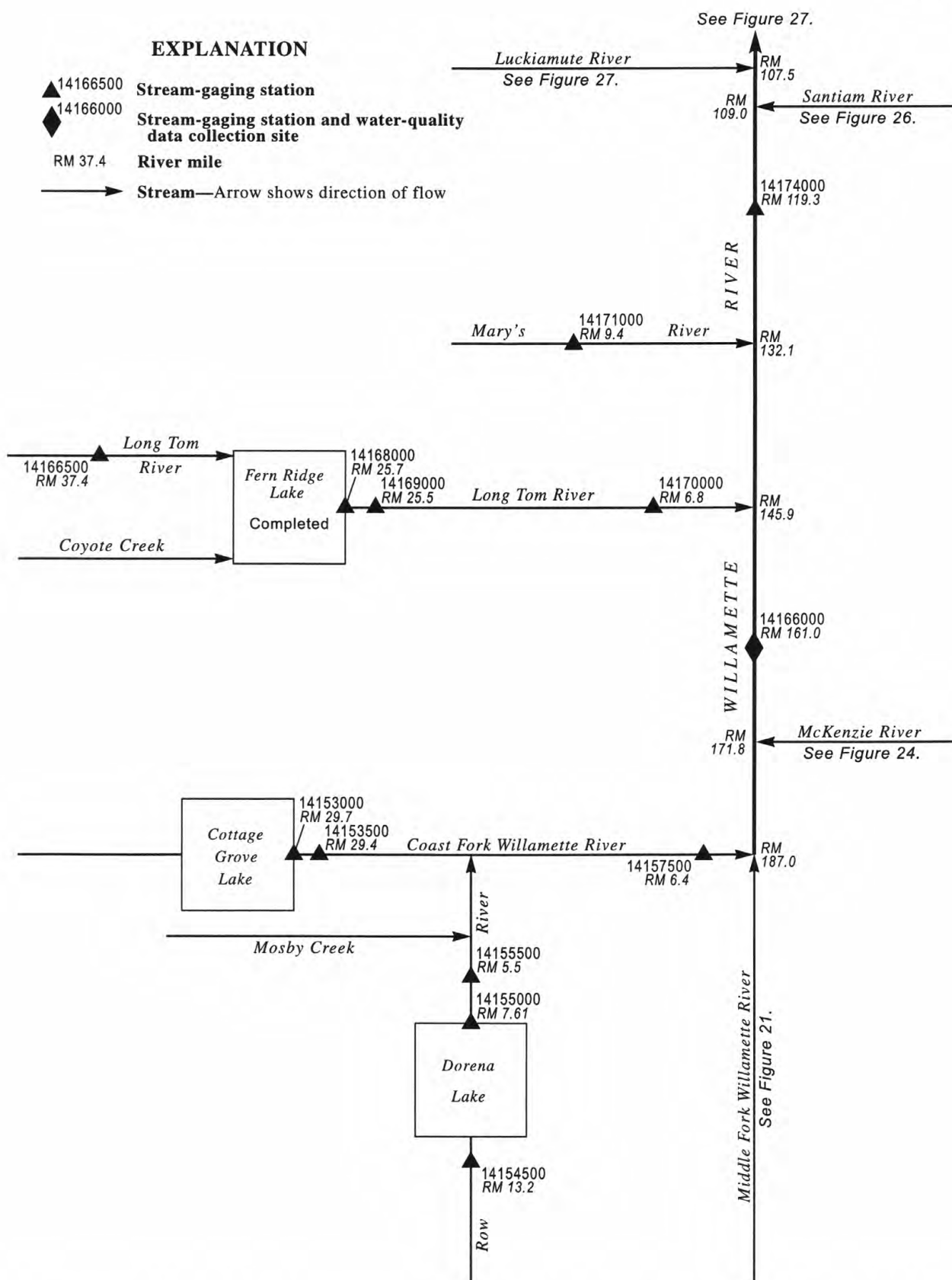


Figure 23. Schematic diagram showing gaging stations in the Long Tom, Coast Fork Willamette and upper Willamette River Basins.

WILLAMETTE RIVER BASIN

14153000 COTTAGE GROVE LAKE NEAR COTTAGE GROVE, OR

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

DRAINAGE AREA.--104 mi².

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

REVISED RECORDS.--WSP 1218: 1950.

GAGE.--Water-stage recorder. Datum of gage is sea level (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, 25,580 acre-ft May 24-26, elevation, 784.23 ft; minimum contents, 2,280 acre-ft Nov. 26, 27, elevation, 746.83 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

CORRECTION.--The total change in contents in acre-feet for the 2000 water year is +340 acre-feet. This figure supercedes the one published in the Water Resources Data, Oregon, for water year 2000.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	775.68	749.31	748.53	750.93	758.43	762.66	770.45	781.55	784.03	782.36	779.94	777.00
2	775.12	749.07	748.64	750.87	758.66	762.96	770.81	781.83	784.00	782.30	779.85	776.89
3	774.54	748.99	748.65	750.78	759.01	763.19	771.24	782.03	783.99	782.23	779.76	776.77
4	773.96	748.89	748.61	750.73	759.60	763.40	771.66	782.19	783.97	782.17	779.67	776.65
5	773.37	748.80	748.51	750.74	760.07	763.56	772.05	782.31	783.99	782.09	779.58	776.53
6	772.78	748.70	748.39	750.74	760.42	763.69	772.55	782.40	783.98	782.02	779.49	776.41
7	772.19	748.58	748.25	750.75	760.66	763.78	773.12	782.47	783.95	781.95	779.40	776.29
8	771.59	748.77	748.10	750.85	760.80	763.88	773.65	782.51	783.90	781.88	779.30	776.16
9	771.05	749.09	747.93	750.98	760.82	764.08	774.14	782.55	783.86	781.80	779.21	776.05
10	770.37	748.95	747.76	751.17	760.81	764.33	774.60	782.57	783.81	781.73	779.12	775.93
11	769.65	748.82	747.61	751.26	760.83	764.53	775.21	782.58	783.77	781.65	779.02	775.81
12	768.93	748.81	747.47	751.43	760.88	764.66	775.78	782.55	783.76	781.57	778.92	775.69
13	768.21	748.77	748.88	751.67	761.03	764.80	776.24	782.23	783.71	781.49	778.82	775.58
14	767.47	748.72	750.90	752.17	761.14	764.89	776.60	782.04	783.66	781.41	778.72	775.46
15	766.71	748.63	750.74	752.74	761.24	764.98	776.91	782.32	783.59	781.32	778.62	775.34
16	765.95	748.48	749.60	753.15	761.33	765.08	777.18	783.17	783.53	781.24	778.53	775.22
17	765.16	748.31	749.26	753.45	761.43	765.23	777.47	783.56	783.46	781.16	778.43	775.10
18	764.38	748.13	749.57	753.71	761.54	765.40	777.80	783.80	783.38	781.08	778.32	774.63
19	763.56	747.94	749.78	753.95	761.62	765.71	778.54	783.96	783.30	781.00	778.22	773.93
20	763.03	747.76	749.85	754.16	761.69	766.06	779.09	784.06	783.20	780.92	778.12	773.22
21	762.28	747.57	750.28	754.46	761.80	766.34	779.48	784.13	783.10	780.84	778.02	772.51
22	761.29	747.30	752.96	754.78	761.91	766.54	779.78	784.19	783.01	780.75	777.95	771.77
23	760.25	747.08	752.73	755.07	762.07	766.70	780.01	784.22	782.92	780.67	777.91	771.04
24	759.16	746.98	751.98	755.64	762.24	766.84	780.20	784.23	782.84	780.57	777.83	770.30
25	758.04	746.88	751.16	756.17	762.36	767.10	780.36	784.23	782.76	780.48	777.73	769.59
26	756.86	746.83	750.92	756.59	762.46	767.33	780.49	784.21	782.70	780.38	777.63	768.87
27	755.66	746.97	750.90	756.91	762.53	767.65	780.60	784.20	782.65	780.28	777.54	768.14
28	754.77	747.18	751.04	757.16	762.57	768.38	780.81	784.17	782.58	780.19	777.44	767.38
29	753.64	747.69	751.02	757.51	---	769.29	780.96	784.14	782.50	780.13	777.34	766.59
30	752.37	748.27	751.00	757.87	---	769.77	781.20	784.10	782.41	780.09	777.24	765.79
31	750.86	---	750.97	758.19	---	770.15	---	784.06	---	780.02	777.13	---
MAX	775.68	749.31	752.96	758.19	762.57	770.15	781.20	784.23	784.03	782.36	779.94	777.00
MIN	750.86	746.83	747.47	750.73	758.43	762.66	770.45	781.55	782.41	780.02	777.13	765.79
(†)	3400	2650	3430	6250	8550	13360	22600	25410	23770	21480	18880	10460
(‡)	-14700	-750	+780	+2820	+2300	+4810	+9240	+2810	-1640	-2290	-2600	-8420

CAL YR 2000 MAX --- MIN --- AC-FT† +110
WTR YR 2001 MAX 784.23 MIN 746.83 AC-FT‡ -7640

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

WILLAMETTE RIVER BASIN

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14153500 COAST FORK WILLAMETTE RIVER BELOW COTTAGE GROVE DAM, OR

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

DRAINAGE AREA.--104 mi².

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

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

GAGE.--Water-stage recorder. Datum of gage is 711.00 ft above sea level (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. Several observations of water temperature were made during the year.

AVERAGE DISCHARGE.--62 years (water years 1940-2001), 265 ft³/s, 34.60 in/yr, 192,000 acre-ft/yr, adjusted for storage.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 753 ft³/s Dec. 23, gage height, 5.07 ft; minimum discharge, 28 ft³/s Nov. 12.

CORRECTION.--The figures given below in the 'Average Discharge' paragraph are correct and supercede those published in the 2000 water year Annual Data Report.

AVERAGE DISCHARGE.--61 years (water years 1940-2000), 268 ft³/s, 34.99 in/yr, 194,200 acre-ft/yr, adjusted for storage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	260	248	52	100	53	67	76	72	69	54	48	53
2	259	68	53	95	61	67	75	72	69	52	48	53
3	257	37	53	95	62	67	74	73	69	53	48	53
4	257	37	53	82	63	67	75	74	69	53	48	53
5	254	37	53	67	76	67	76	74	69	53	48	53
6	254	37	52	67	89	67	76	74	70	53	48	53
7	252	37	52	63	90	69	76	74	69	53	48	53
8	251	38	52	52	101	65	78	74	69	53	48	53
9	251	92	52	52	119	60	78	74	69	53	48	53
10	290	107	52	52	118	60	78	74	69	52	48	53
11	297	76	52	58	117	60	76	74	69	52	48	53
12	287	40	52	47	99	60	69	87	69	52	48	53
13	285	36	54	47	65	60	69	249	69	52	48	53
14	283	36	135	47	65	63	69	230	69	52	48	53
15	281	38	495	47	65	69	69	139	69	52	48	53
16	278	45	507	48	65	69	70	69	69	52	48	53
17	276	45	404	48	65	69	71	69	69	52	48	53
18	280	45	207	45	65	69	71	69	69	52	48	209
19	280	45	148	42	65	69	71	69	69	52	48	311
20	279	45	133	42	65	70	71	69	84	52	48	307
21	316	45	87	42	65	71	72	69	77	52	48	305
22	320	54	227	42	65	71	72	69	74	52	48	301
23	316	57	647	42	67	71	72	69	74	51	48	299
24	312	52	668	43	67	71	72	69	74	50	48	298
25	307	50	477	44	68	71	72	69	74	50	48	295
26	303	50	291	45	69	71	72	69	74	50	48	293
27	298	50	203	45	69	71	72	69	74	50	48	291
28	296	50	141	45	68	74	72	69	74	50	48	287
29	291	51	141	45	---	76	72	69	74	50	48	285
30	286	52	122	45	---	76	72	69	74	49	49	282
31	279	---	111	45	---	76	---	69	---	48	53	---
TOTAL	8735	1700	5826	1679	2106	2113	2188	2618	2139	1601	1494	4664
MEAN	282	56.7	188	54.2	75.2	68.2	72.9	84.5	71.3	51.6	48.2	155
MAX	320	248	668	100	119	76	78	249	84	54	53	311
MIN	251	36	52	42	53	60	69	69	69	48	48	53
AC-FT	17330	3370	11560	3330	4180	4190	4340	5190	4240	3180	2960	9250
MEAN†	42.8	44.0	201	100	117	146	228	130	43.7	14.5	5.85	13.9
CFSM†	0.41	0.42	1.93	0.96	1.12	1.41	2.19	1.25	0.42	0.14	0.06	0.13
IN.†	0.47	0.47	2.23	1.11	1.17	1.62	2.45	1.44	0.47	0.16	0.06	0.15
AC-FT†	2630	2620	12340	6150	6480	9000	13580	8000	2600	890	360	830

CAL YR 2000 TOTAL 82449 MEAN 225 MAX 3000 MIN 35 AC-FT 163500 MEAN† 226 CFSM† 2.17 IN.† 29.51 AC-FT† 163650
WTR YR 2001 TOTAL 36863 MEAN 101 MAX 668 MIN 36 AC-FT 73120 MEAN† 90.4 CFSM† 0.87 IN.† 11.81 AC-FT† 65480

† Adjusted for change in contents, in Cottage Grove Lake.

14154500 ROW RIVER ABOVE PITCHER CREEK, NEAR DORENA, OR

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

DRAINAGE AREA.--211 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 856.16 ft above sea level. 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.--66 years (water years 1936-2001), 595 ft³/s, 38.28 in/yr, 430,700 acre-ft/yr.

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

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16	0500	*3,040	*6.75				
Minimum discharge, 13 ft ³ /s Sept. 23-25.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	64	252	218	210	192	582	920	109	60	32	15
2	27	61	174	194	231	290	550	735	119	57	29	15
3	28	70	141	193	293	314	546	596	146	54	27	15
4	28	67	117	185	545	293	520	489	138	52	26	14
5	29	71	101	179	537	316	517	416	136	50	26	14
6	29	71	90	169	471	307	611	354	180	48	25	14
7	28	77	82	152	389	288	657	310	148	47	23	14
8	27	330	77	146	324	273	571	283	122	45	22	14
9	29	431	73	149	287	289	515	258	110	44	21	14
10	37	253	70	152	257	303	476	229	108	43	20	14
11	49	148	68	133	234	286	693	208	102	44	19	14
12	50	107	73	119	209	261	730	198	154	46	19	14
13	41	89	182	127	185	259	600	180	149	43	18	14
14	41	81	775	182	174	248	503	191	121	41	17	14
15	42	74	1180	217	164	234	464	1120	107	40	17	14
16	40	69	714	181	156	318	513	2350	97	39	17	16
17	38	65	1000	157	150	441	685	1160	90	39	17	15
18	38	63	552	143	150	824	746	712	85	38	16	15
19	42	62	403	180	142	997	975	515	80	37	16	14
20	80	62	334	220	138	932	944	408	76	36	16	14
21	311	64	406	214	178	659	781	340	72	36	16	14
22	133	63	1770	254	215	510	634	293	68	35	16	14
23	76	64	1590	227	275	438	536	251	67	33	21	14
24	60	103	1280	311	336	396	488	216	68	32	26	13
25	52	99	745	374	292	482	497	190	72	30	20	14
26	48	152	522	312	259	467	488	171	69	29	18	21
27	52	202	460	255	235	466	415	155	78	28	17	27
28	142	237	379	218	211	1940	400	143	70	27	16	23
29	184	243	328	217	---	1230	388	133	65	27	16	19
30	115	370	287	218	---	836	465	121	63	36	16	17
31	80	---	246	207	---	633	---	112	---	40	16	---
TOTAL	2001	3912	14471	6203	7247	15722	17490	13757	3069	1256	621	463
MEAN	64.5	130	467	200	259	507	583	444	102	40.5	20.0	15.4
MAX	311	431	1770	374	545	1940	975	2350	180	60	32	27
MIN	25	61	68	119	138	192	388	112	63	27	16	13
AC-FT	3970	7760	28700	12300	14370	31180	34690	27290	6090	2490	1230	918
CFSM	.31	.62	2.21	.95	1.23	2.40	2.76	2.10	.48	.19	.09	.07
IN.	.35	.69	2.55	1.09	1.28	2.77	3.08	2.43	.54	.22	.11	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2001, BY WATER YEAR (WY)

MEAN	158	762	1166	1170	1086	991	826	574	271	75.9	37.5	45.3
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 2001 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1936 - 2001
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ANNUAL TOTAL	181203		86212			
ANNUAL MEAN	495		236		595	
HIGHEST ANNUAL MEAN					1008	1974
LOWEST ANNUAL MEAN					233	1977
HIGHEST DAILY MEAN	7510	Jan 11	2350	May 16	23800	Dec 22 1964
LOWEST DAILY MEAN	24	Sep 27	13	Sep 24	11	Sep 24 1951
ANNUAL SEVEN-DAY MINIMUM	24	Sep 24	14	Sep 19	11	Oct 21 1987
ANNUAL RUNOFF (AC-FT)	359400		171000		430700	
ANNUAL RUNOFF (CFSM)	2.35		1.12		2.82	
ANNUAL RUNOFF (INCHES)	31.95		15.20		38.28	
10 PERCENT EXCEEDS	1200		560		1430	
50 PERCENT EXCEEDS	232		141		277	
90 PERCENT EXCEEDS	29		17		27	

WILLAMETTE RIVER BASIN

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14155000 DORENA LAKE NEAR COTTAGE GROVE, OR

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

DRAINAGE AREA.--265 mi².

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

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

GAGE.--Water-stage recorder. Datum of gage is sea level (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 recorded contents, 74,840 acre-ft May 17, elevation, 833.52 ft; minimum contents, 6,110 acre-ft Nov. 24, elevation, 768.53 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 (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	809.81	769.74	771.91	771.59	784.51	792.52	816.55	827.76	832.62	832.13	829.83	826.19
2	808.89	769.32	771.02	771.53	784.90	792.99	816.95	827.98	832.66	832.08	829.75	825.95
3	808.07	769.23	770.48	771.50	785.57	793.49	817.45	828.15	832.66	832.03	829.66	825.72
4	807.17	769.16	770.55	771.44	787.14	793.92	817.91	828.34	832.62	831.98	829.57	825.44
5	806.25	769.12	770.58	771.33	788.24	794.38	818.38	828.54	832.62	831.91	829.48	825.19
6	805.33	769.08	770.63	771.17	788.65	794.80	818.96	828.76	832.64	831.85	829.38	824.86
7	804.89	769.08	770.65	771.00	788.75	795.09	819.38	829.03	832.51	831.78	829.29	824.46
8	803.44	770.81	770.63	770.99	788.73	795.51	819.38	829.31	832.48	831.71	829.18	823.93
9	802.53	770.97	770.58	771.02	788.73	796.07	819.69	829.56	832.47	831.59	829.10	823.65
10	801.45	770.34	770.51	771.02	788.74	796.64	820.04	829.77	832.42	831.57	829.00	823.25
11	800.31	769.99	770.40	771.12	788.75	797.12	820.77	829.96	832.45	831.41	828.90	822.84
12	799.16	769.87	770.36	771.37	788.80	797.49	821.51	830.12	832.49	831.44	828.80	822.43
13	797.99	769.89	771.43	771.73	788.99	797.84	821.75	830.26	832.48	831.36	828.70	822.02
14	796.79	769.90	773.22	772.54	789.15	798.14	822.04	830.50	832.43	831.27	828.59	821.62
15	795.56	769.83	773.14	773.46	789.28	798.43	822.34	831.89	832.40	831.19	828.49	821.21
16	794.32	769.73	771.72	774.10	789.37	798.90	822.71	833.50	832.39	831.11	828.34	820.80
17	793.05	769.59	770.51	774.56	789.46	799.76	822.99	833.24	832.34	831.04	828.25	820.38
18	791.81	769.42	770.41	774.93	789.54	801.47	823.23	832.70	832.37	830.96	828.15	819.68
19	790.49	769.23	770.58	775.44	789.59	803.50	823.75	832.56	832.36	830.87	828.04	818.80
20	789.55	769.05	770.70	776.09	789.59	805.26	824.19	832.54	832.35	830.80	827.93	817.92
21	788.74	768.87	771.66	776.70	789.79	806.40	824.53	832.47	832.32	830.72	827.83	817.03
22	787.36	768.67	776.45	777.42	790.05	807.22	824.87	832.46	832.29	830.64	827.74	816.13
23	785.78	768.54	777.69	778.04	790.49	807.86	825.13	832.46	832.26	830.54	827.61	815.24
24	784.12	768.72	777.29	779.11	791.08	808.43	825.39	832.44	832.24	830.46	827.48	814.34
25	782.35	768.94	774.84	780.35	791.52	809.19	825.78	832.43	832.22	830.36	827.50	813.47
26	780.54	769.48	772.95	781.27	791.87	809.87	826.13	832.45	832.23	830.26	827.40	812.59
27	778.69	770.31	772.07	781.99	792.13	810.73	826.40	832.50	832.23	830.17	827.29	811.71
28	777.29	771.24	771.45	782.54	792.33	813.99	826.66	832.57	832.22	830.08	827.11	810.80
29	775.80	772.04	771.51	783.11	---	815.97	826.91	832.61	832.20	830.02	826.88	809.87
30	774.04	772.42	771.60	783.65	---	816.71	827.31	832.62	832.17	829.97	826.65	808.93
31	771.90	---	771.63	784.13	---	816.40	---	832.53	---	829.91	826.30	---
MAX	809.81	772.42	777.69	784.13	792.33	816.71	827.31	833.50	832.66	832.13	829.83	826.19
MIN	771.90	768.54	770.36	770.99	784.51	792.52	816.55	827.76	832.17	829.91	826.30	808.93
(†)	7830	8110	7690	15240	21480	47470	63840	73020	72360	68310	62170	38120
(‡)	-32410	+280	-420	+7550	+6240	+25990	+16370	+9180	-660	-4050	-6140	-24050

CAL YR 2000 MAX --- MIN --- AC-FT† +560

WTR YR 2001 MAX 833.50 MIN 768.54 AC-FT† -2120

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

‡ Change in contents, in acre-feet.

WILLAMETTE RIVER BASIN

14155500 ROW RIVER NEAR COTTAGE GROVE, OR

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

DRAINAGE AREA.--270 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 685.24 ft above sea level (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.--62 years (water years 1940-2001), 743 ft³/s, 37.37 in/yr, 538,300 acre-ft/yr, adjusted for storage.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,760 ft³/s Dec. 17, gage height, 4.85 ft; minimum recorded discharge, 93 ft³/s May 7, 8.

CORRECTIONS.--The figures given below in the 'Average Discharge' paragraph are correct and supercede those published in the 2000 water year Annual Data Report.

AVERAGE DISCHARGE.--61 years (water years 1940-2000), 750 ft³/s, 37.72 in/yr, 543,400 acre-ft/yr, adjusted for storage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	574	537	431	297	138	189	699	735	132	96	96	208
2	570	182	425	272	179	189	502	733	133	96	96	208
3	567	104	319	258	188	189	430	611	190	96	96	208
4	562	99	143	258	197	192	413	470	217	96	96	208
5	559	99	129	258	313	193	391	360	217	97	96	208
6	556	98	107	258	476	193	466	265	217	97	96	281
7	551	98	101	241	488	196	618	164	217	97	96	347
8	548	101	101	201	458	197	729	100	217	97	98	347
9	544	514	101	200	395	187	602	98	217	97	98	346
10	610	477	101	200	353	181	451	98	184	98	98	344
11	662	286	101	163	333	181	462	98	114	97	98	342
12	635	174	101	108	280	182	455	98	167	97	98	342
13	629	120	106	110	185	184	634	98	193	98	98	342
14	622	101	574	112	185	185	482	100	191	98	98	342
15	615	101	1490	113	185	185	411	102	163	98	98	342
16	609	101	1330	113	185	185	411	985	124	98	98	342
17	602	101	1540	114	185	187	636	1570	112	98	98	341
18	608	101	815	116	185	189	763	1370	96	98	98	525
19	607	101	514	116	185	192	802	757	96	98	98	644
20	603	101	427	119	185	196	810	523	96	97	98	642
21	709	101	307	119	185	197	674	474	96	97	98	638
22	725	101	707	119	185	191	575	366	96	97	98	633
23	712	101	1490	121	185	188	496	306	96	97	98	632
24	700	101	1720	126	189	189	418	294	96	97	98	624
25	687	102	1680	126	189	189	309	238	96	97	98	623
26	671	101	1200	127	189	189	315	186	96	97	98	620
27	657	102	788	107	189	193	319	141	96	97	98	615
28	645	104	632	107	189	198	319	96	96	97	163	612
29	631	130	410	107	---	201	296	120	96	98	208	607
30	616	356	354	107	---	542	285	133	96	96	208	604
31	598	---	314	107	---	1060	---	133	---	96	208	---
TOTAL	19184	4895	18558	4900	6778	7109	15173	11822	4253	3010	3419	13117
MEAN	619	163	599	158	242	229	506	381	142	97.1	110	437
MAX	725	537	1720	297	488	1060	810	1570	217	98	208	644
MIN	544	98	101	107	138	181	285	96	96	96	96	208
AC-FT	38050	9710	36810	9720	13440	14100	30100	23450	8440	5970	6780	26020
MEAN†	91.7	168	592	281	354	652	781	531	131	31.2	10.4	33.1
CFSM†	0.34	0.06	2.19	1.04	1.31	2.42	2.89	1.97	0.48	0.12	0.04	0.12
IN.†	0.39	0.69	2.52	1.20	1.37	2.78	3.23	2.27	0.54	0.13	0.04	0.14
AC-FT†	5640	9990	36390	17270	19680	40090	46470	32630	7780	1920	640	1970

CAL YR 2000 TOTAL 231586 MEAN 633 MAX 5010 MIN 91 AC-FT 459400 MEAN† 635 CFSM† 2.35 IN.† 31.94 AC-FT† 459900
WTR YR 2001 TOTAL 112218 MEAN 307 MAX 1720 MIN 96 AC-FT 222600 MEAN† 304 CFSM† 1.13 IN.† 15.31 AC-FT† 220500

† Adjusted for change in contents, in Dorena Lake.

WILLAMETTE RIVER BASIN

183

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 mi².

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 sea level. Aug. 23, 1905 to Feb. 7, 1912, nonrecording gage at site 600 ft upstream at different datum.

REMARKS.--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.--57 years (water years 1906-11, 1951-2001), 1,587 ft³/s, 1,150,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,500 ft³/s Nov. 22, 1909, gage height, 19.5 ft, site and datum then in use, from rating curve extended above 15,000 ft³/s; minimum discharge, 36 ft³/s Sept. 29, 30, Oct. 11, 12, 1908.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,840 ft³/s Dec. 24, gage height, 6.22 ft; minimum discharge, 137 ft³/s Aug. 15-22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	892	930	618	614	389	425	1390	1130	241	182	e142	225
2	888	562	583	547	468	552	1080	1310	244	176	e142	227
3	882	232	510	505	538	600	1040	1100	270	171	e142	226
4	876	226	301	491	913	577	997	938	330	166	e142	225
5	870	216	227	452	862	562	925	737	343	161	e140	226
6	865	210	219	437	1030	518	982	595	366	157	e140	237
7	862	205	203	429	1000	490	1270	452	341	154	e140	352
8	857	201	190	365	934	465	1450	328	324	152	e140	359
9	878	538	182	353	880	486	1330	299	317	150	e140	359
10	907	822	176	374	785	515	1120	289	311	150	e140	359
11	1060	507	173	376	762	498	1170	280	253	148	e138	357
12	1000	323	174	273	755	469	1150	273	251	147	e138	357
13	998	231	286	299	519	443	1210	373	278	147	e138	356
14	988	216	1300	335	469	420	1110	456	292	147	e138	355
15	977	198	2540	394	447	407	871	679	253	145	e138	364
16	964	183	2650	376	434	413	857	1530	238	145	137	357
17	953	171	2630	340	420	466	1030	2220	226	145	137	355
18	970	164	1950	319	433	551	1240	2030	220	145	137	494
19	971	159	1170	342	420	649	1550	1260	211	145	138	1010
20	1010	157	962	333	405	709	1550	959	202	145	138	1020
21	1150	155	738	369	442	640	1340	802	196	145	137	1020
22	1180	152	1830	412	471	567	1120	655	190	145	139	1010
23	1140	154	3490	384	589	506	988	541	186	145	157	1010
24	1110	164	3580	524	562	476	881	481	182	144	149	1000
25	1090	171	2950	635	528	534	665	430	180	142	147	1010
26	1070	177	2280	539	485	580	633	352	180	142	145	1010
27	1050	187	1530	446	455	609	608	306	182	142	141	998
28	1100	226	1280	388	434	1140	641	246	186	142	143	994
29	1110	239	922	398	---	1030	656	229	186	142	215	986
30	1050	479	804	458	---	965	602	250	185	143	220	979
31	995	---	666	420	---	1610	---	245	---	e142	222	---
TOTAL	30713	8555	37114	12927	16829	18872	31456	21775	7364	4652	4600	17837
MEAN	991	285	1197	417	601	609	1049	702	245	150	148	595
MAX	1180	930	3580	635	1030	1610	1550	2220	366	182	222	1020
MIN	857	152	173	273	389	407	602	229	180	142	137	225
AC-FT	60920	16970	73620	25640	33380	37430	62390	43190	14610	9230	9120	35380

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 2001, BY WATER YEAR (WY)

	MEAN	788	1975	3326	3579	2799	2224	1565	1075	585	253	361	546
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 2001 CALENDAR YEAR FOR 2001 WATER YEAR WATER YEARS 1906 - 2001

	ANNUAL TOTAL	483499	212694	1587	
ANNUAL MEAN	1321	583			
HIGHEST ANNUAL MEAN				2701	1956
LOWEST ANNUAL MEAN				512	1977
HIGHEST DAILY MEAN	10600	Jan 14	3580	Dec 24	36500
LOWEST DAILY MEAN	140	Jul 30	137	Aug 16	36
ANNUAL SEVEN-DAY MINIMUM	140	Jul 30	137	Aug 15	42
ANNUAL RUNOFF (AC-FT)	959000		421900		1150000
10 PERCENT EXCEEDS	2830		1120		4160
50 PERCENT EXCEEDS	842		429		744
90 PERCENT EXCEEDS	150		145		172

e Estimated

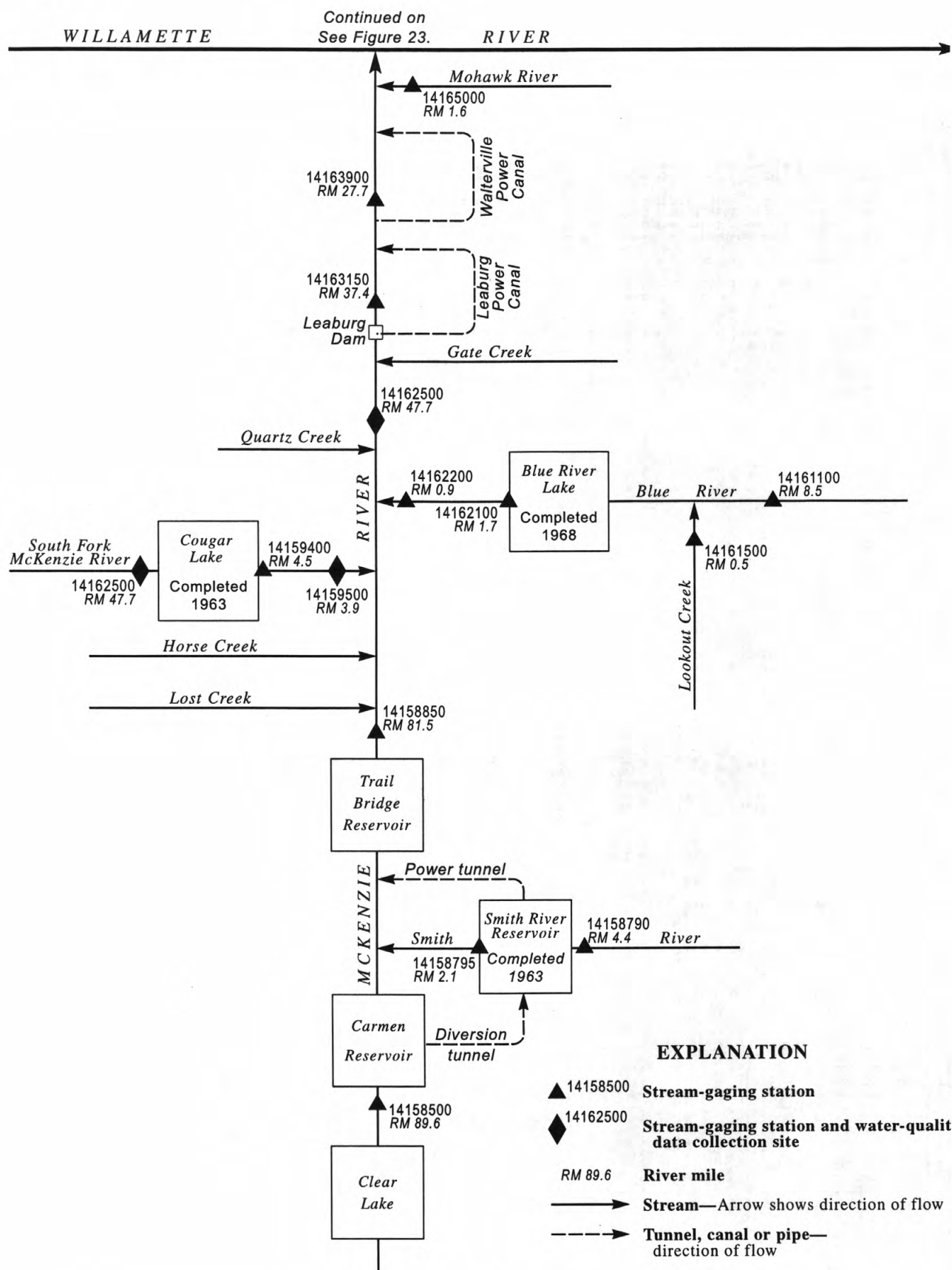


Figure 24. Schematic diagram showing gaging stations and diversions in the McKenzie River Basin.

WILLAMETTE RIVER BASIN

185

14158500 MCKENZIE RIVER AT OUTLET OF CLEAR LAKE, OR

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

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

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

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

GAGE.--Water-stage recorder. Datum of gage is 3,015.32 ft above sea level (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.--57 years (water years 1913-15, 1948-2001), 458 ft³/s, 67.34 in/yr, 331,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,300 ft³/s Dec. 23, 1964, gage height, 8.15 ft; minimum discharge, 116 ft³/s Oct. 27, 28, 1992.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 544 ft³/s Apr. 2, gage height, 2.77 ft; minimum discharge, 139 ft³/s Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	253	237	232	274	243	228	486	384	357	223	176	154
2	249	238	234	274	243	232	540	383	351	220	175	153
3	248	236	235	273	243	227	528	389	346	218	175	153
4	246	235	237	272	243	225	508	394	335	216	174	152
5	245	234	237	274	246	224	493	401	329	214	173	152
6	244	235	238	275	250	223	488	416	322	211	172	151
7	243	234	238	279	257	223	476	426	314	209	171	150
8	242	240	239	282	263	225	467	431	308	206	170	150
9	242	239	240	284	266	230	447	433	303	204	169	149
10	242	238	239	283	266	231	429	430	296	202	169	148
11	241	240	238	282	265	234	423	420	291	204	168	148
12	238	240	237	280	264	235	409	408	287	203	167	148
13	238	239	239	281	261	237	400	399	279	199	166	147
14	237	238	242	278	258	239	393	403	275	197	166	147
15	235	236	245	273	256	242	387	424	272	196	165	147
16	235	234	236	269	253	246	381	451	269	194	164	146
17	234	232	238	265	250	249	379	488	265	192	163	145
18	234	230	234	262	247	254	372	470	262	191	163	145
19	233	227	235	261	244	264	367	457	258	190	162	144
20	238	225	236	257	241	273	363	450	255	188	161	144
21	240	224	239	256	242	290	358	441	251	187	160	143
22	238	222	250	255	239	303	353	432	247	186	161	143
23	240	223	254	253	236	314	350	424	243	185	162	142
24	241	222	259	254	234	324	347	414	242	184	160	141
25	242	221	264	254	233	346	345	404	239	183	158	144
26	241	223	269	253	231	352	344	396	236	182	158	143
27	239	227	272	252	229	368	345	390	235	180	157	142
28	242	224	272	250	227	396	353	384	230	180	157	141
29	239	229	273	252	---	400	358	378	227	179	156	140
30	238	233	274	248	---	407	379	371	225	179	155	140
31	237	---	274	245	---	428	---	364	---	177	155	---
TOTAL	7454	6955	7649	8250	6930	8669	12268	12855	8349	6079	5108	4392
MEAN	240	232	247	266	248	280	409	415	278	196	165	146
MAX	253	240	274	284	266	428	540	488	357	223	176	154
MIN	233	221	232	245	227	223	344	364	225	177	155	140
AC-FT	14790	13800	15170	16360	13750	17190	24330	25500	16560	12060	10130	8710
CFSM	2.60	2.51	2.67	2.88	2.68	3.03	4.43	4.49	3.01	2.12	1.78	1.58
IN.	3.00	2.80	3.08	3.32	2.79	3.49	4.94	5.18	3.36	2.45	2.06	1.77

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1913 - 2001, BY WATER YEAR (WY)

	MEAN	250	374	540	521	532	509	591	679	562	388	301	253
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1913 - 2001

ANNUAL TOTAL	164815	94958	
ANNUAL MEAN	450	260	458
HIGHEST ANNUAL MEAN			688
LOWEST ANNUAL MEAN			241
HIGHEST DAILY MEAN	1000	540	3100
LOWEST DAILY MEAN	221	140	116
ANNUAL SEVEN-DAY MINIMUM	223	142	117
ANNUAL RUNOFF (AC-FT)	326900	188300	331800
ANNUAL RUNOFF (CFSM)	4.87	2.82	4.96
ANNUAL RUNOFF (INCHES)	66.35	38.23	67.34
10 PERCENT EXCEEDS	755	399	798
50 PERCENT EXCEEDS	434	240	395
90 PERCENT EXCEEDS	237	158	210

WILLAMETTE RIVER BASIN

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

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

DRAINAGE AREA.--16.2 mi².

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

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

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

REMARKS.--No estimated daily discharges. Records fair. Eugene Water and Electric Board telemetry at station. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--41 years (water years 1961-2001), 89.6 ft³/s, 75.12 in/yr, 64,890 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,160 ft³/s Dec. 22, 1964, gage height, 11.9 ft, from floodmark, from rating curve extended above 560 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 1.2 ft³/s Oct. 13, 1991, result of log jam.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 30	1530	*345	*7.30				
Minimum discharge, 3.5 ft ³ /s Sept. 22-25.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	8.0	36	61	30	28	189	211	22	10	4.8	3.9
2	5.4	10	32	60	36	30	146	152	23	9.8	4.6	3.9
3	4.7	9.1	30	63	41	28	117	121	28	9.3	4.6	3.9
4	4.5	9.7	27	67	64	27	97	103	25	8.9	4.6	3.9
5	4.3	9.3	25	80	89	27	85	92	28	8.4	4.5	3.9
6	4.2	12	24	77	73	30	79	80	33	8.0	4.4	3.9
7	4.2	11	22	68	63	34	69	75	26	7.7	4.5	3.8
8	4.1	26	20	63	57	42	63	73	23	7.3	4.5	3.8
9	4.5	20	20	61	51	43	57	69	22	7.1	4.4	3.8
10	5.5	16	18	56	47	42	56	63	21	6.8	4.3	3.7
11	6.0	13	17	51	43	40	58	60	23	7.3	4.3	3.7
12	4.9	12	16	47	39	39	54	59	32	7.0	4.1	3.7
13	4.9	11	19	45	36	40	49	54	26	6.6	4.1	3.7
14	5.3	10	29	41	34	42	47	87	23	6.3	4.1	3.7
15	4.8	9.9	36	37	33	43	47	246	21	6.1	4.0	3.8
16	4.6	9.4	34	34	31	41	53	254	19	5.9	4.0	3.8
17	4.5	8.9	44	32	28	43	80	171	18	5.9	4.0	3.7
18	6.0	8.7	35	31	27	68	84	127	17	5.8	3.9	3.7
19	5.3	8.6	33	41	26	146	82	99	15	5.7	4.0	3.7
20	22	8.5	33	38	25	125	79	82	14	5.4	4.0	3.6
21	27	8.4	47	48	32	102	74	69	13	5.3	4.0	3.6
22	12	8.1	76	58	32	97	70	61	12	5.2	4.3	3.6
23	8.8	13	96	53	31	105	68	55	12	5.1	5.9	3.5
24	7.6	19	83	49	29	121	71	48	14	4.9	4.4	3.5
25	7.1	16	64	45	28	162	87	43	13	4.9	4.1	5.2
26	6.8	18	56	41	27	135	106	38	13	4.9	4.0	5.8
27	6.7	35	55	38	26	147	102	34	15	4.8	4.0	4.7
28	11	27	58	36	26	236	99	31	12	4.9	3.9	4.0
29	12	35	61	35	---	213	88	28	12	5.2	3.9	3.8
30	9.9	44	61	32	---	166	226	25	11	5.8	3.9	3.8
31	8.6	---	62	30	---	183	---	23	---	5.1	3.9	---
TOTAL	234.6	454.6	1269	1518	1104	2625	2582	2733	586	201.4	132.0	117.1
MEAN	7.57	15.2	40.9	49.0	39.4	84.7	86.1	88.2	19.5	6.50	4.26	3.90
MAX	27	44	96	80	89	236	226	254	33	10	5.9	5.8
MIN	4.1	8.0	16	30	25	27	47	23	11	4.8	3.9	3.5
AC-FT	465	902	2520	3010	2190	5210	5120	5420	1160	399	262	232
CFSM	.47	1.94	2.53	3.02	2.43	5.23	5.31	5.44	1.21	.40	.26	.24
IN.	.54	1.04	2.91	3.49	2.54	6.03	5.93	6.28	1.35	.46	.30	.22

WILLAMETTE RIVER BASIN

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14158795 SMITH RIVER RESERVOIR NEAR BELKNAP SPRINGS, OR

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

DRAINAGE AREA.--18.2 mi².

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

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

GAGE.--Water-stage recorder. Datum of gage is sea level (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, 14,500 acre-ft May. 16, elevation, 2,602.37 ft; minimum contents, 11,730 acre-ft Dec. 5, elevation, 2,585.17 ft.

MONTHEND ELEVATION AND CONTENTS AT 2400, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	2,598.51	13,860	--
Oct. 31.....	2,598.84	13,910	+50
Nov. 30.....	2,587.02	12,020	-1890
Dec. 31.....	2,593.27	13,020	+1000
CAL YR 2000.....			+770
Jan. 31.....	2,593.65	13,080	+60
Feb. 28.....	2,593.64	13,080	0
Mar. 31.....	2,598.45	13,850	+770
Apr. 30.....	2,599.28	13,990	+140
May 31.....	2,599.21	13,970	-20
June 30.....	2,597.67	13,730	-240
July 31.....	2,598.48	13,860	+130
Aug. 31.....	2,597.79	13,750	-110
Sept. 30.....	2,598.34	13,830	+80
WTR YR 2001.....			-30

WILLAMETTE RIVER BASIN

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

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

DRAINAGE AREA.--184 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,980.00 ft above sea level (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-regulating reservoir upstream. Water is diverted from McKenzie River in SW 1/4 sec.20, T.14 S., R.7 E., to Smith River Reservoir and returned to river upstream from station. Continuous water-quality records for the period November 1976 to September 1985, July 1992 September 1993 have been collected at this location.

AVERAGE DISCHARGE.--42 years (water years 1960-2001), 1,016 ft³/s, 74.99 in/yr, 736,100 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,200 ft³/s Dec. 22, 1964, gage height, 12.45 ft, from rating curve extended above 3,700 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 185 ft³/s Feb. 3, 1963; minimum daily, 423 ft³/s Nov. 22, 1993.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,250 ft³/s May 16, Sept. 14, gage height, 7.12 ft; minimum discharge, 366 ft³/s Sept. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	719	754	738	794	716	683	1130	1170	816	614	560	525
2	710	763	724	784	716	703	1110	1050	818	613	554	524
3	708	761	709	770	728	697	1140	1000	818	611	547	525
4	705	761	708	786	792	688	1130	992	818	614	548	528
5	699	762	704	818	814	677	1090	943	815	614	548	527
6	704	761	694	829	782	672	1070	937	783	615	546	529
7	702	760	663	823	773	670	1040	962	778	614	522	529
8	706	800	658	785	773	669	1020	965	772	600	539	523
9	713	823	656	784	767	676	980	962	767	593	558	517
10	708	756	649	815	759	678	954	953	750	592	558	507
11	683	754	667	811	747	686	929	950	733	592	558	505
12	709	753	683	792	735	676	936	944	734	593	545	517
13	717	756	690	788	736	670	940	923	732	594	544	520
14	707	759	720	768	739	681	926	919	723	595	543	532
15	668	725	758	762	739	694	887	1060	723	591	543	574
16	689	699	734	742	718	693	886	1230	708	579	543	562
17	754	710	721	741	714	697	955	1170	682	580	540	583
18	681	712	763	722	703	739	953	1120	660	582	533	578
19	683	703	759	718	702	887	922	1070	656	570	536	585
20	703	666	715	737	701	865	851	1000	669	566	550	574
21	722	657	694	753	702	874	863	977	678	566	550	549
22	711	660	793	764	707	852	891	961	675	566	548	538
23	690	673	858	763	714	828	903	932	673	566	538	537
24	689	676	851	762	711	843	888	925	672	566	531	537
25	688	676	829	760	693	977	881	905	660	577	517	547
26	689	676	791	744	690	991	921	904	660	577	521	564
27	703	721	772	741	688	994	946	886	660	577	521	567
28	711	731	770	727	678	1150	943	853	659	576	530	568
29	715	717	774	717	---	1120	911	832	634	564	547	566
30	716	724	786	716	---	1080	1040	836	615	564	535	567
31	725	---	795	716	---	1090	---	832	---	565	524	---
TOTAL	21827	21849	22826	23732	20437	24900	29036	30163	21541	18186	16777	16304
MEAN	704	728	736	766	730	803	968	973	718	587	541	543
MAX	754	823	858	829	814	1150	1140	1230	818	615	560	585
MIN	668	657	649	716	678	669	851	832	615	564	517	505
AC-FT	43290	43340	45280	47070	40540	49390	57590	59830	42730	36070	33280	32340
MEAN†	705	697	753	766	730	816	970	973	714	589	539	545
CFSM†	3.83	3.79	4.09	4.16	3.97	4.43	5.27	5.29	3.88	3.20	2.93	2.96
IN.†	4.41	4.22	4.72	4.80	4.13	5.11	5.88	6.09	4.33	3.69	3.38	3.30
AC-FT†	43340	41450	46280	47130	40540	50160	57730	59810	42490	36200	33170	32420

CAL YR 2000 TOTAL 385147 MEAN 1052 MAX 1880 MIN 649 AC-FT 763900 MEAN† 1054 CFSM† 5.73 IN.† 77.92 AC-FT† 764700
WTR YR 2001 TOTAL 267578 MEAN 733 MAX 1230 MIN 505 AC-FT 530700 MEAN† 733 CFSM† 3.98 IN.† 54.08 AC-FT† 530700

† Adjusted for change in contents in Smith River Reservoir.

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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.

WATER-DISCHARGE RECORDS

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16	0400	*1,840	*7.08				
Minimum discharge, 172 ft ³ /s Sept. 20-25.							

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	206	219	321	399	296	300	1010	1490	341	253	204	182
2	206	224	308	387	329	351	883	1170	346	248	201	182
3	200	225	297	388	367	327	774	980	367	244	203	182
4	199	231	284	394	451	321	690	863	355	241	206	181
5	196	234	275	412	507	318	639	794	364	238	203	180
6	195	253	269	404	474	319	641	720	387	235	201	180
7	194	243	263	388	432	326	597	679	351	233	200	180
8	196	375	258	380	405	341	560	672	335	230	199	179
9	200	329	255	374	388	345	524	655	327	227	198	177
10	211	284	251	360	371	337	508	624	318	226	195	178
11	225	260	252	344	358	328	549	604	322	229	195	177
12	211	249	248	331	341	321	526	606	374	233	194	178
13	209	243	286	332	328	319	495	585	337	235	194	177
14	211	238	409	329	320	320	470	681	322	223	193	177
15	208	235	518	314	314	327	466	1330	310	219	192	180
16	205	231	e490	304	309	328	493	1640	301	219	192	180
17	204	228	e550	295	304	350	601	1200	293	217	191	177
18	206	226	400	295	300	456	633	942	286	215	190	176
19	206	225	363	325	295	676	644	795	279	215	190	176
20	274	224	355	320	293	675	644	699	272	212	190	175
21	390	224	418	338	303	593	624	631	267	211	189	175
22	275	222	649	360	310	551	602	581	263	209	195	175
23	244	239	696	351	319	558	585	539	259	208	213	174
24	230	296	622	350	316	589	582	502	269	206	199	173
25	226	272	512	340	306	758	643	468	281	204	194	182
26	224	292	448	328	299	700	727	439	293	203	190	191
27	222	347	427	318	293	786	743	416	292	201	187	188
28	257	319	433	310	288	1430	785	395	276	201	185	182
29	247	331	439	315	---	1260	700	381	265	205	185	179
30	233	351	428	302	---	1040	1120	361	258	218	184	177
31	225	---	414	296	---	976	---	346	---	209	183	---
TOTAL	6935	7869	12138	10683	9616	16626	19458	22788	9310	6867	6035	5370
MEAN	224	262	392	345	343	536	649	735	310	222	195	179
MAX	390	375	696	412	507	1430	1120	1640	387	253	213	191
MIN	194	219	248	295	288	300	466	346	258	201	183	173
AC-FT	13760	15610	24080	21190	19070	32980	38590	45200	18470	13620	11970	10650
CFSM	1.40	1.64	2.45	2.15	2.15	3.35	4.05	4.59	1.94	1.38	1.22	1.12
IN.	1.61											

MEAN	289	621	960	916	903	765	822	904	602	301	241	236
MAX	475	1305	2915	1827	1778	2065	1391	1383	1418	457	338	304
(WY)	1983	1985	1965	1971	1982	1962	1962	1972	1974	1975	1976	1978
MIN	188	261	231	234	232	410	445	426	270	221	195	179
(WY)	1981	1977	1977	1977	1977	1977	1968	1968	1987	1973	2001	2001

WATER YEARS 1958 - 2001

ANNUAL TOTAL	133695				
ANNUAL MEAN	366			629	
HIGHEST ANNUAL MEAN				917	1972
LOWEST ANNUAL MEAN				346	1977
HIGHEST DAILY MEAN	1640	May 16		14000	Dec 23 1964
LOWEST DAILY MEAN	173	Sep 24		173	Sep 24 2001
ANNUAL SEVEN-DAY MINIMUM	175	Sep 18		175	Sep 18 2001
ANNUAL RUNOFF (AC-FT)	265200			455500	
ANNUAL RUNOFF (CFSM)	2.29			3.93	
ANNUAL RUNOFF (INCHES)	31.08			53.39	
10 PERCENT EXCEEDS	646			1200	
50 PERCENT EXCEEDS	301			472	
90 PERCENT EXCEEDS	190			220	

e Estimated

WILLAMETTE RIVER BASIN

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 September 2001.

TURBIDITY: November 2000 to September 2001.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Water temperature records good, turbidity records fair. Turbidity values are considered relative to this site. The probe was checked using a polymer bead standard.

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.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 14.9°C July 4, 5; minimum recorded, 2.6°C Jan. 17, Feb. 8, 13. TURBIDITY: Maximum, 42 NTU May 13, 14; minimum; <1 NTU many days during year.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	---	---	---	5.4	4.6	5.0	4.7	4.3	4.5
2	---	---	---	---	---	---	6.3	4.9	5.6	5.6	4.5	5.1
3	---	---	---	---	---	---	5.9	4.8	5.5	5.6	4.4	5.0
4	---	---	---	---	---	---	5.6	4.9	5.3	5.7	5.2	5.5
5	---	---	---	---	---	---	5.1	4.5	4.9	5.9	5.1	5.5
6	---	---	---	---	---	---	5.2	4.6	4.9	5.3	4.3	4.8
7	---	---	---	---	---	---	5.1	4.4	4.8	5.8	4.7	5.3
8	---	---	---	---	---	---	5.5	4.5	5.0	6.0	5.4	5.7
9	---	---	---	---	---	---	6.0	5.4	5.7	5.4	4.4	4.8
10	---	---	---	---	---	---	5.4	4.8	5.2	5.1	4.4	4.8
11	---	---	---	---	---	---	4.8	4.0	4.4	5.3	4.6	5.0
12	---	---	---	---	---	---	4.8	4.1	4.5	5.6	5.0	5.3
13	---	---	---	---	---	---	4.6	3.8	4.2	5.2	4.0	4.7
14	---	---	---	---	---	---	4.8	4.0	4.5	4.8	3.9	4.3
15	---	---	---	---	---	---	5.1	4.5	4.8	4.6	3.8	4.3
16	---	---	---	---	---	---	---	4.8	---	3.8	2.8	3.2
17	---	---	---	---	---	---	5.3	4.3	4.8	3.9	2.6	3.2
18	---	---	---	---	---	---	4.4	3.9	4.2	4.7	3.8	4.2
19	---	---	---	---	---	---	5.1	4.4	4.7	4.8	3.9	4.4
20	---	---	---	---	---	---	5.4	4.9	5.1	4.7	3.6	4.2
21	---	---	---	---	---	---	5.4	4.8	5.1	5.4	4.6	5.0
22	---	---	---	---	---	---	5.4	5.0	5.3	5.1	4.4	4.8
23	---	---	---	---	---	---	5.7	5.2	5.4	5.2	4.2	4.7
24	---	---	---	---	---	---	5.3	4.6	5.0	5.1	4.7	5.0
25	---	---	---	---	---	---	4.9	4.4	4.7	4.7	4.0	4.3
26	---	---	---	---	---	---	5.4	4.5	4.9	4.1	3.4	3.8
27	---	---	---	---	---	---	5.4	4.7	5.0	3.8	3.0	3.4
28	---	---	---	---	---	---	5.2	4.4	4.8	4.1	2.8	3.4
29	---	---	---	---	---	---	5.1	4.4	4.8	4.1	3.7	3.9
30	---	---	---	---	---	---	4.7	4.2	4.4	4.4	3.6	3.9
31	---	---	---	---	---	---	5.3	4.5	4.9	3.9	3.2	3.6
MONTH	---	---	---	---	---	---	---	3.8	---	6.0	2.6	4.5
FEBRUARY			MARCH			APRIL			MAY			
1	4.7	3.4	4.0	5.0	3.6	4.3	5.9	4.8	5.5	6.1	5.1	5.5
2	5.0	4.4	4.7	4.8	3.8	4.3	4.8	4.1	4.4	7.2	4.7	5.7
3	5.2	4.5	4.9	4.9	3.2	4.0	5.3	3.9	4.4	8.0	4.6	6.2
4	5.8	4.7	5.3	4.9	3.8	4.3	5.9	3.5	4.5	9.0	5.7	7.2
5	5.6	4.5	5.1	6.2	4.0	5.0	6.3	3.7	4.9	8.6	6.3	7.2
6	4.7	3.9	4.3	6.4	4.1	5.2	5.3	4.3	4.8	9.1	5.3	7.0
7	3.9	3.0	3.5	6.7	4.5	5.5	5.3	3.7	4.4	10.3	6.2	8.0
8	3.6	2.6	3.1	6.5	5.3	5.8	5.0	3.6	4.2	10.2	7.3	8.5
9	4.4	3.5	3.9	5.8	4.6	5.1	5.8	3.8	4.7	10.1	7.1	8.4
10	4.8	3.9	4.3	6.0	4.7	5.3	5.7	4.4	5.0	10.5	6.7	8.4
11	4.5	3.5	3.9	6.3	4.6	5.2	5.3	4.1	4.7	11.3	7.3	9.1
12	3.8	3.2	3.6	6.4	4.1	5.2	5.8	4.1	4.8	11.6	8.2	9.6
13	3.6	2.6	3.1	6.7	4.5	5.5	5.8	4.2	5.0	11.3	8.3	9.5
14	3.9	2.7	3.2	6.3	4.9	5.5	6.5	3.7	5.0	9.1	7.8	8.4
15	---	3.0	3.6	5.6	4.5	5.0	7.4	4.0	5.6	7.9	7.4	7.7
16	5.0	3.8	4.3	5.3	4.2	4.8	7.7	4.7	6.1	7.9	7.0	7.4
17	5.6	4.0	4.7	5.6	3.7	4.7	7.5	5.5	6.4	8.8	6.6	7.6
18	5.8	4.6	5.2	6.3	5.0	5.6	7.0	5.7	6.2	10.0	7.4	8.5
19	5.6	4.0	4.8	6.3	5.5	5.9	6.8	5.4	6.0	10.9	7.6	9.0
20	5.4	4.0	4.8	6.4	5.1	5.7	7.0	5.0	5.9	11.3	7.9	9.4
21	5.9	4.9	5.4	6.7	4.5	5.5	6.7	5.5	6.0	12.1	8.1	9.8
22	5.4	4.4	4.8	7.2	4.9	5.9	7.1	5.6	6.3	13.1	8.9	10.7
23	5.3	3.9	4.5	7.6	5.5	6.4	7.4	5.8	6.4	13.4	9.6	11.3
24	4.9	3.5	4.2	7.2	5.8	6.5	8.6	5.5	6.9	13.2	9.6	11.2
25	5.3	3.8	4.5	6.6	5.7	6.2	9.3	6.2	7.6	13.0	9.4	11.0
26	5.1	3.5	4.2	6.0	5.2	5.6	10.0	6.9	8.2	13.6	9.6	11.4
27	4.9	3.2	4.0	5.6	4.9	5.3	9.2	6.6	7.7	13.3	9.5	10.4
28	5.0	3.0	4.0	6.4	5.5	5.9	7.3	5.8	6.5	10.5	8.6	9.5
29	---	---	---	6.8	5.5	6.0	6.6	5.3	6.0	11.6	7.7	9.5
30	---	---	---	6.6	5.4	5.9	6.7	5.7	6.3	12.7	7.8	10.0
31	---	---	---	6.6	5.6	6.0	---	---	---	13.6	8.8	11.0
MONTH	---	2.6	4.3	7.6	3.2	5.4	10.0	3.5	5.7	13.6	4.6	8.8

WILLAMETTE RIVER BASIN

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14159200 SOUTH FORK MCKENZIE RIVER ABOVE COUGAR LAKE, NEAR RAINBOW, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	11.4	9.2	10.0	14.1	9.5	11.6	13.6	9.3	11.3	12.3	9.4	10.9
2	9.7	8.2	8.9	14.4	9.4	11.8	13.9	9.4	11.5	12.5	9.0	10.7
3	9.3	7.6	8.3	13.8	9.8	11.8	12.6	10.1	11.3	12.3	8.9	10.6
4	10.2	7.0	8.6	14.9	10.3	12.4	12.2	10.1	10.9	12.3	8.9	10.5
5	8.9	7.9	8.4	14.9	10.6	12.5	13.8	9.3	11.3	10.9	9.4	10.0
6	11.4	8.0	9.4	14.3	9.6	11.9	14.3	9.7	11.8	11.1	8.0	9.5
7	13.0	8.5	10.4	14.3	9.7	11.9	14.5	9.9	12.1	11.3	7.9	9.5
8	13.0	9.1	10.8	14.8	9.9	12.2	---	10.0	---	11.5	8.1	9.7
9	12.2	9.6	10.6	14.7	10.0	12.3	14.6	10.4	12.4	11.6	8.1	9.8
10	10.0	8.9	9.4	13.1	10.6	11.9	14.4	10.5	12.3	11.7	8.8	10.2
11	9.8	8.7	9.2	13.2	10.4	11.8	14.5	10.4	12.4	11.8	8.7	10.2
12	10.1	8.2	9.1	14.2	10.0	11.8	13.3	10.2	11.9	11.4	9.4	10.4
13	12.0	7.2	9.4	14.7	9.8	12.0	14.4	10.2	12.1	12.0	9.6	10.7
14	12.1	8.0	9.9	14.3	9.8	12.0	14.3	10.4	12.3	12.2	9.3	10.6
15	12.6	7.9	10.1	13.8	9.6	11.6	14.3	10.4	12.3	11.9	9.9	10.7
16	12.6	8.2	10.3	11.7	9.9	10.8	14.3	10.6	12.3	11.8	9.4	10.5
17	11.3	8.1	9.7	13.2	9.3	11.1	13.7	9.9	11.8	11.4	8.8	10.1
18	12.4	7.4	9.8	12.0	9.8	10.8	13.3	10.0	11.6	11.2	8.5	9.8
19	13.3	8.4	10.7	13.0	9.0	11.0	12.9	8.9	10.8	10.8	8.2	9.4
20	14.0	9.0	11.3	13.3	9.8	11.4	12.7	8.9	10.8	10.8	8.0	9.3
21	14.5	9.5	11.8	13.8	9.4	11.4	12.1	8.9	10.5	10.4	7.8	9.1
22	14.0	9.5	11.7	14.1	9.3	11.6	11.0	9.9	10.4	10.8	8.0	9.3
23	13.2	9.9	11.4	14.4	9.6	11.8	---	9.7	10.4	11.0	8.4	9.6
24	11.2	9.4	9.9	14.5	9.8	12.0	12.6	9.2	10.7	10.6	8.7	9.7
25	11.1	8.4	9.6	14.4	9.8	12.0	12.4	9.0	10.6	10.1	9.2	9.5
26	10.1	9.1	9.6	14.1	9.5	11.7	13.1	9.4	11.1	9.6	8.7	9.1
27	11.5	9.1	10.2	14.0	9.4	11.6	13.0	9.6	11.2	9.5	8.0	8.7
28	11.6	9.3	10.3	12.3	9.8	11.0	12.9	9.3	11.0	9.2	7.4	8.3
29	13.7	9.3	11.2	10.9	9.2	10.2	13.2	9.6	11.3	9.4	7.1	8.2
30	12.7	9.3	10.9	11.7	9.5	10.5	13.1	9.7	11.3	9.9	7.6	8.6
31	---	---	---	13.3	9.2	11.0	13.0	9.7	11.2	---	---	---
MONTH	14.5	7.0	10.0	14.9	9.0	11.6	---	8.9	---	12.5	7.1	9.8

TURBIDITY (NTU), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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

WILLAMETTE RIVER BASIN

14159200 SOUTH FORK MCKENZIE RIVER ABOVE COUGAR LAKE, NEAR RAINBOW, OR--Continued

TURBIDITY (NTU), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
FEBRUARY				MARCH			APRIL			MAY		
1	2	1	1	1	<1	<1	5	2	2	10	2	4
2	5	<1	1	4	<1	1	3	1	2	8	1	2
3	1	<1	<1	2	<1	<1	3	1	2	7	1	1
4	1	<1	1	3	<1	<1	4	1	1	4	1	1
5	5	<1	1	1	<1	<1	3	1	1	2	1	1
6	1	<1	<1	1	<1	<1	3	1	1	3	1	1
7	1	<1	<1	1	<1	<1	2	1	1	2	1	1
8	1	<1	<1	1	<1	1	4	1	1	2	1	1
9	1	<1	<1	1	<1	<1	2	1	1	2	1	1
10	1	<1	<1	1	<1	<1	3	1	1	1	1	1
11	2	<1	<1	1	<1	<1	2	1	1	4	1	1
12	1	<1	<1	1	<1	<1	3	1	1	7	1	1
13	1	<1	<1	1	<1	<1	2	1	1	42	1	1
14	1	<1	<1	1	<1	<1	2	1	1	42	1	2
15	1	<1	<1	4	<1	<1	2	1	1	22	2	4
16	3	<1	<1	2	<1	<1	2	1	1	17	3	5
17	<1	<1	<1	2	<1	<1	2	1	1	8	1	2
18	1	<1	<1	3	1	1	4	1	1	2	1	1
19	1	<1	<1	6	2	4	8	1	1	8	1	1
20	1	<1	<1	4	2	2	2	1	1	2	1	1
21	1	<1	<1	2	1	2	2	1	1	3	1	1
22	1	<1	<1	3	1	1	2	1	1	2	1	1
23	1	<1	<1	3	1	1	2	1	1	2	1	1
24	<1	<1	<1	4	1	1	2	1	1	2	1	1
25	1	<1	<1	7	2	2	5	1	1	3	1	1
26	1	<1	<1	3	1	2	3	1	1	2	1	1
27	3	<1	<1	23	1	2	2	1	1	10	1	1
28	1	<1	<1	21	4	5	4	1	1	1	1	1
29	---	---	---	5	2	3	7	1	1	2	1	1
30	---	---	---	6	2	2	19	1	2	2	1	1
31	---	---	---	6	2	2	---	---	---	---	---	---
MAX	5	1	1	23	4	5	19	2	2	---	---	---
MIN	<1	<1	<1	1	<1	<1	2	1	1	---	---	---
DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	---	---	---	---	---	---	---	---	---	1	<1	<1
2	---	---	---	---	<1	---	---	---	---	1	<1	<1
3	---	---	---	1	<1	<1	---	---	---	1	<1	<1
4	---	---	---	1	<1	<1	---	---	---	1	<1	<1
5	---	---	---	1	<1	<1	---	---	---	1	<1	<1
6	---	---	---	1	<1	<1	---	---	---	1	<1	<1
7	---	---	---	1	<1	<1	---	---	---	1	<1	<1
8	---	---	---	1	<1	<1	---	---	---	1	<1	<1
9	---	---	---	2	<1	<1	---	---	---	1	<1	<1
10	---	---	---	1	<1	<1	---	---	---	1	<1	<1
11	---	---	---	8	<1	<1	---	---	---	1	<1	<1
12	---	---	---	2	<1	1	---	---	---	1	<1	<1
13	---	---	---	2	<1	1	---	---	---	---	---	---
14	---	---	---	2	<1	1	---	---	---	---	---	---
15	---	---	---	2	<1	1	---	---	---	---	---	---
16	---	---	---	3	<1	1	---	---	---	---	---	---
17	---	---	---	5	<1	1	---	---	---	---	---	---
18	---	---	---	1	<1	1	---	---	---	---	---	---
19	---	---	---	2	<1	1	---	---	---	---	---	---
20	---	---	---	4	<1	1	---	---	---	---	---	---
21	---	---	---	1	<1	1	---	---	---	---	---	---
22	---	---	---	3	<1	1	---	---	---	---	---	---
23	---	---	---	1	<1	1	---	<1	---	---	---	---
24	---	---	---	2	<1	1	1	<1	<1	---	---	---
25	---	---	---	1	<1	1	1	<1	<1	---	---	---
26	---	---	---	2	<1	1	1	<1	<1	---	---	---
27	---	---	---	1	<1	1	1	<1	<1	---	---	---
28	---	---	---	2	<1	1	1	<1	<1	---	---	---
29	---	---	---	2	<1	1	4	<1	<1	---	---	---
30	---	---	---	2	<1	1	1	<1	<1	---	---	---
31	---	---	---	---	<1	---	1	<1	<1	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

WILLAMETTE RIVER BASIN

193

14159400 COUGAR LAKE NEAR RAINBOW, OR

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

DRAINAGE AREA.--207 mi².

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

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Corps of Engineers).

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

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 215,900 acre-ft Apr. 28, 1990, elevation, 1,696.51 ft; minimum contents, 33,690 acre-ft Oct. 31 to Nov. 2, 1965, elevation, 1,475.40 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 165,800 acre-ft July 5-8, elevation, 1,653.35 ft; minimum contents, 63,160 acre-ft Dec. 13, elevation, 1,530.82 ft.

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

1,510	50,920	1,650	162,300
1,550	75,940	1,696	215,300
1,600	114,800		

ELEVATION (FEET NGVD). WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1620.69	1590.35	1547.90	1533.61	1535.52	1552.17	1596.65	1627.36	1646.69	1653.19	1649.99	1623.91
2	1619.68	1589.30	1545.64	1533.56	1535.85	1552.91	1599.07	1630.22	1647.00	1653.24	1649.46	1622.84
3	1618.67	1588.23	1543.30	1533.53	1536.42	1553.50	1600.11	1632.29	1647.36	1653.29	1648.79	1621.78
4	1617.62	1587.19	1540.87	1533.56	1537.43	1554.08	1600.16	1633.99	1647.68	1653.33	1648.14	1620.68
5	1616.57	1586.16	1539.30	1533.60	1538.71	1554.68	1600.05	1635.45	1648.11	1653.35	1647.47	1619.56
6	1615.52	1585.21	1538.12	1533.58	1539.86	1555.29	1599.98	1636.65	1648.58	1653.35	1646.80	1618.45
7	1614.46	1584.20	1536.92	1533.47	1540.93	1555.80	1599.74	1637.72	1648.94	1653.34	1646.05	1617.35
8	1613.40	1583.94	1535.68	1533.32	1541.88	1556.33	1599.35	1638.75	1649.24	1653.33	1645.10	1616.24
9	1612.38	1583.37	1534.46	1533.21	1542.69	1556.82	1598.92	1639.70	1649.52	1653.32	1644.16	1615.11
10	1611.39	1582.56	1533.18	1533.17	1543.40	1557.25	1598.62	1640.53	1649.75	1653.30	1643.21	1613.97
11	1610.44	1581.66	1531.94	1533.21	1544.03	1557.64	1598.57	1641.30	1650.08	1653.30	1642.25	1612.81
12	1609.44	1580.72	1530.92	1533.32	1544.57	1558.00	1598.33	1641.54	1650.55	1653.29	1641.30	1611.66
13	1608.44	1579.45	1530.93	1533.52	1545.07	1558.36	1598.23	1641.09	1650.88	1653.09	1640.33	1610.53
14	1607.44	1577.74	1531.76	1533.71	1545.51	1558.71	1598.77	1641.11	1651.17	1652.67	1639.51	1609.39
15	1606.42	1576.01	1532.68	1533.76	1545.91	1559.17	1599.58	1643.45	1651.42	1652.23	1638.74	1608.28
16	1605.44	1574.55	1532.08	1533.73	1546.33	1559.59	1600.51	1647.51	1651.64	1651.76	1637.96	1607.14
17	1604.39	1573.30	1532.11	1533.64	1546.76	1560.22	1601.86	1650.12	1651.83	1651.44	1637.21	1605.99
18	1603.40	1572.02	1532.07	1533.55	1547.16	1561.37	1603.38	1651.55	1651.99	1651.29	1636.45	1604.81
19	1602.36	1570.73	1532.17	1533.66	1547.53	1563.67	1604.97	1651.88	1652.13	1651.18	1635.67	1603.63
20	1601.90	1569.48	1532.20	1533.70	1547.88	1565.79	1606.51	1651.93	1652.27	1651.13	1634.90	1602.44
21	1601.57	1568.27	1532.57	1533.88	1548.27	1567.45	1607.97	1651.79	1652.39	1651.07	1634.16	1601.27
22	1600.68	1566.82	1533.80	1534.19	1548.76	1568.87	1609.31	1651.50	1652.50	1651.01	1633.46	1600.08
23	1599.69	1565.01	1534.47	1534.44	1549.32	1570.28	1610.57	1651.09	1652.49	1650.95	1632.77	1598.89
24	1598.64	1563.03	1534.65	1534.71	1549.84	1571.83	1611.83	1650.57	1652.43	1650.88	1631.85	1597.67
25	1597.57	1560.64	1534.06	1534.92	1550.31	1574.07	1613.33	1649.97	1652.45	1650.82	1630.92	1596.52
26	1596.50	1558.33	1533.57	1535.03	1550.77	1576.02	1615.10	1649.29	1652.64	1650.72	1629.97	1595.38
27	1595.43	1556.35	1533.56	1535.08	1551.21	1578.56	1616.82	1648.54	1652.81	1650.65	1629.02	1594.18
28	1594.59	1554.14	1533.56	1535.08	1551.62	1583.81	1618.67	1647.73	1652.95	1650.56	1628.04	1592.97
29	1593.57	1552.11	1533.63	1535.25	---	1587.98	1620.16	1646.87	1653.04	1650.53	1627.06	1591.74
30	1592.52	1550.10	1533.63	1535.37	---	1591.06	1623.25	1646.33	1653.13	1650.52	1626.03	1590.53
31	1591.43	---	1533.64	1535.46	---	1593.90	---	1646.41	---	1650.36	1624.97	---
MAX	1620.69	1590.35	1547.90	1535.46	1551.62	1593.90	1623.25	1651.93	1653.13	1653.35	1649.99	1623.91
MIN	1591.43	1550.10	1530.92	1533.17	1535.52	1552.17	1596.65	1627.36	1646.69	1650.36	1624.97	1590.53
(†)	107500	76010	64950	66120	77070	109600	135700	158600	165600	162700	137400	106800
(‡)	-26700	-31490	-11060	+1170	+10950	+32530	+26100	+22900	+7000	-2900	-25300	-30600

CAL YR 2000 MAX 1691.51 MIN 1530.83 AC-FT† +28800
WTR YR 2001 MAX 1653.35 MIN 1530.92 AC-FT† -27400

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

WILLAMETTE RIVER BASIN

14159500 SOUTH FORK MCKENZIE RIVER NEAR RAINBOW, OR

LOCATION.--Lat 44°08'10", long 122°14'50", in NE 1/4 sec.31, T.16 S., R.5 E., Lane County, Hydrologic Unit 17090004, in Willamette National Forest, on right bank 0.2 mi upstream from Cougar Creek, 0.6 mi downstream from Cougar Dam, 2.1 mi south of Rainbow, and at mile 3.9.

DRAINAGE AREA.--208 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1947 to current year.

REVISED RECORDS.--WSP 1638: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,236.42 ft above sea level (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. Data for the periods Dec. 15-17, Jan. 2-4, June 9-12 provided by the U.S. Army Corps of Engineers. Flow regulated since 1963 by Cougar Lake (station 14159400), usable capacity, 164,800 acre-ft. No diversion upstream from station. Water temperatures July 1955 to September 1997.

AVERAGE DISCHARGE.--54 years (water years 1948-2001), 851 ft³/s, 55.56 in/yr, 616,500 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,600 ft³/s Dec. 11, 1956, gage height, 8.66 ft, from rating curve extended above 8,100 ft³/s; maximum gage height, 8.90 ft Dec. 22, 1955 (backwater from debris); minimum discharge, 17 ft³/s Nov. 18, 1965; minimum daily, 85 ft³/s Apr. 26-28, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 24,500 ft³/s Dec. 28, 1945, gage height, 8.8 ft, from floodmarks, at Corps of Engineers gage at site 40 ft upstream at datum 0.80 ft higher; gage height at present site and datum, about 9.3 ft, computed by Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,170 ft³/s Nov. 24, gage height, 2.53 ft; minimum discharge, 144 ft³/s July 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	691	699	1120	562	373	255	321	315	310	292	439	714
2	690	702	1120	549	375	262	297	343	312	290	519	715
3	689	703	1110	555	376	272	646	392	313	291	594	720
4	698	704	1100	522	380	278	909	381	301	280	594	725
5	692	697	832	552	379	266	905	382	295	297	594	730
6	696	703	704	555	353	231	913	391	295	313	607	728
7	698	707	696	556	299	258	917	392	294	316	623	723
8	690	713	694	556	295	290	920	394	298	297	709	721
9	684	715	697	533	302	305	883	397	300	297	709	724
10	687	723	695	494	308	305	825	405	301	296	710	727
11	683	711	695	438	316	306	815	408	298	296	714	728
12	693	708	610	403	312	305	829	640	295	292	722	727
13	705	802	412	405	308	301	731	932	300	396	714	724
14	707	905	423	406	308	301	434	910	299	487	641	720
15	691	904	602	407	290	298	318	716	311	494	611	717
16	683	801	875	407	282	298	313	448	304	509	628	715
17	668	725	771	410	268	300	307	369	307	436	610	719
18	664	724	602	407	275	301	304	558	291	346	602	722
19	670	725	496	409	275	297	307	885	308	320	623	723
20	692	710	498	412	294	297	321	884	312	294	631	722
21	700	697	499	413	305	295	318	889	285	301	630	718
22	705	765	681	417	279	295	317	888	290	298	619	714
23	707	932	960	421	254	296	334	892	335	306	651	714
24	709	1040	963	414	260	297	314	895	397	305	697	719
25	713	1160	964	419	265	303	306	892	354	301	713	726
26	721	1150	821	419	253	309	316	893	287	299	709	724
27	721	1140	637	418	255	315	314	892	291	306	738	725
28	710	1140	629	422	253	326	308	892	289	316	732	720
29	695	1130	619	388	---	323	296	899	291	317	693	719
30	696	1130	619	372	---	333	310	724	290	330	709	715
31	701	---	584	378	---	344	---	395	---	371	718	---
TOTAL	21549	25065	22728	14019	8492	9162	15348	19693	9153	10299	20203	21638
MEAN	695	836	733	452	303	296	512	635	305	332	652	721
MAX	721	1160	1120	562	380	344	920	932	397	509	738	730
MIN	664	697	412	372	253	231	296	315	285	290	439	714
AC-FT	42740	49720	45080	27810	16840	18170	30440	39060	18150	20430	40070	42920
MEAN†	261	306	553	471	500	824	950	1007	423	285	240	207
CFSM†	1.25	1.47	2.66	2.26	2.40	3.96	4.57	4.84	2.03	1.37	1.15	1.00
IN.†	1.44	1.64	3.07	2.61	2.50	4.57	5.10	5.58	2.27	1.58	1.33	1.11
AC-FT†	16040	18230	34020	28980	27790	50700	56540	61960	25150	17530	14770	12320

CAL YR 2000 TOTAL 276833 MEAN 756 MAX 2440 MIN 272 AC-FT 549100 MEAN† 796 CFSM† 3.83 IN.† 52.09 AC-FT† 577900
WTR YR 2001 TOTAL 197349 MEAN 541 MAX 1160 MIN 231 AC-FT 391400 MEAN† 503 CFSM† 2.42 IN.† 32.81 AC-FT† 364000

† 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 September 2001.

DISSOLVED OXYGEN: December 2000 to September 2001.

TURBIDITY: December 2000 to September 2001.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Water temperature records good, except for the period Feb. 6 to Apr. 3, Apr. 14 to May 12, which are poor. Dissolved oxygen records fair except for the period June 1 to July 2, which are poor. Turbidity records fair except for turbidity NTU values >400, which are unreliable. Turbidity values are considered relative to this site. The probe was checked using a polymer bead 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.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum recorded, 14.6°C Sept. 29, 30; minimum, 4.2°C Feb. 8, 13-15.

DISSOLVED OXYGEN: Maximum, 12.6 mg/L Feb. 28; minimum, 7.4 mg/L Sept. 15.

TURBIDITY: Maximum, >400 NTU on many days; minimum, <1 on many days.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	13.7	13.1	13.5	12.6	12.4	12.5	7.5	7.2	7.4	5.3	5.1	5.1
2	13.8	12.9	13.5	12.6	12.3	12.5	7.7	7.4	7.5	5.2	5.0	5.1
3	13.9	13.4	13.6	12.5	12.1	12.3	7.4	6.7	7.1	5.1	4.9	5.0
4	14.0	13.3	13.6	12.4	12.1	12.2	6.8	6.6	6.7	4.9	4.8	4.9
5	13.8	13.5	13.6	12.4	11.9	12.2	6.7	6.5	6.6	4.8	4.7	4.7
6	14.0	13.4	13.7	12.0	11.8	11.9	6.5	6.2	6.3	4.7	4.6	4.7
7	13.9	13.4	13.6	12.0	11.8	11.9	6.3	6.0	6.1	4.7	4.6	4.6
8	14.0	13.5	13.6	11.9	11.5	11.6	6.1	6.0	6.0	4.6	4.5	4.5
9	13.7	13.5	13.6	11.7	11.4	11.5	6.0	5.9	5.9	4.5	4.4	4.5
10	13.8	13.5	13.6	11.6	11.2	11.4	5.9	5.8	5.9	4.5	4.4	4.4
11	13.9	13.2	13.6	11.4	11.0	11.2	5.9	5.8	5.8	4.4	4.4	4.4
12	13.7	13.4	13.6	11.4	11.0	11.2	5.9	5.7	5.8	4.4	4.4	4.4
13	13.8	13.4	13.6	11.2	10.6	10.9	5.9	5.7	5.8	4.4	4.3	4.4
14	13.6	13.4	13.5	11.1	10.8	11.0	5.8	5.6	5.7	4.8	4.4	4.5
15	13.6	13.4	13.5	11.0	10.3	10.7	5.7	5.6	5.6	4.8	4.6	4.7
16	13.6	13.2	13.4	10.6	10.2	10.4	5.6	5.6	5.6	4.7	4.6	4.6
17	13.4	13.2	13.3	10.7	10.1	10.4	5.6	5.5	5.6	4.9	4.7	4.7
18	13.6	13.2	13.4	10.6	10.1	10.2	5.5	5.3	5.5	5.0	4.9	5.0
19	13.5	13.0	13.2	10.5	10.1	10.3	5.3	5.0	5.2	5.0	4.9	5.0
20	13.3	13.0	13.1	10.5	9.6	10.1	5.0	4.9	5.0	5.0	4.9	5.0
21	13.4	13.1	13.2	10.4	9.0	9.4	5.0	4.9	4.9	5.2	5.0	5.1
22	13.2	12.9	13.0	9.0	8.2	8.6	4.9	4.7	4.8	5.2	5.0	5.1
23	13.3	12.9	13.0	9.0	8.5	8.6	4.7	4.6	4.7	5.2	5.0	5.1
24	13.1	12.9	13.0	8.8	8.2	8.5	4.6	4.4	4.5	5.0	4.9	4.9
25	13.2	13.0	13.0	9.1	7.9	8.3	4.6	4.3	4.5	4.9	4.8	4.9
26	13.2	12.8	13.0	8.8	7.8	8.3	4.6	4.4	4.5	4.9	4.7	4.8
27	13.0	12.7	12.8	8.1	7.8	7.9	5.1	4.4	4.5	4.8	4.7	4.7
28	13.1	12.8	12.9	7.9	7.8	7.9	6.0	5.1	5.6	4.7	4.7	4.7
29	13.2	12.5	12.8	7.9	7.6	7.7	5.3	4.6	4.8	4.8	4.7	4.7
30	13.1	12.6	12.7	7.7	7.3	7.5	5.1	4.7	4.8	4.8	4.6	4.7
31	12.6	12.4	12.5	---	---	---	5.3	5.1	5.2	4.7	4.6	4.6
MONTH	14.0	12.4	13.3	12.6	7.3	10.3	7.7	4.3	5.6	5.3	4.3	4.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4.8	4.6	4.6	5.2	4.7	4.8	5.9	4.7	5.0	5.4	5.1	5.2
2	4.6	4.2	4.5	5.1	4.7	5.0	5.7	4.6	4.9	5.2	4.9	5.0
3	4.8	4.5	4.6	5.2	5.0	5.1	5.7	4.6	4.9	5.4	5.0	5.1
4	4.7	4.5	4.6	5.2	4.8	5.0	5.1	4.6	4.8	5.4	4.9	5.1
5	4.6	4.4	4.5	5.1	4.9	4.9	5.7	4.6	4.9	5.6	5.2	5.3
6	4.8	4.5	4.6	5.2	4.8	4.9	6.0	4.7	5.0	5.6	5.1	5.3
7	5.0	4.6	4.8	5.0	4.6	4.8	5.3	4.6	4.9	5.6	5.0	5.3
8	4.6	4.3	4.5	5.0	4.6	4.8	5.7	4.5	4.8	5.6	5.2	5.4
9	4.7	4.1	4.4	5.3	4.5	4.7	5.5	4.6	4.9	5.7	5.2	5.4
10	4.6	4.0	4.3	5.6	4.5	4.8	5.3	4.7	4.9	5.8	5.1	5.4
11	4.5	4.2	4.3	5.7	4.5	4.8	6.1	4.6	5.0	5.7	5.0	5.4
12	4.7	4.2	4.3	4.9	4.5	4.7	5.6	4.8	5.0	5.8	5.1	5.5
13	4.5	4.2	4.3	5.1	4.6	4.7	6.1	4.7	5.1	5.7	5.0	5.3
14	4.7	4.3	4.4	5.0	4.6	4.7	6.3	4.7	5.1	5.8	5.4	5.6
15	4.8	4.3	4.4	4.9	4.6	4.7	6.2	4.7	5.2	6.0	5.3	5.5
16	4.7	4.4	4.5	4.8	4.5	4.6	6.1	4.8	5.1	5.9	5.1	5.6
17	4.8	4.6	4.7	5.1	4.6	4.8	6.1	4.8	5.2	6.0	5.1	5.6
18	5.0	4.4	4.7	4.9	4.6	4.7	5.3	4.9	5.0	6.1	5.2	5.7
19	5.0	4.4	4.7	5.2	4.6	4.8	5.2	4.9	5.0	6.2	5.6	5.9
20	4.6	4.4	4.5	5.6	4.6	4.8	5.3	4.8	5.0	6.2	5.4	5.8
21	4.7	4.4	4.5	5.6	4.5	4.8	5.5	4.8	5.0	6.2	5.4	5.9
22	4.6	4.4	4.5	4.7	4.5	4.6	5.3	4.9	5.1	6.3	5.3	5.8
23	4.8	4.5	4.7	5.2	4.6	4.8	5.4	4.9	5.1	6.4	5.2	5.8
24	4.8	4.6	4.7	4.8	4.7	4.7	5.3	4.8	5.0	6.6	5.2	6.0
25	4.9	4.6	4.6	5.0	4.7	4.8	5.2	4.8	5.0	6.5	5.6	6.1
26	5.1	4.6	4.7	5.2	4.8	5.0	5.2	4.9	5.1	6.6	5.6	6.2
27	4.8	4.7	4.7	5.2	4.7	4.9	5.3	5.0	5.1	6.6	5.6	6.0
28	5.1	4.7	4.9	4.9	4.5	4.7	5.3	4.9	5.0	6.7	5.7	6.1
29	---	---	---	5.2	4.5	4.8	5.6	5.0	5.2	6.7	5.6	6.1
30	---	---	---	4.9	4.6	4.7	5.7	4.9	5.2	6.7	5.4	6.0
31	---	---	---	4.9	4.5	4.7	---	---	---	6.7	5.4	6.1
MONTH	5.1	4.0	4.6	5.7	4.5	4.8	6.3	4.5	5.0	6.7	4.9	5.6

14159500 SOUTH FORK MCKENZIE RIVER NEAR RAINBOW, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	6.6	5.7	6.2	7.7	6.2	7.1	9.1	6.8	7.9	10.2	8.5	9.4
2	6.8	5.6	6.2	7.6	6.0	7.1	8.8	6.5	7.9	10.1	8.6	9.4
3	6.7	5.5	6.1	7.5	6.8	7.2	8.8	7.5	8.2	10.2	8.4	9.5
4	6.6	5.7	6.2	7.6	6.1	7.1	8.7	7.2	8.2	10.2	8.6	9.5
5	6.5	5.9	6.2	7.7	6.1	7.1	8.7	7.2	8.2	10.3	9.0	9.6
6	6.8	5.6	6.3	7.9	6.3	7.2	8.5	7.8	8.2	10.3	8.9	9.7
7	6.6	5.8	6.3	8.2	6.3	7.3	8.6	8.0	8.4	10.1	9.3	9.8
8	6.7	5.9	6.3	8.0	6.2	7.3	8.9	7.8	8.3	10.4	9.3	9.8
9	6.8	5.6	6.4	7.9	6.4	7.3	8.9	8.1	8.5	10.3	9.4	9.9
10	7.0	5.7	6.4	8.1	6.4	7.5	9.0	7.7	8.5	10.4	9.3	9.9
11	7.1	5.9	6.5	8.2	6.6	7.4	9.4	7.7	8.4	10.6	9.1	10.0
12	6.9	5.9	6.5	8.6	6.7	7.6	8.8	7.9	8.5	10.8	9.3	10.0
13	6.9	6.1	6.6	8.7	6.7	7.5	8.8	8.0	8.6	10.6	9.6	10.1
14	7.0	6.0	6.6	8.6	6.5	7.4	8.9	8.0	8.6	10.8	9.9	10.4
15	7.2	6.0	6.7	8.5	6.1	7.5	9.1	8.4	8.7	11.1	9.4	10.3
16	7.2	6.1	6.8	8.6	6.3	7.4	9.4	8.2	8.7	10.7	9.4	10.3
17	7.1	6.1	6.6	8.8	5.9	7.3	9.3	8.1	8.7	10.7	9.6	10.4
18	7.2	6.3	6.7	8.7	6.7	7.6	9.4	8.1	8.8	11.0	10.0	10.5
19	7.1	6.2	6.8	8.7	6.5	7.5	9.2	8.1	8.8	11.0	9.9	10.5
20	7.3	6.2	6.7	8.6	6.5	7.5	9.2	8.4	8.9	11.0	10.4	10.7
21	7.3	6.2	6.8	8.6	6.2	7.6	9.5	8.0	9.0	11.2	10.4	10.8
22	7.4	6.5	7.0	8.6	6.9	7.7	9.5	8.1	9.0	11.2	10.5	10.8
23	7.3	6.3	6.8	9.1	6.8	7.7	9.6	8.6	9.0	11.4	10.8	11.0
24	7.4	6.0	6.8	9.2	6.5	7.4	9.8	8.4	9.1	11.3	10.6	11.1
25	7.3	6.3	6.9	8.9	6.7	7.8	9.7	8.5	9.1	11.8	10.5	11.1
26	7.3	6.4	6.9	9.4	6.7	7.9	9.8	8.5	9.2	11.7	10.8	11.3
27	7.4	6.7	7.1	8.9	7.0	7.8	9.7	8.3	9.2	11.9	11.1	11.5
28	7.5	6.1	7.0	8.9	7.0	7.9	10.0	8.4	9.2	11.8	10.8	11.3
29	7.5	6.5	7.1	9.0	6.8	7.9	9.5	8.6	9.1	12.0	11.2	11.6
30	7.6	6.4	7.2	9.1	6.5	7.8	9.6	8.9	9.2	11.9	11.5	11.7
31	---	---	---	9.1	6.6	7.9	9.6	8.9	9.4	---	---	---
MONTH	7.6	5.5	6.6	9.4	5.9	7.5	10.0	6.5	8.7	12.0	8.4	10.4
YEAR	14.0	4.0	7.3									

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER AND NOVEMBER 2000

DAY	MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN		MAX	MIN	MEAN
		OCTOBER			NOVEMBER				DECEMBER				JANUARY		
1	12.0	11.1	11.7		11.7	11.5	11.6		---	---	---		---	---	---
2	12.2	11.6	11.8		11.9	11.5	11.6		---	---	---		---	---	---
3	12.3	11.5	11.9		11.8	11.4	11.5		---	---	---		---	---	---
4	12.3	11.7	12.0		11.8	11.5	11.6		---	---	---		---	---	---
5	12.2	11.5	12.0		11.8	11.5	11.6		---	---	---		---	---	---
6	12.3	11.5	12.0		11.9	11.4	11.7		---	---	---		---	---	---
7	12.5	11.9	12.1		11.6	11.2	11.4		---	---	---		---	---	---
8	12.3	11.7	12.1		11.7	11.2	11.4		---	---	---		---	---	---
9	12.6	11.9	12.2		11.7	11.3	11.5		---	---	---		---	---	---
10	12.4	11.8	12.2		11.6	11.3	11.4		---	---	---		---	---	---
11	12.5	11.9	12.2		11.7	11.5	11.6		---	---	---		---	---	---
12	12.5	11.8	12.1		11.6	11.4	11.5		---	---	---		---	---	---
13	12.6	12.0	12.2		11.7	11.4	11.5		---	---	---		---	---	---
14	12.6	11.9	12.2		11.8	11.5	11.6		---	---	---		---	---	---
15	12.4	11.9	12.1		11.5	10.9	11.2		---	---	---		---	---	---
16	12.7	11.8	12.2		11.7	11.3	11.5		---	---	---		---	---	---
17	12.4	11.9	12.1		11.5	11.1	11.3		---	---	---		---	---	---
18	12.2	11.9	12.0		11.5	11.3	11.4		---	---	---		---	---	---
19	12.3	11.9	12.1		11.3	10.9	11.1		---	---	---		---	---	---
20	12.2	11.9	12.0		11.1	10.8	11.0		---	---	---		---	---	---
21	12.3	11.8	12.0		10.9	10.5	10.7		---	---	---		---	---	---
22	12.2	11.9	12.0		10.7	10.2	10.4		---	---	---		---	---	---
23	12.2	11.8	12.0		10.2	10.0	10.1		---	---	---		---	---	---
24	12.3	11.8	12.0		10.2	9.8	10.0		---	---	---		---	---	---
25	12.1	11.8	11.9		10.0	9.5	9.8		---	---	---		---	---	---
26	12.2	11.7	12.0		9.5	7.2	8.3		---	---	---		---	---	---
27	12.2	11.8	11.9		8.2	7.7	8.1		---	---	---		---	---	---
28	12.2	11.5	11.8		8.4	8.1	8.2		---	---	---		---	---	---
29	12.1	11.7	11.9		8.4	8.0	8.3		---	---	---		---	---	---
30	12.1	11.6	11.7		---	---	---		---	---	---		---	---	---
31	11.8	11.5	11.6		---	---	---		---	---	---		---	---	---
MONTH	12.7	11.1	12.0		---	---	---		---	---	---		---	---	---

WILLAMETTE RIVER BASIN

197

14159500 SOUTH FORK MCKENZIE RIVER NEAR RAINBOW, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	---	---	---	---	---	---	5.2	5.1	5.2
2	---	---	---	---	---	---	---	---	---	5.3	5.1	5.2
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	5.4	5.1	5.2
6	---	---	---	---	---	---	---	---	---	5.2	5.0	5.1
7	---	---	---	---	---	---	---	---	---	5.2	5.0	5.1
8	---	---	---	---	---	---	---	---	---	5.2	5.0	5.1
9	---	---	---	---	---	---	---	---	---	5.1	4.9	5.0
10	---	---	---	---	---	---	---	---	---	5.1	4.9	5.0
11	---	---	---	---	---	---	---	---	---	5.2	4.9	5.0
12	---	---	---	---	---	---	---	---	---	5.2	5.0	5.0
13	---	---	---	---	---	---	---	---	---	5.1	4.8	5.0
14	---	---	---	---	---	---	---	---	---	5.2	4.8	4.9
15	---	---	---	---	---	---	---	---	---	5.1	4.8	4.9
16	---	---	---	---	---	---	---	---	---	4.9	4.7	4.8
17	---	---	---	---	---	---	---	---	---	5.0	4.6	4.8
18	---	---	---	---	---	---	---	---	---	5.0	4.7	4.9
19	---	---	---	---	---	---	---	---	---	5.0	4.7	4.9
20	---	---	---	---	---	---	5.7	5.6	5.6	5.0	4.7	4.8
21	---	---	---	---	---	---	5.6	5.5	5.6	5.0	4.8	4.9
22	---	---	---	---	---	---	5.6	5.5	5.6	5.0	4.8	4.9
23	---	---	---	---	---	---	5.6	5.5	5.6	5.0	4.8	4.9
24	---	---	---	---	---	---	5.6	5.4	5.5	5.0	4.8	4.9
25	---	---	---	---	---	---	5.5	5.3	5.4	4.8	4.6	4.7
26	---	---	---	---	---	---	5.4	5.2	5.3	4.9	4.5	4.7
27	---	---	---	---	---	---	5.4	5.3	5.3	4.9	4.4	4.6
28	---	---	---	---	---	---	5.4	5.2	5.3	4.8	4.4	4.6
29	---	---	---	---	---	---	5.4	5.2	5.3	4.9	4.6	4.7
30	---	---	---	---	---	---	5.3	5.1	5.2	4.9	4.5	4.6
31	---	---	---	---	---	---	5.3	5.2	5.2	4.8	4.4	4.5
MONTH	---	---	---	---	---	---	---	---	---	---	---	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4.9	4.4	4.6	5.5	4.5	4.9	6.2	5.7	6.0	7.7	5.3	6.0
2	4.9	4.6	4.7	6.4	4.8	5.0	6.2	5.3	5.9	8.5	5.6	6.4
3	4.9	4.7	4.8	5.9	4.7	5.0	6.7	5.6	6.1	7.5	5.2	6.0
4	5.0	4.6	4.8	5.2	4.8	5.0	7.0	5.8	6.2	7.8	5.3	6.1
5	5.2	4.7	4.9	9.2	4.8	5.6	6.5	5.5	6.0	7.6	5.5	6.1
6	5.0	4.6	4.8	7.8	4.6	5.4	6.3	5.8	6.1	7.7	5.4	6.1
7	5.4	4.3	4.6	7.8	5.0	5.6	6.6	6.0	6.2	8.1	5.4	6.2
8	4.6	4.2	4.4	6.1	5.0	5.3	6.4	5.8	6.1	7.9	5.4	6.2
9	4.9	4.4	4.5	6.0	4.8	5.4	6.5	5.9	6.1	7.5	5.3	6.1
10	4.8	4.3	4.5	5.7	4.7	5.1	6.3	5.7	6.0	7.8	5.5	6.2
11	4.9	4.3	4.5	5.8	4.6	5.0	6.3	5.4	5.8	7.8	5.5	6.2
12	5.5	4.3	4.5	7.3	4.8	5.7	6.1	5.8	6.0	7.2	5.7	6.2
13	5.5	4.2	4.5	7.8	5.3	6.0	6.1	5.7	5.9	6.8	5.9	6.3
14	5.6	4.2	4.5	7.5	5.1	5.8	7.5	5.7	6.0	6.4	5.8	6.2
15	5.4	4.2	4.6	6.1	4.5	5.5	7.7	5.3	6.0	6.5	6.0	6.3
16	5.0	4.4	4.6	6.1	4.5	5.3	7.1	5.5	6.0	6.9	5.9	6.2
17	5.9	4.5	4.7	5.8	4.5	5.3	7.5	5.4	6.0	7.1	5.8	6.3
18	5.3	4.5	4.7	6.3	5.1	5.6	7.2	5.7	6.0	7.7	5.8	6.4
19	5.1	4.4	4.6	5.9	5.2	5.6	6.5	5.5	5.9	6.8	6.2	6.4
20	4.9	4.4	4.6	7.7	5.2	5.9	7.1	5.5	6.1	6.8	5.7	6.4
21	5.2	4.5	4.7	8.0	5.1	6.0	6.5	5.2	5.8	6.7	6.0	6.4
22	5.2	4.5	4.8	7.4	5.3	5.9	6.9	5.5	6.0	6.9	6.1	6.5
23	5.4	4.5	4.9	7.4	5.3	5.8	6.6	5.5	6.0	6.8	6.1	6.5
24	6.5	4.5	4.9	7.2	5.3	5.8	7.8	5.2	6.1	6.9	5.9	6.5
25	6.9	4.6	5.1	6.4	5.6	5.8	8.6	5.4	6.4	7.0	6.0	6.5
26	7.1	4.6	5.1	6.4	5.3	5.8	8.9	5.4	6.4	7.0	6.1	6.7
27	7.2	4.5	5.0	6.1	5.6	5.8	7.9	5.3	6.0	7.0	6.3	6.7
28	6.7	4.4	4.9	6.4	5.8	6.1	7.0	5.2	5.8	7.2	6.2	6.7
29	---	---	---	7.8	5.7	6.2	6.7	5.2	5.8	7.2	6.0	6.6
30	---	---	---	6.5	5.7	6.0	6.4	5.4	5.9	7.3	6.2	6.8
31	---	---	---	6.2	5.6	5.9	---	---	---	7.4	5.9	6.6
MONTH	7.2	4.2	4.7	9.2	4.5	5.6	8.9	5.2	6.0	8.5	5.2	6.3

WILLAMETTE RIVER BASIN

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14159500 SOUTH FORK MCKENZIE RIVER NEAR RAINBOW, OR--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	12.0	10.8	11.4	12.5	11.5	11.8	11.3	10.6	10.9	11.4	10.9	11.1
2	11.8	11.3	11.4	12.4	11.5	11.8	11.7	10.6	11.1	11.5	10.8	11.1
3	11.9	11.3	11.5	12.5	11.6	11.9	11.6	11.0	11.3	11.4	11.0	11.1
4	12.0	11.3	11.5	12.1	11.5	11.7	11.8	11.4	11.6	11.3	10.9	11.0
5	12.1	11.3	11.5	12.3	11.5	11.8	11.9	11.5	11.7	11.4	10.9	11.1
6	12.1	11.3	11.5	12.4	11.6	11.8	11.7	11.5	11.6	11.4	10.9	11.1
7	12.2	11.2	11.5	12.4	11.6	11.8	11.7	11.4	11.5	11.3	10.9	11.1
8	12.2	11.2	11.5	12.3	11.6	11.9	11.7	11.4	11.5	11.4	10.9	11.1
9	12.2	11.2	11.5	12.3	11.5	11.8	11.7	11.4	11.5	11.4	10.8	11.1
10	12.2	11.3	11.5	12.2	11.5	11.8	11.6	11.3	11.5	11.4	10.9	11.0
11	12.2	11.3	11.5	12.2	11.4	11.7	11.7	11.3	11.5	11.6	10.8	11.1
12	12.2	11.4	11.6	12.3	11.6	11.8	11.6	11.3	11.5	11.5	11.0	11.2
13	12.3	11.4	11.6	12.2	11.4	11.7	11.7	11.2	11.5	11.4	11.0	11.2
14	12.3	11.4	11.7	12.2	11.4	11.7	11.9	11.2	11.5	11.3	11.1	11.1
15	12.4	11.4	11.7	12.0	11.3	11.6	11.9	11.1	11.4	11.2	11.0	11.1
16	12.3	11.4	11.7	12.3	11.3	---	11.9	11.1	11.4	11.4	10.9	11.1
17	12.2	11.3	11.6	12.1	11.5	11.7	11.9	11.1	11.4	11.4	10.7	11.1
18	12.4	11.3	11.7	11.8	11.2	11.5	11.8	11.1	11.4	11.4	10.7	11.0
19	12.4	11.3	11.7	11.6	11.0	11.3	11.8	11.1	11.4	11.2	10.8	11.0
20	12.2	11.3	11.6	11.5	10.8	11.1	11.7	11.0	11.3	11.2	10.9	11.0
21	12.2	11.4	11.7	11.0	10.6	10.8	11.7	11.0	11.3	11.0	10.7	10.9
22	12.3	11.4	11.6	11.0	10.4	10.7	11.8	11.1	11.4	11.1	10.8	11.0
23	12.4	11.4	11.7	11.0	10.3	10.6	11.7	11.1	11.3	11.0	10.7	10.8
24	12.4	11.4	11.7	11.1	10.4	10.7	11.7	11.0	11.3	11.1	10.7	10.9
25	12.4	11.4	11.7	11.2	10.5	10.8	11.6	10.9	11.2	11.1	10.7	10.9
26	12.5	11.5	11.8	11.3	10.6	10.9	11.5	10.9	11.2	11.0	10.7	10.9
27	12.5	11.5	11.8	11.1	10.7	10.8	11.5	10.9	11.1	10.9	10.6	10.7
28	12.6	11.5	11.9	11.3	10.3	10.9	11.4	10.8	11.1	10.9	10.6	10.7
29	---	---	---	11.1	10.3	10.6	11.4	10.9	11.1	10.9	10.6	10.7
30	---	---	---	11.2	10.3	10.7	11.2	10.8	11.0	10.9	10.4	10.7
31	---	---	---	11.0	10.5	10.7	---	---	---	11.0	10.3	10.7
MONTH	12.6	10.8	11.6	12.5	10.3	---	11.9	10.6	11.4	11.6	10.3	11.0
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	11.0	10.2	10.6	10.9	10.0	10.4	---	---	---	9.5	8.6	9.0
2	11.3	10.4	10.8	---	---	---	---	---	---	9.4	8.7	8.9
3	11.3	10.5	10.9	---	---	---	---	---	---	9.5	8.6	8.9
4	11.2	10.3	10.7	---	---	---	10.3	9.5	9.8	9.4	8.6	8.8
5	10.9	10.2	10.5	---	---	---	10.5	9.5	9.8	9.2	8.6	8.8
6	11.1	10.2	10.6	---	---	---	10.4	9.6	9.8	9.4	8.5	8.8
7	10.9	10.0	10.5	---	---	---	10.5	9.4	9.8	9.3	8.5	8.7
8	11.1	10.0	10.5	---	---	---	10.1	9.3	9.6	9.3	8.4	8.7
9	11.0	---	---	---	---	---	10.1	9.3	9.6	9.2	8.4	8.7
10	---	---	---	---	---	---	10.1	9.4	9.6	9.2	8.4	8.6
11	---	---	---	---	---	---	10.1	9.3	9.6	9.2	8.4	8.6
12	---	---	---	---	---	---	10.0	9.3	9.6	9.1	8.4	8.6
13	11.1	10.1	10.5	---	---	---	10.0	9.3	9.5	9.2	7.9	8.5
14	11.2	10.0	10.5	---	---	---	10.2	9.2	9.6	8.3	7.7	8.0
15	11.1	10.1	10.5	---	---	---	10.1	9.2	9.5	8.1	7.4	7.8
16	11.0	10.1	10.5	---	---	---	10.2	9.2	9.5	8.6	7.7	8.1
17	10.9	10.1	10.5	---	---	---	10.1	9.1	9.4	8.5	7.7	8.2
18	11.1	10.1	10.5	---	---	---	10.0	9.0	9.4	8.7	8.0	8.3
19	10.9	10.1	10.4	---	---	---	10.0	9.0	9.3	8.6	7.9	8.2
20	10.9	10.1	10.5	---	---	---	10.0	9.1	9.3	8.7	8.0	8.3
21	10.9	10.1	10.4	---	---	---	9.9	8.9	9.3	8.5	7.8	8.2
22	10.9	10.2	10.5	---	---	---	9.5	9.0	9.2	8.6	7.8	8.2
23	10.9	10.2	10.4	---	---	---	9.6	8.9	9.2	8.7	7.8	8.2
24	10.6	10.2	10.5	---	---	---	9.8	9.0	9.3	8.5	7.6	8.0
25	10.9	10.2	10.5	---	---	---	9.7	9.0	9.2	8.3	7.8	8.1
26	10.7	10.1	10.4	---	---	---	9.8	9.0	9.2	8.4	7.8	8.2
27	10.8	10.1	10.4	---	---	---	9.8	8.9	9.2	8.7	8.2	8.4
28	10.9	10.1	10.5	---	---	---	9.7	8.9	9.1	8.9	8.1	8.5
29	10.9	10.1	10.5	---	---	---	9.6	8.8	9.1	8.9	8.1	8.5
30	10.9	10.2	10.5	---	---	---	9.6	8.8	9.0	8.9	7.9	8.4
31	---	---	---	---	---	---	9.5	8.8	9.0	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	9.5	7.4	8.4

WILLAMETTE RIVER BASIN

14159500 SOUTH FORK MCKENZIE RIVER NEAR RAIBNOW, OR--Continued

TURBIDITY (NTU), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
FEBRUARY			MARCH			APRIL			MAY			
1	9	<1	1	20	2	8	53	1	2	2	<1	1
2	13	1	4	17	2	4	35	2	6	2	<1	1
3	12	5	8	35	2	2	14	3	7	1	1	1
4	13	6	9	22	1	2	13	<1	1	1	<1	1
5	17	6	9	5	2	2	6	<1	1	1	<1	<1
6	14	5	9	8	4	5	3	<1	1	1	<1	<1
7	12	1	7	9	2	6	1	<1	1	1	<1	<1
8	5	2	2	6	1	1	3	<1	1	1	<1	<1
9	6	2	4	7	1	1	3	<1	<1	2	<1	<1
10	15	2	5	2	1	1	1	<1	<1	1	<1	1
11	12	2	5	7	1	1	6	<1	<1	1	<1	1
12	11	1	3	2	1	1	1	<1	<1	26	<1	1
13	18	1	3	2	1	1	4	<1	<1	1	<1	1
14	20	3	7	1	1	1	2	<1	<1	20	<1	<1
15	51	1	6	5	1	1	1	<1	<1	2	<1	1
16	2	1	1	6	<1	1	1	<1	<1	6	<1	1
17	5	2	3	2	1	1	1	<1	<1	5	<1	<1
18	3	<1	1	2	1	1	2	<1	<1	2	<1	1
19	5	<1	1	6	1	1	1	<1	<1	1	<1	<1
20	19	2	6	3	1	1	1	<1	<1	1	<1	<1
21	9	2	4	1	1	1	1	<1	<1	1	<1	<1
22	20	2	7	5	1	1	1	<1	<1	1	<1	<1
23	14	1	2	3	1	1	2	<1	<1	5	<1	<1
24	15	1	8	5	1	1	1	<1	<1	1	<1	<1
25	9	<1	1	14	1	2	1	<1	<1	1	<1	<1
26	14	<1	1	6	1	1	8	<1	<1	1	<1	<1
27	14	1	6	8	1	1	1	<1	<1	1	<1	<1
28	11	1	2	8	2	3	2	<1	<1	1	<1	<1
29	---	---	---	16	1	5	4	<1	<1	1	<1	<1
30	---	---	---	8	1	2	3	<1	1	1	<1	1
31	---	---	---	3	<1	1	---	---	---	1	1	1
MAX	51	6	9	35	4	8	53	3	7	26	1	1
MIN	2	<1	1	1	<1	1	1	<1	<1	1	<1	<1

WILLAMETTE RIVER BASIN

201

14159500 SOUTH FORK MCKENZIE RIVER NEAR RAIBNOW, OR--Continued

TURBIDITY (NTU), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
		JUNE		JULY			AUGUST			SEPTEMBER		
1	2	<1	<1	6	1	1	1	<1	<1	6	<1	<1
2	1	<1	<1	>400	<1	2	2	<1	<1	1	<1	<1
3	11	<1	<1	>400	<1	34	>400	-1	<1	1	<1	<1
4	187	<1	<1	>400	12	120	>400	-1	>400	>400	<1	315
5	1	<1	<1	>400	11	15	>400	-1	20	>400	152	372
6	1	<1	<1	>400	<1	203	>400	11	104	>400	206	>400
7	1	<1	<1	147	<1	1	>400	<1	112	>400	133	363
8	1	<1	<1	12	<1	1	2	<1	<1	---	---	---
9	---	<1	<1	12	1	1	1	-1	<1	---	---	---
10	---	---	---	15	1	1	5	-1	<1	---	---	---
11	---	---	---	3	1	1	1	-1	<1	---	---	---
12	---	<1	1	167	1	1	5	-1	<1	---	---	---
13	8	<1	1	21	1	1	2	-1	<1	---	---	---
14	21	<1	1	18	1	1	4	-1	<1	2	1	1
15	2	<1	1	344	1	1	4	<1	<1	1	1	1
16	7	<1	1	5	<1	1	4	<1	<1	1	1	1
17	2	<1	1	4	<1	1	3	<1	<1	1	<1	1
18	2	<1	1	13	<1	1	4	<1	<1	1	1	1
19	2	<1	1	1	<1	1	1	<1	<1	1	1	1
20	5	1	1	1	<1	1	18	<1	<1	2	<1	1
21	4	1	1	1	<1	1	3	<1	<1	1	1	1
22	5	1	2	1	<1	1	7	<1	<1	1	1	1
23	>400	1	1	9	<1	1	1	<1	<1	1	1	1
24	10	1	1	9	<1	<1	4	<1	<1	2	1	1
25	4	<1	1	8	<1	<1	10	<1	<1	1	1	1
26	3	1	1	1	<1	<1	9	<1	<1	2	1	1
27	1	1	1	2	-1	<1	1	<1	<1	1	1	1
28	4	1	1	<1	-1	<1	6	<1	<1	1	1	1
29	4	1	1	2	-1	<1	6	<1	<1	1	1	1
30	4	1	1	4	-1	<1	2	<1	<1	1	1	1
31	---	---	---	79	<1	<1	47	<1	<1	---	---	---
MAX	---	---	---	>400	12	203	>400	11	>400	---	---	---
MIN	---	---	---	<1	-1	<1	1	-1	<1	---	---	---

WILLAMETTE RIVER BASIN

14161100 BLUE RIVER BELOW TIDBITS CREEK. NEAR BLUE RIVER. OR

LOCATION.--Lat 44°13'05", long 122°15'50", in SE 1/4 NE 1/4 sec.36, T.15 S., R.4 E., Lane County, Hydrologic Unit 17090004, in Willamette National Forest, on left bank 0.2 mi downstream from Tidbits Creek, 5.5 mi northeast of town of Blue River, and at mile 8.5.

DRAINAGE AREA. --45.8 mi²

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,386.90 ft above sea level (Corps of Engineers bench mark).

REMARKS.--Records good except for estimated daily discharges, which are fair. Discharges for the period Aug. 24 to Sept. 4 computed from data obtained through U.S. Army Corps of Engineers Columbia River Operational Hydromet System (CROHMS) database. 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 telemetry at station.

AVERAGE DISCHARGE.--38 years (water years 1964-2001), 251 ft³/s, 74.55 in/yr, 182,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,400 ft³/s Dec. 22, 1964, gage height, 15.32 ft, from floodmarks, from rating curve extended above 2,800 ft³/s on basis of slope-area measurement of peak flow; minimum daily discharge, 6.0 ft³/s Oct. 27-29, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16	0100	*1,170	*5.56				

Minimum discharge, 6.7 ft³/s Sept. 24, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	22	109	182	97	88	426	606	74	42	e18	9.7
2	18	30	88	170	113	119	337	373	77	40	e17	9.5
3	13	29	75	173	154	107	271	272	86	38	e17	9.4
4	11	30	64	169	284	101	223	219	75	36	e16	9.2
5	11	31	56	180	320	100	195	186	82	35	e16	9.1
6	11	39	50	167	246	105	194	160	101	33	e15	9.2
7	10	38	45	144	190	109	180	141	81	32	e15	9.1
8	10	131	41	135	161	117	169	130	72	31	e14	8.8
9	11	114	40	133	142	118	158	119	68	30	14	8.4
10	15	70	39	137	129	111	156	107	64	29	14	8.0
11	21	50	39	119	117	102	256	99	67	30	13	8.0
12	16	41	38	107	105	96	245	92	107	30	13	8.0
13	15	36	45	112	97	95	199	85	86	28	13	7.9
14	18	32	267	118	91	93	171	170	76	26	12	7.8
15	15	29	483	108	86	98	161	725	69	26	12	9.1
16	14	26	264	97	82	98	189	861	63	25	12	9.2
17	13	24	349	89	79	115	263	473	59	24	12	8.4
18	18	23	192	86	77	302	262	334	55	24	12	8.1
19	19	22	145	153	74	558	249	259	52	24	11	7.6
20	84	22	145	153	73	392	226	213	50	23	11	7.5
21	125	22	276	237	106	272	200	181	47	23	11	7.3
22	48	21	700	318	122	216	179	159	45	22	12	7.2
23	31	28	830	250	116	196	164	141	43	21	18	7.1
24	24	64	605	208	110	198	157	128	48	21	14	7.0
25	20	50	362	180	101	248	169	116	52	20	12	9.2
26	18	61	255	156	92	222	176	107	53	19	12	16
27	18	147	236	136	86	366	160	100	64	18	11	14
28	40	103	238	123	81	810	166	93	54	18	11	9.8
29	40	116	240	120	---	570	164	89	48	20	11	8.6
30	31	145	212	108	---	407	578	81	45	e25	11	8.1
31	25	---	200	100	---	391	---	76	---	e20	10	---
TOTAL	779	1596	6728	4668	3531	6920	6643	6895	1963	833	410	266.3
MEAN	25.1	53.2	217	151	126	223	221	222	65.4	26.9	13.2	8.88
MAX	125	147	830	318	320	810	578	861	107	42	18	16
MIN	10	21	38	86	73	88	156	76	43	18	10	7.0
AC-FT	1550	3170	13340	9260	7000	13730	13180	13680	3890	1650	813	528
CFSM	.55	1.16	4.74	3.29	2.75	4.87	4.83	4.86	1.43	.59	.29	.19
IN.	.63	1.30	5.46	3.79	2.87	5.62	5.40	5.60	1.59	.68	.33	.22

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2001, BY WATER YEAR (WY)

MEAN	69.2	337	507	490	439	377	343	256	124	39.3	20.9	24.6
MAX	234	731	1471	1033	1066	995	597	521	320	90.9	51.9	82.2
(WY)	1998	1974	1965	1970	1996	1972	1993	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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1964 - 2001
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ANNUAL TOTAL	79108.8		41232.3			
ANNUAL MEAN	216		113		251	
HIGHEST ANNUAL MEAN					404	1974
LOWEST ANNUAL MEAN					106	1977
HIGHEST DAILY MEAN	1590	Feb 1	861	May 16	10000	Dec 22 1964
LOWEST DAILY MEAN	9.3	Sep 28	7.0	Sep 24	6.0	Oct 27 1987
ANNUAL SEVEN-DAY MINIMUM	9.5	Sep 24	7.4	Sep 18	6.1	Oct 23 1987
ANNUAL RUNOFF (AC-FT)	156900		81780		182100	
ANNUAL RUNOFF (CFSM)	4.72		2.47		5.49	
ANNUAL RUNOFF (INCHES)	64.25		33.49		74.55	
10 PERCENT EXCEEDS	561		255		575	
50 PERCENT EXCEEDS	122		77		139	
90 PERCENT EXCEEDS	12		11		15	

e Estimated

WILLAMETTE RIVER BASIN

203

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 mi².

PERIOD OF RECORD.--August 1949 to September 1955, September 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,377.76 ft above sea level (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 August 1950 to September 1955 and September 1963 to September 1981 have been collected at this location.

AVERAGE DISCHARGE.--44 years (water years 1950-55, 1964-2001), 123 ft³/s, 69.52 in/yr, 89,330 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,000 ft³/s Feb. 7, 1996, gage height, 10.03 ft, on basis of slope-area measurement of peak flow; minimum discharge, 4.8 ft³/s Sept. 16, 17, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 22	2300	*377	*3.83				

Minimum discharge, 7.0 ft³/s September 22-25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	12	39	89	52	46	170	241	44	21	11	8.4
2	12	14	35	84	57	60	147	185	44	20	11	8.4
3	10	13	31	85	68	55	129	153	45	20	11	8.4
4	9.7	13	28	85	93	53	114	133	42	19	11	8.3
5	9.5	13	25	90	107	51	104	117	44	18	11	8.2
6	9.4	15	23	84	96	49	104	103	47	17	10	8.1
7	9.4	14	21	76	85	48	97	94	41	16	10	8.0
8	9.1	35	19	74	78	50	92	88	38	16	10	7.9
9	9.3	34	19	71	72	51	86	81	37	15	9.8	7.7
10	10	23	19	69	68	48	84	75	35	15	9.8	7.6
11	12	18	19	62	64	46	111	70	37	30	9.7	7.6
12	10	15	19	57	59	44	110	67	48	30	9.5	7.6
13	10	14	23	60	55	43	100	62	41	21	9.4	7.6
14	11	13	92	66	53	43	90	92	36	18	9.3	7.5
15	10	13	170	63	50	45	84	249	34	16	9.2	8.4
16	9.9	12	111	57	49	45	85	271	33	16	9.1	8.3
17	9.7	12	123	53	47	55	108	196	31	15	9.2	7.7
18	12	11	90	50	46	103	117	152	30	14	9.1	7.5
19	11	11	73	63	44	195	123	127	28	14	9.0	7.5
20	32	11	66	61	43	168	119	109	27	13	8.9	7.3
21	40	11	85	82	51	133	112	95	26	13	8.8	7.2
22	19	11	229	102	53	114	106	85	25	13	9.2	7.2
23	14	13	310	95	53	109	100	77	24	12	12	7.1
24	12	20	244	89	52	112	99	70	26	12	10	7.0
25	11	17	173	81	49	134	110	65	27	12	9.5	8.4
26	11	22	133	74	46	118	116	61	28	11	9.2	11
27	13	46	115	67	44	154	107	57	30	11	9.0	10
28	22	35	108	63	42	292	108	54	25	11	8.8	8.3
29	18	42	106	62	---	231	99	51	23	12	8.7	7.8
30	14	49	99	57	---	185	214	48	22	15	8.6	7.7
31	12	---	95	54	---	175	---	45	---	12	8.5	---
TOTAL	414.0	582	2742	2225	1676	3055	3345	3373	1018	498	299.3	239.7
MEAN	13.4	19.4	88.5	71.8	59.9	98.5	112	109	33.9	16.1	9.65	7.99
MAX	40	49	310	102	107	292	214	271	48	30	12	11
MIN	9.1	11	19	50	42	43	84	45	22	11	8.5	7.0
AC-FT	821	1150	5440	4410	3320	6060	6630	6690	2020	988	594	475
CFSM	.55	.80	3.67	2.98	2.48	4.09	4.63	4.51	1.41	.67	.40	.33
IN.	.64	.90	4.23	3.43	2.59	4.72	5.16	5.21	1.57	.77	.46	.37

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2001, BY WATER YEAR (WY)

MEAN	36.9	152	235	240	218	174	167	135	72.9	25.8	14.8	15.0
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 2001 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1950 - 2001

ANNUAL TOTAL	33998.9	19467.0	
ANNUAL MEAN	92.9	53.3	123
HIGHEST ANNUAL MEAN			207
LOWEST ANNUAL MEAN			49.2
HIGHEST DAILY MEAN	514	Feb 2	4890
LOWEST DAILY MEAN	9.1	Oct 8	5.1
ANNUAL SEVEN-DAY MINIMUM	9.5	Sep 24	5.2
ANNUAL RUNOFF (AC-FT)	67440	38610	89330
ANNUAL RUNOFF (CFSM)	3.85	2.21	5.12
ANNUAL RUNOFF (INCHES)	52.48	30.05	69.52
10 PERCENT EXCEEDS	227	114	277
50 PERCENT EXCEEDS	62	39	74
90 PERCENT EXCEEDS	11	9.1	12

WILLAMETTE RIVER BASIN

14162100 BLUE RIVER LAKE NEAR BLUE RIVER, OR

LOCATION.--Lat 44°10'20", long 122°19'40", in SE 1/4 SE 1/4 sec.16, T.16 S., R.4 E., Lane County, Hydrologic Unit 17090004, in intake tower near left end of Blue River Dam on Blue River, 1.4 mi north of town of Blue River, and at mile 1.7.

DRAINAGE AREA.--87.3 mi².

PERIOD OF RECORD.--October 1968 to current year. Prior to October 1971, published as Blue River Reservoir near Blue River.

REVISED RECORDS.--WDR OR-92-1: 1975-77.

GAGE.--Water-stage recorder. Datum of gage is sea level (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, 49,800 acre-ft Oct. 1, elevation, 1,309.88 ft; minimum contents recorded, 3,570 acre-ft Dec. 16, elevation, 1,176.91 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 (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1308.46	1253.66	1184.65	1184.52	1226.08	1257.64	1302.08	1299.72	1284.72	1278.84	1264.20	1226.24
2	1306.97	1250.65	1184.66	1184.55	1227.46	1258.55	1303.71	1300.98	1282.97	1278.67	1263.06	1225.54
3	1305.44	1247.34	1184.18	1184.64	1229.51	1259.33	1304.39	1301.15	1281.25	1278.48	1261.91	1224.84
4	1303.89	1243.97	1183.33	1184.61	1233.07	1260.01	1303.83	1301.02	1279.41	1278.30	1260.75	1224.12
5	1302.31	1240.46	1183.44	1184.88	1236.67	1260.66	1303.17	1300.70	1277.65	1278.08	1259.59	1223.40
6	1300.72	1236.87	1184.18	1184.82	1239.23	1261.30	1302.56	1300.21	1276.23	1277.87	1258.39	1222.91
7	1299.12	1232.62	1184.71	1183.92	1241.12	1261.96	1300.45	1299.59	1275.55	1277.66	1257.20	1222.58
8	1297.51	1228.83	1185.08	1182.72	1242.65	1262.73	1298.13	1298.94	1275.39	1277.43	1256.00	1222.22
9	1295.89	1223.75	1185.39	1182.37	1243.94	1263.48	1296.56	1298.19	1275.50	1277.17	1254.78	1221.87
10	1294.28	1217.57	1185.69	1183.33	1245.09	1264.15	1296.32	1297.36	1275.71	1276.93	1253.57	1221.51
11	1292.68	1210.41	1186.14	1184.80	1246.08	1264.76	1296.73	1296.45	1276.02	1276.76	1252.32	1221.16
12	1291.00	1202.34	1186.54	1186.61	1246.94	1265.30	1296.66	1295.53	1276.57	1276.60	1251.09	1220.80
13	1289.33	1194.48	1187.20	1188.78	1247.70	1265.83	1296.07	1292.99	1276.94	1276.46	1249.82	1220.44
14	1287.63	1188.66	1192.52	1191.41	1248.39	1266.35	1295.28	1291.17	1277.24	1276.40	1248.55	1220.09
15	1285.89	1185.30	1185.92	1193.43	1249.01	1266.95	1294.41	1293.72	1277.47	1276.33	1247.27	1219.75
16	1284.11	1184.29	1176.91	1194.84	1249.56	1267.56	1293.65	1297.84	1277.68	1276.27	1245.97	1219.42
17	1282.26	1184.09	1182.59	1195.88	1250.07	1268.48	1293.59	1300.10	1277.85	1275.95	1244.68	1219.07
18	1280.43	1183.82	1183.17	1196.76	1250.55	1270.82	1294.13	1301.59	1277.99	1275.27	1243.34	1218.69
19	1278.55	1183.53	1183.97	1199.25	1251.01	1274.72	1294.71	1302.22	1278.12	1274.57	1241.97	1218.32
20	1277.29	1183.21	1184.34	1201.66	1251.48	1277.43	1295.54	1302.36	1278.25	1273.86	1240.53	1217.92
21	1276.16	1182.88	1185.28	1205.24	1252.23	1279.24	1296.62	1302.20	1278.37	1273.16	1239.00	1217.48
22	1274.43	1182.49	1193.54	1210.05	1253.11	1280.68	1297.56	1301.06	1278.45	1272.43	1237.43	1217.05
23	1272.54	1182.32	1194.53	1213.46	1253.95	1281.95	1297.94	1299.27	1278.54	1271.70	1235.90	1216.61
24	1270.58	1183.37	1190.63	1216.05	1254.73	1283.25	1297.38	1297.37	1278.67	1270.97	1234.21	1216.15
25	1268.60	1184.02	1187.41	1218.05	1255.41	1284.80	1296.89	1296.03	1278.78	1270.22	1232.43	1215.81
26	1266.54	1185.02	1185.36	1219.61	1256.01	1286.15	1296.46	1294.56	1278.82	1269.47	1230.60	1215.56
27	1264.46	1185.47	1185.04	1221.03	1256.55	1288.39	1295.92	1293.07	1279.04	1268.71	1229.56	1215.28
28	1262.63	1182.75	1184.52	1222.17	1257.04	1293.01	1295.47	1291.49	1279.17	1267.95	1228.91	1214.53
29	1260.58	1182.32	1184.53	1223.37	---	1296.02	1294.92	1289.89	1279.17	1267.23	1228.25	1213.46
30	1258.51	1184.10	1184.43	1224.29	---	1298.12	1296.95	1288.20	1279.02	1266.42	1227.59	1212.35
31	1256.37	---	1184.50	1225.04	---	1300.10	---	1286.49	---	1265.33	1226.91	---
MAX	1308.46	1253.66	1194.53	1225.04	1257.04	1300.10	1304.39	1302.36	1284.72	1278.84	1264.20	1226.24
MIN	1256.37	1182.32	1176.91	1182.37	1226.08	1257.64	1293.59	1286.49	1275.39	1265.33	1226.91	1212.35
(†)	21440	4530	4590	12220	21680	43160	41140	34980	31050	24850	12680	9380
(‡)	-28380	-16910	+60	+7630	+9460	+21480	-2020	-6160	-3930	-6200	-12170	-3300

CAL YR 2000 MAX --- MIN --- AC-FT† +320

WTR YR 2001 MAX 1308.46 MIN 1176.91 AC-FT† -40440

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

‡ Change in contents, in acre-feet.

WILLAMETTE RIVER BASIN

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14162200 BLUE RIVER AT BLUE RIVER, OR

LOCATION.--Lat 44°09'45", long 122°19'55", in NW 1/4 SE 1/4 sec.21, T.16 S., R.4 E., Lane County, Hydrologic Unit 17090004, on right bank 0.3 mi upstream from Simmonds Creek, 0.7 mi north of town of Blue River, 0.8 mi downstream from Blue River Dam, and at mile 0.9.

DRAINAGE AREA.--87.7 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 1,056.53 ft above sea level (Corps of Engineers bench mark). Prior to Aug. 25, 1966, nonrecording gage at datum 0.80 ft higher.

REMARKS.--No estimated daily discharges. Records good. 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.--35 years (water years 1967-2001), 458 ft³/s, 331,700 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,270 ft³/s Feb. 23, 1968, gage height, 8.93 ft; minimum discharge, 0.80 ft³/s Oct. 8, 10, 11, 1968; minimum daily, 3.7 ft³/s Oct. 8, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964 reached a stage of 16.5 ft, from floodmark.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,660 ft³/s Dec. 23, gage height, 6.23 ft; minimum discharge, 36 ft³/s Feb. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	531	551	144	319	65	51	53	202	600	106	267	97
2	529	608	145	295	46	52	53	294	597	103	267	97
3	527	634	145	295	46	53	276	486	594	102	267	97
4	524	626	144	297	47	52	580	488	590	102	267	96
5	521	616	84	299	47	52	580	488	588	102	267	96
6	519	607	49	299	48	53	581	487	518	102	264	69
7	519	623	49	298	48	53	992	486	302	102	264	51
8	519	678	49	296	47	53	1030	486	152	102	262	51
9	517	760	49	252	47	53	780	486	82	103	262	51
10	515	735	49	200	48	53	400	484	54	104	262	51
11	513	707	50	141	48	53	401	484	54	104	260	51
12	509	672	51	99	49	53	515	483	54	104	259	51
13	507	582	85	101	48	53	577	905	54	82	256	50
14	504	395	213	106	46	49	576	867	54	58	255	50
15	500	224	1270	107	49	48	574	541	54	58	253	50
16	497	95	836	107	55	49	573	171	54	56	252	49
17	502	51	425	108	55	55	471	88	54	109	250	50
18	506	50	349	109	55	56	298	88	54	200	247	50
19	501	50	243	110	55	56	298	230	54	200	247	50
20	501	50	243	112	56	52	180	320	47	202	249	52
21	503	50	362	114	53	51	56	369	46	203	258	55
22	500	49	667	119	51	49	56	632	48	202	261	55
23	495	49	1300	121	51	48	222	790	48	200	259	55
24	492	50	1230	124	51	48	483	788	48	202	256	55
25	487	50	799	125	51	48	482	605	72	203	253	54
26	484	51	568	122	51	49	482	617	70	203	250	54
27	478	202	435	101	51	50	482	615	50	201	152	54
28	474	295	432	101	51	55	481	613	50	200	99	85
29	470	197	402	102	---	53	480	610	85	200	99	111
30	465	143	375	102	---	52	344	607	104	220	99	110
31	461	---	343	103	---	52	---	603	---	267	97	---
TOTAL	15570	10450	11585	5184	1415	1604	13356	15413	5231	4502	7260	1947
MEAN	502	348	374	167	50.5	51.7	445	497	174	145	234	64.9
MAX	531	760	1300	319	65	56	1030	905	600	267	267	111
MIN	461	49	49	99	46	48	53	88	46	56	97	49
AC-FT	30880	20730	22980	10280	2810	3180	26490	30570	10380	8930	14400	3860

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2001, BY WATER YEAR (WY)

	315	663	955	866	463	381	347	345	233	281	373	261
MEAN	315	663	955	866	463	381	347	345	233	281	373	261
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 2000 CALENDAR YEAR			FOR 2001 WATER YEAR			WATER YEARS 1967 - 2001		
ANNUAL TOTAL	132218			93517					
ANNUAL MEAN	361			256			458		
HIGHEST ANNUAL MEAN							727		
LOWEST ANNUAL MEAN							192		
HIGHEST DAILY MEAN	1870			Apr 10			5650		
LOWEST DAILY MEAN	27			Feb 21			3.7		
ANNUAL SEVEN-DAY MINIMUM	41			Feb 18			7.0		
ANNUAL RUNOFF (AC-FT)	262300						331700		
10 PERCENT EXCEEDS	898						998		
50 PERCENT EXCEEDS	150						288		
90 PERCENT EXCEEDS	49						50		

WILLAMETTE RIVER BASIN

14162500 MCKENZIE RIVER NEAR VIDA, OR

LOCATION.--Lat 44°07'30", long 122°28'10", in NE 1/4 NE 1/4 sec.5, T.17 S., R.3 E., Lane County, Hydrologic Unit 17090004, on right bank 0.4 mi downstream from Mason Creek, 5.4 mi east of Vida, and at mile 47.7.

DRAINAGE AREA.--930 mi² at cableway 0.4 mi downstream, where all discharge measurement are made.

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 sea level (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.--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 ft³/s, 2,898,000 acre-ft/yr.
39 years (water years 1963-2001), 4,098 ft³/s, 2,969,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 64,400 ft³/s Dec. 28, 1945, gage height, 17.70 ft, site and datum then in use, from rating curve extended above 32,000 ft³/s; minimum discharge, 1,260 ft³/s Nov. 7, 1930, Sept. 17, Oct. 4, 8, 9, 1931.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in January 1923 reached a stage of 17.2 ft, from floodmarks, discharge, 62,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,020 ft³/s May 16, gage height, 3.17 ft; minimum discharge, 1,770 ft³/s July 10, 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2880	e2880	3180	2970	2210	2000	3930	4690	2940	1930	2080	2010
2	2870	2990	3120	2890	2260	2240	3680	4060	2960	1910	2120	2010
3	2840	3010	3060	2860	2490	2150	3990	3980	2980	1890	2210	2000
4	2830	3000	3020	2840	2780	2110	4550	3790	2920	1870	2190	1990
5	2810	3010	2720	2910	2870	2050	4400	3630	2930	1860	2180	2000
6	2800	3040	2440	2930	2740	2010	4450	3490	2940	1850	2170	1980
7	2800	3030	2380	2890	2520	2040	4790	3440	2620	1850	2160	1940
8	2790	3440	2350	2850	2420	2110	4770	3430	2400	1830	2280	1920
9	2810	3560	2350	2790	2380	2180	4440	3390	2310	1810	2300	1920
10	2840	3300	2340	2660	2330	2160	3850	3330	2240	1800	2300	1900
11	2870	3160	2360	2540	2290	2130	4110	3300	2220	1800	2290	1890
12	2800	3080	2370	2390	2230	2100	4110	3450	2450	1810	2280	1890
13	2820	3040	2350	2440	2180	2070	3990	4200	2310	1870	2270	1890
14	2810	3040	3040	2570	2160	2070	3600	4370	2230	1970	2200	1900
15	2770	2850	4840	2480	2140	2100	3340	5300	2190	1970	2130	1930
16	2700	2570	4300	2390	2120	2140	3350	5420	2150	1970	2130	1890
17	2830	2380	3870	2350	2070	2290	3490	4310	2100	1950	2110	1900
18	2800	2380	3310	2320	2050	2620	3350	3850	2040	1940	2090	1900
19	2750	2370	2890	2410	2030	3410	3450	4090	2010	1920	2100	1900
20	3080	2330	2780	2410	2040	3290	3260	3990	1980	1860	2100	1900
21	3380	2270	2960	2490	2120	2920	3010	3910	1980	1850	2100	1860
22	2980	2300	4210	2600	2160	2730	2940	4060	1970	1840	2120	1830
23	2870	2600	5680	2550	2270	2650	3010	4180	1990	1840	2190	1830
24	2820	2810	5420	2550	2210	2650	3250	4110	2120	1840	2210	1830
25	2800	2920	4520	2520	2120	3070	3260	3860	2130	1840	2170	1890
26	2790	2980	3900	2470	2050	3120	3390	3820	2060	1840	2150	1930
27	2780	3290	3380	2390	2010	3230	3390	3760	2050	1830	2060	1910
28	2930	3360	3300	2360	1980	4930	3460	3690	1990	1840	2000	1910
29	2870	3280	3220	2350	---	4430	3340	3630	1970	1850	2010	1930
30	2810	3260	3140	2280	---	3840	3910	3480	1950	1920	2020	1920
31	2790	---	3060	2250	---	3690	---	3070	---	1960	2020	---
TOTAL	88320	87530	101860	79700	63230	82530	111860	121080	69130	58110	66740	57500
MEAN	2849	2918	3286	2571	2258	2662	3729	3906	2304	1875	2153	1917
MAX	3380	3560	5680	2970	2870	4930	4790	5420	2980	1970	2300	2010
MIN	2700	2270	2340	2250	1980	2000	2940	3070	1950	1800	2000	1830
AC-FT	175200	173600	202000	158100	125400	163700	221900	240200	137100	115300	132400	114100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2001, BY WATER YEAR (WY)

	MEAN	2816	4611	6276	6083	4932	4377	4280	4460	3527	2626	2653	2560
MAX	4116	8718	14430	11180	11510	11210	7097	6625	6604	3529	3510	3358	
(WY)	1998	1985	1965	1965	1996	1972	1993	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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1963 - 2001
ANNUAL TOTAL	1440800	987590	
ANNUAL MEAN	3937	2706	4098
HIGHEST ANNUAL MEAN			6014
LOWEST ANNUAL MEAN			2447
HIGHEST DAILY MEAN	10300	Jan 10	43200
LOWEST DAILY MEAN	2270	Nov 21	1330
ANNUAL SEVEN-DAY MINIMUM	2360	Dec 7	1350
ANNUAL RUNOFF (AC-FT)	2858000		2969000
10 PERCENT EXCEEDS	5850		6990
50 PERCENT EXCEEDS	3370		3230
90 PERCENT EXCEEDS	2520		2220

e Estimated

WILLAMETTE RIVER BASIN

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14162500 MCKENZIE RIVER NEAR VIDA, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: November 1976 to September 1985.

TEMPERATURE: June 1961 to September 1985, November 2000 to September 2001.

INSTRUMENTATION.--Temperature probe and data logger.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 72 microsiemens Nov. 20, 1980; minimum recorded, 2.4 microsiemens Nov. 25, 1977.

TEMPERATURE: Maximum, 16.2°C July 12, 2001; minimum recorded, 0.5°C Jan. 1, 1979.

EXTREMES FOR PERIOD OF DAILY RECORD.--TEMPERATURE: Maximum, 16.2°C July 12; minimum, 3.5°C Jan. 17.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	---	---	---	6.7	6.0	6.4	5.4	4.8	5.1
2	---	---	---	10.5	9.7	---	7.1	6.3	6.7	6.0	5.0	5.4
3	---	---	---	10.7	9.9	10.2	7.1	6.4	6.8	5.6	4.8	5.3
4	---	---	---	10.2	9.6	9.8	6.7	6.1	6.4	6.2	5.4	5.8
5	---	---	---	10.0	9.3	9.6	6.4	5.8	6.0	6.3	5.6	5.9
6	---	---	---	10.0	9.4	9.7	6.1	5.4	5.8	6.1	5.1	5.4
7	---	---	---	9.6	8.8	9.2	6.0	5.2	5.6	5.9	4.9	5.4
8	---	---	---	9.5	8.9	9.3	6.1	5.2	5.6	6.1	5.7	5.9
9	---	---	---	9.1	8.4	8.7	6.7	6.1	6.3	5.9	5.1	5.4
10	---	---	---	8.6	7.7	8.1	6.2	5.8	6.0	5.5	5.3	5.4
11	---	---	---	8.0	7.1	7.5	5.9	5.1	5.5	5.9	5.0	5.4
12	---	---	---	8.1	7.0	7.5	5.3	4.6	5.0	6.1	5.5	5.8
13	---	---	---	8.0	7.2	7.5	5.1	4.0	4.6	5.9	5.2	5.5
14	---	---	---	7.7	7.0	7.4	5.4	4.2	4.9	5.4	4.8	5.1
15	---	---	---	7.7	6.9	7.4	5.5	5.3	5.4	5.4	4.6	5.2
16	---	---	---	7.0	6.0	6.5	5.9	5.3	5.6	4.6	3.8	4.1
17	---	---	---	6.5	5.4	5.9	6.0	5.2	5.7	4.8	3.5	4.1
18	---	---	---	6.3	5.3	5.8	5.3	4.6	4.9	5.4	4.5	4.9
19	---	---	---	6.6	5.2	5.9	5.6	4.9	5.2	5.7	5.0	5.3
20	---	---	---	6.8	5.7	6.2	5.8	5.4	5.6	5.4	4.3	4.9
21	---	---	---	6.8	5.9	6.3	5.7	5.3	5.6	5.8	5.3	5.5
22	---	---	---	6.1	5.3	5.7	5.9	5.6	5.8	6.0	5.3	5.6
23	---	---	---	6.6	5.7	6.2	6.0	5.7	5.9	5.5	4.8	5.2
24	---	---	---	7.4	6.5	6.9	6.0	5.5	5.8	5.8	5.2	5.5
25	---	---	---	7.2	6.3	6.8	5.6	5.1	5.4	5.4	4.8	5.1
26	---	---	---	7.7	7.0	7.3	5.7	5.0	5.3	5.1	4.1	4.6
27	---	---	---	7.4	6.4	7.2	5.8	5.2	5.5	4.8	3.7	4.3
28	---	---	---	6.8	5.9	6.4	5.6	4.9	5.3	4.8	3.6	4.2
29	---	---	---	7.3	6.7	6.9	5.4	4.8	5.2	5.4	4.7	5.0
30	---	---	---	7.3	6.6	7.0	5.2	4.6	4.9	5.5	4.6	5.0
31	---	---	---	---	---	---	5.7	4.9	5.3	5.2	4.1	4.7
MONTH	---	---	---	---	---	---	7.1	4.0	5.6	6.3	3.5	5.2

WILLAMETTE RIVER BASIN

14162500 MCKENZIE RIVER NEAR VIDA, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	5.6	4.1	4.9	5.9	4.6	5.3	7.7	6.8	7.2	8.4	6.9	7.6
2	5.9	5.3	5.6	6.4	5.4	5.8	7.0	5.8	6.4	10.1	6.6	8.1
3	5.9	5.4	5.7	6.1	4.6	5.4	7.7	5.5	6.4	10.1	6.5	8.3
4	6.5	5.6	6.1	6.0	5.0	5.5	8.3	5.7	6.7	10.2	7.2	8.7
5	6.5	5.5	6.1	7.5	5.1	6.3	7.7	5.4	6.5	10.4	7.7	8.9
6	5.5	4.9	5.2	7.9	5.4	6.7	6.9	6.2	6.5	10.7	6.8	8.7
7	5.1	4.1	4.7	8.2	5.6	7.0	7.5	5.8	6.5	11.7	7.3	9.4
8	4.5	3.5	4.1	7.5	6.6	7.0	7.6	5.5	6.4	11.5	8.1	9.8
9	5.4	4.1	4.7	7.2	5.8	6.4	7.4	5.8	6.5	11.6	8.2	9.8
10	5.3	4.4	4.9	7.2	5.8	6.5	7.2	6.1	6.7	11.6	7.6	9.6
11	5.3	4.7	5.0	7.4	5.5	6.4	7.5	6.1	6.6	12.3	8.1	10.1
12	5.2	4.1	4.7	8.0	5.3	6.7	7.1	5.9	6.5	12.3	8.6	10.3
13	5.1	3.6	4.3	8.1	5.6	6.9	8.0	6.0	6.8	11.3	8.5	9.7
14	5.3	3.6	4.5	8.2	6.0	7.1	8.2	5.6	6.9	9.5	8.4	8.6
15	5.6	3.8	4.8	6.8	5.5	6.1	9.0	5.8	7.4	9.0	8.4	8.7
16	6.0	5.0	5.5	6.4	5.4	6.0	8.9	6.3	7.8	10.1	8.3	9.1
17	6.0	5.1	5.6	6.4	5.1	5.8	9.1	7.1	8.1	10.3	7.8	9.0
18	6.6	5.4	6.0	7.3	6.2	6.8	8.7	7.1	7.9	11.8	8.2	9.8
19	6.2	4.9	5.6	7.9	7.0	7.4	8.7	6.9	7.7	11.8	8.3	9.9
20	6.1	4.8	5.5	8.5	6.4	7.3	9.0	6.7	7.8	12.0	8.4	10.0
21	6.8	5.8	6.2	8.6	5.7	7.2	8.8	6.9	7.7	12.4	8.3	10.2
22	6.3	5.5	6.0	9.0	5.8	7.4	9.0	7.1	8.1	12.6	8.9	10.6
23	6.5	5.4	5.9	9.7	6.3	8.0	8.7	7.2	7.9	12.7	9.2	10.8
24	6.5	4.8	5.7	8.6	6.8	7.8	10.4	6.9	8.5	12.7	9.2	10.8
25	6.8	5.0	5.9	8.1	7.3	7.7	11.6	7.5	9.5	12.5	9.1	10.7
26	6.6	4.5	5.6	7.7	6.6	7.1	11.7	8.1	9.9	13.0	9.2	10.9
27	6.5	4.3	5.5	6.9	6.2	6.6	10.1	7.7	9.0	11.0	9.1	10.1
28	6.0	4.0	5.2	8.0	6.8	7.4	9.1	7.6	8.1	10.3	8.9	9.6
29	---	---	---	9.3	7.0	7.9	8.1	6.9	7.5	11.8	8.6	10.0
30	---	---	---	8.4	7.0	7.6	8.4	7.6	7.9	12.7	8.5	10.5
31	---	---	---	7.8	7.0	7.4	---	---	---	13.7	9.4	11.5
MONTH	6.8	3.5	5.3	9.7	4.6	6.8	11.7	5.4	7.4	13.7	6.5	9.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	12.2	9.8	10.6	15.2	10.2	12.6	14.9	10.5	12.7	14.6	11.2	13.0
2	10.9	9.1	9.8	15.5	10.1	12.9	15.2	10.7	13.0	14.8	10.8	12.8
3	11.2	8.8	9.8	15.1	10.5	13.0	14.2	11.0	12.7	14.5	10.7	12.7
4	11.6	8.8	10.2	15.7	10.9	13.3	13.5	10.9	12.1	14.5	10.8	12.7
5	10.4	9.2	9.8	15.5	11.2	13.4	15.1	10.3	12.5	13.1	11.3	12.2
6	13.2	9.2	10.9	15.4	10.3	13.0	15.5	10.8	13.1	13.5	10.0	11.7
7	14.1	9.6	11.8	15.0	10.2	12.9	16.0	11.0	13.5	13.7	9.9	11.9
8	13.7	10.0	12.0	15.7	10.4	13.1	15.7	10.8	13.3	13.8	10.2	12.1
9	13.0	10.3	11.5	15.7	10.6	13.3	15.6	11.2	13.4	14.0	10.3	12.2
10	11.8	9.6	10.5	14.2	11.1	12.8	15.6	11.2	13.4	13.7	10.7	12.2
11	10.2	9.3	9.7	14.6	10.9	12.8	15.7	11.3	13.5	14.2	10.7	12.5
12	11.5	9.0	10.1	16.2	10.7	13.2	14.9	11.3	13.2	14.2	11.3	12.8
13	13.3	8.2	10.6	15.7	10.7	13.2	15.9	11.4	13.5	14.6	11.6	13.1
14	13.5	8.9	11.3	15.2	10.1	12.8	15.8	11.6	13.7	14.4	11.5	13.0
15	13.8	8.9	11.4	14.4	10.0	12.3	16.1	11.8	13.9	13.5	11.9	12.7
16	13.7	9.1	11.5	13.1	10.3	11.8	15.8	11.7	13.8	14.8	11.6	13.1
17	12.6	9.0	10.9	14.0	9.9	11.9	16.1	11.7	13.8	14.3	11.1	12.8
18	13.6	8.4	11.0	13.7	10.7	12.3	15.6	11.8	13.5	13.9	10.8	12.5
19	14.4	9.2	11.8	15.1	10.0	12.4	15.1	10.9	13.0	13.8	10.7	12.3
20	15.0	9.8	12.5	13.9	11.0	12.5	15.1	10.8	13.1	13.6	10.5	12.2
21	15.4	10.2	12.9	15.3	10.5	12.9	14.2	11.0	12.7	13.3	10.4	11.9
22	14.8	10.2	12.6	15.5	10.5	13.1	13.4	11.8	12.5	13.8	10.5	12.2
23	13.4	10.6	12.2	15.7	10.7	13.3	14.3	11.7	12.9	13.9	10.9	12.4
24	12.1	9.6	10.4	16.0	11.0	13.6	15.3	11.5	13.2	13.7	11.2	12.5
25	12.2	9.0	10.5	15.8	10.8	13.5	15.2	11.2	13.2	12.7	11.7	12.0
26	11.4	9.9	10.7	15.6	10.6	13.3	15.8	11.6	13.7	12.1	11.3	11.7
27	12.9	9.9	11.3	15.5	10.6	13.2	15.2	12.0	13.6	12.5	10.8	11.6
28	12.6	10.3	11.5	14.2	11.0	12.7	15.1	11.0	13.1	12.8	10.2	11.5
29	13.7	9.9	11.8	12.9	10.5	11.6	15.3	11.1	13.3	13.1	10.2	11.7
30	13.8	10.3	12.2	12.9	10.6	11.6	15.2	11.2	13.3	13.4	10.6	12.0
31	---	---	---	15.2	10.7	12.7	15.0	11.2	13.2	---	---	---
MONTH	15.4	8.2	11.1	16.2	9.9	12.8	16.1	10.3	13.2	14.8	9.9	12.3

WILLAMETTE RIVER BASIN

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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 mi².

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 710 ft above sea level, 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.--12 years (water years 1990-2001), 2,641 ft³/s, 1,913,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,900 ft³/s Feb. 7, 1996, gage height, 17.95 ft; minimum discharge, 457 ft³/s Aug. 29, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,950 ft³/s May 16, gage height, 6.39 ft; minimum discharge, 959 ft³/s Aug. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1540	1060	1140	1020	1070	1020	2330	3210	1050	1080	1190	1140
2	1540	1060	1080	1020	1060	1180	2060	2390	1050	1080	1210	1130
3	1380	1060	1050	1020	1030	1120	2270	2260	1060	1040	1180	1130
4	1060	1070	1040	1020	1070	1080	2880	1980	1030	1030	1020	1130
5	1050	1070	1040	1040	1090	1040	2700	1780	1040	1030	1020	1130
6	1040	1070	1160	1050	1030	1020	2840	1630	1080	1050	1010	1120
7	1040	1060	1110	1030	1010	1010	3140	1550	1030	1070	1010	1090
8	1040	1460	1070	1030	1010	1030	3130	1520	1270	1050	1040	1080
9	1050	1640	1050	1030	1020	1160	2850	1460	1160	1030	1040	1070
10	1080	1270	1040	1030	1010	1150	2150	1390	1140	1020	1040	1060
11	1080	1100	1050	1020	1120	1090	2710	1340	1170	1030	1040	1060
12	1030	1030	1160	1020	1200	1060	2590	1450	1240	1040	1030	1060
13	1030	1030	1290	1040	1130	1050	2390	2180	1180	1060	1030	1060
14	1040	1060	1700	1050	1110	1060	1940	2470	1090	1170	1020	1060
15	1030	1020	3550	1050	1070	1060	1600	3950	1050	1170	1130	1090
16	1020	1030	2730	1040	1060	1120	1580	4170	1030	1160	1250	1080
17	1080	1080	2200	1030	1020	1070	1730	2750	1030	1150	1230	1070
18	1070	1090	1520	1110	1020	1090	1560	2090	1020	1130	1210	1070
19	1040	1080	1060	1070	1010	1920	1700	2310	1020	1130	1200	1070
20	1220	1050	1030	1000	1020	1740	1560	2180	1010	1070	1210	1080
21	1440	1030	1050	1020	1060	1220	1240	2030	1010	1050	1210	1060
22	1080	1040	2610	1030	1090	1020	1140	2130	1010	1040	1230	1040
23	1070	1330	4400	1010	1230	1030	1150	2240	1010	1030	1220	1040
24	1050	1160	4070	1020	1180	1030	1390	2180	1040	1050	1330	1040
25	1050	1100	2900	1040	1080	1240	1360	1900	1040	1050	1310	1060
26	1050	1090	2130	1030	1020	1260	1470	1820	1020	1050	1290	1140
27	1050	1270	1470	1010	1020	1400	1470	1780	1020	1040	1220	1120
28	1140	1360	1350	1020	1020	3630	1570	1710	1040	1030	1140	1100
29	1050	1260	1240	1020	---	2970	1490	1640	1120	1030	1160	1120
30	1060	1210	1150	1080	---	2210	2120	1500	1100	1100	1170	1120
31	1060	---	1060	1120	---	2001	---	1100	---	1100	1150	---
TOTAL	34560	34240	51500	32120	29860	42080	60110	64090	32160	33160	35540	32620
MEAN	1115	1141	1661	1036	1066	1357	2004	2067	1072	1070	1146	1087
MAX	1540	1640	4400	1120	1230	3630	3140	4170	1270	1170	1330	1140
MIN	1020	1020	1030	1000	1010	1010	1140	1100	1010	1020	1010	1040
AC-FT	68550	67920	102200	63710	59230	83470	119200	127100	63790	65770	70490	64700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2001, BY WATER YEAR (WY)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	1180	3147	4844	4786	3645	2877	3012	3118	1945	1095	1068	1019
MAX	2361	7467	12250	9241	11880	6149	6042	5410	3632	1390	1285	1374
(WY)	1998	1997	1997	1997	1996	1993	1993	1993	1999	1999	1995	2001
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 2001 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1990 - 2001

ANNUAL TOTAL	839340	482040		
ANNUAL MEAN	2293	1321		
HIGHEST ANNUAL MEAN			2641	
LOWEST ANNUAL MEAN			4550	1997
HIGHEST DAILY MEAN	10600	Jan 10	4400	Dec 23
LOWEST DAILY MEAN	1010	Jul 22	1000	Jan 20
ANNUAL SEVEN-DAY MINIMUM	1010	Aug 3	1020	Jun 17
ANNUAL RUNOFF (AC-FT)	1665000		956100	
10 PERCENT EXCEEDS	4320		2120	
50 PERCENT EXCEEDS	1580		1080	
90 PERCENT EXCEEDS	1020		1020	

WILLAMETTE RIVER BASIN

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 mi².

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 600 ft above sea level, 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.--12 years (water years 1990-2001), 2,918 ft³/s, 2,114,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,100 ft³/s Feb. 7, 1996, gage height, 16.18 ft; minimum discharge, 420 ft³/s Nov. 8, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,390 ft³/s Apr. 7, gage height, 4.65 ft; minimum recorded discharge, 958 ft³/s Aug. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1240	1150	1560	1270	1050	1050	2470	3170	1080	1080	1090	1070
2	1230	1280	1500	1110	1060	1100	2240	2260	1090	1070	1080	1080
3	1270	1300	1430	1070	1070	1060	3420	2100	1120	1070	1080	1070
4	1250	1320	1380	1050	1240	1050	5010	1830	1080	1080	1080	1080
5	1130	1320	1250	1060	1310	1040	4820	1640	1080	1070	1070	1080
6	1070	1350	1050	1080	1220	1060	4960	1500	1130	1070	1080	1080
7	1060	1540	1030	1060	2010	1630	5240	1440	1450	1280	1080	1070
8	1070	2810	1030	1040	2590	2200	5260	1410	2430	1540	1080	1080
9	1060	3580	1030	1050	2530	2330	3530	1380	1570	1070	1080	1070
10	1100	3230	1030	1060	2460	2320	2340	1340	1090	1070	1080	1080
11	1180	3060	1040	1060	1530	1470	2850	1310	1080	1070	1070	1080
12	1140	2110	1090	1070	1060	1050	2770	1330	1110	1070	1070	1070
13	1150	1390	1190	1090	1080	1050	2600	1850	1080	1070	1070	1070
14	1150	1410	1780	1100	1050	1060	2200	2090	1070	1070	1070	1070
15	1110	1240	3770	1060	1040	1050	1860	3740	1060	1070	1070	1080
16	1050	1080	3180	1050	1040	1060	1800	4110	1070	1070	1080	1070
17	1160	1060	2590	1050	1030	1100	1930	2720	1070	1070	1070	1050
18	1180	1040	2040	1070	1040	1390	1780	1970	1060	1070	1070	1070
19	1100	1030	1510	1110	1040	2210	1910	2140	1070	1080	1070	1080
20	1410	1020	1350	1040	1040	2250	1830	1970	1070	1070	1080	1080
21	1930	1030	1440	1080	1050	1760	1570	1810	1070	1070	1080	1070
22	1390	1040	2820	1080	1060	1510	1440	1880	1050	1080	1080	1060
23	1210	1170	4820	1050	1080	1370	1370	2000	1250	1060	1100	1070
24	1140	1210	4580	1090	1050	1300	1600	1950	2110	1040	1070	1080
25	1100	1270	3400	1060	1040	1600	1580	1740	1530	1050	1080	1090
26	1090	1340	2620	1050	1040	1680	1650	1630	1070	1070	1080	1070
27	1070	1570	1930	1040	1040	1710	1650	1600	1070	1060	1070	1100
28	1270	1730	1770	1050	1030	3840	1730	1550	1080	1070	1070	1070
29	1160	1640	1670	1050	---	3380	1670	1500	1070	1060	1080	1070
30	1120	1640	1580	1040	---	2650	2050	1430	1070	1080	1090	1070
31	1090	---	1500	1050	---	2400	---	1180	---	1080	1070	---
TOTAL	36680	46960	59960	33190	35880	51730	77130	59570	36230	33830	33390	32230
MEAN	1183	1565	1934	1071	1281	1669	2571	1922	1208	1091	1077	1074
MAX	1930	3580	4820	1270	2590	3840	5260	4110	2430	1540	1100	1100
MIN	1050	1020	1030	1040	1030	1040	1370	1180	1050	1040	1070	1050
AC-FT	72750	93150	118900	65830	71170	102600	153000	118200	71860	67100	66230	63930

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2001, BY WATER YEAR (WY)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	1415	3591	5142	5087	4086	3476	3807	3139	1781	1206	1204	1146
MAX	2756	7816	13640	10030	12560	7079	7133	4989	3377	1692	2295	1807
(WY)	1998	1997	1997	1997	1996	1997	1993	1999	1999	1995	1995	1995
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1990 - 2001

ANNUAL TOTAL	931180	536780	2918
ANNUAL MEAN	2544	1471	5034
HIGHEST ANNUAL MEAN			1471
LOWEST ANNUAL MEAN			1997
HIGHEST DAILY MEAN	11600	5260	44600
LOWEST DAILY MEAN	1020	1020	499
ANNUAL SEVEN-DAY MINIMUM	1040	1040	516
ANNUAL RUNOFF (AC-FT)	1847000	1065000	2114000
10 PERCENT EXCEEDS	4980	2330	6280
50 PERCENT EXCEEDS	1640	1090	1590
90 PERCENT EXCEEDS	1100	1050	1040

14165000 MOHAWK RIVER NEAR SPRINGFIELD, OR

LOCATION.--Lat 44°05'34", long 122°57'20", in SE 1/4 NW 1/4 sec.17, T.17 S., R.2 W., Lane County, Hydrologic Unit 17090004, on left bank 50 ft downstream from bridge, 1.3 mi northeast of Springfield, and at mile 1.59.

DRAINAGE AREA.--177 mi².

PERIOD OF RECORD.--September 1935 to September 1952, October 1963 to 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 sea level. 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 period October 1963 to September 1969 and April 1983 to September 1984 have been collected at this location.

AVERAGE DISCHARGE.--55 years (water years 1936-52, 1963-97, 1999-2001), 530 ft³/s, 40.70 in/yr, 384,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,500 ft³/s Feb. 7, 1996, gage height, 23.11 ft; minimum discharge, 8.2 ft³/s Sept. 9, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1955, reached at stage of 22.9 ft, from floodmark, probably affected by backwater from McKenzie River, discharge, 9,200 ft³/s.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 22	1800	*978	*4.78				
Minimum discharge, 14 ft ³ /s Sept. 14, 22.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	47	104	214	247	189	533	506	166	88	46	22
2	31	51	93	199	251	320	536	436	178	80	40	22
3	27	52	86	185	302	276	576	392	188	76	37	21
4	24	48	78	176	398	263	540	361	174	72	39	19
5	24	54	73	174	403	251	500	333	179	69	38	19
6	22	55	69	165	379	228	539	308	191	66	34	19
7	21	55	65	158	347	216	546	289	159	65	31	19
8	20	83	63	156	319	205	572	271	148	62	30	19
9	27	148	63	160	305	232	609	257	141	59	28	18
10	50	104	65	176	289	234	590	243	142	57	27	17
11	40	80	68	160	285	217	837	233	136	58	26	16
12	38	67	91	154	277	204	760	222	189	56	25	16
13	36	61	195	196	259	197	666	210	151	53	25	16
14	43	58	563	391	247	190	593	241	134	50	25	16
15	39	55	810	365	236	201	538	546	125	51	26	17
16	35	51	586	308	227	228	490	627	121	53	26	20
17	32	49	538	270	216	306	479	492	115	52	27	19
18	46	48	396	247	219	421	451	414	111	51	27	18
19	52	47	315	261	209	526	460	362	107	50	26	17
20	85	48	265	244	201	526	504	325	102	49	24	16
21	186	47	256	287	225	456	463	297	98	51	23	16
22	88	46	633	332	224	399	423	275	93	47	27	16
23	60	52	862	305	232	352	395	253	93	43	60	16
24	50	86	815	373	222	323	371	235	96	41	50	15
25	45	70	598	397	211	343	347	222	106	40	34	18
26	42	81	470	356	198	338	327	210	99	38	29	42
27	41	108	383	315	189	362	303	200	129	37	26	40
28	71	113	324	291	184	723	334	193	108	36	25	30
29	77	111	284	291	---	625	322	188	98	40	23	25
30	57	132	256	281	---	539	387	177	93	61	23	23
31	49	---	235	257	---	518	---	169	---	57	22	---
TOTAL	1482	2107	9702	7844	7301	10408	14991	9487	3970	1708	949	607
MEAN	47.8	70.2	313	253	261	336	500	306	132	55.1	30.6	20.2
MAX	186	148	862	397	403	723	837	627	191	88	60	42
MIN	20	46	63	154	184	189	303	169	93	36	22	15
AC-FT	2940	4180	19240	15560	14480	20640	29730	18820	7870	3390	1880	1200
CFSM	.27	.40	1.77	1.43	1.47	1.90	2.82	1.73	.75	.31	.17	.11
IN.	.31	.44	2.04	1.65	1.53	2.19	3.15	1.99	.83	.36	.20	.13

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2001, BY WATER YEAR (WY)

	110	612	1139	1231	1117	868	591	366	202	76.9	38.8	40.2
MEAN	110	612	1139	1231	1117	868	591	366	202	76.9	38.8	40.2
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1936 - 2001

ANNUAL TOTAL	159696	70556	
ANNUAL MEAN	436	193	530
HIGHEST ANNUAL MEAN			883
LOWEST ANNUAL MEAN			164
HIGHEST DAILY MEAN	5220	862	11500
LOWEST DAILY MEAN	20	15	9.6
ANNUAL SEVEN-DAY MINIMUM	21	16	11
ANNUAL RUNOFF (AC-FT)	316800	139900	384100
ANNUAL RUNOFF (CFSM)	2.47	1.09	3.00
ANNUAL RUNOFF (INCHES)	33.56	14.83	40.70
10 PERCENT EXCEEDS	1140	474	1360
50 PERCENT EXCEEDS	194	142	251
90 PERCENT EXCEEDS	32	24	30

WILLAMETTE RIVER BASIN

14166000 WILLAMETTE RIVER AT HARRISBURG, OR

LOCATION.--Lat 44°16'14", long 123°10'21", in NW 1/4 NE 1/4 sec.16, T.15 S., R.4 W., Linn County, Hydrologic Unit 17090003, on right bank 75 ft north of intersection of First Street and Kesling Street in Harrisburg and at mile 161.0.

DRAINAGE AREA.--3,420 mi², approximately.

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 sea level. 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.--No estimated daily discharges. Records good. 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 ft³/s, 8,927,000 acre-ft/yr.
33 years (water years 1969-2001), 11,400 ft³/s, 8,262,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 210,000 ft³/s Dec. 29, 1945, gage height, 19.69 ft, from rating curve extended above 115,000 ft³/s; minimum discharge, 1,990 ft³/s Oct. 30, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood stage of 20.5 ft was reached in December 1861, and 20.1 ft in February 1890 (information from Corps of Engineers). Flood of Jan. 1, 1943, reached a stage of 19.1 ft from National Weather Service.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16,400 ft³/s Dec. 24, gage height, 5.55 ft; minimum discharge, 3,020 ft³/s July 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6560	6720	7750	5850	4240	3860	8160	8090	7580	3610	3630	3860
2	6620	6630	7340	5580	4240	4840	7630	8120	7730	3490	3580	3860
3	6570	6240	7040	5280	4700	4550	7820	7600	7810	3380	3660	3810
4	6470	6220	7200	5030	5690	4330	8970	7640	7870	3380	3760	3860
5	6480	6320	6970	4950	6220	4210	9030	7490	7620	3340	3730	3770
6	6390	6340	5840	4950	6720	4020	9390	7050	7310	3270	3720	3850
7	6450	6470	5100	4920	6450	3860	10600	6800	6550	3300	3680	3970
8	6430	6830	4350	4870	5750	3850	11700	6810	5360	3230	3650	3960
9	6630	8130	4160	4840	5290	4000	12100	7080	4770	3210	3770	4020
10	6740	8600	4130	4840	5040	4170	10300	7350	4270	3190	3740	4000
11	7000	8120	4320	4680	4970	4130	10200	7850	3970	3180	3840	3940
12	6770	7840	4390	4210	4880	3990	11100	8110	4190	3170	3840	3970
13	6700	7660	4120	4120	4560	3870	11500	8710	4220	3200	3840	3980
14	6740	7850	6650	4690	4380	3810	10500	9380	3950	3230	3800	3990
15	6650	8090	10100	4920	4240	3810	9070	11200	3880	3320	3830	4050
16	6570	7770	11900	4630	4180	4000	8620	12300	3760	3290	3800	4060
17	6500	7170	11100	4510	4080	4240	8490	12100	3690	3160	3780	4050
18	6720	7100	10300	4380	4060	5040	8360	10600	3590	3240	3810	3990
19	6680	6930	7570	4180	3990	5990	8430	9760	3530	3260	3800	4700
20	6890	6790	6570	4390	3940	7060	8550	9260	3450	3260	3760	4850
21	7990	6760	6270	4390	4050	6250	7670	8750	3380	3220	3760	4840
22	7570	6760	7690	4950	4180	5610	6760	9020	3340	3240	3770	4780
23	7170	6980	14500	4790	4470	5200	6350	9530	3360	3190	4010	4800
24	7000	7300	16100	4980	4550	4960	6230	8820	3380	3110	4050	4770
25	6900	7420	14400	5420	4400	5130	6100	8440	3630	3160	3950	4870
26	6800	7640	12200	5150	4170	5520	5980	8460	3570	3150	3940	5020
27	6720	7900	9750	4800	4020	5460	5900	8610	3740	3120	3880	5010
28	6960	8390	8340	4540	3910	8240	5920	8490	3660	3170	3790	4990
29	7080	8050	7210	4460	---	9950	6020	8360	3550	3190	3790	4950
30	6790	7870	6530	4480	---	8220	5870	8290	3670	3490	3830	5030
31	6660	---	6130	4300	---	7670	---	7960	---	3540	3850	---
TOTAL	210200	218890	246020	148080	131370	159840	253320	268030	140380	101290	117640	129600
MEAN	6781	7296	7936	4777	4692	5156	8444	8646	4679	3267	3795	4320
MAX	7990	8600	16100	5850	6720	9950	12100	12300	7870	3610	4050	5030
MIN	6390	6220	4120	4120	3910	3810	5870	6800	3340	3110	3580	3770
AC-FT	416900	434200	488000	293700	260600	317000	502500	531600	278400	200900	233300	257100

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2001, BY WATER YEAR (WY)

	MEAN	7715	14510	21350	20740	14550	12690	10800	10180	7603	4874	5256	6675
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1969 - 2001

ANNUAL TOTAL	3580400	2124660		
ANNUAL MEAN	9783	5821		
HIGHEST ANNUAL MEAN			11400	
LOWEST ANNUAL MEAN			17800	1972
HIGHEST DAILY MEAN	45200	Jan 11	16100	Dec 24
LOWEST DAILY MEAN	4120	Dec 13	3110	Jul 24
ANNUAL SEVEN-DAY MINIMUM	4370	Dec 7	3160	Jul 23
ANNUAL RUNOFF (AC-FT)	7102000		4214000	
10 PERCENT EXCEEDS	15600		8600	8262000
50 PERCENT EXCEEDS	7650		5020	24500
90 PERCENT EXCEEDS	4710		3550	7840
				4550

WILLAMETTE RIVER BASIN
14166000 WILLAMETTE RIVER AT HARRISBURG, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--June 1961 to September 1987, October 2000 to September 2001.

INSTRUMENTATION.--Water-quality monitor.

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, 22.5°C July 24; minimum, 4.4°C Jan. 17.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2001												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	12.2	11.5	11.8	8.7	7.9	8.2	6.9	6.6	6.7
2	---	---	---	12.4	11.7	12.0	8.6	8.0	8.3	6.7	6.5	6.6
3	---	---	---	13.1	12.4	12.6	8.7	8.4	8.5	6.6	6.4	6.4
4	---	---	---	13.1	12.2	12.8	8.7	8.2	8.5	7.3	6.5	6.9
5	14.4	13.2	13.9	12.2	11.5	11.7	8.3	7.8	8.1	7.9	7.3	7.6
6	14.6	13.3	14.0	12.1	11.4	11.7	7.9	7.4	7.6	7.6	6.9	7.1
7	14.7	13.5	14.2	11.6	10.9	11.1	7.4	6.7	7.1	6.9	6.4	6.7
8	14.6	13.5	14.2	11.5	11.1	11.3	6.9	6.6	6.7	6.8	6.3	6.5
9	14.6	13.6	14.0	11.1	10.4	10.7	7.7	6.9	7.3	6.5	6.1	6.2
10	13.8	13.3	13.4	10.4	9.6	10.0	7.6	7.0	7.3	6.2	5.9	6.1
11	14.0	13.2	13.6	9.6	8.8	9.3	7.3	6.4	6.8	6.5	5.7	6.1
12	13.8	13.3	13.6	9.3	8.5	9.0	6.4	6.2	6.3	7.0	6.4	6.7
13	14.2	13.6	13.8	9.4	8.8	9.2	6.7	6.3	6.5	7.2	6.8	7.0
14	14.3	13.5	13.9	9.4	8.7	9.1	6.7	6.4	6.6	7.1	6.7	6.8
15	14.5	13.6	14.0	9.7	8.8	9.3	6.9	6.4	6.7	6.8	6.1	6.5
16	14.3	13.2	13.8	9.6	8.6	9.0	7.0	6.6	6.8	6.1	5.2	5.8
17	14.3	13.5	14.0	8.8	8.2	8.4	7.1	6.6	6.8	5.2	4.4	4.8
18	14.5	14.1	14.3	8.2	7.7	8.0	6.7	6.0	6.2	5.8	4.9	5.3
19	15.0	13.9	14.5	8.0	7.4	7.7	6.5	6.0	6.2	6.9	5.8	6.4
20	14.9	14.1	14.6	8.4	8.0	8.2	7.1	6.5	6.7	6.7	6.0	6.2
21	14.1	13.1	13.5	8.5	7.8	8.1	7.3	6.9	7.1	6.5	6.0	6.2
22	13.4	12.3	12.6	8.1	7.4	7.8	7.5	7.2	7.4	6.9	6.5	6.8
23	12.9	11.8	12.4	8.4	7.8	8.1	7.4	7.2	7.3	6.9	6.5	6.7
24	13.1	11.9	12.5	8.8	8.1	8.5	7.2	6.8	7.0	6.7	6.3	6.5
25	13.1	12.6	12.8	9.0	8.5	8.7	7.0	6.4	6.6	6.4	6.0	6.2
26	13.4	12.6	13.0	9.3	8.8	9.0	6.5	6.2	6.4	6.3	5.5	5.9
27	13.4	13.0	13.2	9.6	9.0	9.3	6.8	6.3	6.5	5.8	4.9	5.4
28	13.3	12.6	13.0	9.0	7.9	8.2	6.9	6.6	6.8	5.4	4.5	5.0
29	13.0	12.4	12.7	8.7	7.8	8.2	7.0	6.5	6.7	6.2	5.4	5.7
30	12.9	12.1	12.5	9.1	8.3	8.7	6.9	6.5	6.8	6.4	5.6	6.0
31	12.4	11.6	12.1	---	---	---	7.0	6.5	6.8	6.2	5.5	5.9
MONTH	---	---	---	13.1	7.4	9.6	8.7	6.0	7.1	7.9	4.4	6.3

WILLAMETTE RIVER BASIN

14166000 WILLAMETTE RIVER AT HARRISBURG, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	6.2	5.4	5.8	6.6	6.2	6.4	9.7	8.8	9.2	10.9	9.4	10.1
2	6.9	6.2	6.6	7.3	6.0	6.6	9.6	8.2	8.9	11.5	9.1	10.2
3	7.2	6.8	7.0	6.8	6.3	6.6	9.1	7.6	8.4	12.8	10.0	11.3
4	8.2	7.2	7.7	6.5	6.1	6.3	9.2	7.4	8.3	12.5	10.9	11.8
5	8.1	7.5	7.8	8.3	6.1	7.1	9.1	8.0	8.6	13.2	10.9	12.0
6	7.6	6.4	7.1	9.6	7.5	8.5	8.7	8.1	8.4	13.4	11.1	12.3
7	6.4	5.2	5.7	10.5	8.6	9.5	8.7	7.2	8.0	14.4	11.6	12.9
8	5.5	5.0	5.2	9.9	9.0	9.6	8.7	7.5	8.1	14.6	12.7	13.7
9	5.3	4.7	5.0	9.0	8.1	8.6	9.1	7.3	8.2	14.4	12.4	13.5
10	5.9	5.2	5.6	8.2	7.6	8.0	9.0	8.0	8.4	14.3	12.0	13.2
11	5.9	5.6	5.8	9.0	7.8	8.4	9.8	7.9	8.8	15.0	12.2	13.7
12	5.7	5.3	5.5	9.6	7.9	8.7	9.1	8.0	8.4	15.2	12.7	14.1
13	5.8	5.1	5.4	9.7	8.4	9.1	9.2	7.3	8.2	14.9	12.5	13.9
14	5.8	4.6	5.2	10.4	8.8	9.5	9.3	7.6	8.5	14.2	11.7	12.5
15	5.9	5.3	5.6	9.6	8.1	9.0	10.1	8.1	9.1	11.7	11.0	11.2
16	6.8	5.9	6.4	8.1	7.1	7.5	10.8	9.2	10.0	12.1	10.6	11.3
17	6.4	5.9	6.2	7.7	7.0	7.4	11.4	9.6	10.5	12.3	10.8	11.5
18	7.2	6.2	6.7	9.0	7.7	8.4	11.2	10.1	10.7	13.4	10.7	12.0
19	7.4	6.6	7.0	10.1	8.7	9.3	11.5	9.8	10.6	14.5	11.7	13.1
20	7.3	6.3	6.8	9.4	7.9	8.8	11.3	9.7	10.5	14.8	12.2	13.5
21	8.0	6.8	7.4	9.8	8.1	8.9	11.8	9.9	10.9	15.4	12.3	13.9
22	7.7	7.2	7.5	10.5	8.4	9.5	11.2	10.0	10.5	16.3	13.5	14.9
23	7.9	7.2	7.5	11.1	9.2	10.2	11.6	10.0	10.6	16.4	13.8	15.2
24	7.8	7.0	7.4	10.9	10.3	10.6	13.0	10.4	11.6	16.4	13.6	15.1
25	8.2	6.8	7.5	10.8	10.0	10.3	14.5	11.6	13.0	16.4	13.9	15.2
26	8.1	6.7	7.4	10.1	9.2	9.7	15.5	13.0	14.2	16.4	14.0	15.3
27	7.9	6.4	7.2	9.5	8.7	8.9	14.8	12.3	13.2	15.8	13.4	14.6
28	7.4	6.3	6.8	9.1	8.4	8.8	12.3	10.9	11.6	14.6	12.9	13.5
29	---	---	---	10.1	8.8	9.4	11.6	10.3	10.7	14.5	11.4	13.0
30	---	---	---	10.6	9.4	10.0	10.9	10.0	10.3	15.8	12.6	14.2
31	---	---	---	10.3	9.4	9.9	---	---	---	17.0	13.8	15.4
MONTH	8.2	4.6	6.5	11.1	6.0	8.7	15.5	7.2	9.9	17.0	9.1	13.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	---	19.6	15.9	17.6	20.2	17.2	18.6	19.4	17.9	18.7
2	---	---	---	20.5	17.2	18.8	21.1	18.0	19.3	19.8	17.8	18.6
3	---	---	---	21.3	18.1	19.5	19.8	18.6	19.1	19.2	17.1	18.1
4	---	---	---	21.8	18.6	20.1	18.8	17.6	18.3	19.0	17.2	18.0
5	13.7	12.5	13.1	20.9	18.1	19.6	19.8	16.8	18.2	18.1	16.6	17.3
6	15.4	12.5	13.8	20.8	17.5	19.1	20.8	17.9	19.2	17.4	15.5	16.4
7	17.0	14.3	15.5	21.0	17.6	19.2	21.1	18.7	19.8	17.5	15.4	16.4
8	17.6	16.0	16.9	21.2	17.6	19.3	21.1	18.2	19.6	18.0	15.6	16.7
9	17.6	15.7	16.6	22.2	18.6	20.2	21.7	19.2	20.3	18.4	16.3	17.2
10	16.2	14.7	15.5	21.8	19.3	20.5	21.8	19.3	20.5	18.5	16.6	17.4
11	15.6	14.1	14.9	20.9	18.2	19.7	20.9	18.8	19.9	18.5	16.4	17.4
12	14.9	13.1	13.9	21.5	18.4	19.8	21.5	18.9	20.1	18.9	16.9	17.8
13	16.5	13.1	14.7	21.7	18.5	20.0	20.6	18.8	19.7	19.1	17.3	18.0
14	17.6	14.7	16.1	21.3	18.1	19.7	20.2	18.5	19.3	18.6	17.5	17.9
15	17.6	15.3	16.3	19.7	17.9	18.6	20.2	18.2	19.1	19.3	17.8	18.3
16	18.0	15.1	16.5	18.3	17.0	17.6	19.4	18.2	18.7	19.3	17.4	18.2
17	17.7	15.4	16.5	18.9	16.5	17.5	19.8	17.5	18.4	18.0	16.7	17.2
18	17.9	14.9	16.4	19.2	16.8	18.0	20.1	18.2	19.0	17.8	16.2	16.9
19	18.8	15.5	17.1	20.4	17.6	18.8	19.5	17.2	18.4	17.0	16.0	16.5
20	20.2	16.7	18.3	19.1	17.6	18.4	19.7	17.3	18.4	17.0	15.6	16.3
21	21.0	17.5	19.1	20.2	16.8	18.3	18.3	17.3	17.8	16.9	15.7	16.3
22	19.5	18.1	18.7	21.3	17.7	19.4	17.9	17.0	17.5	17.1	15.7	16.4
23	18.6	17.2	17.9	22.0	18.5	20.2	18.3	16.6	17.3	17.6	16.2	16.8
24	17.4	15.5	16.6	22.5	19.0	20.7	19.0	16.5	17.7	17.3	16.4	16.8
25	16.0	14.3	15.2	22.0	18.7	20.4	19.5	17.2	18.3	16.6	15.7	16.2
26	15.8	15.3	15.6	21.7	18.4	20.1	19.8	17.5	18.6	15.8	15.3	15.6
27	17.6	15.1	16.2	21.6	18.1	19.8	20.0	17.5	18.7	15.4	14.7	15.0
28	17.8	16.5	17.0	21.1	18.7	19.7	20.3	17.9	18.9	15.9	14.2	15.1
29	17.9	15.9	16.8	19.4	17.1	18.0	19.8	18.0	18.8	16.3	14.9	15.6
30	17.7	15.9	16.8	17.5	16.2	16.8	20.1	17.7	18.7	16.6	15.3	16.0
31	---	---	---	18.9	16.0	17.2	20.1	18.0	18.9	---	---	---
MONTH	---	---	---	22.5	15.9	19.1	21.8	16.5	18.9	19.8	14.2	17.0

14166500 LONG TOM RIVER NEAR NOTI, OR

LOCATION.--Lat 44°03'00", long 123°25'30", in SE 1/4 NW 1/4 sec.33, T.17 S., R.6 W., Lane County, Hydrologic Unit 17090003, on left bank 0.2 mi upstream from Southern Pacific Railroad bridge, 0.8 mi downstream from Noti Creek, 1.3 mi southeast of Noti, and at mile 37.4.

DRAINAGE AREA.--89.3 mi².

PERIOD OF RECORD.--October 1935 to current year.

REVISED RECORDS.--WSP 1318: 1936(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 389.05 ft above sea level (levels by National Weather Service). Prior to Nov. 6, 1940, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records fair. Slight regulation caused by logpond upstream from Noti. No diversion upstream from station.

AVERAGE DISCHARGE.--66 years (water years 1936-2001), 229 ft³/s, 34.89 in/yr, 166,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,990 ft³/s Dec. 22, 1955, gage height, 20.17 ft; minimum discharge, 0.04 ft³/s Aug. 13, 1977.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 22	2100	*1,060	*8.80				
Minimum discharge, 4.3 ft ³ /s Sept. 12, 13.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	29	54	91	77	78	106	74	32	24	16	8.0
2	19	28	45	84	79	105	97	63	33	21	13	8.0
3	17	27	40	78	95	97	91	56	34	19	12	7.3
4	16	25	34	74	138	89	86	53	33	17	13	6.9
5	16	24	31	73	135	96	79	49	34	16	14	6.0
6	16	23	29	68	120	94	77	47	35	14	12	6.8
7	15	23	28	65	108	68	78	45	31	14	10	7.1
8	15	27	27	66	97	73	84	43	28	13	10	6.1
9	23	49	26	68	94	81	84	41	27	12	9.0	6.1
10	42	52	26	79	91	70	80	40	27	10	7.5	6.0
11	28	38	27	72	117	71	99	38	27	11	7.6	5.2
12	24	32	37	64	129	68	96	36	30	10	7.3	5.3
13	23	30	74	65	118	65	88	34	27	8.6	7.3	5.2
14	23	27	235	86	111	64	82	41	24	8.6	7.0	5.3
15	22	26	295	86	104	63	77	110	23	8.4	6.8	6.3
16	21	24	234	79	97	65	73	108	22	16	7.6	6.9
17	19	23	239	73	91	78	72	92	22	37	8.2	6.4
18	25	22	177	69	94	90	70	92	21	31	9.4	6.9
19	31	21	129	69	92	91	73	64	19	31	9.0	7.1
20	37	21	102	66	84	85	71	55	18	17	7.5	6.0
21	63	21	102	71	101	78	65	50	17	16	6.6	5.4
22	37	21	649	83	119	73	60	47	17	16	10	6.1
23	27	23	750	75	109	69	58	43	17	14	22	6.2
24	24	34	429	76	105	67	56	42	18	13	19	5.7
25	22	33	292	79	97	88	55	40	22	13	14	7.2
26	21	33	218	75	88	100	52	37	21	11	12	11
27	24	39	173	71	82	98	50	35	55	11	10	13
28	48	42	144	68	79	185	53	35	48	11	7.8	13
29	55	42	124	79	---	168	55	36	33	11	7.6	11
30	41	63	111	90	---	136	58	33	28	17	8.1	10
31	33	---	100	81	---	116	---	32	---	19	8.3	---
TOTAL	844	922	4981	2323	2851	2769	2225	1595	823	490.6	319.6	217.5
MEAN	27.2	30.7	161	74.9	102	89.3	74.2	51.5	27.4	15.8	10.3	7.25
MAX	63	63	750	91	138	185	106	110	55	37	22	13
MIN	15	21	26	64	77	63	50	32	17	8.4	6.6	5.2
AC-FT	1670	1830	9880	4610	5650	5490	4410	3160	1630	973	634	431
CFSM	.30	.34	1.80	.84	1.14	1.00	.83	.58	.31	.18	.12	.08
IN.	.35	.38	2.07	.97	1.19	1.15	.93	.66	.34	.20	.13	.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2001, BY WATER YEAR (WY)

	MEAN	39.8	205	468	582	558	409	249	128	66.0	30.6	16.9	17.5
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1936 - 2001

ANNUAL TOTAL	68784.9	20360.7	
ANNUAL MEAN	188	55.8	229
HIGHEST ANNUAL MEAN			424
LOWEST ANNUAL MEAN			45.5
HIGHEST DAILY MEAN	2220	750	5850
LOWEST DAILY MEAN	6.4	5.2	.04
ANNUAL SEVEN-DAY MINIMUM	7.4	5.6	.06
ANNUAL RUNOFF (AC-FT)	136400	40390	166100
ANNUAL RUNOFF (CFSM)	2.10	.62	2.57
ANNUAL RUNOFF (INCHES)	28.65	8.48	34.89
10 PERCENT EXCEEDS	501	102	580
50 PERCENT EXCEEDS	68	37	92
90 PERCENT EXCEEDS	15	8.1	15

WILLAMETTE RIVER BASIN

14168000 FERN RIDGE LAKE NEAR ELMIRA, OR

LOCATION.--Lat 44°07'15", long 123°18'00", near center of sec.4, T.17 S., R.5 W., Lane County, Hydrologic Unit 17090003, in control house at spillway section of dam across Long Tom River and Coyote Creek, 4.5 mi northeast of Elmira, and at mile 25.7.

DRAINAGE AREA.--252 mi², not including Amazon Creek basin (see REMARKS).

PERIOD OF RECORD.--October 1941 to current year. Prior to October 1971, published as Fern Ridge Reservoir near Elmira.

GAGE.--Water-stage recorder. Datum of gage is sea level (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 mi².

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

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 124,500 acre-ft Dec. 27, 1955, elevation, 375.83 ft; minimum contents since first filling in 1942, 163 acre-ft Nov. 11, 1950, elevation, 344.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 72,600 acre-ft Oct. 1, elevation, 370.89 ft; minimum contents, 3,140 acre-ft Dec. 18, elevation, 353.18 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 (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	370.77	362.63	353.38	353.96	357.07	361.26	363.89	365.39	365.67	365.27	364.28	363.11
2	370.67	362.24	353.29	353.93	357.22	361.40	363.97	365.40	365.65	365.25	364.24	363.07
3	370.55	361.83	353.25	353.87	357.48	361.51	364.04	365.42	365.66	365.23	364.21	363.02
4	370.38	361.36	353.26	353.81	357.81	361.64	364.10	365.43	365.66	365.21	364.17	362.99
5	370.19	360.88	353.27	353.74	358.06	361.75	364.15	365.43	365.67	365.17	364.13	362.94
6	369.96	360.37	353.27	353.66	358.26	361.85	364.20	365.43	365.66	365.14	364.10	362.88
7	369.75	359.84	353.25	353.56	358.43	361.92	364.27	365.44	365.66	365.12	364.06	362.83
8	369.51	359.35	353.23	353.49	358.58	361.98	364.36	365.45	365.65	365.10	364.02	362.79
9	369.36	358.68	353.22	353.47	358.71	362.04	364.43	365.46	365.63	365.08	364.00	362.76
10	369.14	358.00	353.21	353.44	358.87	362.09	364.52	365.46	365.62	365.05	363.95	362.72
11	368.91	357.29	353.34	353.50	359.10	362.15	364.60	365.47	365.62	365.03	363.91	362.69
12	368.66	356.54	353.41	353.67	359.32	362.19	364.67	365.47	365.60	365.00	363.89	362.64
13	368.39	355.76	354.10	353.90	359.49	362.24	364.73	365.46	365.59	364.96	363.84	362.60
14	368.12	355.38	354.24	354.11	359.63	362.27	364.78	365.53	365.58	364.91	363.79	362.55
15	367.85	355.15	354.10	354.30	359.76	362.32	364.82	365.62	365.55	364.87	363.75	362.53
16	367.56	355.04	353.78	354.47	359.86	362.36	364.88	365.68	365.52	364.83	363.71	362.49
17	367.29	354.92	353.36	354.60	359.99	362.46	364.92	365.73	365.50	364.81	363.67	362.44
18	367.04	354.85	353.23	354.73	360.10	362.56	365.01	365.75	365.47	364.77	363.62	362.39
19	366.76	354.83	353.27	354.86	360.20	362.62	365.07	365.77	365.46	364.76	363.58	362.35
20	366.60	354.74	353.32	354.97	360.30	362.69	365.11	365.78	365.43	364.73	363.54	362.32
21	366.31	354.59	353.68	355.17	360.45	362.74	365.15	365.79	365.40	364.70	363.51	362.29
22	366.01	354.44	355.02	355.33	360.59	362.79	365.18	365.80	365.36	364.66	363.50	362.25
23	365.69	354.33	355.60	355.49	360.73	362.83	365.21	365.79	365.33	364.63	363.47	362.22
24	365.35	354.20	355.11	355.75	360.84	362.90	365.23	365.79	365.30	364.59	363.44	362.19
25	365.02	354.09	354.22	355.99	360.94	362.97	365.27	365.77	365.27	364.54	363.40	362.18
26	364.68	353.97	354.03	356.16	361.02	363.04	365.29	365.76	365.30	364.50	363.37	362.16
27	364.37	353.87	353.96	356.31	361.09	363.22	365.31	365.74	365.31	364.45	363.32	362.14
28	364.10	353.73	353.96	356.49	361.15	363.41	365.33	365.71	365.31	364.40	363.28	362.10
29	363.74	353.78	354.02	356.63	---	363.58	365.35	365.70	365.31	364.39	363.25	362.07
30	363.38	353.57	354.03	356.81	---	363.70	365.37	365.69	365.29	364.35	363.21	362.03
31	363.01	---	353.99	356.95	---	363.80	---	365.68	---	364.31	363.16	---
MAX	370.77	362.63	355.60	356.95	361.15	363.80	365.37	365.80	365.67	365.27	364.28	363.11
MIN	363.01	353.57	353.21	353.44	357.07	361.26	363.89	365.39	365.27	364.31	363.16	362.03
(†)	26320	3550	4020	8500	19430	29670	37150	38760	36740	31980	26930	22520
(‡)	-46280	-22770	+470	+4480	+10930	+10240	+7480	+1610	-2020	-4760	-5050	-4410

CAL YR 2000 MAX 373.49 MIN 353.20 AC-FT† +694
WTR YR 2001 MAX 370.77 MIN 353.21 AC-FT† -50080

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

WILLAMETTE RIVER BASIN

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14169000 LONG TOM RIVER NEAR ALVADORE, OR

LOCATION.--Lat 44°07'25", long 123°17'55", in SW 1/4 NE 1/4 sec.4, T.17 S., R.5 W., Lane County, Hydrologic Unit 17090003, on left bank 0.2 mi downstream from Fern Ridge Dam, 1.7 mi west of Alvadore, and at mile 25.5.

DRAINAGE AREA.--252 mi², not including Amazon Creek basin.

PERIOD OF RECORD.--August 1939 to current year. Prior to October 1943, published as "at Smithfield," and October 1943 to September 1959, as "below Fern Ridge Dam, near Smithfield." Prior to October 1985, published figures included diversion from Fern Ridge Reservoir into Coyote Creek channel (station 14169001).

REVISED RECORDS.--WSP 1248: 1940-41, 1948.

GAGE.--Water-stage recorder and masonry control. Datum of gage is 332.00 ft above sea level (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 except for the period June 28 to Sept. 30, which are fair. Flow regulated since 1941 by Fern Ridge Lake (station 14168000). Several small diversions for irrigation upstream from station. Approximately 7 ft³/s diverted from Fern Ridge Reservoir into Coyote Creek channel. Discharge not adjusted for storage or release from Fern Ridge Lake as evaporation from reservoir at times exceeds natural flow and diversions, and beginning in November 1951, most of flow of Amazon Creek has been diverted into Fern Ridge Lake.

AVERAGE DISCHARGE.--58 years (water years 1944-2001), 520 ft³/s, 376,700 acre-ft/yr (river only).
16 years (water years 1986-2001), 480 ft³/s, 347,600 acre-ft/yr, regulated period without diversions.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s Jan. 1, 1943, gage height, 15.12 ft, site and datum then in use; minimum daily discharge, 2 ft³/s Aug. 7, 1941.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,560 ft³/s Dec. 23, 24, gage height, 4.74 ft; minimum discharge, 26 ft³/s May 7-12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	368	824	195	218	54	53	54	53	47	46	65	56
2	398	819	132	200	54	53	54	53	46	41	62	55
3	464	847	83	196	54	53	54	53	46	35	58	55
4	598	886	51	192	54	53	54	53	46	35	58	56
5	738	866	48	192	54	53	54	53	46	35	59	55
6	817	867	53	192	54	53	54	53	44	34	58	54
7	811	886	53	191	54	53	54	39	39	34	60	54
8	833	869	53	189	54	53	54	26	36	34	61	53
9	843	1010	53	189	54	53	54	26	36	35	61	53
10	838	955	53	184	54	53	54	26	36	35	61	52
11	838	913	53	124	54	53	54	26	36	35	61	51
12	880	891	53	52	54	53	54	29	36	35	63	51
13	910	822	103	48	54	53	54	37	36	44	63	50
14	903	412	508	48	53	53	54	35	39	62	63	50
15	901	216	749	51	53	53	54	33	43	74	63	51
16	892	126	816	61	53	53	54	30	43	63	60	51
17	888	115	794	55	53	53	54	29	43	56	58	51
18	880	88	496	53	53	53	54	29	44	56	58	51
19	873	48	267	53	53	53	54	29	45	56	60	51
20	868	100	217	53	53	53	54	29	45	56	59	51
21	905	135	157	53	53	53	53	29	61	56	57	51
22	904	127	531	53	53	53	53	29	70	55	56	51
23	897	157	1280	53	53	53	53	29	68	56	56	51
24	888	157	1550	53	53	53	53	33	54	56	56	51
25	879	157	1310	53	53	53	53	56	51	65	56	51
26	872	157	692	53	53	53	53	59	53	68	58	51
27	864	154	485	53	53	53	53	51	52	67	58	51
28	857	153	351	53	53	53	53	51	45	72	58	53
29	850	161	252	53	---	54	53	50	48	95	58	53
30	844	200	252	53	---	54	53	48	48	96	57	53
31	836	---	249	52	---	54	---	48	---	82	56	---
TOTAL	25137	14118	11939	3123	1497	1646	1610	1224	1382	1669	1837	1567
MEAN	811	471	385	101	53.5	53.1	53.7	39.5	46.1	53.8	59.3	52.2
MAX	910	1010	1550	218	54	54	54	59	70	96	65	56
MIN	368	48	48	48	53	53	53	26	36	34	56	50
AC-FT	49860	28000	23680	6190	2970	3260	3190	2430	2740	3310	3640	3110

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2001, BY WATER YEAR (WY)

	792	741	928	1363	886	396	168	196	94.5	59.7	56.3	87.6
MEAN	792	741	928	1363	886	396	168	196	94.5	59.7	56.3	87.6
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	469	218	103	101	53.5	21.3	24.5	20.8	34.7	39.1	40.5	38.3
(WY)	1988	1994	1990	2001	2001	1988	1988	1987	1990	1986	1986	1990

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1986 - 2001

ANNUAL TOTAL	162843	66749	
ANNUAL MEAN	445	183	480
HIGHEST ANNUAL MEAN			907
LOWEST ANNUAL MEAN			183
HIGHEST DAILY MEAN	3940	Jan 21	5570
LOWEST DAILY MEAN	36	Jul 8	16
ANNUAL SEVEN-DAY MINIMUM	45	Jul 6	17
ANNUAL RUNOFF (AC-FT)	323000		347600
10 PERCENT EXCEEDS	983		1250
50 PERCENT EXCEEDS	76		71
90 PERCENT EXCEEDS	53		39

WILLAMETTE RIVER BASIN

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 in canalized river channel at Monroe, 110 ft upstream from bridge on State Highway 99W, 0.1 mi downstream from Shafer Creek, and at mile 6.8.

DRAINAGE AREA.--391 mi².

PERIOD OF RECORD.--November 1920 to July 1921, October 1921 to April 1926, November 1926 to May 1927, October 1927 to current year. Prior to October 1930, published as "near Monroe."

REVISED RECORDS.--WSP 654: Drainage area. WSP 1248: 1923, 1927, 1928(M). WSP 1288: 1952.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 270.57 ft above sea level. 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 flows below 100 ft³/s, which are fair, and estimated daily discharges, which are poor. Discharge for the period June 29 to August 8 computed from data obtained through the U.S. Army Corps of Engineers Columbia River Operational Hydromet System (CROHMS) database. Flow regulated since 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 ft³/s, 499,200 acre-ft/yr.
60 years (water years 1942-2001), 774 ft³/s, 561,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,300 ft³/s Jan. 2, 1943, gage height, 17.14 ft, site and datum then in use, from graph based on gage readings, includes some overflow from Willamette River near Junction City; no flow Oct. 20-22, 1944 (water filling pool at gage); minimum discharge observed prior to regulation, 7 ft³/s Sept. 29, Oct. 1, 1939.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,000 ft³/s Dec. 24, gage height, 6.43 ft; minimum discharge, 16 ft³/s July 13, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	292	804	244	306	142	142	157	121	43	53	55	44
2	328	796	195	271	141	185	154	118	48	43	43	47
3	346	794	134	265	153	178	148	109	57	33	40	46
4	480	866	98	261	241	165	143	103	55	32	43	42
5	621	849	82	255	206	174	138	99	57	28	46	40
6	757	832	83	250	175	159	137	94	62	26	41	43
7	759	864	87	247	160	149	137	91	63	23	36	41
8	776	856	85	245	150	142	141	75	53	28	36	40
9	818	962	84	246	149	142	164	59	45	31	36	e39
10	823	981	83	253	149	141	147	55	51	23	36	e38
11	822	914	86	245	183	139	169	55	43	23	35	e38
12	830	889	91	127	197	138	161	50	40	20	38	e39
13	901	873	111	116	184	133	147	50	40	18	36	e40
14	895	524	497	123	166	131	141	54	39	18	28	41
15	886	264	863	134	159	131	137	71	40	38	27	46
16	878	180	843	132	148	128	137	90	45	48	26	52
17	870	119	873	136	143	133	137	88	50	37	31	50
18	867	154	708	131	149	141	138	77	51	34	32	44
19	858	86	374	124	151	137	147	68	43	34	37	43
20	860	85	291	123	146	130	145	63	38	35	36	42
21	912	165	254	132	182	126	135	57	32	35	35	42
22	918	139	827	146	199	125	133	48	48	38	44	42
23	894	183	1670	141	184	121	133	44	58	37	53	44
24	879	186	1950	155	174	120	130	40	58	29	43	38
25	867	183	1730	195	164	134	125	39	44	30	49	40
26	859	180	980	174	150	142	122	56	44	36	53	52
27	850	182	617	153	144	147	117	56	72	40	47	56
28	847	180	495	142	140	289	117	54	75	45	37	57
29	849	181	345	141	---	229	119	51	63	66	41	54
30	830	236	334	146	---	173	118	49	57	84	42	52
31	815	---	324	139	---	140	---	44	---	87	42	---
TOTAL	24187	14507	15438	5654	4629	4664	4174	2128	1514	1152	1224	1332
MEAN	780	484	498	182	165	150	139	68.6	50.5	37.2	39.5	44.4
MAX	918	981	1950	306	241	289	169	121	75	87	55	57
MIN	292	85	82	116	140	120	117	39	32	18	26	38
AC-FT	47970	28770	30620	11210	9180	9250	8280	4220	3000	2280	2430	2640

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2001, BY WATER YEAR (WY)

	MEAN	768	957	1769	2161	1639	907	462	254	97.3	44.2	72.2	195
MAX	1895	3437	5355	6222	4683	2761	2277	1193	697	148	524	960	
(WY)	1948	1951	1956	1956	1956	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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1942 - 2001

ANNUAL TOTAL	223925	80603	774
ANNUAL MEAN	612	221	1517
HIGHEST ANNUAL MEAN			177
LOWEST ANNUAL MEAN			16400
HIGHEST DAILY MEAN	4420	Jan 24	1950
LOWEST DAILY MEAN	31	Jul 8	18
ANNUAL SEVEN-DAY MINIMUM	35	Jul 8	23
ANNUAL RUNOFF (AC-FT)	444200	159900	561000
10 PERCENT EXCEEDS	1690	828	2400
50 PERCENT EXCEEDS	176	130	233
90 PERCENT EXCEEDS	45	37	37

e Estimated

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 mi², including drainage area of Evergreen Creek above Bellfountain Road, 1.4 mi south of station.

PERIOD OF RECORD.--October 1940 to September 1985, October 2000 to present

REVISED RECORDS.--WSP 1218: Drainage area. WSP 1935: 1956(M).

GAGE.--Water-stage recorder. Datum of gage is 224.01 ft above sea level (levels by Corps of Engineers). Prior to Oct. 1 1961, nonrecording gage at bridge 50 ft upstream at same datum. October 1961 to Sept. 30, 1985, gage on left bank, 35 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records fair except for the period Dec. 8-22, 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.--46 years (water years 1941-85, 2001), 455 ft³/s, 38.85 in/yr, 329,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft³/s Dec. 22, 1964, gage height, 20.72 ft; maximum gage height, 20.91 ft Jan. 15, 1974; minimum discharge, 0.60 ft³/s Aug. 23, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 22	1330	*1,550	*11.70				

Minimum discharge, 7.2 ft³/s Sept. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	47	130	189	231	181	311	236	67	54	26	14
2	19	54	110	172	219	242	289	205	69	46	23	15
3	26	47	98	157	218	227	279	178	76	41	21	14
4	22	46	81	147	241	206	261	162	79	40	21	14
5	18	42	67	140	261	195	243	150	77	36	20	14
6	16	43	59	135	262	177	245	141	77	35	19	13
7	16	42	56	127	246	166	268	130	71	34	20	13
8	17	53	53	124	229	160	252	121	62	33	17	13
9	29	85	49	124	225	172	253	114	58	29	16	12
10	37	90	39	136	214	171	242	109	58	29	15	11
11	46	72	39	130	226	159	301	104	57	28	15	10
12	35	57	41	118	215	151	312	99	71	27	15	9.5
13	31	49	73	135	195	144	307	97	75	25	14	9.1
14	26	44	241	347	183	143	283	109	61	25	14	9.3
15	22	41	522	339	175	146	263	195	56	25	14	13
16	22	38	461	274	178	151	246	201	52	25	14	15
17	21	41	477	232	170	232	236	178	51	25	15	13
18	23	35	376	206	181	244	219	148	49	25	16	14
19	25	32	299	191	193	248	214	132	44	24	16	13
20	40	35	265	181	178	257	214	121	41	24	14	12
21	56	32	261	199	271	240	195	109	39	24	14	11
22	57	32	1220	203	305	220	179	101	38	24	18	12
23	43	37	1150	188	276	203	172	94	39	23	34	12
24	34	56	777	195	250	190	166	88	42	21	30	10
25	30	78	571	207	226	213	155	84	43	21	28	13
26	28	71	446	209	203	238	146	81	46	19	23	17
27	28	85	366	192	187	274	138	78	110	19	18	17
28	49	88	309	181	176	474	144	76	112	19	15	17
29	63	102	266	224	---	438	146	78	78	20	14	17
30	66	191	234	277	---	368	166	75	62	27	13	17
31	52	---	210	253	---	326	---	69	---	27	13	---
TOTAL	1014	1765	9346	5932	6134	6956	6845	3863	1860	874	565	393.9
MEAN	32.7	58.8	301	191	219	224	228	125	62.0	28.2	18.2	13.1
MAX	66	191	1220	347	305	474	312	236	112	54	34	17
MIN	16	32	39	118	170	143	138	69	38	19	13	9.1
AC-FT	2010	3500	18540	11770	12170	13800	13580	7660	3690	1730	1120	781
CFSM	.21	.37	1.90	1.20	1.38	1.41	1.44	.78	.39	.18	.11	.08
IN.	.24	.41	2.19	1.39	1.44	1.63	1.60	.90	.44	.20	.13	.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2001, BY WATER YEAR (WY)

	MEAN	71.5	474	1056	1192	1056	785	461	220	94.5	35.9	18.0	19.7
	MAX	568	1897	2360	2455	2398	1736	1133	660	295	89.6	35.8	51.9
	(WY)	1948	1974	1982	1970	1949	1961	1963	1984	1984	1968	1941	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 2001 WATER YEAR

WATER YEARS 1941 - 2001

ANNUAL TOTAL	45547.9		
ANNUAL MEAN	125		455
HIGHEST ANNUAL MEAN			816
LOWEST ANNUAL MEAN			104
HIGHEST DAILY MEAN	1220		11300
LOWEST DAILY MEAN	9.1	Dec 22	1.4
ANNUAL SEVEN-DAY MINIMUM	11	Sep 13	2.4
ANNUAL RUNOFF (AC-FT)	90340	Sep 8	329400
ANNUAL RUNOFF (CFSM)	.78		2.86
ANNUAL RUNOFF (INCHES)	10.66		38.85
10 PERCENT EXCEEDS	261		1250
50 PERCENT EXCEEDS	77		158
90 PERCENT EXCEEDS	15		15

WILLAMETTE RIVER BASIN

14174000 WILLAMETTE RIVER AT ALBANY, OR

LOCATION.--Lat 44°38'20", long 123°06'20", in SW 1/4 sec.6, T.11 S., R.3 W., Linn County, Hydrologic Unit 17090003, on right bank 5 ft upstream from bridge on U.S. Highway 20 (Ellsworth Street) in Albany, 0.2 mi downstream from Calapooia River, and at mile 119.31.

DRAINAGE AREA.--4,840 mi², approximately.

PERIOD OF RECORD.--November 1878 to April 1888 (fragmentary), January to June 1892, November 1892 to September 1894, December 1894 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 694: Drainage area. WSP 904: 1939. WSP 964: 1881, 1890, 1894, 1897, 1901, 1903, 1908, 1910, 1916, 1923, 1927, 1932(M). WSP 984: 1916. WSP 1248: 1895, 1902, 1907, 1915(M), 1917(M), 1918-19, 1934(M). WSP 1318 (monthly and annual figures only): 1894, 1897, 1901-3, 1907-8, 1910, 1916, 1918-19, 1923, 1927.

GAGE.--Water-stage recorder. Datum of gage is 167.18 ft above sea level. 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.--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 ft³/s, 38.00 in/yr, 9,805,000 acre-ft/yr. 60 years (water years 1942-2001), 14,780 ft³/s, 41.50 in/yr, 10,710,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 266,000 ft³/s Jan. 14, 1881, gage height, 37.8 ft, present datum; minimum discharge, 1,840 ft³/s Sept. 1, 2, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 4, 1861, reached a stage of 41.0 ft, discharge, 340,000 ft³/s, from rating curve extended above 220,000 ft³/s. Flood of Feb. 4, 1890, reached a stage of 38.9 ft, discharge, 291,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20,100 ft³/s Dec. 24, gage height, 9.31 ft; minimum discharge, 3,760 ft³/s Aug. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6960	7800	8540	7430	5720	5120	9500	7650	8280	4040	3870	3890
2	7040	7790	8420	7080	5630	5380	9570	9510	8180	4040	3880	3900
3	7120	7620	7930	6770	5720	6290	9280	8810	8290	4050	3880	3900
4	7120	7350	7640	6450	6500	5870	9880	8570	8400	4030	3880	3870
5	7260	7350	7660	6260	7660	5750	10300	8550	8430	3990	3880	3860
6	7590	7400	7130	6180	7930	5570	10300	8180	8120	3950	3890	3860
7	7390	7420	6270	6130	8040	5330	11000	7800	7790	3930	3890	3930
8	7390	7590	5520	6090	7490	5120	12100	7540	6900	3890	3880	4020
9	7610	8350	4930	6010	6860	5100	12900	7620	5890	3870	3870	4020
10	8230	9600	4790	6070	6520	5300	12500	7710	5380	3860	3870	4080
11	8050	9530	4800	6050	6330	5380	11100	8110	4810	3850	3880	4040
12	8020	9080	5120	5790	6370	5310	12200	8590	4610	3850	3890	4000
13	7880	8850	5060	5390	6180	5160	12700	8850	4980	3860	3900	4030
14	7870	8620	5790	5650	5860	5030	12400	9630	4780	3890	e4150	4050
15	7850	8540	9320	6590	5680	4970	10900	10500	4470	3950	e4200	4140
16	7770	8540	13800	6450	5530	5050	9920	12800	4310	4000	e4150	4160
17	7680	8080	13000	6060	5420	5520	9680	13500	4170	4030	e4150	4150
18	7640	7610	13100	5910	5320	6200	9510	12200	4080	4030	e4150	4100
19	7750	7480	10400	5600	5320	6940	9490	11000	4050	4030	e4150	4350
20	8060	7280	8450	5600	5240	8270	9630	10200	4040	4040	e4100	5090
21	8620	7170	7790	5700	5270	8280	9460	9670	4030	4050	e4100	5160
22	9150	7170	8830	5970	5680	7440	8360	9310	3990	4050	3860	5120
23	8580	7230	15300	6350	5770	6830	7720	9890	3930	4050	3940	5080
24	8360	8030	19600	6290	6000	6430	7340	9770	3880	4040	4120	5100
25	8190	7990	19100	6920	5910	6370	7210	9060	3860	3990	4080	5100
26	8050	8230	16200	7110	5660	6780	6980	8790	3880	3930	4000	5290
27	7940	8360	13400	6660	5390	6980	6870	9110	3970	3890	3970	5350
28	8030	8620	10900	6210	5230	8790	6780	9020	4130	3830	3870	5340
29	8380	8790	9450	5940	---	12400	6850	8850	4050	3790	3780	5300
30	8260	8620	8410	5990	---	11200	6890	8760	4030	3770	3860	5320
31	7970	---	7870	5890	---	9540	---	8650	---	3810	3870	---
TOTAL	243810	242090	294520	192590	170230	203710	289320	288200	159710	122380	122960	133600
MEAN	7865	8070	9501	6213	6080	6571	9644	9297	5324	3948	3966	4453
MAX	9150	9600	19600	7430	8040	12400	12900	13500	8430	4050	4200	5350
MIN	6960	7170	4790	5390	5230	4970	6780	7540	3860	3770	3780	3860
AC-FT	483600	480200	584200	382000	337700	404100	573900	571600	316800	242700	243900	265000
CFSM	1.62	1.67	1.96	1.28	1.26	1.36	1.99	1.92	1.10	.82	.82	.92
IN.	1.87	1.86	2.26	1.48	1.31	1.57	2.22	2.22	1.23	.94	.95	1.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1942 - 2001, BY WATER YEAR (WY)

	MEAN	8188	17110	27940	28870	23990	18780	15110	12690	8966	5294	4996	5887
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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1942 - 2001
ANNUAL TOTAL	4415940	2463120	
ANNUAL MEAN	12070	6748	14780
HIGHEST ANNUAL MEAN			24080
LOWEST ANNUAL MEAN			5831
HIGHEST DAILY MEAN	59800	19600	210000
LOWEST DAILY MEAN	4710	3770	2130
ANNUAL SEVEN-DAY MINIMUM	4940	3830	2180
ANNUAL RUNOFF (AC-FT)	8759000	4886000	10710000
ANNUAL RUNOFF (CFSM)	2.49	1.39	3.05
ANNUAL RUNOFF (INCHES)	33.94	18.93	41.50
10 PERCENT EXCEEDS	21700	9630	33300
50 PERCENT EXCEEDS	8590	6370	9390
90 PERCENT EXCEEDS	5390	3900	4540

e Estimated

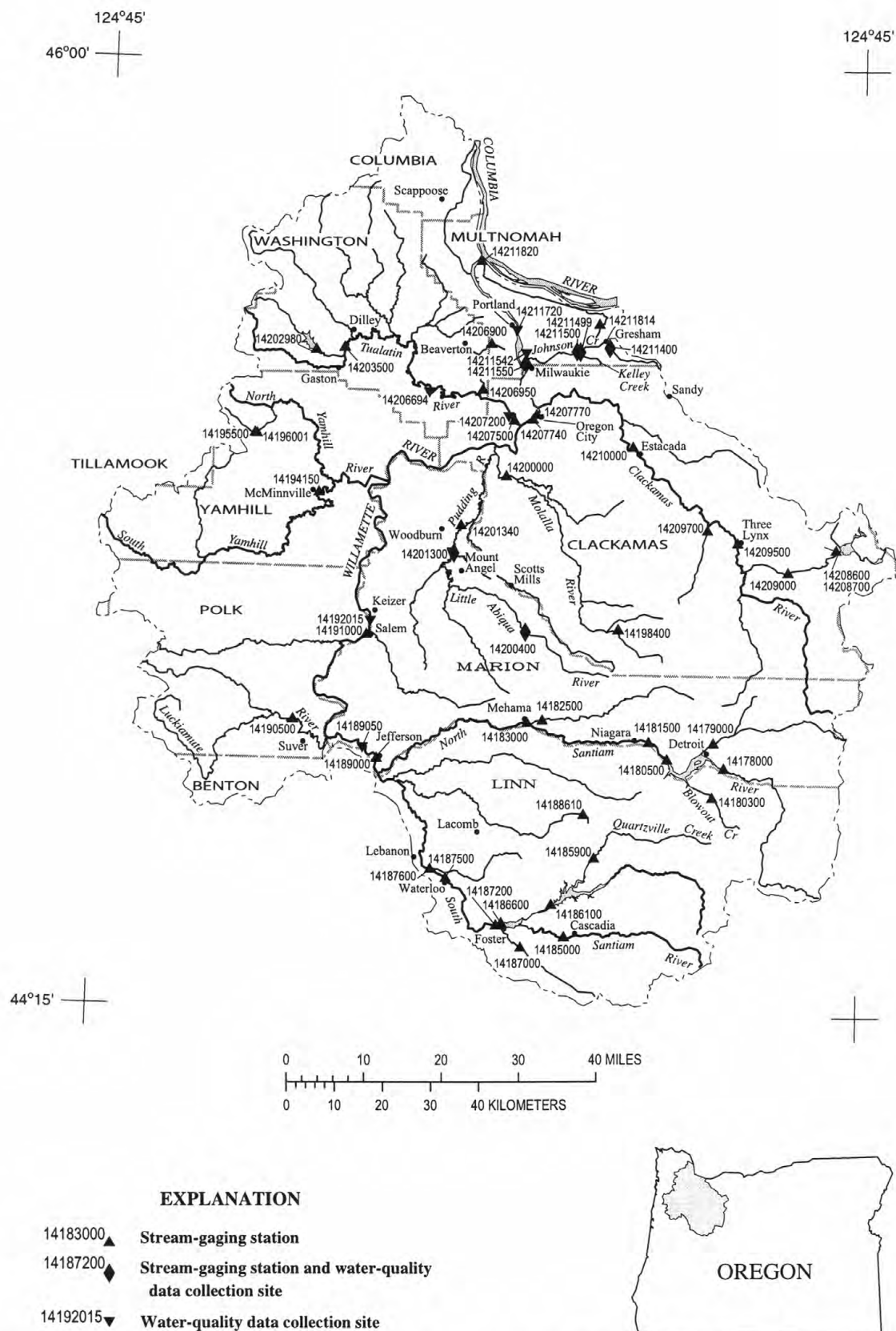


Figure 25. Location of surface-water and water-quality stations in the Willamette River Basin, downstream from the Luckiamute River.

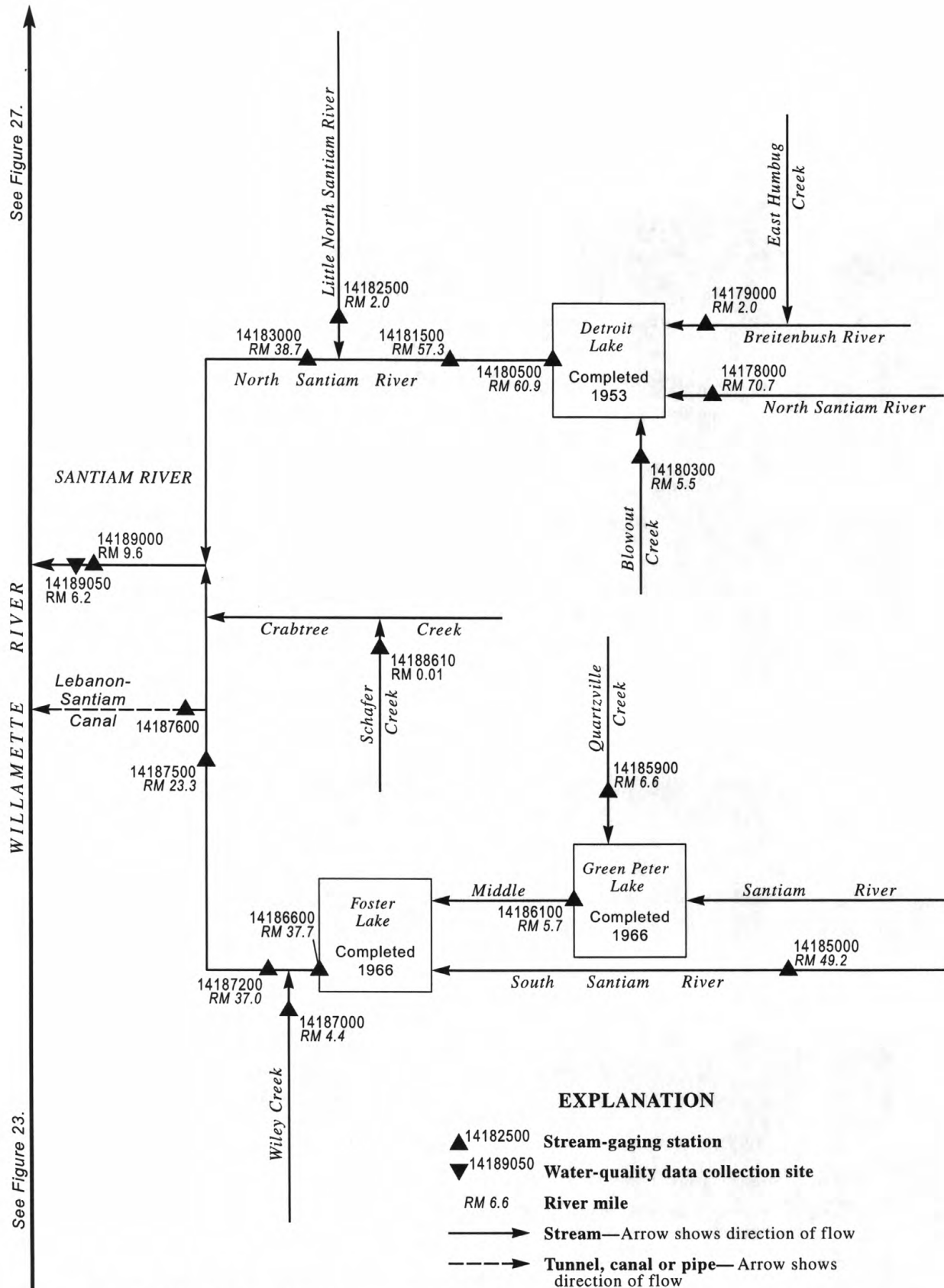


Figure 26. Schematic diagram showing gaging stations and diversions in the Santiam River Basin.

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.

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."

GAGE.--Water-stage recorder. Datum of gage is 1,590.07 ft above sea level. See WSP 1738 for history of changes prior to Oct. 1, 1952.

AVERAGE DISCHARGE.--75 years (water years 1908, 1909, 1929-2001), 1,006 ft³/s, 63.28 in/yr, 728,800 acre-ft/yr.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,700 ft³/s and maximum (*):

Minimum discharge, 285 ft³/s Sept. 20-25, 30.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	541	420	540	668	489	496	1540	1810	647	453	358	317
2	472	425	528	649	539	534	1330	1440	646	444	358	315
3	437	421	526	651	565	503	1160	1260	676	441	360	313
4	425	431	506	665	679	494	1040	1150	636	442	358	312
5	416	433	494	718	847	495	959	1090	644	438	351	310
6	409	449	491	730	780	501	930	994	655	423	356	305
7	407	435	483	697	717	523	865	943	608	414	355	303
8	404	565	475	673	675	567	822	944	587	411	347	301
9	411	559	475	661	648	603	778	939	587	407	343	e293
10	441	500	471	645	625	588	753	900	569	406	344	300
11	478	464	461	614	598	567	798	871	563	402	342	300
12	436	444	451	594	573	552	763	891	693	403	340	301
13	427	435	470	598	552	559	730	883	608	402	337	302
14	425	427	585	589	538	568	702	1010	573	395	338	302
15	415	420	761	560	528	571	690	2040	552	389	342	304
16	409	414	657	537	517	568	700	2210	535	384	342	301
17	404	408	750	520	509	573	779	1660	522	381	336	297
18	423	404	642	514	511	667	823	1360	508	381	331	295
19	419	402	610	537	500	1130	867	1190	498	381	325	293
20	555	401	615	524	495	1060	897	1090	493	377	324	290
21	719	400	697	554	549	939	881	1010	493	372	322	289
22	536	395	960	603	556	873	849	990	491	368	335	289
23	473	433	1110	583	536	867	834	972	479	366	381	289
24	445	534	1030	571	523	927	829	928	490	365	343	288
25	431	483	886	555	510	1190	883	865	503	364	332	315
26	426	514	800	540	498	1120	992	811	477	360	330	335
27	427	576	752	523	492	1110	1020	781	514	358	327	316
28	483	533	725	511	484	1630	1030	736	502	363	324	300
29	467	544	708	525	---	1580	940	705	478	366	321	294
30	444	576	689	507	---	1410	1490	661	461	387	320	290
31	428	---	684	494	---	1450	---	647	---	369	319	---
TOTAL	14033	13845	20032	18310	16033	25215	27674	33781	16688	12212	10541	9059
MEAN	453	462	646	591	573	813	922	1090	556	394	340	302
MAX	719	576	1110	730	847	1630	1540	2210	693	453	381	335
MIN	404	395	451	494	484	494	690	647	461	358	319	288
AC-FT	27830	27460	39730	36320	31800	50010	54890	67000	33100	24220	20910	17970
CFSM	2.10	2.14	2.99	2.73	2.65	3.77	4.27	5.04	2.58	1.82	1.57	

MEAN	510	990	1380	1317	1304	1194	1352	1418	1088	627	474	436
MAX	1215	2167	3840	2991	3552	2865	2137	2762	2759	1101	723	595
(WY)	1951	1951	1965	1953	1996	1972	1943	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

ANNUAL TOTAL	346096			217423					
ANNUAL MEAN	946			596				1006	
HIGHEST ANNUAL MEAN								1506	1974
LOWEST ANNUAL MEAN								569	1977
HIGHEST DAILY MEAN	2820	Feb	2	2210	May	16		19400	Dec 22 1964
LOWEST DAILY MEAN	395	Nov	22	288	Sep	24		250	Sep 13 1909
ANNUAL SEVEN-DAY MINIMUM	403	Nov	16	290	Sep	18		273	Sep 7 1909
ANNUAL RUNOFF (AC-FT)	686500			431300				728800	
ANNUAL RUNOFF (CFSM)	4.38			2.76				4.66	
ANNUAL RUNOFF (INCHES)	59.61			37.45				63.28	
10 PERCENT EXCEEDS	1650			959				1800	
50 PERCENT EXCEEDS	793			514				784	
90 PERCENT EXCEEDS	428			326				402	

e Estimated

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 mi², at measuring cable 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 sea level. Prior to Oct. 1, 1952, at site 0.2 mi downstream at datum 13.46 ft lower.

REMARKS.--No estimated daily discharges. Records fair. No regulation or diversion upstream from station. All records given herein are for measuring site 0.2 mi downstream from gage. Water-quality records are available in the Environmental Quality Section (EQS) of the Oregon District Office.

AVERAGE DISCHARGE.--58 years, (water years 1933-87, 1999-2001), 574 ft³/s, 72.16 in/yr, 415,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,900 ft³/s Dec. 22, 1964, gage height, 14.55 ft; minimum discharge, 87 ft³/s Sept. 2, 1940, Sept. 24, 2001.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 30	1800	*1,580	*5.22				

Minimum discharge, 87 ft³/s Sept. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	372	164	289	406	231	228	820	1060	341	206	125	103
2	218	164	279	385	278	245	682	805	326	198	123	103
3	170	161	276	396	314	229	577	685	314	194	122	102
4	154	176	256	411	409	224	495	605	284	192	123	101
5	145	182	242	486	594	226	451	565	286	187	120	102
6	139	192	235	479	500	238	433	493	297	177	120	102
7	134	183	227	425	428	249	389	466	287	168	120	100
8	131	268	217	387	382	276	366	491	291	164	121	99
9	132	282	213	366	354	289	344	513	315	160	119	97
10	140	241	207	348	332	281	337	483	298	157	117	97
11	162	208	198	325	306	267	389	466	276	157	116	97
12	153	192	188	302	287	256	384	509	338	153	115	96
13	149	182	195	302	272	255	354	520	286	152	114	95
14	152	173	300	292	261	255	333	617	272	147	112	95
15	145	167	538	275	252	260	322	1290	268	144	112	97
16	140	161	388	259	245	259	335	1310	259	142	111	97
17	136	156	482	248	237	264	392	943	251	139	110	95
18	152	152	364	242	241	431	400	747	238	140	110	94
19	148	149	325	266	232	847	400	648	234	139	109	93
20	280	148	333	263	229	711	401	601	237	136	108	93
21	428	146	397	306	272	563	386	553	243	134	108	92
22	262	145	630	375	281	480	371	581	244	132	117	91
23	211	169	782	339	266	454	363	587	234	132	138	91
24	188	258	687	312	254	493	366	553	231	130	119	90
25	175	225	533	292	242	676	422	489	235	127	113	99
26	168	266	450	274	233	609	532	442	215	125	111	110
27	165	344	434	260	226	617	551	422	262	125	109	105
28	207	291	439	250	221	939	532	386	256	126	108	99
29	198	284	426	254	---	877	451	337	227	129	106	97
30	184	319	405	239	---	746	962	311	215	140	106	95
31	172	---	426	232	---	761	---	325	---	131	104	---
TOTAL	5710	6148	11361	9996	8379	13505	13540	18803	8060	4683	3566	2927
MEAN	184	205	366	322	299	436	451	607	269	151	115	97.6
MAX	428	344	782	486	594	939	962	1310	341	206	138	110
MIN	131	145	188	232	221	224	322	311	215	125	104	90
AC-FT	11330	12190	22530	19830	16620	26790	26860	37300	15990	9290	7070	5810
CFSM	1.71	1.90	3.39	2.99	2.77	4.03	4.18	5.62	2.49	1.40	1.07	.90
IN.	1.97	2.12	3.91	3.44	2.89	4.65	4.66	6.48	2.78	1.61	1.23	1.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2001, BY WATER YEAR (WY)

	MEAN	258	663	921	835	805	676	770	784	573	286	172	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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1933 - 2001

ANNUAL TOTAL	176106	106678	574
ANNUAL MEAN	481	292	892
HIGHEST ANNUAL MEAN			1974
LOWEST ANNUAL MEAN			1977
HIGHEST DAILY MEAN	2150	Feb 2	12800
LOWEST DAILY MEAN	121	Sep 29	89
ANNUAL SEVEN-DAY MINIMUM	123	Sep 23	91
ANNUAL RUNOFF (AC-FT)	349300	211600	415500
ANNUAL RUNOFF (CFSM)	4.46	2.71	5.31
ANNUAL RUNOFF (INCHES)	60.66	36.74	72.16
10 PERCENT EXCEEDS	906	535	1130
50 PERCENT EXCEEDS	426	250	407
90 PERCENT EXCEEDS	146	109	138

WILLAMETTE RIVER BASIN

225

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 mi².

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1.840 ft above sea level, from topographic map.

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

AVERAGE DISCHARGE.--3 years (water years 1999-2001), 110 ft³/s, 57.23 in/yr, 79,340 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,400 ft³/s Dec. 28, 1998, gage height, 7.38 ft; minimum discharge, 3.0 ft³/s Sept. 21-25, 2001.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and 9aximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16	0030	*348	*4.64				

Minimum discharge, 3.0 ft³/s Sept. 21-25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	11	52	67	37	44	136	e220	39	19	8.6	4.4
2	7.5	11	44	63	53	52	148	e170	40	18	7.9	4.3
3	6.2	11	40	64	65	46	128	e150	44	17	7.6	4.2
4	5.7	12	35	68	98	45	112	136	38	16	7.6	4.1
5	5.3	12	32	77	138	46	101	121	39	15	7.4	4.1
6	5.0	14	29	75	114	48	99	e100	37	15	7.0	4.2
7	4.9	13	27	67	93	51	90	e80	34	14	6.8	4.1
8	4.7	32	25	62	80	56	84	e80	33	14	6.5	4.0
9	4.9	33	24	59	71	60	78	84	31	13	6.2	3.7
10	5.8	25	23	58	64	58	75	77	30	13	5.9	3.6
11	7.1	20	22	52	58	54	86	72	32	13	5.8	3.6
12	6.4	17	21	48	52	51	84	69	46	12	5.6	3.6
13	6.1	15	22	47	48	49	79	65	36	12	5.5	3.5
14	6.0	14	78	47	45	49	74	108	32	11	5.4	3.5
15	5.7	13	130	43	43	49	71	250	30	11	5.4	3.6
16	5.5	12	98	39	41	48	73	312	28	12	5.3	3.6
17	5.2	11	123	37	39	48	91	225	26	11	5.2	3.5
18	6.8	10	84	35	41	65	99	169	25	11	5.1	3.4
19	6.6	10	68	40	39	158	109	135	24	11	5.0	3.4
20	28	9.8	66	39	38	136	110	113	23	11	4.9	3.4
21	40	9.5	86	55	56	110	106	97	22	10	4.8	3.3
22	22	9.2	231	72	63	95	98	85	21	9.8	5.6	3.2
23	15	14	285	65	59	89	93	75	20	9.3	9.2	3.2
24	12	39	213	61	54	97	90	67	22	8.9	6.9	3.1
25	10	29	149	56	50	136	95	61	22	8.6	6.1	4.8
26	9.2	37	114	51	46	127	106	57	21	8.3	5.6	6.4
27	8.7	67	95	47	43	146	102	54	30	7.9	5.3	5.4
28	17	49	85	44	40	239	99	52	27	8.1	5.0	4.7
29	16	55	78	44	---	217	89	49	23	8.9	4.8	4.3
30	14	65	73	40	---	180	e200	44	21	11	4.7	4.0
31	12	---	70	38	---	142	---	41	---	9.5	4.5	---
TOTAL	319.3	679.5	2522	1660	1668	2791	3005	3418	896	369.3	187.2	118.2
MEAN	10.3	22.6	81.4	53.5	59.6	90.0	100	110	29.9	11.9	6.04	3.94
MAX	40	67	285	77	138	239	200	312	46	19	9.2	6.4
MIN	4.7	9.2	21	35	37	44	71	41	20	7.9	4.5	3.1
AC-FT	633	1350	5000	3290	3310	5540	5960	6780	1780	733	371	234
CFSM	.40	.87	3.13	2.06	2.29	3.46	3.85	4.24	1.15	.46	.23	.15
IN.	.46	.97	3.61	2.38	2.39	3.99	4.30	4.89	1.28	.53	.27	.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2001, BY WATER YEAR (WY)

	1999	2000	2001	1999	2000	2001	1999	2000	2001	1999	2000	2001
MEAN	9.73	141	250	155	222	141	136	154	78.3	21.2	8.14	5.05
MAX	11.3	226	425	265	308	171	154	222	135	33.9	11.5	5.73
(WY)	1999	1999	1999	1999	2000	1999	2000	1999	1999	1999	1999	2000
MIN	7.63	22.6	81.4	53.5	59.6	90.0	100	110	29.9	11.9	6.04	3.94
(WY)	2000	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1999 - 2001

ANNUAL TOTAL	33720.1	17633.5	110
ANNUAL MEAN	92.1	48.3	162
HIGHEST ANNUAL MEAN			48.3
LOWEST ANNUAL MEAN			2440
HIGHEST DAILY MEAN	823	Feb 2	312
LOWEST DAILY MEAN	4.5	Sep 26	3.1
ANNUAL SEVEN-DAY MINIMUM	4.5	Sep 23	3.3
ANNUAL RUNOFF (AC-FT)	66880	34980	79340
ANNUAL RUNOFF (CFSM)	3.54	1.86	4.21
ANNUAL RUNOFF (INCHES)	48.25	25.23	57.23
10 PERCENT EXCEEDS	219	109	240
50 PERCENT EXCEEDS	61	37	58
90 PERCENT EXCEEDS	5.8	5.0	5.4

e Estimated

WILLAMETTE RIVER BASIN

14180500 DETROIT LAKE NEAR DETROIT, OR

LOCATION.--Lat 44°43'20", long 122°14'55", in SW 1/4 NW 1/4 sec.7, T.10 S., R.5 E., Marion County, Hydrologic Unit 17090005, in control house near right abutment of Detroit Dam on North Santiam River, 4.9 mi west of Detroit, and at mile 60.9.

DRAINAGE AREA.--437 mi².

PERIOD OF RECORD.--January 1953 to current year. Prior to October 1971, published as Detroit Reservoir near Detroit.

GAGE.--Water-stage recorder. Datum of gage is sea level (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, 349,400 acre-ft Oct 1, elevation, 1,536.30 ft; minimum contents, 145,500 acre-ft Dec. 13, elevation, 1,444.79 ft.

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

1,425	115,000	1,480	210,900	1,530	331,500
1,430	122,200	1,490	232,000	1,540	360,200
1,440	137,700	1,500	254,600	1,550	390,900
1,450	154,400	1,510	278,700	1,560	424,000
1,460	172,200	1,520	304,400	1,570	458,600

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1535.32	1498.04	1450.76	1454.80	1461.49	1471.15	1502.87	1509.53	1498.22	1493.00	1484.15	1474.55
2	1534.27	1496.89	1450.51	1455.15	1461.74	1471.33	1504.59	1510.59	1497.61	1492.74	1483.92	1474.21
3	1533.20	1495.71	1450.33	1455.67	1462.15	1471.41	1505.70	1510.64	1497.58	1492.46	1483.59	1473.84
4	1532.10	1494.53	1449.54	1456.17	1463.06	1471.58	1506.42	1510.44	1497.41	1492.09	1483.38	1473.47
5	1530.99	1493.39	1448.12	1456.60	1464.70	1471.73	1506.84	1510.72	1497.30	1491.79	1483.13	1473.00
6	1529.79	1492.29	1447.21	1457.01	1465.97	1471.92	1507.25	1510.72	1497.16	1491.47	1482.80	1472.62
7	1528.52	1490.98	1446.81	1457.31	1466.86	1472.13	1507.08	1510.64	1496.89	1491.15	1482.56	1472.26
8	1527.34	1490.10	1446.78	1457.43	1467.46	1472.55	1506.77	1510.04	1496.58	1490.81	1482.23	1471.90
9	1526.06	1489.20	1446.73	1457.37	1467.96	1473.00	1506.23	1509.23	1496.28	1490.45	1481.95	1471.41
10	1525.02	1487.99	1446.29	1457.18	1468.38	1473.52	1506.30	1508.19	1496.03	1490.09	1481.67	1471.02
11	1524.00	1486.66	1445.49	1457.36	1468.80	1473.96	1506.55	1507.07	1495.77	1489.63	1481.41	1470.52
12	1522.93	1485.26	1444.93	1457.63	1469.04	1474.27	1506.70	1505.88	1495.86	1489.25	1481.15	1470.12
13	1521.65	1483.80	1444.90	1458.07	1469.21	1474.54	1506.83	1504.68	1495.78	1488.85	1480.84	1469.74
14	1520.49	1482.31	1445.61	1458.36	1469.34	1474.86	1507.12	1504.07	1495.63	1488.43	1480.45	1469.31
15	1519.28	1480.77	1447.30	1458.55	1469.45	1475.32	1507.43	1505.80	1495.67	1488.19	1480.08	1468.98
16	1518.06	1479.17	1448.29	1458.78	1469.56	1475.65	1507.81	1507.65	1495.53	1487.95	1479.88	1468.58
17	1516.81	1477.52	1449.65	1458.25	1469.58	1476.11	1508.44	1508.73	1495.44	1487.79	1479.49	1468.18
18	1515.62	1475.46	1450.42	1458.31	1469.73	1477.00	1509.22	1509.69	1495.33	1487.55	1479.19	1467.76
19	1514.37	1473.33	1451.02	1458.46	1469.87	1479.77	1509.67	1509.99	1495.09	1487.36	1478.87	1467.24
20	1513.68	1471.10	1451.66	1458.58	1469.92	1481.81	1509.73	1509.77	1494.94	1487.20	1478.55	1466.81
21	1513.38	1468.82	1452.24	1459.04	1470.13	1483.18	1509.97	1509.23	1494.68	1487.03	1478.81	1466.39
22	1512.44	1466.50	1453.59	1459.65	1470.39	1484.19	1510.13	1508.45	1494.53	1486.76	1477.92	1465.96
23	1511.31	1464.19	1454.65	1460.02	1470.58	1485.12	1509.98	1507.73	1494.34	1486.39	1477.72	1465.52
24	1510.11	1462.09	1455.00	1460.41	1470.72	1486.28	1509.16	1507.20	1494.18	1486.19	1477.34	1465.07
25	1508.86	1459.93	1454.60	1460.73	1470.93	1487.89	1508.37	1506.65	1493.96	1485.89	1477.05	1464.74
26	1507.58	1457.92	1453.77	1460.92	1470.99	1489.43	1507.86	1505.60	1493.79	1485.66	1476.64	1464.40
27	1506.28	1456.45	1453.43	1461.07	1471.02	1491.13	1507.35	1504.48	1493.81	1485.34	1476.32	1464.01
28	1504.71	1454.73	1453.74	1461.15	1471.05	1493.99	1506.97	1503.32	1493.69	1485.25	1476.00	1463.62
29	1502.83	1453.01	1453.76	1461.34	---	1496.67	1506.43	1502.06	1493.44	1484.99	1475.65	1463.19
30	1500.91	1451.73	1453.95	1461.43	---	1498.67	1507.63	1500.69	1493.23	1484.73	1475.23	1462.66
31	1499.36	---	1454.44	1461.46	---	1500.74	---	1499.20	---	1484.46	1474.90	---
MAX	1535.32	1498.04	1455.00	1461.46	1471.05	1500.74	1510.13	1510.72	1498.22	1493.00	1484.15	1474.55
MIN	1499.36	1451.73	1444.90	1454.80	1461.49	1471.15	1502.87	1499.20	1493.23	1484.46	1474.90	1462.66
(†)	253100	157400	162200	174900	193100	256300	272900	252700	239100	220100	200700	177200
(‡)	-95600	-95700	+4800	+12700	+18200	+63200	+16600	-20200	-13600	-19000	-19400	-23500

CAL YR 2000 MAX 1565.37 MIN 1444.90 AC-FT‡ +7200

WTR YR 2001 MAX 1535.32 MIN 1444.90 AC-FT‡ -171500

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

‡ Change in contents, in acre-feet.

WILLAMETTE RIVER BASIN

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14181500 NORTH SANTIAM RIVER AT NIAGARA, OR

LOCATION.--Lat 44°45'10", long 122°17'50", in NE 1/4 NE 1/4 sec.34, T.9 S., R.4 E., Linn County, Hydrologic Unit 17090005, on left bank 0.1 mi downstream from Little Sardine Creek, 0.8 mi downstream from Big Cliff Dam, 2.1 mi east of Niagara, and at mile 57.3.

DRAINAGE AREA.--453 mi².

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 sea level (Federal Highway Administration bench mark). See WSP 1738 for history of changes prior to Oct. 1, 1952.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1953 by Detroit Lake (station 14180500) and Big Cliff Reservoir, usable capacity for reregulating purposes, 2,930 acre-ft. No diversion upstream from station.

AVERAGE DISCHARGE.--72 years (water years 1910-19, 1939-2000), 2,334 ft³/s, 69.97 in/yr, 1,691,000 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 63,200 ft³/s Nov. 22, 1909, gage height, 16.4 ft, from floodmark, site and datum then in use, from rating curve extended above 35,000 ft³/s; minimum discharge, 19 ft³/s Aug. 21, 1963; minimum daily, 395 ft³/s Mar. 25, 26, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,540 ft³/s May 11, 12, gage height, 4.83 ft; minimum discharge, 751 ft³/s Mar. 22, 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2340	2330	2070	1250	985	945	837	2030	2400	1110	859	857
2	2450	2060	1340	1230	983	934	835	1970	1930	1110	858	863
3	2310	2090	1300	1080	962	943	1270	2640	1440	1110	855	862
4	2300	2120	1670	1110	950	931	1310	2690	1420	1100	854	869
5	2300	2130	2120	1390	945	887	1450	2050	1420	1110	857	873
6	2360	2160	1860	1380	945	833	1510	1990	1420	1110	857	864
7	2360	2380	1260	1330	951	834	1980	2030	1430	1100	860	861
8	2410	2360	934	1330	942	835	2300	2700	1460	1090	859	862
9	2340	2390	922	1490	951	833	2290	3010	1490	1090	864	868
10	2270	2480	1240	1540	955	846	1630	3160	1420	1110	863	863
11	2260	2360	1530	1150	953	842	1590	3210	1410	1110	866	865
12	2280	2430	1240	978	955	840	1600	3320	1410	1100	855	863
13	2290	2380	949	951	975	837	1600	3300	1410	1100	864	862
14	2300	2310	949	945	951	833	1150	3170	1180	1100	860	867
15	2320	2380	953	948	949	833	1130	3110	1150	914	855	859
16	2340	2390	1090	952	955	826	1130	3080	1140	841	861	850
17	2320	2400	959	1510	954	833	1040	2340	1130	842	856	855
18	2310	2820	960	987	943	851	1040	1640	1140	843	867	854
19	2330	2880	965	966	941	836	1450	2120	1100	849	865	858
20	2330	2920	958	963	938	834	1890	2600	1110	847	860	858
21	2410	2880	1330	947	938	831	1610	2770	1110	850	860	857
22	2430	2950	2030	1000	940	808	1620	3030	1110	858	863	859
23	2400	3160	2790	1070	948	813	1940	2910	1110	876	860	856
24	2370	3200	2850	1010	939	834	2840	2400	1110	855	877	860
25	2380	3060	2760	994	929	845	2960	2420	1110	850	888	857
26	2400	2910	2760	973	934	844	2960	2910	1120	855	892	864
27	2390	3040	2140	976	937	842	2860	2910	1110	855	888	860
28	2960	2830	1580	1000	938	844	2690	2900	1110	862	855	867
29	3190	2760	1640	992	---	834	2690	2890	1110	865	863	861
30	3190	2560	1550	962	---	827	2670	2920	1110	869	861	867
31	2540	---	1310	988	---	829	---	2960	---	860	864	---
TOTAL	75180	77120	48009	34392	26586	26337	53872	83180	39120	30041	26766	25841
MEAN	2425	2571	1549	1109	950	850	1796	2683	1304	969	863	861
MAX	3190	3200	2850	1540	985	945	2960	3320	2400	1110	892	873
MIN	2260	2060	922	945	929	808	835	1640	1100	841	854	850
AC-FT	149100	153000	95230	68220	52730	52240	106900	165000	77590	59590	53090	51260
MEAN†	870	963	1626	1316	1277	1876	2076	2354	1076	660	548	467
CFSM†	1.92	2.12	3.59	2.90	2.82	4.14	4.58	5.20	2.38	1.46	1.21	1.03
IN.†	2.21	2.37	4.14	3.35	2.94	4.78	5.11	5.99	2.65	1.68	1.39	1.15
AC-FT†	53500	57300	100000	80920	70930	115400	123500	144800	63990	40590	33690	27760

CAL YR 2000 TOTAL 718301 MEAN 1963 MAX 4830 MIN 922 AC-FT 1425000 MEAN† 1973 CFSM† 4.36 IN.† 59.27 AC-FT† 1432000
WTR YR 2001 TOTAL 546444 MEAN 1497 MAX 3320 MIN 808 C-FT 1084000 MEAN† 1260 CFSM† 2.78 IN.† 37.77 AC-FT† 912500

† Adjusted for change in contents, in Detroit Lake.

WILLAMETTE RIVER BASIN

14182500 LITTLE NORTH SANTIAM RIVER NEAR MEHAMA, OR

LOCATION.--Lat 44°47'30", long 122°34'40", in NW 1/4 sec.16, T.9 S., R.2 E., Marion County, Hydrologic Unit 17090005, on left bank 2.0 mi east of Mehama, and at mile 2.0.

DRAINAGE AREA.--112 mi² at cableway 1.2 mi downstream where all discharge measurements are made.

PERIOD OF RECORD.--October 1931 to current year. Records for July to September 1924 and July to September 1931 at site 4 mi upstream not equivalent 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 sea level. Prior to June 12, 1948, nonrecording gage at about same site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station. Records herein are for measuring site. Continuous water-quality records for the period May 1985 to September 1986 have been collected at this location.

AVERAGE DISCHARGE.--70 years (water years 1932-2001), 749 ft³/s, 90.84 in/yr, 542,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,000 ft³/s Dec. 22, 1964, gage height, 16.73 ft, from rating curve extended above 17,000 ft³/s; minimum discharge, 13 ft³/s Aug. 30, 1961.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 8,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 30	1800	*4,670	*8.08				
Minimum discharge, 26 ft ³ /s Sept. 23-25.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	960	169	654	605	303	179	1200	2030	189	147	51	33
2	492	166	591	525	401	245	953	1270	197	134	48	33
3	222	156	547	499	606	225	795	972	290	123	46	32
4	147	177	468	483	738	214	690	791	300	116	46	32
5	114	228	403	528	1410	225	622	688	266	107	45	32
6	91	275	360	521	946	244	667	591	301	101	44	32
7	77	301	320	433	698	257	633	512	258	95	42	32
8	68	554	284	383	567	282	587	478	223	89	41	31
9	66	816	270	369	485	433	544	448	212	84	40	30
10	75	576	256	354	426	432	549	407	210	80	39	30
11	101	426	240	323	379	377	1140	368	219	77	38	29
12	97	344	222	299	339	337	929	358	656	73	38	29
13	93	290	267	350	306	330	764	346	485	69	37	29
14	137	252	878	467	281	330	648	505	369	67	36	28
15	131	223	2030	425	265	339	574	2550	303	64	36	29
16	112	199	1190	370	252	383	611	2350	257	65	36	29
17	96	181	1400	334	236	410	864	1400	224	66	36	29
18	132	167	967	317	237	944	883	950	199	64	35	28
19	168	157	800	422	225	2380	850	731	181	64	35	28
20	461	150	770	479	214	1380	805	603	167	61	34	28
21	1440	146	905	706	230	903	727	511	157	60	34	28
22	701	140	1670	1030	249	690	659	450	145	58	37	27
23	424	156	2130	750	241	574	607	404	137	55	63	27
24	299	447	1690	627	227	541	581	361	142	53	57	27
25	230	394	1200	535	213	656	668	324	170	51	42	30
26	190	479	943	461	198	704	741	288	141	50	39	48
27	167	934	882	401	187	761	658	260	175	49	37	54
28	235	738	823	362	177	1770	640	247	213	49	36	41
29	248	636	751	360	---	1410	606	248	181	52	35	35
30	219	777	697	338	---	1010	2210	212	162	60	34	33
31	188	---	670	311	---	991	---	193	---	60	34	---
TOTAL	8181	10654	25278	14367	11036	19956	23405	21846	7129	2343	1251	953
MEAN	264	355	815	463	394	644	780	705	238	75.6	40.4	31.8
MAX	1440	934	2130	1030	1410	2380	2210	2550	656	147	63	54
MIN	66	140	222	299	177	179	544	193	137	49	34	27
AC-FT	16230	21130	50140	28500	21890	39580	46420	43330	14140	4650	2480	1890
CFSM	2.36	3.17	7.28	4.14	3.52	5.75	6.97	6.29	2.12	.67	.36	.28
IN.	2.72	3.54	8.40	4.77	3.67	6.63	7.77	7.26	2.37	.78	.42	.

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2001, BY WATER YEAR (WY)

MEAN	394	1141	1441	1317	1199	1017	967	788	453	132	62.8	104
MAX	1594	3121	3680	3615	3533	2645	1712	1439	1684	547	432	490
(WY)	1948	1943	1965	1932	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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1932 - 2001
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ANNUAL TOTAL	220715		146399						
ANNUAL MEAN	603		401				749		
HIGHEST ANNUAL MEAN							1146		1974
LOWEST ANNUAL MEAN							400		1977
HIGHEST DAILY MEAN	4670	Jun 12	2550	May 15			31400	Feb 7	1996
LOWEST DAILY MEAN	26	Sep 28	27	Sep 22			13	Aug 30	1961
ANNUAL SEVEN-DAY MINIMUM	27	Sep 23	28	Sep 18			15	Aug 24	1961
ANNUAL RUNOFF (AC-FT)	437800		290400				542500		
ANNUAL RUNOFF (CFSM)	5.38		3.58				6.69		
ANNUAL RUNOFF (INCHES)	73.31		48.63				90.84		
10 PERCENT EXCEEDS	1320		891				1680		
50 PERCENT EXCEEDS	500		266				463		
90 PERCENT EXCEEDS	39		36				42		

e Estimated

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.

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.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1953 by Detroit Lake (station 14180500) and Big Cliff Reservoir, usable capacity for reregulating purposes, 2,930 acre-ft. No diversion upstream from station. All records given herein are for measuring site.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,600 ft³/s Apr. 30, gage height, 6.50 ft; minimum discharge, 860 ft³/s Sept. 2.

ANNUAL TOTAL	1066990		758939				
ANNUAL MEAN	2915		2079			3455	
HIGHEST ANNUAL MEAN						5255	1974
LOWEST ANNUAL MEAN						1743	1977
HIGHEST DAILY MEAN	8570	Jun 12	6160	May 15	46700		Feb 7 1996
LOWEST DAILY MEAN	1010	Aug 14	896	Aug 21	626		Oct 28 1952
ANNUAL SEVEN-DAY MINIMUM	1030	Aug 8	898	Sep 17	636		Nov 4 1952
ANNUAL RUNOFF (AC-FT)	2116000		1505000		2503000		
10 PERCENT EXCEEDS	4970		3450		6960		
50 PERCENT EXCEEDS	2660		1900		2450		
90 PERCENT EXCEEDS	1080		923		1150		

WILLAMETTE RIVER BASIN

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 mi².

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 sea level, from topographic map. Prior to Sept. 26, 1989, at site 0.7 mi downstream at datum 759.88 above sea level. 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.--66 years (water years 1936-2001), 817 ft³/s, 63.77 in/yr, 591,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,700 ft³/s Feb. 7, 1996, gage height, 18.11 ft, from rating curve extended above 10,000 ft³/s; minimum discharge, 23 ft³/s Dec. 1, 2, 1936, site then in use.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 30	1845	*3,330	*6.41				

Minimum discharge, 35 ft³/s Sept. 24, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56	94	351	468	313	264	1610	2090	259	163	81	45
2	74	102	303	432	349	356	1320	1460	297	153	75	45
3	56	102	275	421	468	322	1120	1140	378	146	72	44
4	49	111	244	413	798	311	966	946	334	139	71	43
5	46	130	221	442	1110	316	858	821	339	133	71	43
6	44	161	204	429	916	316	894	707	434	129	67	43
7	42	158	188	386	724	318	856	628	355	124	65	42
8	41	481	176	373	604	339	794	581	310	119	63	42
9	42	491	170	375	528	379	734	537	297	114	61	41
10	54	304	167	364	480	373	701	487	278	111	59	40
11	78	222	170	325	440	347	1160	450	288	109	57	39
12	68	183	191	301	392	327	1040	427	550	108	56	39
13	60	161	256	342	356	320	856	399	434	102	55	39
14	66	145	606	445	332	316	729	481	367	98	54	38
15	64	133	1340	397	314	333	660	1750	328	96	54	42
16	57	124	897	341	298	372	698	2410	299	96	53	43
17	53	115	1040	306	284	488	854	1440	273	96	53	41
18	70	108	731	293	290	859	913	1050	255	93	52	39
19	78	103	570	449	273	1640	1040	835	237	93	51	38
20	282	100	503	449	262	1370	1000	696	219	90	50	38
21	549	98	626	495	334	1010	925	598	206	89	49	37
22	227	95	1410	648	370	815	835	526	195	85	52	37
23	151	112	1990	561	355	717	763	471	187	82	84	36
24	119	210	1560	537	336	693	720	425	191	80	72	36
25	101	182	1070	502	312	891	748	389	212	77	59	53
26	91	238	821	450	290	850	792	358	204	75	54	91
27	86	455	711	402	274	1080	743	334	236	73	52	77
28	154	373	630	368	261	2660	769	319	207	72	50	61
29	150	382	589	372	---	2000	724	316	190	77	49	51
30	123	430	535	343	---	1450	1730	284	174	105	48	46
31	104	---	502	322	---	1430	---	265	---	92	46	---
TOTAL	3235	6103	19047	12751	12063	23262	27552	23620	8533	3219	1835	1349
MEAN	104	203	614	411	431	750	918	762	284	104	59.2	45.0
MAX	549	491	1990	648	1110	2660	1730	2410	550	163	84	91
MIN	41	94	167	293	261	264	660	265	174	72	46	36
AC-FT	6420	12110	37780	25290	23930	46140	54650	46850	16930	6380	3640	2680
CFSM	.60	1.17	3.53	2.36	2.48	4.31	5.28	4.38	1.63	.60	.34	.26
IN.	.69	1.30	4.07	2.73	2.58	4.97	5.89	5.05	1.82	.69	.39	.29

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2001, BY WATER YEAR (WY)

	MEAN	293	1109	1526	1444	1376	1165	1130	932	518	168	80.3	94.1
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1936 - 2001

ANNUAL TOTAL	240533						142569						
ANNUAL MEAN	657						391			817			
HIGHEST ANNUAL MEAN										1280			1972
LOWEST ANNUAL MEAN										359			1977
HIGHEST DAILY MEAN	3810	Jan 11					2660	Mar 28		23200	Feb 7		1996
LOWEST DAILY MEAN	40	Sep 27					36	Sep 23		23	Dec 1		1936
ANNUAL SEVEN-DAY MINIMUM	41	Sep 24					37	Sep 18		24	Nov 25		1936
ANNUAL RUNOFF (AC-FT)	477100						282800			591600			
ANNUAL RUNOFF (CFSM)	3.78						2.24			4.69			
ANNUAL RUNOFF (INCHES)	51.42						30.48			63.77			
10 PERCENT EXCEEDS	1570						895			1810			
50 PERCENT EXCEEDS	461						290			502			
90 PERCENT EXCEEDS	56						50			61			

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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.

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 sea level, from topographic map. Aug. 13, 1963, to Dec. 22, 1964, water-stage recorder on left bank at present datum.

REMARKS.--No estimated daily discharges. Records 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,700 ft³/s Feb. 7, 1996, gage height, 20.54 ft, from rating curve extended above 8,000 ft³/s on the basis of slope-area measurement of peak flow; minimum discharge, 14 ft³/s Aug. 19-23, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 36,500 ft³/s Dec. 22, 1964, from slope-area measurement of peak flow.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 30	1730	*4,410	*9.74				
Minimum discharge. 28 ft ³ /s Sept. 23-25.							

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	136	67	353	495	306	239	910	1900	168	122	55	36
2	94	76	307	448	436	321	742	1160	174	114	52	35
3	51	75	278	440	587	286	630	876	219	108	51	35
4	41	82	231	426	800	274	558	705	201	103	52	34
5	36	94	197	466	1070	294	513	606	198	98	51	34
6	34	133	172	439	767	317	544	514	221	94	49	34
7	32	135	152	377	594	324	511	454	192	91	47	34
8	31	338	136	356	499	363	473	423	173	88	47	33
9	32	409	127	358	440	419	443	389	170	85	46	32
10	39	258	123	370	400	412	453	350	159	82	44	32
11	46	170	119	324	361	367	800	320	179	81	43	32
12	43	132	112	298	325	333	688	305	451	78	42	32
13	47	112	141	327	299	320	557	283	309	76	42	31
14	62	98	1040	354	279	312	482	495	242	73	41	31
15	50	88	1610	335	265	326	461	1750	206	71	41	32
16	43	82	880	294	253	339	590	2210	183	71	40	33
17	39	76	1060	269	243	376	792	1270	166	71	39	31
18	58	71	667	259	264	840	744	828	153	70	39	31
19	64	67	538	387	260	1910	761	621	142	68	38	30
20	363	66	513	420	247	1070	737	505	134	66	37	30
21	594	66	687	683	328	697	654	429	127	65	37	29
22	222	63	1650	883	375	538	578	377	121	64	41	29
23	124	93	2170	652	337	462	523	335	117	61	85	29
24	91	404	1560	558	304	457	504	295	123	59	58	29
25	75	251	994	497	276	586	535	265	132	58	45	34
26	65	303	762	438	254	616	561	240	122	56	42	54
27	59	708	720	387	238	747	495	222	168	55	40	52
28	100	443	662	351	225	1570	518	209	201	55	39	40
29	101	446	622	354	---	1140	509	201	152	57	38	35
30	88	469	570	325	---	829	2230	183	133	66	37	34
31	76	---	541	306	---	843	---	172	---	61	36	---
TOTAL	2936	5875	19694	12876	11032	17927	19496	18892	5436	2367	1394	1017
MEAN	94.7	196	635	415	394	578	650	609	181	76.4	45.0	33.9
MAX	594	708	2170	883	1070	1910	2230	2210	451	122	85	54
MIN	31	63	112	259	225	239	443	172	117	55	36	29
AC-FT	5820	11650	39060	25540	21880	35560	38670	37470	10780	4690	2760	2020
CFSM	.95	1.97	6.40	4.19	3.97	5.83	6.55	6.14	1.83	.77	.45	.34
IN.	1.10	2.20	7.39	4.83	4.14	6.72	7.31	7.08	2.04	.89	.52	.31

MEAN	256	1004	1277	1254	1104	940	838	614	320	101	57.5	84.3
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	28.0
(WY)	1988	1994	1977	1977	1977	1992	1968	1992	1992	1992	1992	1987

ANNUAL TOTAL	186094		118942			
ANNUAL MEAN	508		326		653	
HIGHEST ANNUAL MEAN					1113	1974
LOWEST ANNUAL MEAN					311	1977
HIGHEST DAILY MEAN	4900	Feb 1	2230	Apr 30	16000	Feb 7 1996
LOWEST DAILY MEAN	31	Oct 8	29	Sep 21	14	Aug 19 1973
ANNUAL SEVEN-DAY MINIMUM	32	Sep 23	30	Sep 18	14	Aug 17 1973
ANNUAL RUNOFF (AC-FT)	369100		235900		472800	
ANNUAL RUNOFF (CFSM)	5.13		3.28		6.58	
ANNUAL RUNOFF (INCHES)	69.79		44.60		89.39	
10 PERCENT EXCEEDS	1220		727		1500	
50 PERCENT EXCEEDS	337		225		361	
90 PERCENT EXCEEDS	40		38		39	

WILLAMETTE RIVER BASIN

14186100 GREEN PETER LAKE NEAR FOSTER, OR

LOCATION.--Lat 44°27'10", long 122°32'40", in NE 1/4 SE 1/4 sec.10, T.13 S., R.2 E., Linn County, Hydrologic Unit 17090006, in Green Peter Dam on Middle Santiam River, 7.0 mi northeast of Foster, and at mile 5.7.

DRAINAGE AREA.--273 mi².

PERIOD OF RECORD.--October 1966 to current year. Prior to October 1971, published as Green Peter Reservoir near Foster.

GAGE.--Water-stage recorder. Datum of gage is sea level (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, 353,300 acre-ft May 18, elevation, 993.61 ft; minimum contents, 168,200 acre-ft Jan. 12, elevation, 925.95 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 (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	983.66	963.13	941.08	929.88	932.68	943.75	971.27	987.22	984.96	973.62	963.96	953.22
2	983.36	962.29	940.48	929.46	933.13	944.03	972.65	988.75	984.03	973.44	963.66	952.80
3	982.97	961.42	939.76	929.13	933.85	944.39	973.82	988.93	983.13	973.11	963.54	952.38
4	982.64	960.67	938.92	928.80	934.96	944.54	974.81	988.90	982.44	972.87	963.27	951.93
5	982.25	959.89	938.35	928.65	936.55	944.78	975.77	988.72	981.81	972.60	962.91	951.42
6	981.89	959.20	937.78	928.47	937.63	944.93	976.79	988.42	981.24	972.33	962.61	950.94
7	981.50	958.39	937.15	928.11	937.66	945.08	977.51	988.00	980.58	972.03	962.31	950.52
8	981.11	958.03	936.55	927.78	938.56	945.47	978.14	987.49	979.92	971.70	962.01	950.01
9	980.78	957.64	935.92	927.24	939.34	945.92	977.75	987.10	979.17	971.40	961.68	949.50
10	980.36	956.83	935.29	926.67	940.00	946.28	978.02	986.56	978.57	971.07	961.26	949.05
11	979.97	955.69	933.79	926.37	940.48	946.67	979.22	985.93	978.18	970.77	960.96	948.60
12	979.55	954.49	933.12	926.01	940.93	947.03	979.49	985.24	978.57	970.50	960.63	948.15
13	979.16	953.23	932.76	926.52	941.29	947.30	979.57	985.12	978.66	970.20	960.12	947.70
14	978.77	951.91	933.63	927.06	941.65	947.45	979.78	985.87	978.63	969.78	959.79	947.25
15	978.17	950.74	935.04	927.48	941.98	947.78	979.93	988.45	978.48	969.42	959.28	946.83
16	977.39	949.96	935.10	927.75	942.22	948.08	980.23	991.27	978.30	969.09	958.95	946.38
17	976.64	948.58	935.46	927.09	942.28	948.68	980.74	992.95	978.06	968.73	958.44	945.90
18	976.01	947.50	935.04	927.12	942.40	950.00	981.10	993.58	977.82	968.46	958.02	945.42
19	975.29	946.90	934.17	927.39	942.46	952.88	981.31	993.31	977.52	968.16	957.63	944.97
20	975.14	946.24	933.21	927.66	942.67	954.62	981.49	992.89	977.19	967.86	957.30	944.49
21	975.17	945.61	932.76	928.44	942.85	955.85	982.18	992.41	976.83	967.53	956.97	944.01
22	974.72	944.95	933.87	929.55	943.06	956.81	982.72	991.87	976.44	967.23	956.67	943.53
23	974.12	944.41	935.07	930.28	943.24	957.65	983.26	991.96	976.11	966.90	956.52	943.05
24	973.28	944.26	935.34	930.88	943.36	958.52	982.96	991.78	975.81	966.57	956.22	942.57
25	972.35	943.66	934.56	931.33	943.48	959.57	982.63	991.51	975.51	966.24	955.89	942.18
26	971.42	943.12	933.30	931.60	943.54	960.62	982.63	990.94	975.18	965.88	955.56	941.80
27	970.43	942.97	932.19	931.84	943.63	962.03	982.63	989.97	974.97	965.55	955.23	941.35
28	969.19	942.58	931.44	932.08	943.63	964.70	982.57	989.01	974.73	965.22	954.81	940.87
29	967.87	942.19	930.72	932.23	---	966.68	982.45	988.02	974.22	964.92	954.42	940.39
30	966.52	941.71	930.39	932.38	---	968.12	984.58	987.00	973.86	964.62	954.00	939.91
31	964.84	---	930.18	932.47	---	969.74	---	985.98	---	964.29	953.64	---
MAX	983.66	963.13	941.08	932.47	943.63	969.74	984.58	993.58	984.96	973.62	963.96	953.22
MIN	964.84	941.71	930.18	926.01	932.68	943.75	971.27	985.12	973.86	964.29	953.64	939.91
(†)	264700	204000	177400	182500	208600	278800	324100	328500	291000	263100	234000	199700
(+)	-57100	-60700	-26600	+5100	+26100	+70200	+45300	+4400	-37500	-27900	-29100	-34300

CAL YR 2000 MAX 1010.39 MIN 921.77 AC-FT† +18300
WTR YR 2001 MAX 993.58 MIN 926.01 AC-FT† -122100

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

WILLAMETTE RIVER BASIN

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14186600 FOSTER LAKE AT FOSTER, OR

LOCATION.--Lat 44°25'00", long 122°40'25", in NW 1/4 NE 1/4 sec.27, T.13 S., R.1 E., Linn County, Hydrologic Unit 17090006, in Foster Dam on South Santiam River, 0.3 mi above Wiley Creek, 0.5 mi north of Foster, and at mile 37.7.

DRAINAGE AREA.--492 mi².

PERIOD OF RECORD.--December 1966 to current year. Prior to October 1971, published as Foster Reservoir at Foster.

GAGE.--Water-stage recorder. Datum of gage is sea level (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, 56,940 acre-ft Sept. 28, elevation, 637.89 ft; minimum contents, 30,200 acre-ft Nov. 26, elevation, 612.03 ft.

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

607	25,880	630	47,860
610	28,430	635	53,510
615	32,870	640	59,530
620	37,570	641	60,780
625	42,550		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	637.06	621.42	614.28	614.24	613.95	614.18	630.42	614.54	637.03	637.12	636.51	636.62
2	637.00	620.70	614.04	614.09	613.96	614.45	630.48	613.82	636.94	637.03	636.48	636.62
3	636.97	620.31	613.92	614.09	614.26	614.12	629.22	613.88	637.09	637.18	636.03	636.62
4	636.88	619.74	613.77	614.45	615.22	614.24	627.75	614.00	637.15	637.09	635.97	636.59
5	636.79	619.14	613.80	614.54	616.09	614.06	625.65	614.00	637.21	637.11	636.06	636.71
6	636.67	618.63	614.04	614.54	615.58	614.18	623.55	614.06	637.18	637.08	636.02	636.86
7	636.58	618.09	614.34	614.39	616.21	614.33	619.92	614.03	637.03	637.11	635.99	636.86
8	636.46	618.39	614.37	614.24	615.55	614.21	616.14	614.06	637.00	637.11	635.96	637.02
9	636.40	618.78	614.34	614.54	615.16	614.30	614.82	614.09	637.06	637.14	635.90	637.17
10	636.43	617.34	614.25	614.78	614.86	614.45	614.52	614.15	637.06	637.14	636.11	637.17
11	636.58	616.71	614.46	614.15	614.68	614.21	613.86	614.15	637.15	637.14	636.05	637.17
12	636.64	616.14	614.45	614.03	614.47	613.92	614.25	614.21	637.09	637.02	635.99	637.17
13	636.76	615.60	614.66	614.15	614.23	613.77	613.70	613.94	637.06	637.00	636.38	637.17
14	636.88	615.12	614.63	614.19	613.87	613.92	614.42	613.94	636.97	637.05	636.32	637.17
15	636.70	614.58	614.54	613.92	613.39	613.95	614.87	615.53	637.00	637.05	636.68	637.20
16	636.16	612.99	614.21	613.44	613.09	614.07	614.69	619.43	637.06	637.05	636.62	637.20
17	634.90	613.29	614.81	613.74	613.18	614.19	614.03	621.11	637.03	637.05	636.98	637.26
18	633.64	614.16	614.18	613.68	613.30	615.06	614.30	623.66	637.03	637.05	637.04	637.26
19	632.41	613.86	614.93	614.10	613.39	617.25	614.30	627.74	637.06	636.99	637.10	637.26
20	631.72	613.74	615.89	614.13	613.06	618.93	614.18	631.43	637.09	636.93	637.01	637.29
21	631.45	613.59	615.80	614.25	613.34	619.77	613.79	634.73	637.12	636.87	636.92	637.32
22	630.55	613.41	615.29	614.31	613.64	620.16	614.12	637.58	637.27	636.78	636.86	637.32
23	629.47	613.47	614.66	614.25	613.91	620.28	614.18	637.22	637.15	636.72	636.74	637.35
24	627.88	613.62	614.51	614.13	614.06	620.31	614.18	637.34	637.06	636.66	636.71	637.38
25	626.44	613.14	615.41	614.07	614.21	620.70	614.21	637.16	637.03	636.60	636.65	637.50
26	624.97	612.69	615.17	614.01	614.27	621.03	614.33	637.10	636.97	636.51	636.59	637.65
27	623.59	613.71	614.39	613.98	614.12	621.81	614.30	637.40	636.88	636.48	636.53	637.77
28	623.19	613.71	614.57	614.04	614.12	626.01	614.30	637.39	636.70	636.42	636.59	637.80
29	622.44	613.71	614.72	614.04	---	628.71	614.21	637.33	637.15	636.39	636.65	637.80
30	621.78	614.19	613.82	614.04	---	629.49	615.05	637.21	637.09	636.42	636.71	637.77
31	621.48	---	614.12	614.04	---	629.79	---	637.03	---	636.39	636.62	---
MEAN	632.35	615.80	614.53	614.15	614.26	617.74	617.26	623.98	637.06	636.89	636.48	637.20
MAX	637.06	621.42	615.89	614.78	616.21	629.79	630.48	637.58	637.27	637.18	637.10	637.80
MIN	621.48	612.69	613.77	613.44	613.06	613.77	613.70	613.82	636.70	636.39	635.90	636.59
(†)	39010	32140	32070	32000	32070	47630	32920	55910	55980	55150	55420	56800
(‡)	-16930	-6870	-70	-70	+70	+15560	-14710	+22990	+70	-830	+270	+1380

CAL YR 2000 MEAN 623.72 MAX 637.38 MIN 612.69 AC-FT† +530

WTR YR 2001 MEAN 624.87 MAX 637.80 MIN 612.69 AC-FT† +860

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

‡ Change in contents, in acre-feet.

WILLAMETTE RIVER BASIN

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 mi².

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 sea level, from topographic map. Prior to April 6, 1965, water-stage recorder at present site at datum of 718.08 ft above sea level (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 for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--38 years (water years 1948-72, 1989-2001), 215 ft³/s, 56.35 in/yr, 155,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,640 ft³/s Jan. 21, 1972, gage height, 9.28 ft, datum then in use, from rating curve extended above 3,700 ft³/s; maximum gage height, 9.80 ft, Dec. 21, 1964 (backwater from debris), datum then in use; minimum discharge, 2.9 ft³/s August 28-31, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 27	2230	*658	*3.67				
Minimum discharge, 4.8 ft ³ /s Sept. 23-25.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.0	15	59	82	69	68	304	329	50	28	13	6.6
2	11	16	47	74	80	110	281	245	56	26	12	6.5
3	8.8	16	40	69	110	95	243	196	63	24	11	6.2
4	8.0	19	34	64	159	88	205	168	54	22	11	6.1
5	7.6	23	30	64	178	84	184	147	59	21	11	6.0
6	7.0	23	28	60	161	77	212	130	64	21	10	6.1
7	6.6	23	25	57	138	72	212	115	51	20	9.6	6.0
8	6.2	80	24	56	120	72	199	104	45	19	9.3	6.0
9	7.6	84	24	60	111	90	182	95	48	18	8.9	5.7
10	12	47	24	67	104	89	176	87	44	17	8.3	5.4
11	15	33	28	58	97	83	393	81	51	17	7.9	5.3
12	13	27	46	53	87	78	322	74	108	17	7.8	5.2
13	11	23	81	78	81	74	241	68	71	15	7.7	5.2
14	13	21	207	134	76	70	199	86	58	15	7.7	5.2
15	12	19	391	108	71	82	179	254	51	15	7.9	5.7
16	10	18	222	87	68	98	175	409	46	16	7.8	6.3
17	9.3	17	242	74	65	165	201	241	42	16	8.1	6.0
18	14	16	170	68	74	220	217	180	40	15	7.6	5.6
19	15	15	130	90	68	384	251	148	37	15	7.4	5.5
20	61	15	113	87	63	330	238	127	34	14	7.1	5.4
21	77	15	128	104	82	227	208	112	32	15	7.0	5.3
22	30	14	461	120	84	178	185	98	30	13	7.6	5.1
23	20	19	580	110	86	149	164	88	30	13	e21	5.0
24	16	30	439	127	84	134	149	80	31	12	e12	4.9
25	14	28	270	127	77	159	137	72	35	12	e9.5	7.3
26	13	39	191	113	70	157	126	66	33	11	e8.5	e14
27	12	85	153	98	65	259	117	62	43	11	e8.0	e12
28	41	62	129	89	61	528	137	60	39	11	e7.8	9.2
29	30	77	112	87	---	404	133	59	34	12	7.3	e7.6
30	21	81	100	79	---	296	263	52	30	22	7.3	e7.0
31	17	---	90	73	---	289	---	48	---	16	6.9	---
TOTAL	547.1	1000	4618	2617	2589	5209	6233	4081	1409	519	284.0	193.4
MEAN	17.6	33.3	149	84.4	92.5	168	208	132	47.0	16.7	9.16	6.45
MAX	77	85	580	134	178	528	393	409	108	28	21	14
MIN	6.2	14	24	53	61	68	117	48	30	11	6.9	4.9
AC-FT	1090	1980	9160	5190	5140	10330	12360	8090	2790	1030	563	384
CFSM	.34	.64	2.88	1.63	1.79	3.24	4.01	2.54	.91	.32	.18	.12
IN.	.39	.72	3.32	1.88	1.86	3.74	4.48	2.93	1.01	.37	.20	.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1948 - 2001, BY WATER YEAR (WY)

	MEAN	80.4	273	411	448	390	340	267	195	87.9	31.7	16.4	18.0
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	8.08	15.7	109	82.1	92.5	85.0	133	62.8	20.2	11.8	4.40	5.15	
(WY)	1989	1953	1960	1963	2001	1992	1968	1973	1992	1992	1992	1992	

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1948 - 2001

ANNUAL TOTAL	62746.7	29299.5	215
ANNUAL MEAN	171	80.3	318
HIGHEST ANNUAL MEAN			80.3
LOWEST ANNUAL MEAN			2001
HIGHEST DAILY MEAN	1480	580	6410
LOWEST DAILY MEAN	6.2	4.9	2.9
ANNUAL SEVEN-DAY MINIMUM	6.3	5.3	3.0
ANNUAL RUNOFF (AC-FT)	124500	58120	155600
ANNUAL RUNOFF (CFSM)	3.31	1.55	4.15
ANNUAL RUNOFF (INCHES)	45.06	21.04	56.35
10 PERCENT EXCEEDS	458	203	497
50 PERCENT EXCEEDS	86	56	116
90 PERCENT EXCEEDS	8.9	7.6	12

e Estimated

WILLAMETTE RIVER BASIN

235

14187200 SOUTH SANTIAM RIVER NEAR FOSTER, OR

LOCATION.--Lat 44°24'45", long 122°41'15", in SE 1/4 NE 1/4 sec.28, T.13 S., R.1 E., Linn County, Hydrologic Unit 17090006, on left bank 0.6 mi downstream from Wiley Creek and at mile 37.0.

DRAINAGE AREA.--557 mi².

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 sea level, 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.--28 years (water years 1974-2001), 2,844 ft³/s, 69.34 in/yr, 2,060,000 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,700 ft³/s Feb. 7, 1996, gage height, 18.74 ft, from rating curve extended above 16,000 ft³/s; minimum discharge, 343 ft³/s July 18, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,130 ft³/s Dec. 23, gage height, 14.02 ft; minimum discharge, 343 ft³/s July 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	800	2890	2020	2020	928	811	1810	2990	2480	825	613	643
2	809	1970	2010	2090	921	860	1810	2500	2490	771	614	650
3	808	1810	2000	1860	944	842	2270	3250	2510	768	613	649
4	802	1820	1990	1700	1030	832	2190	3040	2050	767	613	660
5	802	1830	1510	1750	1390	826	2330	2910	2030	767	611	658
6	801	1840	1300	1780	1840	817	2370	2740	2110	765	610	651
7	798	1950	1290	1790	1990	810	3400	2660	2050	765	600	652
8	794	2030	1340	1790	1210	810	3370	2610	1900	765	606	656
9	795	2060	1370	1790	974	832	3510	2510	1960	760	606	656
10	808	2890	1360	1800	927	833	2200	2470	1670	759	608	658
11	812	2640	2290	1780	909	824	2350	2360	1510	759	610	657
12	814	2550	1410	1540	844	817	2790	2370	1200	761	611	660
13	812	2510	1430	915	819	809	2920	1630	1100	758	609	660
14	815	2470	1970	1190	828	806	1730	901	1090	749	610	661
15	1230	2270	3930	1200	820	819	1710	1360	1090	756	611	665
16	1690	2200	3310	1170	816	852	1940	1180	1080	756	610	672
17	2040	2010	3160	1740	806	914	2420	1010	1070	762	610	665
18	2070	1450	3410	1080	815	981	2200	942	1070	603	612	666
19	2070	1270	2750	1020	812	1140	2890	899	1070	716	611	668
20	2100	1210	2510	1180	805	1090	2920	883	1070	717	612	669
21	2150	1210	2770	1210	821	990	1870	863	1060	717	612	669
22	2080	1220	4480	1380	826	929	1450	898	1060	716	613	669
23	2070	1180	6340	1390	831	891	1370	1520	1060	712	626	670
24	2490	1210	5580	1420	829	877	2560	1590	1070	709	620	670
25	2520	1850	4360	1420	823	924	2790	1720	1070	710	615	672
26	2500	1890	4550	1360	816	914	2230	2080	1080	709	615	671
27	2500	1790	4310	1240	810	980	2160	2470	1080	707	606	684
28	2820	2010	3060	1100	809	1290	2470	2600	1070	706	620	700
29	2770	2000	2890	1150	---	1170	2440	2640	1070	705	620	715
30	2780	2020	2800	1110	---	1510	2930	2640	1070	714	623	714
31	3010	---	2010	1050	---	1740	---	2580	---	712	624	---
TOTAL	50160	58050	85510	45015	26993	29540	71400	62816	43290	22866	18994	20010
MEAN	1618	1935	2758	1452	964	953	2380	2026	1443	738	613	667
MAX	3010	2890	6340	2090	1990	1740	3510	3250	2510	825	626	715
MIN	794	1180	1290	915	805	806	1370	863	1060	603	600	643
AC-FT	99490	115100	169600	89290	53540	58590	141600	124600	85870	45350	37670	39690
MEAN†	414	799	2324	1534	1435	2348	2894	2472	814	270	144	114
CFSM†	0.74	1.43	4.17	2.75	2.58	4.22	5.20	4.44	1.46	0.48	0.26	0.20
IN.†	0.86	1.60	4.81	3.18	2.68	4.86	5.80	5.12	1.63	0.56	0.30	0.23
AC-FT†	25460	47530	142900	94320	79710	144400	172200	152000	48440	16620	8840	6770

CAL YR 2000 TOTAL 818190 MEAN 2235 MAX 1130 MIN 592 AC-FT 1623000 MEAN† 2268 CFSM† 4.07 IN.† 55.28 AC-FT† 1642000
WTR YR 2001 TOTAL 534644 MEAN 1465 MAX 6340 MIN 600 AC-FT 1060000 MEAN† 1297 CFSM† 2.33 IN.† 31.61 AC-FT† 938800

† Adjusted for change in contents in Green Peter Lake and Foster Lake.

WILLAMETTE RIVER BASIN

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 mi².

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 sea level. 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 ft³/s, 2,098,000 acre-ft/yr.
35 years (water years 1967-2001), 3,003 ft³/s, 2,176,000 acre-ft/yr (regulated period).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,200 ft³/s Dec. 22, 1964, gage height, 24.50 ft; minimum discharge, 61 ft³/s Oct. 12, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,700 ft³/s Dec. 23, gage height, 6.84 ft; minimum discharge, 371 ft³/s July 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	776	3180	2200	2400	1170	980	2270	3670	2770	991	653	662
2	786	2240	2200	2530	1150	1080	2270	2780	2780	852	633	681
3	786	1950	2160	2330	1190	1040	2680	3670	2820	846	630	678
4	792	1960	2150	2080	1320	1010	2640	3470	2380	843	632	685
5	795	1980	1730	2150	1610	996	2740	3310	2290	843	629	687
6	794	1980	1420	2160	2260	977	2800	3150	2380	838	620	675
7	792	2080	1380	2180	2340	967	3700	3010	2320	832	615	675
8	791	2200	1420	2180	1720	966	3860	2950	2140	831	620	679
9	804	2270	1460	2200	1260	1020	3920	2880	2210	827	623	679
10	814	3050	1460	2210	1200	1020	2790	2740	1950	822	623	676
11	819	2930	2460	2190	1190	992	2970	2730	1750	820	627	673
12	816	2740	1550	1960	1120	975	3220	2690	1510	821	629	675
13	816	2750	1590	1360	1060	961	3500	2050	1290	818	627	674
14	818	2680	1990	1640	1060	952	2260	1200	1260	809	634	676
15	1200	2500	4480	1660	1050	964	2080	1690	1250	812	636	679
16	1750	2420	3920	1570	1040	1030	2210	1540	1230	815	635	692
17	2140	2200	3590	2040	1020	1190	2860	1320	1220	824	637	679
18	2240	1690	3860	1560	1020	1340	2630	1190	1210	648	637	675
19	2240	1370	3220	1280	1010	1540	3220	1120	1210	769	639	675
20	2310	1300	2840	1500	1010	1490	3380	1080	1210	768	633	676
21	2380	1280	3040	1550	1030	1310	2420	1050	1200	773	638	676
22	2260	1300	4960	1720	1020	1200	1860	1030	1190	768	642	676
23	2230	1280	7020	1740	1020	1140	1680	1660	1200	762	658	676
24	2630	1310	6290	1840	1020	1100	2750	1810	1210	752	651	672
25	2730	1880	5120	1840	1010	1160	3150	1920	1210	734	643	692
26	2710	2110	5180	1770	996	1140	2620	2290	1220	735	646	690
27	2700	1910	5000	1620	984	1230	2480	2680	1230	734	625	694
28	3040	2200	3730	1390	974	1840	2820	2880	1220	733	647	722
29	3020	2210	3420	1460	---	1640	2840	2920	1210	744	644	733
30	3000	2210	3370	1390	---	1780	3160	2920	1200	757	646	748
31	3220	---	2580	1320	---	2170	---	2880	---	758	648	---
TOTAL	52999	63160	96790	56820	33854	37200	83780	72280	49270	24679	19700	20530
MEAN	1710	2105	3122	1833	1209	1200	2793	2332	1642	796	635	684
MAX	3220	3180	7020	2530	2340	2170	3920	3670	2820	991	658	748
MIN	776	1280	1380	1280	974	952	1680	1030	1190	648	615	662
AC-FT	105100	125300	192000	112700	67150	73790	166200	143400	97730	48950	39070	40720

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2001, BY WATER YEAR (WY)

	MEAN	2108	4786	6515	5741	3829	3272	2945	2385	1599	790	774	1323
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1967 - 2001

ANNUAL TOTAL	934135	611062	
ANNUAL MEAN	2552	1674	3003
HIGHEST ANNUAL MEAN			4666
LOWEST ANNUAL MEAN			1407
HIGHEST DAILY MEAN	12600	7020	26000
LOWEST DAILY MEAN	562	615	67
ANNUAL SEVEN-DAY MINIMUM	632	622	75
ANNUAL RUNOFF (AC-FT)	1853000	1212000	2176000
10 PERCENT EXCEEDS	5150	2980	6970
50 PERCENT EXCEEDS	2080	1310	1830
90 PERCENT EXCEEDS	716	675	705

WILLAMETTE RIVER BASIN

237

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 sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 191 ft³/s Mar. 8, 1994; minimum daily discharge, 25 ft³/s Jan. 18, 1994.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	73	64	64	73	81	79	76	94	85	77	106
2	76	72	74	56	73	86	79	71	95	88	77	105
3	76	73	73	64	75	82	82	75	95	93	77	104
4	76	74	77	79	80	81	81	74	97	93	77	104
5	76	74	78	80	81	83	82	73	99	92	77	104
6	75	74	74	80	73	84	82	72	95	93	77	103
7	75	74	73	80	62	83	84	71	95	92	91	103
8	75	74	74	80	75	82	75	79	91	92	97	103
9	76	77	76	80	67	83	76	88	92	92	97	103
10	77	75	76	80	66	80	79	87	89	91	97	103
11	75	65	73	80	66	78	79	87	86	91	97	103
12	72	64	63	77	69	80	78	87	82	91	98	103
13	71	63	72	68	72	83	84	80	87	91	98	103
14	71	69	73	75	75	82	75	66	95	90	98	103
15	81	75	74	75	77	83	73	76	94	91	98	104
16	83	74	58	76	77	84	79	76	94	91	98	104
17	74	72	57	79	76	86	89	79	92	92	97	103
18	76	67	67	71	76	79	87	80	93	92	97	103
19	76	63	74	69	75	81	82	77	93	89	97	103
20	76	62	73	74	75	89	78	76	92	91	96	103
21	77	68	73	75	76	95	71	81	92	94	96	103
22	75	73	73	77	77	97	66	91	90	94	97	102
23	75	72	72	78	77	94	69	108	90	95	98	102
24	67	73	68	78	76	85	83	102	91	98	98	102
25	69	79	64	77	75	88	86	101	91	98	97	103
26	79	82	57	76	78	88	82	107	93	98	97	102
27	76	75	68	73	81	88	73	111	97	98	96	100
28	79	55	73	69	81	91	70	104	96	98	101	100
29	78	41	71	75	---	82	70	96	95	98	106	100
30	78	41	70	79	---	83	72	96	95	98	106	100
31	77	---	65	77	---	78	---	96	---	86	106	---
TOTAL	2343	2074	2177	2321	2084	2619	2345	2643	2780	2875	2916	3084
MEAN	75.6	69.1	70.2	74.9	74.4	84.5	78.2	85.3	92.7	92.7	94.1	103
MAX	83	82	78	80	81	97	89	111	99	98	106	106
MIN	67	41	57	56	62	78	66	66	82	85	77	100
AC-FT	4650	4110	4320	4600	4130	5190	4650	5240	5510	5700	5780	6120

CAL YR 2000 TOTAL 28643 MEAN 78.3 MAX 114 MIN 41 AC-FT 56810
WTR YR 2001 TOTAL 30261 MEAN 82.9 MAX 111 MIN 41 AC-FT 60020

WILLAMETTE RIVER BASIN

14188610 SCHAFFER 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 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,900 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records fair except those below 2.0 ft³/s, which are poor.

AVERAGE DISCHARGE.--8 years (water years 1994-2001), 7.57 ft³/s, 99.82 in/yr, 5,480 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 400 ft³/s Feb. 7, 1996, gage height, 7.93 ft, from rating curve extended above 110 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 0.01 ft³/s Sept. 30, Oct. 1-5, 1999, Sept. 24, 25, 2001.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 130 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 30	1445	*58	*5.36				

Minimum discharge, 0.01 ft³/s Sept. 24, 25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	2.5	6.5	6.3	2.6	2.3	14	24	1.0	1.3	.16	.06
2	2.1	2.5	6.5	5.5	3.8	2.8	10	13	1.4	1.1	.14	.05
3	1.2	2.3	5.8	5.6	5.5	2.4	7.3	9.6	3.1	.95	.13	.05
4	.83	3.2	4.7	5.4	12	2.4	5.6	7.6	3.3	.83	.12	.05
5	.62	3.5	4.0	6.4	18	2.7	4.7	6.4	3.6	.73	.11	.05
6	.48	4.3	3.4	5.5	11	3.3	4.3	5.0	5.0	.65	.11	.04
7	.40	3.9	3.0	4.4	7.7	4.3	3.8	4.4	4.0	.58	.10	.04
8	.34	6.9	2.6	4.3	5.6	5.2	3.3	4.3	3.1	.52	.09	.04
9	.40	6.6	2.5	4.5	4.6	5.0	3.0	3.9	2.9	.47	.09	.04
10	.68	5.0	2.3	4.6	3.9	4.5	3.3	3.3	2.4	.43	.08	.03
11	1.2	4.0	2.1	3.9	3.3	3.9	4.5	3.1	4.7	.39	.08	.03
12	1.1	3.4	1.9	3.6	2.8	3.5	4.3	3.1	12	.35	.07	.03
13	1.6	3.0	2.2	3.3	2.4	3.8	3.6	2.8	8.0	.32	.07	.03
14	2.3	2.7	8.0	3.0	2.2	3.8	3.1	4.3	5.6	.29	.07	.03
15	1.8	2.4	11	2.8	2.0	4.1	3.2	19	4.2	.27	.06	.03
16	1.5	2.2	9.1	2.5	1.9	4.3	4.2	29	3.3	.28	.06	.03
17	1.2	2.0	9.7	2.4	1.9	5.6	12	15	2.7	.26	.06	.03
18	2.4	1.8	6.9	2.4	2.0	18	14	9.5	2.2	.25	.06	.02
19	2.5	1.7	5.6	3.6	2.0	32	14	6.4	1.9	.24	.05	.02
20	9.8	1.6	5.4	3.8	2.0	15	13	4.7	1.6	.22	.05	.02
21	13	1.6	8.8	5.1	3.5	9.7	11	3.7	1.4	.21	.05	.02
22	7.1	1.6	21	7.8	4.0	6.9	9.5	3.1	1.2	.20	.08	.02
23	4.6	3.0	24	7.4	3.5	6.0	8.8	2.7	1.1	.19	.39	.02
24	3.4	6.9	15	6.7	3.2	6.7	11	2.3	1.3	.17	.14	.02
25	2.7	5.7	9.8	5.6	2.8	9.4	14	2.0	1.5	.16	.12	.08
26	2.3	6.6	8.2	4.7	2.6	8.4	15	1.6	1.3	.15	.10	.15
27	2.0	13	8.3	3.9	2.3	13	11	1.4	1.8	.14	.09	.10
28	2.9	9.3	8.0	3.5	2.1	27	10	1.4	1.8	.15	.08	.06
29	3.6	9.5	7.8	3.2	---	17	8.6	1.4	1.6	.16	.07	.06
30	3.3	8.4	7.5	2.8	---	11	31	1.2	1.4	.21	.07	.05
31	2.8	---	7.4	2.6	---	15	---	1.0	---	.18	.06	---
TOTAL	83.95	131.1	229.0	137.1	121.2	259.0	265.1	200.2	90.4	12.35	3.01	1.30
MEAN	2.71	4.37	7.39	4.42	4.33	8.35	8.84	6.46	3.01	.40	.097	.043
MAX	13	13	24	7.8	18	32	31	29	12	1.3	.39	.15
MIN	.34	1.6	1.9	2.4	1.9	2.3	3.0	1.0	1.0	.14	.05	.02
AC-FT	167	260	454	272	240	514	526	397	179	24	6.0	2.6
CFSM	2.63	4.24	7.17	4.29	4.20	8.11	8.58	6.27	2.93	.39	.09	.04
IN.	3.03	4.73	8.27	4.95	4.38	9.35	9.57	7.23	3.26	.45	.11	.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2001, BY WATER YEAR (WY)

	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	4.97	12.0	14.6	12.8	12.5	9.95	10.1	8.13
MAX	9.18	28.8	24.2	20.5	23.7	14.7	14.7	16.4
(WY)	1997	1996	1997	1995	1996	1997	1999	1999
MIN	.33	.97	4.44	4.42	4.33	7.25	5.95	3.84
(WY)	1994	1994	1998	2001	2001	1996	1998	1994

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1994 - 2001

ANNUAL TOTAL	2081.65	1533.71	
ANNUAL MEAN	5.69	4.20	
HIGHEST ANNUAL MEAN			7.57
LOWEST ANNUAL MEAN			10.5
HIGHEST DAILY MEAN	39	Jun 12	1996
LOWEST DAILY MEAN	.06	Aug 24	2001
ANNUAL SEVEN-DAY MINIMUM	.06	Aug 24	1999
ANNUAL RUNOFF (AC-FT)	4130	3040	5480
ANNUAL RUNOFF (CFSM)	5.52	4.08	7.35
ANNUAL RUNOFF (INCHES)	75.18	55.39	99.82
10 PERCENT EXCEEDS	13	9.9	18
50 PERCENT EXCEEDS	4.8	2.8	3.6
90 PERCENT EXCEEDS	.09	.07	.17

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 mi², approximately.

PERIOD OF RECORD.--October 1905 to June 1906 (gage heights and discharge measurements only), October 1907 to September 1916, October 1939 to current year. Gage-height records collected at same site since 1907 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 904: Drainage area. WSP 1094: 1908, 1910, 1912, 1943. WSP 1248: 1911, 1915-16(M). WSP 1935: 1909, WDR OR-93-1: 1974.

GAGE.--Water-stage recorder. Datum of gage is 199.63 ft above sea level. 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. 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 ft³/s, 5,497,000 acre-ft/yr.
49 years (water years 1953-2001), 7,816 ft³/s, 5,662,000 acre-ft/yr (regulated period).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 197,000 ft³/s Dec. 22, 1964, gage height, 24.22 ft; minimum discharge observed, 260 ft³/s Aug. 15-22, Aug. 24 to Sept. 2, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood stage of 25.0 ft was reached in December 1861, and 23.4 ft in February 1890 (information from Corps of Engineers). On Nov. 21, 1921, the stage reached 19.5 ft at gage on railroad bridge 350 ft downstream, corresponding gage height at present site and datum, 24.4 ft, from curve of relation, discharge, 202,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,300 ft³/s Dec. 23, 24, gage height, 8.09 ft; minimum discharge, 1,030 ft³/s July 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3400	5690	5930	4980	3180	2540	6870	11400	5600	2340	1430	1270
2	3800	4870	5140	4950	3180	2960	6660	8420	5200	2080	1340	1300
3	3360	4260	4680	4660	3730	2920	6830	8410	4910	1990	1300	1310
4	3140	4230	4470	4170	4200	2820	6670	8310	4500	1950	1300	1310
5	3070	4390	4760	4360	5360	2800	6420	7480	4160	1940	1290	1330
6	3050	4420	4380	4520	5790	2670	6670	6770	4310	1900	1290	1330
7	3050	4660	3680	4370	5290	2610	7580	6380	4200	1870	1230	1320
8	3070	5120	3160	4270	4750	2600	8190	6400	3930	1850	1210	1320
9	3150	6140	3040	4350	3890	2990	8120	6670	3930	1820	1210	1320
10	3100	6250	3080	4480	3610	3200	7100	6650	3820	1810	1190	1330
11	3110	6050	4100	4350	3500	3040	8410	6580	3520	1780	1190	1330
12	3140	5700	3770	3730	3300	2910	8170	6510	4280	1770	1200	1330
13	3130	5570	3270	3510	3120	2810	8050	6250	3860	1750	1210	1310
14	3180	5320	4340	4290	3020	2760	6610	5510	3420	1730	1210	1310
15	3390	5250	9080	4290	2950	2770	5510	8520	3060	1720	1190	1340
16	3840	5020	8580	3890	2870	3050	5340	9540	2910	1540	1200	1350
17	4230	4880	8100	4050	2800	3290	6210	7760	2800	1510	1210	1340
18	4460	4700	7540	4170	2820	4270	6360	5860	2730	1410	1210	1330
19	4610	4490	6650	3370	2780	7420	6580	5030	2620	1390	1220	1320
20	4730	4440	5850	3630	2710	6880	7060	5080	2510	1440	1210	1320
21	6740	4370	6090	3710	2770	5290	6810	4970	2450	1440	1230	1320
22	5750	4370	9560	4680	2860	4450	5910	5010	2400	1430	1310	1320
23	5180	4550	14000	4500	2830	3930	5480	5150	2390	1420	1400	1320
24	5150	5110	13800	4600	2780	3670	6620	5080	2400	1420	1460	1320
25	5250	5360	11400	4590	2720	3880	7730	4850	2520	1370	1390	1370
26	5150	5760	10300	4320	2640	4010	7460	5280	2480	1350	1330	1470
27	5130	6370	9580	3950	2590	3980	7070	5700	2550	1340	1320	1510
28	5720	6710	7880	3640	2540	6940	7120	5970	2610	1340	1300	1510
29	6340	6240	6760	3600	---	6740	7120	6050	2530	1400	1290	1490
30	6300	6570	6600	3510	---	5700	8040	5950	2470	1500	1280	1490
31	6010	---	5720	3330	---	5830	---	5910	---	1520	1280	---
TOTAL	132730	156860	205290	128820	94580	121730	208770	203450	101070	51120	39430	40540
MEAN	4282	5229	6622	4155	3378	3927	6959	6563	3369	1649	1272	1351
MAX	6740	6710	14000	4980	5790	7420	8410	11400	5600	2340	1460	1510
MIN	3050	4230	3040	3330	2540	2540	5340	4850	2390	1340	1190	1270
AC-FT	263300	311100	407200	255500	187600	241500	414100	403500	200500	101400	78210	80410

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2001, BY WATER YEAR (WY)

	MEAN	4849	11580	15980	14910	11530	9237	8252	7152	4484	1863	1443	2698
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1953 - 2001

ANNUAL TOTAL	2268440	1484390	
ANNUAL MEAN	6198	4067	
HIGHEST ANNUAL MEAN			7816
LOWEST ANNUAL MEAN			12310
HIGHEST DAILY MEAN	25600	Jan 11	143000
LOWEST DAILY MEAN	1300	Aug 7	396
ANNUAL SEVEN-DAY MINIMUM	1300	Aug 7	406
ANNUAL RUNOFF (AC-FT)	4499000	2944000	5662000
10 PERCENT EXCEEDS	12000	6870	17600
50 PERCENT EXCEEDS	5300	3860	5100
90 PERCENT EXCEEDS	1400	1320	1440

WILLAMETTE RIVER BASIN

14189050 WILLAMETTE RIVER NEAR JEFFERSON, OR--Continued

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 mi² approximately, at site (14189000) 3.4 mi upstream.

PERIOD OF DAILY RECORD.--May to September 2001.

INSTRUMENTATION.--Temperature recorder since May 2001.

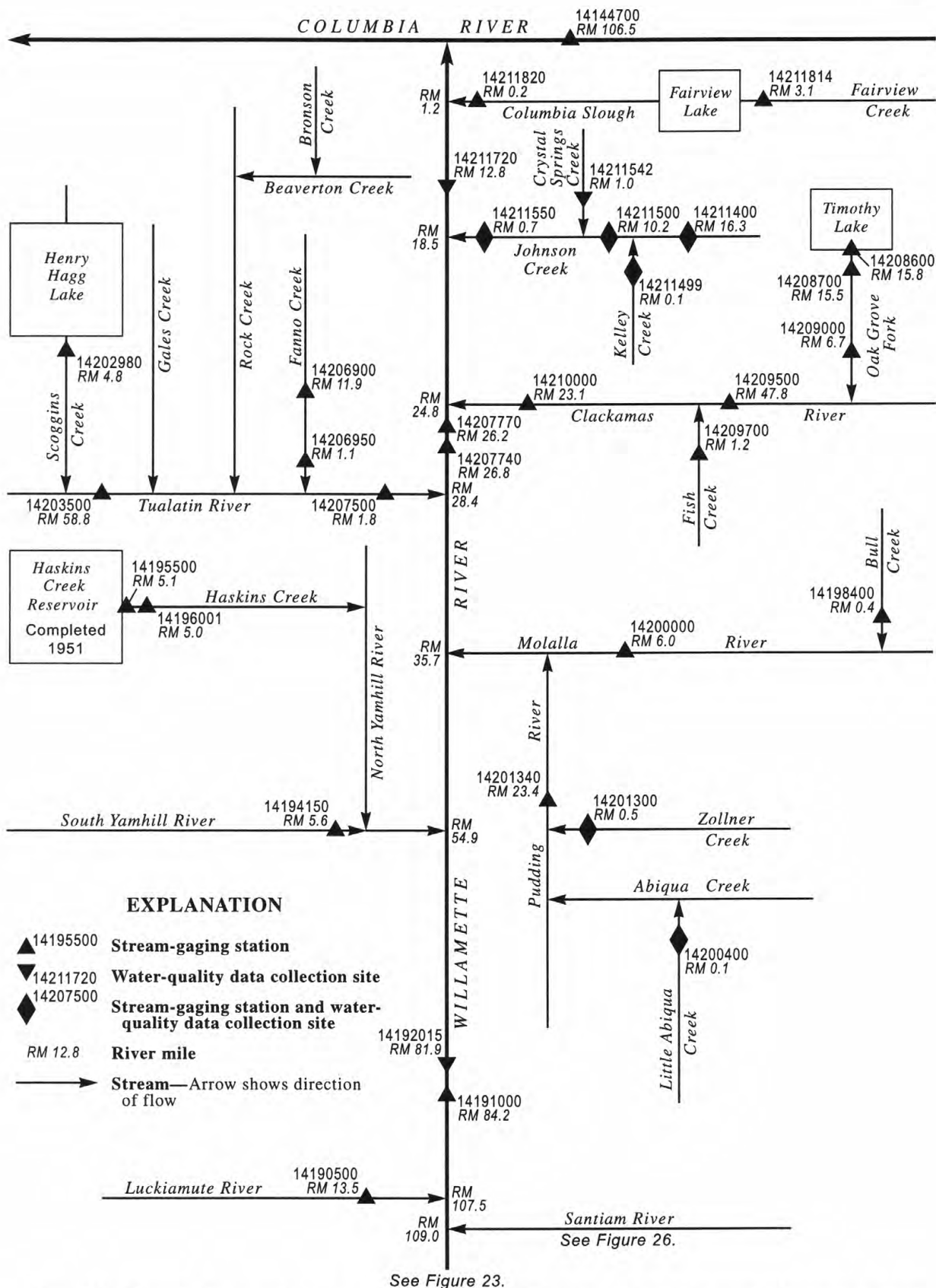
REMARKS.--Records good.

EXTREMES FOR PERIOD MAY 25 TO SEPTEMBER 30.--Maximum recorded, 22.5°C Aug. 10; minimum recorded, 10.1°C May 29.

TEMPERATURE, WATER (DEG. C), MAY TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
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	---	---	---	---	---	---	---	---	---	16.1	13.8	14.9
26	---	---	---	---	---	---	---	---	---	15.7	13.6	14.7
27	---	---	---	---	---	---	---	---	---	15.2	12.7	13.7
28	---	---	---	---	---	---	---	---	---	13.6	11.8	12.4
29	---	---	---	---	---	---	---	---	---	13.9	10.1	11.9
30	---	---	---	---	---	---	---	---	---	14.9	11.7	13.2
31	---	---	---	---	---	---	---	---	---	15.9	12.8	14.3
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	15.6	12.3	13.5	18.8	14.5	16.4	20.2	17.0	18.5	20.5	18.5	19.5
2	12.7	10.9	11.8	20.1	16.2	18.0	21.1	18.1	19.6	20.0	18.0	19.1
3	13.2	11.2	12.2	20.4	17.3	18.8	20.7	18.5	19.3	19.7	17.6	18.7
4	13.1	11.6	12.5	21.0	17.9	19.5	19.0	17.7	18.3	19.3	17.5	18.4
5	12.7	12.0	12.2	20.3	17.5	19.0	20.0	16.6	18.2	18.4	16.6	17.4
6	14.8	11.5	12.9	20.1	17.1	18.6	21.5	18.1	19.7	17.5	15.4	16.5
7	16.2	13.8	14.9	20.3	17.0	18.7	22.0	19.5	20.8	17.9	15.6	16.8
8	17.1	14.8	15.8	20.8	17.2	19.0	21.9	19.2	20.6	18.7	16.2	17.5
9	16.3	13.8	15.0	21.6	18.0	19.8	22.0	19.7	20.9	19.2	16.9	18.1
10	14.7	12.8	13.7	21.0	18.7	19.9	22.5	19.9	21.3	19.3	17.2	18.3
11	14.4	12.4	13.5	20.9	18.1	19.5	22.2	19.7	21.1	19.4	17.2	18.4
12	13.7	11.5	12.6	21.3	18.2	19.7	22.4	19.9	21.3	19.8	17.7	18.8
13	15.7	11.8	13.6	21.1	18.1	19.7	22.2	19.8	21.1	19.9	17.9	19.0
14	16.4	13.7	14.9	20.5	17.8	19.3	21.7	19.4	20.6	19.6	18.0	18.8
15	16.9	13.9	15.2	19.9	17.3	18.1	21.3	19.0	20.3	19.2	18.0	18.7
16	17.2	14.0	15.6	18.0	16.6	17.1	20.9	18.6	19.4	19.4	17.6	18.6
17	16.7	14.1	15.3	17.5	15.9	16.8	20.1	17.5	18.9	19.0	17.1	18.0
18	17.2	13.6	15.3	18.1	16.2	17.1	20.1	18.2	19.3	18.2	16.4	17.2
19	18.4	14.4	16.3	19.8	17.0	18.3	20.1	17.8	19.1	17.5	15.7	16.7
20	19.7	15.6	17.5	19.4	17.5	18.1	20.0	17.5	18.9	17.5	15.4	16.6
21	20.1	16.3	18.2	19.3	16.5	17.8	19.7	17.5	18.0	17.4	15.5	16.6
22	19.0	16.4	17.1	20.9	17.5	19.1	17.7	17.0	17.2	17.7	15.6	16.8
23	16.8	14.7	15.8	21.5	18.6	20.1	17.7	16.3	16.9	18.3	16.1	17.3
24	16.0	14.4	14.9	22.0	19.2	20.7	19.2	15.9	17.5	18.1	16.6	17.4
25	15.8	12.8	14.2	21.6	19.1	20.5	20.1	17.2	18.7	17.7	15.6	16.4
26	15.5	14.5	15.0	21.1	18.8	20.1	20.6	18.0	19.4	15.6	15.0	15.3
27	16.7	14.1	15.3	20.8	18.4	19.8	20.8	18.3	19.7	15.2	13.9	14.5
28	16.8	15.4	16.0	20.5	18.8	19.7	21.1	18.6	20.0	15.6	13.5	14.5
29	17.1	14.2	15.7	19.6	16.3	17.5	20.7	18.8	19.9	16.3	14.1	15.2
30	17.1	14.8	15.9	17.1	15.5	16.3	20.9	18.6	19.8	16.9	14.9	15.9
31	---	---	---	18.9	15.7	17.1	20.9	18.6	19.8	---	---	---
MONTH	20.1	10.9	14.7	22.0	14.5	18.7	22.5	15.9	19.5	20.5	13.5	17.4



WILLAMETTE RIVER BASIN

14190500 LUCKIAMUTE RIVER NEAR SUVER, OR

LOCATION.--Lat 44°47'00", long 123°14'00", in SW 1/4 SW 1/4 sec.18, T.9 S., R.4 W., Polk County, Hydrologic Unit 17090003, on right bank 10 ft upstream from highway bridge at Helmick State Park, 3.0 mi northwest of Suver, 4.7 mi downstream from Little Luckiamute River, and at mile 13.5.

DRAINAGE AREA.--240 mi².

PERIOD OF RECORD.--August 1905 to October 1911, July 1940 to current year.

REVISED RECORDS.--WSP 1044: Drainage area. WSP 1094: 1945-46. WSP 1248: 1905-11.

GAGE.--Water-stage recorder. Datum of gage is 171.92 ft above sea level. 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 poor. 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.--67 years (water years 1906-11, 1941-2001), 889 ft³/s, 50.35 in/yr, 644,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,900 ft³/s Dec. 22, 1964, gage height, 34.52 ft; minimum discharge, 0.65 ft³/s Aug. 13, 1966.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 23	0730	*2,280	*16.11				
Minimum discharge, 17 ft ³ /s Sept. 14, 25.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	128	298	504	416	390	653	783	184	123	48	31
2	110	119	265	462	417	522	592	629	184	110	44	30
3	70	124	269	429	474	470	557	527	202	101	40	32
4	50	112	235	408	503	430	514	468	192	97	41	31
5	43	106	214	400	647	421	479	425	179	91	46	29
6	39	106	198	397	647	393	479	393	198	87	44	29
7	39	107	185	366	595	374	504	364	176	80	35	30
8	37	105	173	355	545	361	473	340	159	79	31	27
9	47	136	165	353	526	364	465	321	148	78	30	27
10	114	207	161	366	494	355	444	304	147	71	32	25
11	110	179	155	362	495	339	503	291	144	68	29	22
12	76	150	165	340	479	327	509	277	180	66	31	21
13	67	136	167	331	444	316	500	267	167	64	29	20
14	70	126	344	477	423	313	468	270	146	59	25	19
15	73	117	1340	474	408	312	442	608	139	62	26	20
16	66	111	1220	442	433	330	419	647	134	64	27	23
17	61	105	1110	414	444	376	402	601	129	63	27	27
18	58	100	902	393	448	449	390	510	125	61	29	21
19	70	96	733	385	465	703	375	443	116	61	29	20
20	77	95	633	376	435	731	361	391	109	59	31	21
21	159	94	581	408	523	611	346	353	101	57	29	20
22	150	91	1350	556	608	534	328	324	98	57	36	20
23	116	92	2210	487	554	483	319	290	100	55	94	20
24	100	163	1850	472	519	446	314	267	101	49	94	21
25	91	189	1360	474	484	456	301	250	111	46	69	19
26	85	185	1080	468	449	543	289	235	109	45	52	23
27	81	237	893	434	423	542	277	226	151	43	46	36
28	86	292	766	414	402	944	275	220	219	40	41	41
29	161	244	670	427	---	902	293	227	161	45	38	34
30	157	299	605	459	---	778	381	210	135	56	36	30
31	152	---	552	431	---	689	---	198	---	56	34	---
TOTAL	2656	4351	20849	13064	13700	15204	12652	11659	4444	2093	1243	769
MEAN	85.7	145	673	421	489	490	422	376	148	67.5	40.1	25.6
MAX	161	299	2210	556	647	944	653	783	219	123	94	41
MIN	37	91	155	331	402	312	275	198	98	40	25	19
AC-FT	5270	8630	41350	25910	27170	30160	25100	23130	8810	4150	2470	1530
CFSM	.36	.60	2.80	1.76	2.04	2.04	1.76	1.57	.62	.28	.17	.11
IN.	.41	.67	3.23	2.02	2.12	2.36	1.96	1.81	.69	.32	.19	.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 2001, BY WATER YEAR (WY)

MEAN	181	1080	2098	2236	2061	1421	848	424	205	81.2	42.9	53.1
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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1906 - 2001
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ANNUAL TOTAL	225841		102684				
ANNUAL MEAN	617		281			889	
HIGHEST ANNUAL MEAN						1464	1974
LOWEST ANNUAL MEAN						230	1977
HIGHEST DAILY MEAN	4600	Feb 2	2210	Dec 23	25200		Dec 23 1964
LOWEST DAILY MEAN	27	Sep 26	19	Sep 14		2.6	Aug 20 1967
ANNUAL SEVEN-DAY MINIMUM	30	Sep 23	20	Sep 19		4.3	Aug 17 1967
ANNUAL RUNOFF (AC-FT)	448000		203700		644300		
ANNUAL RUNOFF (CFSM)		2.57		1.17		3.71	
ANNUAL RUNOFF (INCHES)		35.01		15.92		50.35	
10 PERCENT EXCEEDS	1740				555	2350	
50 PERCENT EXCEEDS	278				198	348	
90 PERCENT EXCEEDS	46				31	36	

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.

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.

GAGE.--Water-stage recorder. Datum of gage is 106.14 ft above sea level. 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.

AVERAGE DISCHARGE.--36 years (water years 1910-16, 1924-1952), 22,590 ft³/s, 42.14 in/yr, 16,370,000 acre-ft/yr.
49 years (water years 1953-2001) 24,030 ft³/s, 44.86 in/yr, 17,410,000 acre-ft/yr.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 500,000 ft³/s Dec. 4, 1861, gage height, about 47 ft present datum, from rating curve extended above 250,000 ft³/s in 1916. Floods of Jan. 16, 1881, and Feb. 5, 1890, reached stages of 44.3 ft, discharge, 428,000 ft³/s, and 45.1 ft, discharge, 448,000 ft³/s, respectively, from floodmarks and information by Corps of Engineers.

AVERAGE DISCHARGE.--32 years (water years 1969-2000) 20,080 ft³/s, 44.94 in/yr, 17,440,000 acre-ft/yr. The figure published in the 2001 report should have read 24,080 ft³/s.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10300	13500	14800	13400	9880	8470	16500	18900	14300	6830	5610	5650
2	11100	13100	14100	12900	9630	8880	16800	18700	13700	6550	5540	5690
3	10900	12200	13000	12300	10100	10100	16500	17400	13600	6290	5450	5720
4	10600	11700	12500	11600	11200	9700	16700	17100	13400	6130	5470	5680
5	10600	11800	12600	11300	13100	9430	17000	16400	13000	6070	5560	5700
6	10600	11900	12100	11400	14400	9160	17000	15400	12900	5950	5560	5680
7	10600	12001	10800	11300	14200	8760	18000	14600	12600	5830	5490	5720
8	10700	12600	9730	11100	13500	8480	19900	14100	11700	5770	5430	5810
9	11000	13800	8870	11000	12100	8590	20600	14400	10500	5730	5400	5820
10	11200	15100	8600	11200	11300	9140	20400	14500	9930	5650	5450	5870
11	11200	15600	8870	11200	11000	9180	19100	14700	9130	5600	5440	5860
12	11300	14800	9800	10500	10800	8940	20400	15000	9230	5570	5530	5820
13	11300	14400	9190	9710	10300	8640	20700	15200	9510	5520	5540	5840
14	11300	14000	9780	10100	9870	8440	19900	15200	9020	5510	5520	5840
15	11300	13800	15900	11700	9510	8340	17400	17300	8280	5520	5490	5910
16	11500	13600	22700	11400	9330	8550	15900	21600	7890	5540	5510	5960
17	11800	13100	22100	10800	9160	9180	15900	22100	7560	5440	5500	5970
18	12001	12400	21500	11100	9000	10600	16200	19400	7390	5360	5500	5940
19	12300	12200	19100	9940	9010	13300	16200	16900	7130	5260	5540	5890
20	12600	11900	15800	9840	8850	15900	17100	15900	6870	5340	5550	6360
21	13800	11700	14500	10200	8880	14900	17100	15400	6710	5330	5530	6520
22	14900	11700	17000	11100	9540	13100	15100	14800	6590	5300	5680	6520
23	13900	11800	27700	11800	9670	11900	13800	15100	6520	5310	5830	6490
24	13300	12400	35000	11700	9760	11200	13600	15400	6540	5230	5980	6500
25	13300	13000	33000	12300	9640	11100	14800	14500	6650	5150	5990	6510
26	13100	13600	28400	12400	9290	11700	14600	14200	6790	5130	5870	6690
27	12900	14000	24700	11800	8880	11900	14100	14700	7050	5120	5800	6830
28	13100	15100	20600	11000	8610	14600	13900	15100	7320	5110	5710	6830
29	14000	15000	17500	10500	---	19400	14000	15100	7200	5180	5600	6800
30	14200	15200	16000	10500	---	18500	14200	14900	6860	5350	5600	6750
31	13900	---	14800	10200	---	16400	---	14800	---	5560	5640	---
TOTAL	374600	397000	521040	347290	290510	346480	503400	498800	275870	173230	173310	183170
MEAN</												

MEAN	13180	29290	47660	48430	38370	30330	24410	20140	13700	7469	6934	9143
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	1977	2001	1977	1973	1992	1966	1966	1953

ANNUAL TOTAL	7185180		4084700			
ANNUAL MEAN	19630		11190		24030	
HIGHEST ANNUAL MEAN					37960	1974
LOWEST ANNUAL MEAN					9792	1977
HIGHEST DAILY MEAN	89300	Jan 15	35000	Dec 24	304000	Dec 24 1964
LOWEST DAILY MEAN	6800	Aug 25	5110	Jul 28	3500	Nov 29 1952
ANNUAL SEVEN-DAY MINIMUM	6850	Aug 23	5180	Jul 23	3560	Nov 25 1952
ANNUAL RUNOFF (AC-FT)	14250000		8102001		17410000	
ANNUAL RUNOFF (CFSM)	2.70		1.54		3.30	
ANNUAL RUNOFF (INCHES)	36.72		20.87		44.86	
10 PERCENT EXCEEDS	36800		16800		55400	
50 PERCENT EXCEEDS	14800		11100		15100	
90 PERCENT EXCEEDS	7150		5560		6560	

WILLAMETTE RIVER BASIN

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 mi².

PERIOD OF DAILY RECORD.--October 2000 to September 2001.

INSTRUMENTATION.--Temperature probe and data logger.

REMARKS.--Records poor. Additional temperature data is available in the files of the Portland Field Office for the Willamette River at Salem site, approximately 2 miles upstream.

EXTREMES FOR CURRENT YEAR.--Maximum, 24.5°C Aug. 12, but may have been higher during period of missing record; minimum, 5.4°C Jan. 18.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	---	---	---	11.7	11.4	11.6	8.5	8.1	8.2	8.1	7.7	7.9
2	---	---	---	11.6	11.2	11.4	8.4	8.1	8.3	7.9	7.4	7.6
3	---	---	---	12.4	11.6	12.0	8.6	8.2	8.4	7.4	6.9	7.1
4	---	---	---	12.8	12.1	12.3	8.4	7.7	8.1	7.3	6.7	7.0
5	---	---	---	12.2	11.8	12.0	7.8	7.3	7.5	8.4	7.3	7.9
6	---	---	---	12.0	11.1	11.5	7.5	6.8	7.1	8.4	7.7	8.0
7	---	---	---	11.1	10.8	10.9	6.8	6.2	6.5	7.8	7.3	7.5
8	---	---	---	10.9	10.5	10.7	6.5	6.0	6.2	7.4	7.0	7.2
9	---	---	---	10.6	10.0	10.4	7.1	6.3	6.5	7.0	6.7	6.8
10	---	---	---	10.2	9.1	9.7	7.4	6.5	6.8	6.9	6.4	6.6
11	---	---	---	9.1	8.2	8.7	6.7	5.5	6.2	7.3	6.5	6.8
12	---	---	---	8.3	7.8	8.0	6.3	5.6	5.9	7.5	6.9	7.2
13	---	---	---	8.4	7.8	8.0	5.9	5.6	5.8	7.7	7.3	7.4
14	---	---	---	8.5	7.8	8.1	6.6	5.6	6.1	8.0	7.3	7.5
15	---	---	---	8.6	7.8	8.2	7.0	6.6	6.8	7.6	6.9	7.4
16	---	---	---	8.5	7.7	8.0	7.1	6.8	7.0	7.0	6.0	6.5
17	---	---	---	8.1	7.3	7.7	7.3	6.9	7.1	6.0	5.5	5.7
18	---	---	---	7.6	6.7	7.1	6.9	6.4	6.6	5.9	5.4	5.6
19	---	---	---	6.8	6.3	6.7	6.4	6.3	6.3	7.0	5.9	6.3
20	---	---	---	7.4	6.5	6.9	6.8	6.3	6.6	6.9	6.3	6.6
21	---	---	---	7.7	6.7	7.1	7.0	6.7	6.8	7.2	6.6	6.9
22	---	---	---	7.4	6.5	6.9	7.7	7.0	7.4	8.0	7.0	7.3
23	---	---	---	7.2	6.5	6.8	7.8	7.7	7.7	7.3	7.0	7.2
24	---	---	---	8.1	6.9	7.5	7.7	7.3	7.5	7.3	6.9	7.1
25	---	---	---	8.2	7.9	8.1	7.3	7.0	7.1	7.1	6.6	6.9
26	12.5	12.0	12.2	8.4	7.9	8.2	7.0	6.8	6.9	7.1	6.2	6.5
27	12.7	12.1	12.4	9.0	8.3	8.6	7.0	6.8	6.9	6.8	5.9	6.3
28	12.8	12.1	12.4	8.6	7.9	8.2	7.4	7.0	7.2	6.2	5.5	5.8
29	12.4	11.9	12.1	8.3	7.8	8.0	7.3	6.8	7.1	6.5	5.7	6.1
30	12.4	11.7	12.0	8.4	7.8	8.1	7.6	7.1	7.3	6.8	6.1	6.4
31	12.1	11.6	11.8	---	---	---	8.2	7.6	7.9	7.0	6.1	6.5
MONTH	---	---	---	12.8	6.3	8.9	8.6	5.5	7.0	8.4	5.4	6.9

WILLAMETTE RIVER BASIN

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14192015 WILLAMETTE RIVER AT KEIZER, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	6.8	6.1	6.4	7.2	6.6	7.0	10.5	9.9	10.2	11.2	10.3	10.8
2	7.6	6.7	7.1	8.3	6.3	6.9	10.1	9.2	9.6	11.6	10.3	10.8
3	7.7	7.1	7.4	7.8	6.4	6.9	9.6	8.6	9.1	12.4	10.7	11.4
4	8.4	7.6	8.0	7.3	6.5	6.9	10.1	8.7	9.3	12.8	11.6	12.2
5	8.8	8.1	8.3	8.9	6.6	7.5	9.5	8.9	9.2	13.1	11.9	12.4
6	8.2	7.4	7.9	10.1	7.4	8.5	9.4	8.9	9.0	13.9	11.7	12.7
7	7.4	6.5	6.9	11.3	8.6	9.7	9.5	8.3	8.8	15.0	12.6	13.7
8	6.5	5.8	6.1	10.8	9.6	10.1	9.3	8.5	8.7	15.8	13.5	14.5
9	6.6	5.4	5.8	11.1	9.1	9.9	9.2	8.3	8.7	15.8	13.7	14.7
10	5.8	5.5	5.7	9.5	8.6	9.0	9.4	8.8	9.0	15.6	13.6	14.5
11	6.3	5.5	5.8	9.2	8.4	8.7	9.9	8.6	9.2	16.0	13.8	14.8
12	7.0	5.6	6.1	10.5	8.2	9.2	9.5	9.0	9.3	16.8	14.6	15.6
13	7.1	5.7	6.2	11.0	9.0	9.7	9.3	8.6	8.9	16.7	15.0	15.7
14	7.1	5.5	6.1	11.4	9.3	9.9	9.4	8.6	8.9	15.4	13.7	14.7
15	6.4	6.1	6.2	10.5	9.1	9.6	9.8	8.7	9.2	13.7	12.3	13.3
16	7.0	6.2	6.5	9.1	8.3	8.8	10.6	9.5	10.1	12.8	12.0	12.3
17	7.1	6.2	6.5	8.8	8.0	8.3	11.4	10.4	10.9	12.5	11.9	12.2
18	7.9	6.3	6.9	9.4	8.3	8.8	12.1	11.0	11.4	13.6	12.0	12.7
19	8.5	6.6	7.2	10.3	8.8	9.5	12.2	11.2	11.7	15.1	13.0	13.9
20	8.5	6.9	7.5	10.1	9.0	9.5	11.9	11.2	11.4	16.0	13.8	14.8
21	9.0	7.5	8.0	10.1	8.9	9.4	12.2	10.9	11.5	16.9	14.7	15.6
22	8.5	7.8	8.1	10.6	8.7	9.6	11.7	11.3	11.5	18.3	15.7	16.8
23	8.7	7.6	8.0	11.5	9.2	10.2	11.6	10.9	11.2	19.3	16.8	17.8
24	9.2	7.5	8.1	11.4	10.2	10.9	13.3	10.8	11.8	19.1	17.3	18.0
25	9.2	7.3	8.0	11.9	10.8	11.2	14.5	12.1	13.2	18.9	16.9	17.8
26	9.1	7.1	7.8	11.5	10.5	10.9	15.6	13.3	14.3	19.1	16.9	17.8
27	9.4	7.0	7.8	10.5	9.5	10.0	14.6	13.5	14.2	18.0	16.5	17.3
28	8.4	6.8	7.5	9.7	9.2	9.4	13.7	12.6	13.1	16.5	14.8	15.8
29	---	---	---	10.1	9.0	9.5	12.6	11.4	12.0	15.6	14.0	14.7
30	---	---	---	10.6	9.8	10.2	12.1	11.0	11.4	16.6	14.2	15.2
31	---	---	---	10.9	10.5	10.7	---	---	---	18.2	15.3	16.6
MONTH	9.4	5.4	7.1	11.9	6.3	9.2	15.6	8.3	10.6	19.3	10.3	14.6

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	17.0	15.9	16.6	---	---	---	---	---	---	21.6	20.8	21.2
2	15.9	14.6	15.4	---	---	---	---	---	---	21.6	20.3	20.9
3	15.3	14.0	14.6	---	---	---	22.5	20.2	20.8	20.9	20.1	20.5
4	15.2	13.9	14.5	---	---	---	21.6	20.0	20.6	20.8	19.7	20.2
5	15.0	13.9	14.3	---	---	---	22.6	19.2	20.7	19.8	18.6	19.4
6	16.0	13.5	14.5	---	---	---	23.3	19.8	21.3	19.0	17.8	18.5
7	17.7	14.6	16.0	---	---	---	---	20.4	---	19.1	17.6	18.3
8	19.6	16.5	17.8	---	---	---	23.2	21.1	22.0	18.9	17.7	18.3
9	19.5	17.7	18.4	---	---	---	24.1	21.6	22.7	19.8	17.8	18.8
10	18.4	16.8	17.5	---	---	---	24.3	22.1	23.1	20.1	18.7	19.3
11	16.8	15.5	16.4	---	---	---	24.4	22.2	23.2	20.4	18.9	19.6
12	---	---	---	---	---	---	24.5	22.6	23.5	20.8	19.4	20.0
13	---	---	---	---	---	---	24.4	22.6	23.4	21.0	19.6	20.2
14	---	---	---	---	---	---	24.0	22.4	23.1	20.5	19.8	20.2
15	---	---	---	---	---	---	23.4	22.0	22.6	21.2	20.0	20.4
16	---	---	---	---	---	---	22.2	21.2	21.7	21.1	19.6	20.3
17	---	---	---	---	---	---	22.1	20.4	21.2	20.5	19.6	20.0
18	---	---	---	---	---	---	21.5	20.4	21.0	19.9	19.0	19.4
19	---	---	---	---	---	---	21.5	20.0	20.7	19.4	18.4	18.8
20	---	---	---	---	---	---	21.9	19.9	20.7	19.1	17.7	18.4
21	---	---	---	---	---	---	20.8	19.5	20.0	18.7	17.6	18.2
22	---	---	---	---	---	---	19.6	18.8	19.2	19.1	17.9	18.5
23	---	---	---	---	---	---	19.3	18.3	18.8	19.8	18.4	18.9
24	---	---	---	---	---	---	19.9	17.9	18.8	19.5	18.4	18.9
25	---	---	---	---	---	---	20.6	18.6	19.6	18.9	17.2	18.1
26	---	---	---	---	---	---	21.7	19.6	20.5	17.7	16.1	16.9
27	---	---	---	---	---	---	22.0	20.1	21.0	16.6	15.4	16.0
28	---	---	---	---	---	---	22.5	20.6	21.5	16.0	14.9	15.5
29	---	---	---	---	---	---	22.4	21.1	21.7	16.2	15.0	15.6
30	---	---	---	---	---	---	22.8	21.0	21.8	16.9	15.5	16.1
31	---	---	---	---	---	---	22.6	21.2	21.7	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	21.6	14.9	18.8

WILLAMETTE RIVER BASIN

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 mi².

PERIOD OF RECORD.--October 1994 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 50 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records fair except for the period Aug. 16-22, which are poor. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--7 years (water years 1995-2001), 2,029 ft³/s, 52.22 in/yr, 1,470,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,100 ft³/s Feb. 9, 1996, gage height, 59.33; minimum discharge, 12 ft³/s Oct. 12, 1994, but may have been lower during period of missing record Oct. 5-12, 1994.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 13,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 23	1230	*4,840	*28.20				

Minimum discharge, 21 ft³/s Sept. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	183	864	888	916	770	1170	1170	305	206	96	37
2	85	160	648	799	876	839	1060	1280	288	188	88	37
3	136	157	608	730	1020	931	997	1060	307	167	81	42
4	86	163	515	677	1120	842	899	920	354	154	80	38
5	67	142	436	660	1500	799	834	818	324	141	84	36
6	57	148	382	664	1550	750	801	756	311	132	86	35
7	54	145	343	615	1390	697	908	679	313	127	77	37
8	54	149	308	581	1230	660	871	615	278	127	73	36
9	80	172	280	570	1140	653	857	568	254	124	64	35
10	78	379	265	624	1060	699	817	535	242	112	65	33
11	138	328	253	775	1010	652	856	501	237	104	59	32
12	108	249	246	701	971	614	1000	472	239	101	61	28
13	86	212	253	654	890	582	934	440	300	100	61	27
14	78	189	263	801	822	564	910	452	254	96	54	23
15	79	172	963	1110	766	577	846	897	227	97	48	28
16	80	157	1970	1010	776	575	790	1250	213	101	48	29
17	75	145	1780	917	1110	611	749	1190	205	101	53	30
18	75	135	1840	840	1060	716	755	995	199	104	57	31
19	71	128	1420	782	1220	842	719	859	185	106	62	31
20	88	122	1220	740	1120	1090	690	759	176	108	65	26
21	90	118	1150	708	1110	984	679	678	168	104	64	27
22	224	116	2170	905	1390	879	632	615	158	101	84	27
23	171	129	4660	876	1300	796	590	557	151	99	52	28
24	129	143	4010	839	1200	732	575	507	154	93	140	27
25	111	339	3050	822	1080	714	549	467	159	90	103	28
26	97	267	2270	837	968	873	514	431	195	82	77	33
27	90	346	1790	806	883	994	484	402	216	78	63	34
28	96	536	1470	757	820	1600	477	378	280	75	51	44
29	153	454	1250	730	---	1710	517	371	312	79	48	56
30	287	571	1090	929	---	1440	575	365	243	89	41	48
31	241	---	978	943	---	1300	---	328	---	94	38	---
TOTAL	3315	6654	38745	24290	30298	26485	23055	21315	7247	3480	2123	1003
MEAN	107	222	1250	784	1082	854	768	688	242	112	68.5	33.4
MAX	287	571	4660	1110	1550	1710	1170	1280	354	206	140	56
MIN	51	116	246	570	766	564	477	328	151	75	38	23
AC-FT	6580	13200	76850	48180	60100	52530	45730	42280	14370	6900	4210	1990
CFSM	.20	.42	2.37	1.48	2.05	1.62	1.46	1.30	.46	.21	.13	.06
IN.	.23	.47	2.73	1.71	2.13	1.87	1.62	1.50	.51	.25	.15	.07

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2001, BY WATER YEAR (WY)

	1995	1996	1997	1998	1999	2000	2001
MEAN	437	2774	5539	4874	4952	2771	1624
MAX	1491	3683	9904	6162	9541	4229	3832
(WY)	1998	1997	1997	1999	1996	1997	1996
MIN	83.4	222	1250	784	1082	854	660
(WY)	2000	2001	2001	2001	2001	2001	2000

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1995 - 2001

ANNUAL TOTAL	395717	188010	2029
ANNUAL MEAN	1081	515	2796
HIGHEST ANNUAL MEAN			515
LOWEST ANNUAL MEAN			1996
HIGHEST DAILY MEAN	6950	Jan 15	40300
LOWEST DAILY MEAN	38	Aug 30	12
ANNUAL SEVEN-DAY MINIMUM	41	Aug 26	16
ANNUAL RUNOFF (AC-FT)	784900	372900	1470000
ANNUAL RUNOFF (CFSM)	2.05	.98	3.84
ANNUAL RUNOFF (INCHES)	27.88	13.25	52.22
10 PERCENT EXCEEDS	3230	1110	5750
50 PERCENT EXCEEDS	436	328	740
90 PERCENT EXCEEDS	51	52	42

WILLAMETTE RIVER BASIN

247

14195500 HASKINS CREEK RESERVOIR NEAR MCMINNVILLE, OR

LOCATION.--Lat 45°18'43", long 123°21'23", in SW 1/4 NW 1/4 sec.18, T.3 S., R.5 W., Yamhill County, Hydrologic Unit 17090008, on control tower 250 ft upstream from dam on Haskins Creek, 11 mi northwest of McMinnville, and at mile 5.1.

DRAINAGE AREA.--6.88 mi².

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WSP 1738: Drainage area. WDR OR-79-1: 1978 (maximum contents).

GAGE.--Nonrecording gage. Datum of gage is sea level (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 ft³/s each and remaining two siphons 350 ft³/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, 714 acre-ft Apr. 23, May 29-31, June 6-8, elevation, 814.8 ft; no contents, Oct. 1 to Jan. 29, Mar. 3-14.

MONTHEND ELEVATIONS AND CONTENTS, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	750.0	0	-
Oct. 31.....	750.0	0	0
Nov. 30.....	750.0	0	0
Dec. 31.....	750.0	0	0
CAL YR 2000.....	-	-	0
Jan. 31.....	767.0	61	+61
Feb. 28.....	766.0	54	-7.0
Mar. 31.....	798.6	401	+347
Apr. 30.....	814.4	704	+303
May 31.....	814.8	714	+10
June 30.....	811.5	638	-76
July 31.....	809.9	605	-33
Aug. 31.....	806.2	532	-73
Sept. 30.....	801.4	446	-86
WTR YR 2001.....	-	-	+446

WILLAMETTE RIVER BASIN

14196001 HASKINS CREEK BELOW RESERVOIR, NEAR MCMINNVILLE, OR

LOCATION.--Lat 45°18'39", long 123°21'06", in SE 1/4 NW 1/4 sec.18, T.3 S., R.5 W., Yamhill County, Hydrologic Unit 17090008, on right bank 800 ft downstream from Haskins Creek Reservoir, 11 mi northwest of McMinnville, and at mile 5.0.

DRAINAGE AREA.--6.90 mi².

PERIOD OF RECORD.--October 1951 to current year.

REVISED RECORDS.--WSP 1738: Drainage area. Maximum discharge for water year 1957, published in WSP 1518, has been found to be unreliable and should not be used.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 707 ft above sea level, 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 except for the period Aug. 22 to Sept. 30, which are poor. 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.--50 years (water years 1952-2001), 31.0 ft³/s, 61.01 in/yr, 22,460 acre-ft/yr, adjusted for storage and diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,050 ft³/s Feb. 8, 1996, gage height, 6.01 ft, from floodmark, from rating curve extended above 140 ft³/s on basis of slope-area measurement of peak flow; maximum daily discharge, 615 ft³/s Feb. 8, 1996; minimum daily, 0.10 ft³/s Oct. 27, 28, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 96 ft³/s Dec. 22; minimum daily, 4.2 ft³/s Nov. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	6.2	17	17	6.0	24	5.3	41	11	11	9.5	9.8
2	10	7.5	17	14	6.0	22	5.7	25	10	11	10	8.6
3	9.0	6.5	14	14	6.0	18	6.1	22	10	14	11	8.3
4	8.6	7.1	13	13	5.8	16	6.2	23	10	14	11	8.9
5	9.3	7.8	14	14	10	15	6.1	23	9.9	14	11	9.3
6	9.3	8.8	13	13	21	14	6.3	20	8.8	11	12	9.3
7	8.8	9.6	13	12	34	13	6.0	13	8.9	11	13	9.2
8	8.7	12	12	12	38	13	6.2	10	9.2	14	13	9.2
9	9.7	17	11	12	22	13	6.0	12	10	15	13	9.3
10	8.2	12	11	14	6.9	12	5.7	12	12	16	13	9.1
11	9.2	11	12	13	6.0	12	5.8	13	11	15	13	9.8
12	9.2	9.8	10	12	12	12	5.8	12	10	13	13	9.9
13	9.6	11	11	13	32	11	5.9	12	9.9	13	12	10
14	9.0	12	27	15	30	9.4	6.0	17	9.9	10	11	9.9
15	8.6	12	42	14	22	5.9	7.4	27	10	13	12	9.6
16	8.8	11	32	13	17	6.2	7.0	27	10	12	12	9.2
17	8.2	11	39	13	11	6.1	16	18	12	12	11	9.2
18	8.1	10	28	12	11	6.1	13	19	12	9.9	10	8.8
19	8.2	10	22	12	11	6.2	8.7	22	13	9.7	9.9	8.5
20	11	9.4	22	12	24	6.0	8.7	18	13	10	10	8.5
21	11	4.2	32	16	38	5.9	8.7	12	13	11	9.9	8.4
22	9.5	4.4	96	14	41	6.5	9.3	11	14	11	9.2	8.5
23	8.8	14	81	14	44	6.0	12	11	13	11	7.4	8.4
24	8.0	15	70	14	37	6.0	13	12	12	12	6.9	9.4
25	8.2	15	62	13	28	6.0	13	12	9.1	12	7.5	9.6
26	8.1	16	49	13	27	6.2	12	12	9.5	12	8.4	8.2
27	7.9	21	39	12	26	6.4	9.4	11	9.2	11	9.2	6.4
28	12	16	33	12	31	6.1	9.4	11	9.7	11	10	5.6
29	11	20	27	9.9	---	5.8	9.2	10	9.6	9.4	10	6.0
30	7.2	22	24	5.4	---	5.8	27	10	9.6	8.8	10	6.7
31	6.7	---	21	6.9	---	5.7	---	10	---	9.1	10	---
TOTAL	281.9	349.3	914	394.2	603.7	307.3	266.9	508	319.3	366.9	328.9	261.6
MEAN	9.09	11.6	29.5	12.7	21.6	9.91	8.90	16.4	10.6	11.8	10.6	8.72
MAX	12	22	96	17	44	24	27	41	14	16	13	10
MIN	6.7	4.2	10	5.4	5.8	5.7	5.3	10	8.8	8.8	6.9	5.6
AC-FT	559	693	1810	782	1200	610	529	1010	633	728	652	519
MEAN†	3.48	6.68	26.8	13.7	21.5	15.6	14.0	16.6	7.78	3.76	0.91	1.09
CFSM†	0.50	0.97	3.88	1.99	3.11	2.26	2.03	2.40	1.13	0.54	0.13	0.16
IN.†	0.58	1.08	4.48	2.29	3.24	2.60	2.26	2.77	1.26	0.63	0.15	0.18
AC-FT†	214	397	1647	843	1193	957	832	1020	463	231	56	65

CAL YR 2000 TOTAL 9502.9 MEAN 26.0 MAX 126 MIN 4.2 AC-FT 18850 MEAN† 22.6 CFSM† 3.27 IN.† 44.44 AC-FT† 16350
WTR YR 2001 TOTAL 4902.0 MEAN 13.4 MAX 96 MIN 4.2 AC-FT 9720 MEAN† 10.9 CFSM† 1.58 IN.† 21.51 AC-FT† 7913

† Adjusted for change in contents in Haskins Creek Reservoir and diversion from McGuire Lake.

WILLAMETTE RIVER BASIN

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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 mi².

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 sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records poor. No regulation or diversion.

AVERAGE DISCHARGE.--8 years (water years 1994-2001), 2.06 ft³/s, 42.48 in/yr, 1,490 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 250 ft³/s Feb. 7, 1996, gage height, 7.55 ft, from rating curve extended above 70 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 0.02 ft³/s Sept. 25-28, 1994, Sept. 21-24, 1995, Sept. 28-30, 1996, Oct. 1-4, 7-12, 1996, Sept. 15-17, 1998, Oct. 4, 21-23, 1999.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 18 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 23	0115	*4.3	*4.63	Apr. 12	0515	4.3	4.63

Minimum discharge, 0.03 ft³/s Sept. 21-25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.22	.17	.66	.59	.44	.38	1.4	1.6	.31	.22	.12	.05
2	.11	.17	.52	.54	.50	.40	1.4	1.6	.40	.21	.11	.05
3	.08	.17	.42	.50	.52	.38	1.4	1.6	.49	.21	.10	.05
4	.08	.19	.35	.47	.61	.38	1.4	1.5	.39	.19	.11	.04
5	.07	.19	.30	.45	.73	.38	1.3	1.2	.39	.19	.12	.04
6	.06	.28	.27	.42	.84	.37	1.3	1.0	.39	.18	.10	.05
7	.06	.25	.24	.40	.83	.35	1.3	.84	.35	.17	.10	.04
8	.05	.58	.22	.41	.80	.37	1.3	.72	.33	.15	.09	.05
9	.09	.69	.21	.40	.75	.58	1.4	.64	.35	.15	.08	.04
10	.18	.53	.20	.39	.70	.64	1.5	.57	.32	.14	.08	.04
11	.19	.41	.18	.37	.65	.61	3.3	.53	.45	.14	.08	.04
12	.12	.33	.17	.36	.59	.60	3.8	.49	.69	.14	.07	.04
13	.11	.28	.24	.45	.54	.58	2.9	.45	.69	.13	.08	.04
14	.12	.25	.45	.54	.50	.56	2.1	.72	.64	.13	.08	.04
15	.11	.22	1.4	.53	.49	.57	1.7	1.0	.55	.13	.08	.04
16	.09	.20	1.4	.50	.47	.55	1.6	1.5	.48	.15	.07	.04
17	.08	.18	1.8	.49	.44	.60	1.8	1.4	.43	.14	.07	.04
18	.16	.17	1.5	.51	.47	.77	1.9	1.1	.38	.14	.07	.03
19	.12	.16	1.3	.55	.43	2.1	1.8	.93	.35	.14	.07	.04
20	.58	.16	1.1	.54	.41	2.6	1.8	.76	.32	.13	.07	.03
21	.51	.15	1.3	.56	.44	1.8	1.8	.66	.30	.13	.06	.03
22	.31	.14	2.8	.54	.46	1.4	1.6	.58	.28	.12	.08	.03
23	.22	.19	3.7	.53	.44	1.1	1.4	.52	.27	.12	.12	.03
24	.17	.20	2.8	.55	.42	.95	1.2	.47	.28	.11	.07	.03
25	.14	.20	2.1	.55	.40	.93	1.0	.43	.26	.11	.06	.07
26	.12	.21	1.6	.52	.38	.85	.85	.40	.27	.11	.06	.10
27	.12	.36	1.2	.49	.36	.92	.74	.38	.34	.10	.06	.07
28	.31	.32	1.0	.47	.35	1.2	.70	.39	.29	.11	.06	.05
29	.22	.49	.84	.48	---	1.4	.62	.36	.26	.12	.05	.04
30	.20	.87	.73	.45	---	1.4	1.3	.33	.24	.17	.05	.04
31	.18	---	.66	.44	---	1.4	---	.31	---	.14	.05	---
TOTAL	5.18	8.71	31.66	14.99	14.96	27.12	47.61	24.98	11.49	4.52	2.47	1.32
MEAN	.17	.29	1.02	.48	.53	.87	1.59	.81	.38	.15	.080	.044
MAX	.58	.87	3.7	.59	.84	2.6	3.8	1.6	.69	.22	.12	.10
MIN	.05	.14	.17	.36	.35	.35	.62	.31	.24	.10	.05	.03
AC-FT	10	17	63	30	30	54	94	50	23	9.0	4.9	2.6
CFSM	.25	.44	1.55	.73	.81	1.33	2.40	1.22	.58	.22	.12	.07
IN.	.29	.49	1.78	.84	.84	1.53	2.68	1.41	.65	.25	.14	.07

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2001, BY WATER YEAR (WY)

MEAN	.55	3.02	4.99	4.28	4.85	2.76	1.84	1.65	.58	.22	.089	.089
MAX	1.73	5.85	12.0	6.28	10.8	6.49	3.11	3.63	.96	.30	.10	.25
(WY)	1998	1997	1997	1998	1996	1997	1996	1998	1998	1998	1999	1997
MIN	.087	.13	.91	.48	.53	.87	.78	.32	.38	.15	.052	.041
(WY)	1994	1994	1994	2001	2001	2001	2000	1994	1999	2001	1994	1999

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1994 - 2001

ANNUAL TOTAL	575.92	195.01	2.06
ANNUAL MEAN	1.57	.53	3.10
HIGHEST ANNUAL MEAN			.53
LOWEST ANNUAL MEAN			100
HIGHEST DAILY MEAN	20	Feb 2	3.8
LOWEST DAILY MEAN	.03	Sep 26	.03
ANNUAL SEVEN-DAY MINIMUM	.04	Sep 23	.03
ANNUAL RUNOFF (AC-FT)	1140	387	1490
ANNUAL RUNOFF (CFSM)	2.38	.81	3.13
ANNUAL RUNOFF (INCHES)	32.46	10.99	42.48
10 PERCENT EXCEEDS	4.5	1.4	4.8
50 PERCENT EXCEEDS	.52	.38	.64
90 PERCENT EXCEEDS	.08	.06	.07

WILLAMETTE RIVER BASIN

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.4S., 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 mi².

PERIOD OF RECORD.--August 1928 to September 1959, October 1963 to September 1978, October 2000 to September 2001.

GAGE.--Water-stage recorder. Datum of gage is 104 ft above sea level. Prior to Oct. 24, 1933 nonrecording gage and Oct. 24, 1933 to Sept. 26, 1955, water-stage recorder at present site and datum 1.00 ft higher. Sept. 27, 1955 to June 3, 1956, water-stage recorder at site 145 ft downstream at present datum. June 4, 1956 to Sept. 30, 1959, water-stage recorder at site 0.3 mi downstream at datum 1.98 ft lower. Oct. 1, 1963 to May 4, 1964, non-recording gage, Oct. 1, 1963 to Sept. 30 1978 water-stage recorder at present site and datum.

REMARKS.--No estimated daily discharges. Records fair. No regulation. Numerous small diversions for irrigation above station.

AVERAGE DISCHARGE.--47 years (water years 1929-59, 1964-78, 2001), 1,149 ft³/s, 48.31 in/yr, 832,100 acre-ft/yr.EXTREMES FOR PERIOD OF RECORD.--Peak discharges greater than base discharge of 7,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 30	2200	*3,440	*4.06				

Minimum discharge, 41 ft³/s Sept. 13, 23.DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	171	279	878	658	402	320	1420	2600	310	270	102	53
2	425	313	758	600	446	411	1330	2020	351	236	90	53
3	212	302	699	555	612	405	1310	1670	406	211	85	53
4	123	235	622	545	702	380	1160	1360	419	191	83	52
5	100	323	535	533	1080	402	1050	1130	381	175	82	51
6	86	379	465	519	1060	389	1080	960	420	165	80	53
7	77	506	424	485	895	379	1090	834	387	156	72	52
8	72	707	401	461	764	388	1030	745	350	150	68	52
9	80	909	400	465	695	493	950	686	340	140	65	50
10	120	764	383	472	634	553	905	635	367	134	62	49
11	236	556	355	423	592	531	1560	590	352	130	59	47
12	220	444	331	397	538	499	1600	554	786	123	58	45
13	172	392	337	430	495	489	1310	520	713	116	57	44
14	169	343	563	537	460	495	1080	527	594	111	55	45
15	157	293	1790	551	436	492	944	1450	518	111	55	47
16	133	262	1220	505	432	538	903	1870	455	115	56	50
17	117	235	1400	468	407	537	1110	1370	409	128	58	50
18	118	216	1070	458	413	717	1220	1030	376	118	57	47
19	194	202	924	473	411	2210	1210	842	339	120	55	47
20	219	191	908	515	388	1940	1180	727	310	113	55	46
21	873	182	1030	527	391	1340	1140	649	284	112	55	45
22	632	172	1710	754	425	1020	1030	589	264	109	62	43
23	415	196	2780	642	413	852	954	535	256	100	103	43
24	311	377	2220	611	392	761	888	492	253	92	125	43
25	247	394	1580	595	373	851	890	453	316	86	89	48
26	219	457	1220	547	355	935	931	417	274	81	75	84
27	219	719	1050	492	337	957	874	390	302	77	68	97
28	297	795	905	461	322	1830	849	376	403	80	60	85
29	376	711	822	454	---	2070	834	411	341	94	58	68
30	327	1000	760	444	---	1660	1520	357	296	118	57	60
31	285	---	714	413	---	1380	---	323	---	133	55	---
TOTAL	7402	12854	29254	15990	14870	26224	33352	27112	11572	4095	2161	1602
MEAN	239	428	944	516	531	846	1112	875	386	132	69.7	53.4
MAX	873	1000	2780	754	1080	2210	1600	2600	786	270	125	97
MIN	72	172	331	397	322	320	834	323	253	77	55	43
AC-FT	14680	25500	58030	31720	29490	52020	66150	53780	22950	8120	4290	3180
CFSM	.74	1.33	2.92	1.60	1.64	2.62	3.44	2.71	1.19	.41	.22	.17
IN.	.85	1.48	3.37	1.84	1.71	3.02	3.84	3.12	1.33	.47	.25	.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1928 - 2001, BY WATER YEAR (WY)

	MEAN	440	1480	2263	2392	1888	1692	1464	1105	619	206	103	140
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	76.5	41.8	46.3	
(WY)	1953	1937	1977	1977	1977	1941	1941	1931	1940	1940	1959	1967	

SUMMARY STATISTICS

FOR 2001 WATER YEAR

WATER YEARS 1928 - 2001

ANNUAL TOTAL	186488		
ANNUAL MEAN	511		
HIGHEST ANNUAL MEAN		1149	
LOWEST ANNUAL MEAN		1822	1956
HIGHEST DAILY MEAN		511	2001
LOWEST DAILY MEAN	2780	34100	Dec 22 1964
ANNUAL SEVEN-DAY MINIMUM	43	22	Aug 27 1959
ANNUAL RUNOFF (AC-FT)	45	30	Aug 22 1959
ANNUAL RUNOFF (CFSM)	369900	832100	
ANNUAL RUNOFF (INCHES)	1.58	3.56	
10 PERCENT EXCEEDS	1100	2640	
50 PERCENT EXCEEDS	402	675	
90 PERCENT EXCEEDS	58	80	

WILLAMETTE RIVER BASIN

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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 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 800 ft above sea level, from topographic map.

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

AVERAGE DISCHARGE.--8 years (water years 1994-2001), 36.9 ft³/s, 51.04 in/yr, 26,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,500 ft³/s Feb. 7, 1996, gage height, 6.19 ft from rating curve extended above 340 ft³/s on basis of slope-area measurement of peak flow; maximum gage height, 6.57 ft Feb. 7, 1996; minimum discharge, 1.9 ft³/s Oct. 2-4, 1993.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 11	0200	*121	*3.37				

Minimum discharge, 2.1 ft³/s Sept. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	5.0	24	23	21	15	48	50	13	7.6	4.0	2.8
2	3.8	5.1	23	21	27	18	49	42	17	7.0	3.7	2.8
3	2.8	5.1	19	19	26	14	48	38	19	6.6	3.8	2.7
4	2.6	7.9	16	18	32	14	44	34	14	6.2	3.8	2.7
5	2.4	7.0	15	20	38	13	41	32	16	6.0	3.6	2.7
6	2.4	8.7	13	17	34	12	52	29	17	5.9	3.4	2.7
7	2.4	7.2	12	16	32	12	49	26	13	5.7	3.2	2.6
8	2.4	16	11	17	31	13	47	24	11	5.5	3.1	2.6
9	3.1	26	13	17	29	31	44	22	13	5.3	3.1	2.5
10	5.4	17	13	16	28	22	51	20	12	5.1	3.0	2.4
11	4.6	12	12	14	26	19	93	19	19	5.0	3.0	2.4
12	3.6	10	12	14	23	18	78	17	25	4.8	2.9	2.4
13	4.1	9.4	17	23	21	17	69	16	18	4.6	2.8	2.4
14	4.3	8.5	41	39	20	16	60	27	16	4.6	2.8	2.4
15	3.5	7.7	81	32	20	19	53	39	14	4.6	2.9	2.6
16	3.2	7.2	62	28	19	19	48	37	13	4.8	2.9	2.5
17	3.1	6.9	58	25	18	22	48	29	12	4.8	3.0	2.4
18	8.0	6.6	47	24	18	35	42	26	12	4.7	2.8	2.4
19	4.9	6.3	43	24	16	68	41	24	11	4.6	2.8	2.4
20	20	6.3	39	22	15	56	37	22	10	4.5	2.7	2.4
21	14	6.1	38	31	16	47	33	20	9.4	4.5	2.7	2.3
22	7.2	5.8	60	27	15	41	31	19	9.2	4.2	6.0	2.3
23	5.5	9.3	66	25	15	36	29	17	9.0	4.0	9.2	2.3
24	4.7	11	62	29	14	33	27	16	11	3.9	3.9	2.3
25	4.4	9.6	54	29	13	35	25	15	11	3.8	3.3	4.2
26	4.2	11	47	26	13	32	24	14	9.8	3.7	3.1	5.1
27	4.3	22	40	24	13	38	23	13	12	3.6	2.9	3.6
28	12	15	36	23	12	52	27	14	9.9	4.0	2.9	2.9
29	7.3	23	32	26	---	47	26	13	8.8	4.2	2.8	2.7
30	6.1	33	29	24	---	43	55	12	8.1	6.4	2.8	2.6
31	5.4	---	26	23	---	50	---	11	---	4.5	2.7	---
TOTAL	173.7	331.7	1061	716	605	907	1342	737	393.2	154.7	105.6	81.1
MEAN	5.60	11.1	34.2	23.1	21.6	29.3	44.7	23.8	13.1	4.99	3.41	2.70
MAX	20	33	81	39	38	68	93	50	25	7.9	9.2	5.1
MIN	2.4	5.0	11	14	12	12	23	11	8.1	3.6	2.7	2.3
AC-FT	345	658	2100	1420	1200	1800	2660	1460	780	307	209	161
CFSM	.57	1.13	3.49	2.35	2.20	2.98	4.56	2.42	1.34	.51	.35	.28
IN.	.66	1.26	4.02	2.72	2.29	3.44	5.09	2.79	1.49	.59	.40	.31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2001, BY WATER YEAR (WY)

	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	15.7	50.9	75.9	72.7	75.3	54.9	38.9	31.7
MAX	43.0	89.1	141	94.3	143	95.7	51.3	46.1
(WY)	1998	1996	1997	1998	1996	1997	1998	1999
MIN	3.06	5.09	27.4	23.1	21.6	29.3	20.1	12.7
(WY)	1994	1994	1994	2001	2001	2001	2000	1994

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1994 - 2001
ANNUAL TOTAL	10651.6	6608.0	
ANNUAL MEAN	29.1	18.1	36.9
HIGHEST ANNUAL MEAN			50.5
LOWEST ANNUAL MEAN			18.1
HIGHEST DAILY MEAN	173	Jan 14	850
LOWEST DAILY MEAN	2.1	Sep 27	1.9
ANNUAL SEVEN-DAY MINIMUM	2.2	Sep 23	2.1
ANNUAL RUNOFF (AC-FT)	21130	13110	26700
ANNUAL RUNOFF (CFSM)	2.97	1.85	3.76
ANNUAL RUNOFF (INCHES)	40.39	25.06	51.04
10 PERCENT EXCEEDS	75	42	91
50 PERCENT EXCEEDS	17	13	20
90 PERCENT EXCEEDS	2.6	2.8	3.1

WILLAMETTE RIVER BASIN

14200400 LITTLE ABIQUA CREEK NEAR SCOTTS MILLS, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1993 to Sept. 1997 (discontinued).

WATER TEMPERATURE: July 1993 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 63 microsiemens Sept. 29, 30, 1993; 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.--

WATER TEMPERATURE: Maximum, 16.9°C Aug. 13; minimum, 1.7°C Nov. 19.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	13.7	11.6	13.1	8.4	7.4	7.9	6.3	5.2	5.8	7.2	5.8	6.2
2	11.6	10.0	10.8	9.1	8.2	8.7	7.3	5.9	6.9	6.9	5.8	6.3
3	11.4	9.8	10.5	10.2	9.1	9.6	7.3	6.6	6.8	7.1	5.5	6.2
4	10.7	8.4	9.5	9.7	8.2	9.3	6.6	5.6	6.1	8.2	7.1	7.7
5	10.9	8.2	9.6	8.7	8.0	8.3	5.7	4.7	5.2	8.6	7.1	8.0
6	11.2	8.6	9.8	8.7	7.0	8.2	4.7	4.1	4.4	7.1	4.7	5.6
7	11.2	8.8	9.9	7.6	6.7	7.2	4.9	4.1	4.4	6.2	4.5	5.3
8	10.9	8.8	9.9	7.8	7.0	7.6	5.2	3.9	4.5	6.9	6.2	6.5
9	10.7	9.6	10.2	7.1	5.9	6.7	6.1	4.9	5.5	6.2	4.8	5.4
10	10.3	9.6	9.8	5.9	4.7	5.3	5.5	4.7	5.1	6.2	5.5	6.0
11	10.3	9.6	10.0	4.7	3.6	4.1	4.8	4.2	4.5	6.7	5.5	6.1
12	10.3	9.6	10.0	4.4	3.3	3.8	4.5	4.0	4.3	7.2	6.4	6.6
13	11.1	10.1	10.5	5.1	3.8	4.4	5.5	4.2	4.9	6.5	5.3	5.7
14	10.7	9.0	9.9	4.6	3.6	4.2	6.7	5.3	6.2	6.2	5.5	5.8
15	9.6	8.4	9.0	4.9	3.8	4.3	6.7	6.2	6.3	5.8	4.5	5.4
16	10.7	9.0	9.8	4.0	2.9	3.4	7.4	6.4	7.0	4.5	3.6	3.9
17	10.7	9.0	10.0	3.3	2.3	2.7	6.7	5.3	6.1	5.0	3.1	4.1
18	11.4	10.5	10.8	2.9	1.8	2.3	5.7	4.8	5.2	6.2	4.7	5.5
19	10.5	9.0	10.0	3.3	1.7	2.5	6.9	5.5	6.3	6.9	5.5	6.4
20	11.1	10.3	10.7	3.8	2.9	3.2	7.2	6.7	6.9	6.0	4.7	5.4
21	10.3	8.6	9.5	4.0	2.9	3.3	7.2	6.5	6.9	7.3	5.8	6.6
22	8.6	6.9	7.7	3.2	2.3	2.7	7.4	6.9	7.2	6.6	5.6	6.2
23	8.1	6.4	7.3	4.6	2.3	3.5	7.6	7.2	7.4	6.6	5.1	5.8
24	8.7	6.8	7.7	5.4	4.4	4.9	7.4	6.2	7.0	6.6	5.6	6.3
25	9.2	7.9	8.5	5.7	4.3	5.0	6.7	5.5	6.1	6.1	4.9	5.5
26	9.5	8.5	9.0	6.8	5.7	6.2	7.4	6.3	6.8	5.4	4.4	4.8
27	10.2	9.3	9.6	6.6	4.7	6.1	7.2	6.5	6.9	4.6	3.6	4.1
28	9.7	8.5	9.0	5.1	3.9	4.5	6.9	6.0	6.4	5.2	3.2	4.1
29	9.3	8.5	8.9	6.6	5.1	5.9	6.9	5.3	6.0	5.6	4.7	5.3
30	8.5	7.2	7.7	7.3	6.1	6.6	8.0	6.9	7.6	5.9	4.7	5.3
31	8.7	6.9	7.8	---	---	---	8.2	7.2	7.6	5.7	4.4	5.1
MONTH	13.7	6.4	9.6	10.2	1.7	5.4	8.2	3.9	6.1	8.6	3.1	5.7

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	6.4	4.3	5.3	5.6	3.8	4.8	8.1	6.6	7.5	9.4	7.3	8.2
2	7.0	6.1	6.6	6.2	4.5	5.1	7.0	5.7	6.3	10.3	7.3	8.5
3	7.0	5.4	6.2	5.6	3.5	4.6	8.1	5.6	6.5	11.8	6.8	9.0
4	8.3	7.0	7.7	6.0	3.8	5.0	8.9	4.7	6.5	11.6	7.9	9.7
5	7.5	5.6	6.7	8.0	5.3	6.4	8.3	5.2	6.7	10.5	8.5	9.3
6	5.7	4.7	5.3	8.4	5.1	6.7	6.8	5.2	6.4	11.6	6.4	8.8
7	4.9	3.9	4.4	9.2	6.0	7.4	8.1	5.1	6.1	12.7	7.7	10.2
8	5.2	3.6	4.4	8.0	6.5	7.3	7.3	5.4	6.2	12.7	8.8	10.8
9	6.1	4.4	5.0	7.2	6.0	6.4	7.5	5.2	6.3	12.2	8.5	10.3
10	5.6	4.1	4.8	7.0	5.3	6.2	7.3	6.1	6.7	12.0	7.7	9.9
11	5.9	4.4	5.1	7.0	5.5	6.3	8.5	5.9	6.8	13.4	8.8	11.0
12	5.2	3.6	4.4	8.6	6.0	7.0	7.4	5.8	6.6	13.9	10.4	12.0
13	5.1	3.3	4.0	7.8	6.0	6.8	8.2	5.7	6.8	12.9	10.4	11.6
14	5.2	3.2	4.1	8.0	6.2	6.8	8.6	5.2	6.8	11.8	10.0	10.5
15	5.9	4.4	5.3	6.7	5.8	6.3	10.4	5.7	7.8	10.9	9.8	10.2
16	7.3	5.6	6.3	6.2	5.0	5.7	10.6	6.9	8.7	10.9	9.0	9.9
17	6.6	4.9	5.8	7.2	5.6	6.5	10.4	7.4	8.9	10.5	7.9	9.3
18	7.3	5.4	6.3	8.8	7.0	8.0	10.0	8.0	8.9	11.7	8.6	10.0
19	6.8	4.9	5.9	8.6	6.0	7.6	10.0	7.6	8.7	12.1	8.2	10.1
20	7.0	5.1	6.1	8.6	4.8	6.4	9.3	7.6	8.4	11.9	8.4	10.1
21	7.5	6.1	6.8	8.8	4.8	6.5	10.8	6.7	8.6	13.3	8.7	10.9
22	6.8	5.4	6.2	9.2	5.0	6.7	8.9	6.7	7.9	14.8	10.8	12.7
23	7.1	5.9	6.5	10.0	5.3	7.4	10.4	7.6	8.9	15.1	11.9	13.5
24	6.6	4.7	5.6	10.3	7.1	8.6	12.8	8.0	10.2	14.5	11.4	13.0
25	6.0	3.8	4.8	8.8	7.5	8.3	14.0	8.7	11.2	14.3	11.4	12.8
26	5.5	3.1	4.1	8.3	7.1	7.5	14.3	10.6	12.0	14.3	11.2	12.7
27	5.7	2.9	4.2	7.5	6.2	7.0	11.7	9.1	10.2	13.0	11.0	11.9
28	5.3	3.1	4.2	8.8	7.5	8.1	10.0	7.6	9.0	11.7	9.5	10.8
29	---	---	---	9.0	7.1	7.9	9.1	7.1	8.2	11.5	7.8	9.6
30	---	---	---	9.7	7.5	8.5	9.3	7.7	8.9	12.8	8.9	10.8
31	---	---	---	8.8	8.1	8.6	---	---	---	14.3	10.4	12.3
MONTH	8.3	2.9	5.4	10.3	3.5	6.9	14.3	4.7	8.0	15.1	6.4	10.7
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	13.3	10.5	11.7	14.1	11.2	12.4	15.0	11.8	13.2	15.2	13.2	14.1
2	10.5	9.2	9.9	14.0	10.7	12.3	15.3	12.0	13.7	15.5	13.6	14.4
3	10.7	8.8	9.6	14.5	11.4	12.9	14.7	13.0	13.8	14.4	12.0	13.4
4	10.9	8.8	10.0	15.3	12.3	13.8	14.5	13.2	13.8	14.4	12.2	13.4
5	10.5	9.4	9.9	14.5	12.5	13.4	15.5	12.0	13.7	13.4	11.8	12.5
6	12.0	9.6	10.7	14.5	12.0	13.2	15.8	12.7	14.3	12.9	10.2	11.6
7	13.4	9.8	11.6	14.5	11.3	12.9	16.4	13.9	14.9	13.7	11.3	12.3
8	14.2	11.3	12.7	15.0	11.4	13.1	15.8	12.2	14.2	13.9	10.7	12.3
9	13.2	11.3	12.0	15.8	12.0	13.8	15.8	13.2	14.6	13.9	10.9	12.4
10	12.0	10.2	11.2	15.8	13.2	14.4	16.6	13.7	15.1	13.9	11.3	12.6
11	11.6	10.2	11.0	16.1	13.2	14.6	16.6	13.7	15.1	14.2	11.1	12.7
12	11.1	9.2	10.1	16.4	13.7	14.8	16.6	13.7	15.2	14.7	12.0	13.3
13	12.0	8.6	10.4	15.5	12.7	14.2	16.9	14.5	15.5	14.7	12.2	13.5
14	11.8	9.4	10.7	15.0	12.0	13.5	16.4	13.9	15.1	14.9	12.7	13.7
15	12.2	9.6	10.9	13.7	12.0	12.8	16.5	14.0	15.2	15.5	13.9	14.5
16	12.2	9.0	10.6	13.0	12.0	12.6	15.1	14.0	14.4	15.5	13.4	14.3
17	11.2	8.7	10.1	12.9	11.9	12.4	15.9	13.1	14.2	14.2	11.8	12.9
18	12.1	8.5	10.3	13.6	12.2	12.8	14.8	13.3	14.0	13.7	11.5	12.5
19	13.1	9.3	11.2	14.4	11.9	13.0	15.1	12.6	13.7	13.6	11.7	12.5
20	14.1	11.0	12.5	12.9	12.2	12.6	14.6	11.4	13.1	13.1	10.1	11.5
21	14.6	11.7	13.1	14.4	11.9	13.0	14.1	11.9	13.1	12.8	10.1	11.5
22	13.3	11.9	12.4	14.9	11.7	13.3	14.3	13.3	13.9	13.3	10.6	11.9
23	12.4	10.8	11.7	15.4	12.4	13.9	14.1	13.1	13.6	13.8	11.4	12.5
24	11.9	10.4	11.3	16.0	12.9	14.2	14.6	12.1	13.3	14.1	11.7	12.7
25	11.5	8.7	10.2	15.7	12.9	14.2	14.6	11.7	13.2	13.1	12.1	12.5
26	11.9	10.8	11.5	15.2	11.9	13.7	15.1	12.3	13.8	12.6	11.4	12.1
27	13.1	11.4	12.3	14.9	11.9	13.4	15.1	12.6	13.8	11.4	9.9	10.8
28	12.6	11.7	12.2	14.4	13.1	13.6	15.6	12.6	14.0	11.5	9.1	10.3
29	12.6	10.4	11.6	13.4	12.2	12.7	15.5	12.8	14.0	11.9	9.3	10.6
30	12.4	10.6	11.7	13.6	12.4	12.9	15.7	12.9	14.3	12.4	9.7	11.1
31	---	---	---	14.5	12.2	13.2	15.7	13.2	14.3	---	---	---
MONTH	14.6	8.5	11.2	16.4	10.7	13.3	16.9	11.4	14.1	15.5	9.1	12.5
YEAR	16.9	1.7	9.1									

WILLAMETTE RIVER BASIN

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 mi².

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 sea level, 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.--8 years (water years 1994-2001), 25.1 ft³/s, 22.74 in/yr, 18,190 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,890 ft³/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 ft³/s Sept. 22, 1994.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 15	1100	*47	*5.14				

Minimum discharge, 0.02 ft³/s Sept. 5, 7, 11-13, 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	e1.4	13	e5.5	8.6	4.7	15	9.1	2.8	1.1	.28	.05
2	1.2	e1.4	8.4	e5.0	12	8.1	14	6.7	2.0	.83	.25	.05
3	1.0	e1.4	7.1	e4.6	16	7.1	13	4.9	2.1	.83	.23	.13
4	1.1	e2.2	5.9	e4.2	29	6.6	13	4.8	1.8	.74	.21	.11
5	1.0	e2.0	4.7	e4.2	21	6.4	13	4.3	1.7	.52	.17	.15
6	.98	e2.4	3.9	3.7	16	5.8	14	3.4	2.1	.57	.14	.20
7	.90	e2.2	3.7	3.4	13	5.7	15	3.6	2.3	.46	.11	.06
8	.85	e3.8	3.7	3.6	11	5.1	14	3.5	2.5	.38	.12	.06
9	2.1	e6.5	3.3	3.8	11	6.0	13	3.2	2.3	.22	.11	.05
10	3.0	e4.2	3.1	4.2	9.6	7.6	13	2.9	2.0	.17	.09	.07
11	2.0	e2.8	2.9	3.5	9.2	7.3	17	2.3	2.0	.23	.12	.03
12	5.8	e2.0	3.1	3.2	7.7	6.8	15	2.2	2.1	.35	.11	e.03
13	2.1	e1.4	5.4	4.3	6.8	6.7	12	2.0	2.6	.35	.10	e.07
14	1.4	e1.0	19	8.1	6.5	6.2	7.5	2.0	2.9	.30	.09	e.08
15	1.2	.72	40	9.9	6.0	6.3	6.2	6.7	2.5	.26	.11	e.07
16	1.1	.69	19	9.4	6.2	6.9	5.4	6.0	2.0	.24	.09	e.05
17	1.1	.74	16	8.3	5.6	7.3	5.7	6.6	1.9	.27	.10	e.05
18	1.4	.81	13	7.4	6.0	8.1	6.6	4.1	1.7	.24	.08	e.04
19	1.5	.83	12	7.8	5.7	9.2	7.8	3.4	1.3	.18	.10	e.03
20	3.9	.94	13	8.2	5.4	10	7.4	2.9	1.3	.16	.10	e.04
21	2.8	.87	14	10	5.9	9.8	6.5	2.4	1.1	.11	.16	e.10
22	2.1	1.0	22	13	7.2	9.0	5.7	2.5	.62	.09	.24	.09
23	1.7	3.7	e20	12	7.0	8.1	5.8	2.3	.37	.27	.37	.13
24	e1.5	5.5	e17	11	6.9	7.6	5.1	2.2	.34	.35	.28	e.14
25	e1.3	3.3	e14	13	6.3	14	4.4	2.6	.43	.24	.16	.23
26	e1.2	4.9	e12	12	5.3	13	4.7	2.7	.54	.21	.10	.71
27	e1.1	8.5	e10	11	5.0	14	4.3	2.6	.83	.35	.11	.83
28	e2.8	8.1	e8.5	9.9	4.8	36	4.6	2.3	1.7	.47	.10	.76
29	e2.2	7.4	e7.5	9.5	---	35	4.5	2.8	1.2	.31	.06	.63
30	e1.8	10	e7.0	9.1	---	22	6.3	2.4	1.0	.56	.05	.52
31	e1.6	---	e6.0	8.8	---	17	---	2.1	---	.45	.06	---
TOTAL	55.23	92.70	338.2	231.6	260.7	323.4	279.5	111.5	50.03	11.81	4.40	5.56
MEAN	1.78	3.09	10.9	7.47	9.31	10.4	9.32	3.60	1.67	.38	.14	.19
MAX	5.8	10	40	13	29	36	17	9.1	2.9	1.1	.37	.83
MIN	.85	.69	2.9	3.2	4.8	4.7	4.3	2.0	.34	.09	.05	.03
AC-FT	110	184	671	459	517	641	554	221	99	23	8.7	11
CFSM	.12	.21	.73	.50	.62	.70	.62	.24	.11	.03	.01	.01
IN.	.14	.23	.84	.57	.65	.80	.69	.28	.12	.03	.01	.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2001, BY WATER YEAR (WY)

	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	8.75	48.9	67.1	58.8	58.4	35.5	12.4	7.29
MAX	23.1	121	187	103	114	91.5	25.9	21.8
(WY)	1997	1997	1997	1996	1997	1996	1996	1997
MIN	.93	1.89	10.9	7.47	9.31	10.4	5.80	2.05
(WY)	2000	1994	2001	2001	2001	2001	1994	1999

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1994 - 2001

ANNUAL TOTAL	5058.14	1764.63	25.1
ANNUAL MEAN	13.8	4.83	48.8
HIGHEST ANNUAL MEAN			4.83
LOWEST ANNUAL MEAN			
HIGHEST DAILY MEAN	180	40	1510
LOWEST DAILY MEAN	.09	.03	.03
ANNUAL SEVEN-DAY MINIMUM	.12	.05	.05
ANNUAL RUNOFF (AC-FT)	10030	3500	18190
ANNUAL RUNOFF (CFSM)	.92	.32	1.67
ANNUAL RUNOFF (INCHES)	12.54	4.38	22.74
10 PERCENT EXCEEDS	40	13	70
50 PERCENT EXCEEDS	2.8	2.8	6.1
90 PERCENT EXCEEDS	.39	.11	.43

e Estimated

WILLAMETTE RIVER BASIN

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14201300 ZOLLNER CREEK NEAR MOUNT ANGEL, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 1993 to September 1997 (discontinued).

WATER TEMPERATURE: July 1993 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Records good.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 611 microsiemens Oct. 6, 1995, but may have been greater during periods of missing record; 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.--

WATER TEMPERATURE: Maximum, 22.8°C Aug. 12; minimum, 2.1°C Nov. 19.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	15.7	15.1	15.5	9.6	9.1	9.3	7.0	5.9	6.3	7.2	6.5	6.9
2	15.1	13.4	14.2	10.2	9.5	9.8	7.2	6.3	6.7	6.6	6.1	6.3
3	13.9	12.3	13.1	11.2	10.2	10.6	7.5	6.9	7.3	6.3	5.4	5.6
4	12.9	11.1	12.0	11.3	10.5	10.8	6.9	5.8	6.3	6.7	5.6	6.1
5	12.5	10.2	11.3	10.5	10.1	10.3	5.8	4.9	5.2	7.9	6.7	7.3
6	12.2	9.9	11.0	10.6	9.5	10.1	5.0	3.9	4.2	7.4	6.5	6.8
7	12.0	9.8	10.8	9.5	9.0	9.2	4.0	3.4	3.7	6.5	5.6	5.9
8	12.0	9.8	10.9	9.4	8.8	9.1	3.4	3.0	3.2	6.3	5.9	6.0
9	12.0	11.1	11.4	9.1	8.3	8.7	4.2	3.4	3.9	6.0	5.0	5.2
10	12.0	11.5	11.6	8.3	6.7	7.5	4.8	3.9	4.4	5.6	4.8	5.2
11	12.2	11.5	11.8	6.7	5.1	6.0	4.6	4.1	4.3	6.1	5.1	5.6
12	12.8	12.1	12.5	5.3	4.6	4.9	4.2	3.8	4.0	6.7	6.0	6.3
13	13.2	12.6	12.9	5.1	4.3	4.7	4.2	3.9	4.1	6.7	6.3	6.5
14	13.3	12.2	12.7	5.0	4.1	4.6	5.8	4.2	4.8	6.7	6.3	6.5
15	12.2	10.9	11.5	5.1	4.2	4.6	6.3	5.8	6.2	6.5	5.6	6.1
16	12.2	11.1	11.6	4.5	3.6	4.0	7.0	6.3	6.6	5.6	4.1	4.6
17	12.5	10.9	11.7	3.8	2.9	3.3	6.9	6.2	6.6	4.3	3.3	3.8
18	13.1	12.2	12.6	3.2	2.4	2.7	6.2	5.4	5.6	5.3	4.3	4.8
19	12.8	11.7	12.3	2.7	2.1	2.4	6.2	5.5	5.8	6.3	5.3	5.9
20	13.0	12.3	12.6	3.3	2.3	2.8	6.6	6.2	6.4	5.8	5.3	5.5
21	12.7	11.5	12.3	3.7	2.8	3.1	6.5	6.0	6.2	6.5	5.5	5.9
22	11.6	10.5	11.0	3.2	2.3	2.7	7.6	6.4	7.1	6.7	6.2	6.4
23	10.5	8.9	9.8	4.7	2.2	2.8	7.7	7.5	7.6	6.2	5.6	5.8
24	9.6	8.3	9.0	5.6	3.6	4.7	7.6	7.2	7.4	6.6	5.9	6.2
25	10.5	9.4	9.8	6.4	5.5	5.8	7.2	6.5	6.7	6.3	5.7	6.0
26	10.7	10.4	10.6	7.1	6.0	6.5	6.9	6.4	6.6	5.9	5.1	5.5
27	11.5	10.6	11.0	7.5	6.6	7.1	6.9	6.5	6.7	5.4	4.6	4.9
28	11.3	10.8	11.0	6.6	5.8	6.0	7.1	6.6	6.9	5.1	3.8	4.4
29	11.5	10.8	11.1	6.6	5.6	6.1	6.6	5.7	6.0	5.9	5.1	5.5
30	10.8	9.5	10.3	7.3	6.6	6.9	6.8	6.0	6.4	6.2	5.6	5.9
31	9.7	8.9	9.3	---	---	---	7.3	6.7	7.0	6.2	5.4	5.8
MONTH	15.7	8.3	11.6	11.3	2.1	6.2	7.7	3.0	5.8	7.9	3.3	5.8

WILLAMETTE RIVER BASIN

14201300 ZOLLNER CREEK NEAR MOUNT ANGEL, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	6.0	4.9	5.4	6.3	5.3	5.8	11.1	10.5	10.8	12.4	11.3	---
2	7.5	6.0	6.8	7.1	6.0	6.5	10.8	9.7	10.2	12.9	11.3	12.0
3	7.5	6.9	7.2	7.0	6.0	6.5	10.6	9.1	9.9	14.1	11.2	12.6
4	8.7	7.4	8.0	6.8	6.1	6.4	10.8	8.7	9.8	14.5	12.3	13.4
5	8.6	7.5	7.9	8.5	6.7	7.5	10.7	9.3	10.0	14.1	12.5	13.3
6	7.5	6.7	7.2	9.6	7.4	8.5	10.2	9.1	9.6	14.9	11.3	13.1
7	6.9	5.7	6.1	10.4	8.3	9.3	10.0	8.1	9.1	15.9	11.9	13.8
8	6.1	5.3	5.7	10.4	9.4	9.9	9.9	9.1	9.6	16.6	13.2	14.8
9	6.5	5.8	6.1	9.9	9.1	9.5	10.2	8.3	9.2	16.0	13.4	14.9
10	6.1	5.3	5.6	9.3	8.5	8.8	10.2	9.5	9.7	15.7	12.7	14.3
11	5.8	5.1	5.5	9.3	8.7	9.0	11.0	9.1	9.9	16.4	13.4	14.9
12	5.8	5.0	5.5	9.9	8.6	9.2	10.9	9.6	10.0	17.0	14.9	16.0
13	5.5	4.7	5.1	10.2	9.0	9.6	10.7	8.9	9.8	16.7	15.0	15.9
14	5.7	4.7	5.2	10.4	9.3	9.7	10.5	9.1	9.9	16.1	13.6	14.6
15	6.5	5.3	5.9	9.6	8.9	9.3	11.2	9.0	10.1	13.7	13.1	13.5
16	7.5	6.5	6.9	8.9	8.2	8.4	12.5	10.2	11.3	14.1	13.1	13.5
17	7.1	6.5	6.7	9.2	8.0	8.5	12.9	11.1	12.0	13.9	6.4	13.2
18	7.1	6.1	6.6	10.8	9.2	10.1	13.2	11.5	12.3	15.2	12.7	13.9
19	7.2	6.2	6.7	11.2	10.4	10.7	12.9	11.9	12.5	15.3	12.3	13.8
20	7.4	6.2	6.9	10.5	9.0	9.9	12.5	11.9	12.2	15.3	12.9	14.2
21	8.1	7.0	7.5	10.4	8.9	9.7	13.4	11.2	12.2	16.5	13.4	14.9
22	8.0	7.3	7.7	10.6	8.8	9.8	12.7	11.9	12.2	18.3	14.8	16.4
23	7.8	6.9	7.4	11.2	9.2	10.2	12.8	11.5	12.0	19.2	16.6	17.9
24	7.9	7.0	7.4	11.8	10.6	11.1	15.3	11.9	13.4	18.8	16.9	18.0
25	7.4	6.2	6.8	11.9	11.6	11.7	17.0	13.1	14.9	18.8	16.3	17.7
26	7.0	5.7	6.4	11.6	10.7	11.0	17.9	15.0	16.3	18.6	16.3	17.6
27	7.1	5.4	6.3	10.9	10.0	10.2	16.5	14.6	15.3	18.1	16.3	17.0
28	6.6	5.2	6.0	10.9	10.0	10.5	14.6	12.9	13.6	16.7	14.6	15.7
29	---	---	---	11.1	9.8	10.4	12.9	11.8	12.3	15.1	12.8	14.1
30	---	---	---	11.6	10.3	10.9	12.8	12.0	12.3	15.9	13.3	14.7
31	---	---	---	11.5	11.1	11.3	---	---	---	17.6	14.6	16.1
MONTH	8.7	4.7	6.5	11.9	5.3	9.4	17.9	8.1	11.4	19.2	6.4	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	17.6	15.4	16.3	17.7	15.4	16.4	20.0	15.9	17.8	19.4	16.5	17.8
2	15.3	14.2	14.7	18.7	16.1	17.3	20.9	16.8	18.6	19.5	16.2	17.7
3	14.8	13.8	14.4	18.9	16.5	17.7	19.3	17.6	18.4	17.9	15.2	16.7
4	14.5	13.4	14.0	20.1	17.2	18.5	19.5	17.6	18.4	17.9	15.5	16.5
5	14.2	13.6	13.9	19.9	16.8	18.4	20.9	16.2	18.3	16.5	14.7	15.5
6	15.8	13.3	14.4	19.6	16.5	18.1	21.6	17.0	19.1	15.8	13.6	14.7
7	16.9	14.4	15.7	19.7	16.1	17.9	21.9	18.1	19.9	16.3	13.8	14.9
8	18.1	15.9	17.0	20.2	16.4	18.3	21.9	17.2	19.4	16.6	13.6	14.9
9	18.0	16.6	17.0	21.3	17.0	19.2	22.7	17.8	20.0	16.5	14.0	15.2
10	16.6	15.6	16.1	20.6	18.0	19.4	22.7	18.5	20.4	16.3	14.1	15.1
11	16.3	14.9	15.6	21.6	17.7	19.7	22.3	18.1	20.1	16.9	14.0	15.4
12	15.1	13.8	14.5	21.8	18.4	20.1	22.8	18.1	20.3	17.4	14.5	---
13	15.8	13.4	14.6	21.3	17.7	19.6	22.3	18.5	20.3	17.0	---	---
14	15.8	14.2	15.1	20.7	17.3	19.0	21.3	18.2	19.7	16.9	---	---
15	16.1	15.0	15.5	19.2	17.1	18.0	21.4	17.6	19.3	17.7	16.1	---
16	16.0	14.4	15.3	17.8	16.6	17.2	19.3	17.6	18.2	17.8	16.2	---
17	15.5	14.3	15.0	17.9	16.1	16.9	20.5	15.8	18.0	17.1	---	---
18	16.1	13.9	15.0	18.0	16.4	17.2	19.5	17.1	18.3	15.9	---	---
19	17.0	14.6	15.7	20.4	16.8	18.3	20.0	16.1	17.9	16.4	14.6	---
20	18.1	15.8	16.9	18.9	17.3	17.8	19.6	15.3	17.3	15.4	---	---
21	19.0	16.6	17.7	20.1	16.5	18.1	17.5	15.9	16.8	14.5	---	---
22	18.2	17.0	17.5	21.1	16.6	18.7	17.4	16.7	17.0	14.7	12.9	13.8
23	17.4	15.6	16.5	20.5	17.3	18.9	17.3	16.2	16.7	---	13.0	---
24	16.4	14.9	15.4	21.3	17.8	19.4	18.6	14.8	16.5	---	---	---
25	15.8	13.3	14.6	21.5	17.6	19.5	18.9	14.3	16.4	---	14.1	---
26	15.5	14.2	15.0	21.1	16.9	19.0	19.6	14.9	16.9	14.7	14.0	14.2
27	17.0	15.0	15.9	20.5	17.0	18.8	19.2	15.0	16.9	14.0	13.1	13.6
28	16.5	16.0	16.3	19.6	17.9	18.7	19.9	15.6	17.5	13.3	11.9	12.6
29	17.6	15.2	16.3	18.7	17.0	17.5	19.2	16.4	17.5	12.9	11.2	12.1
30	16.8	15.9	16.4	18.3	16.6	17.3	20.2	15.7	17.7	13.1	11.3	12.3
31	---	---	---	19.3	16.4	17.6	19.9	16.4	17.9	---	---	---
MONTH	19.0	13.3	15.6	21.8	15.4	18.3	22.8	14.3	18.3	---	---	---

WILLAMETTE RIVER BASIN

257

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 mi².

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 130 ft above sea level, from topographic map.

REMARKS.--Records fair except for the period Mar. 8 to July 10, which are poor. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--4 years (water years 1998-2001), 801 ft³/s, 34.66 in/yr, 580,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,500 ft³/s Dec. 29, 1998, gage height, 29.05 ft; minimum discharge, 12 ft³/s Aug. 20, 2000, Sept. 15, 16, 2001.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 8, 1996 reached a stage of 32.76 ft, from floodmark, discharge about 29,000 ft³/s, on basis of runoff comparison with nearby station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 24	1230	*1,450	*14.30				

Minimum discharge, 12 ft³/s Sept. 15, 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	124	653	564	454	267	e988	e960	e115	e118	43	19
2	66	115	587	513	440	303	e959	e985	e103	e109	39	18
3	89	110	549	465	526	398	e930	e807	e150	e99	33	19
4	63	111	482	425	608	365	e899	e685	e217	e87	30	23
5	55	108	410	396	737	341	e834	e602	e210	e81	29	20
6	51	129	352	399	817	329	e800	e541	e208	e75	31	16
7	52	128	314	370	754	307	e883	e482	e241	e69	31	16
8	49	148	285	340	677	e289	e880	e431	e195	e62	23	16
9	53	210	263	336	619	e321	e825	e385	e176	e63	19	15
10	65	386	261	348	574	e449	e777	e349	e176	e57	16	18
11	72	334	258	346	540	e437	e887	e320	e175	51	15	20
12	79	265	245	322	506	e405	e1160	e296	e207	49	16	17
13	76	221	249	312	461	e373	e1120	e280	e334	44	17	14
14	68	196	350	393	421	e352	e998	e295	e269	44	17	14
15	70	178	859	563	390	e339	e889	e538	e227	45	16	12
16	73	169	1230	559	380	e371	e806	e847	e202	46	14	14
17	67	152	1190	508	376	e419	e777	e763	e183	47	14	15
18	71	138	1100	465	351	e454	e808	e610	e172	44	15	20
19	77	130	943	442	354	e750	e798	e498	e156	43	14	20
20	103	125	849	453	338	e1120	e767	e418	e141	44	15	17
21	146	122	796	457	322	e1050	e716	e350	e127	44	16	16
22	306	121	842	592	345	e886	e655	e293	e118	42	20	17
23	233	128	1250	662	358	e760	e606	e250	e110	42	23	17
24	172	157	1440	623	342	e664	e581	e213	e110	39	51	18
25	140	232	1380	642	326	e652	e532	e185	e119	36	60	20
26	121	223	1200	647	308	e715	e493	e168	e142	34	44	22
27	109	260	1010	604	288	e713	e459	e157	e128	32	34	32
28	114	430	852	552	274	e869	e438	e155	e143	32	30	40
29	161	417	745	514	---	e1160	e472	e152	e153	28	25	38
30	173	494	664	510	---	e1160	e486	e160	e130	30	22	34
31	142	---	615	490	---	e1010	---	e138	---	42	20	---
TOTAL	3153	6061	22223	14812	12886	18028	23223	13313	5137	1678	792	597
MEAN	102	202	717	478	460	582	774	429	171	54.1	25.5	19.9
MAX	306	494	1440	662	817	1160	1160	985	334	118	60	40
MIN	37	108	245	312	274	267	438	138	103	28	14	12
AC-FT	6250	12020	44080	29380	25560	35760	46060	26410	10190	3330	1570	1180
CFSM	.32	.64	2.28	1.52	1.47	1.85	2.47	1.37	.55	.17	.08	.06
IN.	.37	.72	2.63	1.75	1.53	2.14	2.75	1.58	.61	.20	.09	.07

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2001, BY WATER YEAR (WY)

	1998	1999	2000	2001	1998	1999	2000	2001	1998	1999	2000	2001
MEAN	234	889	1652	1880	1697	1406	731	691	319	84.2	35.8	33.4
MAX	600	1394	2845	2842	2835	2082	925	846	459	112	52.9	43.5
(WY)	1998	1999	1999	1999	1999	1999	1999	1998	1998	1998	1999	1998
MIN	61.3	202	717	478	460	582	504	429	171	54.1	25.0	19.9
(WY)	2000	2001	2001	2001	2001	2001	2000	2001	2001	2001	2000	2001

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1998 - 2001
ANNUAL TOTAL	237945	121903	
ANNUAL MEAN	650	334	
HIGHEST ANNUAL MEAN			1191
LOWEST ANNUAL MEAN			334
HIGHEST DAILY MEAN	3180	1440	7210
LOWEST DAILY MEAN	13	12	12
ANNUAL SEVEN-DAY MINIMUM	19	15	15
ANNUAL RUNOFF (AC-FT)	472000	241800	580300
ANNUAL RUNOFF (CFSM)	2.07	1.06	2.55
ANNUAL RUNOFF (INCHES)	28.19	14.44	34.66
10 PERCENT EXCEEDS	1820	820	2220
50 PERCENT EXCEEDS	384	249	447
90 PERCENT EXCEEDS	32	20	34

e Estimated

WILLAMETTE RIVER BASIN

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 4.8.

DRAINAGE AREA.--38.8 mi².

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

GAGE.--Water-stage recorder. Datum of gage is 187.48 ft above sea level.

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.--26 years (water years 1976-2001), 113 ft³/s, 82,220 acre-ft, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,210 ft³/s Apr. 23, 1996, gage height, 16.88 ft; minimum discharge, 0.72 ft³/s Nov. 4, 5, 1996, Dec. 16, 1997.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 180 ft³/s Oct. 20, gage height, 5.88 ft; minimum discharge, 8.9 ft³/s Jan. 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	122	69	16	10	9.3	10	9.8	10	69	74	91	70
2	113	66	12	9.9	9.3	10	10	10	58	101	87	67
3	116	67	12	9.5	9.4	10	9.9	9.9	58	109	85	69
4	125	69	10	9.5	9.4	10	9.9	10	58	105	88	71
5	120	69	9.5	9.5	9.5	10	9.8	9.9	45	110	90	75
6	115	69	9.5	9.5	9.8	10	9.8	9.8	35	108	98	84
7	115	69	9.5	9.5	9.8	10	9.8	10	45	112	119	80
8	115	72	9.5	9.5	9.8	10	9.8	10	63	115	126	86
9	116	66	9.5	9.6	9.8	10	9.9	10	68	127	125	87
10	105	60	9.5	9.6	9.8	10	10	10	68	121	128	89
11	95	60	9.5	9.5	9.8	10	10	20	75	118	128	85
12	94	60	9.5	9.7	9.8	10	10	29	67	116	121	84
13	91	59	9.5	9.8	9.8	10	10	29	64	108	125	89
14	89	51	9.7	9.8	9.8	10	10	21	74	104	128	89
15	88	51	9.8	9.8	9.8	10	9.9	9.8	76	104	128	84
16	88	48	9.9	9.8	9.8	10	9.9	9.9	76	89	121	75
17	105	46	9.8	9.8	9.8	10	10	10	77	84	105	76
18	152	46	9.8	9.8	10	10	10	10	84	80	99	73
19	179	46	10	9.8	9.8	10	10	10	92	79	95	79
20	179	37	10	9.8	9.8	10	10	10	109	76	102	80
21	178	46	10	9.8	10	10	10	10	111	78	77	73
22	177	51	11	9.8	10	10	10	20	110	72	55	71
23	172	44	10	9.8	10	10	9.9	28	109	81	51	71
24	149	44	10	9.8	10	10	9.8	44	97	120	53	87
25	103	44	10	9.8	10	10	9.8	67	81	120	53	95
26	93	44	10	9.8	10	9.9	9.8	71	78	111	67	65
27	93	31	10	9.8	10	10	9.8	71	63	119	94	46
28	94	23	10	9.8	10	10	9.8	71	61	107	124	71
29	93	23	10	9.6	---	9.9	10	66	62	97	132	95
30	68	23	10	9.3	---	9.8	10	59	62	83	126	94
31	58	---	10	9.3	---	9.8	---	60	---	77	93	---
TOTAL	3600	1553	315.5	300.3	274.1	309.4	297.4	825.3	2195	3105	3114	2360
MEAN	116	51.8	10.2	9.69	9.79	9.98	9.91	26.6	73.2	100	100	78.7
MAX	179	72	16	10	10	10	10	71	111	127	132	95
MIN	58	23	9.5	9.3	9.3	9.8	9.8	9.8	35	72	51	46
AC-FT	7140	3080	626	596	544	614	590	1640	4350	6160	6180	4680

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2001, BY WATER YEAR (WY)

	MEAN	95.3	65.8	160	178	136	125	79.2	57.8	59.9	124	151	129
MAX	155	233	571	700	720	326	272	122	121	201	216	206	206
(WY)	1980	1985	1996	1997	1999	1983	1996	1996	1992	1994	1996	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	72.9
(WY)	1978	1988	2001	2001	1977	2001	2001	1977	1977	1993	1977	1977	1977

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1976 - 2001

ANNUAL TOTAL	35420.7	18249.0	113
ANNUAL MEAN	96.8	50.0	217
HIGHEST ANNUAL MEAN			40.4
LOWEST ANNUAL MEAN			1940
HIGHEST DAILY MEAN	529	179	Jan 3
LOWEST DAILY MEAN	9.5	9.3	Jan 30
ANNUAL SEVEN-DAY MINIMUM	9.5	9.4	Jan 30
ANNUAL RUNOFF (AC-FT)	70260	36200	82220
10 PERCENT EXCEEDS	178	114	219
50 PERCENT EXCEEDS	88	44	77
90 PERCENT EXCEEDS	10	9.8	12

WILLAMETTE RIVER BASIN

259

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 mi².

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 sea level. 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.--Records good. Diurnal fluctuation caused by operation of millpond on Scoggins Creek upstream from station and regulation by Henry Hagg Lake since January 1975. Diversions upstream from station of approximately 3,000 acre-ft from J. W. Barney Reservoir on the Middle Fork of North Fork Trask River for municipal water supply and irrigation in Wapato Lake area. 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 ft³/s, 300,800 acre-ft/yr.
27 years (water years 1975-2001), 360 ft³/s, 260,600 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,100 ft³/s Dec. 22, 1964, gage height, 19.34 ft, from rating curve extended above 6,000 ft³/s; minimum discharge, 0.08 ft³/s Sept. 3, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 504 ft³/s Dec. 23, gage height, 14.05 ft; minimum discharge, 29 ft³/s Dec. 12, 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	252	141	88	122	127	114	148	209	127	97	122	90
2	225	141	72	113	129	142	141	179	113	119	121	93
3	203	141	71	104	132	137	135	149	117	137	119	89
4	222	142	62	105	157	127	126	130	113	121	119	95
5	216	145	50	105	199	123	120	118	108	135	123	91
6	207	146	43	103	188	116	120	107	94	123	129	106
7	209	144	38	98	169	111	116	99	92	127	147	95
8	205	145	35	96	154	108	111	91	110	128	155	96
9	217	159	33	94	149	108	110	82	108	144	156	99
10	217	142	32	111	139	103	106	82	104	146	156	103
11	184	134	32	109	137	98	116	83	115	145	154	100
12	181	130	30	103	129	95	112	91	114	151	144	98
13	183	127	31	104	122	91	110	89	97	137	142	98
14	181	120	34	121	118	93	105	99	108	135	145	105
15	178	114	201	123	116	92	100	168	108	137	157	101
16	173	115	150	118	137	100	96	180	104	131	156	90
17	186	109	229	112	152	106	95	167	104	113	142	89
18	240	108	180	109	153	118	93	137	114	114	130	80
19	288	107	130	106	147	156	90	120	114	111	127	105
20	300	103	119	103	140	152	89	108	131	109	140	111
21	301	79	136	124	150	133	87	97	133	115	119	107
22	284	97	396	139	165	119	84	93	130	105	101	97
23	273	101	490	129	157	111	84	98	132	111	109	101
24	257	128	439	128	148	105	86	99	128	134	94	106
25	188	118	351	128	138	109	82	120	115	155	84	130
26	164	133	272	121	129	118	79	119	103	143	85	115
27	166	144	219	115	121	126	76	118	107	146	115	79
28	184	92	182	109	116	222	78	118	106	146	148	86
29	192	72	159	121	---	197	88	120	101	131	161	129
30	166	97	143	128	---	174	121	105	95	127	157	129
31	123	---	131	130	---	159	---	107	---	109	136	---
TOTAL	6565	3674	4578	3531	4018	3863	3104	3682	3345	3982	4093	3013
MEAN	212	122	148	114	144	125	103	119	112	128	132	100
MAX	301	159	490	139	199	222	148	209	133	155	161	130
MIN	123	72	30	94	116	91	76	82	92	97	84	79
AC-FT	13020	7290	9080	7000	7970	7660	6160	7300	6630	7900	8120	5980

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2001, BY WATER YEAR (WY)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	146	321	732	773	725	536	328	172	116	146	172	164															
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1975 - 2001

	2000	2001	1975-2001
ANNUAL TOTAL	105803	47448	
ANNUAL MEAN	289	130	
HIGHEST ANNUAL MEAN			360
LOWEST ANNUAL MEAN			695
HIGHEST DAILY MEAN	1270	490	104
LOWEST DAILY MEAN	30	30	104
ANNUAL SEVEN-DAY MINIMUM	32	32	3.3
ANNUAL RUNOFF (AC-FT)	209900	94110	3.9
10 PERCENT EXCEEDS	652	182	894
50 PERCENT EXCEEDS	216	120	182
90 PERCENT EXCEEDS	98	89	85

WILLAMETTE RIVER BASIN

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 mi².

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 sea level, from topographic map.

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

AVERAGE DISCHARGE.--11 years (water years 1991-2001), 3.35 ft³/s, 19.23 in/yr, 2,430 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 733 ft³/s Feb. 8, 1996, gage height, 13.2 ft, from floodmark, from rating curve extended above 200 ft³/s; minimum discharge, 0.01 ft³/s Sept. 4, 2001.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 20	0700	*97	*10.57				
Minimum discharge, 0.01 ft ³ /s Sept. 4.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	.83	.73	.66	.59	2.1	1.4	3.0	1.6	.38	.30	.17
2	.28	.71	3.2	.62	3.3	1.6	1.4	1.4	.61	.36	.31	.16
3	.23	.55	.79	.86	3.1	.71	1.1	1.1	.59	.35	.28	.15
4	.24	.64	.69	.76	4.8	.78	.95	1.0	.46	.32	.25	.12
5	.25	.66	.61	.57	1.4	.60	1.3	.88	1.4	.32	.23	.24
6	.18	1.1	.61	.53	1.1	.53	1.4	.86	.55	.32	.35	.17
7	.17	.53	.58	.54	.85	1.47	1.6	.75	.46	.30	.17	.15
8	.19	4.2	.52	.69	.85	1.5	.94	.70	.43	.29	.18	.15
9	7.1	.75	.68	1.4	.81	1.5	.78	.66	.49	.29	.19	.14
10	1.4	.39	.54	.70	.86	.61	2.9	.62	.44	.25	.19	.16
11	.32	.35	.67	.49	.70	.56	1.9	.60	2.0	.23	.19	.14
12	.26	.36	.47	1.4	.58	.51	2.1	.58	.59	.22	.19	.14
13	2.4	.39	2.9	4.6	.54	.47	1.0	.53	.48	.22	.18	.14
14	.35	.45	7.3	2.6	.53	.47	.89	5.4	.41	.22	.18	.14
15	.27	.55	4.0	.90	1.3	2.9	.81	4.2	.39	.24	.19	.16
16	.26	.38	3.9	.73	2.6	.90	2.1	1.4	.38	.28	.19	.16
17	.26	.36	4.0	.62	.81	4.0	1.5	.85	.37	.26	.21	.20
18	1.4	.45	1.1	.84	1.0	3.3	.80	.74	.37	.29	.19	.17
19	.69	.38	4.7	1.2	.65	1.3	.72	.69	.35	.26	.19	.17
20	12	.46	3.4	.59	.58	.97	2.6	.64	.33	.26	.19	.18
21	2.9	.48	6.3	2.9	2.8	.89	.84	.65	.34	.25	.21	.17
22	.53	.50	19	.78	.88	.82	2.1	.61	.35	.23	7.1	.15
23	.37	11	6.7	.85	.72	.78	2.5	.55	.36	.24	.99	.16
24	.35	.94	2.3	2.2	.65	3.6	1.0	.51	1.5	.26	.28	.13
25	.31	4.5	1.5	.85	.56	3.4	.88	.50	.44	.26	.21	4.4
26	.50	2.1	1.2	.68	.53	1.6	.78	.53	2.4	.22	.20	1.2
27	1.2	3.4	1.0	.60	.50	11	.72	.52	3.4	.21	.23	.17
28	7.0	.73	.89	.57	.49	3.2	3.1	.51	.84	1.9	.18	.14
29	.91	5.7	.84	.88	---	1.8	.93	.46	.48	.66	.25	.13
30	.54	1.9	.83	.72	---	1.4	10	.49	.42	2.8	.20	.13
31	.48	---	.85	.53	---	2.6	---	.52	---	.33	.19	---
TOTAL	45.44	45.74	82.80	32.86	34.08	56.87	51.04	32.45	23.23	13.02	14.39	9.99
MEAN	1.47	1.52	2.67	1.06	1.22	1.83	1.70	1.05	.77	.42	.46	.33
MAX	12	11	19	4.6	4.8	11	10	5.4	3.4	2.8	7.1	4.4
MIN	.17	.35	.47	.49	.49	.47	.72	.46	.33	.21	.17	.12
AC-FT	90	91	164	65	68	113	101	64	46	26	29	20
CFSM	.62	.64	1.13	.45	.51	.77	.72	.44	.33	.18	.20	.14
IN.	.71	.72	1.30	.52	.53	.89	.80	.51	.36	.20	.23	.16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2001, BY WATER YEAR (WY)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	
MEAN	1.88	5.49	6.82	6.86	7.10	4.41	2.98	2.26	1.18	.55	.41	.52
MAX	4.11	14.3	20.1	11.8	16.6	9.47	5.20	4.79	1.94	.89	1.07	1.18
(WY)	1995	1997	1997	1999	1996	1997	1996	1998	1997	1997	1997	1996
MIN	.60	1.06	2.67	1.06	1.22	1.73	1.31	.73	.31	.29	.13	.12
(WY)	1992	1994	2001	2001	2001	1994	1998	1994	1992	1992	1992	1999

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1991 - 2001

ANNUAL TOTAL	826.24	441.91	
ANNUAL MEAN	2.26	1.21	3.35
HIGHEST ANNUAL MEAN			5.95
LOWEST ANNUAL MEAN			1.21
HIGHEST DAILY MEAN	34	19	202
LOWEST DAILY MEAN	.15	.12	.06
ANNUAL SEVEN-DAY MINIMUM	.15	.14	.07
ANNUAL RUNOFF (AC-FT)	1640	877	2430
ANNUAL RUNOFF (CFSM)	.95	.51	1.42
ANNUAL RUNOFF (INCHES)	12.97	6.94	19.23
10 PERCENT EXCEEDS	5.5	2.9	7.8
50 PERCENT EXCEEDS	.85	.61	1.2
90 PERCENT EXCEEDS	.21	.19	.20

WILLAMETTE RIVER BASIN

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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 mi².

PERIOD OF RECORD.--September to November 1966, September 1972 to September 1977 (discharge measurements only), October 1993 to February 1996, October 2001 to September 2001.

GAGE.--Water-stage recorder. Datum of gage is 116.83 ft above sea level (levels by Corps of Engineers).

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

COOPERATION.--Gage height collected and discharge measurements made by Oregon Water Resources Department.

AVERAGE DISCHARGE.--3 years (water years 1994-95, 2001), 34.8 ft³/s, 15.03 in/yr, 25,240 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,090 ft³/s Feb. 6, 1996, gage height, 9.45 ft (from outside high-water mark); minimum discharge, 1.0 ft³/s, Sept. 13, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 251 ft³/s Dec. 22, gage height, 4.88 ft; minimum discharge, 1.0 ft³/s Sept. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	8.6	20	12	11	33	30	48	13	9.3	8.2	6.2
2	12	9.2	44	9.8	40	40	30	26	16	7.9	6.8	6.4
3	5.6	7.9	21	9.5	34	21	22	18	12	6.6	5.4	5.8
4	4.4	7.2	15	13	80	15	19	15	11	5.9	6.5	5.2
5	3.7	7.4	11	10	42	14	18	14	15	5.7	6.1	5.1
6	3.3	9.9	9.8	8.5	23	12	24	13	15	7.6	4.9	4.2
7	4.3	10	9.3	7.9	18	11	21	12	10	6.2	7.8	4.8
8	3.3	46	8.8	9.9	15	22	23	12	8.9	4.9	4.8	4.6
9	54	21	11	14	17	26	17	11	7.5	5.2	4.1	4.6
10	86	13	9.2	21	14	13	25	11	7.3	4.7	4.5	5.3
11	15	9.1	8.2	11	17	9.6	49	11	18	4.6	4.1	3.5
12	8.3	8.1	7.9	12	13	8.6	24	9.9	23	4.5	4.4	2.7
13	20	7.8	31	60	11	8.3	31	9.0	9.7	4.4	4.0	3.5
14	17	7.4	70	31	12	8.6	17	40	8.1	3.5	4.0	2.7
15	7.9	7.2	90	21	17	15	15	66	7.5	3.6	4.3	3.0
16	6.2	7.3	44	14	45	21	15	56	7.7	3.9	4.6	4.2
17	5.5	7.0	82	12	23	49	33	19	7.1	4.5	5.0	2.9
18	19	6.7	26	12	19	42	16	14	5.7	4.6	5.1	2.8
19	11	6.7	57	22	15	26	14	12	6.5	5.8	4.3	2.7
20	134	6.9	50	13	13	16	26	12	5.8	5.1	4.3	2.9
21	37	6.8	67	36	31	13	21	9.8	6.4	5.5	3.7	3.0
22	19	6.4	215	20	24	11	22	11	6.4	5.5	4.2	3.0
23	10	89	139	14	17	11	39	11	5.8	5.0	80	3.8
24	8.2	69	61	34	13	24	21	11	10	6.5	18	3.3
25	7.4	42	32	22	11	79	15	9.8	15	5.8	11	34
26	8.4	45	26	14	9.9	32	13	8.8	13	4.9	8.7	47
27	18	62	19	12	9.4	81	11	9.3	83	3.7	7.6	15
28	90	22	16	11	8.9	89	29	8.7	25	21	6.3	7.5
29	22	47	14	16	---	42	23	8.8	14	12	6.2	5.8
30	14	70	14	16	---	29	75	8.4	10	43	6.0	4.6
31	12	---	13	12	---	34	---	7.9	---	13	5.8	---
TOTAL	710.5	673.6	1241.2	530.6	603.2	856.1	738	533.4	403.4	234.4	298.5	210.1
MEAN	22.9	22.5	40.0	17.1	21.5	27.6	24.6	17.2	13.4	7.56	9.63	7.00
MAX	134	89	215	60	80	89	75	66	83	43	80	47
MIN	3.3	6.4	7.9	7.9	8.9	8.3	11	7.9	5.7	3.5	3.7	2.7
AC-FT	1410	1340	2460	1050	1200	1700	1460	1060	800	465	592	417
CFSM	.73	.71	1.27	.54	.68	.88	.78	.55	.43	.24	.31	.22
IN.	.84	.80	1.47	.63	.71	1.01	.87	.63	.48	.28	.35	.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2001, BY WATER YEAR (WY)

	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	27.4	58.9	86.3	81.9	74.7	46.8	36.2	19.1
MAX	49.8	115	127	133	111	70.8	49.0	26.7
(WY)	1995	1996	1996	1996	1995	1995	1995	1995
MIN	8.53	10.3	40.0	17.1	21.5	27.6	24.6	13.5
(WY)	1994	1994	2001	2001	2001	2001	1994	1994

SUMMARY STATISTICS

FOR 2001 WATER YEAR

WATER YEARS 1994 - 2001

ANNUAL TOTAL	7033.0	
ANNUAL MEAN	19.3	34.8
HIGHEST ANNUAL MEAN		56.2
LOWEST ANNUAL MEAN		19.3
HIGHEST DAILY MEAN	215	840
LOWEST DAILY MEAN	2.7	1.3
ANNUAL SEVEN-DAY MINIMUM	3.0	1.9
ANNUAL RUNOFF (AC-FT)	13950	25240
ANNUAL RUNOFF (CFSM)	.61	1.11
ANNUAL RUNOFF (INCHES)	8.31	15.03
10 PERCENT EXCEEDS	44	100
50 PERCENT EXCEEDS	12	16
90 PERCENT EXCEEDS	4.5	3.8

WILLAMETTE RIVER BASIN

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 mi².

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 sea level (levels by Corps of Engineers). Prior to June 12, 1941, nonrecording gage at datum 1.02 ft higher.

REMARKS.--No estimated daily discharges. Discharge records good. October 1951 to September 1970, records published for this station included the daily flow in Oswego Canal, which diverts at point 5.0 mi upstream from station for development of power between outlet of Lake Oswego and Willamette River. 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.--26 years (water years 1976-2001), 1,442 ft³/s, 1,045,000 acre-ft/yr, river only, not adjusted for diversion to Oswego Canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,400 ft³/s Feb. 10, 1996, gage height, 18.32 ft, does not include an estimated 3,600 ft³/s flowing in Oswego Canal; minimum daily discharge, 0.20 ft³/s July 30 to Aug. 2, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,130 ft³/s Dec. 24, gage height, 5.98 ft; minimum discharge, 105 ft³/s July 26, Aug. 12, Sept. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	314	348	506	621	565	593	931	607	259	307	214	172
2	357	292	531	569	598	655	873	696	250	248	177	159
3	443	279	485	527	621	673	822	734	269	212	154	135
4	356	279	434	494	733	679	773	667	281	187	139	133
5	291	273	384	474	838	643	723	594	289	181	128	134
6	275	274	336	463	951	603	692	541	297	168	129	130
7	262	280	301	450	969	568	668	507	307	165	136	129
8	250	333	271	434	907	545	665	467	287	157	130	126
9	301	328	250	424	839	547	636	425	248	142	115	127
10	501	328	235	447	791	529	607	387	238	142	117	126
11	504	325	226	467	763	516	631	349	250	141	116	123
12	448	305	220	481	728	484	613	329	276	141	110	123
13	367	285	238	531	688	459	639	320	276	139	117	122
14	348	271	323	572	645	438	612	357	265	128	119	117
15	345	256	507	615	608	416	573	496	230	129	112	117
16	324	246	596	615	626	430	548	647	214	143	108	116
17	307	237	847	579	652	491	554	717	206	156	113	116
18	309	231	852	544	703	592	546	702	198	158	123	116
19	294	224	896	529	715	655	532	615	197	153	120	121
20	508	223	822	506	703	653	517	527	187	148	120	114
21	601	219	784	523	699	655	523	465	177	152	126	114
22	607	215	1130	553	731	617	520	419	172	150	167	124
23	543	284	1710	618	777	572	526	358	164	155	313	135
24	459	414	2110	652	767	550	514	328	176	145	324	131
25	408	448	1970	661	724	655	500	311	190	132	311	149
26	379	506	1660	651	685	703	467	291	210	116	254	225
27	343	554	1350	608	639	755	439	288	317	128	206	275
28	430	497	1100	563	594	908	435	288	408	139	171	279
29	430	499	910	543	---	1060	448	287	456	146	162	218
30	437	541	773	538	---	1100	534	290	386	208	165	194
31	403	---	683	563	---	1020	---	277	---	222	173	---
TOTAL	12144	9794	23440	16815	20259	19764	18061	14286	7680	5038	4969	4400
MEAN	392	326	756	542	724	638	602	461	256	163	160	147
MAX	607	554	2110	661	969	1100	931	734	456	307	324	279
MIN	250	215	220	424	565	416	435	277	164	116	108	114
AC-FT	24090	19430	46490	33350	40180	39200	35820	28340	15230	9990	9860	8730

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 2001, BY WATER YEAR (WY)

	MEAN	294	1161	3141	3427	3556	2642	1544	734	370	184	156	205
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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1976 - 2001
ANNUAL TOTAL	390234	156650	
ANNUAL MEAN	1066	429	1442
HIGHEST ANNUAL MEAN			2787
LOWEST ANNUAL MEAN			278
HIGHEST DAILY MEAN	4970	Jan 16	25900
LOWEST DAILY MEAN	178	Aug 4	18
ANNUAL SEVEN-DAY MINIMUM	196	Aug 2	24
ANNUAL RUNOFF (AC-FT)	774000	310700	1045000
10 PERCENT EXCEEDS	3210	726	4150
50 PERCENT EXCEEDS	474	386	543
90 PERCENT EXCEEDS	219	130	124

WILLAMETTE RIVER BASIN

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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 mi², approximately.

PERIOD OF RECORD.--October 1976 to current year (gage heights only).

GAGE.--Water-stage recorder. Datum of gage is sea level.

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. Continuous water temperature data from Aug. 8, 2001, available in the files of the Portland field office.

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, 56.91 ft Dec. 23, but may have been higher during period of missing record Dec. 23-29; minimum, 53.75 ft July 20.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55.45	55.56	55.98	55.57	54.97	54.71	56.07	56.04	55.42	54.68	54.52	54.19
2	55.55	55.50	55.90	55.40	54.92	54.70	56.10	56.42	55.34	54.57	54.33	54.03
3	55.61	55.40	55.76	55.32	54.96	54.89	56.08	56.24	55.30	54.36	54.16	54.12
4	55.55	55.30	55.63	55.27	55.17	54.99	56.05	56.12	55.30	54.36	54.10	54.25
5	55.50	55.27	55.56	55.16	55.50	54.90	56.05	56.01	55.26	54.34	54.09	54.82
6	55.50	55.29	55.56	55.11	55.83	54.83	56.02	55.88	55.22	54.31	54.14	55.43
7	55.50	55.32	55.54	55.07	55.83	54.74	56.07	55.72	55.19	54.19	54.36	55.29
8	55.50	55.39	55.16	55.03	55.71	54.64	56.23	55.78	54.97	54.25	54.36	54.67
9	55.55	55.54	54.92	55.02	55.52	54.59	56.35	55.57	54.36	54.30	54.18	54.56
10	55.65	55.74	54.75	55.04	55.31	54.70	56.39	55.56	54.15	54.25	53.99	54.49
11	55.43	55.87	54.68	55.08	55.19	54.80	56.36	55.66	54.03	54.16	53.93	54.52
12	55.17	55.80	54.86	55.02	55.12	54.77	56.44	55.59	53.98	53.99	54.01	54.62
13	55.14	55.71	54.90	54.88	55.07	54.72	56.44	55.63	54.04	53.97	54.12	54.75
14	55.12	55.66	54.93	54.82	54.99	54.59	56.38	55.62	54.29	53.96	54.16	54.73
15	55.12	55.61	55.54	55.12	54.94	54.55	56.17	55.79	55.11	54.09	54.15	54.48
16	55.13	55.58	56.59	55.29	54.89	54.54	55.97	56.34	55.05	54.15	54.11	54.36
17	55.16	55.55	56.84	55.19	54.85	54.68	55.89	56.57	54.93	53.97	54.13	54.34
18	55.18	55.46	56.78	55.13	54.84	54.91	55.94	56.39	54.88	53.83	53.97	54.78
19	55.25	55.39	56.64	55.09	54.87	55.38	55.93	56.06	54.86	53.80	54.02	54.60
20	55.36	55.37	56.30	54.94	54.88	55.95	55.98	55.83	54.82	53.83	54.11	54.39
21	55.48	55.48	56.08	54.99	54.79	55.94	56.02	55.73	54.75	54.11	54.18	54.58
22	55.73	55.26	56.22	55.10	54.90	55.72	55.88	55.64	54.65	54.26	54.27	54.70
23	55.69	55.28	---	55.32	55.15	55.48	55.69	55.57	54.58	54.46	54.35	54.74
24	55.55	55.38	---	55.34	55.02	55.30	55.57	55.61	54.55	54.52	54.32	54.74
25	55.50	55.51	---	55.36	54.99	55.26	55.60	55.54	54.60	54.34	54.42	54.73
26	55.47	55.60	---	55.42	54.91	55.32	55.67	55.43	54.70	54.16	54.46	54.78
27	55.48	55.69	---	55.34	54.81	55.44	55.60	55.42	54.85	54.07	54.32	54.84
28	55.46	55.84	---	55.19	54.75	55.71	55.53	55.45	54.93	53.98	54.11	54.91
29	55.54	55.91	---	55.09	---	56.33	55.53	55.48	54.98	53.91	54.11	54.91
30	55.64	55.93	55.99	55.09	---	56.47	55.60	55.49	54.81	54.19	54.39	54.88
31	55.63	---	55.79	55.08	---	56.22	---	55.46	---	54.45	54.49	---
MEAN	55.44	55.54	---	55.16	55.10	55.15	55.99	55.79	54.80	54.19	54.21	54.64
MAX	55.73	55.93	---	55.57	55.83	56.47	56.44	56.57	55.42	54.68	54.52	55.43
MIN	55.12	55.26	---	54.82	54.75	54.54	55.53	55.42	53.98	53.80	53.93	54.03

WILLAMETTE RIVER BASIN

14207770 WILLAMETTE RIVER BELOW FALLS, AT OREGON CITY, OR

LOCATION.--Lat 45°21'28", long 122°36'35", in NE 1/4 NW 1/4 sec.31, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090007, on right bank 0.5 mi below Willamette Falls, 1.4 mi upstream from Clackamas River, and at mile 26.2.

DRAINAGE AREA.--10,000 mi², approximately.

PERIOD OF RECORD.--November 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (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, 11.96 ft Dec. 24; minimum, 1.24 ft July 14.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	7.41	4.27	5.60	6.62	4.62	5.43	7.11	5.50	6.23	6.91	5.25	5.93
2	6.73	3.90	5.03	6.04	4.37	5.14	6.98	5.12	6.01	6.59	4.63	5.40
3	6.24	3.62	4.65	5.63	4.21	4.92	6.50	4.87	5.58	6.58	4.27	5.18
4	5.77	3.67	4.46	5.93	3.66	4.83	6.11	4.31	5.11	7.00	4.29	5.30
5	5.51	3.53	4.25	5.77	3.60	4.59	6.36	4.11	5.05	7.51	4.57	5.66
6	5.23	2.90	3.86	5.99	3.59	4.63	6.58	4.15	5.08	7.77	4.68	5.81
7	5.50	2.82	4.15	6.17	3.58	4.67	7.34	4.03	5.35	7.95	4.83	5.94
8	5.76	3.17	4.36	7.09	4.05	5.30	7.64	4.51	5.71	8.53	4.93	6.42
9	6.30	3.46	4.81	7.51	4.71	5.83	8.01	4.76	6.03	8.75	5.06	6.48
10	6.38	3.52	4.93	7.96	5.05	6.22	8.03	4.54	5.85	9.02	5.23	6.87
11	6.97	4.08	5.40	8.08	5.30	6.38	7.84	4.54	5.73	8.85	5.46	6.84
12	7.01	4.03	5.38	8.20	5.44	6.46	8.36	4.69	6.09	8.55	5.47	6.69
13	7.21	4.14	5.46	8.16	5.24	6.33	8.52	5.20	6.47	8.05	5.04	6.28
14	7.00	3.85	5.21	8.35	5.34	6.45	9.32	5.83	7.09	7.51	4.77	5.92
15	7.21	3.91	5.27	8.01	5.16	6.19	8.75	7.00	7.75	7.31	4.50	5.64
16	7.44	3.99	5.46	7.56	4.95	5.95	9.56	7.04	8.08	7.15	4.46	5.48
17	7.37	4.16	5.47	6.75	4.70	5.55	9.30	8.00	8.52	6.73	4.21	5.12
18	7.14	4.30	5.46	6.28	4.08	5.12	8.61	7.32	7.86	6.74	3.96	5.07
19	6.62	3.88	4.96	6.31	3.86	4.91	8.71	6.91	7.66	7.55	4.70	5.72
20	7.23	3.94	5.28	6.49	3.72	4.89	8.17	6.17	7.02	7.26	4.43	5.56
21	7.23	5.00	5.77	6.85	3.50	5.07	8.27	6.17	6.89	7.55	4.31	5.51
22	6.87	4.49	5.53	7.10	4.05	5.34	9.28	6.15	7.54	7.47	4.57	5.73
23	6.53	4.11	5.26	7.45	4.19	5.52	10.85	7.67	9.44	7.74	4.64	5.88
24	6.71	3.90	5.27	7.67	4.66	5.84	11.96	10.12	11.02	7.78	4.83	6.02
25	7.35	4.24	5.62	7.87	4.74	5.97	11.40	10.41	10.94	7.81	4.76	6.03
26	7.59	4.48	5.83	8.18	5.02	6.29	10.59	9.44	10.00	7.81	5.05	6.18
27	7.79	4.72	6.03	8.28	5.36	6.56	9.71	8.55	9.07	7.39	4.99	5.98
28	8.27	4.81	6.37	8.02	5.53	6.48	8.78	7.54	8.11	6.98	4.57	5.61
29	8.28	5.19	6.51	8.30	5.44	6.57	8.00	6.56	7.19	7.29	4.44	5.70
30	7.86	5.30	6.32	7.71	5.55	6.50	7.59	6.01	6.72	6.60	4.12	5.12
31	7.37	4.96	5.87	---	---	---	7.19	5.64	6.37	6.55	3.93	4.93
MONTH	8.28	2.82	5.28	8.35	3.50	5.66	11.96	4.03	7.15	9.02	3.93	5.81

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	6.42	3.75	4.75	6.86	3.87	5.11	7.77	5.96	6.78	8.39	7.04	7.76
2	7.01	3.92	5.07	7.11	4.28	5.33	7.81	6.12	6.76	8.59	7.39	7.99
3	6.86	4.12	5.11	7.03	4.23	5.19	7.69	6.09	6.75	8.56	6.72	7.66
4	7.30	4.30	5.49	7.15	4.24	5.34	7.81	6.02	6.70	8.46	6.45	7.25
5	8.13	4.80	6.25	7.18	4.09	5.35	8.23	5.89	6.80	8.74	6.47	7.29
6	8.58	5.53	6.74	7.35	4.09	5.41	8.73	6.02	7.21	8.62	6.19	7.08
7	8.47	5.73	6.74	7.66	4.07	5.65	8.79	6.45	7.44	8.48	5.73	6.82
8	8.36	5.47	6.58	7.73	4.19	5.71	8.92	6.55	7.44	8.56	5.63	6.68
9	8.52	5.44	6.62	7.71	4.19	5.73	8.84	6.61	7.49	8.01	5.18	6.34
10	8.14	5.17	6.43	7.57	4.17	5.65	8.99	6.83	7.70	7.62	4.85	5.95
11	7.96	5.07	6.31	7.37	4.10	5.50	9.19	6.79	7.84	6.91	4.58	5.67
12	7.73	4.83	5.98	7.20	3.94	5.28	8.88	7.04	7.77	7.34	5.00	5.87
13	7.40	4.52	5.59	7.10	3.85	5.23	8.33	6.86	7.56	6.68	4.47	5.52
14	7.10	4.17	5.36	7.01	3.79	5.04	7.72	6.14	6.93	6.57	4.88	5.46
15	6.98	4.27	5.22	6.70	3.68	4.79	6.98	5.35	6.23	6.96	5.77	6.19
16	6.97	4.46	5.36	6.25	3.61	4.58	6.41	5.05	5.69	8.17	6.96	7.79
17	6.25	3.97	5.04	5.93	3.50	4.56	6.74	5.17	5.87	8.75	7.60	8.28
18	6.73	4.00	5.09	6.01	3.93	4.69	7.04	5.20	6.28	8.74	7.15	7.91
19	6.97	3.96	5.29	6.48	4.34	5.67	7.48	5.58	6.36	8.37	5.95	7.08
20	7.09	4.17	5.40	7.48	5.59	6.59	7.66	5.46	6.56	7.69	5.32	6.23
21	7.24	4.13	5.45	7.37	5.51	6.48	7.87	5.91	6.67	7.67	5.19	6.22
22	7.67	4.26	5.79	7.35	5.27	6.08	7.55	5.15	6.08	7.99	5.22	6.36
23	7.62	4.54	5.81	7.59	5.11	6.12	7.04	4.66	5.70	8.59	5.70	7.00
24	7.68	4.55	5.90	7.50	4.80	5.98	7.32	4.74	5.86	8.90	6.36	7.29
25	7.23	4.58	5.68	7.33	4.48	5.79	7.86	5.17	6.23	8.76	5.89	7.05
26	6.88	4.29	5.37	7.43	4.66	5.85	8.28	5.56	6.59	8.48	5.46	6.72
27	6.80	4.11	5.15	7.54	5.09	6.14	8.02	5.31	6.40	8.29	5.32	6.53
28	6.80	3.94	5.08	8.41	5.98	6.91	7.99	5.07	6.28	7.52	4.87	5.97
29	---	---	---	8.89	6.82	7.72	7.38	5.09	5.96	7.12	5.03	5.85
30	---	---	---	8.93	7.14	7.84	7.92	5.86	6.63	7.18	5.28	6.10
31	---	---	---	8.47	6.50	7.39	---	---	---	7.46	5.38	6.14
MONTH	8.58	3.75	5.67	8.93	3.50	5.76	9.19	4.66	6.69	8.90	4.47	6.71

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	8.24	5.66	6.76	6.23	2.69	4.11	5.35	1.78	3.53	5.81	2.17	3.91
2	7.93	4.97	6.17	6.15	2.81	4.29	5.55	1.82	3.68	5.94	2.24	4.03
3	7.85	4.66	5.85	6.68	2.95	4.58	5.78	1.94	3.90	5.90	2.25	3.95
4	7.61	4.59	5.95	7.14	3.06	4.71	5.96	2.10	3.97	5.68	2.22	3.88
5	8.06	5.05	6.20	6.35	2.56	4.22	5.77	1.94	3.83	5.38	1.73	3.58
6	8.29	5.25	6.34	6.11	2.28	3.98	5.91	2.52	4.05	5.21	1.78	3.55
7	8.05	4.89	6.15	5.74	1.99	3.77	5.91	2.43	4.05	5.08	1.97	3.38
8	7.70	4.94	6.01	5.56	1.85	3.59	6.02	2.62	4.00	4.83	1.50	3.00
9	7.79	5.04	6.12	5.34	1.77	3.52	6.04	2.69	4.22	5.12	1.64	2.99
10	6.74	3.65	5.18	5.30	2.06	3.64	5.77	2.50	4.02	5.15	1.81	3.08
11	6.45	3.79	4.77	5.31	2.10	3.63	5.65	2.09	3.59	5.21	1.67	3.06
12	6.22	4.37	5.13	5.19	1.71	3.41	5.68	2.33	3.64	5.31	1.73	3.42
13	6.22	4.02	5.06	4.89	1.46	2.95	5.73	2.48	3.68	5.98	2.07	3.80
14	6.25	3.04	4.49	4.77	1.24	2.70	5.69	2.23	3.53	6.05	2.24	3.98
15	5.81	2.81	3.95	4.70	1.35	2.70	6.06	2.45	3.99	6.17	2.25	4.10
16	5.92	2.98	4.00	5.04	1.58	3.02	6.39	2.50	4.20	5.98	2.23	4.08
17	6.06	2.59	3.88	5.40	1.78	3.34	6.64	2.58	4.40	5.87	2.16	4.01
18	5.78	2.60	3.93	5.61	1.85	3.66	6.70	2.56	4.43	5.83	2.26	3.93
19	6.48	3.10	4.62	6.47	2.33	4.19	6.36	2.26	4.23	5.80	2.23	3.96
20	7.48	3.91	5.31	6.25	1.91	4.06	6.54	2.68	4.48	5.90	2.12	3.92
21	7.40	3.60	5.21	6.34	2.36	4.25	6.34	2.38	4.31	5.72	2.25	3.90
22	7.59	3.82	5.36	6.34	2.26	4.19	6.61	2.59	4.42	6.05	2.38	3.87
23	7.51	3.66	5.27	6.02	2.14	4.00	6.52	2.84	4.55	5.56	2.42	3.81
24	7.36	3.37	5.07	6.01	2.24	4.00	5.85	2.27	4.03	5.41	2.08	3.50
25	6.83	3.25	4.81	5.60	1.99	3.75	6.21	2.37	3.74	5.45	2.08	3.67
26	6.55	3.02	4.64	5.60	1.92	3.59	6.35	2.86	4.08	5.54	2.32	3.95
27	6.84	3.56	4.98	5.61	1.92	3.43	6.11	2.51	3.81	5.53	2.14	3.81
28	6.92	3.33	4.81	5.58	1.95	3.43	5.99	2.38	3.85	5.60	2.04	3.68
29	6.81	3.47	4.71	5.27	1.64	3.03	6.26	2.63	4.21	5.33	1.94	3.58
30	6.89	3.15	4.62	5.30	1.71	3.28	6.13	2.32	4.04	5.34	2.14	3.68
31	---	---	---	5.36	1.82	3.42	6.16	2.41	4.03	---	---	---
MONTH	8.29	2.59	5.18	7.14	1.24	3.69	6.70	1.78	4.02	6.17	1.50	3.70

YEAR	11.96	1.24	5.44
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WILLAMETTE RIVER BASIN

14208600 TIMOTHY LAKE NEAR GOVERNMENT CAMP, OR

LOCATION.--Lat 45°06'50", long 121°48'35", in NE 1/4 sec.27, T.5 S., R.8 E., Clackamas County, Hydrologic Unit 17090011, Mount Hood National Forest, in intake structure 350 ft upstream from dam on Oak Grove Fork, 0.4 mi upstream from Anvil Creek, 14 mi south of Government Camp, and at mile 15.8.

DRAINAGE AREA.--53.8 mi².

PERIOD OF RECORD.--May 1956 to current year. Prior to October 1957, published as Timothy Meadows Reservoir.

GAGE.--Nonrecording gage. Datum of gage is sea level (levels by Portland General Electric Co.).

REMARKS.--Reservoir is formed by earthfill dam with concrete spillway built by Portland General Electric Co. Usable storage began May 28, 1956. Capacity, 65,710 acre-ft at elevation 3,190 ft, normal maximum operating level. Usable capacity increased in 1966 water year to 64,450 acre-ft between elevations 3,125.0 ft, invert of outlet pipe, and 3,192.0 ft, top of radial gates. Storage of 4,060 acre-ft below elevation 3,125.0 ft not normally available for release. Water is used for power generation. Figures given herein represent total contents.

COOPERATION.--Elevations and capacity table furnished by Portland General Electric Co.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 68,800 acre-ft Oct. 3, 1967, elevation, 3,192.2 ft; minimum contents observed, 16,010 acre-ft Feb. 24, 1957, elevation, 3,144.5 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 66,840 acre-ft July 3, elevation, 3,190.81 ft; minimum contents observed, 50,970 acre-ft Dec. 4, elevation, 3,178.63 ft.

MONTHEND ELEVATION AND CONTENTS AT 0800, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	3,189.61	65,180	-
Oct. 31.....	3,185.90	60,210	-4,970
Nov. 30.....	3,178.97	51,390	-8,820
Dec. 31.....	3,179.32	51,830	+440
CAL YR 2000.....	-	-	-6,340
Jan. 31.....	3,180.24	52,970	+1,140
Feb. 28.....	3,181.88	55,030	+2,060
Mar. 31.....	3,184.58	58,480	+3,450
Apr. 30.....	3,187.63	62,500	+4,020
May 31.....	3,190.02	65,740	+3,240
June 30.....	3,190.76	66,770	+1,030
July 31.....	3,190.54	66,460	-310
Aug. 31.....	3,190.12	65,880	-580
Sept. 30.....	3,187.73	62,630	-3,250
WTR YR 2001.....	-	-	-2,550

WILLAMETTE RIVER BASIN

267

14208700 OAK GROVE FORK NEAR GOVERNMENT CAMP, OR

LOCATION.--Lat 45°06'50", long 121°48'50", in NE 1/4 sec.27, T.5 S., R.8 E., Clackamas County, Hydrologic Unit 17090011, Mount Hood National Forest, on right bank 0.1 mi upstream from Anvil Creek, 0.3 mi downstream from Timothy Lake, 14 mi south of Government Camp, and at mile 15.5.

DRAINAGE AREA.--54.4 mi².

PERIOD OF RECORD.--July 1956 to current year.

GAGE.--Water-stage recorder and artificial control. Datum of gage is 3,041.83 ft above sea level (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.--45 years (water years 1957-2001), 134 ft³/s, 33.45 in/yr, 97,080 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,110 ft³/s Dec. 24, 1964, gage height, 3.93 ft, from rating curve extended above 290 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 3.7 ft³/s Sept. 23, 1968.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 347 ft³/s Nov. 13, 24, gage height, 2.48 ft; minimum discharge, 39 ft³/s Feb. 1, 2, July 1-3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	175	180	145	86	40	43	45	47	48	39	45	48
2	167	179	106	86	41	43	45	47	48	39	45	48
3	175	157	102	86	44	43	45	47	48	43	45	48
4	170	123	72	86	44	43	45	47	48	47	45	48
5	146	130	45	86	44	43	45	47	47	47	45	48
6	174	112	45	86	44	43	45	47	47	47	45	48
7	192	126	45	86	44	42	45	47	47	47	45	48
8	192	93	45	86	44	42	45	46	47	47	90	48
9	190	101	45	85	44	42	44	47	47	47	115	48
10	188	134	45	81	44	42	44	47	47	46	115	93
11	188	235	45	82	44	42	44	94	47	45	115	105
12	192	298	51	82	44	42	44	100	47	45	107	115
13	193	331	81	82	44	42	44	47	47	45	47	120
14	192	342	105	82	44	42	44	48	47	45	41	119
15	192	342	137	82	44	42	44	48	47	45	41	119
16	184	341	130	77	44	42	44	48	47	45	41	118
17	195	318	123	53	44	42	44	48	47	45	44	118
18	188	202	106	44	44	42	44	48	47	45	48	138
19	190	259	82	44	44	43	44	48	47	45	48	145
20	202	336	92	44	44	43	44	48	47	45	43	145
21	188	335	102	44	44	43	44	48	47	45	41	146
22	189	328	102	44	44	43	44	48	47	45	45	146
23	189	327	102	44	44	43	44	48	47	46	48	145
24	138	320	102	44	44	44	45	48	47	46	48	144
25	118	314	102	44	44	44	45	48	47	45	48	137
26	142	313	78	44	44	44	46	48	47	45	48	127
27	175	280	69	44	44	45	47	48	47	45	48	139
28	156	273	69	44	43	45	47	48	47	45	48	144
29	167	273	69	44	---	45	47	48	43	45	48	144
30	176	275	72	44	---	45	47	48	39	45	48	144
31	181	---	82	44	---	45	---	48	---	45	48	---
TOTAL	5504	7377	2596	2010	1224	1334	1344	1574	1402	1396	1728	3183
MEAN	178	246	83.7	64.8	43.7	43.0	44.8	50.8	46.7	45.0	55.7	106
MAX	202	342	145	86	44	45	47	100	48	47	115	146
MIN	118	93	45	44	40	42	44	46	39	39	41	48
AC-FT	10920	14630	5150	3990	2430	2650	2670	3120	2780	2770	3430	6310
MEAN†	96.7	97.7	90.9	83.4	80.9	99.2	112	103	64.0	40.0	46.3	51.4
CFSM†	1.78	1.80	1.67	1.53	1.49	1.82	2.06	1.89	1.18	0.74	0.85	0.94
IN.†	2.05	2.00	1.93	1.77	1.55	2.10	2.30	2.19	1.31	0.85	0.98	1.05
AC-FT†	5950	5810	5590	5130	4490	6100	6690	6360	3810	2460	2850	3060

CAL YR 2000 TOTAL 54960 MEAN 150 MAX 342 MIN 45 AC-FT 109000 MEAN† 142 CFSM† 2.61 IN.† 35.40 AC-FT† 102700
WTR YR 2001 TOTAL 30672 MEAN 84.0 MAX 342 MIN 39 AC-FT 60840 MEAN† 80.5 CFSM† 1.48 IN.† 20.09 AC-FT† 58290

† Adjusted for change in contents in Timothy Lake.

WILLAMETTE RIVER BASIN

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 mi².

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 sea level, 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 ft³/s, 369,900 acre-ft/yr.
45 years (water years 1957-2001), 482 ft³/s, 349,300 acre-ft/yr (regulated).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft³/s Jan. 7, 1923, gage height, 5.45 ft, site and datum then in use, from rating curve extended above 2,300 ft³/s on basis of peak discharge for other stations in Clackamas River basin; minimum discharge, 148 ft³/s Sept. 3, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 596 ft³/s Nov. 25, gage height, 5.68 ft; minimum discharge, 148 ft³/s Sept. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	429	373	410	263	228	243	467	360	236	225	234	195
2	353	366	333	277	214	202	402	368	227	230	240	207
3	361	360	300	297	223	215	352	383	243	241	239	191
4	347	322	263	319	258	222	326	380	275	238	231	201
5	316	317	219	308	265	182	368	317	227	233	230	174
6	358	285	237	320	274	196	340	330	233	232	230	195
7	374	319	233	348	227	207	290	320	252	233	237	208
8	382	340	239	313	271	191	261	326	251	232	272	214
9	402	313	226	331	257	195	267	316	219	244	315	222
10	373	289	209	309	262	192	305	303	219	243	309	228
11	369	378	206	284	229	187	269	370	239	235	313	277
12	353	502	221	266	203	193	261	375	230	221	311	291
13	364	551	275	264	212	206	251	298	259	211	216	279
14	377	563	292	253	232	201	268	299	238	223	199	288
15	379	547	287	272	237	223	267	405	232	227	197	296
16	373	532	380	262	205	209	277	370	221	207	187	284
17	383	532	310	246	224	213	245	366	216	210	187	274
18	365	433	337	251	222	242	278	334	236	219	184	299
19	379	434	317	241	229	263	274	314	243	242	213	320
20	423	545	309	242	208	280	260	297	232	215	204	327
21	398	550	336	227	223	271	250	323	235	213	198	311
22	397	535	309	230	238	271	251	323	235	225	201	343
23	412	553	329	245	229	273	257	293	230	229	193	341
24	348	543	300	232	224	292	279	271	215	228	199	322
25	329	565	308	232	170	283	303	271	251	225	217	318
26	342	556	306	202	187	297	301	284	248	221	202	289
27	396	504	269	207	208	343	316	255	246	223	192	317
28	374	519	265	242	232	407	285	217	227	217	214	305
29	343	505	280	189	---	418	289	223	247	240	217	313
30	333	463	282	200	---	403	340	242	231	239	202	336
31	350	---	273	214	---	429	---	291	---	242	197	---
TOTAL	11482	13594	8860	8086	6391	7949	8899	9824	7093	7063	6980	8165
MEAN	370	453	286	261	228	256	297	317	236	228	225	272
MAX	429	565	410	348	274	429	467	405	275	244	315	343
MIN	316	285	206	189	170	182	245	217	215	207	184	174
AC-FT	22770	26960	17570	16040	12680	15770	17650	19490	14070	14010	13840	16200

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2001, BY WATER YEAR (WY)

MEAN	394	504	569	584	589	571	570	583	445	329	307	348
MAX	527	798	1047	1095	1433	1377	1024	1104	1126	595	473	619
(WY)	1997	1996	1965	1997	1996	1997	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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1957 - 2001

ANNUAL TOTAL	160462		104386				
ANNUAL MEAN	438		286			482	
HIGHEST ANNUAL MEAN						739	1996
LOWEST ANNUAL MEAN						286	2001
HIGHEST DAILY MEAN	821	Apr 25	565	Nov 25	3940	Feb 7	1996
LOWEST DAILY MEAN	204	Sep 18	170	Feb 25	170	Feb 25	2001
ANNUAL SEVEN-DAY MINIMUM	224	Dec 5	193	Mar 5	193	Mar 5	2001
ANNUAL RUNOFF (AC-FT)	318300		207000		349300		
10 PERCENT EXCEEDS	610		382		690		
50 PERCENT EXCEEDS	463		266		472		
90 PERCENT EXCEEDS	265		206		268		

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 mi².

PERIOD OF RECORD.--April 1909 to December 1913, October 1921 to current year. Prior to October 1911 (monthly discharge only), published in WSP 1318.

REVISED RECORDS.--WSP 1148: Drainage area. WSP 1248: 1910(M), 1912, 1948-50(M).

GAGE.--Water-stage recorder. Datum of gage is 1,091.69 ft above sea level (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 ft³/s, 55.08 in/yr, 1,407,000 acre-ft/yr.
45 years (water years 1957-2001), 2,022 ft³/s, 57.35 in/yr, 1,465,000 acre-ft/yr (regulated period).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 68,200 ft³/s Dec. 22, 1964, gage height, 21.7 ft, from floodmark, from rating curve extended above 34,100 ft³/s on basis of slope-area measurement at gage height 15.06 ft; minimum recorded discharge, 261 ft³/s Oct. 7, 1987; minimum daily, 410 ft³/s Sept. 4, 1986.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 30	2100	*4,460	*4.52				
Minimum discharge, 398 ft ³ /s Aug. 15.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1110	889	1220	1280	894	875	2650	3460	998	754	590	522
2	958	886	1200	1240	1030	976	2390	2760	1010	732	581	521
3	849	873	1140	1220	1170	922	2070	2400	1090	721	578	518
4	815	846	1010	1250	1310	906	1830	2180	1030	712	577	517
5	773	863	957	1420	1880	900	1700	2060	1010	697	573	519
6	774	890	902	1510	1700	912	1640	1880	1030	689	564	518
7	801	887	885	1410	1490	946	1550	1760	964	679	562	516
8	798	1100	870	1330	1350	1020	1460	1740	936	670	599	513
9	798	1140	858	1260	1260	1110	1410	1730	922	663	627	510
10	813	1070	840	1220	1180	1100	1350	1650	898	656	624	551
11	842	1080	809	1160	1120	1070	1540	1650	922	649	621	568
12	824	1080	793	1110	1070	1030	1500	1650	1080	643	616	577
13	814	1090	833	1110	1020	1040	1410	1520	1020	641	539	582
14	815	1080	974	1120	991	1060	1330	1720	959	631	593	581
15	807	1070	1850	1060	974	1080	1280	3390	917	627	480	585
16	794	1050	1470	1010	953	1080	1290	3660	880	637	575	584
17	798	1030	1810	957	924	1060	1410	2850	858	635	522	580
18	820	812	1430	943	922	1240	1540	2340	836	629	521	595
19	835	906	1250	983	902	2640	1580	2030	817	627	523	606
20	970	1060	1260	951	884	2310	1600	1820	797	617	530	604
21	1560	976	1380	1010	950	1900	1550	1660	779	616	527	603
22	1160	984	1840	1250	994	1680	1500	1560	766	609	569	603
23	1010	1030	2690	1190	956	1580	1470	1470	756	603	630	602
24	900	1170	2410	1140	933	1650	1460	1390	767	597	577	601
25	838	1130	1940	1090	910	2220	1580	1300	810	591	528	618
26	814	1190	1620	1040	890	2220	1880	1230	768	586	516	625
27	858	1470	1460	997	875	2130	1970	1170	892	582	534	630
28	986	1390	1390	966	863	3000	1930	1140	905	591	532	621
29	977	1260	1330	983	---	2890	1780	1130	816	595	529	613
30	940	1390	1270	942	---	2580	2730	1060	775	635	528	607
31	911	---	1300	913	---	2460	---	1020	---	611	525	---
TOTAL	27762	31692	40991	35065	30395	47587	50380	58380	27008	19925	17390	17190
MEAN	896	1056	1322	1131	1086	1535	1679	1883	900	643	561	573
MAX	1560	1470	2690	1510	1880	3000	2730	3660	1090	754	630	630
MIN	773	812	793	913	863	875	1280	1020	756	582	480	510
AC-FT	55070	62860	81310	69550	60290	94390	99930	115800	53570	39520	34490	34100
CFSM	1.87	2.21	2.76	2.36	2.27	3.20	3.51	3.93	1.88	1.34	1.17	1.20
IN.	2.16	2.46	3.18	2.72	2.36	3.70	3.91	4.53	2.10	1.55	1.35	1.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2001, BY WATER YEAR (WY)

	1034	2242	3105	3060	3037	2651	2645	2505	1624	904	739	782
MEAN	1034	2242	3105	3060	3037	2651	2645	2505	1624	904	739	782
MAX	2145	4239	8271	6139	7671	6559	3807	4701	4136	1565	972	1242
(WY)	1998	1996	1965	1970	1996	1972	1993	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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1957 - 2001
ANNUAL TOTAL	648277	403765	
ANNUAL MEAN	1771	1106	2022
HIGHEST ANNUAL MEAN			3128
LOWEST ANNUAL MEAN			1062
HIGHEST DAILY MEAN	7500	3660	48000
LOWEST DAILY MEAN	621	480	410
ANNUAL SEVEN-DAY MINIMUM	685	516	490
ANNUAL RUNOFF (AC-FT)	1286000	800900	1465000
ANNUAL RUNOFF (CFSM)	3.70	2.31	4.22
ANNUAL RUNOFF (INCHES)	50.35	31.36	57.35
10 PERCENT EXCEEDS	3100	1810	3680
50 PERCENT EXCEEDS	1470	974	1560
90 PERCENT EXCEEDS	743	581	689

WILLAMETTE RIVER BASIN

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 mi².

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 940 ft above sea level, from topographic map.

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

AVERAGE DISCHARGE.--12 years (water years 1990-2001), 212 ft³/s, 63.86 in/yr, 153,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,540 ft³/s Feb. 7, 1996, gage height, 11.83 ft, from rating curve extended above 2,800 ft³/s on basis of slope-area measurement of peak flow; maximum gage height, 15.40 ft, backwater from debris flow; minimum discharge, 6.0 ft³/s Sept. 1, 2, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,100 ft³/s (revised) and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 30	1600	*829	*6.98				
Minimum discharge, 7.8 ft ³ /s Sept. 23-25.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	120	49	165	143	65	52	338	516	59	41	19	11
2	55	46	146	131	85	61	283	403	64	38	18	10
3	33	42	131	126	101	56	241	341	84	36	17	10
4	27	58	114	126	140	57	208	279	76	34	17	10
5	23	65	99	148	234	61	188	242	73	32	16	10
6	20	90	87	147	201	64	191	204	78	31	16	10
7	19	87	80	129	160	64	180	179	72	30	15	10
8	18	203	71	116	134	72	164	167	72	28	15	9.7
9	18	189	68	105	117	84	150	155	72	27	14	9.4
10	19	132	63	98	104	86	151	140	69	26	13	9.2
11	22	97	57	89	94	83	262	128	82	25	13	9.1
12	21	78	52	82	84	78	238	125	168	24	13	8.9
13	20	66	55	87	77	79	190	119	143	23	12	8.8
14	23	57	114	98	73	80	158	171	117	23	12	8.8
15	22	51	320	88	70	86	142	469	99	22	12	8.9
16	21	46	221	79	68	96	152	517	85	25	12	8.8
17	20	41	280	73	64	105	193	338	76	25	12	8.6
18	25	38	187	73	64	190	211	248	68	24	12	8.5
19	24	36	152	87	61	404	209	199	61	23	12	8.5
20	92	35	169	86	58	300	209	165	55	22	11	8.4
21	263	34	209	94	62	216	203	142	51	22	11	8.3
22	133	32	400	110	67	170	186	125	48	21	13	8.1
23	83	41	520	103	64	144	173	113	46	20	20	8.1
24	61	80	380	97	61	146	170	102	47	19	16	8.0
25	48	75	274	89	57	210	196	92	51	18	14	9.4
26	42	113	216	82	54	219	229	83	44	18	13	14
27	40	205	193	76	52	273	213	77	56	17	12	13
28	80	162	179	71	50	519	194	76	57	19	12	12
29	79	135	164	74	---	423	164	75	49	20	11	11
30	68	202	155	68	---	316	455	65	45	26	11	9.8
31	57	---	153	65	---	319	---	60	---	22	11	---
TOTAL	1596	2585	5474	3040	2521	5113	6241	6115	2167	781	425	288.3
MEAN	51.5	86.2	177	98.1	90.0	165	208	197	72.2	25.2	13.7	9.61
MAX	263	205	520	148	234	519	455	517	168	41	20	14
MIN	18	32	52	65	50	52	142	60	44	17	11	8.0
AC-FT	3170	5130	10860	6030	5000	10140	12380	12130	4300	1550	843	572
CFSM	1.14	1.91	3.91	2.17	1.99	3.65	4.60	4.36	1.60	.56	.30	.21
IN.	1.31	2.13	4.51	2.50	2.07	4.21	5.14	5.03	1.78	.64	.35	.24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2001, BY WATER YEAR (WY)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	96.2	340	412	372	365	290	290	114	36.9	18.0	18.1	
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	1993	1993	1997	
MIN	15.3	26.7	177	98.1	90.0	87.0	181	68.0	20.9	13.6	8.20	9.61
(WY)	1994	1994	2001	2001	2001	1992	1998	1992	1992	1992	1992	2001

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2001 WATER YEAR WATER YEARS 1990 - 2001

	2001 CALENDAR YEAR	2001 WATER YEAR	WATER YEARS 1990 - 2001
ANNUAL TOTAL	56688	36346.3	
ANNUAL MEAN	155	99.6	212
HIGHEST ANNUAL MEAN			335
LOWEST ANNUAL MEAN			99.6
HIGHEST DAILY MEAN	1100	520	5970
LOWEST DAILY MEAN	11	8.0	6.1
ANNUAL SEVEN-DAY MINIMUM	11	8.3	6.4
ANNUAL RUNOFF (AC-FT)	112400	72090	153900
ANNUAL RUNOFF (CFSM)	3.43	2.20	4.70
ANNUAL RUNOFF (INCHES)	46.65	29.91	63.86
10 PERCENT EXCEEDS	361	212	475
50 PERCENT EXCEEDS	125	72	125
90 PERCENT EXCEEDS	13	12	14

14210000 CLACKAMAS RIVER AT ESTACADA, OR

LOCATION.--Lat 45°18'00", long 122°21'10", in NE 1/4 sec.19, T.3 S., R.4 E., Clackamas County, Hydrologic Unit 17090011, on left bank 0.2 mi downstream from River Mill Dam, 1.5 mi northwest of Estacada, and at mile 23.1.

DRAINAGE AREA.--671 mi².

PERIOD OF RECORD.--April 1908 to current year. Monthly discharge only April 1908, published in WSP 1318. Published as "near Cazadero" January 1909 to September 1957.

REVISED RECORDS.--WSP 1248: 1908-9, 1910(M), 1916, 1917(M), 1922(M), 1923. WSP 1288: Drainage area (former site). WSP 1638: 1919(M).

GAGE.--Water-stage recorder. Datum of gage is 286.93 ft above sea level (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 ft³/s, 54.44 in/yr, 1,948,000 acre-ft/yr.
43 years (water years 1959-2001), 2,816 ft³/s, 57.02 in/yr, 2,040,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 86,900 ft³/s Dec. 22, 1964, gage height, 18.36 ft (present datum); minimum discharge, 50 ft³/s Mar. 10, 1961, from rating curve extended below 260 ft³/s; minimum daily, 285 ft³/s Oct. 4, 5, 1958, caused by filling of North Fork dam forebay.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 15,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 30	2400	*6,990	*14.71				

Minimum discharge, 424 ft³/s Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2020	1080	1820	1720	1120	1080	4100	5460	1290	1000	734	615
2	1360	1070	1600	1660	1250	1210	3660	4430	1310	954	705	611
3	1050	1050	1550	1620	1460	1140	3160	3780	1490	945	715	690
4	926	1100	1500	1690	1690	1130	2630	3320	1400	925	748	622
5	900	1120	1330	1770	2710	1100	2600	3040	1360	901	705	625
6	789	1330	1250	1950	2480	1130	2460	2690	1340	877	821	613
7	855	1300	1180	1830	2070	1130	2390	2490	1280	878	692	589
8	880	1870	1110	1700	1870	1240	2150	2400	1250	849	673	627
9	887	1900	1140	1600	1700	1320	2090	2380	1250	842	673	634
10	881	1620	1090	1550	1580	1380	1990	2340	1200	835	710	742
11	968	1500	1060	1450	1490	1350	2840	2030	1310	831	704	685
12	960	1440	984	1400	1400	1290	2650	2030	1770	829	717	632
13	968	1420	1090	1410	1340	1290	2330	1940	1570	836	661	613
14	985	1340	1300	1490	1270	1320	2080	2350	1420	799	648	610
15	983	1350	2860	1390	1240	1380	1930	4820	1330	793	653	714
16	965	1230	2220	1290	1220	1420	2050	5240	1250	852	636	688
17	936	1180	2720	1220	1240	1410	2210	4430	1190	829	619	679
18	904	1060	1950	1190	1130	1810	2340	3090	1150	814	662	677
19	965	1060	1830	1290	1130	3730	2450	2780	1110	811	695	678
20	1230	1270	1880	1280	1110	3470	2490	2500	1080	801	726	711
21	2760	1120	2140	1280	1150	2740	2420	2290	1040	789	682	696
22	1840	1080	2590	1620	1230	2370	2290	2080	1020	780	668	694
23	1410	1260	4030	1560	1180	2040	2200	1920	1010	772	649	698
24	1210	1460	3660	1480	1140	2160	2150	1800	1030	765	660	696
25	1100	1400	2870	1400	1110	2830	2330	1700	1100	818	675	735
26	1000	1570	2420	1340	1090	2940	2700	1600	1030	835	620	790
27	1090	2140	2130	1260	1110	2830	2790	1510	1210	612	610	752
28	1300	1920	1980	1220	1040	4600	2720	1500	1290	635	607	734
29	1270	1760	1850	1250	---	4660	2520	1510	1100	670	695	721
30	1190	1860	1750	1190	---	3970	3780	1380	1040	836	607	711
31	1140	---	1770	1150	---	3650	---	1420	---	749	606	---
TOTAL	35722	41860	58654	45250	39550	65120	76500	82250	37220	25462	20976	20282
MEAN	1152	1395	1892	1460	1412	2101	2550	2653	1241	821	677	676
MAX	2760	2140	4030	1950	2710	4660	4100	5460	1770	1000	821	790
MIN	789	1050	984	1150	1040	1080	1930	1380	1010	612	606	589
AC-FT	70850	83030	116300	89750	78450	129200	151700	163100	73830	50500	41610	40230
CFSM	1.72	2.08	2.82	2.18	2.11	3.13	3.80	3.95	1.85	1.22	1.01	1.01
IN.	1.98	2.32	3.25	2.51	2.19	3.61	4.24	4.56	2.06	1.41	1.16	1.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2001, BY WATER YEAR (WY)

	MEAN	1363	3301	4514	4497	4283	3684	3625	3416	2198	1164	888	950
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 2001 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1959 - 2001

	ANNUAL TOTAL	881280		548846		2816		1974
ANNUAL MEAN	2408			1504		4407		1977
HIGHEST ANNUAL MEAN						1454		
LOWEST ANNUAL MEAN						57900		
HIGHEST DAILY MEAN	11100	Feb 2		5460	May 1		Feb 7	1996
LOWEST DAILY MEAN	789	Oct 6		589	Sep 7		Oct 4	1958
ANNUAL SEVEN-DAY MINIMUM	841	Sep 18		622	Aug 27		Oct 3	1958
ANNUAL RUNOFF (AC-FT)	1748000			1089000		2040000		
ANNUAL RUNOFF (CFSM)	3.59			2.24		4.20		
ANNUAL RUNOFF (INCHES)	48.86			30.43		57.02		
10 PERCENT EXCEEDS	4360			2670		5310		
50 PERCENT EXCEEDS	2140			1260		2180		
90 PERCENT EXCEEDS	916			687		796		

WILLAMETTE RIVER BASIN

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 mi²(revised).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1998 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 305 ft above sea level, from topographic map.

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

AVERAGE DISCHARGE.--3 years (water years 1999-2001), 29.1 ft³/s, 22.23 in/yr, 21,090 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 629 ft³/s Feb. 27, 28, 1999, gage height, 8.58 ft; minimum discharge, 0.26 ft³/s Sept. 27, 28, 2000.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 350 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 22	1330	*203	*6.20				
Minimum discharge, 0.40 ft ³ /s Aug. 10.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	3.7	e15	13	14	11	44	e55	3.9	1.8	1.2	1.4
2	4.6	2.6	e18	12	35	20	e34	47	5.4	1.6	1.1	1.4
3	2.2	1.9	e13	10	34	16	e32	34	4.9	1.4	.90	1.4
4	1.5	3.2	e10	9.7	80	15	e26	26	3.7	1.6	.91	2.1
5	1.2	3.6	e8.0	11	64	15	e24	20	4.3	1.6	.78	1.6
6	1.2	4.2	e7.0	10	46	12	e28	16	3.9	1.4	.98	1.3
7	1.1	3.7	e6.5	9.3	34	11	e22	13	2.9	1.3	.84	1.0
8	.96	20	e6.0	9.5	29	19	e20	11	2.7	1.1	.80	.98
9	4.1	10	e6.5	9.5	27	31	e18	9.1	2.7	1.2	.84	.82
10	4.7	7.5	e5.5	9.7	19	21	e20	8.4	2.7	1.2	.59	.82
11	2.7	5.7	e4.8	9.0	17	17	e50	7.3	5.1	.96	.54	.74
12	1.5	4.9	e4.2	8.6	14	15	e32	6.5	6.5	.73	.60	.78
13	1.6	4.9	6.5	34	13	14	e28	5.7	3.9	.83	.98	.79
14	1.4	4.5	31	50	10	12	e22	13	3.3	.70	.83	.81
15	1.1	4.0	55	36	10	17	e18	17	2.6	.79	.83	.80
16	.85	3.7	41	28	16	18	e16	18	2.7	1.2	.89	.81
17	.72	3.0	59	23	12	39	e26	11	2.5	1.6	1.0	1.0
18	1.7	2.8	33	19	14	91	e16	8.9	2.1	1.5	.95	.83
19	1.4	2.6	33	18	12	108	e14	8.0	1.8	1.3	.80	.88
20	12	2.5	30	15	10	68	e24	7.3	1.5	1.1	.86	.81
21	8.4	2.6	40	18	14	45	e17	6.5	1.4	1.1	.80	.66
22	5.4	2.2	124	16	17	34	e16	5.5	1.3	.98	7.0	.71
23	3.9	9.3	107	15	13	26	e24	4.9	1.5	1.2	8.6	.71
24	3.2	11	77	21	12	26	e18	4.4	2.8	1.0	3.2	.85
25	2.6	8.7	51	19	10	46	e16	5.3	3.0	.82	2.2	3.0
26	2.3	11	37	16	8.8	45	e14	4.0	2.5	.84	2.1	5.3
27	3.0	40	28	14	8.0	80	e12	3.2	4.9	.83	1.8	2.5
28	15	e17	23	12	7.6	92	e13	3.4	4.3	1.2	1.5	1.6
29	5.0	e30	22	13	---	68	e10	3.7	2.7	1.3	1.3	1.3
30	3.8	e24	18	15	---	48	e70	3.0	2.2	2.5	1.2	1.3
31	3.1	---	15	16	---	52	---	2.5	---	1.7	1.2	---
TOTAL	128.23	254.8	935.0	519.3	600.4	1132	724	388.6	95.7	38.38	48.12	39.00
MEAN	4.14	8.49	30.2	16.8	21.4	36.5	24.1	12.5	3.19	1.24	1.55	1.30
MAX	26	40	124	50	80	108	70	55	6.5	2.5	8.6	5.3
MIN	.72	1.9	4.2	8.6	7.6	11	10	2.5	1.3	.70	.54	.66
AC-FT	254	505	1850	1030	1190	2250	1440	771	190	76	95	77
CFSM	.23	.48	1.69	.94	1.20	2.05	1.36	.70	.18	.07	.09	.07
IN.	.27	.53	1.95	1.09	1.25	2.37	1.51	.81	.20	.08	.10	.08

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2001, BY WATER YEAR (WY)

	1999	2000	2001	1999	2000	2001	1999	2000	2001	1999	2000	2001
MEAN	3.53	38.2	72.4	62.2	78.3	51.5	19.7	17.8	4.03	1.66	1.32	1.25
MAX	4.14	61.9	121	102	132	72.3	24.1	24.4	5.18	2.49	1.62	1.30
(WY)	2001	1999	1999	1999	1999	1999	2001	1999	1999	1999	1999	2001
MIN	3.09	8.49	30.2	16.8	21.4	36.5	10.9	12.5	3.19	1.24	.80	1.22
(WY)	1999	2001	2001	2001	2001	2001	2000	2001	2001	2001	2000	1999

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1999 - 2001

ANNUAL TOTAL	8255.91	4903.53	
ANNUAL MEAN	22.6	13.4	29.1
HIGHEST ANNUAL MEAN			45.4
LOWEST ANNUAL MEAN			13.4
HIGHEST DAILY MEAN	233	Jan 13	412
LOWEST DAILY MEAN	.36	Sep 28	.36
ANNUAL SEVEN-DAY MINIMUM	.43	Sep 23	.43
ANNUAL RUNOFF (AC-FT)	16380	9730	21090
ANNUAL RUNOFF (CFSM)	1.27	.75	1.64
ANNUAL RUNOFF (INCHES)	17.25	10.25	22.23
10 PERCENT EXCEEDS	68	34	83
50 PERCENT EXCEEDS	6.6	6.5	8.6
90 PERCENT EXCEEDS	.84	.89	1.0

e Estimated

WILLAMETTE RIVER BASIN

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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 fair.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 21.8°C Aug. 10, 2001; minimum, 1.5°C Dec. 29, 30, 1999.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 21.8°C Aug. 10; minimum, 1.9°C Dec. 13, 14, but may have been lower during period of missing record.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	15.6	14.4	14.7	9.6	9.3	9.4	---	---	---	6.0	4.7	5.2
2	14.4	13.5	13.8	10.1	9.6	9.8	---	---	---	5.8	4.9	5.4
3	13.5	12.2	12.6	10.7	10.1	10.4	---	---	---	5.7	4.6	5.2
4	12.2	11.3	11.7	10.6	10.2	10.4	---	---	---	7.1	5.5	6.4
5	12.0	11.3	11.6	10.3	10.0	10.1	---	---	---	7.8	6.9	7.4
6	12.0	11.4	11.7	10.1	9.9	10.0	---	---	---	6.9	5.5	5.9
7	12.0	11.2	11.6	9.9	9.0	9.3	---	---	---	5.5	5.0	5.3
8	11.8	10.7	11.3	---	---	---	---	---	---	5.7	5.0	5.4
9	12.5	11.4	11.7	---	---	---	---	---	---	5.0	3.8	4.4
10	12.3	11.5	11.8	---	---	---	---	---	---	5.0	4.1	4.6
11	11.8	11.4	11.6	---	---	---	---	---	---	5.8	4.9	5.3
12	11.9	11.8	11.8	---	---	---	---	---	---	6.5	5.5	6.0
13	12.3	11.6	12.0	---	---	---	2.5	1.9	2.2	6.3	5.5	5.9
14	12.3	11.7	11.9	---	---	---	4.8	1.9	3.1	6.3	5.8	6.1
15	11.7	10.3	10.7	---	---	---	6.1	4.8	5.7	6.5	5.2	6.2
16	11.3	10.4	10.7	---	---	---	7.0	6.1	6.5	5.2	3.8	4.4
17	11.5	10.8	11.2	---	---	---	7.0	6.1	6.6	4.9	3.5	4.2
18	12.7	11.5	12.1	---	---	---	6.1	5.3	5.8	5.7	4.9	5.2
19	12.4	11.5	11.8	---	---	---	6.7	5.8	6.2	6.3	5.4	5.7
20	12.9	11.9	12.4	---	---	---	6.4	5.8	6.2	5.4	4.7	5.0
21	12.5	11.8	12.1	---	---	---	5.8	5.0	5.4	6.0	4.7	5.3
22	11.8	10.5	10.9	---	---	---	7.2	5.5	6.1	6.0	5.0	5.5
23	10.5	10.0	10.2	---	---	---	7.3	7.0	7.2	5.2	4.6	5.0
24	10.1	9.5	9.8	---	---	---	7.8	6.9	7.3	5.8	5.0	5.4
25	10.3	9.7	10.0	---	---	---	6.9	6.1	6.5	5.7	4.4	5.1
26	10.6	10.3	10.4	---	---	---	6.8	6.1	6.5	5.4	4.7	5.1
27	11.1	10.6	10.8	---	---	---	6.6	5.8	6.2	4.7	3.5	4.0
28	11.7	10.6	11.4	---	---	---	6.0	5.5	5.7	4.3	2.9	3.6
29	11.3	10.8	11.0	---	---	---	5.8	4.9	5.4	5.5	4.3	4.9
30	10.8	9.5	10.0	---	---	---	6.3	5.8	6.0	5.5	4.9	5.3
31	9.5	9.1	9.3	---	---	---	6.6	5.8	6.2	6.0	4.9	5.4
MONTH	15.6	9.1	11.4	---	---	---	---	---	---	7.8	2.9	5.3

WILLAMETTE RIVER BASIN

14211400 JOHNSON CREEK AT REGNER ROAD, AT GRESHAM, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	6.1	4.1	5.1	6.1	4.1	5.1	9.6	8.7	9.1	10.7	9.6	10.3
2	6.9	6.1	6.5	6.7	5.3	5.8	9.3	7.7	8.5	11.7	9.3	10.4
3	7.1	5.8	6.5	6.6	4.4	5.5	9.2	7.3	8.2	12.9	9.0	11.0
4	8.0	7.1	7.5	6.3	4.8	5.6	10.1	6.4	8.2	13.1	10.6	11.9
5	7.7	6.6	7.2	8.7	6.2	7.3	9.5	7.2	8.4	12.1	10.6	11.3
6	6.8	5.8	6.3	9.7	6.5	8.2	9.0	7.9	8.4	13.2	9.0	11.2
7	5.8	4.9	5.3	10.2	7.4	9.0	9.0	7.3	8.1	14.9	10.1	12.5
8	5.5	4.6	5.0	9.9	6.7	9.0	9.5	7.0	8.1	14.9	11.7	13.4
9	5.5	4.4	5.1	8.5	7.3	7.8	8.9	7.2	8.1	14.1	10.9	12.7
10	4.4	3.8	4.2	8.2	6.8	7.5	8.6	7.8	8.2	14.1	10.6	12.6
11	4.9	3.6	4.3	8.2	7.1	7.7	10.1	7.5	8.6	15.7	11.2	13.5
12	5.0	3.6	4.4	9.0	7.6	8.2	9.0	7.5	8.3	16.6	13.2	15.0
13	4.9	3.0	4.0	9.3	7.7	8.5	9.3	7.2	8.2	16.2	13.7	15.0
14	5.8	3.5	4.7	9.3	7.6	8.4	9.5	6.7	8.1	15.2	12.7	13.4
15	5.9	4.8	5.2	8.4	7.1	7.9	11.2	6.9	9.0	13.4	12.3	12.8
16	6.1	5.0	5.7	7.7	6.7	7.2	12.4	8.7	10.6	13.4	11.5	12.4
17	5.0	3.9	4.5	8.0	6.8	7.4	12.3	9.6	11.1	12.7	10.7	11.8
18	5.8	4.2	5.0	9.6	8.0	8.8	12.7	10.3	11.4	13.8	10.7	12.3
19	6.2	4.5	5.5	10.1	8.4	9.2	11.3	9.5	10.5	13.7	11.0	12.6
20	6.9	5.0	6.0	9.6	7.0	8.4	10.9	9.5	10.2	14.4	10.9	12.8
21	7.5	6.1	6.7	9.6	7.1	8.3	11.3	8.4	10.0	16.2	11.7	14.1
22	7.2	5.5	6.4	9.7	6.5	8.2	10.7	9.3	10.1	19.1	14.4	16.8
23	7.3	5.6	6.5	10.5	6.7	8.7	11.5	9.6	10.4	20.3	16.5	18.5
24	6.7	4.8	5.9	11.4	8.4	9.9	14.6	9.9	12.2	19.5	16.6	18.2
25	5.8	3.9	5.1	11.0	9.7	10.3	15.9	11.2	13.6	18.9	15.4	17.4
26	5.5	3.1	4.5	9.9	8.7	9.3	16.6	13.5	15.1	19.2	15.2	17.4
27	6.1	4.4	5.3	8.8	7.9	8.3	15.2	12.4	13.3	17.6	15.4	16.4
28	5.8	4.1	5.1	9.9	8.7	9.3	13.1	11.3	12.1	16.0	13.5	14.8
29	---	---	---	10.2	8.4	9.2	11.7	9.9	10.8	14.9	11.3	13.1
30	---	---	---	11.0	9.0	10.0	11.5	10.7	11.2	16.7	12.1	14.4
31	---	---	---	10.5	9.6	10.1	---	---	---	19.5	13.8	16.6
MONTH	8.0	3.0	5.5	11.4	4.1	8.2	16.6	6.4	9.9	20.3	9.0	13.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	18.0	14.2	15.9	19.0	15.0	16.8	17.9	13.9	15.9	18.0	16.7	17.4
2	14.2	12.8	13.5	19.8	14.7	17.3	19.3	15.8	17.5	18.1	15.9	17.0
3	14.2	12.2	13.2	20.4	15.5	18.0	18.2	16.6	17.5	17.3	14.7	16.2
4	13.9	11.4	12.9	21.2	16.7	19.0	18.5	16.8	17.5	17.0	15.1	16.1
5	13.6	12.5	13.1	19.7	16.2	17.9	19.8	15.5	17.5	15.8	13.9	14.9
6	15.6	12.4	13.9	18.9	15.7	17.4	20.5	16.6	18.5	15.3	13.4	14.4
7	18.0	13.6	15.7	19.6	15.1	17.4	20.8	17.7	19.1	16.4	13.6	14.8
8	19.5	15.6	17.4	20.5	15.7	18.1	20.5	16.3	18.4	16.7	13.1	15.0
9	18.0	15.6	16.7	21.5	16.8	19.1	21.6	16.8	19.1	17.0	13.6	15.2
10	16.3	14.1	15.2	21.0	18.0	19.6	21.8	18.2	19.8	17.0	13.7	15.3
11	15.3	13.8	14.5	21.0	17.2	19.2	21.4	18.0	19.6	17.3	13.8	15.4
12	13.8	12.4	13.2	21.4	17.6	19.4	21.7	17.7	19.6	17.9	14.8	16.2
13	15.6	11.6	13.6	20.5	17.0	18.8	21.2	19.0	20.2	18.1	15.2	16.5
14	16.0	13.5	14.7	18.8	16.2	17.5	20.1	18.0	18.7	18.1	15.4	16.7
15	15.5	13.5	14.3	17.8	15.7	16.3	19.6	17.2	18.3	19.2	17.0	17.9
16	15.2	12.5	13.9	16.2	15.3	15.7	18.8	16.9	17.6	18.6	16.2	17.2
17	14.7	12.2	13.5	16.4	14.9	15.6	19.1	16.1	17.4	16.5	15.2	15.7
18	16.4	11.8	14.1	16.7	15.1	15.9	18.1	16.5	17.4	15.4	14.0	14.6
19	18.3	12.7	15.5	18.8	15.4	17.0	18.5	15.4	16.8	15.5	13.7	14.6
20	20.0	15.0	17.5	17.6	16.2	16.7	18.1	15.1	16.6	14.9	12.0	13.5
21	20.6	16.0	18.4	17.5	15.7	16.5	16.9	15.0	16.1	14.9	12.1	13.5
22	19.1	16.7	17.6	19.1	15.1	17.1	18.3	16.5	17.1	15.9	12.6	14.1
23	16.9	14.5	15.9	18.9	16.7	17.7	17.3	16.2	16.7	16.2	13.5	14.7
24	16.1	14.5	15.1	18.9	16.5	17.7	17.8	14.8	16.3	16.3	14.0	15.1
25	16.0	12.4	14.3	20.0	16.5	18.1	17.7	14.3	16.1	15.7	14.8	15.1
26	16.3	14.5	15.5	19.7	16.2	18.0	18.8	15.6	17.1	14.9	13.7	14.3
27	17.7	15.6	16.6	18.7	16.3	17.5	18.8	15.9	17.4	13.7	12.3	13.0
28	16.9	15.6	16.3	17.9	16.4	17.1	19.6	16.4	18.1	13.5	11.2	12.3
29	18.2	14.1	16.2	16.6	15.5	15.9	19.0	17.0	17.9	13.5	10.6	12.1
30	17.2	15.0	16.3	16.6	15.2	15.8	19.6	16.5	18.1	14.9	12.0	13.3
31	---	---	---	17.1	14.9	15.9	19.0	16.7	17.9	---	---	---
MONTH	20.6	11.4	15.1	21.5	14.7	17.4	21.8	13.9	17.8	19.2	10.6	15.1

WILLAMETTE RIVER BASIN

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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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 2000 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 245 ft above sea level, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 81 ft³/s May 10, 2000, Mar. 27, 2001, gage height, 4.34 ft; minimum discharge, 0.03 ft³/s Sept. 27, 2000.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 27	1730	*81	*4.34				
Minimum discharge, 0.06 ft ³ /s Sept. 17.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	.41	2.1	2.5	2.9	3.0	9.9	14	1.0	.34	.24	.22
2	.67	.40	3.0	2.2	14	4.4	8.2	10	.66	.29	.24	.17
3	.41	.37	1.9	2.0	11	3.2	7.4	7.0	.69	.33	.22	.12
4	.42	.52	1.3	2.0	25	3.0	5.6	5.2	.60	.30	.26	.18
5	.31	.41	.98	2.3	14	2.7	5.5	3.8	.93	.26	.21	.17
6	.26	.60	.83	1.8	9.2	2.3	6.6	3.0	.71	.25	.15	.18
7	.23	.45	.77	1.6	6.6	2.1	5.1	2.5	.57	.30	.17	.17
8	.25	4.1	.63	1.5	5.3	6.9	4.6	2.0	.50	.29	.16	.18
9	2.4	1.2	1.0	1.6	4.7	8.5	3.8	1.7	.52	.30	.21	.18
10	2.2	.74	.74	1.7	4.0	4.9	5.8	1.5	.49	.34	.16	.17
11	.80	.54	.60	1.5	3.5	3.8	11	1.3	2.1	.30	.22	.18
12	.37	.43	.53	1.8	2.9	3.1	6.7	1.2	1.3	.27	.21	.18
13	.52	.41	1.4	8.6	2.6	2.8	6.1	.93	.76	.29	.22	.17
14	.78	.39	9.3	11	2.3	2.5	5.6	2.7	.62	.22	.27	.17
15	.33	.33	11	6.4	2.5	3.7	4.5	3.5	.55	.21	.25	.19
16	.31	.26	8.0	4.6	5.0	3.5	3.9	3.5	.47	.22	.28	.16
17	.29	.29	12	3.6	3.4	9.7	5.5	1.9	.41	.35	.22	.08
18	.60	.24	6.0	3.1	3.6	24	3.8	1.5	.41	.26	.23	.16
19	.37	.19	8.3	4.0	3.1	21	3.2	1.3	.48	.25	.19	.15
20	4.6	.20	7.7	3.2	2.7	10	5.7	1.0	.44	.25	.20	.18
21	1.5	.19	12	4.7	3.5	7.0	4.0	.97	.33	.22	.28	.15
22	.80	.18	35	4.0	3.3	5.4	3.6	.96	.32	.25	2.2	.18
23	.54	2.3	24	3.5	2.8	4.3	6.1	.87	.34	.22	1.1	.17
24	.44	1.5	14	5.6	2.5	6.3	4.7	.79	.84	.28	.47	.12
25	.38	1.9	8.2	4.7	2.1	18	3.8	.74	.54	.28	.38	1.2
26	.40	1.7	6.0	3.6	1.8	11	3.0	.65	.53	.24	.28	.69
27	1.0	6.5	4.7	2.9	1.7	29	2.6	.64	1.0	.23	.21	.34
28	4.6	2.0	3.9	2.7	1.6	25	2.6	.64	.53	.43	.35	.29
29	1.0	5.1	3.3	3.1	---	16	2.3	.60	.43	.22	.28	.21
30	.63	4.5	3.3	3.5	---	11	21	.62	.40	.61	.26	.16
31	.47	---	2.9	3.3	---	12	---	.60	---	.31	.22	---
TOTAL	32.48	38.35	195.38	108.6	147.6	270.1	172.2	77.61	19.47	8.91	10.34	6.87
MEAN	1.05	1.28	6.30	3.50	5.27	8.71	5.74	2.50	.65	.29	.33	.23
MAX	4.6	6.5	35	11	25	29	21	14	2.1	.61	2.2	1.2
MIN	.23	.18	.53	1.5	1.6	2.1	2.3	.60	.32	.21	.15	.08
AC-FT	64	76	388	215	293	536	342	154	39	18	21	14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2000 - 2001, BY WATER YEAR (WY)

	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001
MEAN	1.05	1.28	6.30	3.50	5.27	8.71	4.57	3.19	.81	.36	.31	.30
MAX	1.05	1.28	6.30	3.50	5.27	8.71	5.74	3.87	.97	.43	.33	.38
(WY)	2001	2001	2001	2001	2001	2001	2001	2000	2000	2000	2001	2000
MIN	1.05	1.28	6.30	3.50	5.27	8.71	3.40	2.50	.65	.29	.29	.23
(WY)	2001	2001	2001	2001	2001	2001	2000	2001	2001	2001	2000	2001

SUMMARY STATISTICS

FOR 2001 WATER YEAR

ANNUAL TOTAL	1087.91
ANNUAL MEAN	2.98
HIGHEST ANNUAL MEAN	
LOWEST ANNUAL MEAN	
HIGHEST DAILY MEAN	35 Dec 22
LOWEST DAILY MEAN	.08 Sep 17
ANNUAL SEVEN-DAY MINIMUM	.15 Sep 16
ANNUAL RUNOFF (AC-FT)	2160
10 PERCENT EXCEEDS	7.5
50 PERCENT EXCEEDS	1.0
90 PERCENT EXCEEDS	.21

WILLAMETTE RIVER BASIN

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.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 20.0°C June 27, July 30, 31, 2000; minimum, 2.2°C Dec. 12, 2000.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 19.4°C Aug. 10; minimum, 2.2°C Dec. 12.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	16.7	14.6	16.0	10.1	9.6	9.8	7.3	6.4	6.8	6.0	4.8	5.3
2	14.6	12.7	13.4	10.9	10.1	10.4	7.5	6.5	7.0	6.0	5.0	5.4
3	13.1	11.4	12.0	11.4	10.7	11.0	7.4	5.9	6.8	5.7	4.9	5.3
4	11.9	10.3	11.2	10.9	10.3	10.7	5.9	5.2	5.6	7.3	5.7	6.5
5	12.3	11.1	11.6	10.3	9.9	10.2	5.2	4.5	4.9	8.4	6.8	7.6
6	12.7	11.4	12.0	10.2	9.5	10.0	4.5	3.8	4.2	6.8	5.9	6.2
7	13.3	11.7	12.4	9.5	8.2	8.7	4.0	3.2	3.7	5.9	5.3	5.6
8	12.2	10.7	11.6	9.7	8.8	9.3	4.3	3.1	3.7	5.8	5.2	5.5
9	13.4	12.0	12.4	9.0	8.0	8.5	5.6	4.2	5.0	5.2	3.8	4.5
10	13.3	12.1	12.4	8.0	6.0	7.0	5.7	5.0	5.3	5.3	4.3	4.8
11	12.8	12.0	12.4	6.0	5.0	5.4	5.0	2.7	3.7	6.0	4.9	5.4
12	12.7	12.5	12.6	5.0	3.8	4.4	2.7	2.2	2.4	6.5	5.4	5.9
13	13.3	12.4	12.7	5.3	4.6	4.9	2.8	2.3	2.5	6.3	5.7	6.0
14	13.1	11.5	12.1	5.4	4.7	5.1	5.0	2.3	3.5	6.3	5.6	6.0
15	11.5	10.0	10.5	5.1	4.0	4.7	6.0	5.0	5.6	6.2	4.9	5.9
16	12.3	10.7	11.5	5.1	4.4	4.9	7.2	5.9	6.4	4.9	3.8	4.2
17	12.5	11.2	11.9	4.8	4.2	4.5	6.9	5.6	6.4	4.7	3.2	4.0
18	13.4	12.5	13.1	4.8	4.2	4.4	5.8	5.1	5.4	5.5	4.6	5.0
19	12.9	11.2	11.9	4.6	3.9	4.3	6.2	5.2	5.7	6.5	5.3	5.7
20	13.7	12.4	13.1	4.7	4.1	4.3	5.9	5.3	5.7	5.4	4.7	5.0
21	12.7	11.1	11.9	4.9	4.0	4.5	5.3	4.5	4.9	6.1	4.7	5.4
22	11.1	8.9	9.9	4.7	4.2	4.5	7.2	5.3	6.1	6.0	5.2	5.5
23	10.6	9.7	10.2	5.1	3.7	4.4	7.2	6.9	7.0	5.5	4.9	5.2
24	10.5	9.3	9.9	6.3	5.1	5.7	7.6	6.8	7.1	5.9	5.1	5.4
25	11.1	10.2	10.6	6.4	5.2	5.7	6.8	6.0	6.4	5.7	4.6	5.2
26	11.4	10.9	11.1	7.5	6.3	6.9	6.6	5.8	6.3	5.6	4.6	5.1
27	11.8	11.1	11.4	8.1	6.3	7.5	6.4	5.8	6.0	4.9	3.9	4.4
28	11.7	10.8	11.3	6.4	5.5	6.0	5.9	5.1	5.5	4.8	3.3	4.1
29	11.4	10.4	11.0	7.3	5.9	6.5	5.6	4.4	5.0	5.8	4.6	5.3
30	10.4	8.7	9.4	7.9	7.0	7.4	6.4	5.6	5.9	5.8	5.1	5.5
31	10.0	8.6	9.2	---	---	---	6.8	5.7	6.1	6.3	4.8	5.6
MONTH	16.7	8.6	11.7	11.4	3.7	6.7	7.6	2.2	5.4	8.4	3.2	5.4

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	6.3	4.3	5.3	6.3	4.2	5.3	9.5	8.5	9.0	11.1	9.4	10.3
2	7.1	6.2	6.7	6.7	5.3	6.0	9.3	7.7	8.4	11.9	9.2	10.4
3	7.3	6.0	6.7	6.7	4.5	5.5	9.0	7.4	8.1	13.1	8.9	11.1
4	8.5	7.2	7.7	6.4	5.1	5.8	10.2	6.2	8.2	12.9	10.4	11.8
5	7.8	6.5	7.1	8.7	6.1	7.3	9.4	7.0	8.3	12.1	10.1	11.2
6	6.7	5.6	6.2	10.2	7.3	8.6	9.2	7.8	8.4	13.2	9.1	11.2
7	5.6	4.3	4.9	11.1	8.2	9.5	9.1	7.3	8.1	14.6	10.0	12.4
8	5.2	4.2	4.7	9.9	5.9	8.8	8.9	7.0	7.9	14.6	11.4	13.1
9	5.5	4.2	4.9	8.6	7.4	7.9	9.1	6.9	7.9	13.8	10.5	12.3
10	4.5	3.7	4.1	8.1	6.9	7.5	8.6	7.8	8.2	14.0	10.2	12.2
11	4.9	3.5	4.2	8.2	6.9	7.6	10.1	7.3	8.6	15.5	10.9	13.3
12	5.3	3.5	4.4	9.2	7.5	8.2	8.9	7.7	8.3	16.3	12.6	14.3
13	5.1	3.1	4.1	9.4	7.9	8.5	9.1	7.0	8.0	15.3	12.9	14.2
14	6.2	3.9	4.9	9.6	7.7	8.4	9.4	6.5	8.0	14.9	12.6	13.2
15	6.1	4.9	5.5	8.4	7.2	7.9	11.1	6.8	9.0	13.1	12.5	12.8
16	6.2	4.9	5.8	7.6	6.6	7.1	12.1	8.5	10.4	13.1	11.4	12.3
17	5.1	4.1	4.6	8.0	6.8	7.4	12.0	9.7	10.9	12.3	10.5	11.6
18	6.2	4.4	5.2	9.9	8.0	9.0	12.3	10.2	11.2	13.2	10.5	11.7
19	6.6	5.0	5.7	9.8	8.1	9.0	11.5	9.5	10.5	13.4	10.5	12.0
20	7.3	5.2	6.1	9.4	6.3	8.0	11.1	9.6	10.3	13.8	10.4	12.1
21	7.8	6.4	7.0	9.5	6.8	8.1	11.7	8.4	10.1	15.6	11.1	13.2
22	7.5	5.8	6.7	9.7	6.3	8.0	10.6	9.2	10.0	18.3	13.9	15.9
23	7.7	6.1	6.8	10.3	6.4	8.4	11.4	9.6	10.5	18.6	15.3	16.9
24	7.2	5.1	6.2	11.3	8.0	9.7	14.2	10.0	12.0	17.8	15.1	16.4
25	6.5	4.0	5.3	10.6	9.5	10.1	15.5	11.1	13.4	17.1	14.2	15.7
26	6.2	3.3	4.8	10.0	8.5	9.2	16.1	13.1	14.5	17.3	14.1	15.7
27	6.8	4.6	5.6	8.9	7.9	8.3	14.7	11.9	12.9	16.6	13.8	14.9
28	6.8	4.3	5.4	9.9	8.7	9.2	12.7	11.1	11.8	15.2	12.9	13.9
29	---	---	---	10.2	7.9	9.1	11.4	10.1	10.8	13.8	10.8	12.3
30	---	---	---	10.9	8.8	9.9	11.9	10.6	11.3	15.1	11.5	13.2
31	---	---	---	10.5	9.5	10.1	---	---	---	17.1	12.9	14.8
MONTH	8.5	3.1	5.6	11.3	4.2	8.2	16.1	6.2	9.8	18.6	8.9	13.1
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	16.8	13.4	14.8	15.6	14.3	15.0	16.1	14.2	15.1	16.9	16.2	16.6
2	13.4	12.1	12.8	16.5	14.3	15.1	17.6	15.7	16.5	17.1	15.6	16.3
3	13.2	11.8	12.5	17.1	14.7	15.7	17.2</					

WILLAMETTE RIVER BASIN

14211500 JOHNSON CREEK AT SYCAMORE, OR

LOCATION.--Lat 45°28'40", long 122°30'24", in lot 2, SW 1/4 sec.13, T.1 S., R.2 E., Multnomah County, Hydrologic Unit 17090012, on left bank, 2.8 mi east of I-205 in Portland, and at mile 10.2.

DRAINAGE AREA.--26.8 mi².

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 sea level.

REMARKS.--Records fair except for estimated daily discharges, which are poor. 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.--61 years (water years 1941-2001), 53.9 ft³/s, 27.63 in/yr, 39,030 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,620 ft³/s Dec. 22, 1964, gage height, 14.68 ft; maximum gage height, 15.30 ft Nov. 19, 1996; minimum discharge, 0.08 ft³/s Aug. 21, 1966.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 1	1000	*258	*5.21				

Minimum recorded discharge, 0.94 ft³/s Sept. 24, but may have been less during period of backwater effect, from beaver dam, Sept. 14-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	77	5.4	26	17	20	20	65	87	11	3.6	2.6	e2.4
2	12	4.8	35	16	72	30	53	73	9.1	3.2	2.4	e2.4
3	5.9	3.3	24	14	56	23	50	52	8.6	3.1	2.3	e2.4
4	4.1	7.8	18	14	128	21	37	38	6.9	2.9	2.2	e3.2
5	e3.2	6.1	15	16	96	20	36	29	9.6	3.1	2.3	e2.8
6	e2.6	12	13	13	67	16	43	23	7.2	2.8	e2.4	e2.4
7	e2.4	7.2	12	12	48	15	35	19	5.4	2.7	e2.2	e2.0
8	e2.2	52	11	13	38	34	31	16	4.9	2.6	e2.0	e1.8
9	e15	19	12	13	32	60	28	13	5.9	2.4	e2.0	e1.6
10	22	13	10	13	27	32	32	12	4.9	2.6	e1.7	e1.4
11	7.0	9.1	8.9	11	23	25	76	11	19	2.5	e1.6	e1.4
12	4.5	7.1	8.1	14	19	22	48	9.7	13	2.2	e1.8	e1.3
13	5.9	6.5	14	16	16	19	43	8.4	7.1	2.1	e1.9	e1.3
14	4.2	6.4	63	78	15	17	35	27	5.8	2.1	e1.7	e1.2
15	2.9	5.4	88	51	15	28	29	31	4.7	1.9	e1.7	e1.2
16	2.3	4.4	62	38	27	27	25	28	4.6	2.3	e1.6	e1.2
17	2.0	3.7	94	30	19	66	39	16	4.4	3.0	e1.7	e1.4
18	6.6	3.4	50	25	20	128	24	13	4.3	3.0	e1.6	e1.3
19	3.1	3.3	56	27	17	156	21	11	3.8	2.8	e1.5	e1.2
20	45	3.3	49	21	15	94	38	9.7	3.5	2.5	e1.5	e1.2
21	20	3.3	70	29	21	65	28	9.2	3.3	2.4	e1.4	e1.1
22	11	3.6	186	23	23	47	24	8.1	3.1	2.4	e15	e1.1
23	6.7	26	157	21	19	36	36	7.3	3.1	2.3	e17	e1.0
24	4.8	21	113	34	17	41	28	6.6	9.1	2.5	e7.0	1.1
25	3.9	21	71	28	15	91	23	6.4	6.2	2.2	e4.6	18
26	4.7	19	50	23	13	72	20	7.1	4.9	1.9	e3.4	19
27	12	75	38	19	12	123	18	5.6	12	1.8	e2.8	9.8
28	45	29	31	18	11	147	19	6.1	7.8	5.7	e2.4	6.5
29	11	56	25	21	---	107	15	6.0	5.2	2.6	e2.2	4.8
30	6.6	46	25	23	---	74	115	5.6	4.1	9.0	e2.0	2.8
31	5.4	---	21	23	---	81	---	4.8	---	3.6	e2.0	---
TOTAL	361.0	483.1	1456.0	754	901	1737	1114	599.6	202.5	89.8	98.5	100.3
MEAN	11.6	16.1	47.0	24.3	32.2	56.0	37.1	19.3	6.75	2.90	3.18	3.34
MAX	77	75	186	78	128	156	115	87	19	9.0	17	19
MIN	2.0	3.3	8.1	11	11	15	15	4.8	3.1	1.8	1.4	1.0
AC-FT	716	958	2890	1500	1790	3450	2210	1190	402	178	195	199
CFSM	.44	.61	1.77	.92	1.21	2.11	1.40	.73	.25	.11	.12	.13
IN.	.51	.68	2.04	1.06	1.26	2.44	1.56	.84	.28	.13	.14	.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2001, BY WATER YEAR (WY)

	MEAN	11.5	72.9	126	139	120	85.8	48.6	26.7	11.2	3.24	2.02	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	.64	.44	.55	
(WY)	1966	1953	1977	1977	1977	1992	1942	1966	1966	1973	1970	1967	

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1941 - 2001

ANNUAL TOTAL	12879.8	7896.8	
ANNUAL MEAN	35.2	21.6	53.9
HIGHEST ANNUAL MEAN			91.7
LOWEST ANNUAL MEAN			15.6
HIGHEST DAILY MEAN	349	186	2150
LOWEST DAILY MEAN	1.2	1.0	.10
ANNUAL SEVEN-DAY MINIMUM	1.5	1.1	.11
ANNUAL RUNOFF (AC-FT)	25550	15660	39030
ANNUAL RUNOFF (CFSM)	1.33	.82	2.03
ANNUAL RUNOFF (INCHES)	18.08	11.09	27.63
10 PERCENT EXCEEDS	97	56	146
50 PERCENT EXCEEDS	12	12	15
90 PERCENT EXCEEDS	2.0	2.0	1.2

e Estimated

WILLAMETTE RIVER BASIN

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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, 22.0°C Aug. 10; minimum, 1.6°C Nov. 18.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	17.5	15.4	16.6	9.8	9.3	9.5	7.2	6.2	6.7	6.0	4.8	5.2
2	15.4	13.5	14.4	10.5	9.6	10.1	7.0	6.2	6.6	5.3	4.5	4.8
3	13.5	12.2	12.8	11.0	10.3	10.6	7.0	5.9	6.6	5.3	4.6	4.9
4	12.7	10.4	11.6	10.9	10.2	10.4	5.9	4.8	5.4	6.6	5.3	5.9
5	12.1	10.8	11.4	10.5	9.9	10.1	4.8	4.1	4.5	7.8	6.5	7.1
6	11.8	11.0	11.5	10.4	9.3	10.0	4.1	3.2	3.7	6.8	5.5	6.1
7	12.4	11.3	11.8	9.3	8.5	8.9	3.6	2.9	3.2	5.5	4.8	5.1
8	11.9	10.4	11.3	9.1	8.8	8.9	3.6	2.6	3.1	5.1	4.7	4.9
9	13.2	11.5	12.2	8.8	7.8	8.4	4.9	3.4	4.3	4.7	3.9	4.4
10	13.2	12.2	12.6	7.8	5.6	6.7	5.5	4.6	5.0	4.9	4.2	4.6
11	12.8	12.0	12.4	5.6	4.0	4.9	4.6	2.5	3.6	5.4	4.5	4.9
12	12.9	12.3	12.6	4.2	3.3	3.8	2.5	2.0	2.3	6.4	5.1	5.7
13	13.3	12.3	12.7	4.3	3.6	3.9	2.2	1.8	2.0	6.4	5.8	6.0
14	13.0	11.6	12.2	4.3	3.3	3.8	4.3	1.8	2.7	6.1	5.5	5.9
15	11.6	10.0	10.8	4.0	2.9	3.4	5.8	4.3	5.3	6.1	5.2	5.9
16	12.5	11.0	11.7	3.6	2.4	3.0	6.9	5.8	6.2	5.2	3.5	4.2
17	12.4	10.9	11.8	3.0	2.3	2.7	6.9	6.0	6.5	4.2	3.2	3.7
18	13.7	12.4	13.1	2.8	1.6	2.2	6.0	5.2	5.4	5.2	4.2	4.7
19	13.0	11.2	12.1	2.9	1.8	2.4	6.1	5.3	5.7	6.0	5.1	5.5
20	13.8	12.6	13.3	2.7	2.2	2.5	6.1	5.4	5.8	5.5	4.6	5.0
21	13.1	11.4	12.1	3.0	2.5	2.7	5.4	4.4	4.8	5.6	4.5	5.0
22	11.4	9.7	10.3	2.8	1.8	2.2	6.7	4.9	5.6	5.6	4.9	5.3
23	10.5	9.2	9.7	4.5	2.1	3.0	7.0	6.7	6.9	5.0	4.5	4.8
24	10.4	8.6	9.5	4.8	4.3	4.5	7.5	6.8	7.1	5.6	4.8	5.2
25	10.9	9.5	10.2	5.8	4.2	4.8	7.1	6.2	6.4	5.4	4.7	5.1
26	11.1	10.2	10.7	6.5	5.7	6.0	6.4	6.1	6.2	5.2	4.5	4.8
27	12.0	10.9	11.4	7.5	6.5	7.1	6.2	5.9	6.0	4.6	3.7	4.1
28	11.7	10.9	11.2	6.5	5.5	5.8	5.9	5.0	5.5	4.0	3.0	3.5
29	11.3	10.2	10.9	6.7	5.4	5.9	5.1	4.3	4.7	5.4	4.0	4.8
30	10.2	8.6	9.5	7.5	6.7	7.1	6.1	5.1	5.6	5.6	5.1	5.3
31	9.8	8.4	9.2	---	---	---	6.3	5.5	5.8	5.9	5.0	5.5
MONTH	17.5	8.4	11.7	11.0	1.6	5.8	7.5	1.8	5.1	7.8	3.0	5.1

WILLAMETTE RIVER BASIN

14211500 JOHNSON CREEK AT SYCAMORE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	5.8	4.5	5.2	6.2	4.3	5.2	9.8	8.9	9.3	11.0	9.9	10.5
2	7.1	5.8	6.5	6.8	5.6	6.2	9.1	8.0	8.6	11.7	9.5	10.4
3	7.2	6.1	6.6	6.2	4.9	5.6	8.9	7.6	8.2	12.5	9.6	11.0
4	8.5	7.2	7.7	6.1	5.2	5.7	9.4	6.9	8.2	12.7	11.1	12.0
5	8.0	6.8	7.3	8.0	6.0	6.9	9.1	7.7	8.5	12.2	11.0	11.7
6	6.8	6.0	6.4	9.6	7.3	8.3	9.3	8.2	8.7	12.8	9.7	11.3
7	6.0	4.8	5.2	10.7	8.4	9.4	9.1	7.7	8.3	14.3	10.7	12.5
8	5.1	4.4	4.8	10.1	6.0	9.1	9.0	7.5	8.2	15.1	12.3	13.6
9	5.2	4.4	4.8	8.3	5.8	7.5	8.9	7.5	8.2	14.5	11.7	13.1
10	4.4	3.8	4.0	8.0	7.2	7.6	8.7	8.0	8.4	14.7	11.5	13.3
11	4.4	3.4	3.9	8.0	7.2	7.7	9.7	7.6	8.6	16.1	12.1	13.9
12	4.8	3.6	4.1	9.0	7.6	8.2	9.1	8.0	8.5	17.0	13.6	15.1
13	4.6	3.2	3.9	9.2	8.0	8.6	8.8	7.5	8.2	16.5	14.1	15.3
14	5.4	3.6	4.3	9.4	8.0	8.6	9.0	7.2	8.2	15.2	13.3	13.9
15	5.7	4.6	5.1	8.4	7.6	8.1	10.4	7.6	9.0	13.4	12.6	13.0
16	6.1	5.1	5.7	7.6	7.0	7.3	11.9	9.3	10.6	13.3	11.9	12.6
17	5.1	4.1	4.4	7.8	6.9	7.2	12.0	10.6	11.4	12.6	11.2	12.1
18	5.6	4.1	4.8	9.8	7.8	8.7	12.6	10.8	11.6	13.9	11.1	12.4
19	6.2	4.8	5.4	9.5	8.6	9.1	11.7	10.1	10.9	14.4	11.7	13.0
20	6.8	5.0	5.7	9.1	7.2	8.3	11.1	10.0	10.6	15.2	11.4	13.2
21	7.3	6.1	6.7	9.1	7.4	8.3	11.5	9.1	10.2	17.1	12.5	14.6
22	7.1	6.1	6.6	9.0	6.9	8.1	10.8	9.8	10.4	19.8	14.9	17.1
23	7.3	6.2	6.7	9.5	7.2	8.5	11.3	10.1	10.6	20.8	16.9	18.7
24	7.0	5.6	6.1	11.3	8.7	9.8	13.9	10.5	12.2	20.0	17.0	18.4
25	6.1	4.4	5.2	11.3	10.2	10.7	15.5	12.2	13.9	19.7	16.0	17.9
26	5.7	3.5	4.5	10.3	9.0	9.5	16.8	14.1	15.3	19.9	16.3	18.1
27	6.3	4.3	5.0	9.2	8.1	8.5	15.7	13.2	14.0	18.1	15.8	16.8
28	6.3	4.2	5.0	9.7	8.6	9.2	13.2	11.9	12.5	16.5	14.0	15.3
29	---	---	---	9.8	8.3	9.1	12.2	11.0	11.6	15.7	12.1	13.9
30	---	---	---	10.7	9.2	10.0	12.0	11.0	11.6	17.3	12.8	15.0
31	---	---	---	10.5	9.8	10.3	---	---	---	19.5	13.9	16.7
MONTH	8.5	3.2	5.4	11.3	4.3	8.2	16.8	6.9	10.1	20.8	9.5	14.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	18.9	14.9	16.2	18.8	15.6	17.2	18.3	15.0	16.7	18.8	17.1	17.9
2	15.0	13.8	14.3	19.6	15.6	17.7	19.9	16.8	18.2	18.1	16.0	17.1
3	14.7	13.2	13.9	20.2	16.5	18.6	19.4	17.5	18.3	17.8	15.5	16.8
4	14.9	12.1	13.5	21.0	17.5	19.3	19.2	17.4	18.1	17.8	15.7	16.6
5	13.9	13.2	13.6	19.3	17.0	18.2	19.9	16.1	18.0	16.4	14.8	15.5
6	16.2	13.0	14.5	19.4	16.5	17.9	20.9	17.0	18.9	15.4	13.7	14.7
7	18.4	13.9	16.1	19.5	15.9	17.8	20.6	18.1	19.4	16.2	13.9	15.0
8	19.6	15.8	17.7	20.5	16.5	18.6	20.9	16.7	18.8	16.6	13.5	15.1
9	18.8	16.6	17.5	21.7	17.5	19.7	21.7	17.1	19.4	16.9	14.0	15.5
10	16.9	15.1	16.1	21.3	18.5	20.0	22.0	18.4	20.1	16.7	13.8	15.4
11	16.3	14.5	15.3	21.4	17.6	19.5	21.3	18.1	19.8	17.1	14.1	15.6
12	14.5	13.4	13.9	21.2	17.9	19.5	21.8	17.9	19.8	17.7	14.9	16.3
13	16.1	12.0	14.0	20.4	17.1	18.7	21.2	18.6	19.9	17.7	15.2	16.5
14	16.4	13.8	15.1	19.5	16.6	17.9	20.1	18.2	19.0	18.2	15.5	16.8
15	16.2	13.6	14.7	17.4	16.1	16.7	20.1	17.5	18.7	19.0	17.0	17.8
16	15.8	12.8	14.4	17.0	15.6	16.2	18.8	17.3	17.9	18.4	16.0	16.9
17	15.5	12.8	14.3	16.8	15.5	16.1	18.8	16.2	17.4	16.4	15.2	15.8
18	16.7	12.4	14.6	17.1	15.7	16.3	18.6	16.6	17.6	16.0	14.4	15.1
19	18.3	13.4	16.0	18.5	15.7	17.0	17.9	15.4	16.8	15.4	13.8	14.7
20	19.7	15.7	17.8	17.5	16.5	16.9	18.0	15.0	16.6	15.1	12.2	13.7
21	20.5	16.6	18.7	18.1	16.0	16.8	17.5	15.2	16.4	15.1	12.5	13.8
22	19.3	17.1	18.1	19.0	15.5	17.2	18.5	16.5	17.4	15.9	13.0	14.4
23	17.3	15.1	16.4	19.9	17.0	18.0	18.4	16.9	17.6	16.3	13.7	15.0
24	16.7	15.1	15.7	19.6	17.0	18.2	18.2	15.8	16.9	16.5	14.1	15.2
25	16.7	13.4	15.2	19.9	16.8	18.2	18.2	14.8	16.6	15.9	14.7	15.2
26	17.0	15.1	16.2	19.5	16.2	17.8	19.0	16.0	17.6	15.6	14.6	15.3
27	18.1	16.4	17.2	19.2	15.9	17.5	18.8	16.4	17.7	14.6	13.6	14.1
28	17.7	16.6	17.2	18.9	17.4	18.1	19.1	17.2	18.3	13.7	12.0	12.8
29	18.6	14.8	16.8	17.6	16.3	16.9	19.4	17.9	18.4	13.2	11.5	12.5
30	18.0	15.4	16.9	17.3	16.2	16.7	19.4	16.9	18.2	14.3	12.0	13.1
31	---	---	---	17.9	15.8	16.7	19.2	17.2	18.1	---	---	---
MONTH	20.5	12.0	15.7	21.7	15.5	17.8	22.0	14.8	18.1	19.0	11.5	15.3

YEAR	22.0	1.6	11.1									
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WILLAMETTE RIVER BASIN

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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, 22.7°C May 23, 2001; minimum, 4.0°C Dec. 22, 1998.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 22.7°C May 23; minimum, 7.1°C Dec. 12.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	15.1	14.0	14.8	12.0	11.5	11.8	10.6	9.7	10.0	10.2	9.2	9.6
2	14.3	12.9	13.7	12.5	11.9	12.2	10.5	9.8	10.1	10.2	8.9	9.3
3	14.6	12.0	13.2	13.4	12.2	12.6	10.5	9.4	10.1	9.5	8.8	9.1
4	14.5	11.9	13.0	12.9	11.9	12.2	9.7	8.6	9.1	10.9	9.2	10.1
5	14.2	12.0	12.9	12.2	11.5	11.8	9.4	8.3	8.7	11.5	10.0	10.8
6	14.3	11.7	12.8	12.0	11.2	11.7	8.9	7.8	8.2	10.3	9.1	9.7
7	15.0	12.0	13.2	11.4	10.8	11.1	8.8	8.0	8.2	9.2	8.6	8.8
8	14.8	11.9	13.3	11.7	10.9	11.2	9.1	7.5	8.3	9.7	8.6	9.0
9	13.9	13.1	13.4	11.1	10.5	10.7	9.7	8.8	9.2	9.1	8.3	8.8
10	13.1	12.6	12.7	10.5	9.2	9.8	10.2	9.1	9.5	9.3	8.7	9.0
11	13.4	12.5	12.9	9.8	8.4	9.0	9.1	7.4	8.1	9.9	8.7	9.2
12	13.3	12.9	13.1	9.5	8.1	8.7	7.8	7.1	7.4	10.7	9.6	10.0
13	13.9	12.8	13.2	9.1	8.4	8.7	7.5	7.2	7.3	10.1	9.6	9.9
14	14.3	12.3	13.2	9.4	8.1	8.7	8.8	7.2	7.8	10.4	9.1	9.7
15	13.6	11.9	12.6	9.8	8.4	8.9	9.7	8.4	9.0	10.1	8.8	9.4
16	14.0	12.5	13.2	9.5	8.1	8.7	10.2	8.9	9.6	9.3	7.9	8.4
17	14.5	12.3	13.4	9.1	7.8	8.3	10.2	8.8	9.5	9.4	7.6	8.4
18	14.5	13.4	13.9	8.9	7.5	8.1	9.5	8.4	8.8	9.9	8.3	9.0
19	14.0	12.2	13.1	8.6	7.5	8.1	9.8	8.9	9.2	11.0	9.0	9.7
20	14.2	13.1	13.5	8.6	7.7	8.0	9.2	8.6	9.1	9.4	8.5	9.0
21	13.6	12.2	12.8	8.9	7.7	8.2	8.6	7.8	8.2	10.2	8.5	9.2
22	13.4	11.4	12.1	9.4	7.8	8.4	10.2	8.3	9.1	10.1	8.5	9.2
23	12.8	10.9	11.8	8.9	8.1	8.5	10.3	9.2	9.6	9.0	8.2	8.5
24	13.1	10.8	11.8	10.2	8.9	9.4	10.8	9.5	10.0	9.9	8.5	9.1
25	13.1	11.7	12.3	10.0	9.2	9.7	10.3	9.2	9.5	9.6	8.7	9.1
26	12.8	12.0	12.3	10.8	9.8	10.3	9.7	9.1	9.3	9.9	8.2	8.8
27	13.1	12.3	12.6	10.9	9.7	10.5	10.2	9.2	9.6	9.7	8.0	8.5
28	12.6	11.9	12.2	10.0	9.1	9.5	10.2	8.8	9.4	9.6	7.6	8.4
29	12.9	11.7	12.1	10.2	8.9	9.5	9.7	8.0	8.8	10.8	8.7	9.5
30	12.6	11.2	11.7	10.8	9.7	10.2	10.0	8.9	9.3	9.7	9.1	9.5
31	12.5	11.4	11.8	---	---	---	10.2	9.4	9.7	10.4	8.7	9.5
MONTH	15.1	10.8	12.9	13.4	7.5	9.8	10.8	7.1	9.0	11.5	7.6	9.2

WILLAMETTE RIVER BASIN

14211542 CRYSTAL SPRINGS CREEK AT BYBEE STREET, PORTLAND, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	10.7	9.0	9.8	10.5	9.3	9.9	13.0	11.3	12.0	14.8	11.8	12.9
2	11.1	10.2	10.5	11.8	9.3	10.3	12.5	10.7	11.5	15.6	12.1	13.5
3	10.8	9.9	10.3	11.4	9.3	10.3	12.5	10.2	11.2	17.0	12.6	14.5
4	11.6	10.5	11.1	10.7	9.3	9.9	14.9	10.0	12.0	16.5	13.9	14.9
5	11.1	9.9	10.5	13.0	9.7	11.1	12.7	11.0	11.8	15.6	12.8	13.9
6	10.5	9.0	9.8	14.4	10.4	12.0	12.7	10.7	11.4	17.3	12.3	14.5
7	10.4	8.0	8.9	15.5	11.3	13.0	12.7	10.2	11.1	18.5	13.6	15.7
8	9.6	8.3	8.8	13.0	10.8	12.0	12.8	10.2	11.2	17.8	14.3	15.7
9	10.1	7.9	8.8	12.0	10.7	11.2	12.6	10.4	11.3	17.6	13.7	15.4
10	9.1	7.6	8.2	11.3	10.3	10.8	11.7	10.8	11.2	17.8	14.0	15.7
11	9.3	7.3	8.2	11.7	10.2	11.0	14.0	10.4	12.1	18.6	14.6	16.5
12	9.9	7.7	8.6	13.3	10.7	11.7	12.8	11.4	11.9	20.1	15.9	17.3
13	10.2	8.2	9.0	13.1	11.0	11.8	12.9	10.6	11.5	18.8	15.4	16.9
14	11.1	8.3	9.5	13.1	10.8	11.8	12.8	10.3	11.4	16.5	14.0	14.9
15	10.1	9.4	9.8	11.6	10.5	11.1	14.3	10.4	12.5	15.1	13.6	14.3
16	10.4	8.7	9.6	11.1	10.2	10.6	15.1	12.1	13.5	15.9	12.8	14.3
17	9.3	8.0	8.6	11.6	10.2	10.8	15.1	12.3	13.6	15.3	12.9	14.0
18	10.7	8.3	9.3	12.8	11.3	12.0	15.7	12.8	13.8	16.2	12.8	14.2
19	10.8	8.8	9.6	13.8	11.1	12.2	15.1	12.5	13.5	16.9	13.4	14.9
20	11.9	9.0	10.1	13.6	10.0	11.6	14.5	12.6	13.4	17.8	13.4	15.4
21	11.8	9.9	10.6	13.9	10.7	11.9	16.1	11.7	13.5	19.1	14.6	16.7
22	11.8	9.7	10.5	14.2	10.5	12.3	13.4	12.3	12.9	22.1	16.2	18.8
23	11.8	10.1	10.7	15.3	10.8	12.9	14.3	12.1	13.0	22.7	17.3	19.8
24	12.1	9.7	10.5	14.5	11.9	13.1	17.3	12.6	14.8	20.4	16.5	18.3
25	12.1	9.1	10.2	13.9	12.2	12.9	18.3	14.3	16.2	20.4	16.5	18.3
26	11.6	9.0	10.0	13.6	11.4	12.3	19.9	15.6	17.4	20.6	16.4	18.4
27	12.2	9.1	10.2	11.6	11.1	11.2	16.2	14.3	15.4	18.9	16.5	17.7
28	11.4	8.8	10.0	12.8	11.1	11.9	15.1	13.2	14.0	16.9	14.8	16.1
29	---	---	---	13.8	10.7	12.1	14.5	12.5	13.2	18.1	13.6	15.7
30	---	---	---	14.2	11.6	12.8	14.2	12.6	13.2	19.3	14.8	16.9
31	---	---	---	13.3	11.9	12.6	---	---	---	20.7	15.9	18.4
MONTH	12.2	7.3	9.7	15.5	9.3	11.6	19.9	10.0	12.9	22.7	11.8	16.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	19.1	15.0	16.9	19.9	15.4	17.3	19.4	15.4	17.2	18.4	16.1	17.0
2	17.3	14.0	15.3	20.7	16.0	18.2	20.6	16.4	18.2	19.0	15.0	16.7
3	17.0	14.3	15.4	21.2	17.4	19.1	19.1	16.7	17.7	17.4	15.0	16.2
4	17.0	13.7	15.3	21.5	17.8	19.2	18.5	16.4	17.3	17.9	15.2	16.1
5	15.4	14.3	14.9	20.2	16.6	18.2	20.6	15.6	17.9	16.8	14.1	15.2
6	18.1	13.7	15.8	21.2	16.6	18.3	21.4	16.9	18.7	16.6	13.8	15.0
7	20.6	15.4	17.8	20.8	16.0	18.2	20.4	16.7	18.5	17.5	14.2	15.5
8	21.6	16.5	18.8	21.5	16.8	19.0	20.7	16.5	18.5	17.9	14.2	15.8
9	18.6	15.9	17.5	22.3	17.9	19.9	21.9	17.5	19.5	18.5	15.0	16.5
10	18.6	15.1	16.6	21.2	18.2	19.7	22.4	18.0	20.0	18.2	15.0	16.5
11	16.5	14.4	15.5	21.3	16.6	18.8	21.2	17.5	19.2	18.7	15.3	16.7
12	16.0	13.8	14.7	21.2	17.1	19.2	21.2	17.6	19.4	18.5	15.6	16.9
13	18.4	13.2	15.6	20.8	17.4	19.1	20.7	17.6	19.2	18.8	15.8	17.1
14	17.8	15.1	16.3	20.7	16.6	18.3	19.9	16.9	18.2	17.9	15.8	16.9
15	18.1	14.6	15.9	17.8	16.2	16.9	20.4	16.4	18.1	18.2	16.3	17.0
16	18.7	14.4	16.1	17.6	15.5	16.4	18.1	16.5	17.1	17.9	15.2	16.3
17	18.2	14.4	16.0	17.4	15.4	16.1	19.1	15.3	17.0	17.2	14.9	15.8
18	18.9	14.1	16.3	17.4	15.1	16.1	18.1	16.2	17.1	16.3	14.9	15.4
19	20.3	15.4	17.7	19.5	15.2	17.1	18.8	15.0	16.7	16.8	13.8	15.2
20	21.2	17.0	19.0	17.3	16.3	16.7	19.6	15.4	17.2	17.5	13.6	15.3
21	22.2	17.6	19.4	18.6	15.4	16.7	17.0	15.9	16.4	17.2	14.1	15.4
22	19.7	16.6	18.1	19.9	15.5	17.5	16.4	15.6	16.0	17.7	14.4	16.0
23	18.7	15.7	17.1	20.5	16.5	18.2	16.7	15.0	15.8	18.0	15.0	16.3
24	17.1	15.1	16.0	20.3	16.8	18.3	18.5	14.6	16.3	17.4	14.9	16.1
25	17.9	13.7	15.8	20.7	16.8	18.5	19.1	15.3	17.1	16.0	14.4	15.0
26	17.9	15.7	16.8	20.7	16.6	18.4	19.6	16.2	17.9	15.0	13.8	14.3
27	19.4	15.7	17.2	20.6	16.2	18.3	20.0	16.2	17.8	15.2	13.0	13.9
28	17.3	15.8	16.6	18.1	16.5	17.6	19.8	16.6	18.0	16.0	12.7	14.1
29	19.7	14.9	17.1	17.2	15.9	16.5	19.3	16.8	17.7	16.1	12.8	14.3
30	18.4	15.8	17.2	18.1	15.4	16.4	20.1	16.3	18.0	16.4	13.4	14.8
31	---	---	---	18.5	15.1	16.5	19.5	16.4	17.8	---	---	---
MONTH	22.2	13.2	16.6	22.3	15.1	17.9	22.4	14.6	17.8	19.0	12.7	15.8

YEAR	22.7	7.1	13.3
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WILLAMETTE RIVER BASIN

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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 mi²(revised).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1989 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is sea level, from State of Oregon.

REMARKS.--No estimated daily discharges. Records fair. 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.--12 years (water years 1990-2001), 80.6 ft³/s, 21.15 in/yr, 58,420 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,170 ft³/s Feb. 8, 1996, gage height 30.27 ft; maximum gage height, 34.43 ft, Feb. 9, 1996, backwater from Willamette River; minimum discharge, 10 ft³/s July 1, 3-5, 1994.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 28	0030	*278	*26.04				

Minimum discharge, 12 ft³/s July 11, Sept. 12, 18, 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101	23	46	36	38	35	88	125	22	16	17	14
2	37	24	53	33	86	55	74	103	27	18	16	14
3	24	22	44	31	79	45	70	76	25	16	15	14
4	21	21	37	31	138	40	59	62	23	15	15	14
5	20	23	33	32	124	41	54	52	25	15	15	14
6	18	25	31	31	87	35	64	44	24	15	15	15
7	17	24	29	28	68	33	57	39	20	15	14	14
8	18	64	28	27	58	41	51	34	18	15	14	14
9	27	41	29	30	53	94	47	30	19	16	14	14
10	58	31	28	30	46	55	50	27	19	16	14	13
11	27	27	26	27	43	46	93	27	28	14	14	13
12	23	25	25	31	38	41	68	25	42	14	14	13
13	23	24	33	75	34	37	64	23	23	16	14	13
14	24	24	69	97	32	34	57	40	22	14	15	13
15	20	23	110	71	32	44	50	59	19	14	14	14
16	20	22	77	58	50	49	46	55	18	16	14	14
17	21	21	114	50	40	80	62	35	18	16	15	14
18	24	20	71	44	39	132	45	30	18	16	14	13
19	22	20	78	48	36	185	41	27	18	16	15	13
20	71	20	70	40	33	116	55	25	18	15	15	14
21	43	19	85	50	39	85	52	25	17	15	15	14
22	32	20	207	45	44	65	44	23	16	14	33	14
23	27	43	177	40	38	55	58	22	15	17	50	14
24	23	46	143	53	35	54	51	20	18	15	21	14
25	21	35	91	48	33	114	44	20	26	15	17	24
26	22	44	69	43	31	92	40	20	23	15	16	38
27	28	85	58	38	29	131	37	19	33	14	15	21
28	69	51	50	35	28	185	41	18	25	18	15	17
29	33	71	44	39	---	134	35	20	20	19	15	15
30	27	69	43	41	---	96	135	20	18	24	15	15
31	24	---	40	42	---	100	---	18	---	19	14	---
TOTAL	965	1007	2038	1324	1431	2349	1732	1163	657	493	519	460
MEAN	31.1	33.6	65.7	42.7	51.1	75.8	57.7	37.5	21.9	15.9	16.7	15.3
MAX	101	85	207	97	138	185	135	125	42	24	50	38
MIN	17	19	25	27	28	33	35	18	15	14	14	13
AC-FT	1910	2000	4040	2630	2840	4660	3440	2310	1300	978	1030	912
CFSM	.60	.65	1.27	.82	.99	1.46	1.11	.72	.42	.31	.32	.30
IN.	.69	.72	1.46	.95	1.03	1.69	1.24	.84	.47	.35	.37	.33

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 2001, BY WATER YEAR (WY)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	37.9	105	150	165	169	110	78.1	60.2	33.5	22.7	20.5	21.6
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	16.8	18.5	65.7	42.7	34.0	44.1	39.8	22.2	16.7	14.1	14.8	15.3
(WY)	1994	1994	2001	2001	1993	1992	2000	1994	1992	1994	1994	2001

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1990 - 2001

ANNUAL TOTAL	21675	14138	
ANNUAL MEAN	59.2	38.7	80.6
HIGHEST ANNUAL MEAN			137
LOWEST ANNUAL MEAN			38.7
HIGHEST DAILY MEAN	499	207	1700
LOWEST DAILY MEAN	16	13	10
ANNUAL SEVEN-DAY MINIMUM	16	13	11
ANNUAL RUNOFF (AC-FT)	42990	28040	58420
ANNUAL RUNOFF (CFSM)	1.14	.75	1.56
ANNUAL RUNOFF (INCHES)	15.57	10.15	21.15
10 PERCENT EXCEEDS	136	75	178
50 PERCENT EXCEEDS	31	28	40
90 PERCENT EXCEEDS	17	14	16

WILLAMETTE RIVER BASIN

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, 24.7°C Aug. 9, 10, 2001; minimum, 0.5°C Dec. 22, 1998.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 24.7°C Aug. 9, 10; minimum, 3.8°C Dec. 14.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	17.0	15.4	16.4	11.6	11.0	11.3	8.3	7.2	7.8	7.4	6.6	7.0
2	15.4	13.7	14.5	12.1	11.2	11.7	8.0	7.4	7.8	7.6	6.3	6.9
3	14.7	12.0	13.3	13.5	11.8	12.5	8.1	6.9	7.7	7.2	5.9	6.5
4	14.7	11.5	13.1	12.7	11.4	12.0	7.3	6.3	6.8	8.9	7.0	7.9
5	14.3	11.7	12.9	11.7	10.9	11.3	6.9	5.8	6.2	9.2	8.0	8.8
6	14.4	11.4	12.8	11.6	10.5	11.2	6.4	5.1	5.7	8.1	7.1	7.6
7	15.4	11.7	13.4	10.5	9.6	10.2	6.3	5.2	5.7	7.2	6.4	6.8
8	15.4	11.6	13.5	10.4	9.4	9.8	6.4	4.8	5.7	7.5	6.5	6.9
9	14.2	13.5	13.7	9.6	8.8	9.2	7.6	6.4	7.0	6.7	5.6	6.3
10	13.6	12.5	12.8	8.8	7.3	8.1	7.8	6.7	7.2	7.1	6.2	6.7
11	13.7	12.4	13.0	7.7	6.1	6.9	7.1	4.7	5.7	7.9	6.4	7.1
12	13.5	13.0	13.2	7.4	5.7	6.6	5.2	4.5	4.9	8.8	7.5	8.0
13	14.2	12.8	13.4	7.3	6.5	6.9	5.1	3.9	4.7	8.0	6.6	6.9
14	14.4	12.1	13.2	8.1	6.1	7.0	4.8	3.8	4.1	6.7	6.0	6.4
15	13.5	11.4	12.3	8.2	6.3	7.1	5.9	4.2	5.2	7.0	5.7	6.5
16	14.4	12.3	13.2	7.9	6.1	6.9	7.5	5.9	6.7	5.7	4.6	5.2
17	14.8	12.2	13.6	7.4	5.8	6.5	7.1	6.0	6.6	5.7	3.9	4.8
18	15.3	13.7	14.4	7.4	5.4	6.3	6.5	5.6	6.0	6.7	5.4	6.0
19	14.2	12.0	13.3	7.3	5.6	6.4	6.6	5.7	6.1	7.8	6.3	6.8
20	14.1	13.1	13.6	7.3	6.0	6.5	6.4	5.8	6.2	6.6	5.9	6.2
21	13.3	11.8	12.7	7.7	6.0	6.7	5.8	5.0	5.2	6.8	5.8	6.3
22	12.4	10.6	11.5	7.6	5.7	6.6	6.5	5.2	5.7	7.2	6.0	6.5
23	12.5	10.2	11.3	6.6	5.2	6.0	7.2	6.5	6.9	6.5	5.5	6.0
24	12.5	9.9	11.3	7.2	5.2	6.3	7.6	6.9	7.2	6.7	5.7	6.2
25	13.0	11.2	12.0	8.2	6.7	7.3	7.4	6.6	6.9	6.8	5.4	6.1
26	12.7	11.6	12.1	8.7	6.8	7.7	7.0	6.3	6.6	7.0	5.3	6.1
27	12.9	12.0	12.4	8.6	7.0	7.9	7.5	6.4	6.9	6.7	4.8	5.7
28	12.4	11.0	11.6	7.5	6.3	6.9	7.1	5.8	6.6	6.5	4.3	5.4
29	12.4	11.1	11.7	7.3	6.5	6.8	6.7	5.1	5.9	7.6	6.1	6.7
30	12.1	10.3	11.1	8.5	7.0	7.8	7.5	6.5	6.8	7.0	6.2	6.6
31	11.9	10.4	11.2	---	---	---	8.0	6.6	7.2	7.8	5.8	6.8
MONTH	17.0	9.9	12.9	13.5	5.2	8.1	8.3	3.8	6.3	9.2	3.9	6.6

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	8.1	5.9	7.0	8.1	6.7	7.4	10.7	9.5	10.1	12.2	10.9	11.5
2	7.8	7.1	7.4	8.7	6.3	7.3	10.5	8.6	9.4	13.2	10.5	11.6
3	8.1	6.9	7.4	9.0	6.3	7.5	10.9	8.1	9.2	14.8	10.7	12.7
4	8.7	7.5	8.0	8.2	6.3	7.3	12.1	7.4	9.6	14.9	12.1	13.4
5	8.2	7.2	7.9	11.1	7.2	8.9	10.9	8.3	9.6	14.4	11.6	13.0
6	7.3	6.0	6.9	12.4	8.1	10.3	10.6	8.6	9.5	16.2	11.0	13.5
7	6.6	4.9	5.7	13.6	9.4	11.5	10.3	8.1	9.1	17.9	12.2	15.0
8	6.1	4.8	5.5	12.1	9.2	10.8	10.9	8.1	9.3	17.9	13.4	15.6
9	7.0	5.0	5.8	9.2	7.5	8.3	10.6	8.2	9.3	17.6	12.8	15.1
10	5.6	4.2	4.9	9.0	7.7	8.3	10.0	8.9	9.4	17.9	12.9	15.1
11	6.1	4.2	5.2	9.6	8.0	8.7	11.5	8.3	9.7	19.3	13.9	16.1
12	7.1	4.5	5.8	11.4	8.6	9.8	10.5	8.8	9.5	20.2	15.5	17.6
13	7.5	4.7	6.0	11.5	9.1	10.1	10.5	8.1	9.2	19.2	15.2	17.1
14	8.2	5.0	6.6	11.6	9.0	10.1	11.0	7.7	9.3	17.1	14.0	14.9
15	7.7	6.6	7.1	10.0	8.3	9.3	12.9	8.2	10.5	15.1	13.4	14.2
16	7.4	5.9	6.9	9.0	7.8	8.3	14.2	10.2	12.1	15.4	12.4	13.9
17	6.5	5.1	5.8	8.3	7.6	7.9	13.8	10.9	12.4	14.8	12.3	13.7
18	8.0	5.5	6.6	9.8	8.3	9.1	15.0	11.6	13.1	16.3	12.0	14.0
19	8.3	5.7	7.0	9.9	9.0	9.5	14.3	11.2	12.6	17.3	12.7	14.9
20	9.5	6.3	7.8	10.5	8.0	9.0	12.8	11.1	12.0	18.3	12.7	15.4
21	9.3	7.7	8.4	11.0	8.0	9.3	14.1	10.0	12.0	20.1	14.1	17.0
22	9.4	7.0	8.1	11.7	7.7	9.5	12.4	10.6	11.6	23.1	16.4	19.6
23	9.4	7.4	8.3	12.4	7.8	10.1	12.9	10.8	11.7	23.5	18.1	20.9
24	9.7	7.1	8.3	12.8	9.5	11.0	16.7	11.2	13.8	22.4	17.4	19.9
25	9.6	6.4	7.9	12.0	10.6	11.4	18.4	13.3	15.7	22.1	16.6	19.3
26	9.5	5.8	7.6	11.1	9.7	10.4	19.1	15.1	17.0	22.5	16.6	19.4
27	9.7	6.3	7.9	9.7	8.8	9.2	17.2	14.3	15.2	19.6	16.7	18.2
28	9.2	6.1	7.6	10.1	8.9	9.5	14.6	12.8	13.6	17.7	15.1	16.5
29	---	---	---	10.7	9.0	9.8	13.6	11.6	12.6	18.9	12.8	15.7
30	---	---	---	11.9	9.6	10.7	12.7	11.9	12.4	20.7	14.4	17.4
31	---	---	---	11.4	10.3	10.9	---	---	---	23.2	16.3	19.6
MONTH	9.7	4.2	7.0	13.6	6.3	9.4	19.1	7.4	11.4	23.5	10.5	15.9
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	20.5	15.6	17.6	21.4	15.8	18.5	21.0	15.6	18.2	19.6	16.9	18.3
2	17.5	14.1	15.7	22.1	16.2	19.1	22.5	16.9	19.5	20.2	15.6	17.8
3	17.1	14.1	15.6	23.0	17.3	20.1	20.2	17.5	18.8	18.9	15.6	17.3
4	17.4	13.2	15.4	23.7	18.0	20.7	19.8	17.1	18.5	19.5	15.9	17.4
5	15.8	14.3	15.1	21.9	16.6	19.1	22.5	16.4	19.3	17.6	14.3	16.0
6	19.0	13.8	16.3	22.0	16.3	19.0	23.5	17.7	20.5	17.6	13.8	15.7
7	21.8	15.6	18.6	22.4	16.0	19.2	22.7	17.4	20.1	18.9	14.3	16.3
8	23.0	17.3	19.9	23.4	17.0	20.2	23.2	17.0	20.0	19.7	14.3	16.9
9	20.2	17.0	18.5	24.2	18.2	21.2	24.7	17.9	21.1	20.3	15.2	17.6
10	19.1	15.3	17.1	23.0	19.0	21.0	24.7	19.0	21.8	20.2	15.3	17.7
11	17.6	15.0	16.0	23.3	17.2	20.3	23.9	18.4	21.1	20.5	15.6	17.9
12	16.4	13.8	14.9	23.1	17.6	20.4	24.2	18.7	21.3	20.7	16.1	18.2
13	19.4	12.9	16.0	22.8	17.4	20.0	23.5	18.8	21.1	21.0	16.2	18.5
14	18.5	15.1	16.7	22.0	16.6	19.2	21.3	17.7	19.4	20.0	16.5	18.2
15	18.6	14.6	16.3	19.2	16.4	17.3	22.1	17.2	19.5	20.1	17.1	18.4
16	18.9	14.1	16.5	18.6	15.7	17.0	19.9	17.2	18.2	19.7	15.8	17.8
17	18.6	14.1	16.1	18.0	15.7	16.7	21.4	16.2	18.6	18.6	15.3	16.7
18	19.9	13.8	16.8	18.3	15.6	16.9	19.9	16.7	18.3	17.3	15.1	16.1
19	22.0	15.1	18.4	21.5	15.9	18.4	20.8	15.3	18.0	18.1	14.3	16.2
20	23.2	17.0	20.0	18.8	16.6	17.4	21.1	15.7	18.3	18.5	13.6	16.0
21	23.8	17.6	20.6	20.0	16.0	17.7	18.7	16.1	17.2	18.4	14.2	16.3
22	20.6	17.5	18.9	22.0	15.9	18.8	18.4	16.5	17.4	19.6	14.7	17.0
23	19.6	15.5	17.6	21.7	16.9	19.1	18.4	17.0	17.6	19.7	15.5	17.5
24	17.9	15.5	16.3	22.1	17.3	19.5	20.1	15.5	17.7	19.1	15.5	17.2
25	19.0	14.1	16.4	22.5	17.0	19.6	21.1	15.8	18.3	17.3	15.5	16.0
26	18.5	15.9	17.3	22.4	16.6	19.5	21.9	16.7	19.2	16.1	14.9	15.5
27	19.6	16.6	18.0	22.3	16.5	19.4	21.4	16.8	19.2	15.7	13.6	14.6
28	18.2	16.4	17.3	20.0	17.5	18.5	22.4	17.5	19.8	16.3	12.7	14.5
29	21.0	15.2	18.0	17.9	16.6	17.3	21.1	17.8	19.2	17.1	12.8	14.9
30	19.6	16.2	18.0	18.8	16.0	17.3	22.2	17.1	19.5	17.9	13.8	15.8
31	---	---	---	20.1	16.0	17.9	21.4	17.2	19.3	---	---	---
MONTH	23.8	12.9	17.2	24.2	15.6	18.9	24.7	15.3	19.2	21.0	12.7	16.8
YEAR	24.7	3.8	12.5									

WILLAMETTE RIVER BASIN

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 mi².

PERIOD OF RECORD.--May 1992 to current year.

GAGE.--Water-stage recorder. Datum of gage is 205 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. No regulation or diversion. High flows affected to an unknown degree by two small ponds just upstream from station.

AVERAGE DISCHARGE.--9 years (water years 1993-2001), 5.72 ft³/s, 15.74 in/yr, 4,150 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 85 ft³/s Nov. 19, 1996, gage height, 6.18 ft, but may have been greater during period of missing record Feb. 7, 1996; maximum gage height, 6.34 ft Nov. 1, 1994; minimum discharge, 0.24 ft³/s Sept. 15, 1995.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 30 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Oct. 1	1230	*38	*5.38	Dec. 22	1500	31	5.22

Minimum discharge, 0.26 ft³/s Sept. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	1.5	4.2	1.5	1.4	.99	7.2	19	.95	.75	.81	.32
2	9.8	1.3	3.6	1.3	5.6	4.4	5.1	7.9	2.6	.66	.62	.30
3	2.7	1.2	3.4	1.1	8.5	4.1	3.6	3.2	2.0	.60	.51	.29
4	1.9	1.3	2.1	1.2	12	1.9	2.5	2.0	1.5	.52	.45	.29
5	1.5	1.5	1.7	1.3	11	1.6	2.0	1.5	1.5	.49	.42	.28
6	1.1	1.9	1.5	1.4	6.0	1.3	4.9	1.2	1.8	.47	.38	.29
7	1.4	1.8	1.4	1.2	2.7	.98	3.5	1.1	1.3	.44	.34	.28
8	1.4	8.8	1.3	1.2	1.7	.93	2.3	1.0	.99	.44	.33	.28
9	1.7	5.9	1.3	1.2	1.5	3.8	1.7	1.0	.86	.43	.33	.28
10	8.0	2.4	1.4	1.3	1.3	3.1	1.6	1.0	.83	.43	.32	.27
11	3.5	1.7	1.3	1.2	1.2	1.6	5.8	1.0	1.2	.43	.31	.27
12	2.1	1.5	1.2	1.1	1.0	1.1	4.4	1.0	5.8	.43	.31	.26
13	1.8	1.4	1.4	6.6	.94	.95	2.9	.95	2.5	.38	.30	.27
14	2.0	1.3	4.9	11	.92	.83	2.0	2.7	1.2	.36	.29	.27
15	1.7	1.3	13	6.5	.90	1.0	1.5	13	.83	.35	.29	.28
16	1.5	1.2	5.6	2.5	1.8	2.0	1.3	11	.70	.35	.29	.29
17	1.3	1.1	10	1.6	2.2	4.6	5.5	4.9	.64	.38	.29	.29
18	1.5	1.2	4.8	1.3	1.6	10	3.6	1.9	.57	.45	.29	.29
19	1.8	1.1	3.1	1.4	1.3	16	1.9	1.3	.55	.47	.29	.29
20	8.3	1.1	3.6	1.6	1.1	8.3	3.0	.96	.53	.44	.28	.29
21	8.7	1.1	5.0	1.8	1.1	3.2	4.3	.87	.53	.42	.27	.29
22	3.7	1.1	23	2.3	2.5	1.8	2.1	.88	.50	.39	.50	.29
23	2.0	2.2	20	1.6	1.8	1.4	3.9	.90	.47	.37	4.4	.29
24	1.7	7.0	14	2.2	1.3	1.5	3.9	.90	.56	.36	1.8	.30
25	1.5	3.3	6.1	2.6	1.0	13	2.1	.85	1.3	.35	.86	.46
26	1.4	4.9	3.0	1.7	.85	10	1.5	.79	1.2	.33	.61	2.3
27	1.7	11	2.3	1.2	.82	9.7	1.3	.74	2.1	.32	.49	1.8
28	8.4	6.6	1.8	1.0	.80	17	1.5	.66	2.1	.35	.43	.87
29	4.2	6.8	1.6	1.1	---	12	1.8	.65	1.3	.50	.38	.57
30	2.1	9.8	1.6	1.4	---	6.7	14	.65	.94	.89	.36	.46
31	1.6	---	1.6	1.6	---	5.8	---	.65	---	1.1	.33	---
TOTAL	117.0	94.3	150.8	66.0	74.83	151.58	102.7	86.15	39.85	14.65	17.88	13.31
MEAN	3.77	3.14	4.86	2.13	2.67	4.89	3.42	2.78	1.33	.47	.58	.44
MAX	25	11	23	11	12	17	14	19	5.8	1.1	4.4	2.3
MIN	1.1	1.1	1.2	1.0	.80	.83	1.3	.65	.47	.32	.27	.26
AC-FT	232	187	299	131	148	301	204	171	79	29	35	26
CFSM	.76	.64	.98	.43	.54	.99	.69	.56	.27	.10	.12	.09
IN.	.88	.71	1.14	.50	.56	1.14	.77	.65	.30	.11	.13	.10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 2001, BY WATER YEAR (WY)

	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	3.23	6.59	8.96	10.0	10.2	8.97	6.15	5.48	3.94
MAX	6.77	11.8	20.2	16.8	19.2	17.7	8.81	8.55	6.14
(WY)	1998	1997	1997	1997	1999	1999	1999	1999	1997
MIN	1.18	1.42	4.39	2.13	2.54	4.74	3.42	2.47	1.33
(WY)	1994	1994	1994	2001	1993	1993	2001	1994	2001

SUMMARY STATISTICS		FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1993 - 2001	
ANNUAL TOTAL		1639.39		929.05			
ANNUAL MEAN		4.48		2.55			
HIGHEST ANNUAL MEAN						9.11	1997
LOWEST ANNUAL MEAN						2.55	2001
HIGHEST DAILY MEAN		30	Jan 13	25	Oct 1	71	Nov 19 1996
LOWEST DAILY MEAN		.87	Sep 23	.26	Sep 12	.26	Sep 12 2001
ANNUAL SEVEN-DAY MINIMUM		.93	Sep 22	.27	Sep 8	.27	Sep 8 2001
ANNUAL RUNOFF (AC-FT)	3250			1840		4150	
ANNUAL RUNOFF (CFSM)		.91		.52		1.16	
ANNUAL RUNOFF (INCHES)		12.35		7.00		15.74	
10 PERCENT EXCEEDS		9.8		6.6		13	
50 PERCENT EXCEEDS		3.1		1.3		3.6	
90 PERCENT EXCEEDS		1.2		.32		.94	

WILLAMETTE RIVER BASIN

287

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 sea level.

REMARKS.--Records fair except for estimated daily discharges, which are poor.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,400 ft³/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 ft³/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, 307 ft³/s Dec. 15; maximum gage height, 7.53 ft Dec. 14; minimum daily discharge, -63 ft³/s May 23, but may have been lower during period of missing record.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	121	158	182	169	126	83	250	103	41	---	42	---
2	193	143	179	165	114	177	141	179	143	---	21	---
3	209	135	198	128	162	170	106	154	118	---	15	---
4	168	110	149	94	122	133	81	92	9.2	---	29	---
5	172	152	121	82	106	109	67	103	80	---	27	---
6	125	149	111	97	90	84	20	76	76	---	19	---
7	89	117	72	67	123	56	106	65	124	---	38	---
8	99	81	49	22	95	86	141	66	53	---	2.0	---
9	71	93	58	63	71	106	75	98	98	---	---	---
10	113	89	89	44	115	115	47	162	---	---	---	---
11	51	89	115	90	110	124	135	115	---	---	---	---
12	80	78	29	116	163	123	175	92	---	112	---	---
13	78	86	34	180	177	74	206	171	---	97	---	---
14	121	67	-26	229	128	161	226	117	---	70	---	---
15	49	113	307	210	173	144	168	118	---	66	---	---
16	34	128	117	174	151	164	122	93	---	78	---	---
17	87	167	306	182	183	187	109	83	---	81	---	e70
18	126	146	239	91	94	150	67	97	---	31	---	e72
19	189	156	165	55	83	104	109	175	---	---	---	e81
20	157	136	148	123	94	113	67	142	-22	---	---	e67
21	248	100	88	71	97	131	120	52	23	---	---	e97
22	225	78	261	122	78	67	139	45	74	---	---	---
23	126	105	205	80	105	39	74	-63	---	---	---	---
24	85	129	166	100	87	176	55	64	---	---	---	---
25	44	96	183	91	146	123	84	107	---	---	---	---
26	61	93	163	100	131	106	58	---	---	---	---	---
27	77	157	171	134	127	134	101	129	---	---	---	---
28	86	173	175	127	111	180	169	139	---	101	---	---
29	140	114	154	118	---	147	90	138	---	91	---	---
30	155	202	117	173	---	279	94	95	---	95	---	---
31	151	---	144	150	---	208	---	93	---	86	---	---
TOTAL	3730	3640	4469	3647	3362	4053	3402	---	---	---	---	---
MEAN	120	121	144	118	120	131	113	---	---	---	---	---
MAX	248	202	307	229	183	279	250	---	---	---	---	---
MIN	34	67	-26	22	71	39	20	---	---	---	---	---
AC-FT	7400	7220	8860	7230	6670	8040	6750	---	---	---	---	---

e Estimated

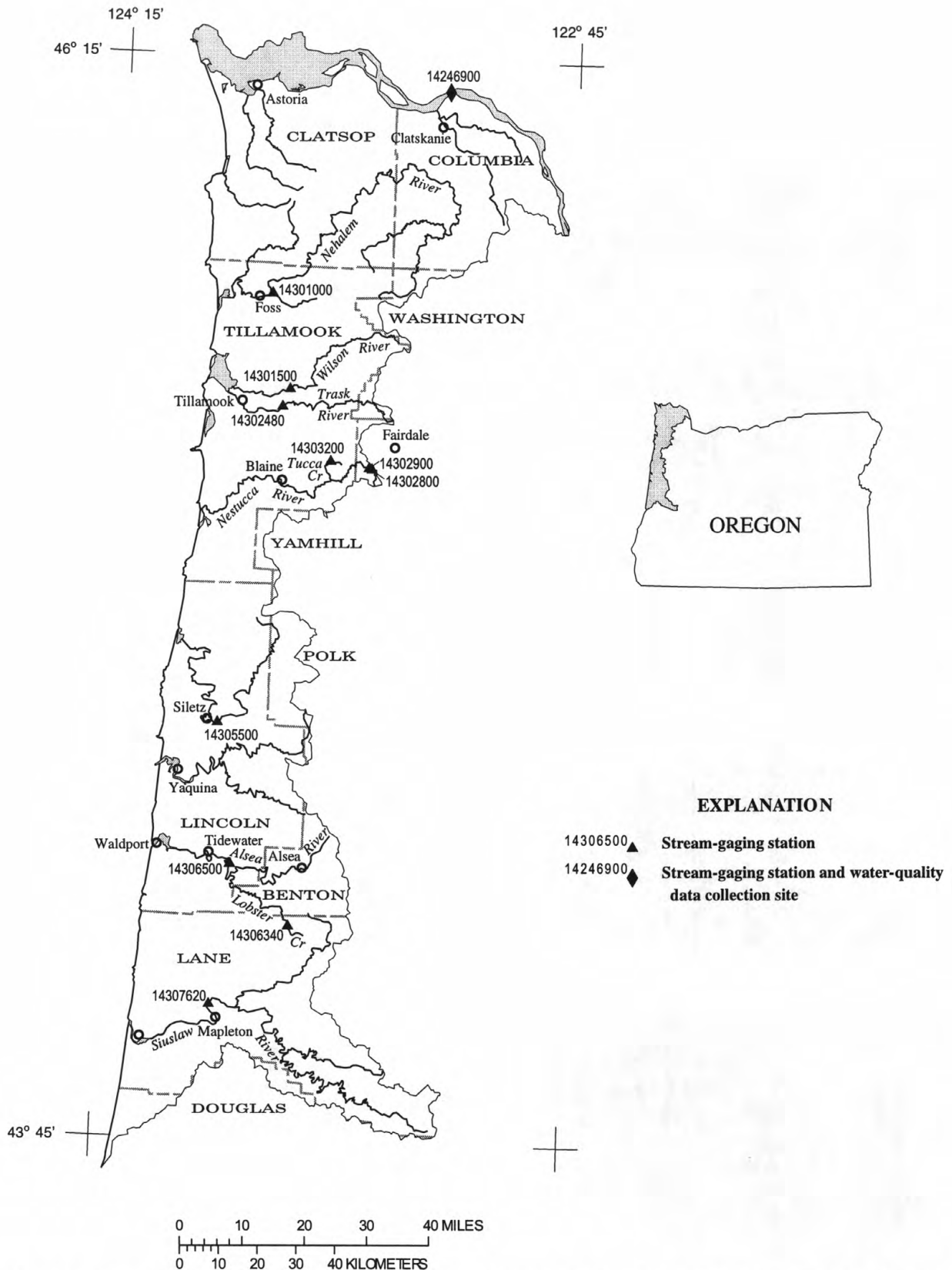


Figure 28. Location of surface-water and water-quality stations in the Oregon Coastal Drainages north of the Siuslaw River Basin and in the lower Columbia River.

COLUMBIA RIVER MAIN STEM

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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 mi², 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 sea level. 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 except for estimated daily discharges, which are poor. 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 ft³/s. Mean discharge values are based on a 24 hour day, not a tidal cycle.

AVERAGE DISCHARGE.--11 years (water years 1969, 1992-2001), 241,000 ft³/s, 174,600,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 864,000 ft³/s Feb. 10, 1996; minimum daily discharge, 63,600 ft³/s Sept. 9, 2001.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 232,000 ft³/s May 18; maximum gage height, 7.99 ft Dec. 14; minimum daily discharge, 63,600 ft³/s Sept. 9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133000	158000	163000	175000	137000	e140000	162000	e170000	201000	124000	89100	99700
2	133000	156000	159000	164000	133000	e140000	154000	e200000	180000	124000	84400	94800
3	130000	154000	168000	154000	148000	e130000	168000	228000	151000	128000	85900	96300
4	143000	138000	154000	150000	145000	e130000	170000	188000	150000	135000	90000	85100
5	152000	146000	158000	155000	166000	e130000	151000	186000	166000	113000	84400	84900
6	120000	145000	148000	166000	164000	e140000	e150000	183000	175000	103000	97000	93800
7	113000	144000	158000	160000	159000	e140000	e160000	165000	170000	92600	102000	84500
8	130000	147000	170000	154000	151000	e130000	e150000	169000	153000	87700	107000	76700
9	128000	161000	180000	150000	143000	130000	e130000	153000	181000	81200	127000	63600
10	123000	167000	164000	145000	e140000	128000	e160000	153000	159000	91400	118000	70200
11	139000	166000	170000	147000	142000	135000	e170000	131000	131000	101000	102000	77100
12	138000	172000	169000	159000	152000	128000	e170000	144000	175000	102000	99200	92100
13	134000	156000	172000	154000	153000	118000	e170000	149000	185000	89000	112000	112000
14	119000	155000	171000	163000	152000	130000	e160000	140000	165000	83900	105000	111000
15	119000	158000	226000	162000	152000	125000	e130000	157000	145000	79200	118000	103000
16	123000	155000	176000	154000	157000	136000	e120000	212000	145000	85600	124000	89800
17	119000	162000	218000	158000	155000	142000	e150000	224000	131000	99500	124000	86300
18	134000	153000	200000	145000	140000	120000	e150000	232000	126000	101000	119000	79200
19	123000	e160000	200000	166000	139000	154000	e170000	208000	140000	107000	96700	78600
20	117000	e150000	194000	170000	141000	172000	e150000	172000	160000	94700	98200	81700
21	169000	e140000	192000	143000	128000	165000	e150000	161000	137000	93800	94100	87400
22	151000	e180000	175000	157000	121000	148000	e130000	151000	147000	89700	85700	84000
23	129000	152000	201000	149000	115000	152000	e120000	170000	137000	82800	106000	89000
24	124000	158000	214000	144000	e140000	148000	e130000	183000	132000	88100	98100	83100
25	129000	151000	219000	141000	e110000	121000	e140000	184000	122000	88500	91600	100000
26	129000	149000	204000	143000	e110000	131000	e150000	172000	118000	95400	119000	110000
27	135000	165000	195000	148000	e130000	145000	e150000	167000	129000	101000	125000	109000
28	116000	171000	192000	143000	e140000	168000	e160000	139000	148000	110000	120000	101000
29	150000	152000	178000	143000	---	171000	e130000	159000	146000	93700	134000	91800
30	150000	165000	170000	150000	---	181000	e160000	186000	147000	89300	124000	86700
31	157000	---	172000	144000	---	177000	---	181000	---	94900	116000	---
TOTAL	4109000	4686000	5630000	4756000	3963000	4405000	4515000	5417000	4552000	3050000	3296400	2702400
MEAN	132500	156200	181600	153400	141500	142100	150500	174700	151700	98390	106300	90080
MAX	169000	180000	226000	175000	166000	181000	170000	232000	201000	135000	134000	112000
MIN	113000	138000	148000	141000	110000	118000	120000	131000	118000	79200	84400	63600
AC-FT	8150000	9295000	11170000	9434000	7861000	8737000	8956000	10740000	9029000	6050000	6538000	5360000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2001, BY WATER YEAR (WY)

MEAN	148700	199400	268700	291200	287400	260400	272400	329200	325500	215600	157600	130900
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	114500	136100	175400	153400	141500	142100	150500	174700	151700	98390	106300	90080
(WY)	1995	1994	1994	2001	2001	2001	2001	2001	2001	2001	2001	2001

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1968 - 2001

ANNUAL TOTAL	78908400	51081800	
ANNUAL MEAN	215600	140000	
HIGHEST ANNUAL MEAN			241000
LOWEST ANNUAL MEAN			338200
HIGHEST DAILY MEAN	430000	232000	864000
LOWEST DAILY MEAN	99400	63600	63600
ANNUAL SEVEN-DAY MINIMUM	108000	78700	78700
ANNUAL RUNOFF (AC-FT)	156500000	101300000	174600000
10 PERCENT EXCEEDS	320000	175000	396000
50 PERCENT EXCEEDS	210000	144000	214000
90 PERCENT EXCEEDS	123000	91700	128000

e Estimated

COLUMBIA RIVER MAIN STEM

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 to September 2001.

INSTRUMENTATION.--Temperature recorder August 1967 to September 1970. Water-quality monitor.

REMARKS.--Specific conductance and water temperature records good, turbidity record fair. Turbidity values are considered relative to this site. The probe was checked using a polymer bead 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 temperature data for the period October 1992 to September 1993 available in the files of the Portland field office. Boron values less than 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.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 187 microsiemens Mar. 15; minimum recorded, 117 microsiemens June 14, 15.

WATER TEMPERATURE: Maximum, 22.4°C Aug. 12-15; minimum, 4.0°C Feb. 14.

TURBIDITY FOR PERIOD FEBRUARY TO SEPTEMBER: Maximum, 27 NTU Sept. 3; minimum, <1 NTU Mar. 2.

WATER-QUALITY DATA

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	TURBID-ITY LAB HACH 2100AN (NTU) (99872)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, (PER-CENT SATUR-ATION) (00301)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
NOV 2000												
13...	1130	156000	3.4	765	12.2	109	7.7	163	10.5	--	E15.7	E4.89
DEC												
11...	1130	170000	1.7	765	12.0	97	7.8	152	6.3	64	17.4	4.87
JAN 2001												
16...	1130	154000	3.2	773	--	--	7.8	159	4.9	57	15.4	4.47
FEB												
13...	1230	153000	4.4	767	13.0	99	8.3	165	4.1	66	17.8	5.14
27...	1230	E130000	--	772	12.9	100	8.2	171	5.0	--	--	--
MAR												
13...	1200	118000	7.8	767	--	--	8.2	178	6.3	72	19.4	5.70
26...	1250	131000	--	771	13.4	113	8.5	159	8.3	--	--	--
APR												
16...	1100	E120000	--	761	--	--	8.3	162	9.0	--	--	--
MAY												
02...	1140	E200000	--	776	10.8	97	8.2	165	11.4	--	--	--
15...	1250	157000	5.2	761	11.6	113	8.5	152	14.1	58	15.4	4.68
JUN												
14...	1210	165000	--	--	--	--	7.8	122	16.6	--	--	--
JUL												
17...	1140	99500	4.8	764	--	--	8.0	140	19.6	54	14.7	4.17
AUG												
14...	1230	105000	--	765	8.6	98	7.5	143	22.0	--	--	--
SEP												
10...	1140	70200	--	761	8.9	98	7.7	145	19.8	--	--	--
24...	1230	83100	3.8	761	--	--	7.6	154	19.5	57	15.0	4.79

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORPTION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
NOV 2000													
13...	E1.21	--	E8.9	--	58	72	0	6.0	E.1	E10.0	12.5	--	95
DEC													
11...	1.22	.4	7.0	19	59	72	0	4.1	E.1	9.2	11.6	.13	94
JAN 2001													
16...	1.08	.4	7.1	21	60	73	0	5.2	E.1	9.4	11.2	.14	100
FEB													
13...	1.18	.4	7.7	20	60	74	0	5.5	E.1	10.4	12.1	.15	107
27...	--	--	--	--	63	77	0	--	--	--	--	--	--
MAR													
13...	1.38	.5	9.1	21	66	77	1	6.1	E.1	9.9	14.0	.15	112
26...	--	--	--	--	60	70	1	--	--	--	--	--	--
APR													
16...	--	--	--	--	59	72	0	--	--	--	--	--	--
MAY													
02...	--	--	--	--	60	74	0	--	--	--	--	--	--
15...	1.17	.4	7.2	21	57	67	1	4.1	E.1	9.4	11.5	.13	98
JUN													
14...	--	--	--	--	44	54	0	--	--	--	--	--	--
JUL													
17...	1.07	.4	6.4	20	52	62	0	4.4	E.1	8.2	8.8	.12	88
AUG													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	1.31	.4	7.7	22	55	67	0	5.5	E.1	9.1	10.9	.13	92

E Estimated.

14246900 COLUMBIA RIVER AT BEAVER ARMY TERMINAL NR QUINCY,OR--Continued

WATER-QUALITY DATA

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L) AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC DIS- SOLVED (MG/L) AS N) (00623)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L) AS N) (00625)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L) AS N) (00631)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L) AS N) (00613)	PHOS- PHORUS DIS- SOLVED (MG/L) AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L) AS P) (00671)	PHOS- PHORUS TOTAL (MG/L) AS P) (00665)	PHOS- PHORUS SEDI- MENT SUSP. PERCENT (30292)	CARBON, INORG + ORGANIC PARTIC. TOTAL (MG/L) AS C) (00694)	CARBON, INORG, ORGANIC, PARTIC. TOTAL (MG/L) AS C) (00688)	CARBON, ORGANIC DIS- SOLVED (MG/L) AS C) (00681)
NOV 2000													
13...	--	.020	E.07	.15	.238	.003	.035	.023	.037	1400	.6	<.1	1.4
DEC													
11...	92	.039	E.07	.15	.290	.002	.022	.017	.033	--	.2	<.1	1.2
JAN 2001													
16...	91	.027	E.07	<.08	.361	.005	.018	.016	.031	--	.2	<.1	1.5
FEB													
13...	98	.003	E.07	.27	.321	.002	.013	.009	.035	1400	.5	<.1	1.8
27...	--	--	--	--	--	--	--	--	--	--	.5	.2	1.4
MAR													
13...	106	.025	E.09	.31	.279	.004	.008	E.005	.042	--	.9	<.1	1.3
26...	--	--	--	--	--	--	--	--	--	--	.8	<.1	1.6
APR													
16...	--	--	--	--	--	--	--	--	--	--	.6	<.1	1.5
MAY													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	88	.006	.15	.32	.126	.003	.006	<.007	.039	2300	.9	<.1	1.7
JUN													
14...	--	--	--	--	--	--	--	--	--	--	.7	<.1	1.9
JUL													
17...	78	.003	E.07	.26	.053	.002	.009	E.005	.035	--	.6	<.1	2.3
AUG													
14...	--	--	--	--	--	--	--	--	--	--	.4	<.1	1.8
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	88	.025	.12	.17	.103	.006	.025	.022	.037	2100	.3	<.1	1.7

DATE	CARBON, ORGANIC PARTIC- ULATE TOTAL (MG/L) AS C) (00689)	CARBON SED. SUSP. PERCENT (30244)	CARBON, ORGANIC SUS- PENDED, TOTAL PERCENT (50465)	ALUM- INUM, DIS- SOLVED (UG/L) AS AL) (01106)	ANTI- MONY, DIS- SOLVED (UG/L) AS SB) (01095)	ARSENIC DIS- SOLVED (UG/L) AS AS) (01000)	BARIUM, DIS- SOLVED (UG/L) AS BA) (01005)	BERYL- LIUM, DIS- SOLVED (UG/L) AS BE) (01010)	BORON, DIS- SOLVED (UG/L) AS B) (01020)	CADMIUM DIS- SOLVED (UG/L) AS CD) (01025)	CHRO- MIUM, DIS- SOLVED (UG/L) AS CR) (01030)	COBALT, DIS- SOLVED (UG/L) AS CO) (01035)	COPPER, DIS- SOLVED (UG/L) AS CU) (01040)
NOV 2000													
13...	.6	--	--	--	--	--	--	--	--	--	--	--	--
DEC													
11...	.2	--	--	--	--	E1.3	--	--	15	--	--	--	--
JAN 2001													
16...	.2	--	--	--	--	.8	--	--	15	--	--	--	--
FEB													
13...	.5	3.0	--	3	.14	.8	20.8	<.06	16	.04	<.8	.05	1.2
27...	.3	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	.9	--	--	--	--	1.0	--	--	16	--	--	--	--
26...	.8	--	--	--	--	--	--	--	--	--	--	--	--
APR													
16...	.6	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	.9	5.8	5.5	3	.09	.8	17.5	<.06	11	<.04	<.8	.06	1.4
JUN													
14...	.7	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	.6	--	--	--	--	.7	--	--	9	--	--	--	--
AUG													
14...	.4	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	.3	5.0	--	3	.15	1.0	20.3	<.06	20	.06	<.8	.04	1.4

DATE	IRON, DIS- SOLVED (UG/L) AS FE) (01046)	LEAD, DIS- SOLVED (UG/L) AS PB) (01049)	LITHIUM DIS- SOLVED (UG/L) AS LI) (01130)	MANGA- NESE, DIS- SOLVED (UG/L) AS MN) (01056)	MOLYB- DENUM, DIS- SOLVED (UG/L) AS MO) (01060)	NICKEL, DIS- SOLVED (UG/L) AS NI) (01065)	SELE- NIUM, DIS- SOLVED (UG/L) AS SE) (01145)	SILVER, DIS- SOLVED (UG/L) AS AG) (01075)	STRON- TIUM, DIS- SOLVED (UG/L) AS SR) (01080)	VANA- DIUM, DIS- SOLVED (UG/L) AS V) (01085)	ZINC, DIS- SOLVED (UG/L) AS ZN) (01090)	ALUM- INUM SED. SUS PERCENT (30221)	AN- TIMONY SED. SUSP. (UG/G) (29816)
NOV 2000													
13...	--	--	--	--	--	--	--	--	--	--	--	7.4	.7
DEC													
11...	<10	--	E3.6	--	--	--	<2.4	--	93.8	<8.0	--	--	--
JAN 2001													
16...	M	--	3.0	--	--	--	E.2	--	85.0	2.7	--	--	--
FEB													
13...	M	.17	2.9	.8	.8	.69	<.3	<1	96.6	1.9	4	7.8	.8
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	<10	--	3.7	--	--	--	<.3	--	104	2.5	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	M	.09	2.8	.3	.8	1.81	<.3	<1	90.1	2.5	2	5.4	.7
JUN													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	<10	--	2.0	--	--	--	<.3	--	79.2	1.9	--	--	--
AUG													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	<10	<.08	2.9	.3	.8	.13	<.3	<1	83.9	2.2	2	6.9	1.1

E Estimated.

M Presence verified, not quantified.

COLUMBIA RIVER MAIN STEM

14246900 COLUMBIA RIVER AT BEAVER ARMY TERMINAL NR QUINCY, OR--Continued

WATER-QUALITY DATA

DATE	ARSENIC SED. SUSP. (UG/G) (29818)	BARIUM SED. SUSP. (UG/G) (29820)	BERYL- LIUM SED. SUSP. (UG/G) (29822)	CADMIUM SED. SUSP. (UG/G) (29826)	CHRO- MIUM SED. SUSP. (UG/G) (29829)	COBALT SEDI- MENT SUSP. (UG/G) (35031)	COPPER SED. SUSP. (UG/G) (29832)	IRON SEDI- MENT SUSP. PERCENT (30269)	LEAD SED. SUSP. (UG/G) (29836)	LITHIUM SEDI- MENT SUSP. (UG/G) (35050)	MAN- GANESE SED. SUSP. (UG/G) (29839)	MERCURY SED. SUSP. (UG/G) (29841)	MOLYB- DENIUM SED. SUSP. (UG/G) (29843)
NOV 2000													
13...	8.3	500	1	.7	96	18	53	3.8	31	24	1500	.23	6
DEC													
11...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN 2001													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
FEB													
13...	8.1	530	1	1.1	130	18	120	4.1	64	22	1400	--	9
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	--	--	--	--	--	--	--	--	--	--	--	--	--
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	5.9	420	1	.7	77	14	41	3.2	13	15	1400	.06	5
JUN													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	9.4	630	2	1.4	99	20	47	4.2	29	23	2100	.22	5
DATE	NICKEL SED. SUSP. (UG/G) (29845)	SELE- NIUM SED. SUSP. (UG/G) (29847)	SILVER SED. SUSP. (UG/G) (29850)	STRON- TIUM SEDI- MENT SUSP. (UG/G) (35040)	TITA- NIUM SEDI- MENT SUSP. PERCENT (30317)	VANA- DIUM SED. SUSP. (UG/G) (29853)	ZINC SED. SUSP. (UG/G) (29855)	2,6-DI- ETHYL ANILINE WAT FLT 0.7 U GF, REC (82660)	ACETO- CHLOR, WATER, FLTRD REC (49260)	ALA- CHLOR, WATER, DISS, REC (46342)	ALPHA BHC DIS- SOLVED (34253)	ATRA- ZINE, WATER, DISS, REC (39632)	BEN- FLUR- ALIN WAT FLD 0.7 U GF, REC (82673)
NOV 2000													
13...	48	M	M	330	.470	100	180	<.002	<.004	<.002	<.005	<.007	<.01
DEC													
11...	--	--	--	--	--	--	--	<.002	<.004	<.002	<.005	E.001	<.01
JAN 2001													
16...	--	--	--	--	--	--	--	<.002	<.004	<.002	<.005	E.005	<.01
FEB													
13...	75	M	<1	360	.500	120	200	<.002	<.004	<.002	<.005	E.004	<.01
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	--	--	--	--	--	--	--	<.002	<.004	<.002	<.005	E.003	<.01
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	44	M	M	240	.390	83	160	<.002	<.004	<.002	<.005	E.004	<.01
JUN													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	46	M	<1	280	.530	110	240	<.002	<.004	<.002	<.005	<.007	<.01
DATE	BUTYL- ATE WATER, DISS, REC (04028)	CAR- BARYL WATER FLTRD 0.7 U GF, REC (82680)	CARBO- FURAN WATER FLTRD 0.7 U GF, REC (82674)	CHLOR- PYRIFOS DIS- SOLVED (UG/L) (38933)	CYANA- ZINE, WATER, DISS, REC (UG/L) (04041)	DCPA WATER FLTRD 0.7 U GF, REC (82682)	DEETHYL ATRA- ZINE, WATER, DISS, REC (UG/L) (04040)	DI- AZINON, DIS- SOLVED (UG/L) (39572)	DI- ELDRIN DIS- SOLVED (UG/L) (39381)	DISUL- FOTON WATER FLTRD 0.7 U GF, REC (82677)	EPTC WATER FLTRD 0.7 U GF, REC (82668)	ETHAL- FLUR- ALIN WAT FLD 0.7 U GF, REC (82663)	ETHO- PROP WATER FLTRD 0.7 U GF, REC (82672)
NOV 2000													
13...	<.002	<.041	<.02	<.005	<.018	<.003	<.006	<.005	<.005	<.021	<.002	<.009	<.005
DEC													
11...	<.002	<.041	<.02	<.005	<.018	<.003	<.006	<.005	<.005	<.021	<.002	<.009	<.005
JAN 2001													
16...	<.002	<.041	<.02	<.005	<.018	<.003	<.006	<.005	<.005	<.021	<.002	<.009	<.005
FEB													
13...	<.002	<.041	<.02	<.005	<.018	<.003	E.002	<.005	<.005	<.021	<.002	<.009	<.005
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	<.002	<.041	<.02	<.005	<.018	<.003	E.003	<.005	<.005	<.021	<.002	<.009	<.005
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	<.002	<.041	<.02	<.005	<.018	<.003	<.006	<.005	<.005	<.021	E.002	<.009	<.005
JUN													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	<.002	<.041	<.02	<.005	<.018	<.003	<.006	<.005	<.005	<.021	<.002	<.009	<.005

E Estimated.

M Presence verified, not quantified.

14246900 COLUMBIA RIVER AT BEAVER ARMY TERMINAL NR QUINCY,OR--Continued

WATER-QUALITY DATA

DATE	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS- SOLVED (UG/L) (39341)	LIN- URON WATER FLTRD 0.7 U (UG/L) (82666)	MALA- THION, DIS- SOLVED (UG/L) (39532)	METHYL AZIN- PHOS WAT FLT 0.7 U (UG/L) (82686)	METHYL PARA- THION WAT FLT 0.7 U (UG/L) (82667)	METO- LACHLOR WATER DISSOLV (UG/L) (39415)	METRI- BUZIN SENSOR WATER DISSOLV (UG/L) (82630)	MOL- INATE WATER FLTRD 0.7 U (UG/L) (82671)	NAPROP- AMIDE WATER FLTRD 0.7 U (UG/L) (82684)	P, P' DDE DISSOLV (UG/L) (34653)	PARA- THION, DIS- SOLVED (UG/L) (39542)	PEB- ULATE WATER FLTRD 0.7 U (UG/L) (82669)
NOV 2000													
13...	<.003	<.004	<.035	<.027	<.050	<.006	E.001	<.006	<.002	<.007	<.003	<.007	<.002
DEC													
11...	<.003	<.004	<.035	<.027	<.050	<.006	<.013	<.006	<.002	<.007	<.003	<.007	<.002
JAN 2001													
16...	<.003	<.004	<.035	<.027	<.050	<.006	<.013	<.006	<.002	<.007	<.003	<.007	<.002
FEB													
13...	<.003	<.004	<.035	<.027	<.050	<.006	E.003	<.006	<.002	E.003	<.003	<.007	<.002
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	<.003	<.004	<.035	<.027	<.050	<.006	M	<.006	<.002	<.007	<.003	<.007	<.002
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	<.003	<.004	<.035	<.027	<.050	<.006	<.013	<.006	<.002	<.007	<.003	<.007	<.002
JUN													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	<.003	<.004	<.035	<.027	<.050	<.006	E.005	<.006	<.002	<.007	<.003	<.007	<.002
DATE	PENDI- METH- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PER- METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO- METON, WATER, DISS, REC (UG/L) (04037)	PRON- AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	PROPA- CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO- PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO- PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	SI- MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU- THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER- BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER- BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO- BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)
NOV 2000													
13...	<.01	<.006	<.011	<.015	<.004	<.010	<.011	<.023	<.011	<.016	<.034	<.017	<.005
DEC													
11...	<.01	<.006	<.011	<.015	<.004	<.010	<.011	<.023	<.011	<.016	<.034	<.017	<.005
JAN 2001													
16...	<.01	<.006	<.011	<.015	<.004	<.010	<.011	<.023	E.004	<.016	<.034	<.017	<.005
FEB													
13...	<.01	<.006	<.011	<.015	<.004	<.010	<.011	<.023	E.003	<.016	<.034	<.017	<.005
27...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
13...	<.01	<.006	<.011	<.015	<.004	<.010	<.011	<.023	<.011	<.016	<.034	<.017	<.005
26...	--	--	--	--	--	--	--	--	--	--	--	--	--
APR													
16...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
02...	--	--	--	--	--	--	--	--	--	--	--	--	--
15...	<.01	<.006	<.011	<.015	<.004	<.010	<.011	<.023	<.011	<.016	<.034	<.017	<.005
JUN													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
17...	--	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
14...	--	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	--	--	--	--	--	--	--	--	--	--	--	--	--
24...	<.01	<.006	<.011	<.015	<.004	<.010	<.011	<.023	<.011	<.016	<.034	<.017	<.005
DATE	TRIAL- LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI- FLUR- ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)	URANIUM NATURAL DIS- SOLVED (UG/L) AS U) (22703)	URANIUM SEDI- MENT SUSP. (UG/G) (35046)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SEDI- MENT, SUS- PENDE (MG/L) (80154)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY) (80155)						
NOV 2000													
13...	<.002	<.009	--	<50	87	8	3370						
DEC													
11...	<.002	<.009	--	--	92	7	3210						
JAN 2001													
16...	<.002	<.009	--	--	91	4	1660						
FEB													
13...	<.002	<.009	.77	<100	62	7	2890						
27...	--	--	--	--	68	6	E2110						
MAR													
13...	<.002	<.009	--	--	65	10	3190						
26...	--	--	--	--	85	8	2830						
APR													
16...	--	--	--	--	95	5	E1620						
MAY													
02...	--	--	--	--	93	9	E4860						
15...	<.002	<.009	.74	<50	91	9	3820						
JUN													
14...	--	--	--	--	95	7	3120						
JUL													
17...	--	--	--	--	93	11	2960						
AUG													
14...	--	--	--	--	98	6	1700						
SEP													
10...	--	--	--	--	--	--	--						
24...	<.002	<.009	.56	<100	99	3	673						

E Estimated.

M Presence verified, not quantified.

COLUMBIA RIVER MAIN STEM

14246900 COLUMBIA RIVER AT BEAVER ARMY TERMINAL, NEAR QUINCY, OR--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	154	145	150	177	164	168	154	145	149	149	144	147
2	147	142	144	176	161	168	165	153	158	149	144	147
3	145	139	142	164	159	161	158	148	153	149	144	147
4	140	137	138	164	158	160	154	147	151	158	146	150
5	142	137	139	160	155	158	154	146	150	158	153	156
6	143	139	141	166	155	162	154	146	151	158	153	156
7	146	139	142	171	159	167	156	149	152	161	153	157
8	153	145	148	177	163	172	157	148	152	156	150	154
9	153	145	149	175	167	170	166	153	157	163	150	154
10	153	146	150	176	163	171	171	159	162	164	150	156
11	150	143	147	173	159	166	166	158	161	154	149	151
12	154	145	148	166	158	161	161	150	155	162	154	157
13	156	146	151	171	163	168	156	148	152	164	157	161
14	152	146	149	174	164	169	156	148	153	167	159	163
15	152	146	151	172	164	167	157	150	153	167	160	165
16	157	149	152	171	165	168	158	153	156	167	157	164
17	154	148	151	178	166	171	164	146	153	160	154	157
18	157	150	152	170	163	168	148	139	142	159	154	---
19	152	150	151	173	164	168	146	139	143	164	154	159
20	154	148	151	174	164	171	146	138	142	160	155	158
21	156	148	151	173	164	168	148	143	146	171	159	164
22	155	147	149	172	161	165	146	142	144	172	166	168
23	150	144	148	168	161	164	149	142	145	169	161	166
24	150	143	148	164	157	159	144	138	142	162	157	160
25	152	140	144	164	159	161	142	130	137	163	155	159
26	161	151	155	162	158	160	137	130	131	160	157	159
27	156	149	152	163	151	158	138	132	134	160	152	155
28	160	154	156	157	149	154	139	136	137	161	151	155
29	164	157	160	156	148	152	145	139	142	161	151	156
30	166	160	162	152	145	148	145	139	142	157	149	153
31	169	163	166	---	---	---	148	142	145	154	149	152
MONTH	169	137	150	178	145	164	171	130	148	172	144	---
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	159	151	155	172	161	167	157	144	151	173	162	168
2	166	152	159	166	160	164	155	148	152	168	156	161
3	161	157	159	169	162	165	159	147	155	157	145	151
4	164	157	160	166	159	162	155	147	152	158	149	153
5	165	152	160	167	160	163	160	146	154	151	146	149
6	158	149	155	169	160	163	160	151	156	153	146	150
7	154	146	152	172	163	167	161	152	158	154	148	151
8	154	142	147	173	170	172	163	155	160	163	153	156
9	155	145	151	175	168	172	169	160	165	167	154	161
10	158	151	155	182	170	175	166	157	163	161	152	157
11	163	153	158	185	172	179	165	156	161	160	154	158
12	166	156	161	178	173	176	166	158	162	158	153	156
13	173	163	168	180	171	177	164	157	161	162	155	158
14	171	164	167	180	175	178	164	157	159	160	152	155
15	175	165	169	187	175	183	166	156	161	158	151	153
16	172	165	169	177	169	173	163	157	160	154	149	151
17	174	163	168	171	164	168	172	159	165	151	147	149
18	174	170	171	164	162	163	175	162	169	155	147	150
19	181	169	175	163	159	161	177	163	172	156	151	153
20	184	176	179	161	155	158	180	170	177	157	153	155
21	182	176	178	158	144	153	182	174	179	160	152	156
22	182	172	176	146	141	144	182	173	178	162	155	159
23	180	171	178	149	138	145	182	172	177	164	157	161
24	183	171	178	153	145	150	175	166	172	166	160	164
25	183	175	179	154	150	152	177	168	171	171	164	167
26	181	172	177	156	150	153	181	175	179	170	161	166
27	173	164	170	156	147	153	183	177	180	164	157	161
28	172	163	168	153	144	151	180	173	177	166	159	162
29	---	---	---	154	147	151	181	173	176	163	156	159
30	---	---	---	151	145	148	175	170	173	158	154	156
31	---	---	---	151	146	148	---	---	---	156	150	152
MONTH	184	142	166	187	138	162	183	144	166	173	145	157

COLUMBIA RIVER MAIN STEM

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14246900 COLUMBIA RIVER AT BEAVER ARMY TERMINAL, NEAR QUINCY, OR--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	151	145	149	128	123	125	137	133	135	146	143	145
2	147	138	142	126	122	124	140	134	138	149	145	147
3	140	134	138	127	123	124	141	135	138	146	144	146
4	138	133	136	136	126	131	140	135	137	146	143	145
5	139	133	135	131	126	129	145	136	139	151	143	144
6	134	130	133	133	126	129	140	136	137	152	145	148
7	133	130	132	141	128	134	144	137	140	151	146	149
8	139	131	134	137	133	136	143	137	140	151	146	148
9	136	132	134	136	131	134	141	135	138	148	145	146
10	138	132	134	142	132	137	138	134	136	147	143	145
11	134	128	133	142	137	139	138	133	135	149	143	146
12	128	123	126	141	136	138	142	134	137	146	143	144
13	124	121	123	137	133	135	138	134	136	154	142	149
14	124	117	120	136	134	135	137	134	136	151	147	149
15	122	117	120	138	134	136	137	135	136	155	147	150
16	127	119	123	142	136	138	142	134	138	154	147	151
17	124	121	123	142	137	138	149	137	143	155	150	152
18	128	123	125	138	135	137	145	139	142	152	148	151
19	133	125	128	142	135	139	144	139	140	150	148	149
20	137	130	133	144	137	140	143	139	141	150	148	149
21	139	127	133	141	137	139	142	139	140	158	150	154
22	134	127	131	139	137	138	143	141	141	154	148	150
23	135	126	130	137	135	136	146	142	144	152	149	151
24	135	125	131	137	134	135	147	142	145	158	150	154
25	129	124	127	137	134	136	149	145	147	157	151	154
26	131	126	127	139	135	137	147	141	143	160	151	154
27	128	126	127	137	133	135	150	142	146	152	147	150
28	131	126	128	137	132	134	161	145	151	153	146	149
29	129	124	127	140	133	135	149	145	146	150	146	148
30	128	123	125	141	136	138	147	143	145	157	147	150
31	---	---	---	137	133	135	147	143	145	---	---	---
MONTH	151	117	130	144	122	135	161	133	140	160	142	149

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	17.7	17.4	17.6	13.2	13.2	13.2	8.0	7.6	7.7	5.3	4.9	5.1
2	17.7	17.4	17.5	13.2	13.2	13.2	7.6	7.4	7.5	5.1	4.9	5.1
3	17.7	17.1	17.4	13.5	13.2	13.3	7.6	7.4	7.6	5.1	4.9	5.0
4	17.4	16.8	17.1	13.5	13.5	13.5	7.6	7.1	7.4	5.1	4.9	5.0
5	16.8	16.5	16.8	13.5	13.2	13.4	7.3	7.1	7.3	5.3	4.9	5.1
6	16.8	16.5	16.8	13.5	13.2	13.2	7.3	6.9	7.0	5.3	4.9	5.1
7	16.8	16.5	16.7	13.2	12.7	13.0	6.9	6.6	6.7	5.3	5.1	5.1
8	16.5	16.2	16.3	13.0	12.5	12.7	6.7	6.2	6.4	5.1	5.1	5.1
9	16.3	15.7	15.9	12.5	12.3	12.4	6.4	6.2	6.2	5.1	4.9	5.1
10	15.7	15.2	15.4	12.3	11.8	12.1	6.4	6.2	6.2	5.1	4.8	5.0
11	15.7	15.2	15.3	11.8	11.3	11.6	6.6	6.2	6.4	5.0	4.8	4.8
12	15.7	15.4	15.7	11.3	10.7	11.0	6.6	6.4	6.6	5.0	4.8	4.9
13	15.7	15.4	15.7	10.7	10.5	10.5	6.6	5.9	6.3	4.9	4.8	4.9
14	15.7	15.4	15.5	10.5	10.3	10.3	5.9	5.5	5.6	4.9	4.8	4.9
15	15.4	15.2	15.4	10.5	10.1	10.2	5.5	5.3	5.4	5.1	4.9	5.0
16	15.4	14.9	15.2	10.1	9.6	9.7	5.5	5.3	5.4	5.1	4.9	5.0
17	15.2	14.9	15.0	9.6	9.4	9.5	5.9	5.5	5.7	4.9	4.9	4.9
18	15.2	14.9	15.0	9.4	9.2	9.4	5.9	5.7	5.8	4.9	4.8	4.8
19	15.2	14.9	15.1	9.2	8.8	9.1	5.9	5.7	5.8	4.8	4.6	4.7
20	15.2	14.9	15.2	8.8	8.5	8.6	5.9	5.7	5.8	4.8	4.6	4.6
21	15.2	14.9	15.1	8.5	8.3	8.4	5.9	5.7	5.7	4.8	4.6	4.6
22	15.1	14.9	14.9	8.3	8.0	8.2	5.9	5.7	5.7	4.8	4.6	4.7
23	14.9	14.6	14.7	8.0	7.8	7.8	5.7	5.5	5.6	4.8	4.6	4.7
24	14.6	14.4	14.4	8.0	7.8	7.8	5.5	5.2	5.4	4.8	4.6	4.7
25	14.4	14.1	14.3	8.0	7.6	7.8	5.5	5.2	5.3	4.8	4.6	4.8
26	14.1	13.6	13.9	7.8	7.6	7.7	5.5	5.3	5.5	4.8	4.6	4.7
27	13.6	13.4	13.4	8.0	7.8	7.9	5.7	5.5	5.5	4.8	4.4	4.6
28	13.4	13.1	13.3	8.0	7.8	7.8	5.5	5.3	5.5	4.6	4.4	4.5
29	13.2	13.0	13.1	8.0	7.8	7.8	5.3	5.1	5.3	4.6	4.5	4.5
30	13.2	13.0	13.2	8.0	7.8	7.9	5.3	5.1	5.3	4.6	4.4	4.5
31	13.2	13.2	13.2	---	---	---	5.3	5.1	5.2	4.6	4.5	4.5
MONTH	17.7	13.0	15.3	13.5	7.6	10.3	8.0	5.1	6.1	5.3	4.4	4.8

COLUMBIA RIVER MAIN STEM

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14246900 COLUMBIA RIVER AT BEAVER ARMY TERMINAL, NEAR QUINCY, OR--Continued

TURBIDITY (NTU), FEBRUARY TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
FEBRUARY				MARCH			APRIL			MAY		
1	---	---	---	3	1	2	13	7	9	12	2	4
2	---	---	---	3	0	2	12	8	10	14	7	10
3	---	---	---	4	2	3	13	7	10	16	8	11
4	---	---	---	6	2	3	12	8	10	13	6	10
5	---	---	---	7	2	3	13	7	10	14	7	10
6	---	---	---	6	2	3	12	8	10	12	7	10
7	---	---	---	4	2	3	12	8	10	14	6	10
8	---	---	---	4	2	3	12	8	10	13	7	11
9	---	---	---	4	2	3	12	7	10	16	7	10
10	---	---	---	6	2	4	12	6	10	17	6	10
11	---	---	---	7	3	4	12	6	9	13	7	10
12	---	---	---	6	2	4	11	6	9	13	8	10
13	---	---	---	7	3	4	11	6	9	14	8	10
14	5	5	5	7	2	4	10	4	8	13	8	10
15	5	4	5	7	3	6	10	4	8	13	8	10
16	4	4	4	8	4	6	9	6	8	15	8	10
17	4	4	4	7	3	6	9	6	8	15	8	10
18	4	4	4	8	3	6	9	4	8	12	8	10
19	4	4	4	14	4	7	8	4	7	12	8	10
20	4	3	4	10	6	8	9	4	7	13	8	10
21	3	3	3	11	6	8	9	3	7	13	7	10
22	3	3	3	11	8	10	9	3	7	13	8	10
23	3	3	3	11	8	9	9	4	7	14	7	10
24	3	3	3	11	8	9	12	2	6	13	8	10
25	3	2	2	12	8	10	8	2	6	13	8	10
26	2	2	2	12	9	10	8	2	6	14	7	10
27	4	1	2	12	8	11	8	2	6	12	7	9
28	3	1	2	13	9	11	7	2	6	12	7	9
29	---	---	---	13	9	11	8	1	4	13	8	9
30	---	---	---	13	9	11	6	1	4	12	6	9
31	---	---	---	12	8	10	---	---	---	12	7	9
MAX	---	---	---	14	9	11	13	8	10	17	8	11
MIN	---	---	---	3	0	2	6	1	4	12	2	4

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	11	6	9	9	4	7	9	2	4	17	3	6
2	11	6	8	11	4	7	11	2	4	19	3	6
3	13	7	8	10	4	7	10	2	4	27	3	6
4	11	7	9	11	4	7	8	2	4	6	2	3
5	12	7	9	11	4	8	8	2	4	7	2	3
6	12	7	9	10	6	7	9	2	4	7	1	3
7	13	7	9	11	6	8	8	2	4	7	1	3
8	12	7	9	12	6	8	8	2	4	6	1	3
9	12	6	9	10	4	7	7	2	4	4	1	3
10	11	7	9	11	4	7	8	2	4	6	1	3
11	11	6	8	10	4	7	7	2	4	6	1	3
12	11	7	9	10	3	7	8	2	4	6	1	3
13	10	6	9	8	3	6	8	2	4	6	1	3
14	9	6	8	10	4	6	8	2	4	7	1	3
15	10	6	8	10	4	7	10	2	4	7	1	3
16	10	6	8	11	4	7	9	2	4	6	1	3
17	10	6	8	11	4	8	8	2	4	8	1	3
18	12	6	8	11	4	8	8	2	6	6	1	3
19	11	6	8	15	4	8	8	3	6	6	1	3
20	11	6	9	12	4	7	10	2	4	6	1	3
21	11	6	8	13	4	7	8	1	4	4	1	3
22	11	6	8	10	3	7	8	2	4	6	1	2
23	10	4	7	10	3	6	8	1	4	4	1	2
24	10	4	7	10	4	6	7	2	3	4	1	2
25	11	4	7	11	3	6	22	3	10	4	1	2
26	9	4	7	10	3	6	18	2	6	10	1	3
27	9	4	7	9	3	6	7	2	4	4	1	2
28	9	4	7	14	3	6	8	2	4	4	1	2
29	8	4	7	9	3	6	8	2	4	6	1	2
30	10	4	7	10	3	6	8	2	6	4	1	2
31	---	---	---	10	2	4	10	2	6	---	---	---
MAX	13	7	9	15	6	8	22	3	10	27	3	6
MIN	8	4	7	8	2	4	7	1	3	4	1	2

PACIFIC SLOPE BASINS IN OREGON

NEHALEM RIVER BASIN

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 mi².

PERIOD OF RECORD.--October 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 32.60 ft above sea level (State Highway Department bench mark). Prior to Nov. 11, 1939, nonrecording gage.

REMARKS.--No estimated daily discharges. Records good. No regulation. Several small diversions for irrigation and domestic use upstream from station. National Weather Service telemeter at station.

AVERAGE DISCHARGE.--62 years (water years 1940-2001), 2,673 ft³/s, 54.45 in/yr, 1,936,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,300 ft³/s Feb. 8, 1996, gage height, 29.56 ft, based on slope-area measurement of peak flow; minimum discharge, 34 ft³/s Aug. 29-31, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 19,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 23	1330	*6,980	*8.33				
Minimum discharge, 82 ft ³ /s Oct. 8-9.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	654	466	1520	1540	2080	1120	2430	2440	632	527	233	203
2	406	410	1510	1390	2190	1350	2250	2660	681	485	228	197
3	277	367	1350	1280	2280	1380	2060	2430	806	453	223	188
4	235	370	1190	1300	2650	1300	1880	2120	758	426	220	181
5	177	398	1050	1430	3400	1220	1710	1940	724	402	209	176
6	136	415	930	1410	3320	1160	1780	1730	860	382	196	170
7	108	429	837	1320	2910	1090	1770	1540	798	368	188	171
8	90	484	760	1240	2550	1080	1760	1380	713	355	181	163
9	108	721	730	1240	2260	1100	1760	1260	658	342	172	152
10	136	732	691	1490	2010	1050	1850	1160	618	328	161	146
11	145	662	645	1430	1800	1010	2530	1070	676	316	152	139
12	141	576	599	1360	1610	953	2490	998	814	304	147	132
13	177	504	572	1320	1450	927	2360	922	769	296	141	127
14	185	449	647	1410	1320	938	2170	1180	721	285	134	121
15	169	406	1490	1420	1250	937	1970	2090	670	274	129	118
16	167	369	1750	1390	1870	1010	1800	2680	632	282	127	116
17	180	339	3420	1310	2190	1050	1780	2550	610	296	125	113
18	286	313	3290	1250	2080	1240	1720	2200	585	301	122	110
19	301	293	2720	1230	1880	2020	1630	1910	564	313	120	109
20	557	273	2320	1180	1740	1900	1540	1670	544	302	121	107
21	933	259	2220	1520	1660	1690	1430	1470	520	293	123	105
22	701	257	4660	1670	1620	1520	1340	1320	503	284	449	103
23	581	309	6700	1600	1530	1380	1280	1190	489	262	816	102
24	442	445	6120	1490	1430	1280	1230	1070	512	250	664	101
25	347	450	4960	1410	1340	1410	1150	974	541	237	518	105
26	291	724	3940	1330	1250	1630	1080	890	514	223	427	138
27	260	2420	3190	1230	1160	1860	1020	821	595	211	349	150
28	440	1970	2630	1140	1100	3010	1050	817	680	223	292	144
29	701	1620	2220	1290	---	3290	1170	786	636	231	255	137
30	608	1670	1940	1630	---	2890	1730	722	580	250	229	131
31	535	---	1730	2210	---	2610	---	675	---	243	210	---
TOTAL	10474	19100	68331	43460	53930	46405	51720	46665	19403	9744	7661	4155
MEAN	338	637	2204	1402	1926	1497	1724	1505	647	314	247	138
MAX	933	2420	6700	2210	3400	3290	2530	2680	860	527	816	203
MIN	90	257	572	1140	1100	927	1020	675	489	211	120	101
AC-FT	20780	37880	135500	86200	107000	92040	102600	92560	38490	19330	15200	8240
CFSM	.51	.95	3.30	2.10	2.89	2.24	2.58	2.26	.97	.47	.37	.21
IN.	.58	1.07	3.81	2.42	3.01	2.59	2.88	2.60	1.08	.54	.43	.23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2001, BY WATER YEAR (WY)

	MEAN	816	3764	6189	6163	5810	4242	2704	1291	627	276	149	212
MAX	3698	9256	11390	12450	13000	8696	6389	3028	1591	747	314	911	911
(WY)	1998	1974	1956	1971	1999	1956	1996	1948	1968	1983	1968	1997	1997
MIN	69.9	154	599	596	1066	1171	1149	520	250	137	62.5	63.6	63.6
(WY)	1953	1994	1977	1977	1977	1992	1941	1989	1992	1967	1967	1967	1967

SUMMARY STATISTICS FOR 2000 CALENDAR YEAR FOR 2001 WATER YEAR WATER YEARS 1940 - 2001

ANNUAL TOTAL	636859	381048		
ANNUAL MEAN	1740	1044		
HIGHEST ANNUAL MEAN			2673	
LOWEST ANNUAL MEAN			4292	1999
HIGHEST DAILY MEAN	9090	Feb 2	6700	Dec 23
LOWEST DAILY MEAN	44	Sep 28	90	Oct 8
ANNUAL SEVEN-DAY MINIMUM	47	Sep 23	105	Sep 19
ANNUAL RUNOFF (AC-FT)	1263000		755800	
ANNUAL RUNOFF (CFSM)	2.61		1.57	
ANNUAL RUNOFF (INCHES)	35.52		21.25	
10 PERCENT EXCEEDS	4820		2200	
50 PERCENT EXCEEDS	1020		786	
90 PERCENT EXCEEDS	112		147	

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 mi², 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 sea level. 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. No regulation. Small diversions for domestic use upstream from station.

AVERAGE DISCHARGE.--71 years (water years 1915, 1932-2001), 1,178 ft³/s, 99.40 in/yr, 853,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,000 ft³/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 ft³/s Sept. 5, 1973, but may have been less for short period following a landslide Jan. 31, 1965.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in February 1916 reached a stage of 20.8 ft, from floodmark, site and datum then in use.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 12,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 23	0100	*3,750	*7.76				
Minimum discharge, 65 ft ³ /s Sept. 25.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	438	232	789	633	769	477	976	1890	328	201	106	98
2	203	230	801	574	894	606	908	1510	362	191	105	98
3	143	212	708	546	994	544	831	1220	373	182	107	94
4	120	229	598	609	1370	503	757	1020	335	174	111	93
5	105	236	513	760	1670	481	709	909	339	167	106	89
6	96	248	451	748	1410	461	761	780	369	162	101	87
7	91	239	405	676	1170	440	712	690	327	158	98	85
8	88	275	370	639	1010	448	687	620	301	153	95	82
9	109	398	351	614	882	443	660	567	292	150	92	79
10	137	384	326	706	790	419	703	521	277	146	90	77
11	113	335	304	666	713	403	915	485	328	143	88	76
12	102	296	285	614	637	384	882	451	358	138	87	74
13	127	269	294	685	580	385	823	423	319	135	85	73
14	134	246	435	761	535	406	753	840	296	131	84	72
15	121	228	1450	736	531	440	695	1500	280	130	84	72
16	124	211	1150	688	999	483	643	1750	263	136	83	72
17	128	199	1700	638	1120	547	669	1410	253	138	83	71
18	184	186	1340	600	975	918	678	1120	242	140	82	70
19	174	178	1060	609	859	1940	651	941	232	138	81	69
20	319	171	936	573	775	1420	625	809	221	132	80	68
21	466	165	906	846	759	1090	583	713	212	129	84	67
22	335	156	2750	932	717	895	549	635	206	123	243	67
23	257	216	3420	813	659	772	552	573	202	119	440	67
24	211	291	2780	745	611	693	529	522	217	115	318	66
25	181	287	2040	679	562	760	500	481	221	112	215	70
26	163	390	1530	611	515	883	473	445	200	108	165	88
27	152	1030	1200	558	478	1050	450	417	256	105	139	89
28	253	743	983	519	448	1570	500	428	275	115	124	77
29	322	628	846	606	---	1350	615	401	236	115	114	72
30	303	862	787	704	---	1140	1490	366	214	119	106	69
31	257	---	704	817	---	1070	---	343	---	113	100	---
TOTAL	5956	9770	32212	20905	23432	23421	21279	24780	8334	4318	3896	2331
MEAN	192	326	1039	674	837	756	709	799	278	139	126	77.7
MAX	466	1030	3420	932	1670	1940	1490	1890	373	201	440	98
MIN	88	156	285	519	448	384	450	343	200	105	80	66
AC-FT	11810	19380	63890	41470	46480	46460	42210	49150	16530	8560	7730	4620
CFSM	1.19	2.02	6.45	4.19	5.20	4.69	4.41	4.96	1.73	.87	.78	.48
IN.	1.38	2.26	7.44	4.83	5.41	5.41	4.92	5.73	1.93	1.00	.90	.54

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1915 - 2001, BY WATER YEAR (WY)

MEAN	569	1890	2674	2497	2233	1758	1170	625	341	168	105	154
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 2001 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1915 - 2001
ANNUAL TOTAL	293367	180634	
ANNUAL MEAN	802	495	1178
HIGHEST ANNUAL MEAN			1811
LOWEST ANNUAL MEAN			495
HIGHEST DAILY MEAN	7270	3420	28000
LOWEST DAILY MEAN	73	66	34
ANNUAL SEVEN-DAY MINIMUM	74	68	35
ANNUAL RUNOFF (AC-FT)	581900	358300	853300
ANNUAL RUNOFF (CFSM)	4.98	3.07	7.32
ANNUAL RUNOFF (INCHES)	67.78	41.74	99.40
10 PERCENT EXCEEDS	2030	996	2900
50 PERCENT EXCEEDS	480	384	567
90 PERCENT EXCEEDS	96	89	87

TRASK RIVER BASIN

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 mi², 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 sea level, from topographic map.

REMARKS.--No estimated daily discharges. 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.--5 years (water years 1997-2001), 1,077 ft³/s, 93.84 in/yr, 780,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,500 ft³/s Nov. 25, 1999, gage height, 21.77 ft; minimum discharge, 63 ft³/s Oct. 3-5, 1999.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 8, 1996 reached a stage of 23.2 ft, from floodmark; discharge, 25,800 ft³/s, from slope-area measurement.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 9,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 22	2130	*2,520	*9.97				
Minimum discharge, 66 ft ³ /s Sept. 23-25.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	557	229	555	607	635	486	915	1370	426	273	132	85
2	228	245	592	565	671	576	875	1200	486	262	128	87
3	154	230	536	539	692	537	822	1050	503	251	128	83
4	127	261	491	550	876	505	755	923	445	240	135	86
5	112	274	452	599	1020	492	714	870	449	233	128	83
6	101	275	418	555	964	477	798	765	469	227	122	82
7	95	256	390	525	865	461	758	700	429	219	118	80
8	92	319	367	523	793	476	749	652	407	213	111	78
9	130	492	360	529	724	507	723	613	406	208	108	76
10	148	445	344	599	671	473	839	580	390	199	101	74
11	116	388	325	551	632	458	1230	553	477	196	100	73
12	105	349	311	529	584	443	1070	527	523	190	96	73
13	133	317	328	593	550	449	981	508	451	182	94	71
14	142	294	453	716	523	465	887	842	420	180	91	70
15	123	274	1200	673	522	485	814	1270	402	178	91	72
16	115	264	972	630	709	515	752	1350	383	186	91	73
17	113	249	1230	596	647	550	739	1170	369	189	90	71
18	148	241	1060	567	671	730	701	1010	358	191	88	70
19	133	233	911	552	634	1300	658	893	343	187	87	70
20	261	229	840	526	603	1050	633	796	330	174	83	70
21	384	220	824	636	617	877	597	727	319	170	86	69
22	284	214	2100	593	588	762	574	669	309	161	191	69
23	224	295	2330	561	560	683	575	619	304	157	255	68
24	190	368	1980	549	536	637	552	582	319	151	159	67
25	169	329	1580	522	512	682	528	550	320	145	124	69
26	157	390	1270	498	488	714	506	523	291	142	107	90
27	153	687	1050	475	470	828	491	501	350	137	99	94
28	286	559	895	461	453	1240	537	511	349	159	94	77
29	328	536	787	560	---	1080	577	489	307	156	91	74
30	279	610	721	622	---	960	1080	456	283	153	87	72
31	245	---	662	671	---	973	---	437	---	140	85	---
TOTAL	5832	10072	26334	17672	18210	20871	22430	23706	11617	5849	3500	2276
MEAN	188	336	849	570	650	673	748	765	387	189	113	75.9
MAX	557	687	2330	716	1020	1300	1230	1370	523	273	255	94
MIN	92	214	311	461	453	443	491	437	283	137	83	67
AC-FT	11570	19980	52230	35050	36120	41400	44490	47020	23040	11600	6940	4510
CFSM	1.21	2.15	5.45	3.65	4.17	4.32	4.79	4.90	2.48	1.21	.72	.49
IN.	1.39	2.40	6.28	4.21	4.34	4.98	5.35	5.65	2.77	1.39	.83	.54

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2001, BY WATER YEAR (WY)

MEAN	570	1713	2687	2142	1987	1544	780	691	406	197	111	144
MAX	1688	2370	4157	2893	4345	2538	1102	857	622	254	127	374
(WY)	1998	2000	1997	1998	1999	1997	1997	1999	2000	1997	1997	1997
MIN	127	336	849	570	650	673	538	462	290	161	103	74.5
(WY)	2000	2001	2001	2001	2001	2001	2000	1998	1998	1998	1998	1999

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1997 - 2001

ANNUAL TOTAL	245331											
ANNUAL MEAN	670											
HIGHEST ANNUAL MEAN												
LOWEST ANNUAL MEAN												
HIGHEST DAILY MEAN	4090	Feb 2					2330	Dec 23		17300	Nov 25	1999
LOWEST DAILY MEAN	78	Sep 27					67	Sep 24		63	Oct 4	1999
ANNUAL SEVEN-DAY MINIMUM	80	Sep 23					69	Sep 19		66	Oct 17	1999
ANNUAL RUNOFF (AC-FT)	486600						334000			780600		
ANNUAL RUNOFF (CFSM)	4.30						2.96			6.91		
ANNUAL RUNOFF (INCHES)	58.50						40.15			93.84		
10 PERCENT EXCEEDS	1600						876			2720		
50 PERCENT EXCEEDS	461						451			550		
90 PERCENT EXCEEDS	102						91			97		

NESTUCCA RIVER BASIN

301

14302800 MCGUIRE LAKE NEAR FAIRDALE, OR

LOCATION.--Lat 45°18'30", long 123°24'30", in NW 1/4 SE 1/4 sec.15, T.3 S., R.6 W., Yamhill County, Hydrologic Unit 17100203, on control tower in reservoir on Nestucca River, 0.3 mi upstream from Walker Creek, and 5.0 mi southwest of Fairdale.

DRAINAGE AREA.--2.85 mi².

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Nonrecording gage. Datum of gage is sea level.

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, 3,980 acre-ft Dec. 15, 1999, elevation, 1,866.4 ft; no contents most of time during winter months.

EXTREMES FOR CURRENT YEAR.--Maximum observed contents, 2,510 acre-ft June 19-24, elevation, 1,855.0 ft; minimum contents observed, zero acre-ft Jan. 10, elevation, 1,810.0 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	1,848.0	1,830	-
Oct. 31.....	1,842.7	1,400	-430
Nov. 30.....	1,839.6	1,170	-230
Dec. 31.....	1,829.4	570	-600
CAL YR 2000.....	-	-	-3,260
Jan. 31.....	1,824.5	378	-192
Feb. 28.....	1,835.8	928	+550
Mar. 31.....	1,843.7	1,480	+552
Apr. 30.....	1,848.6	1,880	+400
May 31.....	1,853.9	2,400	+520
June 30.....	1,854.8	2,490	+90
July 31.....	1,850.8	2,090	-400
Aug. 31.....	1,845.9	1,650	-440
Sept. 30.....	1,841.3	1,290	-360
WTR YR 2000.....	-	-	-540

a Interpolated.

NESTUCCA RIVER BASIN

14302900 NESTUCCA RIVER NEAR FAIRDALE, OR

LOCATION.--Lat 45°18'40", long 123°25'05", in SW 1/4 NW 1/4 sec.15, T.3 S., R.6 W., Yamhill County, Hydrologic Unit 17100203, on right bank 100 ft upstream from former Meadow Lake, 0.4 mi downstream from Walker Creek, 5.3 mi southwest of Fairdale, and at mile 49.3.

DRAINAGE AREA.--6.18 mi².

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

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 sea level (levels by city of McMinnville).

REMARKS.--No estimated daily discharges. Records good. Flow regulated since March 1969 by McGuire Lake about 1 mi upstream from gage (station 14302800). During winter months lake is empty except when inflow exceeds capacity of outlet tunnel. Trans-basin diversion upstream from station to Haskins Creek Basin (see station 14196001). About 2,250 acre-ft diverted during the 2001 water year, primarily during summer and fall.

AVERAGE DISCHARGE.--41 years (water years 1961-2001), 31.6 ft³/s, 69.44 in/yr, 22,890 acre-ft/yr, adjusted for storage and diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 876 ft³/s Dec. 22, 1964, gage height, 10.43 ft; minimum discharge, 0.41 ft³/s Sept. 11, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 123 ft³/s Dec. 22, gage height, 3.82 ft; minimum discharge, 0.64 ft³/s Sept. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	7.6	12	52	11	10	13	28	3.9	2.7	1.6	1.1
2	5.8	8.9	13	50	14	11	12	22	4.8	2.6	1.6	1.1
3	5.4	8.0	11	47	14	9.4	11	18	4.7	2.4	1.5	1.3
4	4.8	8.4	9.2	46	19	8.8	9.6	14	4.0	2.5	1.6	1.1
5	4.3	7.6	7.9	44	19	8.3	8.8	13	4.3	2.2	1.5	1.1
6	4.3	6.4	7.2	41	17	7.7	9.8	11	4.2	2.2	1.5	1.1
7	4.2	4.8	6.5	37	15	7.2	8.8	9.4	3.7	2.2	1.6	1.1
8	4.1	7.6	6.1	32	13	7.5	8.3	8.1	3.5	2.0	1.4	1.0
9	6.9	9.7	6.2	18	12	7.5	7.7	7.3	3.4	1.9	1.2	.95
10	6.2	7.0	5.7	16	11	6.7	9.0	6.5	3.3	1.9	1.2	.90
11	4.5	6.0	5.6	8.4	9.7	6.3	12	6.0	4.4	1.8	1.2	.91
12	4.4	5.6	5.7	7.6	8.7	6.1	10	5.5	4.7	1.8	1.2	.90
13	4.3	4.4	5.7	10	8.3	6.0	9.9	5.3	3.7	1.6	1.1	.86
14	4.4	3.0	23	12	7.7	6.6	9.1	16	3.4	1.6	1.1	.86
15	4.3	2.8	44	11	9.3	8.3	8.4	18	3.2	1.7	1.1	.95
16	4.2	2.8	43	10	16	7.9	7.8	18	3.1	1.9	1.1	1.1
17	4.1	2.7	48	9.4	13	10	8.6	14	3.0	2.0	1.2	.84
18	4.3	2.5	37	8.6	18	13	7.6	12	2.9	2.0	1.3	.93
19	4.2	2.5	51	8.0	15	16	7.1	11	2.8	2.0	2.1	.86
20	6.8	2.6	70	7.5	14	14	6.9	9.4	2.6	1.8	1.1	.81
21	6.6	2.5	75	14	20	13	6.3	8.1	2.5	1.9	1.2	.74
22	5.1	3.3	116	10	17	11	6.0	7.1	2.4	1.8	3.9	.77
23	4.9	8.3	106	9.3	15	9.8	6.4	6.3	2.4	1.7	3.0	.71
24	4.2	7.9	94	9.9	13	9.1	5.8	5.7	3.1	1.6	2.0	.80
25	4.3	7.4	81	9.3	12	14	5.4	5.3	3.0	1.5	1.8	.89
26	4.3	8.0	73	8.6	11	13	5.1	4.9	2.6	1.5	1.6	1.5
27	4.4	12	67	7.9	9.7	20	5.0	4.6	7.0	1.5	1.3	1.3
28	9.0	8.4	62	7.4	8.6	24	7.1	5.0	4.3	1.6	1.2	1.1
29	8.9	13	59	12	---	20	9.4	4.7	3.4	1.7	1.2	1.0
30	8.3	16	57	12	---	17	24	4.4	3.0	1.9	1.1	.92
31	7.7	---	55	12	---	15	---	4.0	---	1.7	1.1	---
TOTAL	167.6	197.7	1262.8	587.9	371.0	344.2	265.9	312.6	107.3	59.2	46.6	29.50
MEAN	5.41	6.59	40.7	19.0	13.2	11.1	8.86	10.1	3.58	1.91	1.50	.98
MAX	9.0	16	116	52	20	24	24	28	7.0	2.7	3.9	1.5
MIN	4.1	2.5	5.6	7.4	7.7	6.0	5.0	4.0	2.4	1.5	1.1	.71
AC-FT	332	392	2500	1170	736	683	527	620	213	117	92	59
MEAN†	4.02	7.69	33.5	15.9	23.2	20.2	15.6	18.5	6.67	2.94	2.84	1.13
CFSM†	0.65	1.24	5.42	2.57	3.75	3.27	2.52	2.99	1.08	0.48	0.46	0.18
IN.†	0.75	1.39	6.25	2.97	3.91	3.76	2.81	3.46	1.20	0.55	0.53	0.20
AC-FT†	247	458	2060	978	1290	1240	927	1140	397	181	175	67

CAL YR 2001 TOTAL 8261.2 MEAN 22.6 MAX 137 MIN 1.5 AC-FT 16390 MEAN† 21.6 CFSM† 3.50 IN.† 47.43 AC-FT† 15630
WTR YR 2001 TOTAL 3752.30 MEAN 10.3 MAX 116 MIN .71 AC-FT 7440 MEAN† 12.6 CFSM† 2.04 IN.† 27.77 AC-FT† 9150

† Adjusted for storage and diversion from McGuire Lake.

NESTUCCA RIVER BASIN

303

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 mi².

PERIOD OF RECORD.--July 1983 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,400 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records fair.

AVERAGE DISCHARGE.--18 years (water years 1984-2001), 17.2 ft³/s, 75.52 in/yr, 12,440 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 680 ft³/s Feb. 6, 1996, gage height, 4.30 ft, from rating curve extended above 190 ft³/s on basis of slope-area measurement of peak flow; maximum gage height, 5.49 ft, Dec. 27, 1998; minimum discharge, 0.46 ft³/s Sept. 30, Oct. 1, 2, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 180 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 23	1345	*45	*2.68				

Minimum discharge, 0.99 ft³/s Sept. 23-25, 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	2.9	11	11	9.4	7.6	18	21	6.6	3.4	1.9	1.3
2	2.2	3.2	11	9.9	11	7.8	16	20	7.0	3.2	1.9	1.3
3	1.7	2.8	10	9.2	13	7.3	15	19	6.9	3.0	2.0	1.3
4	1.5	3.4	9.5	9.0	17	7.1	14	17	6.4	3.0	2.0	1.3
5	1.4	3.3	8.7	10	20	7.1	13	16	6.4	2.9	1.9	1.3
6	1.3	3.5	8.0	9.0	21	7.0	13	14	6.2	2.8	1.9	1.2
7	1.3	3.2	7.5	8.5	19	6.8	12	12	5.8	2.8	1.8	1.2
8	1.3	5.6	6.9	8.2	17	6.9	12	11	5.3	2.7	1.8	1.2
9	2.3	7.3	6.7	8.4	16	6.9	11	10	5.3	2.6	1.7	1.2
10	1.8	6.4	6.2	8.9	14	6.6	13	9.3	5.2	2.6	1.7	1.1
11	1.5	5.8	5.8	8.3	13	6.6	16	8.9	6.3	2.6	1.6	1.1
12	1.5	5.4	5.5	8.2	11	6.3	17	8.5	6.0	2.5	1.6	1.1
13	1.8	5.0	6.3	9.4	10	6.4	17	8.1	5.3	2.5	1.5	1.1
14	1.7	4.6	11	10	9.4	6.6	16	15	5.2	2.5	1.4	1.1
15	1.5	4.2	22	10	9.4	7.3	15	18	5.1	2.5	1.4	1.1
16	1.5	3.9	22	10	11	7.2	14	19	4.8	2.7	1.4	1.1
17	1.5	3.6	26	10	9.3	7.9	13	19	4.6	2.7	1.4	1.1
18	1.9	3.4	25	9.8	9.8	11	12	18	4.4	2.7	1.4	1.1
19	1.6	3.2	22	9.3	9.1	18	11	16	4.3	2.6	1.4	1.1
20	4.8	3.1	20	9.1	9.1	19	10	14	4.1	2.5	1.4	1.1
21	5.2	2.9	18	9.8	9.3	17	9.3	13	4.0	2.3	1.5	1.1
22	3.3	2.7	36	9.0	9.1	15	9.1	11	3.9	2.2	3.1	1.1
23	2.6	5.1	43	8.6	8.8	13	9.0	10	3.8	2.1	2.5	1.1
24	2.3	5.0	38	8.4	8.5	12	8.5	9.5	4.3	2.1	1.9	.99
25	2.1	5.2	32	8.2	8.3	13	8.1	8.9	3.9	2.0	1.7	1.1
26	2.1	6.3	27	7.9	7.9	12	7.9	8.4	3.7	2.0	1.4	1.9
27	2.0	10	23	7.5	7.6	16	7.6	8.0	4.7	2.0	1.4	1.3
28	4.7	8.9	19	7.4	7.4	22	8.3	8.0	3.9	2.2	1.4	1.1
29	4.3	9.8	16	8.5	---	23	8.8	7.3	3.6	2.1	1.3	1.1
30	3.3	11	14	9.0	---	21	17	7.1	3.4	2.1	1.3	1.0
31	2.9	---	13	9.5	---	20	---	6.9	---	2.0	1.3	---
TOTAL	74.2	150.7	530.1	280.0	325.4	351.4	371.6	391.9	150.4	77.9	51.9	35.19
MEAN	2.39	5.02	17.1	9.03	11.6	11.3	12.4	12.6	5.01	2.51	1.67	1.17
MAX	5.3	11	43	11	21	23	18	21	7.0	3.4	3.1	1.9
MIN	1.3	2.7	5.5	7.4	7.4	6.3	7.6	6.9	3.4	2.0	1.3	.99
AC-FT	147	299	1050	555	645	697	737	777	298	155	103	70
CFSM	.77	1.63	5.53	2.92	3.76	3.67	4.01	4.09	1.62	.81	.54	.38
IN.	.89	1.81	6.38	3.37	3.92	4.23	4.47	4.72	1.81	.94	.62	.42

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2001, BY WATER YEAR (WY)

	6.14	31.8	36.0	33.3	34.5	23.8	17.5	10.7	6.75	3.11	1.77	1.91
MEAN	6.14	31.8	36.0	33.3	34.5	23.8	17.5	10.7	6.75	3.11	1.77	1.91
MAX	29.2	66.1	98.5	60.0	98.0	42.4	41.4	18.7	12.0	4.49	2.44	7.64
(WY)	1998	1996	1997	1999	1999	1997	1996	1984	1990	1997	1997	1997
MIN	.95	1.76	15.9	9.03	10.3	6.59	8.66	4.02	2.40	1.65	1.11	.91
(WY)	1988	1994	1987	2001	1993	1992	2000	1989	1992	1992	1986	1987

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1984 - 2001

ANNUAL TOTAL	4387.7	2790.69	
ANNUAL MEAN	12.0	7.65	
HIGHEST ANNUAL MEAN			17.2
LOWEST ANNUAL MEAN			29.4
HIGHEST DAILY MEAN	69	43	7.65
LOWEST DAILY MEAN	1.2	.99	460
ANNUAL SEVEN-DAY MINIMUM	1.2	1.1	.55
ANNUAL RUNOFF (AC-FT)	8700	5540	.63
ANNUAL RUNOFF (CFSM)	3.88	2.47	
ANNUAL RUNOFF (INCHES)	52.82	33.60	5.56
10 PERCENT EXCEEDS	31	17	75.52
50 PERCENT EXCEEDS	7.6	6.6	39
90 PERCENT EXCEEDS	1.5	1.4	8.5
			1.4

SILETZ RIVER BASIN

14305500 SILETZ RIVER AT SILETZ, OR

LOCATION.--Lat 44°42'55", long 123°53'10", in NW 1/4 SW 1/4 sec.11, T.10 S., R.10 W., Lincoln County, Hydrologic Unit 17100204, on right bank, 1.8 mi downstream from Baker Creek, 1.5 mi east of Siletz, and at mile 42.6.

DRAINAGE AREA.--202 mi².

PERIOD OF RECORD.--October 1905 to 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 sea level. Oct. 1, 1905, to Sept 30, 1938, nonrecording gage at various sites within 2.5 mi downstream at different datums.

REMARKS.--No estimated daily discharges. 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.--80 years (water years 1906-08, 1911, 1926-2001), 1,514 ft³/s, 101.81 in/yr, 1,097,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,800 ft³/s Nov. 26, 1999, gage height, 28.62 ft, from rating curve extended above 22,700 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 47 ft³/s Oct. 20, 21, 29, 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 20, 1921, reached a stage of 31.6 ft. at site 2.5 mi downstream at different datum, from floodmark. discharge, 40,800 ft³/s. from rating curve extended above 17,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 14,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 22	2000	*5,980	*9.21				
Minimum discharge, 77 ft ³ /s Sept. 21-25.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	408	326	891	870	777	695	1340	2300	429	308	153	104
2	225	344	883	791	937	826	1270	1660	474	289	150	108
3	144	323	776	738	1030	711	1180	1350	516	274	153	103
4	123	312	692	771	1330	666	1090	1160	458	262	159	100
5	112	315	626	793	1850	647	1020	1050	453	251	152	97
6	105	340	572	734	1580	612	1140	924	472	242	145	94
7	100	321	528	688	1340	585	1120	835	415	235	141	93
8	97	380	491	689	1180	601	1110	763	388	226	137	92
9	135	584	475	680	1110	691	1060	705	382	220	134	88
10	254	604	448	791	1020	631	1090	656	362	215	131	86
11	163	520	465	732	1000	599	1520	616	418	211	130	85
12	137	458	514	696	912	575	1450	578	564	203	128	85
13	162	413	581	840	849	561	1360	547	445	196	125	83
14	184	376	1290	1340	799	589	1220	932	406	192	124	83
15	156	348	3140	1240	770	579	1120	1910	383	188	123	84
16	141	323	2340	1110	1060	631	1030	1850	363	191	122	86
17	133	302	2170	991	1040	757	1010	1490	348	190	122	84
18	153	287	1750	903	1130	1420	972	1240	334	190	120	82
19	156	274	1480	884	1060	2880	893	1070	319	189	118	81
20	256	265	1260	804	983	2100	842	938	305	183	116	80
21	530	256	1180	1050	1080	1590	782	843	293	178	117	78
22	383	245	4450	1120	1040	1310	726	764	284	172	224	77
23	288	308	5130	1010	960	1120	706	698	280	169	437	77
24	240	564	3680	960	900	1000	675	648	293	164	232	77
25	211	442	2680	908	836	1100	626	605	331	159	174	80
26	195	562	2060	844	775	1130	590	566	283	155	147	106
27	183	968	1650	780	723	1250	562	535	385	152	133	127
28	329	845	1370	735	682	2290	613	541	459	158	123	98
29	457	823	1180	859	---	1860	675	535	368	166	116	87
30	447	1010	1080	836	---	1550	1970	478	328	173	110	82
31	366	---	974	806	---	1460	---	449	---	163	106	---
TOTAL	6973	13438	46806	26993	28754	33016	30762	29236	11538	6264	4602	2687
MEAN	225	448	1510	871	1027	1065	1025	943	385	202	148	89.6
MAX	530	1010	5130	1340	1850	2880	1970	2300	564	308	437	127
MIN	97	245	448	680	682	561	562	449	280	152	106	77
AC-FT	13830	26650	92840	53540	57030	65490	61020	57990	22890	12420	9130	5330
CFSM	1.11	2.22	7.47	4.31	5.08	5.27	5.08	4.67	1.90	1.00	.73	.44
IN.	1.28	2.47	8.62	4.97	5.30	6.08	5.67	5.38	2.12	1.15	.85	.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 2001, BY WATER YEAR (WY)

MEAN	717	2443	3353	3244	2954	2214	1486	841	499	224	131	197
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	64.5	58.6
(WY)	1988	1930	1977	1977	1973	1941	1926	1939	1928	1992	1992	1965

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1906 - 2001
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ANNUAL TOTAL	389798		241069			
ANNUAL MEAN	1065		660		1514	
HIGHEST ANNUAL MEAN					2337	1974
LOWEST ANNUAL MEAN					660	1977
HIGHEST DAILY MEAN	8090	Jun 12	5130	Dec 23	36700	Dec 28 1998
LOWEST DAILY MEAN	75	Sep 26	77	Sep 22	47	Oct 20 1987
ANNUAL SEVEN-DAY MINIMUM	76	Sep 23	79	Sep 19	48	Oct 16 1987
ANNUAL RUNOFF (AC-FT)	773200		478200		1097000	
ANNUAL RUNOFF (CFSM)	5.27		3.27		7.49	
ANNUAL RUNOFF (INCHES)	71.78		44.39		101.81	
10 PERCENT EXCEEDS	2590		1320		3820	
50 PERCENT EXCEEDS	673		535		752	
90 PERCENT EXCEEDS	104		116		104	

ALSEA RIVER BASIN

305

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 mi².

PERIOD OF RECORD.--July 1983 to current year.

REVISED RECORDS.--WDR OR-87-2: 1984(M,P), 1985(M,P), 1986(M,P).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 680 ft above sea level, from topographic map.

REMARKS.--Records poor. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--18 years (water years 1984-2001), 24.9 ft³/s, 59.47 in/yr, 18,070 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,360 ft³/s Feb. 7, 1996, gage height, 5.37 ft, from rating curve extended above 900 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 0.17 ft³/s Sept. 27, 28, Oct. 2, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 22	0630	*183	*3.32				
Minimum discharge, 0.90 ft ³ /s Sept. 21.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	2.2	7.4	8.5	10	8.2	18	23	4.2	3.6	1.8	1.3
2	1.8	2.4	5.5	7.4	11	9.3	18	17	4.7	3.3	1.7	1.3
3	1.6	2.4	4.6	6.8	14	8.2	21	13	4.9	3.1	1.8	1.3
4	1.5	2.5	4.0	6.8	23	8.1	19	11	4.5	3.0	1.9	1.2
5	1.4	2.5	3.5	6.4	25	7.4	17	9.2	4.8	2.9	1.8	1.2
6	1.4	2.6	3.2	5.8	23	6.7	16	8.0	4.5	2.7	1.7	1.2
7	1.3	2.4	2.9	5.5	19	6.1	15	7.1	4.0	2.6	1.6	1.2
8	1.3	4.2	2.7	5.8	16	6.3	16	6.2	3.8	2.5	1.5	1.2
9	2.5	8.3	2.8	5.8	15	7.4	16	6.0	4.0	2.5	1.4	1.1
10	2.5	4.5	2.6	6.4	14	7.3	17	5.6	3.8	2.4	1.4	1.1
11	1.9	3.3	3.0	6.0	16	7.0	31	5.2	4.1	2.3	1.3	1.0
12	1.8	2.8	3.6	5.6	15	6.6	27	4.9	4.7	2.3	1.3	1.0
13	1.9	2.5	21	8.4	14	6.2	21	4.7	4.1	2.2	1.3	1.0
14	2.1	2.3	46	20	12	6.0	18	13	3.8	2.2	1.3	1.0
15	1.9	2.1	57	15	11	5.9	15	23	3.7	2.2	1.3	1.1
16	1.9	2.0	37	11	10	5.8	13	49	3.6	2.2	1.3	1.1
17	1.9	1.8	31	9.4	9.3	6.7	12	30	3.6	2.2	1.3	1.1
18	3.0	1.8	19	8.2	9.7	12	11	18	3.4	2.2	1.3	1.2
19	2.4	1.7	12	7.7	8.6	37	9.6	13	3.3	2.1	1.2	1.2
20	8.1	1.7	8.6	7.1	8.2	26	8.7	10	3.2	2.1	1.2	1.2
21	5.3	1.6	11	9.8	15	17	7.9	8.3	3.1	2.1	1.2	1.2
22	2.5	1.5	140	11	17	14	7.2	7.1	3.1	2.0	2.5	1.1
23	1.9	2.0	104	9.9	14	11	6.9	6.3	3.1	1.8	3.2	1.1
24	1.6	3.0	71	9.2	12	9.5	6.6	5.9	3.5	1.8	1.9	1.1
25	1.5	2.4	47	9.4	10	11	6.2	5.5	3.5	1.7	1.6	1.3
26	1.4	2.6	32	9.0	8.8	13	5.6	5.1	3.6	1.7	1.4	1.7
27	1.5	5.0	23	8.4	7.7	24	5.4	4.8	7.0	1.7	1.3	1.7
28	4.1	4.1	17	7.8	7.1	48	6.4	5.1	5.2	1.7	1.2	1.4
29	3.7	5.0	13	12	---	33	5.8	4.8	4.3	1.9	1.2	1.3
30	3.1	14	11	13	---	23	18	4.3	3.9	2.3	1.2	1.2
31	2.5	---	9.7	12	---	20	---	4.1	---	2.0	1.3	---
TOTAL	73.0	97.2	756.1	275.1	375.4	417.7	415.3	338.2	121.0	71.3	47.4	36.1
MEAN	2.35	3.24	24.4	8.87	13.4	13.5	13.8	10.9	4.03	2.30	1.53	1.20
MAX	8.1	14	140	20	25	48	31	49	7.0	3.6	3.2	1.7
MIN	1.3	1.5	2.6	5.5	7.1	5.8	5.4	4.1	3.1	1.7	1.2	1.0
AC-FT	145	193	1500	546	745	829	824	671	240	141	94	72
CFSM	.41	.57	4.28	1.56	2.35	2.36	2.43	1.91	.71	.40	.27	.21
IN.	.48	.63	4.93	1.80	2.45	2.73	2.71	2.21	.79	.47	.31	.24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 2001, BY WATER YEAR (WY)

MEAN	5.31	39.7	52.4	55.7	57.7	37.3	24.7	15.1	8.36	2.85	1.36	1.42
MAX	32.4	115	137	116	164	77.1	49.5	28.2	21.3	10.4	2.42	4.51
(WY)	1998	1985	1997	1999	1999	1997	1993	1999	1985	1983	1983	1997
MIN	.39	1.41	17.6	8.87	13.4	11.5	7.26	5.99	1.83	1.40	.52	.66
(WY)	1988	1994	1990	2001	2001	1992	2000	1994	1992	1992	1992	1987

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1983 - 2001

ANNUAL TOTAL	6540.58	3023.8	24.9
ANNUAL MEAN	17.9	8.28	46.7
HIGHEST ANNUAL MEAN			8.28
LOWEST ANNUAL MEAN			817
HIGHEST DAILY MEAN	152	Jan 14	Feb 7 1996
LOWEST DAILY MEAN	.98	Aug 30	Oct 13 1991
ANNUAL SEVEN-DAY MINIMUM	1.1	Aug 25	Oct 9 1991
ANNUAL RUNOFF (AC-FT)	12970	6000	18070
ANNUAL RUNOFF (CFSM)	3.14	1.45	4.38
ANNUAL RUNOFF (INCHES)	42.69	19.73	59.47
10 PERCENT EXCEEDS	53	18	61
50 PERCENT EXCEEDS	6.0	4.6	9.5
90 PERCENT EXCEEDS	1.3	1.3	1.0

ALSEA RIVER BASIN

14306500 ALSEA RIVER NEAR TIDEWATER, OR

LOCATION.--Lat 44°23'10", long 123°49'50", in NW 1/4 NW 1/4 sec.6, T.14 S., R.9 W., Lincoln County, Hydrologic Unit 17100205, on right bank 0.9 mi downstream from Grass Creek, 2.5 mi upstream from Scott Creek, 3.8 mi southeast of Tidewater, and at mile 21.0.

DRAINAGE AREA.--334 mi².

PERIOD OF RECORD.--October 1939 to current year.

GAGE.--Water-stage recorder. Datum of gage is 48.16 ft above sea level. 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.--62 years (water years 1940-2001), 1,474 ft³/s, 59.97 in/yr, 1,068,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,800 ft³/s Dec. 22, 1964, gage height, 27.44 ft; minimum discharge, 45 ft³/s Sept. 26, 27, 1965.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood on or about Feb. 3, 1890, reached a stage of 29.5 ft, from floodmark (discharge not determined).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 13,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 22	1530	*7,520	*10.64				

Minimum discharge, 62 ft³/s Sept. 22-24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	122	189	681	740	687	671	984	1200	331	236	125	82
2	130	182	486	680	703	798	964	963	350	220	115	82
3	104	173	396	632	731	712	964	828	376	205	111	81
4	92	163	334	594	852	679	930	736	353	195	112	79
5	86	158	296	590	923	665	873	681	344	188	112	78
6	81	159	268	549	904	620	937	622	350	182	107	76
7	79	151	247	517	841	592	931	579	315	176	103	76
8	77	174	231	518	781	593	911	542	295	170	98	75
9	126	364	224	515	801	660	867	513	283	165	95	73
10	261	368	220	580	769	628	854	489	276	161	93	70
11	162	264	219	537	832	596	1050	469	284	159	90	68
12	122	215	257	510	806	571	1040	449	344	154	89	68
13	111	191	474	607	762	549	984	431	302	148	87	67
14	110	176	1820	1450	725	550	907	513	273	145	84	66
15	106	163	2710	1330	695	533	848	987	263	143	85	67
16	100	154	1880	1060	705	550	795	1030	252	144	86	67
17	94	146	1560	903	664	565	778	922	242	145	86	66
18	125	140	1250	803	830	622	732	760	235	144	85	66
19	148	136	1010	751	827	876	710	663	227	142	83	65
20	211	134	842	694	775	899	684	599	221	140	80	65
21	481	131	834	759	916	781	647	549	212	137	79	64
22	281	127	5530	799	1050	698	609	511	206	133	105	63
23	193	141	4850	749	1000	642	587	475	205	128	250	63
24	158	203	3130	729	926	612	566	447	211	123	180	63
25	138	201	2260	720	847	721	543	427	229	119	128	65
26	126	197	1740	704	770	806	519	408	219	114	107	75
27	119	313	1390	662	715	897	498	390	354	111	98	89
28	200	363	1160	632	675	1810	550	387	423	110	94	86
29	368	350	1010	733	---	1500	572	397	307	114	90	76
30	295	781	903	761	---	1210	781	365	259	140	86	71
31	227	---	816	717	---	1080	---	347	---	141	84	---
TOTAL	5033	6607	39028	22525	22512	23686	23615	18679	8541	4732	3227	2152
MEAN	162	220	1259	727	804	764	787	603	285	153	104	71.7
MAX	481	781	5530	1450	1050	1810	1050	1200	423	236	250	89
MIN	77	127	219	510	664	533	498	347	205	110	79	63
AC-FT	9980	13100	77410	44680	44650	46980	46840	37050	16940	9390	6400	4270
CFSM	.49	.66	3.77	2.18	2.41	2.29	2.36	1.80	.85	.46	.31	.21
IN.	.56	.74	4.35	2.51	2.51	2.64	2.63	2.08	.95	.53	.36	.24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2001, BY WATER YEAR (WY)

	370	1758	3293	3520	3270	2436	1478	805	411	192	118	128
MEAN	370	1758	3293	3520	3270	2436	1478	805	411	192	118	128
MAX	2521	6058	7419	7874	6909	5144	3203	1848	1053	363	234	452
(WY)	1948	1974	1965	1953	1996	1961	1963	1993	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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1940 - 2001
ANNUAL TOTAL	376357	180337	1474
ANNUAL MEAN	1028	494	2541
HIGHEST ANNUAL MEAN			431
LOWEST ANNUAL MEAN			36100
HIGHEST DAILY MEAN	7590	Jan 14	5530
LOWEST DAILY MEAN	77	Oct 8	63
ANNUAL SEVEN-DAY MINIMUM	83	Sep 23	64
ANNUAL RUNOFF (AC-FT)	746500	357700	1068000
ANNUAL RUNOFF (CFSM)	3.08	1.48	4.41
ANNUAL RUNOFF (INCHES)	41.92	20.09	59.97
10 PERCENT EXCEEDS	2820	928	3800
50 PERCENT EXCEEDS	510	350	640
90 PERCENT EXCEEDS	111	85	98

SIUSLAW RIVER BASIN

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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 mi².

PERIOD OF RECORD.--October 1967 to September 1994 (discharge), February 1998 to current year (gage height only).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 41 ft above sea level, from topographic map.

REMARKS.--No regulation or diversions upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 28.45 ft Jan. 21, 1972.

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 ft³/s, from rating curve extended above 40,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 11.23 ft Dec. 22; minimum gage height, 2.78 ft Sept. 24.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.11	3.55	4.47	4.80	4.75	4.60	5.23	5.34	3.86	3.66	3.14	2.94
2	3.14	3.51	4.33	4.68	4.79	4.81	5.16	5.03	3.89	3.58	3.12	2.93
3	3.07	3.46	4.19	4.58	4.87	4.72	5.15	4.83	3.92	3.52	3.11	2.92
4	3.03	3.41	4.04	4.50	5.14	4.71	5.09	4.68	3.88	3.47	3.13	2.90
5	3.01	3.38	3.91	4.50	5.37	4.70	5.00	4.58	3.90	3.43	3.14	2.89
6	3.00	3.36	3.81	4.42	5.33	4.63	5.02	4.47	3.95	3.39	3.09	2.88
7	2.99	3.34	3.73	4.35	5.18	4.56	5.01	4.38	3.85	3.36	3.05	2.87
8	2.98	3.39	3.67	4.38	5.03	4.51	5.07	4.30	3.78	3.34	3.03	2.87
9	3.13	3.81	3.63	4.39	4.99	4.54	5.10	4.23	3.75	3.32	3.02	2.86
10	3.39	4.13	3.60	4.54	4.92	4.48	5.06	4.17	3.71	3.30	3.01	2.84
11	3.27	3.92	3.60	4.54	5.07	4.43	5.27	4.12	3.75	3.29	3.03	2.84
12	3.19	3.75	3.71	4.50	5.21	4.38	5.30	4.07	3.88	3.27	2.98	2.83
13	3.20	3.64	4.49	4.59	5.26	4.34	5.24	4.03	3.78	3.24	2.97	2.88
14	3.24	3.55	7.03	5.11	5.16	4.32	5.10	4.24	3.71	3.23	2.96	2.84
15	3.20	3.48	7.87	5.25	5.02	4.30	4.98	5.31	3.66	3.22	2.95	2.82
16	3.15	3.43	7.02	5.13	4.92	4.32	4.87	5.71	3.62	3.22	2.94	2.83
17	3.12	3.39	6.75	4.95	4.81	4.38	4.80	5.65	3.59	3.22	2.94	2.82
18	3.29	3.35	6.21	4.81	4.89	4.62	4.75	5.30	3.56	3.21	2.94	2.81
19	3.38	3.32	5.67	4.75	4.83	5.29	4.70	4.99	3.53	3.21	2.93	2.80
20	3.70	3.31	5.27	4.64	4.75	5.24	4.66	4.76	3.50	3.20	2.91	2.80
21	4.23	3.30	5.07	4.77	4.91	5.01	4.59	4.59	3.48	3.19	2.90	2.79
22	3.87	3.28	9.30	4.94	5.06	4.83	4.51	4.46	3.46	3.17	3.03	2.79
23	3.62	3.36	9.70	4.91	5.06	4.69	4.46	4.35	3.45	3.15	3.45	2.79
24	3.50	3.60	8.29	4.88	4.99	4.61	4.41	4.25	3.49	3.13	3.26	2.79
25	3.40	3.59	7.15	4.83	4.90	4.71	4.36	4.18	3.55	3.11	3.14	2.81
26	3.33	3.63	6.40	4.76	4.80	4.85	4.31	4.10	3.54	3.09	3.07	2.88
27	3.28	3.96	5.89	4.71	4.70	5.03	4.26	4.04	3.97	3.07	3.04	2.94
28	3.53	4.09	5.52	4.65	4.62	6.21	4.37	4.03	4.00	3.07	3.00	2.93
29	3.80	4.12	5.27	4.75	---	6.10	4.36	4.03	3.84	3.08	2.98	2.90
30	3.76	4.55	5.10	4.80	---	5.70	4.80	3.95	3.74	3.17	2.97	2.88
31	3.63	---	4.94	4.77	---	5.42	---	3.90	---	3.18	2.95	---
MEAN	3.34	3.60	5.47	4.72	4.98	4.81	4.83	4.52	3.72	3.26	3.04	2.86
MAX	4.23	4.55	9.70	5.25	5.37	6.21	5.30	5.71	4.00	3.66	3.45	2.94
MIN	2.98	3.28	3.60	4.35	4.62	4.30	4.26	3.90	3.45	3.07	2.90	2.79

WTR YR 2001 MEAN 4.09 MAX 9.70 MIN 2.79

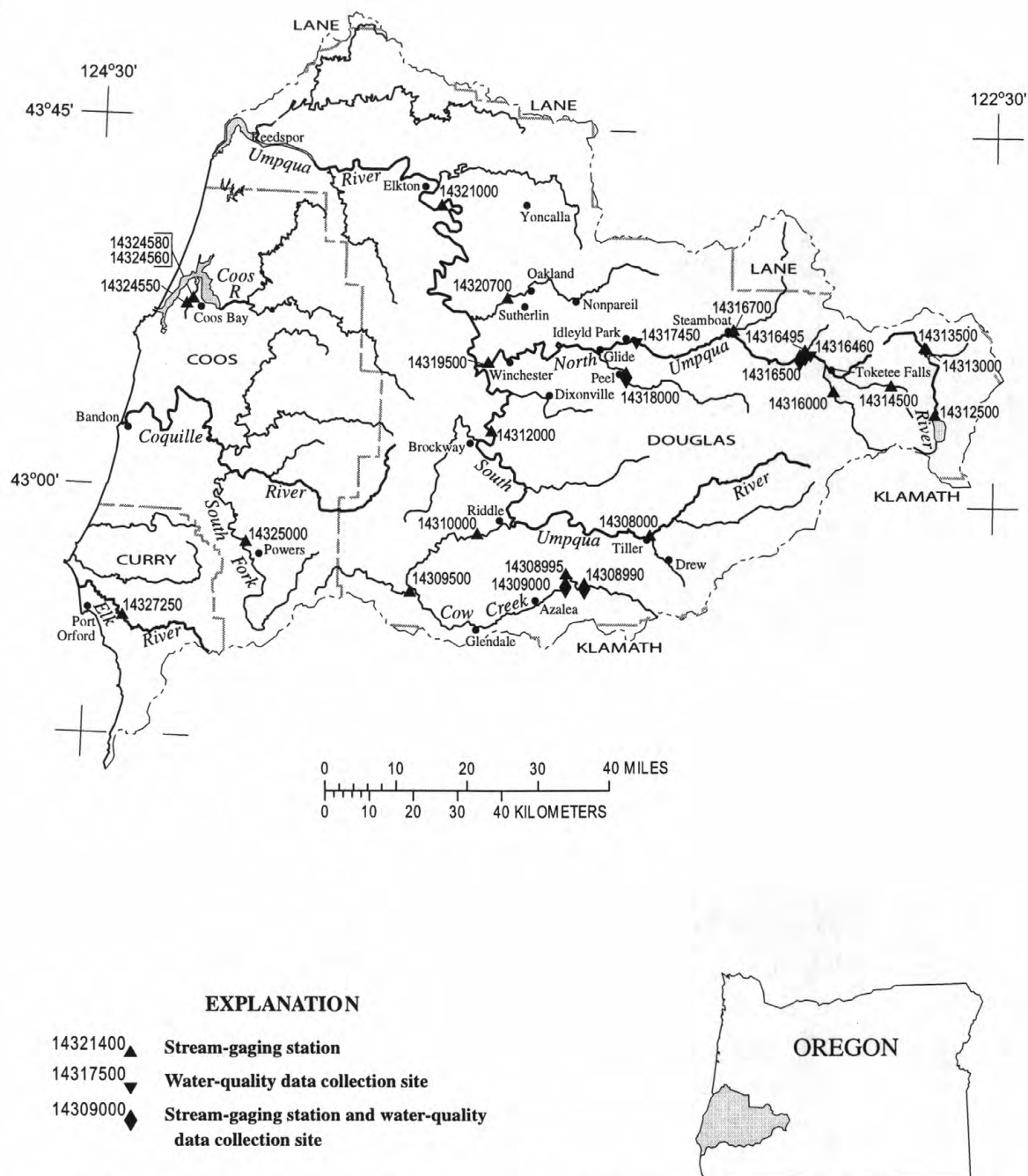


Figure 29. Location of surface-water and water-quality stations in the Umpqua, Coos and Coquille River Basins.

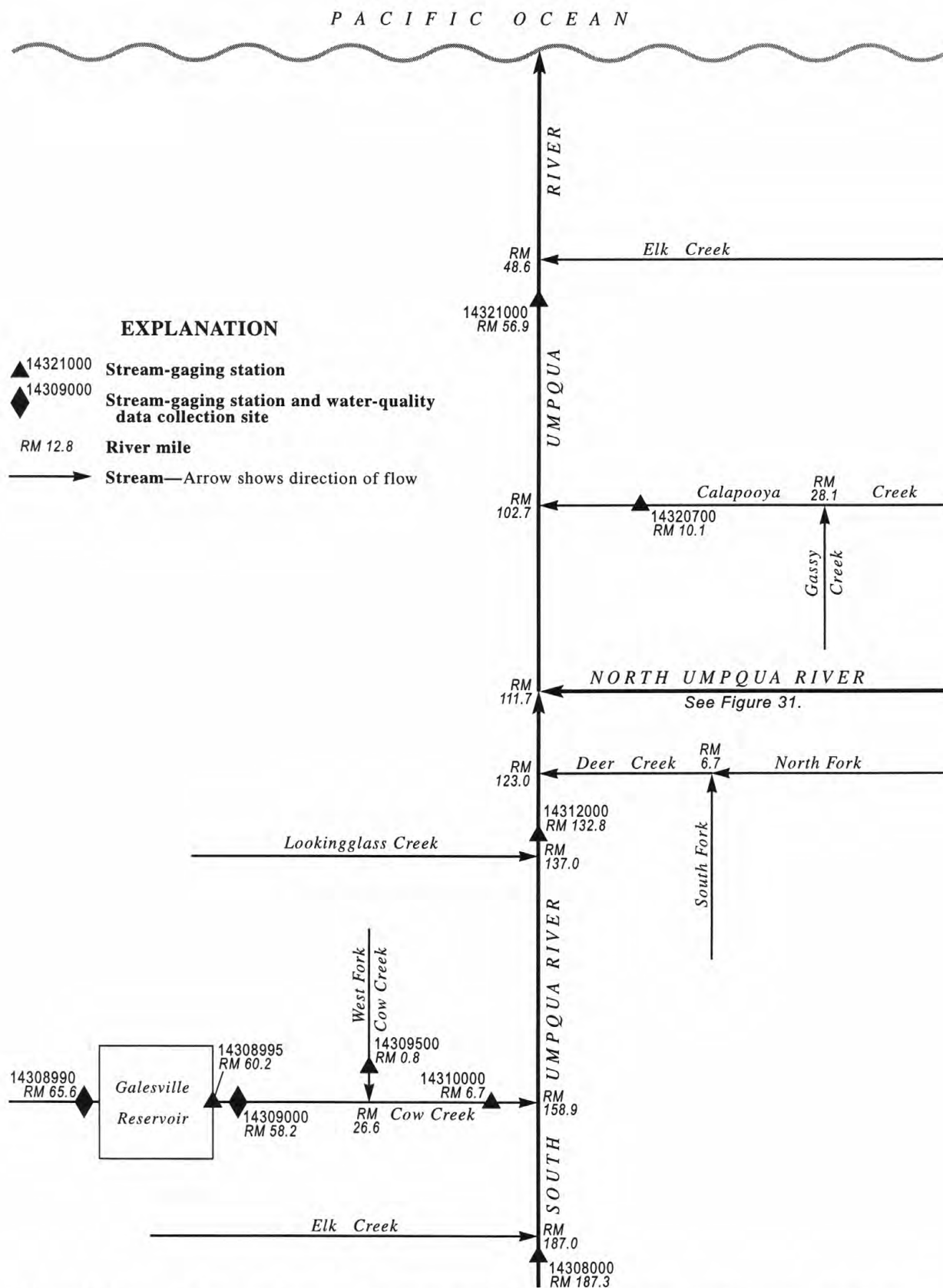


Figure 30. Schematic diagram showing gaging stations in the Umpqua and the South Fork Umpqua River Basins.

UMPQUA RIVER BASIN

14308000 SOUTH UMPQUA RIVER AT TILLER, OR

LOCATION.--Lat 42°55'50", long 122°56'50", in NE 1/4 sec.33, T.30 S., R.2 W., Douglas County, Hydrologic Unit 17100302, Umpqua National Forest, on left bank 0.3 mi upstream from bridge on State Highway 227 at Tiller, 0.3 mi upstream from Elk Creek, and at mile 187.31.

DRAINAGE AREA.--449 mi².

PERIOD OF RECORD.--October 1910 to December 1911, October 1939 to current year. Monthly discharge only for some periods, published in WSP 1318. Prior to December 1911, published as South Fork of Umpqua River at Tiller.

REVISED RECORDS.--WSP 1448: 1911(M), 1912, drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 991.8 ft above sea level (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.--63 years, (water years 1911, 1940-2001), 1,027 ft³/s, 31.09 in/yr, 744,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 60,200 ft³/s Dec. 22, 1964, gage height, 25.72 ft; minimum discharge observed, 20 ft³/s Sept. 3, 4, 1911.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 28	0500	*3,670	*6.19				
Minimum discharge, 33 ft ³ /s Sept. 23, 24.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	83	369	283	241	266	958	812	226	117	72	41
2	45	80	265	262	252	450	856	711	220	112	64	40
3	45	89	214	260	344	522	777	638	220	106	62	39
4	44	83	184	258	828	460	719	580	218	102	60	38
5	44	78	161	257	752	463	689	540	231	97	58	38
6	44	80	146	252	623	462	779	497	245	94	57	37
7	43	82	135	237	511	461	901	461	211	91	56	37
8	42	128	126	231	433	457	840	442	193	88	54	38
9	42	287	121	244	392	450	814	423	183	85	53	37
10	60	194	118	237	356	425	786	398	174	83	51	36
11	86	139	114	215	342	390	1090	374	171	83	48	35
12	88	114	133	199	308	358	1280	361	186	86	47	35
13	68	102	139	202	284	338	1070	343	175	85	46	35
14	61	109	491	251	276	325	893	344	160	78	45	36
15	58	114	900	264	267	317	800	1220	153	75	45	37
16	56	106	614	234	264	376	788	2330	147	74	44	38
17	54	99	743	208	278	528	988	1500	141	73	43	43
18	54	92	546	194	326	1250	995	1050	135	72	43	39
19	54	90	402	199	326	1230	981	828	131	71	43	36
20	68	90	354	236	308	1040	997	686	127	69	43	35
21	308	98	372	240	340	875	939	589	122	70	42	35
22	172	100	796	277	374	786	836	514	118	69	43	34
23	107	95	1070	274	392	738	765	452	116	66	47	34
24	84	178	1000	344	392	707	736	401	117	64	59	33
25	74	190	721	415	370	830	765	365	126	64	59	41
26	69	195	529	380	333	747	805	335	124	62	50	54
27	67	224	454	324	306	756	773	311	155	60	46	89
28	96	354	402	285	282	2910	729	292	149	58	44	71
29	161	304	362	280	---	1920	667	272	142	58	43	54
30	121	492	339	271	---	1390	603	256	125	68	42	48
31	96	---	307	250	---	1100	---	240	---	87	42	---
TOTAL	2456	4469	12627	8063	10500	23327	25619	18565	4941	2467	1551	1243
MEAN	79.2	149	407	260	375	752	854	599	165	79.6	50.0	41.4
MAX	308	492	1070	415	828	2910	1280	2330	245	117	72	89
MIN	42	78	114	194	241	266	603	240	116	58	42	33
AC-FT	4870	8860	25050	15990	20830	46270	50820	36820	9800	4890	3080	2470
CFSM	.18	.33	.91	.58	.84	1.68	1.90	1.33	.37	.18	.11	.09
IN.	.20	.37	1.05	.67	.87	1.93	2.12	1.54	.41	.20	.13	.10

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 2001, BY WATER YEAR (WY)

	195	1049	2017	2085	1992	1716	1409	1075	518	156	77.6	75.3
MEAN	195	1049	2017	2085	1992	1716	1409	1075	518	156	77.6	75.3
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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1911 - 2001
ANNUAL TOTAL	323138	115828	
ANNUAL MEAN	883	317	1027
HIGHEST ANNUAL MEAN			1762
LOWEST ANNUAL MEAN			268
HIGHEST DAILY MEAN	11600	2910	36500
LOWEST DAILY MEAN	42	33	20
ANNUAL SEVEN-DAY MINIMUM	43	35	26
ANNUAL RUNOFF (AC-FT)	640900	229700	744300
ANNUAL RUNOFF (CFSM)	1.97	.71	2.29
ANNUAL RUNOFF (INCHES)	26.77	9.60	31.09
10 PERCENT EXCEEDS	2200	798	2420
50 PERCENT EXCEEDS	370	199	506
90 PERCENT EXCEEDS	56	43	59

UMPQUA RIVER BASIN

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14308990 COW CREEK ABOVE GALESVILLE RESERVOIR, NEAR AZALEA, OR

LOCATION.--Lat 42°49'24", long 123°07'29", in SW 1/4 NW 1/4 sec.1, T.32 S., R.4 W., Douglas County, Hydrologic Unit 17100302, on left bank, about 600 ft upstream from bridge on Houck Ranch Road (BLM), 1.1 mi downstream from Sugar Creek, 3.2 mi south of Galesville Dam, 6.9 mi northeast of Azalea, and at mile 65.6

DRAINAGE AREA.--64.7 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,900 ft above sea level, 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.--16 years (water years 1986-2001), 84.2 ft³/s, 17.69 in/yr, 61,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 6,980 ft³/s Jan. 9, 1995, gage height 12.04 ft, from rating curve extended above 2,450 ft³/s; maximum gage height 12.30 ft Jan. 9, 1995 (from outside highwater mark); minimum discharge, 3.5 ft³/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 ft³/s at site 7.4 mi downstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 22	1630	141	1.51				
Minimum discharge, 3.6 ft ³ /s Aug. 16.							

 DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.6	12	30	22	23	27	35	26	12	10	7.7	5.8
2	8.3	13	22	21	24	32	35	26	13	9.7	6.9	5.8
3	8.7	13	18	21	28	30	36	24	13	9.0	5.8	5.6
4	9.1	12	17	21	33	30	37	23	13	8.5	6.8	5.6
5	9.2	12	15	20	34	31	37	22	15	8.3	6.6	5.4
6	8.7	13	15	20	32	30	41	21	14	8.5	6.3	5.8
7	8.3	13	14	20	29	30	46	21	13	7.5	5.9	5.9
8	8.4	19	14	20	27	30	47	20	12	8.0	6.4	5.6
9	9.0	26	14	21	27	31	51	19	12	7.4	6.1	5.4
10	13	19	14	24	26	30	50	19	11	7.9	5.9	5.1
11	12	15	14	21	26	29	64	18	12	8.2	5.7	4.7
12	11	14	17	20	24	28	66	18	13	8.2	5.9	4.9
13	11	13	26	22	24	27	59	17	12	7.4	5.2	5.6
14	11	16	72	24	24	26	52	17	11	7.9	5.2	5.6
15	11	17	56	24	23	26	48	28	12	7.5	5.5	5.5
16	10	16	38	22	24	27	47	29	11	7.5	5.1	4.9
17	10	15	46	21	26	37	49	23	11	7.8	5.7	5.4
18	10	14	34	20	29	43	47	20	11	7.6	5.5	5.4
19	11	14	27	21	29	39	52	19	10	7.3	5.9	5.1
20	23	14	24	20	29	37	52	18	9.3	7.5	6.2	5.5
21	32	15	28	20	38	34	47	17	9.3	7.5	5.9	5.5
22	16	14	109	20	42	32	43	16	9.4	7.5	5.8	5.2
23	13	15	87	20	38	30	40	15	9.1	6.8	7.2	4.9
24	12	16	58	29	36	29	38	15	10	6.9	7.3	5.3
25	11	17	43	32	34	35	35	14	10	6.3	6.5	9.3
26	11	20	35	28	31	31	33	14	11	6.5	5.9	11
27	11	20	31	26	29	31	30	13	18	6.2	5.8	9.7
28	25	20	28	24	28	47	30	13	14	6.2	6.0	8.5
29	21	42	26	25	---	45	29	13	12	6.3	6.0	7.9
30	15	48	24	24	---	40	27	13	11	9.9	6.2	7.6
31	13	---	23	23	---	37	---	13	---	9.8	6.1	---
TOTAL	391.3	527	1019	696	817	1011	1303	584	354.1	241.6	189.0	183.5
MEAN	12.6	17.6	32.9	22.5	29.2	32.6	43.4	18.8	11.8	7.79	6.10	6.12
MAX	32	48	109	32	42	47	66	29	18	10	7.7	11
MIN	8.3	12	14	20	23	26	27	13	9.1	6.2	5.1	4.7
AC-FT	776	1050	2020	1380	1620	2010	2580	1160	702	479	375	364
CFSM	.20	.27	.51	.35	.45	.50	.67	.29	.18	.12	.09	.09
IN.	.22	.30	.59	.40	.47	.58	.75	.34	.20	.14	.11	.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2001, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	13.5	58.2	142	199	196	160	103	73.0	35.2	16.4	10.3	9.71				
MAX	27.2	269	862	506	483	315	200	208	83.8	30.2	15.8	18.8				
(WY)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
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)	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1986 - 2001
ANNUAL TOTAL	30488.8	7316.5	
ANNUAL MEAN	83.3	20.0	84.2
HIGHEST ANNUAL MEAN			179
LOWEST ANNUAL MEAN			20.0
HIGHEST DAILY MEAN	1520	109	3980
LOWEST DAILY MEAN	8.1	4.7	4.2
ANNUAL SEVEN-DAY MINIMUM	8.4	5.2	4.5
ANNUAL RUNOFF (AC-FT)	60470	14510	61040
ANNUAL RUNOFF (CFSM)	1.29	.31	1.30
ANNUAL RUNOFF (INCHES)	17.53	4.21	17.69
10 PERCENT EXCEEDS	204	38	198
50 PERCENT EXCEEDS	28	16	30
90 PERCENT EXCEEDS	9.4	5.9	8.2

UMPQUA RIVER BASIN

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 fair. Turbidity values are considered relative to this site. 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, 83 NTU Jan. 10, 2000; minimum, <1 many days each year.

EXTREMES FOR CURRENT YEAR.--

TURBIDITY: Maximum recorded, 30 NTU Apr. 8, but may have been higher during period of missing record; minimum, <1 many days during year.

TURBIDITY (NTU), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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

UMPQUA RIVER BASIN

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14308990 COW CREEK ABOVE GALESVILLE RESERVOIR, NEAR AZALEA, OR--Continued

TURBIDITY (NTU), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
FEBRUARY			MARCH			APRIL			MAY			
1	3	1	1	2	1	1	2	1	2	1	1	1
2	2	1	1	2	1	1	2	1	1	2	1	1
3	1	1	1	2	1	1	2	1	1	2	1	1
4	2	1	1	2	1	1	3	1	2	1	1	1
5	3	1	1	2	1	1	2	1	1	2	1	1
6	4	1	1	2	1	1	3	1	2	2	1	1
7	2	1	1	2	<1	1	4	2	3	2	<1	1
8	1	1	1	2	1	1	30	2	3	1	<1	<1
9	2	1	1	1	1	1	6	3	4	1	<1	<1
10	1	1	1	1	1	1	9	2	2	1	<1	<1
11	6	1	1	4	1	1	9	2	5	1	<1	<1
12	1	1	1	2	<1	1	14	3	5	1	<1	<1
13	2	<1	1	2	<1	1	15	---	---	2	<1	<1
14	2	1	1	2	<1	1	---	---	---	3	<1	<1
15	5	<1	1	1	1	1	---	---	---	3	<1	1
16	1	1	1	2	1	1	---	---	---	4	<1	1
17	3	1	1	5	1	2	13	1	---	1	<1	<1
18	2	1	1	3	1	2	2	1	2	<1	<1	<1
19	1	1	1	2	1	1	4	1	2	---	---	---
20	3	1	1	2	1	1	3	1	2	---	---	---
21	2	1	1	2	1	1	3	1	2	---	---	---
22	2	1	1	1	1	1	3	1	1	---	---	---
23	2	1	1	1	<1	1	2	1	1	1	<1	1
24	2	1	1	1	<1	1	2	1	1	2	<1	1
25	2	1	1	---	---	---	3	<1	1	1	<1	1
26	1	1	1	---	---	---	1	<1	1	2	<1	1
27	2	1	1	---	---	---	1	<1	1	2	<1	1
28	1	1	1	---	---	---	3	<1	<1	1	<1	<1
29	---	---	---	4	1	2	1	<1	<1	2	<1	<1
30	---	---	---	2	1	2	2	<1	1	2	<1	1
31	---	---	---	3	1	1	---	---	---	1	<1	1
MAX	6	1	1	---	---	---	---	---	---	---	---	---
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	1	1	2	<1	1	2	<1	1
2	2	<1	<1	2	1	1	2	<1	1	1	<1	1
3	2	<1	<1	2	1	1	5	<1	1	3	<1	1
4	1	<1	<1	2	1	1	2	<1	1	1	<1	1
5	1	<1	<1	3	1	2	2	<1	1	2	<1	1
6	2	<1	1	2	1	2	---	---	---	4	<1	1
7	2	<1	1	5	1	1	---	---	---	2	1	1
8	2	<1	1	5	1	1	3	<1	1	2	<1	1
9	1	<1	1	2	1	1	---	---	---	2	<1	1
10	2	<1	1	2	1	1	---	---	---	2	<1	1
11	1	<1	<1	2	<1	1	---	---	---	2	<1	1
12	1	<1	<1	5	<1	<1	---	---	---	2	<1	1
13	2	<1	1	4	<1	1	---	---	---	5	<1	1
14	2	<1	1	2	<1	1	---	---	---	3	1	1
15	1	<1	1	2	<1	<1	---	---	---	2	<1	1
16	1	<1	<1	4	<1	<1	---	---	---	2	<1	1
17	1	<1	1	1	<1	<1	---	---	---	4	<1	1
18	17	<1	1	1	<1	<1	---	---	---	2	<1	1
19	4	<1	1	2	<1	1	---	---	---	2	<1	1
20	1	<1	1	3	<1	<1	---	---	---	2	<1	1
21	5	<1	1	3	<1	<1	---	---	---	2	<1	1
22	2	<1	1	2	<1	<1	3	1	1	2	<1	<1
23	3	1	1	6	<1	<1	6	1	1	2	<1	1
24	2	<1	1	1	<1	1	3	1	1	2	<1	1
25	2	<1	<1	3	<1	1	8	<1	1	3	1	1
26	1	<1	<1	4	<1	1	4	<1	1	2	<1	1
27	2	<1	1	4	<1	1	2	<1	1	3	<1	1
28	2	1	1	3	<1	1	10	1	1	2	<1	1
29	2	1	1	2	<1	1	2	<1	1	3	<1	1
30	5	1	1	2	<1	1	3	<1	1	2	<1	1
31	---	---	---	3	<1	1	3	<1	1	---	---	---
MAX	17	1	1	6	1	2	---	---	---	5	1	1
MIN	1	<1	<1	1	<1	<1	---	---	---	1	<1	<1

UMPQUA RIVER BASIN

14308995 GALESVILLE RESERVOIR NEAR AZALEA, OR

LOCATION.--Lat 42°50'56", long 123°10'40", in NE 1/4 sec.28, T.31 S., R.4 W., Douglas County, Hydrologic Unit 17100302, on the upstream face of Galesville dam to the right side of the spillway section, 1.2 mi downstream from McGinnis Creek, 5.6 mi northeast of Azalea, and at mile 60.2.

DRAINAGE AREA.--74.3 mi².

PERIOD OF RECORD.--October 1985 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (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, 24,500 acre-ft Oct. 1, elevation, 1,850.16 ft; minimum contents, 12,570 acre-ft Sept. 30, elevation, 1,821.76 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 (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1849.85	1844.68	1839.25	1836.97	1835.81	1834.68	1833.55	1833.74	1833.36	1831.64	1828.76	1825.31
2	1849.53	1844.41	1839.15	1836.89	1835.76	1834.64	1833.56	1833.75	1833.31	1831.55	1828.66	1825.19
3	1849.23	1844.13	1839.05	1836.80	1835.73	1834.59	1833.53	1833.77	1833.27	1831.48	1828.55	1825.07
4	1848.95	1843.86	1838.95	1836.72	1835.67	1834.54	1833.50	1833.78	1833.24	1831.39	1828.44	1824.94
5	1848.69	1843.58	1838.83	1836.65	1835.62	1834.51	1833.47	1833.79	1833.21	1831.28	1828.34	1824.81
6	1848.46	1843.39	1838.71	1836.59	1835.59	1834.46	1833.47	1833.80	1833.18	1831.19	1828.24	1824.68
7	1848.25	1843.26	1838.59	1836.54	1835.56	1834.42	1833.46	1833.80	1833.13	1831.10	1828.14	1824.55
8	1848.07	1843.03	1838.47	1836.50	1835.54	1834.37	1833.43	1833.81	1833.08	1831.01	1828.03	1824.42
9	1847.94	1842.80	1838.35	1836.48	1835.50	1834.34	1833.41	1833.80	1833.02	1830.92	1827.92	1824.28
10	1847.81	1842.58	1838.22	1836.43	1835.46	1834.29	1833.41	1833.80	1832.97	1830.83	1827.82	1824.15
11	1847.70	1842.36	1838.11	1836.40	1835.46	1834.24	1833.50	1833.80	1832.92	1830.75	1827.71	1824.01
12	1847.57	1842.13	1838.01	1836.37	1835.42	1834.19	1833.59	1833.78	1832.87	1830.66	1827.60	1823.89
13	1847.44	1841.87	1837.95	1836.36	1835.38	1834.14	1833.65	1833.76	1832.82	1830.56	1827.50	1823.78
14	1847.30	1841.60	1837.88	1836.34	1835.34	1834.10	1833.65	1833.78	1832.76	1830.46	1827.39	1823.67
15	1847.17	1841.33	1837.82	1836.31	1835.30	1834.07	1833.63	1833.84	1832.70	1830.36	1827.27	1823.55
16	1847.03	1841.09	1837.70	1836.28	1835.23	1834.04	1833.62	1833.85	1832.63	1830.26	1827.17	1823.40
17	1846.89	1840.94	1837.59	1836.25	1835.23	1834.04	1833.58	1833.86	1832.57	1830.17	1827.05	1823.26
18	1846.76	1840.80	1837.50	1836.22	1835.19	1833.98	1833.56	1833.86	1832.50	1830.08	1826.94	1823.14
19	1846.63	1840.66	1837.44	1836.19	1835.15	1833.93	1833.58	1833.86	1832.43	1829.98	1826.82	1823.01
20	1846.63	1840.52	1837.38	1836.16	1835.13	1833.89	1833.58	1833.85	1832.36	1829.89	1826.70	1822.89
21	1846.48	1840.38	1837.33	1836.12	1835.07	1833.86	1833.57	1833.84	1832.28	1829.80	1826.60	1822.76
22	1846.13	1840.23	1837.47	1836.08	1835.02	1833.82	1833.57	1833.82	1832.20	1829.70	1826.48	1822.64
23	1845.89	1840.11	1837.55	1836.05	1834.97	1833.79	1833.58	1833.79	1832.10	1829.61	1826.37	1822.51
24	1845.76	1839.98	1837.53	1836.06	1834.92	1833.77	1833.58	1833.76	1832.04	1829.52	1826.25	1822.40
25	1845.61	1839.87	1837.43	1836.03	1834.86	1833.74	1833.61	1833.72	1831.97	1829.41	1826.14	1822.34
26	1845.48	1839.76	1837.37	1836.00	1834.82	1833.70	1833.62	1833.67	1831.92	1829.32	1826.03	1822.25
27	1845.31	1839.65	1837.33	1835.97	1834.76	1833.70	1833.63	1833.62	1831.89	1829.22	1825.92	1822.14
28	1845.20	1839.54	1837.28	1835.94	1834.70	1833.68	1833.67	1833.56	1831.84	1829.12	1825.80	1822.02
29	1845.06	1839.46	1837.22	1835.90	---	1833.65	1833.69	1833.52	1831.78	1829.04	1825.69	1821.90
30	1844.93	1839.32	1837.14	1835.88	---	1833.62	1833.71	1833.47	1831.71	1828.96	1825.57	1821.76
31	1844.81	---	1837.06	1835.84	---	1833.60	---	1833.42	---	1828.86	1825.45	---
MAX	1849.85	1844.68	1839.25	1836.97	1835.81	1834.68	1833.71	1833.86	1833.36	1831.64	1828.76	1825.31
MIN	1844.81	1839.32	1837.06	1835.84	1834.70	1833.60	1833.41	1833.42	1831.71	1828.86	1825.45	1821.76
(†)	21980	19520	18550	18030	17560	17100	17150	17030	16340	15210	13910	12570
(+)	-2520	-2460	-970	-520	-470	-460	+50	-120	-690	-1130	-1300	-1340

CAL YR 2000 MAX 1878.69 MIN 1837.06 AC-FT† -2190

WTR YR 2001 MAX 1849.85 MIN 1821.76 AC-FT† -11930

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

UMPQUA RIVER BASIN

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14309000 COW CREEK NEAR AZALEA, OR

LOCATION.--Lat 42°49'30", long 123°10'40", in N-1/2 sec.4, T.32 S., R.4 W., Douglas County, Hydrologic Unit 17100302, on right bank 0.8 mi upstream from Whitehorse Creek, 4.5 mi northeast of Azalea, and at mile 58.2.

DRAINAGE AREA.--78.0 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1926 to September 1928 (no winter records), April 1929 to December 1931, April 1932 to current year.

REVISED RECORDS.--WSP 984: 1933-36. WSP 1154: 1946(M), 1948(M). WSP 1448: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,694.32 ft above sea level (Douglas County Road Department bench mark). Prior to July 19, 1949, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since Oct. 7, 1985 by Galesville Reservoir (station 14308995). Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--71 years (water years 1930-31, 1933-2001), 108 ft³/s, 18.80 in/yr, 78,250 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft³/s Jan. 15, 1974, gage height, 16.40 ft, from high-water mark in well; minimum discharge, 1.1 ft³/s Aug. 12, 1981, but may have been less during period of no gage-height record Sept. 4-30, 1970.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 111 ft³/s Nov. 3, gage height, 1.80 ft; minimum discharge, 18 ft³/s Aug. 5-7, 16.

CORRECTIONS.--The figures given below in the 'Average Discharge' paragraph are correct and supercede those published in the 2000 water year Annual Data Report.

AVERAGE DISCHARGE.--70 years (water years 1930-31, 1933-2000), 109 ft³/s, 18.98 in/yr, 78,970 acre-ft/yr, adjusted for storage.

 DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	82	42	45	40	33	36	49	24	19	21	23	24
2	79	78	42	40	33	44	46	24	19	21	23	23
3	74	74	40	39	38	43	48	23	19	21	21	22
4	69	73	40	36	48	43	49	21	19	21	22	22
5	66	73	40	32	48	44	48	20	20	21	22	22
6	59	59	40	29	43	42	54	19	20	22	21	22
7	54	43	40	28	39	41	66	21	19	21	20	23
8	49	80	39	29	36	42	68	19	19	21	21	23
9	44	83	39	28	35	43	70	19	20	21	21	23
10	42	66	39	31	34	41	68	19	20	21	20	23
11	42	65	39	28	35	39	69	19	20	22	20	25
12	42	64	39	27	32	38	67	19	20	22	21	21
13	42	70	46	28	31	36	65	19	20	21	20	22
14	41	82	79	32	32	36	65	19	20	21	20	21
15	41	76	71	31	32	34	65	28	20	20	20	22
16	42	68	68	28	32	36	63	31	20	20	20	24
17	41	47	68	28	34	50	65	21	20	21	21	25
18	42	43	55	27	40	65	65	20	20	21	21	21
19	42	43	41	27	41	56	65	20	21	20	21	22
20	43	43	39	27	40	49	65	19	20	21	21	22
21	70	43	42	27	52	45	61	19	20	21	21	22
22	94	43	69	28	61	43	53	19	20	21	23	22
23	69	44	69	28	57	38	47	19	24	20	23	22
24	42	43	68	38	53	38	43	20	20	20	23	22
25	42	43	68	43	48	47	37	20	20	20	22	24
26	42	43	54	37	43	43	34	20	20	20	22	26
27	48	43	41	32	40	40	31	19	25	20	22	25
28	65	43	40	30	42	66	29	19	22	20	21	24
29	57	63	40	41	---	61	28	19	20	20	21	25
30	47	74	40	30	---	54	26	19	20	23	21	27
31	42	---	40	30	---	48	---	19	---	24	22	---
TOTAL	1654	1754	1520	979	1132	1381	1609	636	606	649	660	691
MEAN	53.4	58.5	49.0	31.6	40.4	44.5	53.6	20.5	20.2	20.9	21.3	23.0
MAX	94	83	79	43	61	66	70	31	25	24	23	27
MIN	41	42	39	27	31	34	26	19	19	20	20	21
AC-FT	3280	3480	3010	1940	2250	2740	3190	1260	1200	1290	1310	1370
MEAN†	12.4	17.1	33.2	23.1	32.1	37.1	54.5	18.5	8.57	2.60	0.16	0.50
CFSM†	0.16	0.22	0.42	0.30	0.41	0.48	0.70	0.24	0.11	0.03	.002	.006
IN.†	0.18	0.24	0.49	0.34	0.43	0.55	0.78	0.27	0.12	0.04	.002	.007
AC-FT†	760	1020	2040	1420	1780	2280	3240	1140	510	160	10	30
CAL YR 2000	TOTAL 32161	MEAN 87.9	MAX 984	MIN 39	AC-FT 63790	MEAN† 84.9	CFSM† 1.09	IN.† 14.81	AC-FT† 61600			
WTR YR 2001	TOTAL 13271	MEAN 36.4	MAX 94	MIN 19	AC-FT 26320	MEAN† 19.9	CFSM† 0.26	IN.† 3.46	AC-FT† 14390			

† Adjusted for change in contents, in Galesville Reservoir.

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, turbidity records fair. Turbidity values are considered relative to this site. The 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, 20 NTU Jan. 22, 2000; minimum, <1 NTU many days each year.

EXTREMES FOR CURRENT YEAR.--

DISSOLVED OXYGEN: Maximum recorded, 13.4 mg/L Jan. 29, but may have been higher during periods of missing record; minimum recorded, 4.6 mg/L July 28, but may have been lower during periods of missing record.

TURBIDITY: Maximum recorded, 15 NTU May 24; minimum, <1 NTU many days during the year.

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	9.8	9.2	9.4	---	---	---	9.9	9.7	9.8	9.9	9.6	9.8
2	10.1	9.1	9.5	---	---	---	10.0	9.7	9.8	10.0	9.6	9.8
3	10.0	9.2	9.5	---	---	---	10.1	9.7	9.9	10.3	9.8	10.1
4	10.1	9.2	9.5	---	---	---	10.5	10.1	10.2	10.4	9.8	10.1
5	13.3	9.2	9.9	---	---	---	10.5	10.2	10.3	10.4	9.7	10.1
6	10.6	9.6	9.9	---	---	---	10.3	10.1	10.2	10.6	9.7	10.3
7	10.6	9.6	10.0	---	---	---	10.4	10.0	10.2	10.7	8.6	10.0
8	10.9	9.7	10.0	---	---	---	10.3	9.9	10.1	10.5	10.0	10.2
9	10.7	9.6	10.0	---	---	---	10.2	9.8	10.1	10.4	9.5	10.0
10	10.3	9.8	10.0	---	---	---	10.2	9.4	9.9	10.4	9.8	10.0
11	---	---	---	---	---	---	10.0	8.7	9.6	10.6	10.3	10.4
12	---	---	---	---	---	---	9.5	8.7	9.1	10.6	10.2	10.4
13	---	---	---	---	---	---	11.1	7.4	9.3	10.5	10.2	10.3
14	---	---	---	---	---	---	11.4	7.0	9.8	10.4	10.1	10.3
15	---	---	---	---	---	---	9.2	7.8	8.7	10.4	10.0	10.2
16	---	---	---	---	---	---	9.7	8.7	9.2	10.4	10.2	10.3
17	---	---	---	---	---	---	9.4	8.0	8.9	10.4	9.9	10.1
18	---	---	---	---	---	---	9.3	8.7	9.1	10.3	10.1	10.2
19	---	---	---	---	---	---	9.5	9.2	9.3	10.4	10.2	10.3
20	---	---	---	---	---	---	9.5	9.2	9.4	10.6	10.3	10.5
21	---	---	---	9.9	9.2	9.5	10.0	9.1	9.5	10.7	10.0	10.4
22	---	---	---	9.8	9.0	9.2	9.4	8.9	9.2	11.3	10.6	10.9
23	---	---	---	10.1	9.1	9.3	9.6	8.9	9.2	11.2	10.6	10.9
24	---	---	---	9.5	9.2	9.3	9.5	9.2	9.3	10.9	10.4	10.7
25	---	---	---	9.3	9.0	9.1	9.6	9.3	9.5	11.1	10.4	10.8
26	---	---	---	9.6	9.0	9.3	9.7	9.3	9.5	10.9	10.4	10.7
27	---	---	---	9.6	9.3	9.4	10.1	9.5	9.7	11.1	10.6	10.9
28	---	---	---	9.7	9.1	9.5	9.7	9.4	9.6	11.0	10.6	10.8
29	---	---	---	9.5	6.3	8.4	9.7	9.4	9.6	13.4	10.0	10.9
30	---	---	---	9.9	8.7	9.6	9.6	9.2	9.4	11.1	10.8	10.9
31	---	---	---	---	---	---	9.8	9.3	9.5	11.4	11.0	11.2
MONTH	---	---	---	---	---	---	11.4	7.0	9.6	13.4	8.6	10.4

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	11.7	11.4	11.5	12.5	12.2	12.4	12.1	11.5	11.7	11.6	11.2	11.4
2	11.7	11.2	11.4	12.6	12.0	12.4	12.0	11.4	11.6	11.6	11.2	11.4
3	11.6	11.3	11.4	12.4	11.7	12.2	11.9	11.4	11.7	11.3	10.5	10.9
4	11.6	11.2	11.4	12.7	12.2	12.5	11.7	11.2	11.6	10.9	10.4	10.6
5	12.3	11.2	11.6	12.5	12.0	12.2	11.7	11.3	11.6	11.1	10.6	10.8
6	11.7	10.7	11.2	12.3	12.0	12.1	11.7	11.2	11.6	10.9	10.5	10.7
7	11.6	11.2	11.4	12.1	11.8	12.1	12.1	11.6	11.9	11.0	10.3	10.6
8	11.7	11.3	11.5	12.1	11.6	11.9	12.1	11.6	11.8	10.7	10.2	10.4
9	11.7	11.4	11.5	12.1	11.6	11.8	11.9	11.4	11.8	10.7	10.3	10.4
10	11.9	11.4	11.7	12.1	11.8	12.0	12.0	11.4	11.8	10.7	10.2	10.4
11	11.9	11.7	11.8	12.1	11.8	12.0	11.9	11.4	11.7	10.4	10.2	10.3
12	11.9	11.2	11.7	12.2	11.9	12.1	11.9	11.2	11.7	10.4	10.1	10.2
13	12.0	11.7	11.9	12.1	11.8	12.0	12.1	11.4	11.7	10.4	10.1	10.3
14	12.1	11.8	12.0	12.2	11.6	12.0	12.1	11.6	11.9	10.3	9.9	10.1
15	12.2	11.8	12.0	12.1	11.9	12.0	12.0	11.6	11.9	10.0	9.0	9.5
16	12.5	11.9	12.2	12.1	11.9	12.0	12.1	11.0	11.7	9.3	8.9	9.1
17	12.3	12.1	12.2	12.4	11.9	12.1	12.1	10.6	11.7	9.4	9.0	9.2
18	12.1	11.9	12.0	12.4	11.8	12.2	11.9	11.5	11.6	9.4	9.0	9.2
19	12.3	11.9	12.1	12.3	11.3	12.0	12.1	11.2	11.7	9.2	8.9	9.0
20	12.5	12.1	12.2	12.4	11.5	12.1	11.9	10.8	11.7	9.2	8.7	8.9
21	12.5	11.3	12.0	12.3	11.5	12.1	12.0	11.5	11.9	9.0	8.5	8.8
22	12.1	11.8	12.0	12.2	11.7	12.0	12.0	11.6	11.8	---	---	---
23	12.3	11.8	12.0	12.1	11.8	11.9	12.2	11.8	12.0	---	---	---
24	12.5	11.8	12.3	12.2	11.6	12.0	11.9	11.3	11.7	---	---	---
25	12.4	12.1	12.3	12.5	11.4	12.0	11.8	11.4	11.6	---	---	---
26	12.5	12.1	12.4	12.4	12.0	12.2	11.9	10.8	11.6	---	---	---
27	12.8	12.2	12.4	12.3	12.0	12.2	11.8	11.4	11.6	---	---	---
28	12.8	12.4	12.6	12.5	11.6	12.1	11.6	11.1	11.4	---	---	---
29	---	---	---	12.0	11.2	11.8	11.6	11.1	11.3	---	---	---
30	---	---	---	11.9	11.3	11.6	11.6	11.1	11.3	---	---	---
31	---	---	---	11.9	11.4	11.6	---	---	---	---	---	---
MONTH	12.8	10.7	11.9	12.7	11.2	12.1	12.2	10.6	11.7	---	---	---

UMPQUA RIVER BASIN

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14309000 COW CREEK NEAR AZALEA, OR--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	---	---	---	7.8	7.2	7.6	6.8	6.1	6.4	---	---	---
2	---	---	---	7.9	7.3	7.6	6.2	5.7	6.0	---	---	---
3	---	---	---	8.0	7.2	7.5	6.0	5.5	5.9	---	---	---
4	---	---	---	8.0	7.2	7.6	6.1	5.2	5.6	---	---	---
5	---	---	---	7.7	7.0	7.4	6.2	5.6	5.9	---	---	---
6	---	---	---	7.4	6.8	7.1	6.8	5.8	6.2	---	---	---
7	---	---	---	7.7	6.8	7.2	7.0	5.9	6.3	---	---	---
8	---	---	---	7.5	6.8	7.1	6.9	6.0	6.3	---	---	---
9	---	---	---	7.6	6.7	7.1	6.7	6.1	6.4	---	---	---
10	---	---	---	7.2	6.4	6.8	6.9	6.3	6.6	---	---	---
11	---	---	---	7.0	6.1	6.6	7.0	6.4	6.7	---	---	---
12	---	---	---	---	---	---	7.1	6.5	6.8	---	---	---
13	---	---	---	---	---	---	7.3	6.7	6.9	---	---	---
14	---	---	---	---	---	---	7.2	6.6	6.9	---	---	---
15	---	---	---	---	---	---	7.1	6.7	6.9	---	---	---
16	---	---	---	---	---	---	7.2	6.6	6.9	---	---	---
17	---	---	---	---	---	---	7.3	6.6	6.9	---	---	---
18	---	---	---	---	---	---	7.3	6.8	7.0	---	---	---
19	6.1	5.0	5.4	---	---	---	7.5	6.8	7.1	---	---	---
20	6.3	5.0	5.8	---	---	---	7.5	6.9	7.2	---	---	---
21	5.6	4.7	5.2	---	---	---	---	---	---	---	---	---
22	6.5	5.6	6.1	---	---	---	---	---	---	---	---	---
23	9.0	6.1	7.0	---	---	---	---	---	---	---	---	---
24	8.0	6.2	6.7	---	---	---	---	---	---	---	---	---
25	6.9	6.5	6.7	---	---	---	---	---	---	---	---	---
26	7.1	6.8	6.9	7.2	5.5	6.6	---	---	---	---	---	---
27	7.4	6.7	7.0	7.3	4.8	5.6	---	---	---	---	---	---
28	7.3	6.6	7.0	6.7	4.6	5.7	---	---	---	---	---	---
29	7.8	7.0	7.4	7.1	5.8	6.5	---	---	---	---	---	---
30	7.9	7.2	7.5	6.4	5.6	6.0	---	---	---	---	---	---
31	---	---	---	6.8	6.0	6.4	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

TURBIDITY (NTU), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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

UMPQUA RIVER BASIN

14309000 COW CREEK NEAR AZALEA, OR--Continued

TURBIDITY (NTU), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
FEBRUARY			MARCH			APRIL			MAY			
1	3	3	3	2	2	2	4	1	2	---	---	---
2	4	1	2	2	2	2	4	1	2	---	---	---
3	3	2	2	2	2	2	5	1	2	---	---	---
4	3	2	2	3	2	2	6	1	2	2	1	1
5	2	2	2	4	2	2	2	1	1	3	1	1
6	5	2	3	2	2	2	2	1	1	2	1	1
7	3	2	3	3	2	2	2	1	1	2	1	1
8	4	3	3	3	2	2	2	1	1	2	1	1
9	6	2	3	2	2	2	2	1	1	2	1	1
10	4	2	3	2	2	2	9	1	2	2	1	1
11	7	2	2	2	2	2	2	1	1	2	1	1
12	11	2	3	3	2	2	5	1	1	3	1	1
13	5	2	2	4	2	2	2	1	1	3	1	2
14	5	2	2	2	2	2	3	1	2	3	2	2
15	6	2	2	2	2	2	3	1	12	4	3	3
16	2	1	1	2	1	2	3	1	10	5	3	4
17	3	1	2	2	1	2	2	1	2	5	2	4
18	3	2	3	---	---	---	---	---	---	7	4	5
19	3	2	2	---	---	---	---	---	---	10	5	7
20	4	2	3	---	---	---	---	---	---	10	9	10
21	4	2	3	---	---	---	---	---	---	14	9	12
22	3	2	2	---	---	---	---	---	---	14	<1	10
23	6	2	2	11	1	2	---	---	---	3	<1	<1
24	2	2	2	3	1	2	---	---	---	15	<1	2
25	3	2	2	3	2	2	---	---	---	1	<1	<1
26	3	2	2	3	1	2	---	---	---	1	<1	<1
27	4	2	2	2	1	1	---	---	---	12	<1	<1
28	4	2	2	7	1	2	---	---	---	12	<1	<1
29	---	---	---	2	1	2	---	---	---	1	<1	<1
30	---	---	---	2	1	1	---	---	---	1	<1	<1
31	---	---	---	2	1	1	---	---	---	1	<1	<1
MAX	11	3	3	---	---	---	---	---	---	---	---	---
MIN	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	3	3	4	1	2	8	1	2
2	1	1	1	4	2	3	4	1	1	6	1	3
3	2	1	1	4	2	3	4	1	2	5	1	2
4	2	1	1	3	2	3	6	3	4	3	1	2
5	2	1	1	4	3	3	6	3	4	2	<1	1
6	1	1	1	8	3	3	6	3	4	5	1	2
7	2	1	1	4	3	3	8	3	4	4	1	2
8	2	1	1	5	3	4	4	3	4	4	1	2
9	2	1	1	5	3	4	6	2	3	2	1	2
10	2	1	1	4	3	3	4	1	2	7	2	2
11	2	1	1	---	---	---	6	2	3	---	---	---
12	2	1	1	---	---	---	4	2	3	---	---	---
13	2	1	1	---	---	---	4	2	3	---	---	---
14	2	1	1	---	---	---	5	2	2	---	---	---
15	3	1	1	---	---	---	2	1	2	---	---	---
16	2	1	2	---	---	---	4	2	3	---	---	---
17	2	1	1	---	---	---	6	2	3	---	---	---
18	4	<1	2	---	---	---	5	2	3	---	---	---
19	5	2	2	---	---	---	6	2	3	---	---	---
20	8	1	2	---	---	---	6	2	3	---	---	---
21	2	1	1	---	---	---	6	2	4	---	---	---
22	2	1	1	---	---	---	5	2	4	---	---	---
23	11	2	2	---	---	---	4	2	3	---	---	---
24	4	2	3	---	---	---	3	2	2	---	---	---
25	3	2	2	---	---	---	6	2	2	---	---	---
26	3	2	2	4	1	2	3	2	2	5	1	3
27	4	2	2	4	1	2	6	1	2	4	1	2
28	3	2	2	3	1	2	4	<1	1	4	1	2
29	7	2	2	4	1	2	2	<1	1	4	2	3
30	3	2	2	4	1	2	3	<1	1	4	2	3
31	---	---	---	3	1	1	4	1	1	---	---	---
MAX	11	2	3	---	---	---	8	3	4	---	---	---
MIN	1	<1	1	---	---	---	2	<1	1	---	---	---

UMPQUA RIVER BASIN

319

14309500 WEST FORK COW CREEK NEAR GLENDALE, OR

LOCATION.--Lat 42°48'15", long 123°36'35", in SW 1/4 NE 1/4 sec.11, T.32 S., R.8 W., Douglas County, Hydrologic Unit 17100302, on left bank 1.6 mi downstream from Bear Creek, 11 mi northwest of Glendale, and at mile 0.8.

 DRAINAGE AREA.--86.9 mi².

PERIOD OF RECORD.--August 1955 to current year.

REVISED RECORDS.--WSP 1738: 1956, drainage area (former site). WSP 1935: 1956.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,018.48 ft above sea level. Prior to June 8, 1964, at site 0.6 mi upstream at different datum.

REMARKS.--Records good. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station.

 AVERAGE DISCHARGE.--46 years (water years 1956-2001), 257 ft³/s, 40.23 in/yr, 186,400 acre-ft/yr.

 EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft³/s Dec. 22, 1964, gage height, 18.59 ft, from floodmark, from rating curve extended above 2,600 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 2.5 ft³/s Sept. 10, 2001.

 EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 22	0930	*1,440	*6.08				

Minimum discharge, 2.5 ft³/s Sept. 10.

 DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.8	24	119	57	83	79	122	56	23	15	6.2	3.8
2	4.7	20	70	e51	78	82	113	52	23	13	5.7	3.8
3	4.6	18	51	e46	84	77	105	49	25	12	5.2	3.7
4	4.8	16	40	43	89	86	97	47	25	11	5.1	3.7
5	4.9	14	33	41	85	119	91	44	24	10	5.0	3.7
6	5.0	14	29	39	79	105	98	42	23	9.4	4.9	3.6
7	4.9	13	26	38	72	92	118	40	22	9.2	4.7	3.6
8	4.8	15	24	39	64	81	115	38	21	9.0	4.7	3.5
9	9.9	40	22	43	62	82	116	37	20	8.5	4.6	3.4
10	14	40	20	133	58	85	113	36	20	8.5	4.3	3.3
11	11	29	20	102	61	79	137	35	20	9.0	3.9	3.3
12	10	22	22	77	57	71	157	34	20	9.0	3.7	3.3
13	9.1	19	64	68	53	65	144	32	19	8.5	3.6	3.3
14	8.8	22	327	74	52	59	126	33	18	7.5	3.6	3.3
15	8.5	32	251	77	51	56	112	57	18	7.2	3.6	3.3
16	8.1	31	201	74	53	57	101	68	18	7.2	3.6	3.3
17	7.7	28	280	67	58	70	149	56	17	7.3	3.6	3.2
18	7.2	23	190	61	365	84	132	47	16	7.3	3.6	3.2
19	7.2	20	123	56	315	82	139	42	16	7.2	3.8	3.3
20	16	18	88	52	210	81	147	38	15	7.2	3.8	3.3
21	42	17	95	51	221	77	134	36	15	7.1	3.8	3.3
22	21	16	980	49	282	71	114	34	14	6.7	4.4	3.2
23	13	16	576	47	228	65	99	32	14	6.3	5.6	3.2
24	11	18	492	51	184	61	87	30	14	6.0	7.4	3.2
25	9.8	18	299	49	148	113	78	28	16	5.7	6.0	4.3
26	10	22	195	49	119	143	71	27	16	5.4	5.0	5.3
27	9.3	23	141	45	101	129	64	26	30	5.0	4.7	5.8
28	44	23	109	44	88	307	70	26	27	4.9	4.4	5.6
29	129	137	88	83	---	247	67	25	21	5.0	4.3	5.0
30	60	247	74	114	---	183	58	25	17	5.9	4.1	4.7
31	35	---	65	95	---	144	---	23	---	6.6	4.0	---
TOTAL	540.1	995	5114	1915	3400	3132	3274	1195	587	247.6	140.9	112.5
MEAN	17.4	33.2	165	61.8	121	101	109	38.5	19.6	7.99	4.55	3.75
MAX	129	247	980	133	365	307	157	68	30	15	7.4	5.8
MIN	4.6	13	20	38	51	56	58	23	14	4.9	3.6	3.2
AC-FT	1070	1970	10140	3800	6740	6210	6490	2370	1160	491	279	223
CFSM	.20	.38	1.90	.71	1.40	1.16	1.26	.44	.23	.09	.05	.04
IN.	.23	.43	2.19	.82	1.46	1.34	1.40	.51	.25	.11	.06	.05

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2001, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
40.7	293	587	665	580	471
254	1470	1960	1496	1660	934
1963	1974	1997	1958	1983	1982
5.19	13.7	13.3	24.2	66.0	91.6
1988	1994	1977	1977	1977	1992

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1956 - 2001

ANNUAL TOTAL	73422.7	20653.1	
ANNUAL MEAN	201	56.6	
HIGHEST ANNUAL MEAN			257
LOWEST ANNUAL MEAN			499
HIGHEST DAILY MEAN	4050	Jan 14	11000
LOWEST DAILY MEAN	4.6	Oct 3	3.0
ANNUAL SEVEN-DAY MINIMUM	4.8	Oct 1	3.2
ANNUAL RUNOFF (AC-FT)	145600	40970	186400
ANNUAL RUNOFF (CFSM)	2.31	.65	2.96
ANNUAL RUNOFF (INCHES)	31.43	8.84	40.23
10 PERCENT EXCEEDS	509	129	669
50 PERCENT EXCEEDS	44	28	66
90 PERCENT EXCEEDS	7.3	4.1	8.4

e Estimated

UMPQUA RIVER BASIN

14310000 COW CREEK NEAR RIDDLE, OR

LOCATION.--Lat 42°55'25", long 123°25'40", in NE 1/4 sec.32, T.30 S., R.6 W., Douglas County, Hydrologic Unit 17100302, on left bank 0.4 mi upstream from Council Creek, 3.8 mi southwest of Riddle, and at mile 6.7.

DRAINAGE AREA.--456 mi².

PERIOD OF RECORD.--September 1954 to current year.

REVISED RECORDS.--WSP 1935: 1956(M).

GAGE.--Water-stage recorder. Datum of gage is 682.60 ft above sea level.

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 ft³/s, 654,200 acre-ft/yr.
16 years (water years 1986-2001), 682 ft³/s, 493,700 acre-ft/yr, regulated.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,400 ft³/s Jan. 15, 1974, gage height, 28.17 ft; minimum discharge, 7.4 ft³/s Aug. 17-19, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 29, 1950, reached a stage of about 28.5 ft, present site and datum, from slope-area measurement, discharge, 41,100 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,430 ft³/s Dec. 22, gage height, 5.18 ft; minimum discharge, 16 ft³/s Aug. 13, 14, 16-18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	94	112	357	193	232	238	315	161	55	44	27	18
2	95	100	227	179	221	230	291	149	53	40	27	17
3	96	114	174	165	219	227	277	139	54	38	25	18
4	92	121	149	154	229	229	261	129	60	35	24	20
5	87	121	132	145	234	280	247	122	62	32	23	20
6	85	117	122	136	230	268	246	115	61	30	22	19
7	81	115	114	128	219	250	282	108	58	29	22	19
8	75	99	109	128	204	233	304	100	51	29	22	19
9	82	154	106	136	196	224	320	96	48	29	21	19
10	96	192	103	257	190	230	323	93	46	28	20	19
11	84	154	101	270	200	223	345	89	46	28	20	18
12	76	133	104	223	203	208	404	86	48	31	18	18
13	73	123	118	203	193	197	389	85	47	30	17	18
14	72	127	506	209	187	187	352	84	45	27	17	22
15	70	155	491	226	182	177	320	101	44	26	17	20
16	67	155	449	230	181	175	294	147	43	25	16	18
17	67	145	528	217	185	185	327	149	41	26	17	18
18	67	121	459	201	407	224	320	125	40	26	17	19
19	66	106	334	190	550	238	338	108	37	26	17	21
20	75	101	255	178	437	232	367	93	35	27	17	21
21	145	98	229	168	394	223	359	83	34	25	18	20
22	130	97	1490	160	518	209	323	82	32	24	19	19
23	133	95	1270	153	499	198	286	80	30	25	20	20
24	121	98	917	163	442	188	259	79	30	24	22	20
25	85	100	651	177	384	233	238	76	32	23	25	22
26	80	103	485	196	321	293	220	73	36	22	25	26
27	79	111	373	182	279	281	202	68	50	20	24	36
28	113	110	295	164	253	457	196	63	85	20	22	36
29	304	166	254	192	---	520	194	61	62	20	21	35
30	222	491	227	283	---	437	173	61	50	21	20	33
31	146	---	208	257	---	362	---	59	---	25	19	---
TOTAL	3158	4034	11337	5863	7989	7856	8772	3064	1415	855	641	648
MEAN	102	134	366	189	285	253	292	98.8	47.2	27.6	20.7	21.6
MAX	304	491	1490	283	550	520	404	161	85	44	27	36
MIN	66	95	101	128	181	175	173	59	30	20	16	17
AC-FT	6260	8000	22490	11630	15850	15580	17400	6080	2810	1700	1270	1290

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2001, BY WATER YEAR (WY)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	110	523	1266	1892	1672	1187	711	395	190	105	86.3	90.7				
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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1986 - 2001
ANNUAL TOTAL	238225	55632	
ANNUAL MEAN	651	152	
HIGHEST ANNUAL MEAN			682
LOWEST ANNUAL MEAN			1221
HIGHEST DAILY MEAN	17200	1490	23100
LOWEST DAILY MEAN	66	16	16
ANNUAL SEVEN-DAY MINIMUM	69	17	17
ANNUAL RUNOFF (AC-FT)	472500	110300	493700
10 PERCENT EXCEEDS	1350	322	1690
50 PERCENT EXCEEDS	178	110	214
90 PERCENT EXCEEDS	95	20	61

STATISTICS COMPUTED BY: jghouse

DATE: 01/23/2002 AT: 15:47:01

14312000 SOUTH UMPQUA RIVER NEAR BROCKWAY, OR

LOCATION.--Lat 43°08'00", long 123°23'50", in SW 1/4 sec.15, T.28 S., R.6 W., Douglas County, Hydrologic Unit 17100302, on right bank 10 ft upstream from Winston Bridge on State Highway 99, 2.5 mi northeast of Brockway, 4.2 mi downstream from Lookingglass Creek, and at mile 132.8.

DRAINAGE AREA.--1,670 mi².

PERIOD OF RECORD.--December 1905 to June 1912, October 1923 to September 1926, January 1942 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1248: 1946(M), 1948(M), 1951. WSP 1448: Drainage area. WDR OR 72-1: 1965(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 462.52 ft above sea level (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.--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.--67 years (water years 1907-11, 1924-26, 1943-2001), 2,773 ft³/s, 22.56 in/yr, 2,009,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 125,000 ft³/s Dec. 23, 1964, gage height, 34.28 ft; minimum discharge, 16 ft³/s Aug. 23, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 21, 1927, reached a stage of about 31.2 ft, present site and datum, discharge, 89,500 ft³/s. Discharge for flood of February 1890, which reached a stage 1.9 ft higher, according to local resident who lived nearby at time of both floods, has been found to be in error and should not be used.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 28	1700	*5,220	*8.38				

Minimum discharge, 30 ft³/s Sept. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	155	329	1220	702	770	783	2000	1080	336	195	75	44
2	161	277	855	646	723	794	1770	1220	319	171	95	43
3	155	260	637	600	729	1090	1710	1080	313	151	87	44
4	156	281	526	577	936	1130	1610	973	322	139	76	44
5	156	285	458	560	1490	1100	1510	893	330	126	67	39
6	155	274	408	544	1320	1120	1470	831	330	114	66	36
7	153	270	377	528	1160	1060	1860	772	344	107	58	35
8	151	283	356	512	1010	1020	1960	719	299	105	54	35
9	172	345	340	509	901	998	1940	685	271	99	52	38
10	190	668	327	557	838	1020	1880	654	256	93	48	39
11	208	537	319	717	826	988	1950	617	242	92	45	39
12	211	417	312	635	837	908	2660	581	248	e91	43	40
13	226	356	353	578	778	836	2500	556	245	91	41	38
14	218	337	693	587	733	782	2140	544	249	90	40	38
15	199	372	1630	701	713	744	1840	645	219	91	36	39
16	189	416	1790	751	692	742	1660	2420	206	84	35	40
17	183	382	1590	694	688	849	1660	2570	198	78	38	40
18	179	354	1790	628	752	1350	1910	1770	192	76	38	37
19	177	314	1280	590	1270	2170	1910	1340	179	75	43	33
20	195	292	979	568	1160	1940	1980	1080	166	77	43	37
21	238	283	850	591	1020	1680	1980	908	156	80	41	43
22	526	279	1840	589	1160	1460	1800	791	150	73	41	44
23	423	289	3630	607	1320	1330	1590	700	142	79	47	41
24	339	290	2820	646	1280	1250	1450	613	145	74	51	41
25	286	337	2390	861	1200	1260	1370	552	150	67	52	47
26	236	420	1740	953	1070	1490	1360	506	160	64	57	60
27	220	421	1340	852	935	1380	1340	466	197	58	66	83
28	251	455	1110	741	845	3170	1260	430	224	49	59	106
29	378	621	948	693	---	3980	1220	404	270	48	48	137
30	592	879	842	812	---	2970	1100	381	222	61	43	121
31	423	---	769	852	---	2370	---	358	---	65	45	---
TOTAL	7501	11323	34519	20381	27156	43764	52390	27139	7080	2873	1630	1501
MEAN	242	377	1114	657	970	1412	1746	875	236	92.7	52.6	50.0
MAX	592	879	3630	953	1490	3980	2660	2570	344	195	95	137
MIN	151	260	312	509	688	742	1100	358	142	48	35	33
AC-FT	14880	22460	68470	40430	53860	86810	103900	53830	14040	5700	3230	2980
CFSM	.14	.23	.67	.39	.58	.85	1.05	.52	.14	.06	.03	.03
IN.	.17	.25	.77	.45	.60	.97	1.17	.60	.16	.06	.04	.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1907 - 2001, BY WATER YEAR (WY)

	MEAN	462	2697	5644	6893	6290	4741	3235	1984	876	268	139	151
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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1907 - 2001
ANNUAL TOTAL	853938	237257	
ANNUAL MEAN	2333	650	2773
HIGHEST ANNUAL MEAN			5567
LOWEST ANNUAL MEAN			562
HIGHEST DAILY MEAN	40700	Jan 14	90200
LOWEST DAILY MEAN	144	Sep 28	17
ANNUAL SEVEN-DAY MINIMUM	148	Sep 24	18
ANNUAL RUNOFF (AC-FT)	1694000	4706000	2009000
ANNUAL RUNOFF (CFSM)	1.40	.39	1.66
ANNUAL RUNOFF (INCHES)	19.02	5.29	22.56
10 PERCENT EXCEEDS	5490	1640	6770
50 PERCENT EXCEEDS	732	417	1070
90 PERCENT EXCEEDS	163	45	115

e Estimated

UMPQUA RIVER BASIN

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, Hydrologic 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 mi².

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. Altitude 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.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by gates and fish racks at lake outlet. No diversion upstream from station.

AVERAGE DISCHARGE.--40 years (water years 1927-29, 1931-53, 1972-77, 1979-84, 2000-01), 58.7 ft³/s, 42,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 336 ft³/s Jan. 1, 1943, gage height, 2.8 ft from rating curve extended above 120 ft³/s; no flow Aug. 25-27, 1931, Sept. 19, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum recorded discharge, 139 ft³/s Oct. 30, gage height, 2.49 ft; minimum recorded discharge, 7.0 ft³/s Mar. 25, result of regulation at outlet.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	126	72	70	59	56	22	16	34	31	16	13
2	43	121	71	69	60	58	25	17	32	30	16	13
3	42	117	70	68	61	58	26	18	33	30	15	13
4	42	112	69	67	62	58	27	19	33	29	15	12
5	42	108	68	66	61	57	28	19	34	29	15	12
6	41	105	67	65	61	56	30	20	35	28	12	12
7	40	102	66	64	61	56	30	21	34	28	10	12
8	29	103	66	63	60	55	31	21	34	27	11	12
9	23	104	65	63	60	55	32	22	34	27	11	12
10	24	101	64	63	60	55	32	23	34	26	11	12
11	26	98	65	63	59	55	35	24	33	26	11	12
12	26	95	66	63	59	54	35	24	33	27	11	12
13	27	92	69	63	58	54	28	25	32	27	11	19
14	28	90	75	63	57	53	17	29	31	26	11	24
15	28	88	79	63	57	54	18	38	30	25	11	25
16	29	85	79	62	56	54	20	43	29	24	11	24
17	29	80	78	62	56	55	20	44	29	24	11	24
18	30	76	76	61	57	56	22	43	28	23	11	23
19	30	75	75	62	57	57	25	43	28	23	11	23
20	35	74	74	62	57	56	26	41	27	23	11	22
21	52	72	74	62	57	56	25	41	27	22	11	21
22	59	71	78	61	57	55	27	41	27	22	11	21
23	59	72	79	61	58	55	27	40	27	22	12	21
24	57	72	79	61	57	55	18	40	26	21	12	21
25	57	71	78	61	57	34	13	39	27	21	12	23
26	55	71	76	60	57	7.7	14	39	29	19	12	25
27	55	71	75	59	56	11	15	38	31	15	12	28
28	60	70	74	59	56	16	13	37	32	15	12	33
29	61	72	73	60	---	17	12	35	32	16	13	32
30	92	73	72	60	---	19	14	35	31	16	13	31
31	131	---	71	59	---	21	---	35	---	16	13	---
TOTAL	1396	2667	2243	1945	1633	1458.7	707	970	926	738	375	587
MEAN	45.0	88.9	72.4	62.7	58.3	47.1	23.6	31.3	30.9	23.8	12.1	19.6
MAX	131	126	79	70	62	58	35	44	35	31	16	33
MIN	23	70	64	59	56	7.7	12	16	26	15	10	12
AC-FT	2770	5290	4450	3860	3240	2890	1400	1920	1840	1460	744	1160

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1927 - 2001, BY WATER YEAR (WY)

	MEAN	42.0	65.4	78.6	81.0	75.9	70.1	58.7	61.0	68.5	41.6	27.8	28.3
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	30.4	23.1	9.53	6.19	7.41	
(WY)	1942	1937	1937	1977	1977	1941	1942	1934	1934	1979	1980	1981	

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR			FOR 2001 WATER YEAR			WATER YEARS 1927 - 2001		
ANNUAL TOTAL	23183			15645.7					
ANNUAL MEAN	63.3			42.9			58.7		
HIGHEST ANNUAL MEAN							90.7		
LOWEST ANNUAL MEAN							36.9		
HIGHEST DAILY MEAN	131	Oct 31		131	Oct 31		250	Jan 1	1943
LOWEST DAILY MEAN	19	Aug 9		7.7	Mar 26		.00	Aug 25	1931
ANNUAL SEVEN-DAY MINIMUM	20	Aug 9		11	Aug 7		1.2	Aug 14	1978
ANNUAL RUNOFF (AC-FT)	45980			31030			42500		
10 PERCENT EXCEEDS	95			74			99		
50 PERCENT EXCEEDS	68			35			55		
90 PERCENT EXCEEDS	27			13			19		

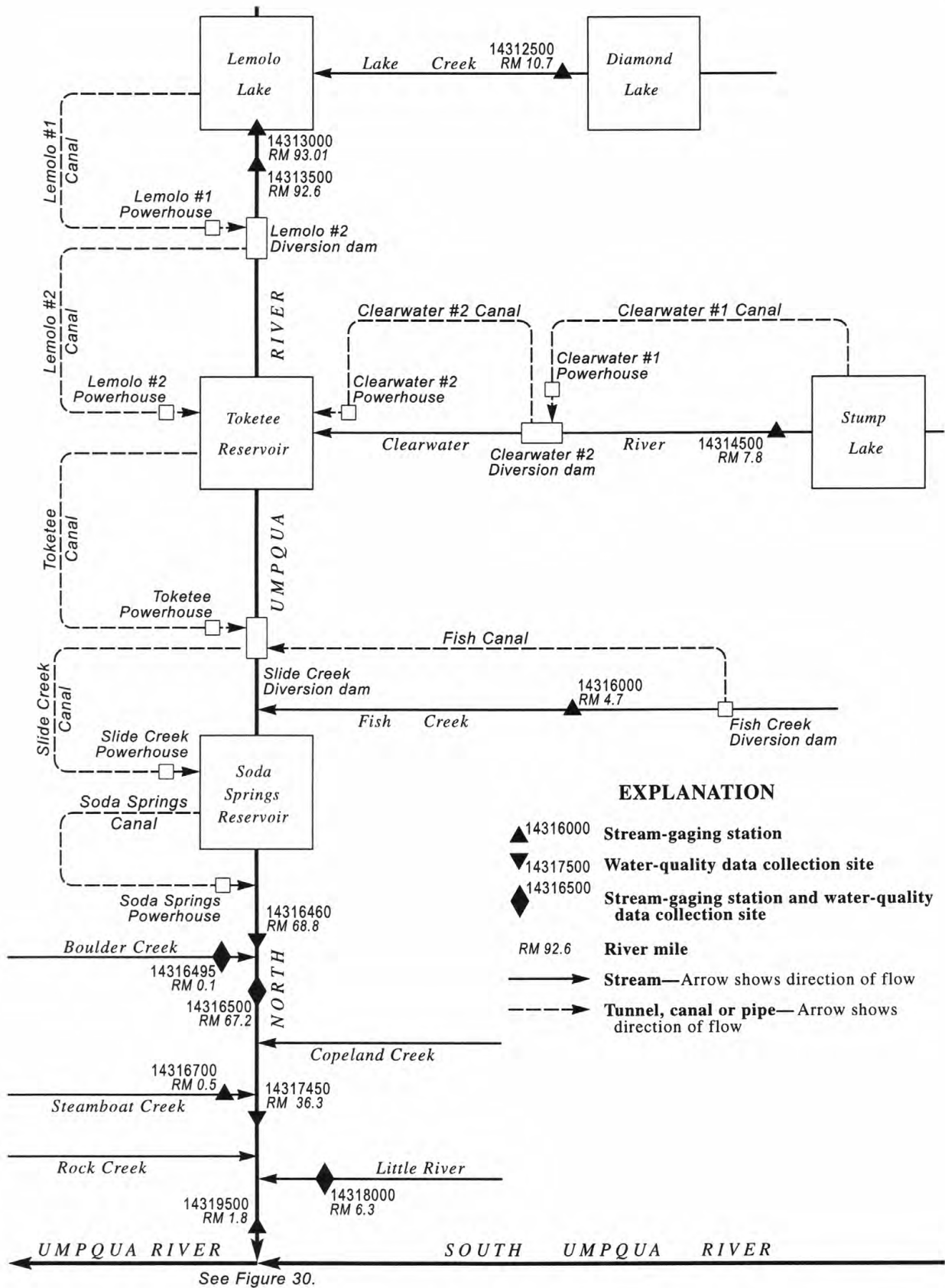


Figure 31. Schematic diagram showing gaging stations and diversions in the North Umpqua River Basin.

UMPQUA RIVER BASIN

14313000 LEMOLO LAKE NEAR TOKETEE FALLS, OR

LOCATION.--Lat 43°19'10", long 122°11'20", in SE 1/4 NW 1/4 sec.11, T.26 S., R.5 E., Douglas County, Hydrologic Unit 17100301, at Lemolo No. 1 diversion dam on North Umpqua River, 0.8 mi downstream from Lake Creek, 13.0 mi east of town of Toketee Falls, and at mile 93.01.

DRAINAGE AREA.--170 mi².

PERIOD OF RECORD.--July 1954 to current year. Prior to October 1960, published as Lemolo Reservoir near Toketee Falls.

GAGE.--Nonrecording gage. Datum of gage is sea level (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, 13,420 acre-ft July 14, elevation, 4,148.17 ft; minimum observed, 3,100 acre-ft Mar. 5, elevation, 4,114.40 ft.

MONTHEND ELEVATION AND CONTENTS AT 0900, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

Date	Elevation (feet)	Contents (acre-feet)	Change in contents (acre-feet)
Sept.30.....	4,133.90	8,200	--
Oct. 31.....	4,134.45	8,370	+170
Nov. 30.....	4,127.20	6,170	-2,200
Dec. 31.....	4,127.50	6,260	+90
CAL YR 2000.....	--	--	+2,950
Jan. 31.....	4,117.80	3,750	-2,510
Feb. 28.....	4,114.90	3,160	-590
Mar. 31.....	4,134.50	8,390	+5,230
Apr. 30.....	4,138.30	9,650	+1,260
May 31.....	4,145.60	12,360	+2,710
June 30.....	4,147.70	13,220	+860
July 31.....	4,147.70	13,220	0
Aug. 31.....	4,145.60	12,360	-860
Sept.30.....	4,147.70	13,220	+860
WTR YR 2001.....	--	--	+5,020

14313500 NORTH UMPQUA RIVER BELOW LEMOLO LAKE, NEAR TOKETEE FALLS, OR

LOCATION.--Lat 43°19'20", long 122°11'40", in NW 1/4 NW 1/4 sec.11, T.26 S., R.5 E., Douglas County, Hydrologic Unit 17100301, Umpqua National Forest, on right bank 0.4 mi downstream from Lemolo Lake, 13 mi east of town of Toketee Falls, and at mile 92.6.

DRAINAGE AREA.--170 mi² (see REMARKS).

PERIOD OF RECORD.--October 1927 to December 1945, March 1946 to current year. Records since October 1983 are equivalent to earlier records if diversion to Lemolo No. 1 power canal is added to flow past station. Published as "below Lake Creek" prior to October 1952, as "below Lake Creek, near Toketee Falls" October 1952 to September 1953, and as "below Lemolo Reservoir near Toketee Falls" October 1953 to September 1960.

REVISED RECORDS.--WSP 1448: Drainage area. WDR OR-75-1: 1964(M).

GAGE.--Water-stage recorder. Elevation of gage is 4,025 ft above sea level, from river-profile map. Prior to July 15, 1954, at site 1 mi upstream at datum about 65 ft higher. July 15, 1954, to Sept. 25, 1955, at site 400 ft upstream at datum 14.11 ft higher.

REMARKS.--No estimated daily discharges. Records good. 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 ft³/s, 33.79 in/yr, 306,500 acre-ft/yr, adjusted for storage. 34 years (water years 1968-2001), 59.6 ft³/s, 43,190 acre-ft/yr (river only).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 4,600 ft³/s Dec. 25, 1964, from rating curve extended above 450 ft³/s on basis of slope-area measurement of peak flow, gage height, 9.20 ft, from floodmark; minimum discharge, 6.4 ft³/s July 17, 1954.

Combined flow, maximum discharge, 4,680 ft³/s Dec. 25, 1964, from river rating curve extended above 450 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 9.7 ft³/s May 13, 1955.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 286 ft³/s June 5, gage height, 5.79 ft; minimum discharge, 28 ft³/s many days during February and March.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	32	30	30	29	28	32	36	279	33	33	33
2	32	32	30	29	28	28	32	35	281	32	34	33
3	32	32	30	29	28	28	32	35	281	32	35	33
4	32	32	30	29	28	28	31	36	282	32	35	33
5	32	32	30	29	29	28	30	36	215	32	36	33
6	32	32	30	29	29	28	31	36	34	32	35	33
7	32	32	30	29	29	28	32	36	33	32	34	33
8	32	32	30	29	29	28	31	36	33	32	35	33
9	32	32	30	29	29	28	31	36	32	33	35	33
10	32	32	30	29	29	28	31	36	32	33	36	33
11	33	32	30	29	29	28	31	36	32	33	35	33
12	32	32	30	29	29	28	31	36	32	33	32	33
13	32	32	30	29	29	28	31	35	32	34	32	31
14	32	32	30	29	29	28	31	36	32	35	32	29
15	32	31	30	29	29	28	31	41	32	35	32	30
16	32	31	30	29	29	28	31	41	32	35	32	29
17	32	31	30	29	29	28	31	41	32	34	32	29
18	32	31	30	29	29	29	31	39	32	34	31	29
19	32	31	30	29	29	29	31	37	32	34	30	29
20	33	30	30	29	28	29	31	36	32	34	30	29
21	32	30	30	29	28	29	31	36	32	33	30	29
22	32	31	30	29	28	28	31	35	32	33	30	30
23	32	31	30	29	28	28	31	35	32	33	30	31
24	32	31	30	29	28	28	31	34	32	36	32	31
25	32	31	30	29	28	29	32	34	32	37	33	31
26	32	31	30	29	28	29	33	34	33	36	33	31
27	32	31	30	29	28	29	34	34	34	35	33	31
28	32	30	30	29	28	30	35	33	33	35	33	31
29	32	31	30	29	---	30	35	231	33	35	33	31
30	32	30	30	29	---	31	36	279	33	35	33	31
31	32	---	30	29	---	31	---	280	---	34	33	---
TOTAL	994	940	930	900	800	885	952	1801	2148	1046	1019	938
MEAN	32.1	31.3	30.0	29.0	28.6	28.5	31.7	58.1	71.6	33.7	32.9	31.3
MAX	33	32	30	30	29	31	36	280	282	37	36	33
MIN	32	30	30	29	28	28	30	33	32	32	30	29
AC-FT	1970	1860	1840	1790	1590	1760	1890	3570	4260	2070	2020	1860

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2001, BY WATER YEAR (WY)

	MEAN	37.9	34.5	39.6	43.2	34.7	37.8	41.0	111	138	83.5	66.5	47.0
MAX	126	150	185	307	144	200	119	301	687	301	321	225	
(WY)	1979	1979	1997	1997	1996	1972	1987	1972	1974	1996	1979	1985	
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1968 - 2001

ANNUAL TOTAL	14355	13353	
ANNUAL MEAN	39.2	36.6	59.6
HIGHEST ANNUAL MEAN			125
LOWEST ANNUAL MEAN			24.1
HIGHEST DAILY MEAN	478	Apr 20	282
LOWEST DAILY MEAN	24	Feb 24	28
ANNUAL SEVEN-DAY MINIMUM	24	Feb 24	28
ANNUAL RUNOFF (AC-FT)	28470	26490	43190
10 PERCENT EXCEEDS	43	35	125
50 PERCENT EXCEEDS	32	32	30
90 PERCENT EXCEEDS	25	29	23

UMPQUA RIVER BASIN

14314500 CLEARWATER RIVER ABOVE TRAP CREEK, NEAR TOKETEE FALLS, OR

LOCATION.--Lat 43°14'40", long 122°17'10", in SW 1/4 sec.1, T.27 S., R.4 E., Douglas County, Hydrologic Unit 17100301, Umpqua National Forest, on right bank 900 ft downstream from Clearwater No. 1 diversion dam, 0.4 mi upstream from Trap Creek, 8.7 mi east of town of Toketee Falls, and at mile 7.8.

DRAINAGE AREA.--41.6 mi² (see REMARKS).

PERIOD OF RECORD.--October 1927 to December 1945, March 1946 to current year. Records since October 1983 are equivalent to earlier records if diversion to Clearwater No. 1 power canal is added to flow past station. Monthly discharge only December 1927 to March 1928, published in WSP 1318. Prior to October 1952, published as "above Trap Creek."

REVISED RECORDS.--WSP 1124: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,862.84 ft above sea level (levels by Pacific Power & Light Co.). Prior to Dec. 1, 1953, at two sites about 0.4 mi downstream at different datums.

REMARKS.--No estimated daily discharges. Records good. Records after September 1983 do not include flow in Clearwater No. 1 power canal, completed in June 1953, which diverts 900 ft upstream from station for generation of power and returns water to Clearwater River 2.5 mi downstream from station.

AVERAGE DISCHARGE.--55 years (water years 1928-83), 173 ft³/s, 125,300 acre-ft/yr.
18 years (water years 1984-2001), 19.4 ft³/s, 14,030 acre-ft/yr (river only).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 848 ft³/s Dec. 23, 1964, gage height, 7.19 ft; maximum gage height, 7.87 ft Dec. 23, 1964, log jam; minimum discharge, 0.08 ft³/s Sept. 21, 1977, result of beavers plugging release gate at diversion dam 900 ft upstream.

Combined flow, maximum discharge, 1,020 ft³/s Dec. 23, 1964; minimum daily, 91 ft³/s Nov. 4-6, 1931.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 240 ft³/s Oct. 18, gage height, 4.62 ft; minimum discharge, 5.1 ft³/s Apr. 3.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.4	178	176	7.3	6.2	5.4	6.8	14	6.5	6.5	6.8	5.9
2	6.4	178	176	7.1	6.2	5.6	6.0	6.7	6.5	6.5	6.8	5.9
3	6.3	178	175	7.1	6.3	5.6	5.3	5.9	6.5	6.5	6.6	5.9
4	6.2	178	175	7.1	6.4	5.9	5.4	5.9	6.5	6.5	6.7	5.9
5	6.2	177	175	7.1	6.3	5.9	5.4	6.3	6.5	6.4	6.8	6.1
6	6.2	177	175	7.1	6.2	5.8	5.4	5.8	6.5	6.2	6.8	6.6
7	6.2	176	175	7.1	5.9	5.6	5.4	5.9	6.6	6.4	6.8	18
8	6.2	186	175	7.1	5.9	5.6	5.6	6.5	6.8	6.5	6.8	6.4
9	6.4	180	105	7.1	5.9	5.6	5.9	7.1	6.7	6.5	6.8	6.2
10	6.5	178	8.0	7.1	5.9	5.6	5.9	24	6.8	6.5	6.8	6.2
11	6.5	177	8.0	6.9	5.9	5.6	6.6	8.1	6.8	7.1	6.8	6.2
12	6.5	177	7.9	6.8	5.9	5.6	6.1	9.3	6.8	6.8	7.1	6.2
13	6.6	176	7.7	6.5	5.9	5.6	6.0	7.8	6.8	6.5	7.1	6.3
14	7.2	176	7.7	6.5	5.9	5.6	5.9	10	6.6	6.5	7.1	6.5
15	12	176	7.7	6.5	5.9	5.8	5.9	36	6.5	6.2	7.1	6.5
16	136	176	7.7	6.5	5.9	5.9	5.8	29	6.5	6.2	7.0	6.5
17	176	176	7.7	6.5	5.9	5.9	6.3	7.3	6.5	6.2	6.8	6.5
18	181	176	7.7	6.5	5.9	5.9	6.4	7.6	6.5	6.2	6.8	7.0
19	179	176	7.7	6.5	5.9	5.9	6.5	8.9	6.5	6.4	6.8	53
20	193	175	7.7	6.5	5.9	5.9	6.1	7.1	6.5	6.5	6.8	6.3
21	188	175	7.7	6.5	5.9	5.9	5.8	6.9	6.6	6.5	6.5	6.2
22	181	175	7.7	6.5	5.8	5.9	5.6	6.8	6.7	6.4	6.5	7.6
23	179	177	7.7	6.5	5.6	5.9	6.4	7.0	6.5	6.4	6.6	8.9
24	179	177	7.7	6.5	5.6	6.2	8.2	6.8	6.6	6.5	6.5	13
25	179	176	7.4	6.3	5.6	10	8.1	6.4	6.6	6.5	6.5	16
26	178	176	7.4	6.2	5.6	8.2	6.4	6.4	6.8	6.5	6.5	13
27	178	178	7.4	6.2	5.4	10	9.5	6.3	6.8	6.6	6.3	11
28	182	176	7.4	6.2	5.4	13	12	6.2	6.3	6.6	6.2	9.7
29	181	180	7.4	6.2	---	8.8	6.0	6.2	6.2	6.7	6.2	8.0
30	179	177	7.4	6.2	---	7.9	12	6.2	6.3	6.8	6.2	8.0
31	178	---	7.4	6.2	---	7.2	---	6.2	---	6.8	7.5	---
TOTAL	2948.8	5314	1675.1	206.4	165.1	203.3	198.7	290.6	197.3	201.4	208.6	285.5
MEAN	95.1	177	54.0	6.66	5.90	6.56	6.62	9.37	6.58	6.50	6.73	9.52
MAX	193	186	176	7.3	6.4	13	12	36	6.8	7.1	7.5	53
MIN	6.2	175	7.4	6.2	5.4	5.4	5.3	5.8	6.2	6.2	6.2	5.9
AC-FT	5850	10540	3320	409	327	403	394	576	391	399	414	566

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2001, BY WATER YEAR (WY)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	17.2	17.7	15.4	17.3	21.8	14.2	21.6	44.0	16.1	21.4	15.5	10.0						
MAX	95.1	177	68.5	143	177	45.0	66.1	125	56.8	88.3	100	59.4						
(WY)	2001	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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1984 - 2001

	2000	2001	1984-2001
ANNUAL TOTAL	13937.6	11894.8	
ANNUAL MEAN	38.1	32.6	19.4
HIGHEST ANNUAL MEAN			52.0
LOWEST ANNUAL MEAN			5.85
HIGHEST DAILY MEAN	193	193	659
LOWEST DAILY MEAN	6.2	5.3	2.0
ANNUAL SEVEN-DAY MINIMUM	6.2	5.5	3.2
ANNUAL RUNOFF (AC-FT)	27650	23590	14030
10 PERCENT EXCEEDS	176	176	43
50 PERCENT EXCEEDS	7.9	6.5	6.5
90 PERCENT EXCEEDS	6.5	5.9	5.3

14316000 FISH CREEK AT BIG CAMAS RANGER STATION, NEAR TOKETEE FALLS, OR

LOCATION.--Lat 43°13'50", long 122°26'45", in SE 1/4 sec.10, T.27 S., R.3 E., Douglas County, Hydrologic Unit 17100301, Umpqua National Forest, 0.2 mi upstream from Camas Creek, 0.7 mi east of Big Camas ranger station, 3.2 mi south of town of Toketee Falls, and at mile 4.7.

DRAINAGE AREA.--68.8 mi² (see REMARKS).

PERIOD OF RECORD.--October 1947 to current year. Records since October 1983 are equivalent to earlier records if diversion to Fish Creek power canal is added to flow past station. Prior to October 1952, published as "at Big Camas ranger station."

REVISED RECORDS.--WSP 1448: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,858.52 ft above sea level (levels by Pacific Power & Light Co.). Prior to July 10, 1951, water-stage recorder and July 10 to Aug. 10, 1951, nonrecording gage at site 1,000 ft upstream at datum 13.72 ft higher. Aug. 11 to Nov. 3, 1951, nonrecording gage at site 200 ft downstream at different datum. Nov. 4, 1951, to Sept. 30, 1956, water-stage recorder at present site at datum 1.92 ft higher.

REMARKS.--No estimated daily discharges. 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 ft³/s, 46.78 in/yr, 171,700 acre-ft/yr.
18 years (water years 1984-2001), 127 ft³/s, 24.98 in/yr, 91,650 acre-ft/yr (river only).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 12,100 ft³/s Dec. 22, 1964, gage height, 13.9 ft, from floodmark; minimum discharge, 2.3 ft³/s Sept. 25, 1957.

Combined flow, maximum discharge, 12,100 ft³/s Dec. 22, 1964; minimum daily, 19 ft³/s July 30, 1979, result of diversion dam manipulation.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 653 ft³/s May 16, gage height, 5.25 ft; minimum discharge, 13 ft³/s Oct. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	16	24	19	17	21	91	177	34	30	27	26
2	16	22	20	19	23	24	62	110	33	30	27	25
3	16	22	22	22	30	19	38	84	36	33	27	25
4	16	20	19	33	47	22	28	76	33	32	28	24
5	15	19	18	30	33	24	25	70	42	31	28	22
6	16	19	21	26	24	25	26	56	38	29	27	21
7	17	17	23	24	22	30	23	54	31	29	27	21
8	17	38	21	26	26	33	21	57	32	28	27	20
9	20	23	23	22	20	29	20	50	33	27	28	20
10	20	18	21	35	20	26	20	41	34	28	28	20
11	20	22	20	21	19	24	21	44	34	32	28	20
12	15	21	21	18	22	23	20	46	42	33	28	20
13	18	20	23	17	36	24	23	37	32	30	28	20
14	17	20	35	16	24	25	31	66	31	29	27	20
15	17	19	42	16	21	24	33	376	31	28	27	22
16	16	17	21	22	16	24	38	493	29	28	27	24
17	16	34	27	25	16	31	63	265	29	28	26	20
18	20	56	19	17	20	46	64	170	30	27	26	20
19	20	56	18	18	17	100	61	118	29	27	26	20
20	66	20	17	17	17	88	62	82	29	28	26	19
21	56	20	21	18	19	62	59	61	30	29	26	19
22	19	20	44	19	21	64	59	46	31	28	27	19
23	18	30	41	18	20	77	64	35	33	27	34	18
24	15	39	32	23	20	84	74	30	35	28	28	18
25	16	28	24	19	21	165	106	28	37	29	27	21
26	19	32	23	17	21	94	137	27	41	28	27	24
27	20	45	23	18	21	94	123	28	48	27	26	22
28	27	33	21	24	20	229	127	34	37	27	26	18
29	21	51	21	20	---	175	77	38	29	27	26	19
30	16	40	22	17	---	128	140	37	33	32	26	19
31	17	---	21	17	---	102	---	35	---	29	26	---
TOTAL	638	837	748	653	633	1936	1736	2871	1016	898	842	626
MEAN	20.6	27.9	24.1	21.1	22.6	62.5	57.9	92.6	33.9	29.0	27.2	20.9
MAX	66	56	44	35	47	229	140	493	48	33	34	26
MIN	15	16	17	16	16	19	20	27	29	27	26	18
AC-FT	1270	1660	1480	1300	1260	3840	3440	5690	2020	1780	1670	1240
CFSM	.30	.41	.35	.31	.33	.91	.84	1.35	.49	.42	.39	.30
IN.	.34	.45	.40	.35	.34	1.05	.94	1.55	.55	.49	.46	.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2001, BY WATER YEAR (WY)

	MEAN	28.6	99.3	167	181	168	189	213	235	137	40.0	34.3	29.4
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	1995	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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1984 - 2001

ANNUAL TOTAL	36019	13434	127
ANNUAL MEAN	98.4	36.8	247
HIGHEST ANNUAL MEAN			36.8
LOWEST ANNUAL MEAN			2001
HIGHEST DAILY MEAN	558	493	4100
LOWEST DAILY MEAN	15	15	5.9
ANNUAL SEVEN-DAY MINIMUM	16	16	6.8
ANNUAL RUNOFF (AC-FT)	71440	26650	91650
ANNUAL RUNOFF (CFSM)	1.43	.53	1.84
ANNUAL RUNOFF (INCHES)	19.48	7.26	24.98
10 PERCENT EXCEEDS	250	62	315
50 PERCENT EXCEEDS	36	26	45
90 PERCENT EXCEEDS	18	18	17

UMPQUA RIVER BASIN

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.

REMARKS.--Specific conductance, pH, water temperature, dissolved oxygen, and turbidity records good. Turbidity values are considered relative to this site. The probe was checked using a polymer bead standard.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 83 microsiemens May 24, 2001; minimum recorded, 34 microsiemens Jan. 17, 1998.

pH: Maximum recorded, 8.2 units Aug. 9, 1998, but may have been higher during period of missing record, Sept. 11, 12, 2001; minimum recorded, 7.0 units Oct. 29, 1997, Apr. 20, 2000, but may have been lower during period of missing record.

WATER TEMPERATURE: Maximum recorded, 15.5°C Aug. 11, 2001, but may have been higher during period of missing record; minimum recorded, 2.0°C Dec. 25, 1997.

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, 29 NTU June 13, 2001; minimum, <1 many days each year.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 83 microsiemens May 24; minimum, 45 microsiemens May 1.

pH: Maximum recorded, 8.2 units Sept. 11, 12; minimum recorded, 7.2 units May 16, 26, July, 11, 12, but may have been lower during period of missing record.

WATER TEMPERATURE: Maximum recorded, 15.5°C Aug. 11, but may have been higher during period of missing record; minimum recorded, 2.1°C Jan. 17.

DISSOLVED OXYGEN: Maximum recorded, 15.2 mg/L Nov. 19; minimum recorded, 6.9 mg/L July 11, but may have been lower during period of missing record.

TURBIDITY: Maximum, 29 NTU June 13; minimum, <1 many days throughout the year.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	65	63	64	61	59	60	60	58	59	59	56	58
2	65	64	65	61	59	60	60	58	59	59	56	57
3	65	62	64	61	59	61	60	57	58	59	56	57
4	64	62	63	61	59	60	59	57	58	58	56	57
5	64	62	63	61	59	60	60	57	58	58	56	57
6	63	62	63	61	58	60	60	57	58	59	56	57
7	63	62	63	60	58	59	60	58	59	59	56	57
8	63	62	63	60	58	59	60	58	59	58	56	57
9	63	61	62	60	57	58	60	58	59	58	56	57
10	62	60	61	59	57	58	61	58	59	57	56	56
11	63	61	62	60	57	58	61	58	59	59	56	57
12	64	61	62	60	57	58	60	57	59	59	57	58
13	62	61	62	59	57	58	61	57	59	60	57	58
14	62	60	61	59	57	58	60	57	58	60	57	58
15	62	59	60	60	57	58	60	56	58	60	57	59
16	62	59	60	60	58	59	61	57	58	61	57	59
17	62	59	60	59	57	58	60	57	58	59	57	58
18	61	59	60	59	57	58	61	57	59	60	57	58
19	61	58	59	59	57	58	60	57	59	60	57	58
20	61	58	60	59	57	58	61	57	59	61	57	59
21	59	56	57	60	58	59	61	57	59	60	57	59
22	60	57	58	60	57	58	59	56	58	60	57	58
23	61	58	59	60	58	59	59	55	57	60	57	59
24	61	58	60	59	57	58	60	57	58	60	57	58
25	62	59	60	60	57	58	61	58	59	59	57	58
26	61	59	60	60	57	58	61	58	59	58	56	57
27	62	59	60	60	58	59	59	57	58	59	56	58
28	61	59	60	59	57	58	60	57	58	59	56	57
29	60	58	59	60	58	59	60	56	58	58	56	57
30	61	59	60	59	57	58	59	57	58	59	56	57
31	60	58	59	---	---	---	59	56	58	59	56	58
MONTH	65	56	61	61	57	59	61	55	58	61	56	58

UMPQUA RIVER BASIN

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14316460 NORTH UMPQUA RIVER AT SODA SPRINGS, NEAR TOKETEE FALLS, OR--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	59	56	58	59	58	58	50	50	50	49	45	47
2	59	56	58	59	57	58	53	48	51	50	46	48
3	59	56	57	60	56	58	54	50	52	51	46	49
4	58	56	57	59	58	58	55	52	54	52	47	50
5	58	56	57	60	57	58	56	53	54	52	47	51
6	59	56	58	59	58	58	56	53	55	52	48	51
7	59	56	57	60	58	59	56	53	55	54	51	52
8	58	56	57	59	58	59	56	53	55	55	51	52
9	59	56	57	60	58	58	55	53	54	54	52	53
10	58	56	57	60	57	58	57	53	55	54	52	53
11	59	57	58	60	58	58	56	54	55	55	52	53
12	60	56	58	60	58	58	57	55	56	55	52	54
13	60	57	59	60	58	58	59	55	57	55	52	53
14	60	57	59	60	58	58	59	57	58	55	52	53
15	60	58	59	59	58	58	60	57	58	53	48	49
16	60	58	59	59	57	58	60	57	58	54	48	51
17	60	58	59	59	57	58	59	57	58	60	54	58
18	60	57	59	59	56	57	60	55	57	65	60	63
19	60	58	59	57	56	56	58	55	56	71	65	67
20	60	58	59	56	55	55	58	54	56	75	71	73
21	60	57	59	55	55	55	59	55	56	80	75	78
22	60	57	58	55	52	55	59	55	57	80	77	78
23	60	58	59	55	53	54	58	57	57	82	79	80
24	60	58	59	54	52	53	58	55	57	83	79	82
25	60	58	59	54	48	50	57	54	55	79	75	77
26	60	57	58	52	49	50	55	51	53	77	72	74
27	59	58	58	52	50	51	53	48	51	79	76	78
28	60	58	58	51	49	49	51	48	50	80	74	78
29	---	---	---	50	48	49	51	46	49	74	65	69
30	---	---	---	50	49	50	51	48	50	68	65	66
31	---	---	---	51	49	50	---	---	---	68	64	65
MONTH	60	56	58	60	48	56	60	46	55	83	45	61

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	66	63	64	67	65	66	61	59	60	65	63	64
2	64	61	62	67	64	65	61	59	60	64	62	63
3	65	63	64	67	64	65	62	60	61	64	62	63
4	64	62	63	67	65	66	63	61	62	64	62	63
5	64	60	62	67	65	66	63	61	62	64	61	62
6	64	61	63	67	65	66	64	61	62	63	60	61
7	64	61	62	67	65	66	64	62	63	61	59	60
8	64	61	63	68	65	66	65	62	63	60	58	59
9	65	62	63	68	66	67	64	62	63	59	58	59
10	64	60	63	68	65	66	64	62	63	60	58	59
11	63	60	61	68	65	66	64	62	63	61	58	59
12	63	60	61	67	64	65	64	62	63	61	58	59
13	63	59	61	---	---	---	64	62	63	60	58	59
14	63	61	63	---	---	---	65	63	64	60	58	59
15	64	62	63	---	---	---	65	63	64	60	58	59
16	65	62	63	---	---	---	65	63	64	60	58	59
17	66	61	63	---	---	---	65	63	64	63	58	60
18	65	60	62	---	---	---	65	63	64	63	61	62
19	65	62	63	---	---	---	65	62	63	63	62	62
20	65	62	64	---	---	---	65	62	63	64	61	62
21	66	63	65	---	---	---	65	62	63	63	62	62
22	66	63	64	---	---	---	68	62	65	63	61	62
23	65	64	64	---	---	---	68	64	66	63	61	62
24	65	63	64	---	---	---	67	64	65	63	60	61
25	65	62	63	---	---	---	65	63	64	61	60	61
26	64	62	63	62	60	61	64	61	62	61	60	61
27	64	62	63	58	55	57	65	61	63	60	58	61
28	64	63	64	59	56	58	65	63	64	63	61	62
29	67	64	65	59	57	58	67	63	64	63	61	62
30	68	65	66	59	57	58	67	63	65	62	61	62
31	---	---	---	60	57	58	65	63	64	---	---	---
MONTH	68	59	63	---	---	---	68	59	63	65	58	61

UMPQUA RIVER BASIN

14316460 NORTH UMPQUA RIVER AT SODA SPRINGS, NEAR TOKETEE FALLS, OR--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	7.7	7.5	7.6	7.6	7.4	7.5	7.8	7.6	7.6	7.5	7.4	7.5
2	7.8	7.5	7.6	7.6	7.4	7.5	7.8	7.6	7.6	7.6	7.4	7.5
3	7.5	7.4	7.5	7.6	7.4	7.5	7.7	7.5	7.6	7.6	7.4	7.5
4	7.7	7.4	7.5	7.7	7.5	7.5	7.7	7.6	7.6	7.6	7.4	7.5
5	7.7	7.4	7.5	7.7	7.5	7.6	7.7	7.5	7.6	7.6	7.4	7.4
6	7.7	7.4	7.5	7.7	7.5	7.6	7.8	7.6	7.6	7.6	7.4	7.4
7	7.7	7.4	7.5	7.7	7.5	7.6	7.8	7.6	7.6	7.6	7.4	7.4
8	7.7	7.4	7.5	7.7	7.5	7.6	7.7	7.5	7.6	7.5	7.3	7.4
9	7.6	7.4	7.5	7.7	7.4	7.6	7.7	7.5	7.6	7.5	7.4	7.4
10	7.6	7.5	7.5	7.6	7.5	7.5	7.7	7.5	7.6	7.5	7.4	7.4
11	7.7	7.4	7.5	7.6	7.5	7.5	7.6	7.5	7.6	7.5	7.3	7.4
12	7.7	7.4	7.5	7.6	7.4	7.5	7.7	7.5	7.5	7.6	7.3	7.4
13	7.8	7.5	7.5	7.7	7.5	7.6	7.6	7.5	7.6	7.5	7.4	7.4
14	7.8	7.5	7.6	7.7	7.5	7.6	7.6	7.4	7.5	7.6	7.3	7.4
15	7.8	7.5	7.6	7.7	7.5	7.6	7.5	7.3	7.4	7.6	7.4	7.4
16	7.8	7.5	7.6	7.6	7.5	7.6	7.5	7.4	7.4	7.5	7.4	7.4
17	7.9	7.6	7.7	7.6	7.5	7.6	7.5	7.4	7.4	7.5	7.4	7.4
18	7.8	7.6	7.6	7.6	7.5	7.6	7.5	7.4	7.4	7.6	7.4	7.4
19	7.8	7.6	7.6	7.7	7.5	7.6	7.6	7.3	7.5	7.5	7.4	7.4
20	7.7	7.6	7.6	7.7	7.6	7.7	7.6	7.4	7.5	7.6	7.4	7.4
21	7.7	7.6	7.7	7.7	7.4	7.7	7.6	7.4	7.5	7.5	7.3	7.4
22	7.8	7.6	7.7	7.7	7.6	7.7	7.6	7.4	7.5	7.5	7.3	7.4
23	7.8	7.5	7.7	7.7	7.6	7.6	7.5	7.4	7.5	7.5	7.3	7.4
24	7.7	7.5	7.6	7.8	7.6	7.6	7.6	7.4	7.5	7.5	7.3	7.4
25	7.7	7.5	7.6	7.8	7.6	7.6	7.6	7.4	7.5	7.5	7.3	7.4
26	7.7	7.5	7.6	7.7	7.6	7.6	7.7	7.4	7.5	7.5	7.3	7.4
27	7.8	7.5	7.6	7.8	7.6	7.6	7.6	7.5	7.5	7.4	7.3	7.4
28	7.8	7.5	7.6	7.8	7.6	7.6	7.6	7.4	7.5	7.5	7.3	7.4
29	7.7	7.5	7.6	7.8	7.6	7.6	7.6	7.4	7.5	7.5	7.3	7.4
30	7.7	7.5	7.6	7.7	7.6	7.6	7.6	7.4	7.5	7.5	7.3	7.4
31	7.6	7.5	7.6	---	---	---	7.5	7.4	7.5	7.5	7.3	7.4
MAX	7.9	7.6	7.7	7.8	7.6	7.7	7.8	7.6	7.6	7.6	7.4	7.5
MIN	7.5	7.4	7.5	7.6	7.4	7.5	7.5	7.3	7.4	7.4	7.3	7.4

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
FEBRUARY			MARCH			APRIL			MAY			
1	7.5	7.3	7.4	7.7	7.5	7.5	7.6	7.4	7.5	7.5	7.4	7.4
2	7.5	7.3	7.4	7.6	7.5	7.5	7.6	7.4	7.5	7.5	7.4	7.4
3	7.5	7.3	7.4	7.7	7.5	7.5	7.6	7.4	7.5	7.6	7.3	7.4
4	7.5	7.3	7.4	7.7	7.4	7.5	7.6	7.4	7.5	7.6	7.3	7.4
5	7.6	7.3	7.4	7.7	7.5	7.5	7.7	7.4	7.5	7.6	7.3	7.5
6	7.6	7.3	7.4	7.8	7.5	7.5	7.6	7.4	7.5	7.6	7.3	7.5
7	7.5	7.3	7.4	7.7	7.4	7.5	7.7	7.4	7.5	7.6	7.4	7.4
8	7.5	7.3	7.4	7.7	7.4	7.5	7.7	7.4	7.5	7.8	7.4	7.5
9	7.6	7.3	7.4	7.8	7.5	7.6	7.6	7.4	7.5	7.6	7.3	7.5
10	7.6	7.3	7.4	7.7	7.5	7.6	7.7	7.4	7.5	7.6	7.4	7.4
11	7.6	7.3	7.4	7.7	7.5	7.6	7.7	7.4	7.5	7.6	7.3	7.4
12	7.5	7.3	7.4	7.7	7.5	7.6	7.7	7.4	7.5	7.6	7.4	7.4
13	7.5	7.3	7.4	7.7	7.5	7.6	7.7	7.4	7.6	7.6	7.4	7.5
14	7.5	7.3	7.4	7.7	7.4	7.6	7.8	7.4	7.6	7.5	7.4	7.4
15	7.6	7.3	7.4	7.7	7.5	7.6	7.8	7.4	7.6	7.4	7.3	7.3
16	7.6	7.3	7.4	7.7	7.4	7.6	7.8	7.4	7.6	7.3	7.2	7.3
17	7.6	7.3	7.4	7.7	7.4	7.6	7.7	7.4	7.6	7.4	7.3	7.3
18	7.6	7.3	7.4	7.7	7.4	7.5	7.7	7.4	7.5	7.5	7.3	7.4
19	7.6	7.4	7.5	7.7	7.4	7.5	7.7	7.4	7.6	7.5	7.3	7.4
20	7.6	7.4	7.4	7.7	7.4	7.5	7.6	7.5	7.6	7.5	7.3	7.4
21	7.6	7.4	7.4	7.6	7.4	7.5	7.7	7.4	7.6	7.5	7.3	7.4
22	7.7	7.4	7.5	7.6	7.4	7.5	7.7	7.4	7.6	7.4	7.3	7.3
23	7.7	7.5	7.5	7.6	7.4	7.5	7.7	7.4	7.5	7.5	7.3	7.4
24	7.7	7.5	7.5	7.6	7.4	7.4	7.7	7.4	7.5	7.5	7.3	7.4
25	7.7	7.5	7.5	7.5	7.4	7.4	7.6	7.4	7.5	7.5	7.3	7.4
26	7.6	7.5	7.5	7.5	7.4	7.4	7.6	7.3	7.5	7.4	7.2	7.3
27	7.6	7.5	7.5	7.5	7.4	7.4	7.6	7.3	7.5	7.7	7.3	7.5
28	7.7	7.5	7.5	7.4	7.4	7.4	7.6	7.3	7.5	7.6	7.4	7.5
29	---	---	---	7.5	7.4	7.4	7.6	7.4	7.5	7.7	7.4	7.5
30	---	---	---	7.5	7.4	7.4	7.5	7.4	7.5	7.7	7.4	7.5
31	---	---	---	7.6	7.4	7.4	---	---	---	7.7	7.3	7.5
MAX	7.7	7.5	7.5	7.8	7.5	7.6	7.8	7.5	7.6	7.8	7.4	7.5
MIN	7.5	7.3	7.4	7.4	7.4	7.4	7.5	7.3	7.5	7.3	7.2	7.3

UMPQUA RIVER BASIN

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14316460 NORTH UMPQUA RIVER AT SODA SPRINGS, NEAR TOKETEE FALLS, OR--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	7.6	7.3	7.5	7.9	7.4	7.6	8.1	7.5	7.6	8.0	7.6	7.6
2	7.7	7.4	7.5	7.8	7.4	7.6	8.1	7.4	7.6	8.0	7.6	7.6
3	7.7	7.5	7.5	7.9	7.4	7.6	8.1	7.4	7.6	8.0	7.6	7.7
4	7.7	7.4	7.5	7.9	7.4	7.6	8.0	7.4	7.6	8.0	7.6	7.6
5	7.7	7.4	7.5	7.9	7.4	7.6	8.0	7.4	7.5	8.1	7.6	7.7
6	7.7	7.4	7.5	7.8	7.3	7.5	8.0	7.4	7.5	8.1	7.5	7.7
7	7.7	7.4	7.5	7.9	7.3	7.5	8.0	7.4	7.5	8.1	7.7	7.8
8	7.7	7.4	7.5	7.8	7.3	7.5	8.1	7.4	7.6	8.1	7.7	7.8
9	7.8	7.4	7.5	7.9	7.3	7.5	8.1	7.4	7.5	8.1	7.7	7.8
10	7.7	7.4	7.5	7.8	7.3	7.5	8.1	7.4	7.5	8.1	7.7	7.8
11	7.6	7.4	7.5	7.7	7.2	7.4	7.8	7.4	7.5	8.2	7.7	7.8
12	7.7	7.3	7.5	7.7	7.2	7.3	7.8	7.3	7.5	8.2	7.6	7.8
13	7.7	7.4	7.5	---	---	---	7.8	7.3	7.5	8.1	7.7	7.8
14	7.8	7.4	7.5	---	---	---	7.8	7.3	7.5	8.1	7.7	7.8
15	7.9	7.5	7.7	---	---	---	7.8	7.4	7.4	8.0	7.7	7.8
16	8.0	7.6	7.7	---	---	---	7.8	7.4	7.4	8.0	7.7	7.8
17	8.0	7.6	7.7	---	---	---	7.8	7.4	7.4	8.1	7.7	7.8
18	8.0	7.5	7.7	---	---	---	7.9	7.4	7.4	8.1	7.6	7.8
19	8.0	7.5	7.6	---	---	---	7.8	7.4	7.4	8.1	7.6	7.7
20	8.0	7.5	7.6	---	---	---	7.8	7.4	7.4	8.1	7.6	7.7
21	7.9	7.5	7.6	---	---	---	7.9	7.4	7.5	8.1	7.6	7.7
22	8.0	7.5	7.6	---	---	---	8.0	7.3	7.5	8.1	7.6	7.7
23	8.0	7.5	7.6	---	---	---	8.1	7.7	7.8	8.0	7.5	7.7
24	7.9	7.5	7.6	---	---	---	8.1	7.6	7.7	8.1	7.5	7.7
25	7.9	7.5	7.6	---	---	---	8.1	7.6	7.7	7.8	7.5	7.6
26	7.8	7.5	7.6	8.1	7.6	---	8.1	7.6	7.7	7.7	7.5	7.6
27	7.8	7.4	7.5	8.1	7.5	7.6	8.1	7.6	7.7	7.9	7.5	7.6
28	7.8	7.4	7.6	8.1	7.5	7.6	8.1	7.7	7.8	7.9	7.4	7.5
29	8.0	7.4	7.6	8.1	7.5	7.6	8.1	7.7	7.8	7.9	7.4	7.5
30	7.9	7.4	7.6	8.1	7.5	7.6	8.0	7.6	7.7	7.8	7.4	7.5
31	---	---	---	8.1	7.4	7.6	8.0	7.6	7.7	---	---	---
MAX	8.0	7.6	7.7	---	---	---	8.1	7.7	7.8	8.2	7.7	7.8
MIN	7.6	7.3	7.5	---	---	---	7.8	7.3	7.4	7.7	7.4	7.5

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	10.1	9.2	9.6	5.9	5.5	5.7	4.2	3.8	4.1	3.9	3.5	3.7
2	10.2	9.4	9.8	6.5	5.5	6.1	4.2	3.8	4.0	4.1	3.6	3.8
3	---	---	---	6.7	6.3	6.6	4.4	3.9	4.2	4.1	3.7	3.9
4	8.7	8.0	8.3	6.4	6.0	6.3	4.2	3.8	4.0	4.6	4.1	4.4
5	8.7	8.0	8.3	6.1	5.8	5.9	4.0	3.6	3.8	4.5	4.2	4.4
6	8.8	8.2	8.4	6.2	5.8	6.1	3.9	3.6	3.7	4.4	3.8	4.2
7	8.9	8.3	8.5	5.9	5.3	5.6	4.2	3.9	4.1	4.3	3.8	4.0
8	8.7	8.1	8.4	5.9	5.3	5.7	4.1	3.6	3.9	4.8	4.0	4.5
9	8.4	8.1	8.3	5.8	4.9	5.2	4.6	4.1	4.4	4.5	3.7	4.2
10	8.1	7.8	8.0	4.8	4.2	4.5	4.6	4.1	4.4	3.9	3.4	3.7
11	7.8	7.4	7.6	4.4	3.7	4.0	4.1	3.4	3.8	3.8	3.5	3.6
12	7.8	7.4	7.6	4.1	3.6	3.9	4.0	3.5	3.8	4.1	3.6	3.8
13	8.2	7.6	7.8	4.2	3.8	3.9	4.1	3.5	3.9	4.0	3.3	3.7
14	8.1	7.6	7.9	4.3	3.9	4.1	3.7	3.2	3.5	3.7	3.3	3.5
15	7.9	7.2	7.6	4.2	3.9	4.0	3.7	3.2	3.5	3.7	3.3	3.5
16	7.4	6.8	7.2	4.0	3.3	3.7	3.6	3.2	3.4	3.3	2.2	2.8
17	7.4	6.8	7.1	3.4	2.9	3.1	3.8	3.0	3.5	2.5	2.1	2.3
18	7.7	6.9	7.4	3.2	2.8	3.0	3.3	2.5	2.9	3.4	2.6	3.0
19	7.9	7.5	7.7	3.3	2.9	3.1	3.6	2.8	3.2	3.6	3.0	3.3
20	7.9	7.6	7.7	3.6	3.2	3.4	3.9	3.1	3.6	3.8	3.3	3.5
21	7.7	6.9	7.4	4.2	3.8	4.0	4.2	3.7	3.9	4.0	3.4	3.7
22	6.9	6.1	6.6	3.8	3.2	3.6	4.2	3.8	4.0	4.1	3.7	3.8
23	6.8	6.2	6.5	3.6	3.2	3.4	4.0	3.6	3.8	4.3	3.7	4.0
24	6.6	6.1	6.4	4.0	3.5	3.7	4.1	3.8	4.0	4.4	3.9	4.1
25	6.8	6.4	6.7	4.1	3.8	3.9	3.8	3.3	3.6	4.0	3.4	3.8
26	7.0	6.6	6.8	4.2	3.8	4.0	3.6	3.2	3.3	3.7	3.2	3.4
27	7.0	6.8	6.9	4.5	4.2	4.4	3.9	3.3	3.6	3.2	2.7	3.0
28	6.9	6.5	6.8	4.4	3.9	4.2	3.9	3.4	3.7	3.1	2.6	2.8
29	6.5	6.2	6.3	4.6	4.0	4.4	3.7	3.3	3.5	3.5	2.6	3.1
30	6.4	6.2	6.3	4.7	4.2	4.5	3.6	3.2	3.4	3.5	3.1	3.2
31	6.2	5.7	6.0	---	---	---	3.8	3.2	3.5	3.4	2.8	3.1
MONTH	---	---	---	6.7	2.8	4.5	4.6	2.5	3.7	4.8	2.1	3.6

UMPQUA RIVER BASIN

14316460 NORTH UMPQUA RIVER AT SODA SPRINGS, NEAR TOKETEE FALLS, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	3.8	3.1	3.4	4.5	3.8	4.2	7.0	6.7	6.9	7.1	6.5	6.7
2	4.1	3.2	3.7	4.3	3.8	4.2	6.4	4.9	5.8	7.3	6.2	6.7
3	4.3	3.8	4.0	4.0	3.5	3.8	5.2	4.6	4.8	7.7	6.7	7.2
4	4.6	4.0	4.2	4.4	3.5	3.9	5.4	4.7	5.0	8.5	7.4	8.1
5	4.9	4.3	4.7	4.7	3.9	4.3	5.8	5.0	5.4	9.3	8.3	8.8
6	4.8	4.0	4.5	5.2	4.3	4.8	6.1	5.0	5.8	9.0	8.2	8.6
7	4.0	3.2	3.5	5.8	4.6	5.2	5.0	4.6	4.8	9.6	8.7	9.1
8	3.2	2.7	3.0	6.4	5.3	5.9	5.3	4.7	5.0	10.2	9.5	9.9
9	3.5	2.7	3.0	5.7	5.0	5.6	5.6	4.8	5.2	9.7	9.1	9.4
10	3.9	3.0	3.5	5.3	4.9	5.0	6.0	5.2	5.6	9.6	9.0	9.4
11	3.9	3.4	3.6	5.4	4.7	5.0	5.7	5.0	5.3	10.3	9.4	9.9
12	3.4	2.7	3.1	5.7	4.8	5.2	5.4	4.7	5.0	11.2	10.0	10.7
13	3.1	2.5	2.8	6.0	5.1	5.6	5.7	5.0	5.3	10.9	10.0	10.6
14	3.3	2.5	2.9	6.1	5.2	5.7	5.8	4.8	5.3	10.4	8.6	9.7
15	3.7	2.8	3.2	5.6	5.0	5.4	6.4	5.2	5.7	8.6	7.8	8.1
16	4.5	3.5	4.1	5.1	4.7	5.0	7.0	5.6	6.2	8.3	7.5	7.9
17	4.8	3.9	4.3	5.1	4.6	4.8	7.7	6.3	7.0	8.9	7.7	8.2
18	5.0	4.3	4.6	5.9	4.7	5.3	7.6	6.9	7.4	10.0	8.7	9.2
19	4.7	4.3	4.6	6.6	5.7	6.2	6.7	6.1	6.5	10.5	9.3	9.9
20	4.8	4.3	4.5	6.8	6.5	6.6	6.8	6.1	6.4	10.9	9.8	10.3
21	5.2	4.3	4.8	6.8	6.4	6.6	7.2	6.2	6.6	11.4	10.3	10.9
22	5.0	4.3	4.8	7.3	6.5	6.9	7.4	6.6	7.1	12.2	10.9	11.5
23	4.4	4.1	4.2	7.6	6.8	7.2	8.0	6.9	7.4	12.5	11.6	12.1
24	4.6	4.0	4.3	7.4	7.0	7.2	8.6	7.4	7.9	12.6	11.8	12.3
25	4.8	4.0	4.4	7.1	6.5	6.8	9.3	7.9	8.8	12.7	11.8	12.3
26	4.7	4.1	4.5	6.5	6.0	6.3	10.0	8.8	9.4	13.0	11.9	12.4
27	4.6	3.9	4.3	6.0	5.3	5.6	9.6	8.3	9.1	12.4	11.3	12.1
28	4.5	3.8	4.2	6.4	5.5	6.0	8.7	7.0	7.9	11.3	10.4	11.0
29	---	---	---	7.3	6.7	7.0	7.0	6.4	6.6	11.3	10.3	10.7
30	---	---	---	7.0	6.5	6.7	7.1	6.5	6.8	11.6	10.3	11.0
31	---	---	---	6.6	6.3	6.5	---	---	---	12.9	11.2	11.8
MONTH	5.2	2.5	4.0	7.6	3.5	5.6	10.0	4.6	6.4	13.0	6.2	9.9

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	12.7	11.5	12.1	13.4	12.4	12.8	13.6	12.0	12.8	13.8	12.6	13.0
2	11.5	9.8	10.8	13.8	12.5	13.1	13.9	12.5	13.2	13.3	12.3	12.7
3	10.0	9.2	9.6	14.2	13.0	13.5	13.8	12.8	13.3	13.3	12.1	12.6
4	9.9	8.9	9.3	14.7	13.2	13.8	13.4	12.6	13.1	13.3	12.0	12.4
5	9.4	9.1	9.3	15.1	13.9	14.3	14.1	12.5	13.0	12.8	12.0	12.2
6	10.4	9.1	9.7	14.8	13.7	14.1	14.5	12.7	13.5	12.6	11.0	11.8
7	12.4	10.3	11.5	14.3	13.4	13.8	14.8	13.1	13.9	11.7	10.3	10.9
8	12.8	12.0	12.3	14.4	13.1	13.7	15.3	14.2	14.7	12.1	10.5	11.3
9	12.6	11.9	12.1	15.0	13.5	14.2	15.1	13.8	14.3	12.0	10.5	11.2
10	11.9	10.6	11.4	14.7	14.0	14.3	15.0	13.8	14.3	12.1	10.9	11.4
11	10.6	9.8	10.2	14.6	13.3	13.9	15.5	13.8	14.4	12.1	11.1	11.6
12	10.5	9.5	10.0	14.1	12.9	13.4	14.7	13.8	14.1	11.8	11.1	11.3
13	11.2	10.1	10.6	---	---	---	14.6	13.5	14.2	12.0	10.9	11.5
14	12.5	10.8	11.6	---	---	---	15.0	13.3	14.0	12.1	11.1	11.5
15	12.7	11.4	11.9	---	---	---	15.1	13.7	14.2	11.9	11.1	11.4
16	12.6	11.7	12.0	---	---	---	15.0	13.6	14.1	12.0	10.8	11.4
17	12.6	11.2	11.8	---	---	---	14.7	13.4	13.9	11.9	10.8	11.2
18	12.2	10.9	11.4	---	---	---	14.6	13.4	13.8	11.7	10.8	11.0
19	12.8	11.0	11.7	---	---	---	14.1	12.7	13.6	11.5	10.2	10.9
20	13.6	11.6	12.5	---	---	---	13.7	12.4	12.9	11.0	9.9	10.4
21	14.3	12.5	13.3	---	---	---	13.3	12.3	12.7	10.8	9.9	10.1
22	14.3	13.0	13.5	---	---	---	12.9	12.3	12.5	10.7	9.7	10.0
23	13.7	12.7	13.1	---	---	---	12.3	12.0	12.2	10.8	9.7	10.2
24	12.7	11.4	12.0	---	---	---	12.9	11.8	12.3	11.0	10.1	10.4
25	11.4	10.3	10.7	---	---	---	13.4	12.0	12.6	10.5	9.8	10.1
26	10.7	10.3	10.6	---	---	---	13.9	12.4	13.0	9.9	9.5	9.6
27	10.9	10.3	10.5	14.3	12.7	13.4	14.2	12.7	13.2	10.2	9.1	9.7
28	12.2	11.2	11.7	14.1	12.7	13.2	14.0	12.7	13.2	9.7	8.5	9.0
29	13.0	11.4	12.1	13.1	12.1	12.8	14.0	12.7	13.2	9.9	8.8	9.2
30	13.3	12.3	12.7	12.8	11.8	12.2	14.1	12.7	13.2	9.9	8.8	9.3
31	---	---	---	13.2	11.9	12.5	14.1	12.7	13.2	---	---	---
MONTH	14.3	8.9	11.4	---	---	---	15.5	11.8	13.4	13.8	8.5	11.0

UMPQUA RIVER BASIN

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14316460 NORTH UMPQUA RIVER AT SODA SPRINGS, NEAR TOKETEE FALLS, OR--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	10.7	10.3	10.4	12.8	12.4	12.6	12.6	12.3	12.4	13.1	12.9	13.0
2	10.6	10.2	10.4	---	---	---	12.5	12.2	12.4	13.3	12.9	13.1
3	10.6	10.0	10.3	---	---	---	12.8	12.2	12.4	13.3	13.0	13.1
4	10.5	10.0	10.3	---	---	---	12.6	12.4	12.5	13.2	12.9	13.0
5	10.6	10.1	10.3	---	---	---	12.7	12.4	12.6	13.1	12.9	13.0
6	10.4	10.0	10.2	---	---	---	12.7	12.5	12.6	13.1	12.9	13.0
7	10.5	9.9	10.1	---	---	---	---	12.4	---	13.2	12.8	13.0
8	10.4	9.9	10.1	---	---	---	---	---	---	13.0	12.6	12.8
9	10.4	10.0	10.2	---	---	---	---	---	---	13.0	12.7	12.9
10	10.6	10.0	10.2	13.1	12.3	12.8	---	---	---	13.1	12.9	13.0
11	10.7	10.1	10.4	13.7	13.1	13.4	---	---	---	13.3	13.0	13.1
12	10.7	10.0	10.3	14.0	13.6	13.8	---	---	---	13.3	12.9	13.1
13	10.7	10.2	10.4	14.2	13.6	14.0	---	---	---	13.4	13.0	13.2
14	10.9	10.2	10.4	14.3	12.4	13.8	---	---	---	13.6	13.2	13.4
15	10.7	10.3	10.5	12.7	12.3	12.5	---	---	---	13.6	13.2	13.4
16	10.9	10.2	10.5	12.9	12.4	12.7	---	---	---	13.8	13.4	13.6
17	10.8	10.4	10.6	13.3	12.9	13.1	---	---	---	14.0	13.7	13.8
18	10.7	10.3	10.5	13.4	13.1	13.3	---	---	---	13.9	13.6	13.8
19	10.7	10.2	10.4	15.2	13.4	14.8	---	---	---	13.7	13.3	13.6
20	10.5	9.9	10.2	15.0	13.2	13.8	12.8	12.2	12.5	13.5	13.1	13.3
21	10.7	10.1	10.3	12.8	12.3	12.5	12.4	12.1	12.3	13.3	12.9	13.1
22	10.8	10.3	10.6	12.9	12.2	12.5	12.6	12.1	12.3	13.2	12.8	13.0
23	11.0	10.6	10.8	12.7	12.4	12.6	12.6	12.4	12.5	13.0	12.5	12.8
24	11.1	10.7	10.9	12.6	12.4	12.5	12.7	12.5	12.6	12.8	12.3	12.6
25	10.9	10.6	10.8	12.6	12.3	12.4	12.9	12.6	12.8	12.8	12.4	12.6
26	10.9	10.6	10.7	12.5	12.2	12.4	13.1	12.7	12.9	12.8	12.5	12.7
27	10.6	10.3	10.5	12.5	12.2	12.3	13.1	12.8	12.9	12.8	12.6	12.7
28	10.8	10.3	10.5	12.5	12.2	12.3	13.0	12.7	12.9	12.9	12.5	12.7
29	11.1	10.6	10.9	12.4	12.0	12.2	13.1	12.8	13.0	12.8	12.5	12.6
30	11.2	10.8	11.0	12.4	12.1	12.3	13.1	12.8	12.9	12.8	12.4	12.6
31	12.7	11.2	11.8	---	---	---	13.1	12.9	13.0	12.6	12.3	12.4
MONTH	12.7	9.9	10.5	---	---	---	---	---	---	14.0	12.3	13.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	13.0	12.1	12.5	12.2	11.9	12.1	10.8	10.3	10.4	10.7	10.5	10.6
2	12.8	12.5	12.7	12.1	11.9	12.0	10.8	10.3	10.6	10.9	10.7	10.8
3	12.8	12.4	12.6	12.1	11.8	12.0	11.0	10.7	10.9	10.9	10.5	10.7
4	12.6	12.3	12.4	11.9	11.5	11.7	11.0	10.7	10.9	10.7	10.3	10.5
5	12.5	12.1	12.3	11.6	11.4	11.5	10.8	10.6	10.7	10.5	10.1	10.3
6	12.5	12.1	12.3	13.5	11.4	11.9	10.7	10.4	10.6	10.5	10.1	10.3
7	12.7	12.3	12.6	13.8	12.5	13.4	11.0	10.7	10.9	10.4	10.0	10.2
8	12.9	12.6	12.7	13.8	12.0	12.8	11.0	10.8	10.8	10.3	10.0	10.2
9	12.7	12.2	12.5	12.9	10.7	11.7	11.0	10.7	10.9	15.1	14.1	13.5
10	12.4	12.1	12.2	12.9	10.8	11.3	10.8	10.6	10.7	14.7	12.1	13.6
11	12.4	12.0	12.2	11.1	10.8	11.0	10.9	10.6	10.7	13.4	11.7	12.8
12	12.5	12.2	12.4	11.4	10.7	11.0	11.3	10.8	11.1	13.0	12.0	12.5
13	12.6	12.4	12.5	11.2	10.7	10.9	11.5	11.1	11.3	12.8	12.2	12.5
14	12.6	12.2	12.4	11.1	10.8	10.9	11.3	10.9	11.1	13.4	12.0	12.8
15	12.4	12.2	12.3	11.0	10.8	10.9	11.1	10.7	10.9	13.6	12.8	13.3
16	12.7	12.0	12.2	11.9	10.9	11.2	11.0	10.4	10.8	13.2	10.6	12.1
17	12.7	12.2	12.3	12.0	11.2	11.7	10.8	10.5	10.7	10.6	9.7	10.2
18	12.5	12.1	12.2	11.2	10.6	11.1	11.8	10.1	10.8	9.7	9.4	9.6
19	12.4	12.1	12.2	10.8	10.5	10.7	12.6	11.2	12.0	9.7	9.3	9.5
20	12.5	12.1	12.3	10.8	10.5	10.7	12.4	10.9	11.5	9.6	9.2	9.4
21	12.3	12.0	12.2	10.8	10.6	10.7	11.1	10.7	10.9	9.5	9.1	9.3
22	12.2	11.9	12.1	10.8	10.5	10.6	10.8	10.5	10.7	9.4	9.0	9.2
23	12.4	12.1	12.3	10.8	10.5	10.6	10.7	10.5	10.6	9.3	8.9	9.1
24	12.4	12.1	12.2	11.0	10.4	10.8	10.7	10.3	10.5	9.4	8.9	9.1
25	12.3	12.1	12.2	10.8	10.3	10.5	10.9	10.1	10.4	9.4	8.9	9.1
26	12.2	12.1	12.2	11.0	10.7	10.9	10.3	9.9	10.1	9.3	8.8	9.1
27	12.3	12.0	12.2	11.1	10.9	11.0	10.3	9.9	10.1	9.4	9.0	9.2
28	12.2	12.0	12.1	11.1	10.8	11.0	10.5	10.1	10.3	9.6	9.2	9.4
29	---	---	---	11.5	10.8	11.1	10.9	10.5	10.7	9.7	9.5	9.6
30	---	---	---	12.0	10.7	11.5	10.8	10.5	10.7	9.7	9.3	9.6
31	---	---	---	10.7	10.3	10.5	---	---	---	9.6	9.2	9.3
MONTH	13.0	11.9	12.3	13.8	10.3	11.3	12.6	9.9	10.8	15.1	8.8	10.6

UMPUA RIVER BASIN

14316460 NORTH UMPQUA RIVER AT SODA SPRINGS, NEAR TOKETEE FALLS, OR--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	9.4	9.0	9.2	9.8	9.3	9.5	---	---	---	8.9	8.3	8.5
2	9.6	9.2	9.4	9.6	8.9	9.2	---	---	---	8.7	8.2	8.4
3	9.9	9.5	9.7	9.4	8.7	9.0	---	---	---	8.7	8.2	8.4
4	10.0	9.6	9.7	9.1	8.5	8.8	---	---	---	8.6	8.1	8.3
5	10.1	9.7	9.9	8.8	8.2	8.5	---	---	---	8.7	7.9	8.3
6	10.1	9.6	9.9	8.7	8.0	8.3	---	---	---	9.0	7.5	8.3
7	9.9	9.3	9.6	8.7	7.8	8.3	---	---	---	9.2	8.6	8.9
8	10.8	9.3	10.0	8.5	7.7	8.1	---	---	---	9.2	8.6	8.9
9	11.3	10.7	11.0	8.2	7.4	7.8	---	---	---	9.3	8.8	9.0
10	11.3	10.8	11.0	7.9	7.1	7.5	---	---	---	9.3	8.8	9.0
11	11.5	11.1	11.3	7.7	6.9	7.3	---	---	---	9.4	8.9	9.1
12	11.3	10.9	11.2	9.8	7.0	8.3	---	---	---	9.5	9.0	9.2
13	11.1	10.6	10.9	9.8	7.5	9.4	---	---	---	9.6	9.1	9.4
14	---	10.5	11.1	---	---	---	---	---	---	9.8	9.2	9.4
15	11.6	10.6	11.2	---	---	---	---	---	---	9.6	9.3	9.5
16	10.9	10.1	10.6	---	---	---	---	---	---	9.8	9.2	9.5
17	10.5	10.0	10.2	---	---	---	---	---	---	9.9	9.5	9.7
18	10.6	10.1	10.3	---	---	---	---	---	---	10.0	9.6	9.7
19	10.5	10.0	10.3	---	---	---	---	---	---	10.1	9.6	9.8
20	10.4	9.9	10.2	---	---	---	---	---	---	10.1	9.8	9.9
21	10.3	9.6	10.0	---	---	---	---	---	---	10.4	10.0	10.2
22	10.1	9.5	9.8	---	---	---	---	---	---	10.4	10.1	10.2
23	10.2	9.5	9.8	---	---	---	9.8	9.1	9.5	10.4	10.0	10.2
24	10.3	9.7	10.0	---	---	---	9.9	9.1	9.5	10.4	9.8	10.2
25	10.6	9.8	10.2	---	---	---	9.7	8.9	9.3	10.5	9.8	10.2
26	11.0	10.2	10.7	---	---	---	9.4	8.9	9.1	10.5	10.1	10.3
27	10.9	10.4	10.6	---	---	---	9.3	8.7	9.0	10.5	9.1	10.2
28	11.0	10.2	10.6	---	---	---	9.1	8.6	8.8	10.7	10.1	10.3
29	10.7	10.0	10.3	---	---	---	9.0	8.4	8.7	10.5	10.1	10.3
30	10.1	9.5	9.8	---	---	---	8.9	8.3	8.5	10.4	10.1	10.3
31	---	---	---	---	---	---	8.9	8.3	8.5	---	---	---
MONTH	---	9.0	10.3	---	---	---	---	---	---	10.7	7.5	9.5

TURBIDITY (NTU), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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	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
4	1	<1	<1	1	<1	<1	1	1	1	1	1	1
5	1	<1	<1	1	<1	<1	1	<1	1	1	<1	1
6	1	<1	<1	1	<1	<1	1	<1	1	1	<1	1
7	1	<1	<1	1	<1	<1	1	<1	1	1	<1	1
8	1	<1	<1	1	<1	1	1	<1	<1	2	<1	1
9	1	<1	<1	1	<1	1	1	<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	1	<1	<1	1	<1	1
12	2	<1	1	1	<1	<1	1	<1	<1	1	<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	1	<1	1
15	1	<1	1	1	<1	<1	3	1	2	1	<1	1
16	1	<1	1	<1	<1	<1	2	1	1	1	<1	1
17	2	1	1	<1	<1	<1	2	1	1	1	<1	1
18	1	<1	1	<1	<1	<1	2	1	1	1	<1	1
19	2	<1	1	<1	<1	<1	1	1	1	1	<1	1
20	2	<1	1	<1	<1	<1	1	1	1	1	<1	<1
21	3	1	1	1	<1	<1	1	1	1	1	<1	1
22	2	<1	1	1	<1	<1	3	1	2	1	<1	1
23	1	<1	<1	1	<1	<1	4	2	2	1	<1	1
24	1	<1	<1	1	<1	1	5	2	2	1	1	1
25	2	<1	<1	1	<1	1	26	1	2	1	1	1
26	1	<1	<1	1	<1	1	2	1	1	3	1	1
27	2	<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	2	1	1	1	1	1
30	1	<1	<1	4	1	1	1	1	1	1	1	1
31	1	<1	<1	---	---	---	1	1	1	1	1	1
MAX	---	---	---	4	1	1	26	2	2	3	1	1
MIN	---	---	---	<1	<1	<1	1	<1	<1	1	<1	<1

UMPQUA RIVER BASIN

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14316460 NORTH UMPQUA RIVER AT SODA SPRINGS, NEAR TOKETEE FALLS, OR--Continued

TURBIDITY (NTU), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
FEBRUARY			MARCH			APRIL			MAY			
1	1	<1	1	1	1	1	1	1	1	5	1	2
2	1	<1	<1	3	1	1	3	1	1	2	1	1
3	1	<1	1	1	1	1	1	1	1	2	1	1
4	2	1	1	1	1	1	1	1	1	1	1	1
5	2	1	1	2	1	1	1	1	1	2	1	1
6	1	1	1	2	<1	1	2	1	1	2	1	1
7	2	1	1	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	4	1	1	4	1	1
9	1	1	1	1	1	1	4	1	1	1	1	1
10	1	<1	1	1	1	1	2	1	1	2	1	1
11	1	<1	1	1	1	1	3	1	1	1	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	1	1	1
15	1	<1	<1	1	1	1	2	1	1	4	1	2
16	1	<1	1	1	1	1	1	1	1	12	3	6
17	1	<1	1	1	1	1	2	1	1	5	2	3
18	1	<1	1	2	1	1	2	1	1	6	1	2
19	1	1	1	2	2	2	2	1	1	3	1	1
20	1	1	1	2	1	2	1	1	1	1	1	1
21	1	1	1	1	1	1	1	1	1	1	1	1
22	1	1	1	2	1	1	2	1	1	2	1	1
23	1	1	1	1	1	1	1	1	1	1	1	1
24	1	1	1	3	1	1	1	1	1	1	1	1
25	1	1	1	4	1	2	1	1	1	13	1	1
26	1	1	1	6	1	2	1	1	1	2	1	1
27	1	1	1	22	1	1	2	1	1	3	1	1
28	1	1	1	22	4	6	3	1	1	1	1	1
29	---	---	---	4	2	3	2	1	1	2	1	2
30	---	---	---	3	1	2	3	1	1	6	2	4
31	---	---	---	2	1	1	---	---	---	9	4	7
MAX	2	1	1	22	4	6	4	1	1	13	4	7
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	7	1	1	2	1	1	2	1	1	3	1	1
2	2	1	1	1	1	1	1	1	1	1	1	1
3	3	1	2	2	1	1	1	1	1	1	1	1
4	4	2	3	2	<1	1	1	1	1	1	1	1
5	8	2	3	1	<1	<1	1	1	1	1	1	1
6	19	7	12	1	<1	<1	1	1	1	2	1	1
7	20	1	13	1	<1	<1	1	1	1	1	1	1
8	24	2	3	1	<1	<1	2	<1	1	2	1	1
9	7	3	4	1	<1	<1	1	<1	1	1	1	1
10	14	3	10	1	<1	<1	1	1	1	2	1	1
11	18	5	12	2	<1	<1	3	1	1	1	1	1
12	26	1	15	1	<1	1	2	1	1	1	1	1
13	29	1	17	1	<1	<1	1	1	1	1	1	1
14	1	<1	1	1	<1	<1	2	1	1	1	1	1
15	2	1	1	1	<1	<1	2	1	1	2	1	1
16	1	1	1	1	<1	<1	1	1	1	2	1	1
17	2	1	1	1	<1	<1	1	1	1	2	1	1
18	2	1	1	1	<1	<1	1	1	1	1	1	1
19	1	1	1	2	<1	<1	2	1	1	1	1	1
20	4	1	1	2	<1	<1	1	1	1	1	1	1
21	2	1	1	1	<1	<1	1	1	1	2	1	1
22	1	1	1	1	<1	<1	1	<1	1	2	1	1
23	1	1	1	1	<1	<1	1	<1	1	3	1	1
24	2	1	1	1	<1	<1	1	<1	1	3	1	1
25	1	1	1	1	<1	<1	1	<1	1	3	1	1
26	2	1	1	2	<1	1	1	<1	1	2	1	1
27	1	1	1	1	1	1	2	1	1	2	<1	1
28	2	1	1	2	1	1	1	1	1	1	<1	<1
29	1	1	1	1	1	1	1	1	1	1	<1	<1
30	2	1	1	1	1	1	2	1	1	<1	<1	<1
31	---	---	---	1	1	1	1	1	1	---	---	---
MAX	29	7	17	2	1	1	3	1	1	3	1	1
MIN	1	<1	1	1	<1	<1	1	<1	1	<1	<1	<1

UMPQUA RIVER BASIN

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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1997 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,640 ft above sea level, from topographic map.

REMARKS.--Records good.

AVERAGE DISCHARGE.--4 years (water years 1998-2001), 94.0 ft³/s, 42.01 in/yr, 68,090 acre-ft/yr.EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,370 ft³/s Nov. 21, 1998, gage height, 6.98 ft; minimum discharge, 2.0 ft³/s Sept. 24, 2001.EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 600 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16	0530	*345	*4.29				

Minimum discharge, 2.0 ft³/s Sept. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	e12	43	58	27	32	117	124	27	11	6.1	3.2
2	2.7	14	34	54	30	42	103	106	26	11	5.8	3.1
3	2.6	13	30	56	50	42	90	94	27	10	5.4	3.0
4	2.5	11	26	51	115	42	81	85	26	10	5.3	3.0
5	2.5	10	22	49	98	51	76	79	27	9.6	5.2	2.9
6	2.4	11	20	44	79	61	77	72	26	9.3	5.0	2.8
7	2.3	11	18	40	62	68	74	68	23	9.1	4.8	2.9
8	e2.2	55	17	38	51	65	70	65	21	8.8	4.7	2.8
9	2.7	45	16	35	46	56	67	62	20	8.4	4.4	2.7
10	5.7	31	14	33	41	48	68	57	19	8.2	4.2	2.6
11	7.3	24	15	30	38	43	82	54	20	10	4.1	2.6
12	5.2	20	16	27	34	40	89	52	25	11	3.9	2.6
13	4.1	17	23	28	31	39	80	49	20	8.8	3.8	3.2
14	4.2	16	69	27	30	38	71	59	19	8.1	3.7	3.9
15	4.0	15	118	26	28	39	68	183	18	7.7	3.7	3.5
16	3.7	13	79	24	28	41	75	297	17	7.6	3.7	3.1
17	3.4	12	104	23	28	76	107	209	16	7.5	3.6	2.7
18	3.3	12	65	23	28	184	104	155	15	7.3	3.5	2.6
19	3.7	12	54	27	27	179	100	121	15	7.2	3.6	2.4
20	16	13	55	31	27	147	93	98	14	7.1	3.5	2.4
21	42	14	92	35	28	119	83	83	14	6.9	3.5	2.3
22	19	14	151	40	32	108	75	70	13	6.6	3.6	2.2
23	e13	15	162	39	35	104	71	60	13	6.4	4.4	2.2
24	9.0	28	140	44	39	101	73	52	13	6.1	4.2	2.1
25	7.6	24	97	45	38	121	84	46	14	5.9	4.0	3.5
26	e7.0	25	80	40	36	101	91	41	14	5.8	3.8	6.6
27	6.2	40	91	36	35	118	88	38	16	5.6	3.6	6.1
28	16	41	84	33	33	261	86	35	14	5.5	3.4	3.6
29	18	45	86	32	---	200	75	33	13	5.5	3.4	3.0
30	14	56	77	29	---	156	95	30	12	7.5	3.4	2.7
31	11	---	65	27	---	131	---	28	---	6.9	3.3	---
TOTAL	246.1	669	1963	1124	1174	2853	2513	2605	557	246.4	128.6	92.3
MEAN	7.94	22.3	63.3	36.3	41.9	92.0	83.8	84.0	18.6	7.95	4.15	3.08
MAX	42	56	162	58	115	261	117	297	27	11	6.1	6.6
MIN	2.2	10	14	23	27	32	67	28	12	5.5	3.3	2.1
AC-FT	488	1330	3890	2230	2330	5660	4980	5170	1100	489	255	183
CFSM	.26	.73	2.08	1.19	1.38	3.03	2.76	2.76	.61	.26	.14	.10
IN.	.30	.82	2.40	1.38	1.44	3.49	3.08	3.19	.68	.30	.16	.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2001, BY WATER YEAR (WY)

	1998	1999	2000	2001	1998	1999	2000	2001	1998	1999	2000	2001
MEAN	21.5	84.0	138	201	152	145	132	155	72.0	18.3	7.57	4.54
MAX	60.3	189	239	311	256	181	202	287	144	34.6	13.1	7.16
(WY)	1998	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999
MIN	7.94	22.3	63.3	36.3	41.9	92.0	83.8	84.0	18.6	7.95	4.15	3.08
(WY)	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001	2001

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1998 - 2001

ANNUAL TOTAL	30296.8	14171.4	94.0	1999
ANNUAL MEAN	82.8	38.8	155	2001
HIGHEST ANNUAL MEAN			38.8	2001
LOWEST ANNUAL MEAN			1310	Nov 21 1998
HIGHEST DAILY MEAN	413	Jan 14	297	May 16
LOWEST DAILY MEAN	2.2	Oct 8	2.1	Sep 24 2001
ANNUAL SEVEN-DAY MINIMUM	2.5	Oct 2	2.3	Sep 18 2001
ANNUAL RUNOFF (AC-FT)	60090	28110	68090	
ANNUAL RUNOFF (CFSM)	2.72	1.28	3.09	
ANNUAL RUNOFF (INCHES)	37.07	17.34	42.01	
10 PERCENT EXCEEDS	204	94	222	
50 PERCENT EXCEEDS	54	26	56	
90 PERCENT EXCEEDS	4.1	3.4	5.2	

e Estimated

UMPQUA RIVER BASIN

337

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, 21.0°C July 31, 2000, Aug. 14, 2001; minimum, 1.2°C Jan. 17, Feb. 13, 2001.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 21.0°C Aug. 14; minimum, 1.2°C Jan. 17, Feb. 13.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	14.9	13.2	13.8	---	---	---	5.5	4.7	4.9	4.9	4.4	4.7
2	14.2	12.8	13.4	8.1	---	---	5.7	4.7	5.2	5.5	4.8	5.1
3	12.8	11.2	12.0	8.5	8.1	8.2	5.7	5.3	5.5	5.7	4.7	5.1
4	12.0	10.5	11.2	8.1	7.5	7.9	5.4	4.8	4.9	5.7	5.3	5.5
5	11.6	10.1	10.8	7.6	6.9	7.3	4.8	4.2	4.4	6.0	5.4	5.7
6	11.6	---	---	7.7	6.7	7.3	4.4	4.0	4.2	5.7	4.7	5.0
7	11.6	10.1	10.8	6.7	5.8	6.3	4.4	4.0	4.2	5.6	4.4	4.9
8	10.9	---	---	6.9	5.6	6.5	4.7	4.1	4.4	6.1	5.6	5.8
9	11.0	---	---	5.7	5.0	5.4	5.4	4.7	5.1	5.7	4.5	4.8
10	10.8	10.0	10.3	5.4	4.5	4.9	5.2	4.3	4.9	4.7	4.2	4.4
11	10.6	9.8	10.2	4.5	3.7	4.0	4.3	3.8	4.0	4.5	4.0	4.3
12	10.6	9.9	10.3	3.8	3.4	3.6	4.4	3.8	4.1	4.5	4.2	4.4
13	10.9	10.1	10.5	3.9	3.2	3.6	4.3	3.8	4.2	4.3	3.5	3.9
14	11.3	10.5	10.8	4.1	3.5	3.8	4.9	3.8	4.3	3.5	3.0	3.3
15	---	9.8	---	4.2	3.7	4.0	5.7	4.9	5.3	3.5	2.9	3.3
16	10.2	9.2	9.7	3.7	2.9	3.2	5.9	5.2	5.6	2.9	1.6	2.0
17	9.9	8.8	9.4	2.9	2.3	2.5	5.7	4.8	5.3	1.8	1.2	1.5
18	---	9.5	---	2.4	1.9	2.1	4.8	4.1	4.4	2.6	1.7	2.2
19	11.0	10.1	10.4	2.5	1.8	2.2	5.0	4.4	4.6	3.1	2.6	2.9
20	10.8	10.1	10.5	2.8	2.3	2.6	5.5	4.9	5.2	3.5	2.5	2.9
21	10.1	8.7	9.3	3.1	2.6	2.9	5.7	5.1	5.4	4.1	3.5	3.8
22	8.7	7.4	7.9	3.0	2.4	2.7	5.9	5.1	5.5	4.2	3.6	3.9
23	---	---	---	3.1	2.3	2.6	6.2	5.8	6.0	4.9	3.8	4.3
24	7.7	---	---	4.1	3.1	3.7	5.9	5.2	5.6	4.9	4.4	4.6
25	8.4	7.6	8.0	4.1	3.5	3.8	5.2	4.8	5.0	4.4	3.9	4.1
26	---	---	---	4.8	4.1	4.4	5.4	4.7	5.0	3.9	3.2	3.4
27	8.9	8.3	8.7	5.6	4.8	5.2	5.7	4.9	5.3	3.2	2.6	2.8
28	8.8	---	---	5.2	4.5	4.8	5.2	4.5	4.8	2.8	2.1	2.4
29	8.3	7.8	8.1	6.1	5.1	5.7	5.2	4.5	4.8	3.2	2.8	3.1
30	8.0	7.4	7.7	6.0	5.5	5.8	4.9	4.2	4.4	3.2	2.8	3.0
31	7.4	6.8	7.1	---	---	---	5.1	4.4	4.8	3.0	2.5	2.7
MONTH	---	---	---	---	---	---	6.2	3.8	4.9	6.1	1.2	3.9

UMPQUA RIVER BASIN

14316495 BOULDER CREEK NEAR TOKETEE FALLS, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	3.5	2.3	2.8	3.9	3.1	3.5	7.1	6.1	6.7	6.9	5.9	6.3
2	4.1	3.5	3.8	3.9	3.3	3.6	6.1	4.4	5.0	7.1	4.9	6.0
3	4.7	4.0	4.3	3.6	2.6	3.2	4.7	3.9	4.3	7.9	5.0	6.4
4	5.9	4.6	5.2	4.4	3.5	3.9	4.7	3.4	4.1	8.9	6.5	7.7
5	5.9	5.1	5.6	4.8	3.8	4.3	5.3	3.5	4.3	8.8	7.2	8.1
6	5.1	3.6	4.4	5.6	3.8	4.7	5.3	4.5	5.0	9.0	6.3	7.7
7	3.6	2.6	3.0	6.2	4.7	5.4	4.5	3.9	4.2	10.3	7.3	8.7
8	2.6	1.9	2.2	6.2	5.5	6.0	4.2	3.5	3.9	10.4	8.6	9.5
9	3.1	2.3	2.7	5.5	4.6	4.9	4.7	3.5	4.1	10.4	8.6	9.6
10	3.5	2.9	3.2	5.0	4.2	4.6	5.0	3.9	4.4	10.5	8.1	9.4
11	3.4	3.1	3.2	4.6	3.4	4.0	5.0	4.3	4.7	11.6	9.0	10.2
12	3.1	1.9	2.2	5.0	3.4	4.2	5.3	4.5	4.8	12.1	10.2	11.2
13	1.9	1.2	1.6	5.7	4.1	4.9	5.2	4.6	4.9	11.7	9.8	10.8
14	2.1	1.3	1.7	5.5	4.4	5.0	5.6	3.8	4.7	11.2	8.9	9.7
15	2.6	1.5	2.0	4.9	4.2	4.5	5.9	4.3	5.1	8.9	8.5	8.7
16	3.7	2.6	3.1	4.7	4.0	4.3	7.1	5.1	6.0	8.8	7.7	8.3
17	4.0	3.3	3.7	5.2	3.7	4.3	7.2	6.2	6.8	9.5	7.0	8.3
18	4.5	3.8	4.1	6.4	5.2	5.8	7.1	6.2	6.5	10.6	7.7	9.1
19	4.3	3.7	4.1	7.3	6.2	6.7	6.5	5.5	6.0	11.3	8.4	9.8
20	4.6	3.6	4.1	7.1	6.1	6.6	6.3	5.4	5.9	11.8	8.9	10.3
21	5.0	4.5	4.8	7.2	5.7	6.5	6.9	5.6	6.2	12.6	9.4	11.0
22	4.9	3.8	4.5	7.8	6.1	6.9	7.3	6.1	6.7	13.8	10.6	12.2
23	4.2	3.4	3.8	8.1	6.7	7.4	8.1	6.5	7.2	14.4	11.9	13.2
24	4.5	3.6	4.1	7.7	6.9	7.3	8.9	6.6	7.7	14.4	12.1	13.4
25	4.8	4.0	4.4	7.4	6.4	6.9	9.9	7.6	8.7	14.4	12.3	13.5
26	4.5	3.5	4.0	6.4	5.5	5.9	10.4	8.6	9.5	14.7	12.4	13.7
27	4.0	3.0	3.6	5.9	4.7	5.2	9.8	8.1	8.8	14.4	12.1	12.9
28	3.6	2.6	3.2	7.2	5.9	6.6	8.8	6.9	7.6	12.3	10.7	11.6
29	---	---	---	7.5	6.5	6.9	6.9	6.0	6.5	11.7	9.8	10.9
30	---	---	---	7.1	5.8	6.5	7.3	6.7	6.9	12.8	10.1	11.6
31	---	---	---	7.4	6.5	6.9	---	---	---	14.4	11.7	13.2
MONTH	5.9	1.2	3.5	8.1	2.6	5.4	10.4	3.4	5.9	14.7	4.9	10.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	14.3	12.0	13.3	17.0	14.2	15.5	17.6	14.9	16.2	18.3	16.0	17.0
2	12.0	10.4	11.1	17.8	14.6	16.1	18.1	15.4	16.8	17.8	15.3	16.5
3	10.4	9.3	9.8	18.1	15.5	16.8	17.7	16.0	17.0	17.6	15.2	16.3
4	10.1	8.2	9.3	19.3	16.3	17.7	17.8	16.3	16.9	17.4	15.0	16.1
5	10.2	9.5	9.9	19.7	17.0	18.2	18.3	15.4	16.9	16.4	14.6	15.6
6	12.1	9.8	10.9	18.6	15.7	17.2	19.0	16.2	17.6	15.2	12.9	14.1
7	14.0	11.4	12.6	18.5	15.5	17.0	19.7	16.9	18.3	15.3	12.9	14.0
8	14.4	12.7	13.5	19.2	15.9	17.5	20.1	17.3	18.7	15.4	12.9	14.0
9	14.4	13.0	13.6	19.5	16.3	17.9	20.6	18.1	19.3	15.4	12.9	14.1
10	13.2	11.9	12.4	18.8	17.2	18.1	20.8	18.2	19.4	15.8	13.5	14.6
11	11.9	11.4	11.6	18.8	17.1	17.7	20.9	18.3	19.5	15.9	13.9	14.9
12	12.1	10.4	11.3	19.0	16.3	17.6	20.2	18.2	19.3	15.5	14.6	15.1
13	12.3	9.7	11.1	19.5	16.5	18.0	20.9	18.4	19.6	17.0	15.0	15.9
14	13.5	10.9	12.1	19.1	16.4	17.8	21.0	18.4	19.6	17.1	15.1	16.1
15	14.0	11.4	12.7	18.5	15.8	17.1	20.7	18.1	19.4	17.6	16.0	16.6
16	13.9	12.0	13.0	18.0	15.8	16.6	20.4	18.0	19.2	17.5	15.6	16.3
17	13.9	12.0	12.8	16.8	14.1	15.5	20.0	17.6	18.7	16.7	14.8	15.7
18	13.7	11.3	12.5	17.4	14.6	15.9	19.6	17.4	18.3	16.2	14.3	15.1
19	14.8	11.9	13.3	17.9	15.1	16.4	18.4	15.9	17.2	15.7	13.7	14.6
20	16.1	13.1	14.5	17.6	15.8	16.6	18.0	15.5	16.7	15.4	13.3	14.2
21	17.3	14.2	15.6	17.7	14.8	16.3	16.9	15.1	16.1	14.4	12.6	13.5
22	17.3	14.7	15.9	17.9	14.9	16.4	16.9	16.2	16.6	14.6	12.4	13.4
23	16.8	14.9	15.7	18.5	15.5	17.0	16.9	16.0	16.4	14.9	12.8	13.7
24	15.2	13.2	14.2	19.0	16.0	17.5	17.5	15.2	16.2	14.7	13.1	14.0
25	13.6	12.1	12.9	19.2	16.3	17.7	17.5	15.1	16.3	14.5	13.9	14.2
26	13.3	12.6	13.0	18.7	15.9	17.4	18.1	15.6	16.7	13.9	13.1	13.5
27	14.2	12.9	13.4	18.6	15.8	17.2	18.3	15.9	17.0	13.1	12.4	12.7
28	15.3	13.4	14.2	18.4	15.9	17.0	18.1	15.6	16.8	12.8	11.3	12.0
29	16.5	13.8	14.9	16.9	15.3	16.1	18.6	16.0	17.2	12.6	11.0	11.8
30	16.4	14.0	15.1	16.6	15.3	15.9	18.7	16.2	17.3	12.9	11.2	12.0
31	---	---	---	17.2	14.7	15.9	18.6	16.3	17.3	---	---	---
MONTH	17.3	8.2	12.9	19.7	14.1	17.0	21.0	14.9	17.7	18.3	11.0	14.6

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 Tokete Falls, and at mile 67.2.

WATER-DISCHARGE RECORDS

REVISED RECORDS.--WSP 1448: 1953(M), 1954, drainage area.

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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,700 ft³/s Dec. 22, 1964, gage height, 19.1 ft, from floodmark, from rating curve extended above 7,200 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 345 ft³/s July 24, 1992; minimum daily, 565 ft³/s Sept. 13, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,400 ft³/s May 16, gage height, 7.06 ft; minimum discharge, 628 ft³/s Sept. 6, 7.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	815	925	958	997	903	860	1250	1530	907	818	687	649
2	817	895	948	973	905	875	1180	1180	902	808	686	648
3	809	914	935	969	927	871	1120	1100	901	789	686	646
4	810	964	911	952	998	868	1150	1120	896	772	683	645
5	810	952	897	967	974	880	1160	1120	897	760	683	643
6	812	922	897	959	953	892	1130	1150	898	735	684	640
7	812	912	895	958	941	896	1120	1170	895	726	687	639
8	813	1050	893	959	932	895	1130	1180	889	722	688	639
9	814	1030	892	955	926	888	1090	1160	874	720	677	645
10	824	992	897	951	923	880	1030	1160	868	721	675	668
11	819	977	913	948	914	874	1050	1090	862	732	671	670
12	816	924	906	923	911	870	1050	1090	869	749	668	663
13	815	902	883	913	908	861	1040	1100	864	726	671	670
14	817	912	951	911	906	853	1010	1130	859	723	675	668
15	817	920	1080	910	907	855	1010	1690	855	723	679	675
16	819	900	1110	905	902	857	1020	2210	840	726	679	679
17	818	906	1050	904	902	890	1050	1850	819	725	680	679
18	821	922	992	893	902	1000	1190	1760	806	726	680	679
19	821	921	968	895	897	1070	1210	1590	782	727	688	677
20	961	910	938	907	897	1160	1170	1430	767	727	686	677
21	988	889	969	909	880	1110	1140	1390	768	728	682	677
22	854	884	1040	921	871	1000	1140	1280	772	726	670	676
23	830	876	1070	917	866	1040	1120	1220	769	722	663	675
24	830	914	1040	925	868	1150	1120	1210	768	715	660	678
25	828	945	986	924	867	1290	1210	1200	770	705	657	683
26	825	951	961	919	864	1350	1220	999	770	697	656	691
27	823	941	976	912	862	1340	1310	939	785	691	656	694
28	855	941	958	910	860	1940	1350	931	805	689	658	695
29	914	957	1000	912	---	1620	1310	947	830	688	660	696
30	884	974	1020	905	---	1390	1180	939	835	688	655	697
31	918	---	1000	904	---	1270	---	910	---	688	651	---
TOTAL	26009	28022	29934	28807	25366	32595	34260	38775	25122	22592	20881	20061
MEAN	839	934	966	929	906	1051	1142	1251	837	729	674	669
MAX	988	1050	1110	997	998	1940	1350	2210	907	818	688	697
MIN	809	876	883	893	860	853	1010	910	767	688	651	639
AC-FT	51590	55580	59370	57140	50310	64650	67950	76910	49830	44810	41420	39790

MEAN	930	1283	1779	1807	1830	1765	1863	2019	1646	1073	887	854
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

WATER YEARS 1950 - 2001

ANNUAL TOTAL	519931		332424				
ANNUAL MEAN	1421		911			1476	
HIGHEST ANNUAL MEAN						2080	1956
LOWEST ANNUAL MEAN						897	1977
HIGHEST DAILY MEAN	3060	Feb 15	2210	May 16	24300		Dec 22 1964
LOWEST DAILY MEAN	809	Oct 3	639	Sep 7	565		Sep 13 1959
ANNUAL SEVEN-DAY MINIMUM	811	Oct 3	642	Sep 3	587		Sep 2 1992
ANNUAL RUNOFF (AC-FT)	1031000		659400		1069000		
10 PERCENT EXCEEDS	2170		1160		2410		
50 PERCENT EXCEEDS	1140		897		1230		
90 PERCENT EXCEEDS	837		678		766		

UMPQUA RIVER BASIN

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.

TEMPERATURE: June 1998 to current year.

DISSOLVED OXYGEN: June 1998 to current year.

TURBIDITY: June 2000 to current year.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Records good. Seasonal records only (June to September).

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; minimum recorded, 7.1 units Aug. 22, 1998.

TEMPERATURE FOR PERIOD JUNE TO SEPTEMBER: Maximum recorded, 15.8°C Aug. 11, 2001; 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, 69 microsiemens Sept. 24, 25; minimum recorded, 58 microsiemens June 5, 6, 12-14, 17.

pH FOR PERIOD JUNE TO SEPTEMBER: Maximum recorded, 8.4 units July 28-30, Aug. 1-10; minimum recorded, 7.4 units Sept. 28-30.

TEMPERATURE FOR PERIOD JUNE TO SEPTEMBER: Maximum recorded, 15.8°C Aug. 11; minimum recorded, 8.8°C Sept. 28.

DISSOLVED OXYGEN FOR PERIOD JUNE TO SEPTEMBER: Maximum recorded, 11.2 mg/L Sept. 28, minimum recorded, 8.3 mg/L July 11.

TURBIDITY FOR PERIOD JUNE TO SEPTEMBER: Maximum recorded, 89 NTU June 22; minimum recorded, <1 NTU many days during June, July, August, and September.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), JUNE TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	62	60	61	64	62	63	64	63	64	63	61	62
2	62	60	61	64	61	62	66	64	64	63	61	62
3	62	59	61	64	62	63	66	64	65	64	61	62
4	62	60	61	64	62	63	67	64	65	64	62	63
5	61	58	60	65	62	64	68	65	67	64	61	63
6	61	58	60	65	63	64	68	65	67	64	62	63
7	62	59	60	65	63	64	69	66	67	64	62	63
8	62	60	61	65	63	64	69	65	67	64	62	63
9	62	59	60	66	63	64	68	65	66	64	62	63
10	62	59	60	66	63	64	66	64	65	64	62	63
11	61	59	60	66	62	65	66	64	65	65	61	63
12	61	58	59	65	63	64	66	64	65	65	61	64
13	61	58	59	65	63	64	65	64	64	65	62	63
14	62	58	60	---	---	---	66	64	65	65	62	63
15	62	59	60	---	---	---	66	63	64	64	62	63
16	62	59	60	---	---	---	65	63	64	64	62	63
17	63	58	60	---	---	---	65	62	63	64	62	63
18	64	60	61	---	---	---	66	62	63	64	62	63
19	63	60	61	---	---	---	64	62	63	64	63	63
20	63	60	62	---	---	---	65	62	63	65	63	64
21	64	61	63	---	---	---	64	62	62	65	64	64
22	64	62	63	---	---	---	63	60	62	67	65	65
23	64	62	63	---	---	---	63	60	61	67	65	66
24	64	59	63	---	---	---	63	60	61	69	67	68
25	64	59	63	---	---	---	63	61	62	69	66	67
26	64	62	63	64	62	63	64	61	62	67	66	67
27	64	62	63	64	62	63	64	62	63	67	62	64
28	64	62	63	64	62	63	64	61	62	64	62	63
29	64	61	62	64	62	63	64	61	62	64	62	63
30	64	62	63	64	61	63	64	61	62	63	61	62
31	---	---	---	65	62	63	63	61	62	---	---	---
MONTH	64	58	61	---	---	---	69	60	64	69	61	64

UMPQUA RIVER BASIN

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14316500 NORTH UMPQUA RIVER ABOVE COPELAND CREEK, NEAR TOKETEE FALLS, OR--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, JUNE TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	8.0	7.6	---	8.1	7.6	7.7	8.4	7.7	7.8	8.1	7.5	7.6
2	8.1	7.7	7.8	8.1	7.6	7.7	8.4	7.6	7.8	8.1	7.5	7.6
3	8.0	7.7	7.8	8.2	7.6	7.8	8.4	7.7	7.8	8.1	7.5	7.6
4	8.0	7.7	7.8	8.2	7.6	7.7	8.4	7.7	7.8	8.1	7.5	7.6
5	8.0	7.7	7.7	8.2	7.7	7.8	8.4	7.6	7.7	8.2	7.6	7.7
6	8.1	7.7	7.8	8.2	7.7	7.8	8.4	7.6	7.7	8.1	7.6	---
7	8.0	7.5	7.7	8.2	7.6	7.8	8.4	7.6	7.7	8.1	7.5	7.6
8	8.0	7.6	7.7	8.2	7.6	7.8	8.3	7.6	---	8.1	7.5	7.6
9	8.0	7.6	7.7	8.2	7.6	7.8	8.4	7.5	7.7	8.1	7.5	7.6
10	8.0	7.6	7.7	8.2	7.6	7.7	8.4	7.5	7.7	8.1	7.5	7.6
11	7.9	7.6	7.6	8.2	7.6	7.7	8.2	7.6	7.7	8.2	7.5	7.6
12	8.0	7.6	7.7	8.1	7.6	7.7	8.2	7.5	7.6	8.1	7.5	7.6
13	8.0	7.6	7.7	---	---	---	8.2	7.5	7.7	8.1	7.5	7.6
14	8.0	7.6	---	---	---	---	8.2	7.5	7.7	8.2	7.5	7.6
15	8.0	7.6	7.6	---	---	---	8.2	7.6	7.7	8.0	7.5	7.6
16	8.1	7.6	7.7	---	---	---	8.2	7.6	7.7	8.1	7.5	7.6
17	8.1	7.6	7.7	---	---	---	8.2	7.6	7.7	8.1	7.5	7.6
18	8.1	7.6	7.7	---	---	---	8.3	7.6	7.7	8.1	7.6	7.6
19	8.1	7.6	7.7	---	---	---	8.2	7.6	7.7	8.1	7.6	7.6
20	8.1	7.5	7.7	---	---	---	8.2	7.6	7.6	8.1	7.6	7.6
21	8.1	7.6	7.6	---	---	---	8.3	7.6	7.7	8.1	7.6	7.6
22	8.1	7.6	7.7	---	---	---	7.9	7.6	---	8.1	7.6	7.6
23	8.1	7.6	7.7	---	---	---	8.1	7.6	7.7	8.1	7.6	7.6
24	8.0	7.6	7.7	---	---	---	8.1	7.5	7.6	8.1	7.6	7.7
25	8.0	7.6	7.7	---	---	---	8.2	7.5	7.6	7.9	7.5	7.6
26	7.9	7.6	7.7	8.3	---	---	8.1	7.5	7.6	7.9	7.5	7.6
27	7.9	7.5	7.6	8.3	7.7	7.8	8.1	7.5	7.6	7.9	7.5	---
28	8.1	7.5	---	8.4	7.7	7.8	8.1	7.5	7.6	7.8	7.4	7.5
29	8.1	7.5	7.7	8.4	7.7	7.8	8.1	7.5	7.6	7.8	7.4	7.4
30	8.1	7.5	7.7	8.4	7.7	7.8	8.1	7.5	7.6	7.8	7.4	7.4
31	---	---	---	8.4	7.7	7.8	8.1	7.5	7.6	---	---	---
MAX	8.1	7.7	---	---	---	---	8.4	7.7	---	8.2	7.6	---
MIN	7.9	7.5	---	---	---	---	7.9	7.5	---	7.8	7.4	---

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	12.8	11.6	12.3	14.1	12.6	13.1	14.0	12.2	13.0	13.7	12.4	12.9
2	11.6	9.9	11.0	14.2	12.7	13.3	14.3	12.7	13.5	13.3	12.1	12.5
3	10.2	9.3	9.7	14.6	13.2	13.8	14.2	13.0	13.5	13.1	11.8	12.4
4	10.0	9.0	9.4	15.1	13.3	14.0	13.9	12.8	13.4	13.1	11.6	12.2
5	9.7	9.1	9.4	15.4	14.0	14.5	14.3	12.6	13.3	12.6	11.6	11.9
6	10.9	9.2	9.9	15.0	13.8	14.3	14.8	12.9	13.7	11.9	10.5	11.3
7	12.8	10.4	11.6	14.6	13.4	13.9	15.3	13.3	14.2	11.5	10.0	10.7
8	13.3	12.1	12.5	14.7	13.1	13.9	15.4	14.1	14.6	11.8	10.2	11.0
9	12.9	12.0	12.3	15.2	13.5	14.3	15.5	13.9	14.5	11.9	10.4	11.1
10	12.0	10.8	11.6	14.8	13.9	14.3	15.4	14.0	14.5	12.0	10.7	11.3
11	10.8	10.0	10.4	14.6	13.3	13.9	15.8	13.9	14.6	12.2	10.8	11.5
12	10.7	9.7	10.1	14.0	12.9	13.5	15.0	13.9	14.3	11.8	11.0	11.3
13	11.5	10.1	10.7	---	---	---	14.9	13.7	14.3	12.2	10.9	11.5
14	12.5	10.6	11.4	---	---	---	15.3	13.4	14.2	12.3	11.2	11.5
15	13.0	11.5	12.0	---	---	---	15.3	13.8	14.4	12.1	11.2	11.5
16	12.9	11.8	12.2	---	---	---	15.2	13.7	14.3	12.3	10.9	11.6
17	12.8	11.3	12.0	---	---	---	14.9	13.5	14.0	12.2	10.8	11.3
18	12.6	11.2	11.6	---	---	---	14.7	13.4	13.9	12.0	10.7	11.1
19	13.2	11.2	12.0	---	---	---	14.2	12.7	13.7	11.8	10.3	11.0
20	14.0	11.8	12.8	---	---	---	13.8	12.4	12.9	11.4	10.0	10.6
21	14.8	12.7	13.6	---	---	---	13.3	12.2	12.7	11.0	9.9	10.3
22	14.7	13.2	13.8	---	---	---	12.6	12.1	12.5	11.1	9.9	10.3
23	14.1	13.0	13.4	---	---	---	12.3	11.9	12.1	11.2	9.9	10.4
24	13.0	11.7	12.4	---	---	---	12.8	11.6	12.2	11.3	10.2	10.7
25	11.7	10.7	11.1	---	---	---	13.4	11.9	12.5	10.9	10.1	10.5
26	11.2	10.7	11.0	14.9	---	---	13.9	12.0	12.8	10.2	9.8	10.0
27	11.3	10.8	11.0	14.8	13.1	13.8	14.1	12.4	13.0	10.0	9.2	9.6
28	12.4	11.1	11.6	14.6	13.0	13.6	13.9	12.5	13.0	9.9	8.8	9.3
29	13.5	11.7	12.4	13.5	12.4	13.1	14.0	12.4	13.0	10.3	9.0	9.5
30	13.8	12.5	13.0	13.2	12.0	12.5	14.1	12.5	13.1	10.3	9.0	9.5
31	---	---	---	13.6	12.1	12.8	14.0	12.6	13.1	---	---	---
MONTH	14.8	9.0	11.6	---	---	---	15.8	11.6	13.5	13.7	8.8	11.0

UMPQUA RIVER BASIN

14316500 NORTH UMPQUA RIVER ABOVE COPELAND CREEK, NEAR TOKETEE FALLS, OR--Continued

OXYGEN DISSOLVED (MG/L), JUNE TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	9.2	8.9	9.0	9.6	9.2	9.4	9.8	9.3	9.6	10.5	10.0	10.2
2	9.7	9.2	9.4	9.4	9.0	9.2	9.8	9.3	9.6	10.6	10.1	10.3
3	10.0	9.7	9.8	9.3	8.8	9.1	9.8	9.2	9.5	10.6	9.9	10.3
4	10.1	9.8	9.9	9.3	8.7	9.0	9.8	9.3	9.5	10.5	9.8	10.1
5	10.2	9.8	10.0	9.1	8.6	8.8	9.8	9.3	9.5	10.5	9.8	10.2
6	10.3	9.8	10.0	9.0	8.6	8.8	9.8	9.3	9.5	11.0	10.0	10.5
7	9.9	9.3	9.6	9.1	8.7	8.9	9.7	9.1	9.4	11.1	10.4	10.7
8	9.6	9.2	9.4	9.2	8.7	8.9	10.4	8.9	9.6	11.0	10.2	10.6
9	9.7	9.3	9.5	9.0	8.4	8.7	10.3	9.7	10.0	10.9	10.1	10.5
10	10.0	9.5	9.8	8.9	8.4	8.6	10.4	9.7	10.0	10.9	10.2	10.5
11	10.3	9.9	10.1	8.8	8.3	8.6	10.2	9.7	10.0	10.8	10.1	10.4
12	10.7	10.1	10.4	9.2	8.5	8.8	10.4	9.7	10.0	10.7	10.1	10.4
13	10.4	10.1	10.3	---	8.6	---	10.4	9.6	10.0	10.6	10.1	10.3
14	10.7	10.2	10.4	---	---	---	10.3	9.7	10.0	10.4	9.9	10.2
15	10.7	10.3	10.5	---	---	---	10.2	9.6	9.9	10.3	9.7	10.0
16	10.6	10.3	10.4	---	---	---	10.3	9.6	9.9	10.4	9.9	10.1
17	10.7	10.3	10.5	---	---	---	10.2	9.6	9.9	10.5	10.0	10.2
18	10.8	10.3	10.5	---	---	---	10.4	9.8	10.0	10.4	10.0	10.2
19	10.6	10.1	10.4	---	---	---	10.5	9.8	10.1	10.3	9.9	10.1
20	10.3	9.8	10.1	---	---	---	10.6	9.7	10.2	10.5	10.1	10.3
21	10.0	9.5	9.8	---	---	---	10.7	10.0	10.3	10.7	10.2	10.4
22	9.8	9.4	9.6	---	---	---	10.4	9.9	10.1	10.6	10.2	10.4
23	9.9	9.5	9.7	---	---	---	10.6	10.0	10.3	10.6	10.2	10.4
24	10.1	9.5	9.8	---	---	---	10.5	9.9	10.2	10.8	10.2	10.5
25	10.4	9.8	10.1	---	---	---	10.5	9.9	10.1	10.8	10.3	10.5
26	10.2	9.9	10.1	9.6	---	---	10.5	9.9	10.1	10.8	10.3	10.5
27	10.4	10.0	10.2	9.6	9.2	9.4	10.5	9.9	10.2	11.1	10.5	10.7
28	10.2	9.5	9.9	9.7	9.2	9.5	10.4	9.8	10.1	11.2	10.7	10.9
29	9.9	9.3	9.6	9.8	9.3	9.5	10.4	9.9	10.1	11.0	10.7	10.9
30	9.6	9.2	9.4	9.9	9.4	9.7	10.4	9.8	10.1	10.9	10.6	10.8
31	---	---	---	9.9	9.4	9.6	10.4	9.9	10.1	---	---	---
MONTH	10.8	8.9	9.9	---	---	---	10.7	8.9	9.9	11.2	9.7	10.4

TURBIDITY (NTU), JUNE TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	2	1	1	1	<1	1	1	<1	<1	16	1	2
2	1	1	1	1	<1	1	2	<1	<1	17	1	2
3	3	1	1	1	1	1	18	<1	1	70	1	2
4	1	<1	1	8	1	1	3	<1	1	3	1	2
5	1	<1	1	2	1	1	5	1	2	10	1	2
6	2	1	1	2	1	1	4	1	2	3	<1	1
7	1	1	1	1	<1	1	9	1	1	4	<1	1
8	2	1	1	1	<1	1	2	<1	1	3	<1	1
9	2	1	1	1	<1	1	1	<1	1	1	1	1
10	1	1	1	2	1	1	1	<1	1	1	<1	1
11	2	1	1	11	1	1	3	<1	1	2	1	1
12	23	1	1	2	1	2	2	1	1	1	1	1
13	23	1	1	3	1	1	7	1	1	4	1	1
14	2	<1	1	2	<1	1	7	<1	1	1	1	1
15	1	<1	<1	2	<1	1	3	<1	1	2	1	1
16	1	<1	<1	2	<1	1	2	<1	1	2	1	1
17	<1	<1	<1	2	<1	1	1	<1	1	2	1	1
18	1	<1	<1	4	<1	1	1	<1	1	2	1	1
19	1	<1	<1	1	<1	1	4	<1	1	2	1	1
20	1	<1	<1	2	<1	1	1	<1	1	2	1	1
21	6	<1	<1	1	<1	1	1	<1	1	2	<1	1
22	89	<1	1	2	<1	1	1	<1	1	3	1	1
23	1	<1	1	2	<1	1	28	<1	1	4	1	1
24	3	1	1	2	1	1	86	1	30	3	<1	1
25	3	1	2	6	1	1	29	1	6	5	1	2
26	28	<1	2	2	<1	1	7	1	1	5	1	1
27	2	<1	1	1	<1	1	9	1	1	26	<1	1
28	2	<1	1	1	<1	1	10	1	1	6	<1	1
29	2	<1	1	1	<1	<1	2	1	1	1	<1	<1
30	1	<1	1	1	<1	<1	2	1	1	1	<1	<1
31	---	---	---	1	<1	<1	2	1	1	---	---	---
MAX	89	1	2	11	1	2	86	1	30	70	1	2
MIN	<1	<1	<1	1	<1	<1	1	<1	<1	1	<1	<1

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.

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 sea level (levels by Federal Highway Administration). October 1955 to June 1956, nonrecording gage at site 100 ft upstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. No regulation or diversion upstream from station. Several measurements of water temperature were made during the year. National Weather Service satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,000 ft³/s Dec. 22, 1964, gage height, 25.6 ft, from floodmark, from rating curve extended above 13,000 ft³/s on basis of slope-area measurement at 17.96 ft; minimum discharge, 25 ft³/s Sept. 24, 2001.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
May 16	0500	*3,260	*5.61				
Minimum discharge, 25 ft ³ /s Sept. 24.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	65	284	e350	222	213	629	1010	143	77	54	30
2	40	66	195	e320	255	388	538	703	143	74	50	30
3	40	76	160	e290	383	434	473	547	148	73	48	30
4	40	71	135	e275	828	390	428	454	145	70	47	29
5	40	67	116	255	705	391	411	393	147	67	47	29
6	39	67	102	242	541	393	461	345	156	66	46	28
7	39	72	92	221	425	372	517	311	137	64	45	28
8	38	207	85	213	352	348	486	293	126	63	44	28
9	40	303	81	214	314	324	463	273	119	61	43	28
10	58	194	76	217	286	307	441	250	115	60	42	28
11	58	131	75	197	268	284	662	233	115	82	41	28
12	56	99	85	175	241	262	796	225	136	109	40	27
13	50	83	199	177	220	253	647	210	122	72	e38	28
14	49	78	943	211	210	244	523	238	112	64	e36	28
15	47	73	e1600	230	199	240	471	1670	106	61	35	38
16	45	68	e1000	207	191	272	498	2610	102	60	34	36
17	44	65	e1500	183	187	407	680	1380	98	58	33	30
18	43	63	e950	171	186	1150	651	867	94	58	32	29
19	44	61	e700	185	181	1360	755	609	91	57	32	28
20	96	61	e500	266	176	1130	792	469	88	56	32	27
21	245	64	e600	267	203	789	688	385	86	55	31	27
22	129	64	e1700	328	239	607	562	332	84	54	33	27
23	76	66	e2000	293	257	921	484	290	82	54	41	26
24	61	147	e2000	342	299	478	444	255	84	52	37	26
25	55	139	e1400	400	291	580	459	229	91	51	31	30
26	53	163	e1000	352	265	507	466	210	91	49	32	51
27	54	193	e750	291	245	569	419	195	108	48	32	52
28	109	227	e600	251	224	2210	408	181	96	47	32	41
29	166	234	e500	250	---	1410	373	169	86	47	32	36
30	117	391	e450	233	---	974	458	158	80	58	32	33
31	79	---	e400	221	---	732	---	150	---	62	31	---
TOTAL	2090	3658	20278	7827	8393	18539	16083	15644	3331	1929	1183	936
MEAN	67.4	122	654	252	300	598	536	505	111	62.2	38.2	31.2
MAX	245	391	2000	400	828	2210	796	2610	156	109	54	52
MIN	38	61	75	171	176	213	373	150	80	47	31	26
AC-FT	4150	7260	40220	15520	16650	36770	31900	31030	6610	3830	2350	1860
CFSM	.30	.54	2.88	1.11	1.32	2.63	2.36	2.22	.49	.27	.17	.14
IN.	.34	.60	3.32	1.28	1.38	3.04	2.64	2.56	.55	.32	.19	.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1957 - 2001, BY WATER YEAR (WY)

MEAN	167	888	1510	1510	1406	1235	973	645	275	97.7	60.4	68.4
MAX	536	2887	5391	3415	3195	2774	2017	1337	780	193	158	260
(WY)	1957	1974	1965	1970	1986	1993	1993	1963	1984	1983	1976	1986
MIN	31.5	56.5	62.6	108	142	211	287	165	87.5	56.6	35.9	31.2
(WY)	1988	1994	1977	1977	1977	1992	1968	1992	1992	1973	1994	2001

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1957 - 2001
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ANNUAL TOTAL	240356		99891				
ANNUAL MEAN	657		274			733	
HIGHEST ANNUAL MEAN						1253	1974
LOWEST ANNUAL MEAN						239	1977
HIGHEST DAILY MEAN	9070	Jan 11	2610	May 16	33000		Dec 22 1964
LOWEST DAILY MEAN	38	Oct 8	26	Sep 23	26		Sep 23 2001
ANNUAL SEVEN-DAY MINIMUM	39	Oct 2	27	Sep 18	27		Sep 18 2001
ANNUAL RUNOFF (AC-FT)	476700		198100		531300		
ANNUAL RUNOFF (CFSM)	2.89		1.21		3.23		
ANNUAL RUNOFF (INCHES)	39.39		16.37		43.90		
10 PERCENT EXCEEDS	1710		636		1740		
50 PERCENT EXCEEDS	246		156		330		
90 PERCENT EXCEEDS	48		33		48		

e Estimated

UMPQUA RIVER BASIN

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 mi², 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.

INSTRUMENTATION.--Water-quality monitor and data logger since January 1998.

REMARKS.--Specific conductance, water temperature and turbidity records good; pH and dissolved oxygen records fair. Turbidity values are considered relative to this site. The probe was checked using a polymer bead standard.

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, 8.5 units July 25, 2001, Aug. 13, 14, 16, Sept. 5, 2001; minimum recorded, 6.1 units

Dec. 18, 1999, but may have been lower during period of missing record.

WATER TEMPERATURE: Maximum recorded, 21.0°C Aug. 9, 2001; minimum recorded, 2.2°C Nov. 18, 19, 2001.

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, 89 NTU Jan. 10, 2001, but may have been higher during period of missing record; minimum recorded, <1 many days each year.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 76 microsiemens June 22; minimum, 41 microsiemens May 16.

pH: Maximum recorded, 8.5 units Aug. 13, 14, 16, Sept. 5; minimum recorded, 6.6 units July 12, but may have been lower during period of missing record.

WATER TEMPERATURE: Maximum recorded, 21.0°C Aug. 9, but may have been higher during period of missing record; minimum recorded, 2.2°C Nov. 18, 19.

DISSOLVED OXYGEN: Maximum recorded, 13.6 mg/L Jan. 17; minimum recorded, 6.4 mg/L Aug. 10, 13, 14, but may have been lower during period of missing record.

TURBIDITY: Maximum recorded, 86 NTU June 25, but may have been higher during period of missing record; minimum, <1 many days during year.

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	65	65	65	64	62	63	55	54	54	55	54	55
2	66	65	65	64	62	63	58	55	56	56	54	55
3	66	65	66	65	63	64	59	57	58	56	55	55
4	66	65	65	65	63	64	59	57	58	56	54	55
5	66	65	65	64	62	63	59	57	58	56	55	56
6	66	65	65	64	62	63	59	57	58	56	55	55
7	65	64	65	64	62	63	60	58	59	56	55	56
8	65	64	64	63	61	61	60	59	59	56	54	55
9	65	63	64	63	59	61	60	59	59	56	54	55
10	66	64	64	61	59	60	61	59	60	55	54	55
11	66	65	65	60	59	60	61	60	60	55	53	54
12	67	65	66	61	59	60	62	59	60	55	54	55
13	68	66	67	61	59	60	61	57	59	55	54	54
14	68	65	66	60	59	60	58	53	57	56	54	55
15	68	65	66	61	59	60	53	45	47	55	54	55
16	67	65	65	61	59	60	52	47	50	56	54	55
17	67	64	65	61	60	60	53	49	51	56	54	55
18	66	63	65	61	59	60	53	50	52	58	55	56
19	66	64	65	61	59	60	57	53	55	57	56	57
20	66	62	64	61	59	60	56	56	56	57	55	56
21	68	63	67	62	60	61	56	54	56	55	53	54
22	66	61	62	62	61	61	54	43	48	55	53	54
23	65	61	63	61	60	61	44	42	43	54	52	53
24	65	63	64	63	60	61	47	44	45	54	52	53
25	65	63	64	63	60	61	50	47	49	53	52	53
26	66	63	64	61	59	60	53	50	52	52	52	52
27	67	64	65	60	59	60	54	52	53	53	52	52
28	66	63	64	60	58	59	52	51	52	54	52	53
29	68	65	66	58	56	57	53	52	53	54	52	53
30	65	64	64	58	54	56	54	52	53	54	53	53
31	64	63	63	---	---	---	55	53	54	54	52	53
MONTH	68	61	65	65	54	61	62	42	54	58	52	54

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	54	53	53	58	57	58	49	49	49	50	44	46
2	55	53	54	57	56	57	50	49	49	46	44	45
3	54	52	53	56	56	56	50	49	50	48	46	47
4	52	48	50	57	56	56	52	50	51	50	47	49
5	50	47	48	57	56	56	52	51	52	52	49	51
6	51	49	50	59	56	57	53	51	52	52	50	51
7	52	50	51	57	56	56	52	51	51	53	51	52
8	53	51	52	57	56	57	53	51	52	57	53	55
9	53	51	53	56	56	56	53	52	53	55	54	54
10	55	52	53	57	56	56	54	53	54	55	54	55
11	55	53	54	57	56	56	53	51	52	57	55	56
12	56	55	55	58	56	57	51	51	51	58	57	57
13	56	55	56	58	57	57	53	51	52	58	57	57
14	57	56	56	59	57	58	55	53	54	58	55	56
15	58	56	57	58	57	58	55	54	55	55	46	51
16	60	57	58	58	57	57	57	54	55	46	41	43
17	60	58	59	57	55	56	55	52	54	46	43	44
18	60	58	59	55	48	52	53	51	52	49	46	47
19	60	58	59	48	47	48	52	51	51	52	49	50
20	60	58	59	48	46	47	52	51	51	53	51	52
21	60	58	59	49	48	49	52	51	52	55	53	54
22	59	58	59	50	49	50	54	52	53	57	55	56
23	58	56	58	51	50	50	55	54	54	60	57	58
24	59	58	58	51	50	50	57	55	55	59	58	59
25	58	56	57	50	48	49	57	55	56	---	---	---
26	58	56	57	49	47	48	55	53	54	61	59	60
27	58	57	57	49	48	49	54	50	52	61	59	60
28	58	57	58	48	44	45	53	48	50	---	---	---
29	---	---	---	49	45	46	49	48	49	---	---	---
30	---	---	---	48	47	47	51	48	50	63	61	62
31	---	---	---	49	48	48	---	---	---	64	62	63
MONTH	60	47	55	59	44	53	57	48	52	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	65	64	64	67	64	65	---	---	---	68	67	68
2	65	64	64	67	65	66	---	---	---	68	67	67
3	65	64	64	66	65	65	---	---	---	69	67	68
4	69	62	64	66	64	65	---	---	---	69	68	68
5	68	64	66	67	65	66	---	---	---	68	63	67
6	69	62	64	67	65	66	---	---	---	63	63	63
7	65	63	64	66	64	65	---	---	---	63	62	63
8	66	64	65	65	63	64	60	58	59	64	62	63
9	67	65	66	65	64	64	60	58	59	64	63	64
10	69	66	67	65	64	64	61	60	60	64	63	64
11	68	67	67	66	64	65	62	59	61	64	63	64
12	72	66	69	---	---	---	62	61	62	64	63	63
13	68	65	67	---	---	---	63	62	62	65	63	64
14	69	66	67	---	---	---	63	62	63	65	64	65
15	68	66	67	---	---	---	64	62	63	66	65	65
16	69	67	68	---	---	---	65	63	64	66	65	65
17	70	67	68	---	---	---	66	64	65	66	65	65
18	69	67	68	---	---	---	66	65	65	68	65	65
19	70	67	68	---	---	---	---	---	---	66	65	65
20	70	67	68	---	---	---	---	---	---	66	65	65
21	69	67	68	---	---	---	---	---	---	66	65	66
22	76	68	73	---	---	---	66	65	65	66	65	66
23	74	68	72	---	---	---	66	64	65	67	65	66
24	74	67	72	---	---	---	67	66	67	68	65	67
25	67	66	66	---	---	---	67	66	67	67	65	66
26	68	66	67	---	---	---	66	65	66	---	---	---
27	70	66	67	---	---	---	67	66	66	67	65	66
28	69	65	66	---	---	---	68	66	67	67	65	66
29	66	65	65	---	---	---	67	66	67	66	64	65
30	66	64	65	---	---	---	68	67	68	66	64	65
31	---	---	---	---	---	---	69	68	68	---	---	---
MONTH	76	62	67	---	---	---	---	---	---	---	---	---

UMPQUA RIVER BASIN

14317450 NORTH UMPQUA RIVER NEAR IDLEYLD PARK, OR--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	8.0	7.4	7.6	7.9	7.6	7.7	7.6	7.4	7.5	7.5	7.3	7.4
2	7.9	7.3	7.6	7.9	7.6	7.6	7.6	7.4	7.5	7.5	7.3	7.4
3	7.9	7.5	7.6	7.8	7.5	7.6	7.5	7.3	7.4	7.5	7.4	7.4
4	7.9	7.5	7.6	7.8	7.5	7.6	7.5	7.4	7.4	7.6	7.4	7.4
5	7.9	7.5	7.6	7.9	7.6	7.7	7.5	7.4	7.4	7.6	7.4	7.5
6	7.7	7.4	7.6	7.9	7.6	7.7	7.6	7.4	7.4	7.6	7.4	7.5
7	7.7	7.4	7.5	7.9	7.6	7.7	7.7	7.4	7.5	7.6	7.5	7.5
8	7.8	7.4	7.5	7.8	7.6	7.6	7.7	7.5	7.5	7.6	7.4	7.5
9	7.7	7.4	7.5	7.7	7.5	7.6	7.7	7.4	7.5	7.6	7.5	7.5
10	7.8	7.4	7.5	7.7	7.5	7.6	7.7	7.5	7.6	7.7	7.5	7.5
11	8.0	7.4	7.6	7.7	7.5	7.6	7.6	7.5	7.6	7.6	7.5	7.5
12	7.8	7.4	7.6	7.7	7.5	7.6	7.7	7.5	7.6	7.6	7.4	7.5
13	7.9	7.4	7.5	7.7	7.5	7.6	7.6	7.4	7.6	7.5	7.4	7.4
14	7.9	7.3	7.5	7.6	7.4	7.5	7.5	7.4	7.5	7.6	7.4	7.4
15	7.8	7.3	7.5	7.7	7.4	7.5	7.4	7.3	7.3	7.6	7.4	7.4
16	7.7	7.3	7.4	7.5	7.3	7.4	7.5	7.3	7.4	7.5	7.4	7.4
17	7.8	7.3	7.5	7.5	7.4	7.4	7.5	7.4	7.4	7.6	7.4	7.4
18	7.7	7.3	7.4	7.5	7.4	7.4	7.6	7.4	7.5	7.5	7.4	7.5
19	7.8	7.3	7.4	7.5	7.4	7.4	7.6	7.4	7.5	7.5	7.3	7.4
20	7.6	7.3	7.4	7.5	7.4	7.4	7.6	7.4	7.5	7.6	7.4	7.4
21	7.5	7.2	7.3	7.6	7.4	7.5	7.6	7.4	7.5	7.5	7.3	7.4
22	7.5	7.2	7.3	7.6	7.4	7.5	7.4	7.2	7.4	7.5	7.4	7.4
23	7.7	7.2	7.5	7.6	7.5	7.5	7.3	7.2	7.3	7.5	7.3	7.4
24	7.8	7.5	7.6	7.6	7.4	7.5	7.4	7.3	7.4	7.6	7.4	7.4
25	7.9	7.5	7.7	7.6	7.5	7.5	7.5	7.4	7.4	7.6	7.4	7.4
26	7.9	7.5	7.7	7.6	7.4	7.5	7.6	7.4	7.5	7.5	7.4	7.4
27	7.9	7.5	7.7	7.6	7.4	7.5	7.6	7.4	7.5	7.5	7.4	7.4
28	7.8	7.6	7.7	7.7	7.4	7.5	7.6	7.4	7.5	7.6	7.4	7.4
29	7.9	7.6	7.7	7.6	7.4	7.5	7.5	7.4	7.4	7.5	7.4	7.4
30	7.8	7.6	7.6	7.6	7.4	7.5	7.5	7.3	7.4	7.5	7.4	7.4
31	7.9	7.6	7.7	---	---	---	7.5	7.3	7.4	7.6	7.4	7.4
MAX	8.0	7.6	7.7	7.9	7.6	7.7	7.7	7.5	7.6	7.7	7.5	7.5
MIN	7.5	7.2	7.3	7.5	7.3	7.4	7.3	7.2	7.3	7.5	7.3	7.4

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
FEBRUARY				MARCH			APRIL			MAY		
1	7.6	7.4	7.5	7.6	7.4	7.5	7.1	6.8	7.0	7.1	6.9	7.0
2	7.6	7.4	7.5	7.6	7.4	7.5	7.1	6.9	7.0	7.2	6.9	7.0
3	7.5	7.4	7.4	7.6	7.4	7.5	7.1	6.9	7.0	7.2	6.9	7.0
4	7.5	7.3	7.4	7.6	7.4	7.5	7.1	6.9	7.0	7.3	6.9	7.0
5	7.5	7.3	7.4	7.6	7.4	7.5	7.2	7.0	7.1	7.3	6.9	7.1
6	7.6	7.3	7.4	7.5	7.4	7.4	7.3	7.0	7.1	7.3	6.9	7.1
7	7.6	7.4	7.4	7.6	7.4	7.5	7.2	7.0	7.1	7.3	6.9	7.0
8	7.5	7.4	7.4	7.7	7.4	7.5	7.2	7.0	7.1	7.3	6.9	7.1
9	7.6	7.4	7.4	7.7	7.4	7.5	7.3	7.0	7.1	7.4	6.9	7.1
10	7.6	7.4	7.4	7.7	7.4	7.5	7.3	7.1	7.2	7.4	6.9	7.1
11	7.6	7.4	7.4	7.5	7.4	7.5	7.3	7.1	7.1	7.4	6.9	7.1
12	7.5	7.4	7.4	7.5	7.3	7.4	7.3	7.0	7.1	7.5	6.9	7.2
13	7.5	7.4	7.5	7.6	7.3	7.4	7.3	7.1	7.2	7.6	7.0	7.3
14	7.5	7.4	7.5	7.6	7.3	7.4	7.4	7.1	7.2	7.4	7.0	7.2
15	7.6	7.4	7.5	7.5	7.2	7.3	7.4	7.1	7.2	7.1	7.0	7.1
16	7.6	7.4	7.4	7.5	7.2	7.3	7.4	7.1	7.2	7.1	6.8	7.0
17	7.6	7.4	7.5	7.4	7.2	7.3	7.4	7.1	7.2	7.3	7.0	7.2
18	7.6	7.4	7.5	7.3	7.1	7.2	7.4	7.0	7.2	7.4	7.1	7.2
19	7.6	7.4	7.5	7.3	7.1	7.2	7.4	7.1	7.2	7.5	7.1	7.2
20	7.6	7.4	7.5	7.4	7.1	7.2	7.4	7.1	7.2	7.5	7.1	7.2
21	7.6	7.4	7.5	7.4	7.1	7.2	7.4	7.1	7.2	7.6	7.1	7.2
22	7.6	7.4	7.5	7.4	7.1	7.2	7.4	7.1	7.2	7.6	7.1	7.2
23	7.6	7.4	7.5	7.4	7.1	7.2	7.4	7.1	7.2	7.7	7.1	7.3
24	7.5	7.3	7.4	7.4	7.1	7.2	7.4	7.1	7.2	7.8	7.2	7.3
25	7.4	7.3	7.4	7.5	7.1	7.2	7.4	7.1	7.2	7.8	7.1	7.3
26	7.5	7.3	7.4	7.4	7.1	7.2	7.4	7.0	7.1	7.8	7.2	7.4
27	7.6	7.3	7.4	7.4	7.0	7.2	7.4	7.0	7.1	7.9	7.2	7.4
28	7.6	7.4	7.5	7.1	6.9	7.0	7.3	7.0	7.1	7.8	7.2	7.4
29	---	---	---	7.0	6.8	6.9	7.3	6.9	7.0	7.9	7.2	7.4
30	---	---	---	7.0	6.8	6.9	7.2	6.9	7.0	7.9	7.2	7.4
31	---	---	---	7.1	6.8	6.9	---	---	---	7.8	7.2	7.4
MAX	7.6	7.4	7.5	7.7	7.4	7.5	7.4	7.1	7.2	7.9	7.2	7.4
MIN	7.4	7.3	7.4	7.0	6.8	6.9	7.1	6.8	7.0	7.1	6.8	7.0

UMPQUA RIVER BASIN

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14317450 NORTH UMPQUA RIVER NEAR IDLEYLD PARK, OR--Continued

PH, WATER, WHOLE, FIELD, STANDARD UNITS, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	7.7	7.2	7.4	7.8	7.1	7.4	---	---	---	8.4	7.5	7.8
2	7.9	7.3	7.5	7.8	6.9	7.3	---	---	---	8.4	7.5	7.8
3	7.9	7.3	7.5	7.8	6.9	7.3	---	---	---	8.4	7.6	7.8
4	7.8	7.3	7.5	7.7	6.9	7.2	---	---	---	8.4	7.5	7.8
5	7.8	7.3	7.4	7.8	6.9	7.3	---	---	---	8.5	7.5	7.9
6	8.0	7.3	7.5	7.8	6.9	7.3	---	---	---	8.3	7.6	7.9
7	7.9	7.2	7.4	7.7	6.8	7.2	8.3	---	---	8.3	7.6	7.8
8	7.9	7.2	7.5	7.7	6.8	7.2	8.3	7.4	7.8	8.2	7.6	7.8
9	8.1	7.2	7.5	7.7	6.8	7.1	8.3	7.3	7.8	8.2	7.5	7.8
10	8.0	7.2	7.6	7.5	6.6	7.0	8.4	7.3	7.8	8.2	7.5	7.7
11	7.8	7.3	7.5	7.6	6.7	7.1	8.4	7.3	7.8	8.3	7.5	7.7
12	8.0	7.3	7.6	---	6.6	---	8.4	7.3	7.8	8.2	7.4	7.7
13	7.8	7.3	7.5	---	---	---	8.5	7.4	7.9	8.3	7.5	7.7
14	7.9	7.3	7.5	---	---	---	8.5	7.4	7.9	8.2	7.5	7.7
15	7.8	7.2	7.4	---	---	---	8.4	7.4	7.9	8.1	7.4	7.7
16	7.9	7.2	7.5	---	---	---	8.5	7.4	7.8	8.2	7.4	7.8
17	8.0	7.2	7.4	---	---	---	8.4	7.4	7.8	8.2	7.4	7.6
18	7.9	7.1	7.4	---	---	---	8.4	7.4	7.9	8.1	7.4	7.6
19	7.8	7.1	7.3	---	---	---	---	---	---	8.1	7.4	7.6
20	7.7	7.0	7.2	---	---	---	---	---	---	8.1	7.4	7.6
21	7.6	6.9	7.2	---	---	---	---	---	---	8.0	7.4	7.6
22	7.8	7.0	7.3	---	---	---	8.0	7.3	7.6	8.1	7.4	7.6
23	7.7	7.0	7.2	---	---	---	8.4	7.3	7.8	8.0	7.4	7.7
24	7.5	6.8	7.1	---	---	---	8.4	7.3	7.8	8.1	7.4	7.6
25	7.7	6.8	7.2	---	---	---	8.4	7.4	7.7	7.8	7.3	7.4
26	7.2	6.7	7.0	---	---	---	8.4	7.4	7.7	7.8	7.3	7.4
27	7.8	6.7	7.0	---	---	---	8.4	7.4	7.7	7.9	7.3	7.5
28	8.0	7.1	7.3	---	---	---	8.4	7.4	7.7	7.7	7.3	7.4
29	7.9	7.0	7.3	---	---	---	8.3	7.4	7.7	7.7	7.3	7.4
30	7.9	7.0	7.4	---	---	---	8.4	7.4	7.8	7.7	7.2	7.4
31	---	---	---	---	---	---	8.4	7.5	7.8	---	---	---
MAX	8.1	7.3	7.6	---	---	---	---	---	---	8.5	7.6	7.9
MIN	7.2	6.7	7.0	---	---	---	---	---	---	7.7	7.2	7.4

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	13.2	11.5	12.4	7.0	6.6	6.9	5.5	4.9	5.1	4.1	3.9	4.0
2	12.7	11.7	12.2	7.7	6.6	7.2	5.2	4.9	5.0	4.4	4.1	4.2
3	11.7	10.5	11.1	8.1	7.5	7.7	5.1	4.8	5.0	4.5	4.2	4.3
4	10.8	9.8	10.3	7.8	7.3	7.6	4.8	4.5	4.7	4.8	4.5	4.6
5	10.5	9.3	9.8	7.4	7.1	7.3	4.5	3.9	4.2	5.1	4.6	4.9
6	10.4	9.1	9.7	7.5	6.7	7.2	3.9	3.7	3.8	5.1	4.5	4.9
7	10.6	9.3	9.9	6.7	6.4	6.5	4.1	3.6	3.8	4.5	4.3	4.4
8	10.5	9.4	9.9	7.0	6.4	6.6	4.2	3.8	4.0	5.4	4.5	5.0
9	10.0	9.4	9.7	6.4	5.8	6.0	4.9	4.1	4.6	5.4	4.8	5.1
10	9.8	9.3	9.6	5.8	4.8	5.2	5.2	4.6	4.9	4.9	4.3	4.7
11	9.8	9.1	9.4	5.0	3.9	4.5	4.6	4.2	4.4	4.3	4.1	4.2
12	9.6	9.1	9.5	4.0	3.5	3.7	4.5	4.2	4.3	4.5	4.1	4.4
13	9.8	9.0	9.4	4.0	3.5	3.8	4.8	4.4	4.6	4.7	4.3	4.5
14	10.6	9.6	10.0	4.5	4.0	4.3	5.1	4.8	5.0	4.7	4.4	4.5
15	10.0	9.1	9.8	4.7	4.3	4.5	5.8	5.1	5.5	4.5	4.0	4.3
16	9.3	8.5	8.9	4.3	3.4	3.9	5.8	5.4	5.5	4.0	2.7	3.4
17	8.9	8.0	8.4	3.4	2.7	3.1	5.4	5.0	5.3	2.7	2.3	2.5
18	9.3	8.1	8.7	2.7	2.2	2.6	5.0	3.9	4.2	3.1	2.5	2.8
19	9.9	8.8	9.3	2.8	2.2	2.5	4.1	3.7	3.9	3.7	3.0	3.5
20	9.8	9.2	9.5	3.3	2.8	3.1	4.8	4.1	4.5	3.9	3.4	3.6
21	9.5	9.1	9.3	3.4	3.0	3.2	5.3	4.8	5.0	4.7	3.9	4.4
22	9.1	7.6	8.3	3.5	3.0	3.3	6.3	5.3	5.7	4.7	4.5	4.6
23	7.6	6.7	7.2	3.5	3.0	3.3	6.4	6.3	6.3	4.7	4.4	4.5
24	7.4	6.5	6.9	4.3	3.5	4.0	6.3	5.8	6.1	5.3	4.6	5.0
25	8.0	6.9	7.5	4.4	4.0	4.3	5.8	4.8	5.1	5.1	4.6	4.8
26	8.5	7.7	8.1	4.9	4.4	4.8	4.8	4.4	4.6	4.6	3.6	4.1
27	8.8	8.0	8.4	5.4	4.9	5.1	5.0	4.6	4.8	3.6	2.8	3.2
28	8.5	8.0	8.3	5.2	4.9	5.0	4.7	4.1	4.4	2.9	2.4	2.7
29	8.2	7.9	8.1	5.4	4.9	5.2	4.2	3.9	4.0	3.8	2.9	3.5
30	8.0	7.1	7.6	5.6	5.4	5.5	3.9	3.6	3.7	3.8	3.5	3.7
31	7.7	7.0	7.4	---	---	---	4.1	3.6	3.8	3.5	3.2	3.4
MONTH	13.2	6.5	9.2	8.1	2.2	4.9	6.4	3.6	4.7	5.4	2.3	4.1

UMPQUA RIVER BASIN

14317450 NORTH UMPQUA RIVER NEAR IDLEYLD PARK, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	3.9	3.2	3.5	4.6	4.2	4.4	8.4	8.0	8.2	8.7	8.1	8.5
2	4.7	3.8	4.4	5.2	4.5	4.9	8.0	6.7	7.2	9.4	7.3	8.4
3	5.0	4.5	4.8	4.8	4.4	4.6	6.7	6.0	6.3	10.0	8.1	9.0
4	5.8	5.0	5.4	4.9	4.5	4.7	6.9	5.6	6.2	10.6	9.1	9.8
5	6.2	5.8	6.0	5.4	4.7	5.1	6.9	5.8	6.3	11.3	10.0	10.7
6	6.0	5.0	5.4	5.9	5.1	5.5	6.8	6.4	6.6	11.5	10.0	10.9
7	5.0	3.7	4.4	6.5	5.6	6.1	6.5	6.0	6.2	12.5	10.3	11.3
8	3.7	2.9	3.1	7.2	6.4	6.8	6.2	5.3	5.8	12.8	11.5	12.1
9	3.4	2.9	3.2	7.0	6.4	6.7	6.6	5.8	6.2	12.7	11.5	12.2
10	4.2	3.4	3.8	6.6	6.0	6.3	6.7	6.3	6.5	12.9	11.2	12.1
11	4.1	3.6	3.9	6.3	5.6	5.9	7.0	6.5	6.7	13.7	11.8	12.8
12	3.8	3.1	3.6	6.3	5.3	5.8	7.0	6.2	6.4	14.3	13.0	13.7
13	3.3	2.5	2.9	7.0	5.8	6.4	6.8	6.1	6.5	14.1	13.1	13.7
14	2.8	2.4	2.6	7.0	6.3	6.7	7.2	5.8	6.5	13.9	11.4	12.6
15	3.2	2.4	2.8	6.5	5.9	6.2	7.2	6.6	6.9	11.4	9.8	10.5
16	4.5	3.2	3.9	6.3	5.9	6.0	8.2	6.9	7.4	10.4	9.2	9.7
17	5.1	4.3	4.7	5.9	5.7	5.8	9.0	8.0	8.5	10.4	8.8	9.6
18	5.6	4.9	5.3	7.2	5.9	6.5	9.0	8.3	8.6	12.0	9.5	10.7
19	5.4	5.1	5.2	8.2	7.2	7.6	8.3	7.7	8.0	13.2	10.7	11.9
20	5.2	4.9	5.0	8.2	7.6	8.0	8.2	7.3	7.8	13.8	11.4	12.6
21	5.9	4.9	5.5	8.7	7.7	8.2	8.2	7.4	7.9	14.7	12.0	13.3
22	6.0	5.5	5.8	8.9	8.0	8.4	8.8	7.8	8.3	15.7	13.1	14.4
23	5.7	5.2	5.4	9.4	8.6	9.0	9.8	8.3	9.1	16.5	14.3	15.5
24	5.2	4.9	5.1	9.4	8.8	9.0	10.9	9.0	9.9	16.5	14.8	15.8
25	5.7	5.1	5.4	9.0	8.4	8.7	12.2	10.2	11.0	16.5	14.9	15.9
26	5.5	4.9	5.2	8.4	7.7	8.0	13.0	11.3	12.1	16.6	14.9	15.9
27	5.2	4.5	4.9	7.7	6.7	7.0	12.9	11.0	11.6	16.6	14.6	15.6
28	4.8	4.1	4.4	8.1	6.9	7.5	11.3	9.8	10.3	14.6	13.3	14.0
29	---	---	---	9.1	7.7	8.3	9.8	8.4	8.9	14.5	13.1	13.8
30	---	---	---	8.7	7.7	8.3	8.6	8.2	8.5	15.2	13.2	14.2
31	---	---	---	8.6	8.0	8.3	---	---	---	16.8	14.7	15.7
MONTH	6.2	2.4	4.5	9.4	4.2	6.8	13.0	5.3	7.9	16.8	7.3	12.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	16.3	13.9	15.4	18.0	15.5	16.6	---	---	---	17.8	16.0	16.9
2	13.9	13.1	13.6	18.8	16.2	17.3	---	---	---	17.6	15.7	16.6
3	13.2	12.3	12.9	19.2	17.0	17.8	---	---	---	17.2	15.3	16.2
4	13.3	11.8	12.4	19.8	17.1	18.2	---	---	---	16.9	15.0	15.9
5	12.3	11.4	11.9	19.4	17.7	18.4	---	---	---	16.2	15.0	15.4
6	14.0	11.4	12.6	19.9	17.2	18.3	---	---	---	15.0	13.5	14.3
7	15.8	13.7	14.7	19.8	17.3	18.3	19.9	---	---	15.0	13.2	14.1
8	17.1	15.3	16.0	20.2	17.2	18.5	20.4	17.8	18.9	15.0	13.1	14.0
9	16.5	15.7	16.1	20.6	17.7	18.9	21.0	18.2	19.5	15.1	13.2	14.2
10	15.7	14.2	15.0	19.1	17.9	18.5	20.7	18.4	19.4	15.5	13.6	14.5
11	14.2	12.9	13.8	19.6	17.0	18.2	20.5	18.2	19.3	15.5	13.7	14.6
12	14.4	12.4	13.3	---	---	---	20.2	18.2	19.1	15.1	14.0	14.6
13	14.7	12.7	13.7	---	---	---	19.9	17.4	18.6	15.5	13.9	14.7
14	15.9	13.8	14.6	---	---	---	19.9	17.9	18.8	16.4	14.5	15.3
15	16.2	14.5	15.1	---	---	---	19.8	17.6	18.6	16.6	15.0	15.8
16	16.7	14.9	15.6	---	---	---	19.3	17.7	18.4	16.5	15.0	15.6
17	16.3	14.6	15.3	---	---	---	19.6	17.3	18.3	15.6	14.5	15.0
18	16.2	14.2	15.0	---	---	---	18.5	17.2	17.7	14.9	13.4	14.1
19	17.1	14.4	15.5	---	---	---	---	---	---	14.5	13.1	13.7
20	18.2	15.1	16.5	---	---	---	---	---	---	14.3	12.8	13.5
21	19.3	16.3	17.5	---	---	---	17.3	---	---	13.6	12.3	12.9
22	19.3	17.1	17.9	---	---	---	16.3	15.5	15.9	13.5	11.7	12.6
23	17.9	16.2	17.2	---	---	---	16.4	14.7	15.5	13.7	12.0	12.8
24	16.2	14.6	15.6	---	---	---	16.8	15.0	15.8	13.7	12.2	12.9
25	15.3	13.7	14.4	---	---	---	17.2	15.1	16.0	13.4	12.9	13.1
26	14.3	13.2	14.0	---	---	---	17.7	15.3	16.4	13.1	12.3	12.5
27	15.1	13.1	14.0	---	---	---	18.1	15.8	16.9	12.3	11.8	12.0
28	15.2	14.6	14.9	---	---	---	18.0	15.9	16.9	12.1	11.2	11.7
29	15.5	14.5	14.9	---	---	---	17.9	16.3	17.0	11.8	10.6	11.2
30	16.6	15.0	15.8	---	---	---	18.3	16.2	17.2	12.3	10.8	11.5
31	---	---	---	---	---	---	18.2	16.1	17.1	---	---	---
MONTH	19.3	11.4	14.8	---	---	---	---	---	---	17.8	10.6	14.1

UMPQUA RIVER BASIN

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14317450 NORTH UMPQUA RIVER NEAR IDLEYLD PARK, OR--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	10.2	9.6	9.8	11.9	11.4	11.6	12.7	12.3	12.6	13.1	12.9	13.0
2	10.4	9.5	9.8	11.9	11.3	11.6	12.7	12.5	12.6	13.1	12.8	12.9
3	10.0	9.5	9.7	11.5	11.2	11.3	12.8	12.5	12.6	13.1	12.7	12.9
4	10.2	9.7	9.9	11.6	11.1	11.3	12.8	12.6	12.7	12.8	12.6	12.7
5	10.2	9.9	10.0	11.8	11.3	11.5	13.1	12.7	12.9	12.8	12.4	12.6
6	10.3	9.9	10.1	11.8	11.2	11.5	13.2	12.9	13.0	12.7	12.4	12.5
7	10.3	9.8	10.0	12.1	11.5	11.8	13.3	12.9	13.0	12.7	12.4	12.6
8	10.3	9.8	10.0	11.9	11.5	11.7	13.1	12.8	13.0	12.6	12.3	12.4
9	10.2	9.8	10.0	12.6	11.7	12.2	12.9	12.6	12.7	12.4	12.2	12.3
10	10.2	9.9	10.0	12.7	12.2	12.5	12.9	12.5	12.7	12.6	12.3	12.4
11	10.4	9.9	10.1	13.0	12.5	12.8	12.9	12.6	12.7	12.8	12.4	12.6
12	10.5	9.9	10.2	13.2	12.8	13.0	12.9	12.5	12.7	12.9	12.5	12.6
13	10.6	10.1	10.3	13.1	12.7	12.9	12.6	12.4	12.5	12.8	12.4	12.6
14	10.5	9.9	10.1	12.8	12.6	12.7	12.6	12.4	12.5	12.9	12.5	12.7
15	10.4	9.8	10.0	12.8	12.4	12.6	12.7	12.5	12.6	13.0	12.6	12.8
16	10.7	10.1	10.3	13.0	12.5	12.8	12.7	12.5	12.6	13.3	12.8	13.1
17	10.7	10.1	10.4	13.2	12.8	13.0	12.9	12.6	12.7	13.6	13.1	13.4
18	10.5	10.1	10.3	13.3	13.0	13.2	13.2	12.8	13.0	13.6	13.1	13.3
19	10.5	10.0	10.1	13.3	12.9	13.2	13.2	12.9	13.0	13.1	12.8	13.0
20	10.2	9.8	10.0	13.0	12.6	12.8	12.9	12.5	12.8	13.1	12.6	12.8
21	10.6	10.0	10.3	13.0	12.6	12.8	12.6	12.3	12.4	12.7	12.4	12.5
22	10.8	10.3	10.5	13.0	12.7	12.9	12.5	12.3	12.4	12.5	12.1	12.3
23	11.3	10.5	10.9	13.1	12.8	13.0	12.3	12.2	12.3	12.5	12.1	12.3
24	11.5	11.1	11.3	12.9	12.5	12.8	12.6	12.3	12.4	12.4	12.0	12.2
25	11.3	10.8	11.1	12.9	12.5	12.7	12.9	12.5	12.7	12.4	12.0	12.2
26	11.1	10.8	10.9	12.6	12.3	12.5	13.1	12.7	12.8	12.7	12.1	12.4
27	11.1	10.7	10.9	12.5	12.3	12.4	12.9	12.7	12.8	12.9	12.5	12.7
28	11.1	10.7	10.9	12.7	12.3	12.4	13.0	12.7	12.9	13.1	12.7	12.9
29	11.2	10.9	11.0	12.4	12.1	12.3	13.1	12.9	13.0	12.9	12.6	12.7
30	11.4	10.9	11.2	12.6	12.2	12.4	13.2	12.9	13.1	12.8	12.5	12.6
31	11.7	11.2	11.4	---	---	---	13.2	12.9	13.0	12.9	12.5	12.7
MONTH	11.7	9.5	10.4	13.3	11.1	12.4	13.3	12.2	12.7	13.6	12.0	12.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	12.8	12.4	12.6	12.3	12.0	12.1	11.6	11.2	11.4	11.7	11.1	11.4
2	12.6	12.1	12.4	12.2	11.9	12.1	11.9	11.2	11.6	12.0	10.9	11.5
3	12.5	12.1	12.3	12.5	12.0	12.2	12.3	11.8	12.0	11.7	10.7	11.2
4	12.3	12.0	12.1	12.2	11.9	12.1	12.4	11.6	12.0	11.2	10.4	10.8
5	12.2	11.9	12.1	12.4	12.0	12.1	12.3	11.6	12.0	11.0	10.0	10.6
6	12.3	11.8	12.1	12.3	11.9	12.1	12.1	11.6	11.8	11.0	10.1	10.5
7	12.6	12.1	12.4	12.2	11.8	12.1	12.3	11.8	12.0	11.0	9.8	10.5
8	13.0	12.5	12.8	12.0	11.6	11.9	12.6	12.0	12.2	10.9	9.7	10.3
9	13.1	12.6	12.8	11.9	11.6	11.8	12.5	11.9	12.2	10.9	10.1	10.4
10	12.7	12.3	12.6	12.1	11.7	11.9	12.3	11.7	12.0	10.9	10.0	10.4
11	12.8	12.3	12.5	12.3	11.9	12.1	12.1	11.6	11.9	10.6	9.7	10.2
12	12.9	12.4	12.7	12.4	11.9	12.1	12.3	11.6	12.0	10.3	9.5	9.9
13	13.2	12.8	13.0	12.2	11.7	11.9	12.4	11.8	12.1	10.3	9.5	9.9
14	13.4	12.9	13.2	12.1	11.6	11.8	12.3	11.5	11.9	10.4	9.5	10.0
15	13.4	12.9	13.2	11.9	11.6	11.8	12.0	11.4	11.7	10.9	10.2	10.6
16	12.7	12.0	12.4	12.1	11.7	11.8	11.8	11.0	11.4	11.4	10.9	11.1
17	12.0	11.7	11.8	12.2	11.7	11.9	11.6	10.8	11.2	11.3	10.5	10.9
18	11.9	11.5	11.7	11.9	11.5	11.7	11.5	10.8	11.2	10.8	9.8	10.5
19	11.7	11.4	11.6	11.6	11.1	11.4	11.8	11.3	11.5	10.3	9.5	10.0
20	11.9	11.6	11.8	11.6	11.0	11.4	11.8	11.3	11.5	10.2	9.2	9.7
21	11.7	11.5	11.6	11.3	10.8	11.1	11.9	11.3	11.6	10.0	8.8	9.5
22	11.8	11.4	11.6	11.3	10.6	11.0	11.8	11.2	11.5	9.7	8.6	9.2
23	11.9	11.5	11.7	11.0	10.3	10.7	11.8	11.0	11.4	9.5	8.6	9.0
24	12.0	11.6	11.8	10.8	10.4	10.6	11.5	10.6	11.2	9.4	8.5	9.0
25	12.0	11.6	11.8	11.1	10.4	10.8	11.1	10.2	10.8	9.5	8.3	8.9
26	12.2	11.8	12.0	11.4	10.8	11.1	10.7	9.9	10.4	9.6	8.5	8.9
27	12.3	11.9	12.1	11.6	10.9	11.3	10.7	9.9	10.3	9.6	8.5	9.1
28	12.4	12.0	12.2	11.7	11.2	11.5	11.1	10.1	10.6	10.0	9.0	9.4
29	---	---	---	11.7	11.2	11.4	11.3	10.6	11.0	10.3	8.9	9.5
30	---	---	---	11.8	11.2	11.5	11.5	10.8	11.2	10.2	8.9	9.4
31	---	---	---	11.7	11.2	11.4	---	---	---	9.9	8.3	9.1
MONTH	13.4	11.4	12.2	12.5	10.3	11.6	12.6	9.9	11.5	12.0	8.3	10.0

UMPUA RIVER BASIN

14317450 NORTH UMPQUA RIVER NEAR IDLEYLD PARK, OR--Continued

OXYGEN DISSOLVED (MG/L), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	9.3	8.2	8.9	8.8	7.6	8.2	---	---	---	9.4	7.1	7.9
2	10.3	9.0	9.5	8.6	7.5	8.0	---	---	---	9.4	6.9	7.9
3	10.1	9.0	9.6	8.7	7.3	7.9	---	---	---	9.4	7.1	8.1
4	10.7	9.2	9.7	8.5	6.8	7.8	---	---	---	9.7	7.4	8.4
5	10.3	9.0	9.6	8.6	6.9	7.6	---	---	---	9.8	7.4	8.7
6	10.6	8.8	9.7	8.5	6.8	7.6	---	---	---	10.2	9.1	9.5
7	10.0	8.4	9.0	8.2	7.1	7.6	---	---	---	10.2	8.9	9.5
8	9.5	8.1	8.6	8.5	6.9	7.6	7.9	6.8	7.4	10.5	9.0	9.6
9	9.5	8.0	8.6	8.4	6.9	7.5	7.9	6.9	7.4	10.5	8.9	9.5
10	9.7	8.1	8.8	8.3	6.8	7.4	8.3	6.4	7.4	10.6	8.7	9.3
11	9.4	8.5	9.0	8.5	6.9	7.5	8.5	6.7	7.4	10.6	8.5	9.3
12	10.2	8.7	9.3	---	7.2	---	8.5	6.6	7.3	10.3	8.5	9.1
13	10.1	8.7	9.4	---	---	---	8.8	6.4	7.4	10.9	8.6	9.3
14	9.8	9.1	9.4	---	---	---	8.6	6.4	7.3	10.7	8.2	9.1
15	9.6	8.7	9.2	---	---	---	8.7	6.6	7.5	10.3	8.0	8.8
16	9.5	8.7	9.0	---	---	---	8.8	6.7	7.6	10.3	8.1	8.8
17	9.5	8.7	9.1	---	---	---	9.1	7.2	8.0	10.2	8.2	8.8
18	9.6	8.5	9.0	---	---	---	9.3	7.2	8.0	10.6	8.4	9.1
19	9.4	8.1	8.8	---	---	---	---	---	---	10.8	8.7	9.3
20	9.3	7.9	8.5	---	---	---	---	---	---	10.9	8.7	9.4
21	9.0	7.6	8.1	---	---	---	---	---	---	11.1	9.0	9.6
22	8.8	7.4	8.0	---	---	---	9.2	8.2	8.7	11.1	9.4	9.9
23	8.6	7.4	8.0	---	---	---	9.4	8.2	8.9	11.1	9.4	9.9
24	8.8	7.9	8.4	---	---	---	9.6	8.2	8.8	10.9	9.7	10.0
25	9.5	8.3	8.8	---	---	---	9.4	8.1	8.7	10.5	9.6	9.9
26	9.0	8.1	8.6	---	---	---	9.3	7.6	8.4	10.8	9.9	10.3
27	9.3	8.4	8.7	---	---	---	9.4	7.6	8.3	10.9	10.1	10.4
28	9.2	8.3	8.7	---	---	---	9.4	7.3	8.1	11.2	10.1	10.6
29	9.1	8.0	8.5	---	---	---	9.5	7.0	7.9	11.3	10.3	10.6
30	8.9	7.7	8.4	---	---	---	9.4	7.0	7.9	11.3	10.0	10.5
31	---	---	---	---	---	---	9.4	6.9	7.9	---	---	---
MONTH	10.7	7.4	8.9	---	---	---	---	---	---	11.3	6.9	9.4

TURBIDITY (NTU), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

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

TURBIDITY (NTU), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
FEBRUARY			MARCH			APRIL			MAY			
1	1	1	1	2	1	1	2	1	2	4	1	3
2	2	1	1	3	1	2	2	1	2	3	1	2
3	2	1	1	4	3	3	2	1	1	2	1	1
4	4	2	4	4	2	3	1	1	1	2	1	1
5	5	3	4	3	2	2	1	1	1	2	1	1
6	4	2	3	3	2	2	2	1	1	2	1	1
7	2	2	2	3	2	2	3	2	2	1	1	1
8	3	2	2	2	2	2	2	1	2	4	1	1
9	2	1	1	2	2	2	6	1	1	2	1	1
10	2	1	1	2	1	2	3	1	1	1	1	1
11	2	1	1	3	1	1	15	1	3	1	1	1
12	2	1	1	2	1	1	3	2	3	2	1	1
13	2	1	1	2	1	1	2	2	2	2	1	1
14	1	1	1	2	1	1	2	1	2	2	1	1
15	2	1	1	2	1	1	2	1	1	21	2	10
16	1	1	1	2	1	1	2	1	1	26	13	19
17	1	1	1	3	1	2	2	1	2	13	6	8
18	1	1	1	10	3	7	3	1	2	6	3	4
19	2	1	1	8	6	7	3	2	2	4	2	3
20	2	1	1	7	4	4	2	2	2	6	2	2
21	1	1	1	4	3	3	2	1	1	3	1	2
22	1	1	1	3	1	3	2	1	1	3	1	2
23	3	1	1	2	1	1	3	1	1	2	1	2
24	2	1	1	2	1	1	2	1	1	2	1	2
25	2	1	2	3	1	2	2	1	1	2	1	2
26	2	1	1	3	2	2	2	1	1	3	1	1
27	2	1	1	32	1	2	3	1	1	2	1	1
28	2	1	1	49	13	24	2	1	1	2	1	1
29	---	---	---	14	6	9	2	1	1	1	1	1
30	---	---	---	7	3	5	2	1	1	2	1	1
31	---	---	---	3	2	3	---	---	---	3	1	2
MAX	5	3	4	49	13	24	15	2	3	26	13	19
MIN	1	1	1	2	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	12	1	2	66	<1	1	---	---	---	---	---	---
2	6	1	2	2	<1	<1	---	---	---	3	1	1
3	2	1	1	2	<1	1	---	---	---	4	1	1
4	3	1	2	2	<1	1	---	---	---	2	1	1
5	7	2	3	1	1	1	---	---	---	1	<1	1
6	7	3	3	2	1	2	---	---	---	1	<1	<1
7	6	2	3	5	2	2	---	---	---	1	<1	<1
8	4	1	2	10	2	6	1	<1	<1	1	<1	<1
9	4	1	2	17	6	10	1	<1	<1	1	<1	<1
10	3	2	2	10	2	4	3	<1	<1	2	<1	<1
11	3	2	2	16	1	5	2	<1	<1	1	<1	<1
12	2	1	2	22	1	5	2	<1	1	<1	<1	<1
13	2	<1	2	---	---	---	1	<1	1	1	<1	<1
14	1	<1	1	---	---	---	3	<1	1	<1	<1	<1
15	2	<1	1	---	---	---	1	<1	1	1	<1	<1
16	2	1	1	---	---	---	1	<1	1	1	<1	<1
17	2	1	2	---	---	---	2	1	1	1	<1	<1
18	4	2	3	---	---	---	2	1	1	2	<1	1
19	10	4	6	---	---	---	---	---	---	---	---	---
20	72	4	11	---	---	---	---	---	---	---	---	---
21	12	2	6	---	---	---	---	---	---	---	---	---
22	27	8	17	---	---	---	1	<1	<1	---	---	---
23	61	18	34	---	---	---	1	<1	<1	---	---	---
24	71	1	37	---	---	---	2	<1	<1	---	---	---
25	86	2	28	---	---	---	6	<1	<1	---	---	---
26	64	2	5	---	---	---	1	<1	<1	---	---	---
27	64	4	6	---	---	---	1	<1	1	3	<1	1
28	70	2	20	---	---	---	2	<1	1	4	<1	2
29	21	2	9	---	---	---	2	1	1	9	<1	2
30	42	<1	8	---	---	---	---	---	---	7	<1	2
31	---	---	---	---	---	---	3	1	1	---	---	---
MAX	86	18	37	---	---	---	---	---	---	---	---	---
MIN	1	<1	1	---	---	---	---	---	---	---	---	---

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.

WATER-DISCHARGE RECORDS

GAGE.--Water-stage recorder. Datum of gage is 828.33 ft above sea level.

AVERAGE DISCHARGE.--37 years (1955-89, 2001), 460 ft³/s, 35.28 in/yr, 333,000 acre-ft/yr.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 22, 23, 1953, reached a stage of 20.6 ft, from floodmark, discharge, 22,700 ft³/s, from rating curve extended above 5,900 ft³/s on basis of slope-area measurement at gage height 16.55 ft.

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 28	0230	*2,190	*6.42				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	39	194	142	150	140	462	400	87	44	29	16
2	16	39	142	130	162	293	430	359	90	42	26	15
3	16	41	115	124	212	308	406	315	101	40	24	14
4	16	38	94	122	435	275	385	279	93	39	24	14
5	16	39	80	120	402	283	388	248	105	38	24	13
6	16	39	70	118	349	263	551	222	113	37	23	13
7	15	39	64	110	289	247	624	201	88	35	22	14
8	14	141	59	117	245	240	560	184	78	34	22	14
9	18	238	55	139	219	279	551	171	72	34	21	14
10	33	150	54	135	196	297	530	158	71	33	20	13
11	34	92	52	117	192	273	890	146	70	35	19	12
12	33	70	62	104	170	245	869	136	81	34	19	12
13	27	59	110	128	157	223	670	126	70	32	18	13
14	24	63	408	178	149	206	533	138	63	31	18	13
15	23	65	568	178	145	199	470	513	59	30	18	15
16	22	57	448	150	149	262	475	1140	57	30	18	13
17	21	52	552	130	160	372	622	694	55	30	19	13
18	21	49	359	119	173	686	626	473	52	29	18	12
19	21	48	259	122	165	662	715	360	50	29	18	12
20	65	49	209	137	157	546	714	291	49	29	18	12
21	196	54	228	139	192	443	601	246	47	29	17	12
22	85	51	774	158	212	375	502	213	45	28	18	12
23	49	51	864	151	212	330	439	184	44	27	24	11
24	38	102	856	233	211	306	406	163	47	26	24	11
25	33	100	533	281	199	388	395	147	53	24	21	19
26	31	129	372	234	178	370	374	134	50	24	19	31
27	29	156	288	192	162	501	333	123	66	23	18	39
28	74	190	238	166	147	1760	319	115	56	23	17	28
29	88	234	203	170	---	1050	299	107	50	23	16	23
30	61	274	178	163	---	721	299	99	46	30	16	20
31	46	---	158	151	---	547	---	93	---	34	16	---
TOTAL	1197	2748	8646	4658	5789	13090	15438	8178	2008	976	624	473
MEAN	38.6	91.6	279	150	207	422	515	264	66.9	31.5	20.1	15.8
MAX	196	274	864	281	435	1760	890	1140	113	44	29	39
MIN	14	38	52	104	145	140	299	93	44	23	16	11
AC-FT	2370	5450	17150	9240	11480	25960	30620	16220	3980	1940	1240	938
CFSM	.22	.52	1.58	.85	1.17	2.39	2.91	1.49	.38	.18	.11	.09
IN.	.25	.58	1.82	.98	1.22	2.75	3.24	1.72	.42	.21	.13	.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1955 - 2001, BY WATER YEAR (WY)

MEAN	103	570	950	947	812	799	626	427	169	57.9	32.7	37.6
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	31.5	20.0	15.8
(WY)	1988	1977	1977	1977	1977	1978	1968	1987	1987	2001	1973	2001

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1955 - 2001
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ANNUAL TOTAL	143170		63825				
ANNUAL MEAN	391		175			460	
HIGHEST ANNUAL MEAN						805	1974
LOWEST ANNUAL MEAN						158	1977
HIGHEST DAILY MEAN	5640	Jan 14	1760	Mar 28	15200		Dec 22 1964
LOWEST DAILY MEAN	14	Oct 8	11	Sep 23	11		Sep 23 2001
ANNUAL SEVEN-DAY MINIMUM	15	Sep 24	12	Sep 18	12		Sep 18 2001
ANNUAL RUNOFF (AC-FT)	284000		126600		333000		
ANNUAL RUNOFF (CFSM)	2.21		.99		2.60		
ANNUAL RUNOFF (INCHES)	30.09		13.41		35.28		
10 PERCENT EXCEEDS	918		454		1100		
50 PERCENT EXCEEDS	158		102		213		
90 PERCENT EXCEEDS	20		17		25		

UMPQUA RIVER BASIN

353

14318000 LITTLE RIVER AT PEEL, OR

WATER-QUALITY RECORDS

LOCATION.--Lat 43°15'10", long 123°01'30", in NW 1/4 sec.2, T.27 S., R.3 W., Douglas County, Hydrologic Unit 17100301, on left bank 0.6 mi southeast of Peel, 0.9 mi downstream from Cavitt Creek, and at mile 6.3.

DRAINAGE AREA.--177 mi².

PERIOD OF RECORD.--

WATER TEMPERATURE: June 1999 to current year.

INSTRUMENTATION.--Temperature recorder since June 1999.

REMARKS.--Record excellent.

EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum 24.0°C July 31, 2000, Aug. 10, 2001: minimum, 0.5°C Nov. 19, 2000.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum 24.0°C Aug. 10: minimum, 0.5°C Nov. 19.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	16.5	14.5	15.4	8.6	7.3	7.8	5.8	4.7	5.1	4.6	4.1	4.4
2	16.3	14.8	15.5	9.5	8.2	8.8	6.1	4.9	5.5	5.2	4.3	4.7
3	14.8	12.6	13.4	10.2	9.3	9.8	6.0	5.4	5.7	5.3	4.3	4.7
4	12.6	10.7	11.6	10.0	8.9	9.5	5.4	4.7	4.9	5.8	5.0	5.4
5	11.7	9.9	10.9	8.9	7.9	8.3	4.9	4.4	4.7	6.5	5.5	6.0
6	11.9	9.9	11.0	9.1	8.2	8.6	4.4	3.3	3.9	6.2	5.2	5.9
7	12.2	10.2	11.3	8.3	6.7	7.2	3.8	2.6	3.3	5.2	4.3	4.7
8	12.2	10.4	11.4	8.2	6.9	7.6	4.6	3.3	3.8	6.3	5.2	5.8
9	11.6	10.5	11.0	6.9	5.9	6.3	5.7	4.5	5.2	6.1	4.7	5.1
10	11.1	10.8	10.9	5.9	5.0	5.3	5.9	5.0	5.6	4.8	4.2	4.5
11	11.4	10.6	11.0	5.3	4.3	4.9	5.0	4.2	4.5	4.5	4.0	4.2
12	11.1	10.4	10.7	4.3	3.3	3.9	5.1	4.4	4.8	4.7	4.3	4.5
13	12.1	10.7	11.3	4.0	3.0	3.5	5.6	5.0	5.2	4.9	4.4	4.7
14	12.8	12.0	12.3	4.7	3.9	4.3	6.2	5.6	5.9	5.0	4.6	4.8
15	13.2	12.3	12.6	5.1	4.2	4.7	6.4	6.0	6.2	5.0	4.3	4.7
16	12.3	10.8	11.5	4.4	2.8	3.6	6.6	5.7	6.2	4.3	2.5	3.4
17	11.2	10.2	10.8	2.8	1.9	2.3	6.5	4.9	5.9	2.7	1.7	2.3
18	11.9	10.8	11.3	2.2	1.3	1.7	4.9	3.9	4.3	3.6	2.5	3.0
19	12.6	11.2	11.9	2.1	.5	1.3	5.5	4.2	4.7	4.7	3.6	4.1
20	12.4	11.6	12.2	2.8	1.6	2.2	6.4	5.5	5.9	4.2	3.1	3.7
21	11.6	9.7	10.6	2.9	1.9	2.5	6.6	6.0	6.3	5.6	4.2	4.9
22	9.7	7.8	8.6	2.4	1.6	2.0	7.0	6.4	6.6	5.5	4.6	5.0
23	7.9	6.6	7.4	3.2	1.4	2.1	7.0	6.5	6.7	5.1	4.1	4.6
24	8.2	6.2	7.3	4.7	3.2	4.0	6.8	5.8	6.2	5.8	5.1	5.4
25	8.8	7.7	8.3	4.8	4.3	4.6	5.8	4.8	5.2	5.1	4.2	4.7
26	9.8	8.7	9.2	5.8	4.8	5.3	5.6	4.6	5.1	4.8	4.1	4.4
27	10.6	9.6	10.1	6.5	5.7	6.1	6.0	5.2	5.5	4.1	2.7	3.2
28	10.4	9.5	10.0	5.7	4.8	5.1	5.5	4.4	4.7	3.3	1.8	2.5
29	9.6	9.0	9.3	6.8	5.3	6.1	4.4	3.7	4.1	4.3	3.3	3.9
30	9.9	9.1	9.4	6.7	5.8	6.3	4.2	3.5	3.8	4.0	3.2	3.5
31	9.4	8.5	9.0	---	---	---	4.8	3.8	4.3	3.2	2.2	2.7
MONTH	16.5	6.2	10.9	10.2	.5	5.2	7.0	2.6	5.2	6.5	1.7	4.4

UMPQUA RIVER BASIN

14318000 LITTLE RIVER AT PEEL, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4.1	2.3	3.0	4.5	3.3	3.9	8.8	7.6	8.4	9.4	8.2	8.8
2	5.3	4.1	4.8	5.2	4.2	4.7	7.6	5.7	6.4	10.3	6.7	8.4
3	5.4	4.8	5.1	4.7	3.3	4.1	6.9	4.9	5.8	11.0	6.8	8.9
4	6.7	5.2	5.9	5.6	4.2	4.8	7.3	4.5	5.9	11.6	8.1	10.0
5	6.6	6.0	6.5	6.0	4.7	5.4	7.3	4.5	6.0	12.4	9.8	11.2
6	6.0	4.3	5.1	6.5	4.4	5.5	7.1	5.8	6.4	12.2	8.6	10.6
7	4.3	3.2	3.7	7.4	5.0	6.3	6.6	5.2	5.7	13.6	9.0	11.4
8	3.2	2.1	2.6	7.5	6.6	7.1	6.2	4.6	5.4	13.8	11.1	12.6
9	3.8	2.5	3.2	7.1	5.8	6.2	7.2	4.9	5.9	13.5	11.1	12.4
10	4.2	3.3	3.8	6.6	5.2	5.9	6.9	5.5	6.2	14.1	10.5	12.6
11	4.0	2.7	3.2	5.9	4.3	5.2	7.2	6.0	6.5	15.3	11.3	13.6
12	2.9	2.0	2.4	6.2	4.0	5.3	6.8	5.4	6.1	16.4	13.3	14.9
13	2.7	1.7	2.1	7.1	4.5	5.9	7.2	5.7	6.4	16.3	13.4	14.9
14	2.3	1.0	1.7	7.0	5.2	6.1	8.0	4.7	6.3	15.1	11.8	13.0
15	3.0	1.3	2.1	6.1	5.1	5.5	8.0	5.6	6.8	11.8	10.6	10.9
16	4.6	3.0	3.7	5.9	4.9	5.5	9.2	6.3	7.8	10.8	9.3	10.1
17	5.3	4.0	4.7	6.3	5.3	5.8	9.1	7.2	8.2	11.1	8.2	9.7
18	5.7	4.5	5.1	7.8	6.3	7.0	8.5	7.3	7.9	12.9	9.6	11.0
19	5.3	4.2	4.8	8.4	7.5	7.9	8.2	6.6	7.4	14.0	9.6	11.8
20	5.7	4.3	5.0	7.8	7.2	7.5	8.3	6.3	7.2	14.7	10.8	12.8
21	6.6	5.4	6.0	8.7	7.1	7.7	8.6	6.2	7.3	15.7	11.1	13.5
22	6.3	5.4	5.7	9.3	6.7	8.0	9.1	6.8	7.9	17.6	12.9	15.3
23	5.8	5.0	5.4	10.2	7.5	8.9	10.7	7.5	8.9	18.4	14.8	16.9
24	5.4	4.1	4.8	9.6	8.3	9.1	11.9	7.9	9.7	18.2	15.0	16.9
25	6.0	4.8	5.3	9.3	8.4	8.9	13.4	9.0	11.1	18.4	15.0	16.9
26	5.3	3.9	4.6	8.5	7.4	7.9	14.4	10.8	12.5	18.5	15.0	17.0
27	4.6	3.0	4.0	7.4	6.0	6.7	12.9	10.2	11.1	17.6	15.0	15.8
28	4.3	2.7	3.7	8.7	7.3	8.0	10.7	9.2	9.8	15.0	13.4	14.2
29	---	---	---	9.8	7.9	8.6	9.2	7.6	8.5	15.5	11.9	13.7
30	---	---	---	9.5	7.1	8.3	10.0	8.6	9.2	16.9	12.4	14.7
31	---	---	---	9.2	8.1	8.7	---	---	---	19.3	14.5	16.9
MONTH	6.7	1.0	4.2	10.2	3.3	6.7	14.4	4.5	7.6	19.3	6.7	12.9
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	18.5	14.2	16.2	20.0	16.2	18.0	20.7	18.1	19.5	20.4	17.9	19.3
2	14.2	12.6	13.4	20.8	16.9	19.0	21.3	18.6	20.1	20.8	18.1	19.4
3	13.8	11.8	12.8	21.2	17.9	19.7	20.9	19.4	20.2	20.2	17.8	19.

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.

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.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 372.97 ft above sea level (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 fair. 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.--58 years (water years 1909-13, 1924-29, 1955-2001), 3,726 ft³/s, 37.67 in/yr, 2,699,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 150,000 ft³/s Dec. 22, 1964, gage height, 34.2 ft, from floodmark; minimum discharge, 235 ft³/s Aug. 27, 1987, result of regulation at Winchester Dam 5.2 mi upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 29, 1950, reached a stage of 23.2 ft. from floodmark, at site 4.8 mi upstream at different datum, discharge, 88,000 ft³/s. Flood of Nov. 23, 1953, reached a stage of 28.4 ft. from floodmarks, present site and datum, discharge, 93,300 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 28	1130	*10,200	*6.99				
Minimum discharge, 636 ft ³ /s Sept. 7, 9.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	855	1160	1990	1850	1710	1590	3380	3320	1380	1070	816	664
2	857	1150	1700	1780	1710	1890	3140	3390	1380	1020	785	663
3	858	1140	1550	1730	1850	2240	2980	2750	1400	1000	769	656
4	847	1230	1460	1710	2590	2150	2790	2490	1410	974	765	653
5	850	1270	1360	1680	2940	2080	2730	2350	1390	944	763	642
6	853	1240	1300	1680	2600	2060	2930	2200	1450	917	753	638
7	851	1140	1260	1640	2300	2020	3500	2140	1380	885	745	636
8	844	1230	1230	1620	2110	1970	3350	2060	1310	875	745	637
9	896	2130	1200	1670	2000	2020	3240	2010	1270	863	742	636
10	943	1840	1190	1670	1920	2010	3030	1940	1240	858	718	641
11	976	1560	1190	1640	1930	1930	3530	1860	1230	871	712	670
12	959	1410	1230	1580	1900	1850	4240	1750	1260	952	705	680
13	938	1270	1340	1570	1790	1780	3740	1720	1290	941	695	670
14	920	1230	2840	1750	1740	1730	3200	1740	1210	877	700	687
15	916	1240	4830	1870	1700	1690	2880	3350	1180	861	713	684
16	943	1210	3920	1780	1660	1800	2760	8250	1160	856	717	703
17	950	1160	3700	1670	1660	1920	3020	6170	1130	860	720	709
18	951	1150	3070	1600	1680	3080	3320	4440	1090	856	718	697
19	946	1160	2290	1570	1660	4160	3760	3590	1070	852	713	692
20	1020	1150	2030	1650	1620	4020	3800	3030	1030	852	718	690
21	1670	1150	1960	1710	1650	3350	3530	2640	1010	854	720	693
22	1600	1140	4000	1780	1710	2830	3160	2430	995	854	733	691
23	1200	1130	6910	1810	1790	2450	2890	2180	999	838	752	690
24	1060	1210	5840	1930	1780	2370	2690	2020	997	818	755	690
25	1010	1460	4170	2230	1810	2650	2630	1920	1030	799	730	736
26	979	1470	2970	2150	1740	2840	2700	1830	1050	781	704	773
27	955	1560	2480	1960	1680	2780	2630	1530	1090	766	686	843
28	1050	1750	2280	1830	1630	7840	2630	1460	1140	760	680	831
29	1400	1670	2110	1800	---	6690	2660	1490	1100	763	677	784
30	1370	2030	2050	1830	---	4900	2440	1480	1090	803	675	766
31	1190	---	1950	1730	---	3890	---	1440	---	832	671	---
TOTAL	31657	40640	77400	54470	52860	86580	93280	80970	35761	27052	22495	20845
MEAN	1021	1355	2497	1757	1888	2793	3109	2612	1192	873	726	695
MAX	1670	2130	6910	2230	2940	7840	4240	8250	1450	1070	816	843
MIN	844	1130	1190	1570	1620	1590	2440	1440	995	760	671	636</

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 2001, BY WATER YEAR (WY)

MEAN	1363	4125	6312	6738	6248	5580	4812	3885	2458	1344	1001	987
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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1909 - 2001
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ANNUAL TOTAL	1238367		624010				
ANNUAL MEAN	3384		1710			3726	
HIGHEST ANNUAL MEAN						6116	1974
LOWEST ANNUAL MEAN						1639	1977
HIGHEST DAILY MEAN	35200	Jan 11	8250	May 16	117000		Dec 23 1964
LOWEST DAILY MEAN	843	Sep 25	636	Sep 7	549		Aug 22 1994
ANNUAL SEVEN-DAY MINIMUM	850	Sep 24	640	Sep 4	600		Oct 1 1908
ANNUAL RUNOFF (AC-FT)	2456000		1238000		2699000		
ANNUAL RUNOFF (CFSM)	2.52		1.27		2.77		
ANNUAL RUNOFF (INCHES)	34.28		17.27		37.67		
10 PERCENT EXCEEDS	6700		3070		7530		
50 PERCENT EXCEEDS	2120		1460		2430		
90 PERCENT EXCEEDS	945		715		893		

UMPQUA RIVER BASIN

14320700 CALAPOOYA CREEK NEAR OAKLAND, OR

LOCATION.--Lat 43°24'10", long 123°21'45", in NW 1/4 sec.13, T.25 S., R.6 W., Douglas County, Hydrologic Unit 17100303, near center of span on downstream side of highway bridge, 0.9 mi downstream from Williams Creek, 2.5 mi northwest of Sutherlin, 3.5 mi southwest of Oakland, and at mile 10.1

DRAINAGE AREA.--210 mi².

PERIOD OF RECORD.--October 1955 to September 1973, October 1986 to September 2001 (discontinued). Records for the years 1974-86 are available at the Douglas County Water Resources Dept. in Roseburg.

GAGE.--Water-stage recorder. Datum of gage is 371.26 ft above sea level. Prior to June 22, 1968, nonrecording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records fair. Diversion upstream from station for municipal supply of cities of Sutherlin and Oakland. Small diversions by pumping for irrigation upstream from station.

AVERAGE DISCHARGE.--33 years (water years 1956-73, 1987-2001), 449 ft³/s, 29.06 in/yr, 325,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,100 ft³/s Nov. 18, 1996, gage height, 21.62 ft; no flow Sept. 9-11, 1966, Sept. 8, 1988, all or part of several days in August 1994.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 22	1800	*1,350	*5.43				

Minimum discharge, 0.05 ft³/s Sept. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	7.6	51	124	188	140	358	282	46	26	16	2.0
2	2.6	6.1	34	112	181	301	333	256	47	24	12	1.6
3	2.8	6.4	23	102	211	337	340	221	53	21	9.7	1.4
4	3.3	6.2	18	94	366	314	333	191	56	19	9.4	.97
5	4.1	5.7	14	87	343	286	313	165	54	18	10	1.6
6	4.8	6.0	12	81	309	241	368	146	64	17	9.8	.56
7	5.0	5.8	9.7	78	271	212	477	132	54	15	8.7	.65
8	5.3	12	8.7	79	234	191	455	119	46	15	7.0	1.0
9	8.3	165	7.6	94	220	257	430	110	41	14	7.1	.83
10	11	95	7.1	109	196	291	382	101	41	13	6.6	.11
11	13	39	6.4	106	255	269	506	93	40	13	6.2	.46
12	8.7	21	6.8	94	280	237	519	86	48	14	6.5	.83
13	7.9	14	43	108	250	209	457	79	50	13	4.8	.57
14	7.0	12	538	199	223	184	389	82	42	12	5.3	.87
15	7.0	11	455	301	201	170	336	202	39	11	4.7	.57
16	6.7	9.0	426	255	187	180	301	396	36	11	3.8	.19
17	7.0	7.7	438	206	175	212	292	309	35	12	5.3	.52
18	7.2	6.6	326	175	192	270	302	227	32	12	7.1	1.7
19	6.1	5.8	237	163	166	290	583	175	31	11	7.3	.29
20	9.9	5.5	179	156	150	299	530	141	30	11	5.0	.80
21	47	5.4	165	161	153	280	430	120	27	12	4.4	.50
22	19	5.4	874	180	154	248	354	107	25	12	4.6	.07
23	7.8	5.3	972	167	187	215	302	91	25	11	8.8	.08
24	4.7	7.7	815	279	195	191	265	79	25	8.9	14	.09
25	3.5	11	546	381	186	217	236	71	27	7.5	14	.23
26	2.9	13	393	306	164	211	210	67	28	7.2	9.8	2.7
27	2.7	16	293	243	151	257	184	62	35	7.4	8.0	9.0
28	11	32	230	205	143	956	195	59	39	6.8	5.5	12
29	39	35	188	231	---	714	206	56	32	6.9	4.9	8.5
30	19	77	158	236	---	520	180	53	29	10	5.2	6.9
31	11	---	140	203	---	408	---	49	---	18	2.7	---
TOTAL	298.3	655.2	7614.3	5315	5931	9107	10566	4327	1177	409.7	234.2	57.59
MEAN	9.62	21.8	246	171	212	294	352	140	39.2	13.2	7.55	1.92
MAX	47	165	972	381	366	956	583	396	64	26	16	12
MIN	2.6	5.3	6.4	78	143	140	180	49	25	6.8	2.7	.07
AC-FT	592	1300	15100	10540	11760	18060	20960	8580	2330	813	465	114
CFSM	.05	.10	1.17	.82	1.01	1.40	1.68	.66	.19	.06	.04	.01
IN.	.05	.12	1.35	.94	1.05	1.61	1.87	.77	.21	.07	.04	.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1956 - 2001, BY WATER YEAR (WY)

	MEAN	59.0	467	1052	1167	905	802	485	306	112	27.6	10.9	12.9
MAX	329	1517	3856	2296	2229	1912	1342	960	595	73.1	41.9	35.0	
(WY)	1957	1997	1956	1956	1961	1961	1963	1998	1993	1993	1993	1971	
MIN	6.48	21.8	104	120	212	142	164	58.0	19.9	9.05	1.59	1.92	
(WY)	1988	2001	1990	1963	2001	1992	1987	1966	1992	1973	1994	2001	

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1956 - 2001

ANNUAL TOTAL	133150.7	45692.29	
ANNUAL MEAN	364	125	
HIGHEST ANNUAL MEAN			449
LOWEST ANNUAL MEAN			905
HIGHEST DAILY MEAN	6620	Jan 14	15200
LOWEST DAILY MEAN	1.8	Sep 28	125
ANNUAL SEVEN-DAY MINIMUM	2.3	Sep 24	125
ANNUAL RUNOFF (AC-FT)	264100	90630	325400
ANNUAL RUNOFF (CFSM)	1.73	.60	2.14
ANNUAL RUNOFF (INCHES)	23.59	8.09	29.06
10 PERCENT EXCEEDS	944	329	1170
50 PERCENT EXCEEDS	84	46	144
90 PERCENT EXCEEDS	3.8	4.3	8.2

UMPQUA RIVER BASIN

357

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 mi².

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 sea level. 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.--96 years (water years 1906-2001), 7,404 ft³/s, 27.31 in/yr, 5,364,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 265,000 ft³/s Dec. 23, 1964, gage height, 51.95 ft, from floodmarks; minimum discharge observed, 640 ft³/s July 18, 1926.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least December 1861, 51.95 ft on Dec. 23, 1964.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 52,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 29	0700	*14,200	*9.54				

Minimum recorded discharge, 891 ft³/s Sept. 11, but may have been less during period of estimated discharge Sept. 8-10.

 DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1190	1740	2890	2860	2810	2570	6410	e4700	1810	1410	1030	930
2	1180	1600	3190	2660	2680	2550	5680	4950	1750	1360	1040	917
3	1190	1540	2570	2510	2640	3280	5290	4550	1740	1310	1020	914
4	1200	1480	2190	2390	3010	3830	5080	3910	1750	1260	1020	917
5	1190	1520	1970	2330	4360	3800	4760	3540	1780	1220	1020	908
6	1190	1570	1830	2270	4830	3590	4630	3290	1770	1180	1000	905
7	1200	1550	1740	2240	4330	3510	5210	3070	1810	1160	994	901
8	1200	1520	1670	2200	3830	3360	5920	2940	1760	1120	977	e900
9	1240	1690	1630	2190	3420	3240	5810	2790	1680	1100	969	e900
10	1300	2690	1600	2270	3170	3400	5600	2690	1600	1100	962	e900
11	1320	2430	1580	2300	3080	3370	e6000	2600	1570	1090	946	899
12	1340	2120	1580	2360	3230	3200	e7000	2480	1560	1090	938	912
13	1340	1860	1700	2320	3110	2970	e6500	2350	1560	1090	935	932
14	1320	1700	2400	2340	2890	2790	e6000	2330	1590	1170	922	931
15	1320	1640	5230	2670	2740	2640	e5500	2550	1530	1100	916	937
16	1300	1620	7480	2920	2630	2570	4990	6350	1490	1070	922	940
17	1290	1640	6200	2790	2550	2750	4750	10900	1450	1070	926	940
18	1310	1610	6150	2570	2560	3170	5160	7740	1420	1070	928	e930
19	1300	1570	5040	2400	2600	5480	5740	5950	1380	1070	922	e920
20	1330	1550	3890	2300	2920	e5700	6390	4860	1340	1060	923	e920
21	1420	1520	3260	2380	2900	e5000	6200	4120	1310	1050	929	e930
22	1930	1500	3910	2440	2820	e4500	5710	3600	1270	1060	949	936
23	1940	1500	10700	2540	2960	e3500	5150	3240	1250	1060	960	934
24	1750	1510	10900	2550	3260	e3000	4670	2870	1250	1060	966	941
25	1540	1550	9070	3000	3230	e3300	4330	2670	1240	1040	973	963
26	1450	1740	6690	3560	3150	e3500	4230	2490	1270	1020	969	987
27	1390	1840	5130	3420	2910	e3500	4190	2340	1360	e1000	954	1020
28	1390	1940	4330	3030	2710	e8000	4150	2070	1390	e950	942	1060
29	1480	2200	3770	2800	---	13000	4110	1970	1430	e950	935	1090
30	1750	2280	3350	2850	---	9960	e4000	1910	1410	e1000	941	1080
31	1890	---	3110	2870	---	7730	---	1870	---	1010	938	---
TOTAL	43180	52220	126750	80330	87330	132760	159160	113690	45520	34300	29766	28294
MEAN	1393	1741	4089	2591	3119	4283	5305	3667	1517	1106	960	943
MAX	1940	2690	10900	3560	4830	13000	7000	10900	1810	1410	1040	1090
MIN	1180	1480	1580	2190	2550	2550	4000	1870	1240	950	916	899
AC-FT	85650	103600	251400	159300	173200	263300	315700	225500	90290	68030	59040	56120
CFSM	.38	.47	1.11	.70	.85	1.16	1.44	1.00	.41	.30	.26	.26
IN.	.44	.53	1.28	.81	.88	1.34	1.61	1.15	.46	.35	.30	.29

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1906 - 2001, BY WATER YEAR (WY)

	1875	7054	13390	15840	15020	12180	9525	6529	3747	1728	1180	1199
MEAN	1875	7054	13390	15840	15020	12180	9525	6529	3747	1728	1180	1199
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1906 - 2001

ANNUAL TOTAL	2261290	933300	7404
ANNUAL MEAN	6178	2557	13360
HIGHEST ANNUAL MEAN			2321
LOWEST ANNUAL MEAN			1977
HIGHEST DAILY MEAN	70000	13000	260000
LOWEST DAILY MEAN	1170	899	663
ANNUAL SEVEN-DAY MINIMUM	1180	902	663
ANNUAL RUNOFF (AC-FT)	4485000	1851000	5364000
ANNUAL RUNOFF (CFSM)	1.68	.69	2.01
ANNUAL RUNOFF (INCHES)	22.84	9.43	27.31
10 PERCENT EXCEEDS	14300	5140	17100
50 PERCENT EXCEEDS	3100	1870	3910
90 PERCENT EXCEEDS	1250	941	1060

e Estimated

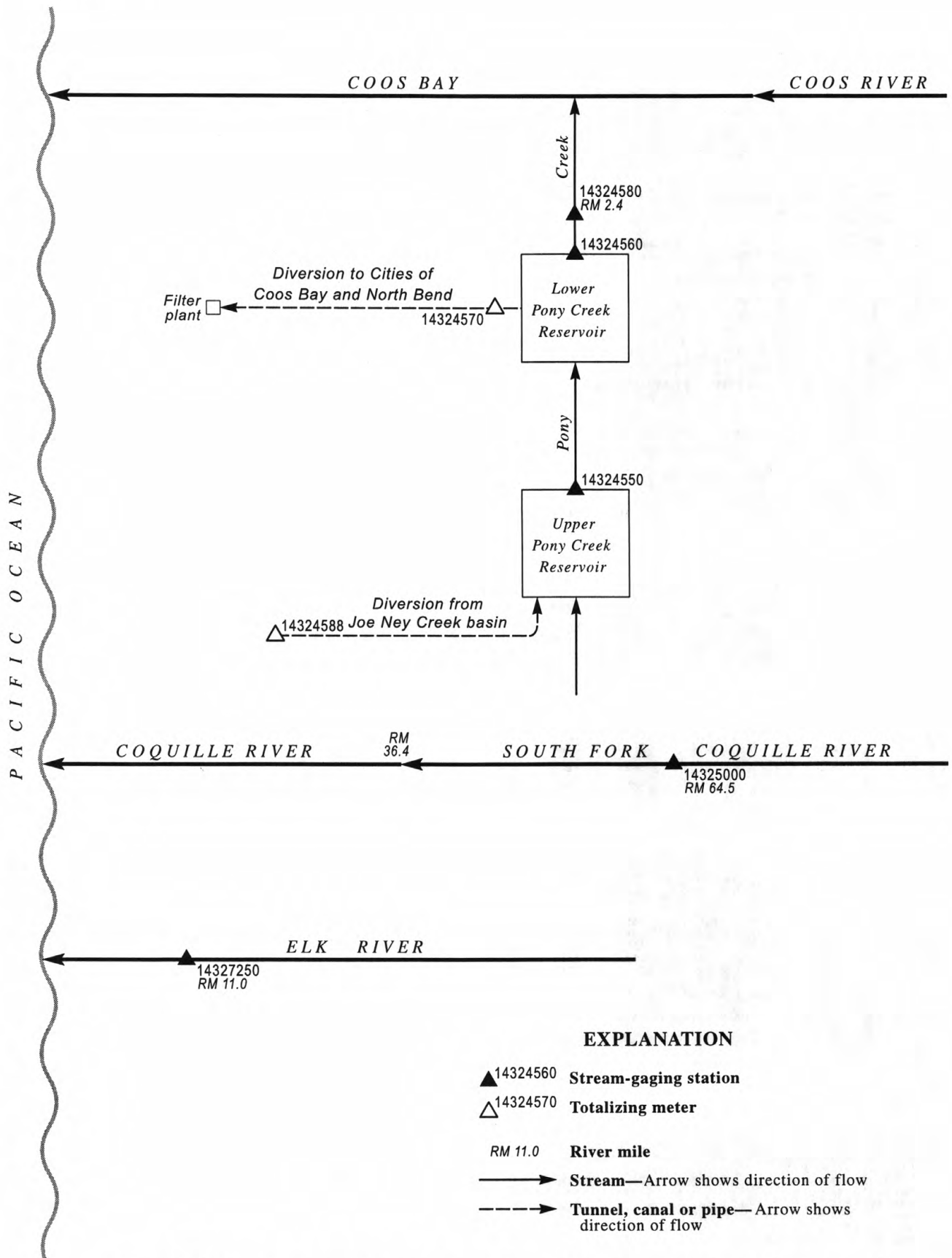


Figure 32. Schematic diagram showing gaging stations and diversions in the Pony Creek Basin.

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 mi².

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

REVISED RECORDS.--WDR OR-93-1: Drainage Area.

GAGE.--Water-stage recorder. Datum of gage is North American Vertical Datum 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 sea level. Oct. 1, 1992 to July 19, 2001 at same site at datum 2.9 ft higher.

REMARKS.--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 ft³/s is diverted to the Coos Bay-North Bend water treatment plant, maximum capacity, 10.8 ft³/s.

COOPERATION.--Data for diversion from Joe Ney Creek into Pony Creek (14324590), and diversion from Lower Pony Creek Reservoir to City of Coos Bay (14324570) provided by Coos Bay-North Bend Water Board.

AVERAGE DISCHARGE.--26 years (water years 1976-2001), 10.22 ft³/s, 35.59 in/yr, 7,400 acre-ft/yr, adjusted for Joe Ney diversion into Pony Creek, Coos Bay-North Bend diversion, and change in contents in Upper and Lower Pony Creek Reservoirs.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 181 ft³/s Dec. 6, 1981, gage height, 6.19 ft; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.07 ft³/s June 29, gage height, 38.00 ft; minimum discharge, no flow many days during year.

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 2000 TO SEPTEMBER 2001

	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.....	0	0	303.3	-41.7	-93.0	168.6	0.81
November.....	0	0	287.3	-9.9	-81.0	196.4	0.94
December.....	0	0	304.6	+14.0	+297.0	615.6	2.96
CAL YR 2000...	0	3,902.0	3,984.0	-67.5	-942.0	6,876.5	33.05
January.....	0	0	294.1	+20.2	+148.0	462.3	2.22
February.....	337.6	0	268.3	-7.2	+484.0	1,082.7	5.21
March.....	288.9	0	291.0	-26.3	+320.0	873.6	4.20
April.....	45.0	0	296.5	+22.3	+97.0	460.8	2.22
May.....	143.6	0	357.9	+9.7	+41.0	552.2	2.66
June.....	206.9	0	386.3	+28.3	-71.0	550.5	2.65
July.....	18.6	0	441.8	-20.7	-360.0	79.7	0.38
August.....	0	0	440.2	+15.8	-433.0	23.0	0.11
September.....	0.110	0	386.9	-45.5	-319.0	22.5	0.11
WTR YR 2001...	1040.7	0	4,058.2	-41.0	+30.0	5,087.9	24.47

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

CAL YR 2000 TOTAL 1967.22 MEAN 5.37 MAX 92 MIN .00 AC-FT 3900
WTR YR 2001 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00

COQUILLE RIVER BASIN

14325000 SOUTH FORK COQUILLE RIVER AT POWERS, OR

LOCATION.--Lat 42°53'30", long 124°04'10", in SE 1/4 sec.12, T.31 S., R.12 W., Coos County, Hydrologic Unit 17100305, on left bank 0.6 mi downstream from highway bridge at Powers, 0.9 mi upstream from Woodward Creek, and at mile 64.5.

DRAINAGE AREA.--169 mi².

PERIOD OF RECORD.--September 1916 to September 1926, 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 sea level. 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.--Records good except for estimated daily discharges, which are fair. No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--82 years (water years 1917-26, 1930-2001), 782 ft³/s, 62.87 in/yr, 566,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,900 ft³/s Dec. 22, 1964, gage height, 26.51 ft, from floodmarks, from rating curve extended above 19,000 ft³/s on basis of contracted-opening measurement at gage height 18.14 ft and slope-area measurement of peak flow; minimum discharge, 6.4 ft³/s Oct. 10-12, 1995.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,300 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 22	1330	*3,670	*5.98				
Minimum discharge, 15 ft ³ /s Oct. 6-9.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	167	742	e550	333	373	401	357	105	63	37	28
2	17	134	502	e450	313	480	456	321	108	59	36	27
3	17	121	382	e400	343	429	540	289	113	56	34	27
4	17	102	305	e350	357	456	526	259	109	54	35	28
5	16	94	253	e300	359	495	495	239	103	52	35	28
6	15	89	215	e250	349	442	520	218	100	51	35	28
7	15	86	e160	e250	326	402	566	198	93	49	34	27
8	15	109	e150	e300	293	380	560	181	88	49	34	27
9	19	338	e150	340	277	428	557	168	85	46	34	27
10	42	362	e160	732	280	458	536	157	85	46	33	26
11	49	248	e160	543	390	437	597	149	81	45	32	27
12	45	184	e170	438	356	404	633	140	81	49	32	26
13	33	159	e1400	411	316	371	610	133	78	47	31	26
14	30	216	e2800	439	288	342	555	143	74	45	32	26
15	27	253	e2500	440	268	314	504	698	72	43	32	25
16	25	210	e1300	408	281	311	482	836	69	42	32	24
17	23	181	e900	371	311	331	753	569	68	42	32	24
18	23	160	e800	340	751	358	676	438	65	41	31	24
19	24	138	e750	312	736	361	704	362	64	40	30	23
20	43	128	e700	286	620	356	637	304	61	40	29	23
21	202	123	e800	293	802	334	588	257	59	39	29	22
22	99	118	2800	295	1010	303	524	224	58	38	31	23
23	59	117	2260	265	844	274	471	195	58	37	52	22
24	43	167	1750	263	711	266	425	173	58	36	55	22
25	35	159	1210	264	610	489	387	159	58	36	39	22
26	32	161	1100	261	522	539	353	147	61	35	34	23
27	30	160	e1000	234	458	465	319	137	115	34	32	25
28	241	166	e800	215	408	582	388	130	94	33	30	26
29	634	745	e700	415	---	558	386	125	80	33	29	25
30	471	1230	e650	429	---	490	342	116	70	37	28	23
31	258	---	e600	369	---	434	---	109	---	39	28	---
TOTAL	2616	6625	28169	11213	12912	12662	15491	7931	2413	1356	1047	754
MEAN	84.4	221	909	362	461	408	516	256	80.4	43.7	33.8	25.1
MAX	634	1230	2800	732	1010	582	753	836	115	63	55	28
MIN	15	86	150	215	268	266	319	109	58	33	28	22
AC-FT	5190	13140	55870	22240	25610	25120	30730	15730	4790	2690	2080	1500
CFSM	.50	1.31	5.38	2.14	2.73	2.42	3.06	1.51	.48	.26	.20	.15
IN.	.58	1.46	6.20	2.47	2.84	2.79	3.41	1.75	.53	.30	.23	.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1917 - 2001, BY WATER YEAR (WY)

	201	1023	1707	1809	1657	1319	917	458	174	61.3	34.7	45.2
MEAN	201	1023	1707	1809	1657	1319	917	458	174	61.3	34.7	45.2
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 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1917 - 2001	
ANNUAL TOTAL	241193		103189		782	
ANNUAL MEAN	659		283		1374	1974
HIGHEST ANNUAL MEAN					237	1977
LOWEST ANNUAL MEAN					34900	Dec 22 1964
HIGHEST DAILY MEAN	9860	Jan 14	2800	Dec 14	7.2	Oct 10 1994
LOWEST DAILY MEAN	15	Oct 6	15	Oct 6	7.3	Oct 7 1994
ANNUAL SEVEN-DAY MINIMUM	16	Oct 2	16	Oct 2		
ANNUAL RUNOFF (AC-FT)	478400		204700		566600	
ANNUAL RUNOFF (CFSM)	3.90		1.67		4.63	
ANNUAL RUNOFF (INCHES)	53.09		22.71		62.87	
10 PERCENT EXCEEDS	1770		625		2000	
50 PERCENT EXCEEDS	225		166		263	
90 PERCENT EXCEEDS	24		27		26	

e Estimated

14327250 ELK RIVER ABOVE ANVIL CREEK, NEAR PORT ORFORD, OR

LOCATION.--Lat 42°44'07", long 124°24'01", in SW 1/4 NE 1/4 sec.7, T.33 S., R.14 W., Curry County, Hydrologic Unit 17100306, on left bank, 0.6 mi upstream from Anvil Creek, 5.0 mi east of Port Orford, and at mile 13.6.

DRAINAGE AREA.--70.7 mi², at cableway 0.6 mi downstream where all discharge measurements are made.

PERIOD OF RECORD.--October 1993 to September 2001 (discontinued). Operated by Oregon Water Resources Department January 1977 to September 1993.

GAGE.--Water-stage recorder. Elevation of gage is 160 ft above sea level, from topographic map. Oct. 1, 1993 to Sept. 12, 1995 at site 0.7 mi downstream at different datum. Prior to Oct. 1, 1993 gage operated by Oregon Water Resources Department at several different sites both above and below Anvil Creek.

REMARKS.--No estimated daily discharges. Records good.

AVERAGE DISCHARGE.--8 years (water years 1994-2001), 539 ft³/s, 103.61 in/yr, 390,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,900 ft³/s Nov. 18, 1996, gage height 22.58 ft; minimum discharge, 18 ft³/s Sept. 26, 1994.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 14	2030	*2,720	*9.21				
Minimum discharge, 39 ft ³ /s Sept. 23, 24.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	129	376	278	261	268	276	351	134	84	57	48
2	43	110	274	255	246	307	277	297	132	81	56	47
3	41	93	218	236	234	268	265	265	129	79	55	47
4	40	85	186	219	223	286	252	241	123	76	56	47
5	41	79	163	209	214	277	242	224	130	75	55	47
6	43	75	148	197	205	259	276	209	123	74	54	46
7	41	67	135	191	197	243	288	197	114	73	53	45
8	39	75	124	244	186	233	289	186	109	71	52	45
9	58	125	115	272	201	232	285	178	108	70	52	45
10	59	137	107	497	249	222	283	170	104	70	52	45
11	52	110	116	367	303	210	364	164	106	69	51	45
12	49	93	133	302	279	200	352	158	110	69	51	45
13	46	92	724	286	261	191	322	153	102	67	51	44
14	45	318	1750	292	247	183	291	254	98	66	50	44
15	43	251	1540	281	241	183	267	1180	95	65	50	44
16	42	182	905	266	252	179	271	1180	93	64	49	43
17	42	148	774	249	266	181	353	701	91	64	49	43
18	52	124	605	232	383	189	316	479	89	63	48	43
19	46	106	475	225	361	226	299	369	87	62	48	43
20	136	96	389	211	330	227	294	304	85	62	47	42
21	124	90	450	250	513	209	286	263	84	61	49	42
22	72	84	1730	232	690	194	268	233	82	60	60	42
23	59	116	1550	225	550	183	251	209	81	60	111	42
24	53	130	1200	229	457	210	236	193	83	59	67	42
25	49	117	897	243	388	462	222	181	83	58	58	42
26	47	121	687	238	337	471	210	172	103	57	55	47
27	45	148	544	224	302	401	204	163	136	56	52	46
28	200	151	450	216	276	451	248	158	102	56	51	43
29	370	441	387	323	---	399	227	152	93	57	50	43
30	365	586	342	312	---	345	291	145	88	65	49	42
31	183	---	307	287	---	304	---	140	---	59	48	---
TOTAL	2568	4479	17801	8088	8652	8193	8305	9269	3097	2052	1686	1329
MEAN	82.8	149	574	261	309	264	277	299	103	66.2	54.4	44.3
MAX	370	586	1750	497	690	471	364	1180	136	84	111	48
MIN	39	67	107	191	186	179	204	140	81	56	47	42
AC-FT	5090	8880	35310	16040	17160	16250	16470	18390	6140	4070	3340	2640
CFSM	1.17	2.11	8.12	3.69	4.37	3.74	3.92	4.23	1.46	.94	.77	.63
IN.	1.35	2.36	9.37	4.26	4.55	4.31	4.37	4.88	1.63	1.08	.89	.70

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2001, BY WATER YEAR (WY)

	1994	1995	1996	1997	1998	1999	2000	2001	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	141	687	1201	1275	1173	747	542	355	185	87.8	55.6	55.8				
MAX	509	1580	2782	2151	1931	1146	1092	520	310	137	68.1	134				
(WY)	1998	1997	1997	1995	1996	1995	1996	1995	1995	1995	1995	1997				
MIN	44.6	47.5	289	261	309	264	226	217	103	66.2	45.5	35.8				
(WY)	1994	1994	2000	2001	2001	2001	2000	1997	2001	2001	1994	1994				

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1994 - 2001
ANNUAL TOTAL	147116	75519	
ANNUAL MEAN	402	207	539
HIGHEST ANNUAL MEAN			759
LOWEST ANNUAL MEAN			207
HIGHEST DAILY MEAN	3500	Jan 14	1750
LOWEST DAILY MEAN	39	Oct 8	39
ANNUAL SEVEN-DAY MINIMUM	41	Oct 2	41
ANNUAL RUNOFF (AC-FT)	291800	149800	390600
ANNUAL RUNOFF (CFSM)	5.69	2.93	7.63
ANNUAL RUNOFF (INCHES)	77.41	39.74	103.61
10 PERCENT EXCEEDS	1060	372	1360
50 PERCENT EXCEEDS	194	151	240
90 PERCENT EXCEEDS	48	46	44

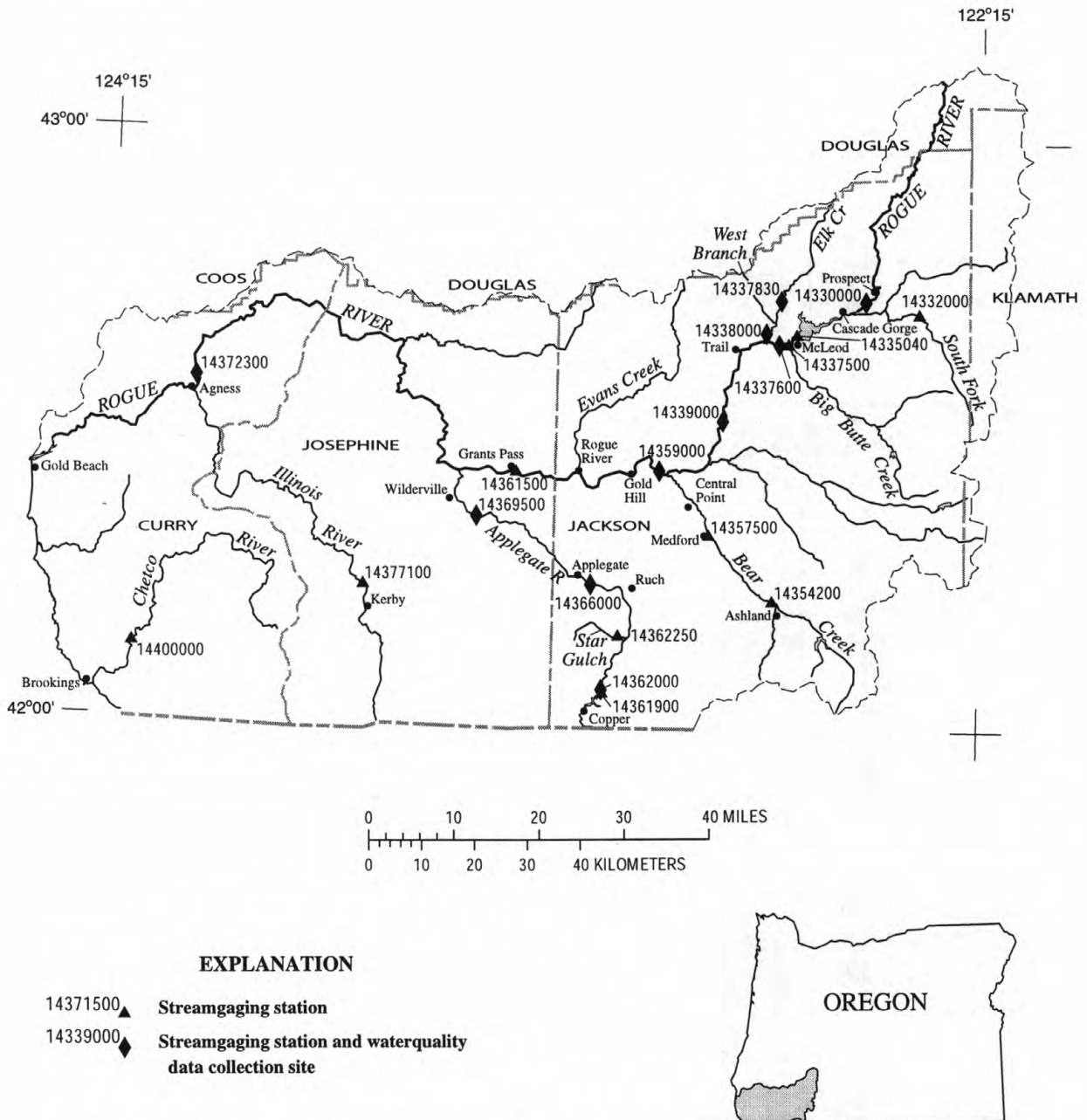


Figure 33. Location of surface-water and water-quality stations in the Rogue and Chetco River Basins.

14330000 ROGUE RIVER BELOW PROSPECT, OR

LOCATION.--Lat 42°43'50", log 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 mi².

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 sea level (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 good. Fluctuations caused by powerplant 600 ft upstream from station. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--33 years, (water years 1969-2001), 1,471 ft³/s, 1,066,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,200 ft³/s Jan. 1, 1997, gage height, 8.15 ft; minimum discharge, 166 ft³/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 ft³/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, 2,290 ft³/s Mar. 28, gage height 3.34 ft; minimum discharge, 227 ft³/s July 23, result of regulation by upstream diversion gates.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	898	950	1040	989	907	944	1680	1470	1010	825	694	516
2	930	972	1010	993	927	975	1400	1370	1000	810	687	517
3	927	967	990	1000	974	930	1180	1320	1010	803	680	513
4	931	948	976	1010	1110	940	1170	1370	993	789	681	512
5	929	942	964	1020	1090	938	1210	1410	1030	784	676	514
6	927	943	963	1020	1060	942	1360	1350	1030	775	669	509
7	925	938	954	1020	1020	989	1290	1260	980	763	670	511
8	921	1040	947	1020	982	1060	1270	1380	958	760	672	509
9	940	1040	950	1030	1000	1060	1090	1290	944	734	679	508
10	989	976	947	1020	981	1030	1070	1330	933	719	675	504
11	995	951	943	1000	969	1010	1100	1320	932	729	671	503
12	960	945	951	986	921	889	1090	1350	975	755	665	499
13	935	939	976	989	914	885	1090	1330	929	740	668	518
14	928	952	1010	980	916	920	1160	1320	909	734	665	513
15	924	940	1060	955	914	917	1160	1830	894	730	661	519
16	879	927	1010	917	916	1020	1060	1940	883	727	658	522
17	855	913	1030	919	909	1030	1180	1630	873	723	657	514
18	871	921	978	955	934	1180	1250	1480	863	722	652	517
19	914	920	980	954	918	1250	1230	1410	857	721	653	560
20	986	926	972	934	921	1270	1300	1380	851	717	649	616
21	1150	928	990	940	947	1190	1290	1330	841	713	600	615
22	973	902	1110	947	982	1340	1290	1290	829	706	531	614
23	932	895	1130	945	972	1480	1190	1250	822	694	557	613
24	937	958	1110	986	963	1530	1240	1210	822	719	551	608
25	917	923	1040	974	957	1730	1310	1170	839	702	537	646
26	939	939	1020	955	950	1480	1450	1140	862	693	527	701
27	940	1040	1000	940	946	1380	1570	1120	979	690	526	679
28	1020	1030	974	926	939	1910	1600	1100	936	688	523	645
29	1040	1110	999	955	---	1730	1480	1070	873	690	526	642
30	990	1110	1000	922	---	1730	1270	1040	840	728	519	643
31	957	---	994	906	---	1660	---	1030	---	713	521	---
TOTAL	29359	28885	31018	30107	26939	37339	38030	41290	27497	22796	19300	16800
MEAN	947	963	1001	971	962	1204	1268	1332	917	735	623	560
MAX	1150	1110	1130	1030	1110	1910	1680	1940	1030	825	694	701
MIN	855	895	943	906	907	885	1060	1030	822	688	519	499
AC-FT	58230	57290	61520	59720	53430	74060	75430	81900	54540	45220	38280	33320

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2001, BY WATER YEAR (WY)

MEAN	958	1241	1569	1692	1683	1826	1886	2036	1633	1192	1009	944
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	728	926	946	946	1045	1268	933	765	717	623	560
(WY)	1993	1995	1991	1977	1977	1977	2001	1992	1992	1992	2001	2001

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1969 - 2001
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ANNUAL TOTAL	537909		349360						
ANNUAL MEAN	1470		957				1471		
HIGHEST ANNUAL MEAN							2053		1974
LOWEST ANNUAL MEAN							957		2001
HIGHEST DAILY MEAN	3070	Apr 18	1940	May 16			10500	Jan 1	1997
LOWEST DAILY MEAN	855	Oct 17	499	Sep 12			499	Sep 12	2001
ANNUAL SEVEN-DAY MINIMUM	901	Oct 13	506	Sep 6			506	Sep 6	2001
ANNUAL RUNOFF (AC-FT)	1067000		693000				1066000		
10 PERCENT EXCEEDS	2230		1310				2280		
50 PERCENT EXCEEDS	1250		947				1300		
90 PERCENT EXCEEDS	940		643				839		

ROGUE RIVER BASIN

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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.--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, 15.9°C July 5; minimum, 0.6°C Feb. 13.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	9.8	8.0	8.8	5.4	4.1	4.7	3.8	3.0	3.4	3.8	2.4	2.9
2	9.2	7.7	8.5	6.4	4.9	5.6	4.2	3.0	3.6	3.9	2.9	3.3
3	8.1	6.6	7.4	6.8	5.8	6.2	4.2	3.3	3.8	3.6	3.0	3.3
4	7.7	5.9	6.8	6.0	4.9	5.5	3.9	3.1	3.5	4.1	3.2	3.7
5	7.9	6.1	6.9	5.5	4.5	5.0	3.6	2.8	3.3	4.3	3.4	3.9
6	8.2	6.3	7.1	5.8	4.8	5.2	3.7	2.7	3.2	4.0	3.1	3.6
7	8.3	6.5	7.4	5.1	4.1	4.6	3.6	2.7	3.2	3.8	2.9	3.4
8	8.2	6.6	7.4	5.4	4.6	4.9	4.0	2.8	3.3	4.5	3.6	4.0
9	7.4	6.8	7.1	5.1	3.7	4.4	4.7	3.9	4.3	4.2	3.2	3.7
10	7.2	6.6	6.8	4.0	2.8	3.4	4.4	3.2	4.0	3.6	2.7	3.0
11	7.2	6.4	6.8	3.2	2.2	2.6	3.5	2.7	3.1	3.7	2.7	3.2
12	7.2	6.3	6.8	3.0	1.9	2.5	3.2	2.4	2.9	3.8	3.0	3.4
13	7.8	6.7	7.2	3.2	2.0	2.7	3.2	1.9	2.9	3.4	2.7	3.0
14	7.7	6.4	7.2	3.1	2.1	2.7	2.5	1.8	2.1	3.3	2.5	2.9
15	7.2	5.9	6.5	3.9	2.7	3.3	2.9	2.0	2.4	3.1	2.3	2.8
16	7.0	5.4	6.2	3.4	2.4	3.0	3.5	2.3	2.8	2.3	1.3	1.7
17	6.8	5.3	6.1	2.8	1.7	2.3	3.4	2.5	3.0	1.7	1.1	1.4
18	7.2	5.9	6.5	2.5	1.6	2.1	2.6	1.8	2.3	2.3	1.3	1.8
19	7.7	6.1	6.9	2.9	1.7	2.3	3.1	2.0	2.6	3.5	2.2	2.8
20	7.3	6.4	6.9	3.4	2.2	2.8	4.0	2.8	3.5	3.2	2.3	2.8
21	7.1	6.0	6.6	3.6	2.6	3.1	4.1	3.4	3.8	3.8	3.0	3.3
22	6.4	4.8	5.5	3.3	2.6	3.0	4.0	3.3	3.7	4.1	3.1	3.6
23	5.7	4.1	4.9	3.4	2.4	2.9	3.7	2.8	3.3	3.8	3.1	3.4
24	6.1	4.4	5.2	4.1	2.9	3.5	3.6	2.9	3.3	3.8	3.1	3.4
25	6.3	5.4	5.8	4.1	3.2	3.7	3.2	2.5	2.9	3.3	2.6	3.0
26	7.0	5.5	6.2	4.5	3.5	4.0	3.3	2.3	2.8	3.1	2.3	2.7
27	6.4	5.1	5.9	4.8	3.9	4.3	3.6	2.7	3.2	2.5	1.6	2.1
28	6.6	5.8	6.2	4.4	3.5	4.0	3.3	2.5	2.9	2.3	1.3	1.8
29	6.2	5.3	5.8	4.5	3.8	4.1	3.2	2.3	2.8	2.9	2.0	2.3
30	6.1	5.2	5.7	4.4	3.5	4.0	3.0	2.2	2.7	2.6	1.6	2.1
31	5.5	4.4	5.0	---	---	---	3.6	2.4	2.8	2.3	1.4	1.9
MONTH	9.8	4.1	6.6	6.8	1.6	3.7	4.7	1.8	3.1	4.5	1.1	2.9

ROGUE RIVER BASIN

14330000 ROGUE RIVER BELOW PROSPECT, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	2.9	1.6	2.2	3.4	2.3	2.9	6.1	5.1	5.5	7.0	5.6	6.1
2	3.6	2.7	3.1	3.2	2.2	2.7	5.2	3.1	4.1	7.4	4.8	6.0
3	4.0	3.2	3.6	2.9	1.6	2.3	3.9	2.8	3.3	8.2	5.4	6.7
4	4.4	3.1	3.8	3.3	2.3	2.7	4.4	2.7	3.5	9.0	6.4	7.6
5	4.3	3.4	3.9	4.2	2.9	3.5	4.9	2.9	3.9	9.5	7.2	8.2
6	3.8	2.8	3.4	5.0	3.0	3.9	4.4	3.2	3.7	9.1	6.8	7.9
7	2.9	1.7	2.3	5.4	3.5	4.4	4.3	2.7	3.3	10.4	7.0	8.6
8	1.9	1.0	1.4	5.4	4.2	4.8	4.1	2.6	3.4	10.3	8.0	8.9
9	2.1	1.2	1.6	4.8	3.8	4.3	4.6	2.5	3.6	10.2	7.6	8.9
10	3.2	1.8	2.5	4.4	2.8	3.6	4.7	3.3	4.0	10.6	7.5	8.9
11	2.9	2.1	2.5	4.7	2.9	3.7	4.5	3.4	3.9	11.4	8.1	9.6
12	2.2	1.1	1.7	4.8	2.9	3.9	4.4	3.0	3.7	12.0	9.2	10.4
13	1.8	.6	1.3	5.2	3.5	4.3	4.8	3.7	4.2	11.4	9.0	10.1
14	2.2	.9	1.5	4.9	3.3	4.1	5.5	3.2	4.3	10.2	7.9	8.9
15	2.8	1.2	1.9	4.2	3.3	3.8	5.4	3.7	4.6	8.0	7.1	7.5
16	3.5	2.3	2.9	4.1	2.8	3.5	6.2	4.1	5.1	8.5	6.8	7.6
17	3.9	2.9	3.4	4.0	3.0	3.6	7.3	5.3	6.2	9.3	7.2	8.2
18	4.2	3.4	3.8	5.1	3.6	4.4	6.5	5.2	6.0	10.6	7.9	9.0
19	4.3	3.0	3.7	5.7	4.7	5.2	6.2	4.7	5.4	11.7	8.7	10.1
20	4.1	3.0	3.7	5.6	4.6	5.1	5.9	4.8	5.4	12.3	9.3	10.6
21	4.5	3.6	4.0	6.4	4.9	5.5	6.4	4.1	5.3	12.9	9.7	11.2
22	4.1	2.9	3.6	6.4	5.0	5.6	6.7	4.8	5.8	13.8	10.3	11.8
23	3.7	2.6	3.2	6.8	5.3	5.9	8.3	5.6	6.8	14.4	10.9	12.5
24	4.0	2.9	3.4	5.9	5.2	5.5	9.0	6.2	7.4	14.5	11.5	12.9
25	4.3	3.1	3.7	5.4	4.7	5.1	9.7	7.0	8.2	14.0	11.4	12.7
26	4.3	2.9	3.6	5.1	4.4	4.8	9.9	8.1	8.8	14.6	11.4	12.9
27	4.0	2.5	3.3	4.4	3.8	4.1	8.9	7.6	8.1	13.3	11.4	12.2
28	3.7	2.2	3.0	5.2	4.1	4.6	7.8	6.0	7.1	12.0	9.4	10.6
29	---	---	---	6.2	4.9	5.5	6.2	5.1	5.6	11.8	8.6	10.1
30	---	---	---	5.8	4.8	5.4	6.9	5.8	6.3	12.7	9.0	10.6
31	---	---	---	6.1	5.2	5.7	---	---	---	14.1	10.3	12.0
MONTH	4.5	.6	2.9	6.8	1.6	4.3	9.9	2.5	5.2	14.6	4.8	9.7
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	13.5	11.4	12.3	13.7	11.2	12.4	13.4	10.7	12.0	13.0	11.2	12.2
2	11.7	9.5	10.5	14.2	11.1	12.6	13.8	11.3	12.6	12.5	11.0	11.8
3	10.0	8.2	9.1	14.5	12.0	13.1	13.6	11.7	12.8	12.2	10.8	11.6
4	10.1	7.8	8.9	15.2	12.6	13.8	13.6	11.7	12.8	12.0	10.5	11.4
5	9.5	8.3	8.9	15.9	13.0	14.4	13.8	11.3	12.5	11.8	10.8	11.3
6	11.3	8.2	9.5	15.3	12.4	13.9	14.2	11.7	12.9	11.2	9.4	10.3
7	13.1	9.3	11.0	14.5	12.2	13.4	14.7	12.1	13.4	10.7	9.0	9.9
8	13.4	10.4	11.7	14.9	12.0	13.4	14.9	12.6	13.8	10.8	9.2	10.0
9	12.9	10.7	11.7	15.4	12.2	13.7	15.3	13.0	14.1	11.1	9.3	10.2
10	11.7	10.1	10.7	14.5	12.9	13.7	15.1	13.0	14.1	11.4	9.7	10.6
11	10.5	9.5	9.9	14.1	12.4	13.3	14.7	12.8	13.9	11.2	10.0	10.7
12	11.3	8.7	9.8	14.4	11.7	13.1	14.2	12.5	13.4	12.6	9.8	10.9
13	12.0	8.5	10.1	14.8	11.8	13.1	14.5	11.8	13.3	11.9	10.8	11.3
14	12.7	9.2	10.8	14.7	12.0	13.3	14.6	12.4	13.5	11.9	10.5	11.3
15	13.1	9.8	11.3	14.2	11.8	13.0	14.6	12.5	13.6	11.7	10.6	11.3
16	12.9	10.0	11.4	13.4	11.8	12.6	14.3	12.4	13.4	11.5	10.4	11.1
17	12.8	9.9	11.3	13.1	10.7	11.9	13.9	12.1	13.1	11.4	10.1	10.9
18	12.4	9.5	10.9	13.3	10.4	11.7	13.5	11.7	12.7	11.1	9.8	10.6
19	13.2	9.9	11.4	14.1	11.1	12.4	13.0	10.9	12.0	10.8	9.3	10.1
20	14.1	10.6	12.3	13.9	11.9	12.9	12.5	10.6	11.7	10.2	8.7	9.6
21	14.8	11.6	13.1	13.7	11.3	12.5	12.0	10.5	11.3	9.8	8.4	9.3
22	14.6	11.8	13.2	13.9	11.0	12.4	11.9	11.0	11.4	10.0	8.4	9.2
23	13.6	11.7	12.7	13.6	9.2	12.5	12.1	10.8	11.5	10.3	8.7	9.5
24	12.7	10.8	11.6	15.1	11.4	13.4	11.9	10.3	11.2	10.4	9.2	9.8
25	11.1	9.4	10.2	15.1	12.4	13.7	12.3	10.4	11.3	10.3	9.4	9.8
26	10.3	9.4	9.8	14.4	12.2	13.4	12.9	10.9	11.9	9.4	8.8	9.1
27	11.4	9.5	10.3	14.3	11.9	13.2	12.9	11.3	12.2	9.0	8.4	8.7
28	13.0	10.3	11.4	13.9	11.8	13.0	12.9	11.2	12.1	8.9	7.7	8.4
29	13.8	10.4	11.9	13.3	11.3	11.9	13.2	11.3	12.3	8.8	7.4	8.2
30	13.9	11.1	12.4	12.4	10.8	11.6	13.3	11.6	12.5	9.3	7.6	8.4
31	---	---	---	13.1	10.2	11.5	13.2	11.6	12.4	---	---	---
MONTH	14.8	7.8	11.0	15.9	9.2	12.9	15.3	10.3	12.6	13.0	7.4	10.2
YEAR	15.9	.6	7.1									

14332000 SOUTH FORK ROGUE RIVER NEAR PROSPECT, OR

LOCATION.--Lat 42°42'30", long 122°23'30", in SE 1/4 SW 1/4 sec.7, T.33 S., R.4 E., Jackson County, Hydrologic Unit 17100307, in Rogue River National Forest, on left bank 0.3 mi downstream from South Fork dam and intake of South Fork power canal, 0.31 mi downstream from Imnaha Creek, 5.6 mi southeast of Prospect, and at mile 10.2.

DRAINAGE AREA.--83.8 mi². Drainage area at site upstream from Imnaha Creek was used October 1931 to September 1949, 61.3 mi²; and Imnaha Creek near Prospect, 22.2 mi².

PERIOD OF RECORD.--April 1924 to September 1931, October 1949 to current year. Equivalent records for period October 1931 to September 1949 may be obtained by combining flow of South Fork Rogue River above Imnaha Creek, near Prospect and Imnaha Creek near Prospect. Records for period October 1949 to September 1983 included flow of South Fork power canal.

REVISED RECORDS.--WSP 1318: 1925(M), 1927(M), 1930(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,300 ft above sea level, from topographic map. Prior to Sept. 10, 1965, at site 1,000 ft upstream at different datum.

REMARKS.--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 ft³/s, 129,000 acre-ft/yr (includes flow of South Fork power canal). 18 years (water years 1984-2001), 78.4 ft³/s, 56,790 acre-ft/yr (river only).

EXTREMES FOR PERIOD OF RECORD.--River only, maximum discharge, 7,010 ft³/s Dec. 22, 1964, gage height, 11.1 ft, from floodmark, from rating curve extended above 410 ft³/s on basis of measurement of flow over dam of 3,180 ft³/s; no flow Jan. 31, 1950, Sept. 29, 30, 1967 (entire flow diverted to canal).

Combined flow, maximum discharge, 7,010 ft³/s Dec. 22, 1964 (no flow in canal); minimum daily, about 38 ft³/s Aug. 1-31, 1931.

EXTREMES FOR CURRENT YEAR.--River only, maximum discharge, 692 ft³/s May 16, gage height, 4.06 ft; minimum discharge, 5.3 ft³/s Dec. 18.

 DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	17	16	14	22	19	74	104	18	e14	e13	43
2	16	19	14	16	23	21	56	64	17	e14	e13	42
3	15	19	15	18	25	19	37	48	17	e14	e13	40
4	15	18	16	18	29	20	27	46	17	e14	e13	39
5	14	17	15	19	27	21	22	56	16	e14	e13	39
6	14	18	15	18	25	22	26	50	15	e14	e13	39
7	14	17	14	19	23	23	23	48	15	e14	e13	24
8	14	34	17	20	22	26	20	58	15	e14	e12	12
9	17	27	22	20	24	24	20	59	14	e14	e12	12
10	22	23	22	19	22	21	21	52	15	e13	e12	12
11	22	24	20	19	22	21	21	48	14	e13	e12	12
12	17	23	19	18	20	21	18	54	14	e13	e12	12
13	21	24	20	19	21	21	20	47	14	e13	e12	13
14	21	26	17	18	21	22	21	39	14	e13	e12	12
15	21	25	14	16	20	22	23	347	13	e13	e12	12
16	56	23	14	16	20	21	23	452	13	e13	e12	12
17	72	23	14	18	20	29	27	171	13	e13	e12	12
18	48	23	13	20	20	60	31	91	13	e13	e12	12
19	20	22	16	20	20	62	29	59	13	e13	e12	12
20	30	22	16	19	19	54	29	42	13	e13	e12	12
21	38	22	18	19	20	48	26	32	13	e13	e12	12
22	15	22	20	19	21	45	26	28	13	e13	e12	12
23	17	24	22	19	21	44	28	23	13	e13	e12	12
24	18	27	21	21	20	55	34	21	13	e13	e12	12
25	38	25	18	19	19	79	50	20	13	e13	e12	13
26	18	20	18	18	19	47	77	19	e14	e13	11	12
27	19	27	17	18	19	84	97	18	e14	e13	11	12
28	23	25	16	17	19	267	109	19	e14	e13	29	12
29	16	23	16	18	---	158	71	19	e14	e13	44	12
30	18	17	15	16	---	108	62	19	e14	e13	44	12
31	17	---	15	18	---	83	---	19	---	e13	43	---
TOTAL	722	676	525	566	603	1567	1148	2172	428	412	489	544
MEAN	23.3	22.5	16.9	18.3	21.5	50.5	38.3	70.1	14.3	13.3	15.8	18.1
MAX	72	34	22	21	29	267	109	452	18	14	44	43
MIN	14	17	13	14	19	19	18	18	13	13	11	12
AC-FT	1430	1340	1040	1120	1200	3110	2280	4310	849	817	970	1080

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2001, BY WATER YEAR (WY)

	MEAN	24.2	42.2	93.5	95.5	94.3	106	137	170	106	27.5	18.9	26.8
MAX	116	161	526	435	323	238	345	347	301	155	121	115	115
(WY)	1998	1997	1997	1997	1996	1993	1989	1997	1984	1997	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	1.16
(WY)	1984	1986	1987	1985	1985	1985	1988	1992	1987	1988	1986	1984	1984

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1984 - 2001

ANNUAL TOTAL	23794.0	9852	78.4	
ANNUAL MEAN	65.0	27.0		
HIGHEST ANNUAL MEAN			224	1997
LOWEST ANNUAL MEAN			17.6	1987
HIGHEST DAILY MEAN	408	Apr 18	2670	Jan 1 1997
LOWEST DAILY MEAN	9.4	Jul 12	.22	Oct 7 1984
ANNUAL SEVEN-DAY MINIMUM	11	Jul 6	.23	Oct 2 1984
ANNUAL RUNOFF (AC-FT)	47200	19540	56790	
10 PERCENT EXCEEDS	194	48	212	
50 PERCENT EXCEEDS	22	19	18	
90 PERCENT EXCEEDS	12	12	4.4	

e Estimated

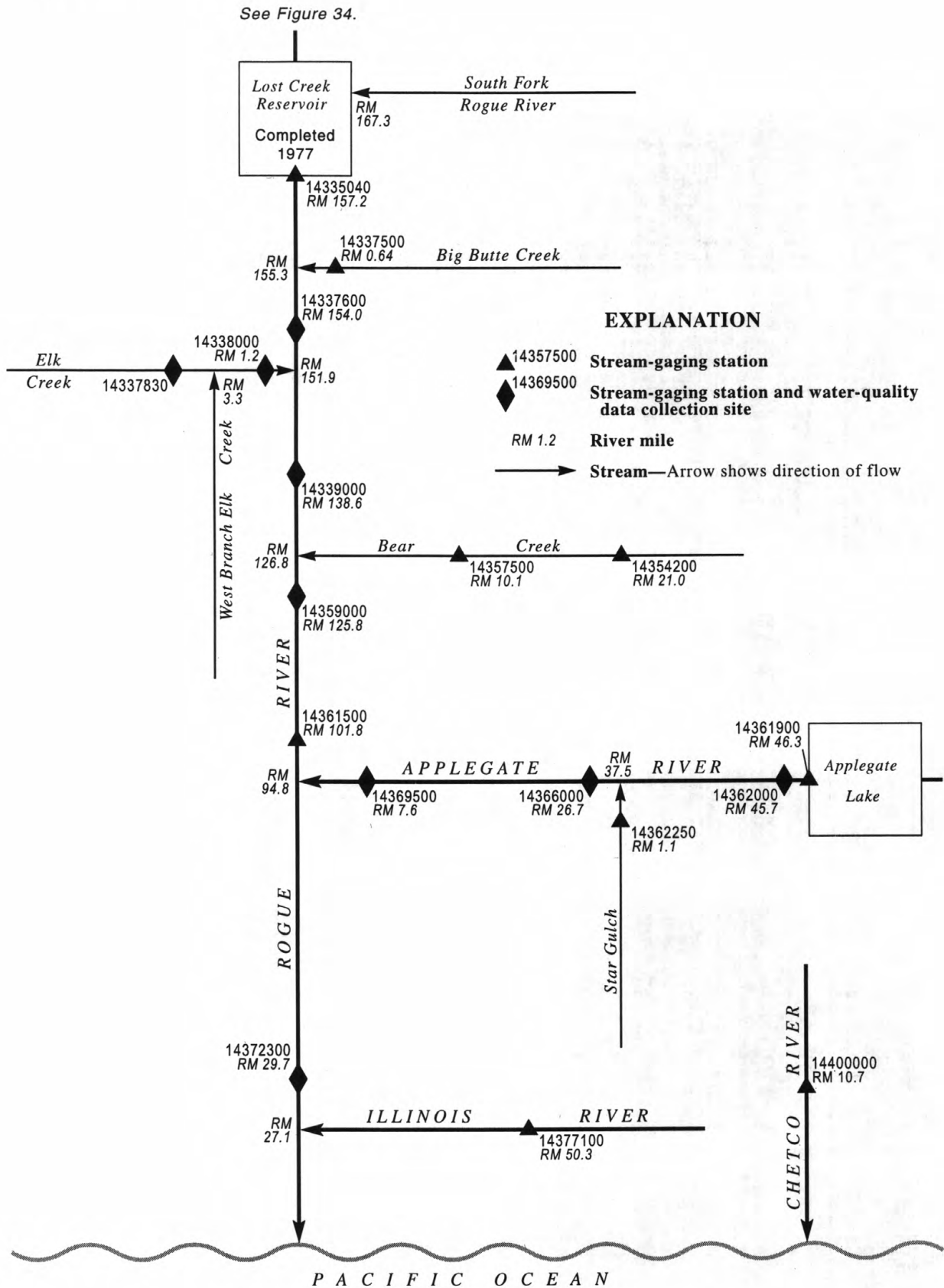


Figure 35. Location of surface-water and water-quality stations in the Rogue River Basin, downstream from Lost Creek Reservoir.

ROGUE RIVER BASIN

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14335040 LOST CREEK LAKE NEAR MCLEOD, OR

LOCATION.--Lat 42°40'16", long 122°40'25", in SW 1/4 sec.26, T.33 S., R. 1 E., Jackson County, Hydrologic Unit 17100307, in outlet structure of Lost Creek Dam on Rogue River, 1.0 mi northeast of McLeod and at mile 157.2.

DRAINAGE AREA.--686 mi².

PERIOD OF RECORD.--February 1977 to current year.

REVISED RECORDS.--WDR OR-85-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level (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, 413,300 acre-ft May 3, 4, elevation, 1,856.42 ft; minimum contents, 200,300 acre-ft Sept. 30, elevation, 1,776.52 ft.

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

1,720	100,100	1,850	393,100
1,750	148,200	1,872	465,000
1,800	254,600	1,899	562,900

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1812.98	1812.72	1812.95	1811.48	1814.87	1822.61	1840.03	1856.14	1835.84	1826.76	1819.38	1794.22
2	1812.90	1812.69	1812.96	1811.49	1815.07	1822.95	1840.83	1856.24	1835.03	1826.56	1818.70	1793.35
3	1812.82	1812.66	1812.96	1811.52	1815.33	1823.22	1841.45	1856.42	1834.37	1826.36	1818.03	1792.46
4	1812.74	1812.61	1812.94	1811.57	1815.71	1823.53	1842.01	1856.24	1833.85	1826.16	1817.33	1791.57
5	1812.66	1812.56	1812.91	1811.61	1816.05	1823.81	1842.54	1855.86	1833.50	1825.95	1816.61	1790.67
6	1812.58	1812.52	1812.86	1811.67	1816.36	1824.07	1843.11	1855.15	1833.28	1825.74	1815.86	1789.77
7	1812.54	1812.46	1812.80	1811.71	1816.65	1824.37	1843.61	1854.44	1833.10	1825.52	1815.09	1788.86
8	1812.49	1812.56	1812.73	1811.77	1816.88	1824.73	1844.10	1853.80	1832.88	1825.29	1814.30	1787.93
9	1812.49	1812.63	1812.69	1811.85	1817.14	1825.08	1844.54	1853.13	1832.65	1825.06	1813.51	1787.01
10	1812.52	1812.62	1812.65	1811.93	1817.40	1825.38	1844.99	1852.33	1832.39	1824.85	1812.70	1786.12
11	1812.57	1812.58	1811.89	1812.02	1817.74	1825.68	1845.47	1851.54	1832.15	1824.63	1811.89	1785.37
12	1812.57	1812.53	1810.94	1812.12	1817.99	1825.96	1845.93	1850.91	1831.94	1824.41	1811.06	1784.68
13	1812.56	1812.47	1810.83	1812.26	1818.23	1826.28	1846.36	1850.35	1831.69	1824.19	1810.23	1784.06
14	1812.54	1812.48	1810.85	1812.37	1818.46	1826.58	1846.77	1849.99	1831.42	1823.96	1809.42	1783.41
15	1812.51	1812.43	1810.90	1812.45	1818.72	1826.89	1847.15	1850.39	1831.16	1823.70	1808.59	1782.80
16	1812.47	1812.36	1810.86	1812.50	1818.96	1827.22	1847.55	1850.83	1830.87	1823.45	1807.76	1782.14
17	1812.44	1812.29	1810.84	1812.55	1819.22	1827.61	1848.02	1850.46	1830.57	1823.21	1806.91	1781.48
18	1812.41	1812.21	1810.75	1812.63	1819.49	1828.18	1848.57	1849.90	1830.28	1822.96	1806.08	1780.80
19	1812.37	1812.15	1810.70	1812.79	1819.74	1828.84	1849.10	1849.11	1829.98	1822.72	1805.22	1780.13
20	1812.51	1812.11	1810.68	1812.91	1820.00	1829.51	1849.65	1848.08	1829.67	1822.47	1804.37	1779.44
21	1812.74	1812.10	1810.69	1813.05	1820.28	1830.14	1850.14	1847.00	1829.36	1822.22	1803.52	1778.99
22	1812.78	1812.10	1810.85	1813.20	1820.62	1830.84	1850.62	1845.89	1829.04	1821.96	1802.69	1778.70
23	1812.77	1812.12	1811.02	1813.35	1820.93	1831.57	1851.10	1844.75	1828.74	1821.71	1801.89	1778.40
24	1812.76	1812.18	1811.18	1813.58	1821.25	1832.37	1851.61	1843.59	1828.42	1821.45	1801.06	1778.12
25	1812.74	1812.24	1811.27	1813.77	1821.53	1833.29	1852.20	1842.77	1828.11	1821.19	1800.21	1777.90
26	1812.72	1812.28	1811.31	1813.92	1821.80	1834.05	1852.90	1842.10	1827.87	1820.93	1799.37	1777.71
27	1812.68	1812.44	1811.34	1814.07	1822.06	1834.79	1853.66	1841.39	1827.70	1820.66	1798.52	1777.44
28	1812.77	1812.56	1811.38	1814.21	1822.32	1836.17	1854.44	1840.65	1827.49	1820.37	1797.67	1777.14
29	1812.81	1812.76	1811.41	1814.36	---	1837.35	1855.06	1839.63	1827.22	1820.12	1796.83	1776.83
30	1812.81	1812.90	1811.44	1814.53	---	1838.34	1855.56	1838.26	1826.94	1819.94	1795.97	1776.52
31	1812.77	---	1811.46	1814.70	---	1839.22	---	1836.89	---	1819.70	1795.09	---
MAX	1812.98	1812.90	1812.96	1814.70	1822.32	1839.22	1855.56	1856.42	1835.84	1826.76	1819.38	1794.22
MIN	1812.37	1812.10	1810.68	1811.48	1814.87	1822.61	1840.03	1836.89	1826.94	1819.70	1795.09	1776.52
(†)	287000	287300	283600	292100	312500	360400	410600	353600	325200	305400	242600	200300
(†)	-700	+300	-3700	+8500	+20400	+47900	+50200	-57000	-28400	-19800	-62800	-42300

CAL YR 2000 MAX 1872.39 MIN 1810.68 AC-FT+ -2000
WTR YR 2001 MAX 1856.42 MIN 1776.52 AC-FT+ -87400

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

ROGUE RIVER BASIN

14337500 BIG BUTTE CREEK NEAR MCLEOD, OR

LOCATION.--Lat 42°39'05", long 122°41'25", in NE 1/4 NW 1/4 sec.3, T.34 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on right bank 225 ft upstream from county road bridge, 0.9 mi south of McLeod, and at mile 0.64.

DRAINAGE AREA.--245 mi².

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 sea level. 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.--46 years (water years 1946-57, 1968-2001), 257 ft³/s, 186,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,950 ft³/s Dec. 22, 1955, gage height, 12.75 ft, site and datum then in use, from rating curve extended above 3,300 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 6.4 ft³/s June 23, 24, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 18.6 ft, present site, from floodmark by local resident, discharge, 16,800 ft³/s, from rating curve, at former site, extended above 9,000 ft³/s and field estimate of overflow.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 13	2300	*303	*3.61				
Minimum discharge, 29 ft ³ /s Sept. 24.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	131	82	91	63	75	84	109	89	45	40	33	34
2	131	84	96	62	77	151	107	83	43	38	32	34
3	137	83	86	61	93	131	106	74	45	38	32	35
4	133	81	92	59	103	118	92	70	44	37	33	35
5	131	81	83	58	95	109	85	69	47	37	35	36
6	131	83	81	61	91	102	115	67	46	37	31	36
7	131	81	79	61	86	96	151	65	43	37	32	36
8	131	92	78	62	83	94	124	64	42	36	35	35
9	136	98	78	65	86	92	117	61	43	36	33	36
10	159	88	85	67	84	90	108	60	48	36	32	33
11	158	83	79	66	89	87	122	59	44	38	31	33
12	145	81	80	69	83	83	121	58	44	38	32	33
13	140	81	121	77	83	80	114	57	43	38	33	34
14	138	86	169	89	86	79	107	59	42	37	33	35
15	139	88	119	82	85	79	101	98	41	41	32	36
16	139	87	97	73	87	80	96	144	41	36	32	31
17	139	82	107	68	89	104	97	95	42	36	35	31
18	126	81	84	71	90	120	109	72	41	37	33	31
19	77	81	75	72	88	110	155	67	41	36	33	32
20	90	81	70	72	87	104	145	63	40	36	32	32
21	96	81	73	71	83	99	130	60	35	36	33	32
22	81	80	77	71	92	96	120	56	35	36	34	31
23	80	81	78	76	120	90	114	54	38	35	36	47
24	80	84	90	104	117	88	108	53	36	36	36	30
25	80	83	79	109	103	113	104	53	38	36	34	49
26	80	113	74	92	93	98	102	53	40	36	33	83
27	80	119	71	83	88	95	99	53	46	36	33	117
28	96	92	68	79	85	205	100	54	50	36	33	127
29	94	113	66	83	---	163	96	55	47	37	33	126
30	97	108	65	79	---	135	87	54	40	40	33	116
31	100	---	64	75	---	119	---	52	---	34	33	---
TOTAL	3606	2638	2655	2280	2521	3294	3341	2071	1270	1143	1025	1436
MEAN	116	87.9	85.6	73.5	90.0	106	111	66.8	42.3	36.9	33.1	47.9
MAX	159	119	169	109	120	205	155	144	50	41	36	127
MIN	77	80	64	58	75	79	85	52	35	34	31	30
AC-FT	7150	5230	5270	4520	5000	6530	6630	4110	2520	2270	2030	2850

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2001, BY WATER YEAR (WY)

	123	188	392	479	474	484	363	238	138	79.7	67.2	70.0
MEAN	123	188	392	479	474	484	363	238	138	79.7	67.2	70.0
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	60.2	58.0	64.2	90.0	92.2	73.4	57.0	42.3	36.7	33.1	43.8
(WY)	1982	1988	1977	1977	2001	1992	1977	1968	2001	1968	2001	1988

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1946 - 2001
ANNUAL TOTAL	69613	27280	
ANNUAL MEAN	190	74.7	257
HIGHEST ANNUAL MEAN			501
LOWEST ANNUAL MEAN			74.7
HIGHEST DAILY MEAN	1650	205	7190
LOWEST DAILY MEAN	64	30	15
ANNUAL SEVEN-DAY MINIMUM	68	31	30
ANNUAL RUNOFF (AC-FT)	138100	54110	186200
10 PERCENT EXCEEDS	414	120	580
50 PERCENT EXCEEDS	96	79	139
90 PERCENT EXCEEDS	72	34	57

ROGUE RIVER BASIN

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14337600 ROGUE RIVER NEAR MCLEOD, OR

LOCATION.--Lat 42°39'20", long 122°42'50", in SW 1/4 sec.33, T.33 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on left bank at Obstinate J Ranch, 1.3 mi downstream from Big Butte Creek, 1.6 mi southwest of McLeod, and at mile 154.0.

DRAINAGE AREA.--938 mi².

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,489.08 ft above sea level.

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 is diverted near Butte Falls.

AVERAGE DISCHARGE.--12 years (water years 1966-77), 2,176 ft³/s, 1,577,000 acre-ft/yr.
24 years (water years 1978-2001), 2,080 ft³/s, 1,507,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s Mar. 3, 1972, gage height, 12.24 ft; minimum discharge, 468 ft³/s Feb. 18, 1977, result of closure of Lost Creek Dam.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1928, 20.35 ft Dec. 22, 1964, from floodmarks, discharge, 74,300 ft³/s, from slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 3,370 ft³/s May 21; minimum daily discharge, 576 ft³/s Apr. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1250	1180	1170	1140	898	800	816	1100	2720	1180	1220	1850
2	1250	1180	1180	1130	905	855	806	1600	2330	1180	1780	1850
3	1260	1180	1180	1130	909	842	812	1360	2100	1180	1730	e1850
4	1250	1170	1190	1130	907	828	760	1970	1890	1180	1760	e1840
5	1250	1170	1180	1130	898	813	817	2290	1670	1180	1810	1840
6	1240	1170	1180	1130	886	822	836	2800	1470	1180	1820	1840
7	1200	1170	1180	1130	864	820	868	2790	1360	1180	1870	1860
8	1200	1160	1180	1140	880	812	826	2750	1360	1180	1880	1860
9	1210	1170	1190	1140	885	811	822	2740	1370	1180	1870	1840
10	1240	1180	1180	1120	865	811	807	2940	1370	1170	1880	1810
11	1230	1170	2050	1050	817	812	827	2910	1370	1170	1880	1620
12	1220	1170	2440	1050	809	810	828	2720	1370	1170	1880	1530
13	1200	1180	1540	1060	813	803	821	2530	1370	1180	1870	1520
14	1210	1190	1390	1060	817	802	819	2240	1370	1180	1860	1530
15	1210	1190	1320	1050	813	799	811	2130	1360	1180	1860	e1540
16	1200	1190	1310	1040	820	801	767	2390	1360	1180	1850	e1540
17	1200	1180	1310	1040	821	824	730	2800	1360	1180	1850	e1500
18	1200	1170	1290	1030	820	837	818	2810	1360	1190	e1860	e1490
19	1160	1170	1240	969	816	811	862	3030	1360	1190	e1870	e1480
20	1140	1150	1200	965	815	814	852	3300	1360	1180	1880	e1500
21	1150	1130	1190	967	812	815	837	3310	1350	1180	1870	e1260
22	1140	1090	1170	963	809	816	827	3300	1350	1180	1860	e1020
23	1140	1090	1160	970	826	811	825	3280	1350	1180	1860	e1010
24	1140	1110	1170	991	824	807	822	3240	1340	1180	1860	e1010
25	1140	1100	1160	991	813	822	823	2680	1340	1180	1870	e1040
26	1150	1140	1160	973	815	808	823	2360	1340	1180	1860	e1060
27	1160	1150	1150	963	814	806	813	2350	1350	1180	1850	e1100
28	1200	1130	1140	957	810	906	820	2360	1360	1180	1850	e1110
29	1190	1170	1140	966	---	864	866	2740	1370	1180	1850	e1110
30	1190	1170	1140	919	---	833	939	3280	1330	1180	1850	e1100
31	1190	---	1140	891	---	819	---	3260	---	1190	1850	---
TOTAL	37110	34770	39620	32185	23581	25434	24700	81360	44760	36580	56710	44510
MEAN	1197	1159	1278	1038	842	820	823	2625	1492	1180	1829	1484
MAX	1260	1190	2440	1140	909	906	939	3310	2720	1190	1880	1860
MIN	1140	1090	1140	891	809	799	730	1100	1330	1170	1220	1010
AC-FT	73610	68970	78590	63840	46770	50450	48990	161400	88780	72560	112500	88290

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2001, BY WATER YEAR (WY)

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	1265	1686	2323	2209	1766	2069	2345	2771	2470	2173	2164	1692												
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	894	898	964	1038	842	820	823	1578	1492	1123	1761	1290												
(WY)	1993	1993	1993	2001	2001	2001	2001	1992	2001	1992	1994	1980												

SUMMARY STATISTICS

	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1978 - 2001
ANNUAL TOTAL	761310	481320	
ANNUAL MEAN	2080	1319	
HIGHEST ANNUAL MEAN			2080
LOWEST ANNUAL MEAN			3224
HIGHEST DAILY MEAN	5920	3310	1314
LOWEST DAILY MEAN	1090	730	16500
ANNUAL SEVEN-DAY MINIMUM	1120	799	730
ANNUAL RUNOFF (AC-FT)	1510000	954700	734
10 PERCENT EXCEEDS	3110	1880	1507000
50 PERCENT EXCEEDS	2100	1180	3320
90 PERCENT EXCEEDS	1170	816	1870
			1030

e Estimated

ROGUE RIVER BASIN

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 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, 16.2°C Aug. 1; minimum, 4.1°C Feb. 13.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001												
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	10.4	8.7	9.4	6.6	6.0	6.3	6.7	6.2	6.4	6.1	5.5	5.7
2	9.5	8.2	8.8	6.9	6.3	6.5	6.9	6.1	6.4	6.2	5.5	5.7
3	9.4	7.7	8.5	7.1	6.3	6.6	6.7	6.2	6.4	6.0	5.4	5.6
4	9.2	7.6	8.4	7.0	6.2	6.4	6.7	6.2	6.3	6.2	5.5	5.7
5	9.3	7.8	8.4	6.8	6.1	6.4	6.5	6.1	6.2	6.1	5.5	5.8
6	9.4	7.8	8.5	7.0	6.3	6.5	6.6	5.9	6.2	6.0	5.3	5.6
7	9.5	8.0	8.6	6.6	6.0	6.3	6.5	5.9	6.2	5.8	5.3	5.5
8	9.5	8.1	8.7	6.8	6.3	6.5	6.8	6.1	6.3	6.0	5.6	5.8
9	9.0	8.2	8.6	6.8	6.2	6.5	6.7	6.3	6.5	5.8	5.5	5.6
10	8.9	8.3	8.5	6.9	6.0	6.3	6.6	6.0	6.3	5.6	5.3	5.5
11	9.0	8.2	8.5	6.6	5.6	6.0	6.5	6.0	6.3	5.9	5.3	5.5
12	9.0	8.2	8.4	6.5	5.6	6.0	6.7	6.3	6.5	5.7	5.1	5.4
13	8.2	7.2	7.8	6.4	5.8	6.1	6.5	6.2	6.4	5.7	5.3	5.4
14	8.0	6.9	7.3	6.2	5.8	6.1	6.4	6.1	6.3	5.8	5.3	5.5
15	7.6	6.8	7.1	6.7	6.1	6.3	6.6	6.2	6.4	5.8	5.0	5.4
16	7.8	6.7	7.1	6.6	5.8	6.1	6.7	6.2	6.4	5.5	4.8	5.1
17	7.6	6.6	7.0	6.6	5.6	6.0	6.5	6.0	6.2	5.5	4.7	5.0
18	7.4	6.8	7.0	6.5	5.6	5.9	6.3	5.8	6.0	5.6	4.9	5.2
19	7.5	6.6	6.9	6.4	5.7	6.0	6.6	5.9	6.1	5.8	5.1	5.4
20	6.9	6.4	6.6	6.6	5.8	6.1	6.4	5.9	6.2	5.5	5.0	5.2
21	7.2	6.4	6.6	6.7	5.9	6.2	6.4	6.0	6.2	5.8	5.3	5.5
22	7.0	6.0	6.4	6.7	5.9	6.1	6.6	6.1	6.3	6.0	5.2	5.4
23	7.1	5.8	6.3	6.4	5.9	6.2	6.2	6.0	6.1	5.7	5.2	5.4
24	7.1	6.0	6.4	6.8	6.3	6.5	6.5	5.8	6.1	5.8	5.3	5.5
25	6.7	6.3	6.5	6.7	6.3	6.4	6.1	5.6	5.8	5.5	5.1	5.3
26	7.2	6.2	6.6	6.9	6.3	6.5	6.2	5.5	5.8	5.8	4.9	5.2
27	7.1	6.2	6.6	6.8	6.4	6.6	6.2	5.6	5.8	5.6	4.7	5.0
28	7.1	6.4	6.6	6.8	6.3	6.5	6.2	5.4	5.7	5.5	4.5	5.0
29	7.0	6.4	6.6	6.7	6.3	6.5	6.0	5.4	5.6	5.6	5.0	5.2
30	7.1	6.3	6.6	6.8	6.3	6.5	6.0	5.3	5.6	5.5	4.8	5.0
31	7.0	6.0	6.4	---	---	---	6.1	5.4	5.7	5.5	4.5	4.9
MONTH	10.4	5.8	7.5	7.1	5.6	6.3	6.9	5.3	6.2	6.2	4.5	5.4

ROGUE RIVER BASIN

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14337600 ROGUE RIVER NEAR MCLEOD, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	5.6	4.6	5.1	5.3	4.6	5.0	8.9	7.2	7.9	9.1	7.6	8.3
2	5.7	5.2	5.4	6.1	4.8	5.3	7.9	6.6	7.1	9.3	7.0	8.1
3	5.7	5.3	5.5	5.5	4.3	4.9	7.9	6.6	7.1	9.7	7.2	8.1
4	6.2	5.4	5.6	5.4	4.9	5.1	8.8	6.5	7.4	9.1	7.4	8.2
5	6.0	5.3	5.6	6.0	4.8	5.3	8.7	6.5	7.5	8.8	7.2	8.0
6	5.6	4.9	5.3	6.7	4.7	5.4	7.6	6.8	7.1	8.6	7.1	7.9
7	5.5	4.3	4.8	6.9	4.8	5.6	8.2	6.4	7.1	8.8	7.3	8.1
8	5.2	4.2	4.6	6.3	5.2	5.6	7.6	6.2	6.9	8.8	7.2	8.1
9	5.3	4.7	4.9	6.5	4.9	5.5	8.6	6.3	7.1	9.0	7.2	8.2
10	5.8	4.9	5.2	6.4	4.6	5.2	7.4	6.6	7.0	9.0	7.3	8.3
11	5.4	4.5	4.9	6.7	4.7	5.4	8.2	6.6	7.2	9.0	7.6	8.3
12	5.7	4.2	4.8	6.9	4.7	5.6	7.7	6.3	6.9	9.3	7.9	8.6
13	5.7	4.1	4.7	7.0	4.8	5.6	7.9	6.4	7.1	9.6	7.5	8.7
14	5.8	4.2	4.8	6.7	4.8	5.5	8.7	6.2	7.1	8.9	7.7	8.5
15	5.8	4.2	4.8	5.7	4.9	5.3	8.2	6.8	7.3	8.7	8.2	8.5
16	5.7	4.8	5.1	6.3	4.7	5.3	8.7	6.6	7.5	9.3	8.2	8.7
17	6.0	4.9	5.3	6.1	5.2	5.5	8.8	6.7	7.8	9.6	7.8	8.9
18	6.0	5.0	5.4	6.9	5.5	6.1	7.7	7.0	7.3	10.0	7.8	9.0
19	6.0	4.9	5.3	7.7	5.8	6.5	8.9	6.9	7.6	9.9	7.8	9.1
20	5.8	4.8	5.3	7.4	5.7	6.4	8.9	7.0	7.7	10.1	7.9	9.1
21	6.2	5.0	5.4	8.0	5.8	6.6	9.2	6.6	7.7	9.9	8.3	9.1
22	5.6	5.1	5.2	8.0	5.6	6.6	8.9	7.0	7.8	9.6	8.3	8.8
23	5.8	4.9	5.2	9.4	6.7	7.8	9.9	7.4	8.3	9.4	8.2	8.7
24	5.5	4.8	5.1	9.0	7.1	8.1	10.2	7.6	8.6	10.4	7.7	9.0
25	6.3	4.7	5.3	8.7	7.1	7.8	11.8	7.4	9.4	10.1	8.4	9.4
26	6.3	4.5	5.2	8.9	7.1	7.8	11.3	8.6	9.9	10.5	8.3	9.6
27	6.3	4.3	5.1	8.0	7.0	7.4	10.9	8.2	9.3	10.6	8.1	9.4
28	6.1	4.3	5.0	8.6	7.4	7.9	9.8	8.0	8.7	10.7	8.6	9.8
29	---	---	---	9.8	7.4	8.3	9.6	7.7	8.6	10.7	8.0	9.7
30	---	---	---	9.6	7.1	8.0	9.4	7.6	8.4	10.6	8.6	9.8
31	---	---	---	9.0	7.5	8.0	---	---	---	11.0	8.5	10.1
MONTH	6.3	4.1	5.1	9.8	4.3	6.3	11.8	6.2	7.7	11.0	7.0	8.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	12.7	8.9	10.2	13.6	10.8	12.3	16.2	13.2	14.4	13.2	11.9	12.7
2	10.9	9.4	10.4	14.1	11.4	12.7	15.8	13.7	14.7	12.8	11.0	12.0
3	11.1	8.8	10.1	14.0	11.5	12.7	15.6	14.3	14.8	12.2	11.0	11.6
4	11.0	8.8	10.1	14.4	11.9	13.0	15.2	14.3	14.7	11.6	9.7	10.9
5	10.5	9.2	9.9	14.3	12.2	13.1	16.0	14.3	15.0	11.2	9.0	10.5
6	11.2	9.6	10.2	14.2	11.9	12.9	15.7	14.5	15.0	11.3	9.9	10.7
7	11.2	9.0	10.3	14.2	11.9	12.9	16.1	14.4	15.1	11.5	9.4	10.7
8	11.3	8.7	10.0	14.5	12.0	13.1	16.1	14.7	15.3	11.8	9.7	11.0
9	11.2	8.8	10.1	14.6	11.9	13.3	16.0	14.4	15.1	11.9	10.2	11.1
10	10.8	8.5	9.8	13.9	12.1	13.0	15.7	14.3	15.0	12.3	9.6	11.3
11	10.5	9.0	9.8	13.4	12.0	12.7	15.3	13.9	14.6	12.2	10.0	11.4
12	11.2	9.2	10.1	14.2	12.2	13.0	15.4	14.0	14.8	12.3	11.0	11.7
13	11.2	8.9	10.1	14.3	12.1	13.1	15.6	14.2	14.9	12.3	10.9	11.7
14	11.4	8.7	10.1	14.2	12.1	13.0	15.6	14.0	14.8	12.6	11.3	11.9
15	11.6	8.9	10.2	14.5	12.2	13.2	15.7	14.1	15.0	---	---	---
16	11.5	8.9	10.3	14.6	12.2	13.2	15.5	13.9	14.8	---	---	---
17	11.5	9.1	10.2	14.2	12.3	13.1	15.6	13.9	14.8	---	---	---
18	11.5	9.4	10.5	14.6	12.4	13.3	15.2	14.1	14.7	---	---	---
19	12.1	9.1	10.8	14.8	12.5	13.4	15.4	13.8	14.5	---	---	---
20	12.3	9.6	11.0	14.3	12.4	13.1	15.2	13.9	14.5	---	---	---
21	12.5	9.9	11.2	14.6	12.4	13.3	15.1	13.6	14.4	---	---	---
22	12.6	9.9	11.3	14.6	12.4	13.3	14.5	13.7	14.0	---	---	---
23	12.5	9.9	11.2	14.9	12.6	13.5	14.4	13.5	13.9	---	---	---
24	12.0	10.2	11.1	15.0	12.5	13.6	15.0	13.6	14.2	---	---	---
25	12.2	10.3	11.2	14.9	12.7	13.7	15.1	13.8	14.4	---	---	---
26	11.5	10.9	11.1	15.1	12.7	13.7	15.3	13.8	14.4	---	---	---
27	11.9	10.8	11.3	15.1	12.8	13.8	15.1	13.5	14.2	---	---	---
28	12.4	11.0	11.6	15.0	13.0	13.8	14.9	13.3	14.0	---	---	---
29	12.9	10.7	11.7	14.4	13.0	13.5	14.6	13.2	13.9	---	---	---
30	12.8	10.7	11.7	14.4	13.1	13.7	14.2	12.7	13.4	---	---	---
31	---	---	---	15.0	12.8	13.8	13.8	12.4	13.2	---	---	---
MONTH	12.9	8.5	10.6	15.1	10.8	13.2	16.2	12.4	14.5	---	---	---

ROGUE RIVER BASIN

14337830 ELK CREEK BELOW ALCO CREEK, NEAR TRAIL, OR

LOCATION.--Lat 42°40'46", long 122°42'37", in NW 1/4 sec.4, T.33 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on Corps of Engineers' Land, on right bank 500 ft downstream from Alco Creek, and 7.5 mi northeast of Trail.

DRAINAGE AREA.--111 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1986 to current year (operated as a low-flow station only).

GAGE.--Water-stage recorder. Elevation of gage is 1,680 ft above sea level, from topographic map.

REMARKS.--Records good. No regulation. Some diversions upstream from station for irrigation. Operated as a low-flow station only. Discharges above 440 ft³/s not published. U.S. Geological Survey satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Minimum discharge recorded, 0.54 ft³/s Sept. 23, 1992, but may have been less during period of estimated discharge during that year.

EXTREMES FOR CURRENT YEAR.--Minimum discharge, 0.70 ft³/s Aug. 13, 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	13	55	41	30	53	118	55	12	6.4	2.9	2.3
2	2.9	12	39	39	30	70	102	50	12	5.6	2.2	2.3
3	e3.0	14	31	37	39	70	90	47	13	5.0	2.1	2.2
4	e3.0	13	27	36	84	67	82	44	14	4.2	2.0	1.9
5	e3.1	13	24	37	83	67	80	41	17	3.8	1.9	1.6
6	e3.2	13	e22	36	71	67	92	39	18	3.5	1.8	1.7
7	3.1	14	e19	34	60	69	108	36	14	3.4	1.6	1.5
8	2.7	15	19	34	e52	69	103	34	12	3.0	1.3	1.4
9	3.4	30	19	34	e48	65	103	31	11	2.8	1.0	1.2
10	7.3	28	18	38	e44	59	105	29	10	2.5	.93	1.5
11	9.8	22	18	34	e42	54	170	28	10	2.6	.84	1.5
12	9.3	18	21	30	e40	50	221	26	13	2.8	.93	1.3
13	7.5	16	39	32	38	47	179	24	11	2.8	.81	1.3
14	7.1	17	131	40	38	45	142	25	8.2	2.5	1.0	1.3
15	7.0	19	182	42	37	44	122	51	7.8	2.5	1.2	2.4
16	6.9	18	111	38	39	48	122	55	7.3	2.7	1.2	3.9
17	6.8	18	112	33	42	71	156	47	6.9	2.7	1.3	4.0
18	6.6	17	80	30	48	203	151	41	6.7	2.6	1.1	2.7
19	7.3	17	60	31	49	200	153	35	6.1	2.4	.97	2.2
20	12	17	54	33	49	149	142	31	5.9	2.2	1.1	2.2
21	31	18	62	35	57	116	124	27	5.6	2.2	1.0	2.4
22	18	19	236	37	70	99	105	24	4.9	2.3	1.5	2.3
23	13	18	258	39	91	88	95	22	4.0	2.2	1.7	2.5
24	11	19	206	49	105	81	84	21	4.6	2.2	2.9	1.7
25	10	22	130	54	91	95	75	19	5.3	2.1	2.9	2.1
26	10	27	88	e52	76	79	73	19	6.5	2.1	2.5	6.4
27	9.9	31	69	e46	66	85	67	17	13	1.7	2.2	6.2
28	11	48	60	e40	58	334	64	17	9.9	1.7	2.1	5.0
29	22	39	53	e38	---	263	59	16	8.6	1.5	2.1	4.1
30	17	67	49	e35	---	190	54	15	7.1	3.2	2.2	3.7
31	14	---	44	31	---	143	---	13	---	4.7	2.2	---
TOTAL	282.3	652	2336	1165	1577	3140	3341	979	285.4	91.9	51.48	76.8
MEAN	9.11	21.7	75.4	37.6	56.3	101	111	31.6	9.51	2.96	1.66	2.56
MAX	31	67	258	54	105	334	221	55	18	6.4	2.9	6.4
MIN	2.7	12	18	30	30	44	54	13	4.0	1.5	.81	1.2
AC-FT	560	1290	4630	2310	3130	6230	6630	1940	566	182	102	152
CFSM	.08	.20	.68	.34	.51	.91	1.00	.28	.09	.03	.01	.02
IN.	.09	.22	.78	.39	.53	1.05	1.12	.33	.10	.03	.02	.03

WTR YR 2001 TOTAL 13977.88 MEAN 38.3 MAX 334 MIN .81 AC-FT 27730 CFSM .35 IN. 4.68

e Estimated

14337830 ELK CREEK BELOW ALCO CREEK, NEAR TRAIL, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: April 1986 to current year.

TURBIDITY: October 2000 to September 2001.

INSTRUMENTATION.--Water-quality monitor.

REMARKS.--Water temperature records good. Available turbidity records fair. Turbidity values are considered relative to this site. 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.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 29.3°C Aug. 9, 10; minimum, 0.0°C Jan. 17.

TURBIDITY: Maximum recorded, 37 NTU Aug. 16, but may have been higher during periods of missing record; minimum, <1 many days during the year.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	---	---	---	8.3	6.4	7.5	6.1	4.9	5.5	4.0	2.4	3.1
2	---	---	---	10.8	8.0	8.6	6.5	4.6	5.1	4.8	3.0	3.7
3	---	---	---	12.9	9.6	10.5	6.6	5.2	5.7	4.0	2.7	3.4
4	---	---	---	12.5	8.9	10.0	6.4	4.4	5.2	5.6	3.5	4.4
5	17.6	---	---	11.0	7.1	8.3	5.6	3.7	4.5	5.8	3.9	4.6
6	17.6	10.5	13.8	10.8	7.7	8.8	---	---	---	5.4	3.5	4.2
7	17.6	10.7	14.0	10.5	5.6	7.3	4.0	---	---	4.5	3.0	3.7
8	17.2	10.9	13.9	8.7	7.3	7.8	4.2	2.0	3.1	5.8	4.5	5.2
9	14.4	12.0	13.2	8.4	6.6	7.3	5.6	4.1	4.8	5.1	4.3	4.6
10	13.3	11.3	11.9	7.6	5.6	6.5	5.3	3.0	4.0	4.3	3.4	3.8
11	13.1	10.8	11.8	7.0	3.3	4.9	3.5	2.5	3.0	4.9	3.1	3.9
12	12.4	10.6	11.5	5.7	2.6	3.9	4.7	3.3	4.0	4.7	2.8	3.6
13	14.1	10.8	12.2	5.4	2.7	3.7	4.3	3.6	4.1	4.4	3.4	3.9
14	14.5	10.3	12.3	4.6	2.0	3.3	4.7	3.5	4.0	4.7	3.4	3.9
15	13.5	9.6	11.3	5.4	2.7	3.3	5.5	4.7	5.1	4.7	2.6	3.5
16	14.2	8.5	11.1	5.4	2.3	3.7	5.5	4.5	5.1	2.7	.8	1.7
17	13.3	8.4	10.7	4.7	1.3	2.7	5.2	3.5	4.6	2.3	.0	1.1
18	13.0	10.1	11.5	3.9	.6	1.9	3.5	2.4	3.1	3.0	1.2	2.1
19	15.2	10.6	12.4	3.4	.7	2.1	4.3	3.0	3.6	4.9	2.6	3.4
20	12.3	10.7	11.3	4.0	1.2	2.4	5.0	3.7	4.3	3.5	2.0	2.8
21	11.3	8.8	10.0	4.1	1.5	2.6	5.2	4.2	4.7	4.9	3.5	4.1
22	10.5	6.7	8.4	3.9	1.1	2.4	6.2	5.0	5.5	5.5	3.4	4.2
23	10.8	5.8	8.1	3.5	1.2	2.1	6.0	5.4	5.8	4.6	3.2	3.9
24	11.3	6.4	8.6	5.4	3.1	3.7	5.7	4.5	5.2	5.6	4.4	4.9
25	9.9	8.6	9.2	5.5	4.1	4.6	4.5	3.5	4.0	4.6	3.7	4.1
26	12.9	8.4	9.9	6.0	4.6	4.9	4.7	3.1	3.9	---	---	---
27	11.6	8.1	9.7	6.5	5.4	5.6	4.8	3.6	4.1	---	---	---
28	11.1	9.1	10.0	6.5	4.3	5.2	4.1	2.6	3.4	---	---	---
29	10.9	8.8	9.7	6.0	4.8	5.1	3.7	2.3	2.9	---	---	---
30	11.7	8.3	9.6	6.2	5.2	5.6	3.2	1.8	2.5	3.8	---	---
31	10.1	6.8	8.2	---	---	---	4.0	2.2	2.9	3.1	.6	1.8
MONTH	---	---	---	12.9	.6	5.2	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	3.5	1.1	2.4	4.3	3.0	3.8	9.8	7.0	8.4	11.8	7.2	9.4
2	4.8	3.4	4.1	6.6	3.8	4.8	7.8	4.8	6.0	12.9	6.2	9.5
3	5.4	4.3	4.9	4.2	2.2	3.4	7.9	4.2	5.7	13.9	7.2	10.6
4	6.5	5.0	5.7	5.0	3.7	4.3	9.0	3.4	6.1	15.2	8.9	11.9
5	6.5	4.8	5.6	6.4	4.2	5.1	8.5	3.7	6.4	15.4	10.0	12.5
6	4.8	3.3	4.2	8.0	3.6	5.8	7.6	5.2	6.0	15.5	9.0	12.2
7	3.8	1.6	2.7	8.8	4.5	6.8	7.9	4.1	5.7	17.2	9.8	13.4
8	---	.8	---	8.6	6.3	7.3	7.0	3.8	5.4	17.0	11.5	14.1
9	---	---	---	7.8	5.4	6.4	8.8	2.8	5.6	17.2	11.3	14.0
10	---	---	---	6.7	3.4	5.1	6.6	4.3	5.6	17.8	10.7	14.1
11	---	---	---	7.6	3.8	5.6	7.7	5.1	6.3	19.2	11.6	15.3
12	---	---	---	8.3	3.6	6.0	7.0	4.7	5.9	20.2	13.9	16.6
13	---	---	---	9.0	4.6	6.7	7.7	5.2	6.3	18.8	12.7	15.5
14	---	---	---	8.4	4.2	6.3	9.1	3.5	6.2	15.2	11.9	13.2
15	---	---	---	6.2	4.6	5.3	8.5	4.7	6.6	12.2	11.1	11.6
16	4.7	2.3	3.4	6.2	3.4	5.0	10.1	5.3	7.8	15.5	10.0	12.4
17	5.1	3.0	4.1	6.6	4.9	5.7	10.7	7.2	9.0	15.1	9.4	12.2
18	5.8	3.9	4.8	8.0	5.9	6.9	9.0	7.1	7.7	16.9	10.4	13.5
19	6.2	3.4	4.6	10.0	6.9	8.2	9.4	6.2	7.7	18.3	11.4	14.7
20	5.6	3.6	4.7	9.8	6.4	8.1	9.7	6.1	7.8	19.4	12.2	15.6
21	7.1	4.7	5.8	11.7	7.0	9.2	10.5	5.1	7.7	20.7	12.9	16.6
22	5.8	4.5	5.2	11.6	6.8	9.4	9.9	6.0	8.1	22.2	14.2	18.1
23	5.2	3.6	4.4	12.8	8.1	10.4	13.0	7.6	10.1	23.4	16.1	19.5
24	5.4	3.5	4.5	10.5	8.2	9.5	14.2	7.7	11.0	23.0	16.2	19.4
25	6.8	3.8	5.3	9.6	7.9	8.8	15.7	9.2	12.5	22.7	16.2	19.3
26	6.5	3.1	4.9	9.8	7.1	8.2	16.8	11.2	14.0	23.6	16.4	19.6
27	6.1	2.6	4.4	7.4	5.2	6.3	14.9	10.4	12.8	19.6	15.8	17.9
28	5.3	2.1	4.0	8.8	6.4	7.6	12.4	9.6	11.1	19.3	13.0	15.9
29	---	---	---	11.3	7.2	8.8	10.6	7.4	9.1	19.3	11.8	15.4
30	---	---	---	10.8	6.1	8.3	11.3	9.3	10.2	21.5	12.4	16.7
31	---	---	---	10.4	7.2	8.8	---	---	---	24.1	14.7	19.4
MONTH	---	---	---	12.8	2.2	6.8	16.8	2.8	8.0	24.1	6.2	14.8

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	21.1	15.9	18.6	24.1	16.1	19.9	25.9	16.4	20.8	25.4	17.6	21.2
2	17.2	12.9	15.1	26.2	16.1	20.7	26.8	17.7	22.0	24.8	17.0	20.7
3	17.1	11.1	14.0	27.3	17.8	22.1	24.2	18.9	21.9	24.3	17.0	20.4
4	16.6	10.1	13.6	27.7	19.1	23.0	23.1	19.4	21.3	23.9	16.4	19.4
5	14.5	12.2	13.3	26.8	19.2	22.6	26.5	17.4	21.6	21.5	16.2	19.0
6	19.1	11.7	15.0	27.1	16.9	21.5	28.0	19.0	23.2	20.4	13.2	16.8
7	22.2	13.7	17.7	26.3	17.3	21.5	28.3	19.9	23.8	20.7	13.9	17.2
8	23.2	15.2	18.9	28.1	17.9	22.6	29.2	19.9	24.0	21.0	14.1	17.5
9	22.3	15.9	18.9	29.0	18.6	23.4	29.3	20.7	24.7	22.1	14.6	18.1
10	18.3	14.3	16.3	27.7	20.1	23.7	29.3	21.1	24.7	22.8	15.7	18.8
11	17.1	14.0	15.5	25.6	19.6	22.6	27.9	19.9	23.7	20.4	15.7	18.3
12	20.1	12.7	16.1	26.3	18.4	22.2	27.1	19.3	23.0	21.0	17.0	18.8
13	20.8	11.8	16.2	27.3	17.8	22.2	27.8	19.9	23.4	21.5	18.2	19.8
14	22.0	13.2	17.4	27.2	18.5	22.5	27.9	19.9	23.4	23.5	17.2	20.1
15	22.7	13.8	18.0	26.4	17.9	21.7	28.4	19.4	23.2	23.0	18.5	20.5
16	22.3	14.0	17.9	25.4	17.7	21.0	27.1	19.5	22.9	23.8	16.9	20.0
17	21.9	13.9	17.6	24.6	16.0	20.2	26.8	18.3	22.1	23.0	16.3	19.4
18	22.2	13.6	17.6	25.0	16.8	20.7	23.3	18.4	20.7	21.9	15.1	18.3
19	23.5	14.3	18.6	26.6	18.2	21.9	24.7	16.3	20.2	21.1	14.7	17.7
20	25.3	15.9	20.2	25.4	18.6	21.4	24.0	16.0	19.9	20.8	14.1	17.4
21	26.6	17.4	21.5	24.6	16.6	20.6	23.0	16.4	19.8	19.9	13.5	16.8
22	26.1	17.3	21.4	26.6	17.0	21.5	20.8	18.6	19.9	20.1	13.6	16.9
23	25.0	16.8	20.4	27.6	18.4	22.8	22.1	17.7	19.4	20.8	14.5	17.6
24	20.4	16.2	18.2	28.2	19.1	23.3	24.3	16.1	19.8	19.4	15.1	17.3
25	19.8	13.9	16.9	28.0	19.1	23.1	25.1	16.6	20.4	18.6	15.7	17.3
26	17.1	15.5	16.3	27.5	18.0	22.4	26.0	17.5	21.3	15.7	14.0	15.1
27	19.7	15.0	17.3	27.3	18.1	22.3	25.7	17.6	21.2	16.9	13.0	14.5
28	23.3	16.1	19.2	26.8	18.2	22.1	25.3	17.2	21.0	18.1	11.7	14.4
29	24.6	15.8	19.7	21.9	17.7	19.9	25.7	18.4	21.6	18.9	11.4	14.8
30	24.0	16.3	19.8	24.2	18.0	20.5	26.1	18.2	21.7	19.7	12.2	15.7
31	---	---	---	25.4	16.4	20.5	25.9	18.3	21.7	---	---	---
MONTH	26.6	10.1	17.6	29.0	16.0	21.8	29.3	16.0	21.9	25.4	11.4	18.0

TURBIDITY (NTU), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

[illegible]

TURBIDITY (NTU), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

[illegible]

ROGUE RIVER BASIN

14338000 ELK CREEK NEAR TRAIL, OR

LOCATION.--Lat 42°40'30", long 122°44'38", in NE 1/4 sec.30, T.33 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on right bank 3.7 mi northeast of Trail and at mile 1.2.

DRAINAGE AREA.--129 mi².

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 sea level. 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.--55 years (water years 1947-2001), 217 ft³/s, 157,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,200 ft³/s Dec. 22, 1964, gage height, 18.84 ft, from rating curve extended above 4,700 ft³/s on basis of slope-area measurement of peak flow, site and datum then in use; minimum discharge, 0.01 ft³/s Oct. 8, 1987, result of dam construction 1.3 mi upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 22	2230	*348	*3.68				

Minimum discharge, 0.12 ft³/s Aug. 22-24, Sept. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.9	12	53	41	32	57	117	63	14	8.1	3.8	.41
2	3.8	12	39	38	32	74	103	57	15	7.0	2.2	.38
3	3.8	13	31	36	39	77	93	53	15	5.4	1.8	.40
4	4.1	12	26	35	83	73	85	51	16	4.7	1.5	.30
5	4.1	11	22	35	88	72	82	47	19	4.1	1.4	.24
6	3.8	11	20	34	78	72	91	45	21	3.6	1.3	.21
7	3.8	12	18	32	66	73	107	42	17	3.5	1.1	.18
8	3.7	14	17	31	56	72	104	39	14	3.1	.90	.17
9	3.6	31	16	32	52	69	104	36	14	2.3	.66	.16
10	6.9	26	15	36	48	64	105	34	13	2.1	.43	.16
11	10	20	15	33	47	58	150	33	13	2.0	.25	.15
12	11	16	19	30	42	53	204	31	15	2.3	.20	.14
13	8.5	15	31	31	40	49	169	29	14	2.6	.18	.15
14	7.7	17	139	40	40	47	136	29	11	2.2	.18	.14
15	7.2	18	176	43	39	45	119	56	11	1.7	.17	.15
16	7.1	18	112	39	39	49	117	63	9.9	1.8	.16	.15
17	7.1	16	110	34	42	68	143	55	9.5	2.0	.16	.16
18	6.8	15	83	32	49	181	145	47	9.0	1.9	.16	.20
19	7.0	15	62	32	52	192	145	41	8.0	1.8	.15	.57
20	11	16	54	34	51	146	135	36	7.6	1.5	.15	.57
21	33	17	60	35	58	115	121	32	7.2	1.4	.14	.45
22	21	17	205	38	71	98	105	29	6.2	1.3	.13	.36
23	14	17	247	38	91	88	94	25	5.1	1.2	.13	.31
24	11	18	192	51	106	81	86	24	5.4	1.1	.15	.29
25	10	21	130	60	96	93	83	22	6.5	.97	1.4	.64
26	9.5	26	90	56	82	80	82	21	8.2	.84	1.4	2.9
27	9.1	35	72	49	73	74	76	20	14	.63	1.1	6.2
28	13	44	61	43	64	297	73	20	13	.59	.86	5.3
29	23	47	55	40	---	247	69	18	11	.47	.71	4.0
30	17	67	50	37	---	181	61	17	9.5	1.5	.59	3.3
31	13	---	45	34	---	139	---	15	---	5.1	.46	---
TOTAL	298.5	629	2265	1179	1656	3084	3304	1130	352.1	78.80	23.92	28.74
MEAN	9.63	21.0	73.1	38.0	59.1	99.5	110	36.5	11.7	2.54	.77	.96
MAX	33	67	247	60	106	297	204	63	21	8.1	3.8	6.2
MIN	3.6	11	15	30	32	45	61	15	5.1	.47	.13	.14
AC-FT	592	1250	4490	2340	3280	6120	6550	2240	698	156	47	57

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2001, BY WATER YEAR (WY)

	MEAN	30.3	184	435	517	506	416	284	164	59.6	14.9	6.48	7.10
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	.21	.60	
(WY)	1953	1994	1977	1977	1977	1992	1968	1992	1992	1994	1994	1992	

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1947 - 2001

ANNUAL TOTAL	66846.3	14029.06		
ANNUAL MEAN	183	38.4		
HIGHEST ANNUAL MEAN			217	
LOWEST ANNUAL MEAN			438	1974
HIGHEST DAILY MEAN	2920	297	38.4	2001
LOWEST DAILY MEAN	2.7	.13	12200	Dec 22 1964
ANNUAL SEVEN-DAY MINIMUM	2.9	.14	.12	Sep 1 1994
ANNUAL RUNOFF (AC-FT)	132600	27830	.12	Sep 1 1994
10 PERCENT EXCEEDS	480	97	157500	
50 PERCENT EXCEEDS	42	20	548	
90 PERCENT EXCEEDS	4.2	.44	66	
			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.

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, 30.7°C Aug. 10; minimum, 0.7°C Jan. 17.

TURBIDITY: Maximum recorded, 96 NTU Mar. 28; minimum recorded, <1 NTU many times during the year.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	19.8	15.8	17.6	9.1	8.4	8.7	6.3	5.6	5.9	4.0	2.8	3.4
2	19.6	15.4	17.0	9.9	8.5	9.2	6.1	5.3	5.7	4.7	3.3	3.9
3	18.6	14.1	16.0	11.7	9.9	10.7	6.4	5.7	6.1	4.4	3.2	3.7
4	17.8	13.7	15.4	11.2	9.9	10.5	6.2	5.6	5.9	5.1	3.7	4.3
5	17.8	13.3	15.2	9.9	9.1	9.5	5.8	5.0	5.3	5.3	4.3	4.9
6	17.2	13.0	15.0	9.9	8.7	9.1	5.1	4.0	4.3	5.1	4.1	4.7
7	17.1	13.0	14.9	8.7	7.8	8.2	4.0	3.2	3.5	4.8	3.6	4.0
8	17.1	13.1	14.9	8.5	7.7	8.1	3.8	2.8	3.2	5.6	4.4	5.1
9	15.3	13.6	14.2	8.2	7.2	7.7	4.9	3.8	4.4	5.5	4.9	5.1
10	13.8	12.8	13.3	7.2	6.3	6.7	4.8	4.1	4.5	4.9	4.0	4.3
11	13.5	12.4	12.8	6.4	4.7	5.3	4.1	3.4	3.6	4.6	3.6	4.1
12	12.6	11.9	12.3	4.9	4.0	4.3	4.5	3.5	3.9	4.5	3.5	4.0
13	13.8	11.8	12.6	4.2	3.7	4.0	4.6	4.2	4.4	4.5	3.9	4.2
14	14.0	11.9	12.9	4.1	3.3	3.6	4.7	3.9	4.2	4.8	4.1	4.4
15	13.3	11.6	12.3	4.3	3.3	3.8	5.7	4.7	5.2	4.5	3.6	4.0
16	13.9	10.9	12.2	4.3	3.4	3.8	5.7	4.9	5.4	3.8	1.9	2.5
17	12.8	10.7	11.7	3.5	2.5	3.0	5.5	4.1	5.1	2.0	.7	1.4
18	12.8	11.3	11.9	2.8	1.9	2.5	4.1	2.6	3.3	2.7	1.5	2.0
19	14.5	11.5	12.7	2.5	1.8	2.3	4.2	3.2	3.7	4.2	2.6	3.3
20	12.8	11.6	12.2	2.8	2.0	2.5	4.9	3.8	4.3	3.9	2.7	3.2
21	11.6	10.6	11.1	3.2	2.5	2.8	5.2	4.6	4.9	4.8	3.6	4.1
22	10.9	8.8	9.7	3.0	2.3	2.7	6.2	5.1	5.6	5.3	3.8	4.6
23	10.0	8.1	9.1	2.9	2.3	2.5	6.2	5.7	5.9	5.0	3.8	4.3
24	10.2	8.2	9.2	4.8	2.9	3.8	6.0	4.9	5.5	5.4	4.5	4.9
25	9.9	9.3	9.5	5.3	4.7	5.0	4.9	3.6	4.2	5.1	4.1	4.5
26	11.2	9.2	10.0	6.0	5.2	5.5	4.6	3.2	3.9	4.5	2.9	3.8
27	11.4	9.4	10.3	6.4	5.9	6.1	4.7	3.7	4.1	4.1	2.4	3.2
28	11.0	10.2	10.6	6.0	5.3	5.6	4.2	2.9	3.6	3.1	1.5	2.2
29	10.6	10.0	10.3	6.0	5.2	5.6	3.7	2.7	3.2	3.9	2.7	3.2
30	10.8	9.8	10.3	6.5	5.6	6.0	3.2	2.2	2.7	3.5	2.4	2.9
31	10.0	9.1	9.5	---	---	---	3.9	2.5	3.1	2.9	1.5	2.3
MONTH	19.8	8.1	12.5	11.7	1.8	5.6	6.4	2.2	4.5	5.6	.7	3.8
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	3.4	1.7	2.5	5.0	3.7	4.2	10.4	8.1	9.3	12.1	9.2	10.7
2	4.7	3.4	3.9	6.4	4.2	5.1	9.0	6.1	7.1	12.8	8.8	10.8
3	5.4	4.6	4.9	5.1	2.9	3.9	7.7	4.9	6.2	14.1	9.6	11.8
4	7.2	5.3	6.1	5.1	4.0	4.5	8.9	5.1	6.9	15.1	11.1	13.1
5	6.7	5.6	6.3	6.2	4.5	5.3	8.7	5.7	7.4	15.5	12.3	13.9
6	5.6	4.0	4.8	7.9	4.2	6.0	8.4	6.2	7.2	15.6	11.8	13.7
7	4.0	2.3	3.1	9.0	5.5	7.3	8.0	4.9	6.3	17.0	12.6	14.7
8	3.0	1.5	1.9	8.7	7.2	7.9	7.6	4.9	6.3	17.0	14.3	15.6
9	2.8	1.8	2.2	8.0	6.6	7.2	8.4	3.8	6.1	17.1	14.0	15.6
10	4.2	2.5	3.3	7.0	4.6	5.8	7.8	5.7	6.5	17.6	14.2	15.7
11	4.0	2.6	3.1	7.7	4.6	6.1	8.2	6.1	7.0	18.9	14.9	16.7
12	2.8	1.1	2.1	8.2	5.1	6.7	7.0	5.1	6.2	19.8	16.6	18.1
13	2.7	.9	1.9	9.0	6.0	7.5	7.8	5.6	6.7	18.8	16.4	17.6
14	2.9	1.0	2.0	8.4	5.9	7.3	9.0	4.5	6.7	17.7	14.1	15.7
15	3.4	1.4	2.4	7.7	6.0	6.4	8.6	5.8	7.3	14.1	12.6	13.1
16	4.5	2.8	3.6	6.2	4.7	5.5	10.3	6.4	8.3	15.2	11.5	13.2
17	5.3	3.8	4.5	6.8	5.5	6.1	11.3	8.5	9.9	15.1	11.9	13.7
18	5.9	4.5	5.1	8.3	6.4	7.4	10.3	7.9	8.7	16.8	12.6	14.6
19	6.1	4.0	5.0	10.4	7.3	8.7	10.7	6.8	8.5	18.2	14.2	16.1
20	5.7	4.5	5.1	10.0	7.4	8.8	9.4	7.2	8.5	19.2	15.6	17.2
21	6.9	5.1	5.9	11.9	8.1	9.9	10.0	6.5	8.4	20.4	16.5	18.2
22	6.5	5.1	5.7	12.2	8.5	10.4	10.5	7.5	9.1	21.8	17.7	19.6
23	5.2	4.2	4.7	13.1	9.5	11.3	13.1	8.9	10.8	23.1	19.4	21.1
24	5.1	3.9	4.5	12.1	10.1	10.8	14.4	9.9	12.2	22.8	20.0	21.3
25	6.9	4.2	5.4	10.4	9.2	9.7	16.1	11.6	13.7	22.5	20.0	21.2
26	6.6	3.8	5.4	10.0	8.3	9.1	17.4	13.7	15.5	23.1	19.9	21.3
27	6.4	3.6	5.0	9.0	6.9	7.4	16.4	13.3	14.7	21.5	19.0	20.3
28	5.6	3.1	4.5	9.0	6.7	7.9	14.5	11.9	12.8	19.6	17.4	18.5
29	---	---	---	11.4	7.6	9.3	12.1	9.4	10.6	19.1	15.9	17.5
30	---	---	---	10.7	6.8	8.9	12.0	10.7	11.3	20.8	16.1	18.2
31	---	---	---	10.5	7.9	9.3	---	---	---	23.3	17.7	20.4
MONTH	7.2	.9	4.1	13.1	2.9	7.5	17.4	3.8	8.9	23.3	8.8	16.4

ROGUE RIVER BASIN

14338000 ELK CREEK NEAR TRAIL, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	21.8	18.9	20.4	23.9	19.1	21.3	25.1	19.6	22.3	26.8	18.2	21.8
2	18.9	16.5	17.9	25.3	19.1	21.9	26.2	20.0	22.9	26.5	17.5	21.5
3	17.7	15.4	16.4	25.7	20.3	22.9	25.2	20.7	23.0	26.5	17.5	21.4
4	16.9	14.5	15.7	27.2	21.2	23.8	26.1	20.9	22.9	25.8	16.9	20.7
5	15.6	14.7	15.1	27.2	21.6	23.9	26.7	19.8	22.9	23.3	16.9	19.6
6	18.1	14.0	15.9	26.6	20.8	23.4	27.8	20.8	23.8	23.3	14.0	18.1
7	21.2	16.1	18.5	25.7	20.7	23.1	29.2	21.2	24.4	24.3	14.4	18.6
8	22.6	18.1	20.1	26.7	20.7	23.7	29.8	21.2	24.7	24.5	14.4	19.0
9	22.3	18.7	20.2	27.1	21.2	24.2	30.6	21.6	25.1	24.7	15.0	19.3
10	19.8	17.5	18.6	27.4	22.0	24.4	30.7	21.5	25.1	25.3	15.8	19.8
11	17.9	16.7	17.2	25.4	21.7	23.5	28.9	20.2	24.1	22.1	15.8	19.2
12	19.2	15.7	17.5	27.1	21.1	23.6	28.3	19.8	23.7	23.9	17.0	19.7
13	20.3	15.8	17.8	27.4	21.1	23.9	30.2	20.1	24.3	23.3	18.3	20.6
14	21.2	16.4	18.7	27.2	21.4	23.8	29.3	20.1	24.1	26.1	17.1	21.0
15	22.2	17.0	19.4	27.0	20.7	23.2	29.6	19.5	23.9	24.4	18.4	21.0
16	21.9	17.4	19.4	25.3	20.7	22.7	29.7	19.5	23.7	24.8	17.2	20.5
17	21.3	17.2	19.1	25.0	19.6	22.1	28.8	18.3	22.8	24.5	16.1	19.7
18	21.5	17.1	19.2	26.0	19.5	22.4	26.1	18.2	21.6	22.8	14.9	18.5
19	22.6	17.4	19.8	26.7	20.3	22.9	27.7	16.4	21.2	23.8	14.7	18.6
20	24.1	18.4	21.1	26.4	20.5	22.6	26.7	16.1	20.8	23.3	15.2	18.7
21	25.1	19.6	22.2	26.1	19.2	22.3	24.7	16.5	20.6	22.6	14.3	18.1
22	25.5	20.1	22.6	27.2	19.4	22.8	21.9	19.0	20.6	22.5	14.0	17.9
23	24.1	20.0	21.9	28.2	20.2	23.6	23.5	18.2	20.4	22.8	14.7	18.4
24	21.8	19.4	20.5	28.6	20.5	23.9	26.0	16.0	20.5	21.6	15.4	18.4
25	20.8	18.1	19.3	28.9	20.5	23.9	25.8	18.7	21.7	20.0	16.7	18.1
26	18.9	17.5	18.3	29.0	19.7	23.5	26.3	19.5	22.5	18.6	16.2	17.2
27	20.0	17.0	18.4	28.9	19.3	23.2	27.0	19.3	22.3	19.6	16.5	17.5
28	22.9	18.2	20.2	27.8	19.3	22.7	26.8	18.6	22.0	18.7	15.1	16.6
29	23.4	18.7	20.8	23.9	18.6	21.1	27.9	19.4	22.7	18.8	14.1	16.4
30	23.6	19.1	21.2	25.4	19.6	21.9	27.7	19.3	22.5	19.2	14.3	16.6
31	---	---	---	25.0	20.3	22.4	27.6	19.0	22.3	---	---	---
MONTH	25.5	14.0	19.1	29.0	18.6	23.1	30.7	16.0	22.8	26.8	14.0	19.1
YEAR	30.7	.7	12.3									

TURBIDITY (NTU), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	<1	<1	<1	1	<1	<1	5	3	4	5	1	1
2	1	<1	<1	1	<1	<1	3	2	2	2	1	1
3	3	<1	<1	1	<1	<1	3	1	1	5	1	1
4	3	<1	1	1	<1	<1	3	1	1	3	1	1
5	2	1	1	1	<1	<1	1	<1	1	1	1	1
6	2	1	1	2	<1	<1	9	<1	<1	2	1	1
7	3	1	1	1	<1	<1	6	<1	<1	1	<1	1
8	2	1	1	1	<1	<1	6	<1	<1	2	<1	1
9	1	1	1	5	<1	1	3	<1	<1	1	<1	<1
10	6	1	1	4	<1	<1	6	<1	<1	1	<1	<1
11	2	1	1	7	<1	<1	1	<1	<1	3	<1	1
12	2	1	1	5	<1	<1	1	<1	<1	3	<1	1
13	1	<1	1	1	<1	<1	28	<1	<1	1	<1	1
14	1	<1	1	1	<1	<1	45	26	33	2	1	1
15	5	<1	1	1	<1	<1	50	16	23	4	1	2
16	7	<1	1	1	<1	<1	17	10	13	2	2	2
17	2	<1	<1	2	<1	<1	18	10	10	3	1	2
18	1	<1	<1	3	<1	<1	10	8	9	5	1	1
19	3	<1	<1	1	<1	<1	8	5	7	3	1	1
20	3	<1	1	1	<1	<1	6	4	5	2	1	1
21	5	1	2	1	<1	<1	4	3	3	2	1	1
22	5	1	1	1	<1	<1	34	3	9	2	1	1
23	3	<1	1	<1	<1	<1	26	12	16	3	1	1
24	3	<1	<1	<1	<1	<1	18	10	12	2	1	2
25	2	<1	<1	<1	<1	<1	18	7	9	4	2	3
26	2	<1	<1	1	<1	<1	7	6	6	3	2	2
27	3	<1	<1	3	<1	<1	7	4	5	3	2	2
28	2	<1	<1	4	2	3	4	3	4	3	1	1
29	2	<1	1	7	2	2	4	3	3	1	1	1
30	6	<1	1	8	5	6	4	2	2	2	1	1
31	3	<1	<1	---	---	---	3	2	2	1	1	1
MAX	7	1	2	8	5	6	50	26	33	5	2	3
MIN	<1	<1	<1	<1	<1	<1	1	<1	<1	1	<1	<1

TURBIDITY (NTU), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
FEBRUARY				MARCH			APRIL			MAY		
1	2	<1	1	5	1	2	5	3	4	3	1	1
2	2	<1	1	7	1	2	4	2	2	2	1	1
3	2	<1	1	9	6	7	2	2	2	2	1	1
4	14	1	4	6	4	5	3	2	2	5	1	1
5	11	5	5	4	3	4	2	1	2	4	1	2
6	5	3	4	4	2	2	2	1	1	7	1	2
7	7	3	3	5	2	2	6	2	5	13	1	2
8	4	2	2	2	1	2	6	4	5	13	1	4
9	3	1	2	5	1	1	8	4	5	7	1	4
10	2	1	1	1	1	1	6	5	5	10	1	4
11	2	1	1	1	1	1	12	5	6	8	2	4
12	2	1	1	1	<1	1	13	9	11	6	1	1
13	2	1	1	1	<1	<1	11	7	8	5	1	1
14	3	1	1	2	<1	<1	8	6	7	11	1	1
15	1	1	1	1	<1	<1	7	5	6	13	1	2
16	2	1	1	2	<1	<1	7	5	5	13	2	2
17	2	1	1	3	<1	1	20	5	6	9	1	3
18	3	1	2	74	2	15	29	6	10	9	1	1
19	4	2	3	39	8	12	22	5	6	6	1	1
20	3	2	2	9	6	7	6	5	5	5	1	1
21	4	2	2	6	4	5	5	4	4	7	1	1
22	5	3	3	7	2	3	4	4	4	9	1	1
23	12	4	6	4	2	2	5	4	4	9	1	1
24	11	7	9	6	1	2	7	2	3	9	1	1
25	11	6	7	6	1	2	4	2	2	8	1	1
26	---	---	---	5	1	2	4	2	2	8	1	1
27	---	---	---	4	1	1	4	2	2	5	1	1
28	6	2	2	96	4	28	19	1	2	7	1	1
29	---	---	---	20	11	14	7	1	2	6	1	1
30	---	---	---	11	6	8	4	1	1	5	1	1
31	---	---	---	9	5	6	---	---	---	6	1	1
MAX	---	---	---	96	11	28	29	9	11	13	2	4
MIN	---	---	---	1	<1	<1	2	1	1	2	1	1

DAY	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN	MAX	MIN	MEDIAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	8	1	2	3	1	1	---	---	---	2	<1	<1
2	3	1	1	3	1	2	---	---	---	6	<1	<1
3	7	1	1	3	1	2	---	---	---	7	<1	<1
4	4	1	1	2	1	2	---	---	---	5	<1	1
5	4	1	1	3	2	2	---	---	---	1	<1	<1
6	2	1	1	6	2	2	---	---	---	1	<1	<1
7	3	1	1	3	2	2	---	---	---	3	<1	<1
8	9	1	2	3	2	2	---	<1	---	1	<1	<1
9	9	1	2	4	1	2	1	<1	<1	2	<1	<1
10	2	1	2	3	2	2	5	<1	<1	1	<1	<1
11	4	1	1	3	1	2	5	<1	<1	7	<1	<1
12	8	1	1	2	1	1	6	<1	<1	8	<1	<1
13	2	1	1	2	1	1	5	<1	<1	2	<1	<1
14	3	1	1	6	1	2	8	<1	<1	4	<1	<1
15	3	1	1	8	2	3	9	<1	<1	3	<1	<1
16	2	1	1	---	---	---	7	<1	<1	6	<1	<1
17	4	1	1	---	---	---	7	<1	<1	6	<1	<1
18	4	1	1	---	---	---	10	<1	<1	1	<1	<1
19	2	1	1	---	<1	---	7	<1	1	1	<1	<1
20	3	1	2	1	<1	1	11	<1	1	3	<1	<1
21	3	1	2	2	<1	1	9	<1	<1	2	<1	<1
22	4	2	2	2	<1	1	8	<1	<1	1	<1	<1
23	6	2	3	2	1	1	3	<1	<1	---	---	---
24	---	---	---	5	<1	1	11	<1	<1	---	---	---
25	---	---	---	5	1	1	7	<1	2	1	<1	<1
26	---	1	---	6	<1	1	7	1	2	8	1	2
27	10	1	2	8	<1	1	10	<1	1	5	3	3
28	7	1	1	10	<1	2	8	<1	2	6	2	3
29	2	1	1	---	---	---	9	<1	2	3	1	2
30	3	1	1	---	---	---	3	<1	1	2	<1	1
31	---	---	---	---	---	---	2	<1	<1	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

ROGUE RIVER BASIN

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 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year.

REVISED RECORDS.--WSP 1094: 1942(M), 1943, 1945(M), 1946. WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,271.99 ft above sea level. 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 ft³/s, 1,910,000 acre-ft/yr.
24 years (water years 1978-2001), 2,428 ft³/s, 1,759,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 87,600 ft³/s Dec. 22, 1964, gage height, 12.78 ft, datum then in use, from rating curve extended above 23,000 ft³/s; minimum discharge, 567 ft³/s Feb. 18, 1977, result of closure of Lost Creek dam, minimum prior to that time, 611 ft³/s Aug. 6, 14, 29, Sept. 9, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,350 ft³/s May 20, gage height, 3.87 ft; minimum discharge, 842 ft³/s Mar. 15, 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1310	1260	1290	1180	929	883	957	1130	2800	e1280	1250	1910
2	1320	1250	1270	1180	933	958	947	1680	2390	e1260	1780	1910
3	1320	1250	1260	1170	946	965	964	1480	2170	e1260	1820	1900
4	1320	1250	1260	1170	995	926	959	1950	1960	e1260	1830	1900
5	1310	1240	1260	1170	1010	914	920	2300	1760	1260	1900	1900
6	1310	1240	1250	1170	992	916	949	2810	1560	e1260	1890	1910
7	1280	1240	1250	1170	965	912	1020	2830	1410	e1260	1950	1900
8	1260	1240	1240	1170	965	908	980	2790	1410	e1260	1950	1910
9	1270	1250	1250	1170	963	904	965	2760	1410	e1250	1960	1910
10	1300	1270	1240	1160	944	898	947	2950	1430	e1240	1960	1890
11	1300	1260	1420	1070	895	890	995	2940	1430	e1250	1970	1720
12	1300	1250	2650	1070	881	883	1090	2730	1430	e1250	1970	1610
13	1280	1240	1940	1080	879	862	1050	2560	1430	e1260	1960	1600
14	1270	1270	1670	1110	882	859	1010	2330	1430	e1250	1960	1600
15	1270	1270	1610	1100	875	853	976	2170	1420	e1250	1950	1610
16	1270	1270	1540	1080	876	857	958	2440	1420	e1250	1950	1600
17	1270	1260	1490	1080	881	900	985	2860	1430	e1250	1950	1580
18	1260	1260	1450	1080	888	1020	1010	2840	1430	e1250	1950	1570
19	1240	1240	1360	1010	887	1040	1050	3020	1430	e1250	1950	1570
20	1220	1230	1290	999	887	991	1030	3320	1430	e1240	1940	1580
21	1230	1200	1270	997	891	952	1000	3320	1420	e1240	1940	1370
22	1240	1160	1370	1000	908	930	972	3300	1420	e1240	1940	1150
23	1220	1140	1520	1010	946	911	948	3290	1420	e1240	1940	1140
24	1210	1160	1440	1090	972	902	926	3270	1420	e1240	1940	1130
25	1200	1160	1370	1090	944	929	917	2770	1430	1240	1930	1160
26	1210	1180	1300	1050	927	911	910	2380	1440	1240	1920	1170
27	1220	1230	1260	1030	919	900	900	2360	1460	1240	1920	1230
28	1250	1220	1230	1020	901	1180	899	2360	1470	1240	1900	1250
29	1290	1240	1220	1020	---	1160	953	2670	e1470	1240	1900	1250
30	1270	1310	1210	982	---	1070	1000	3240	e1460	1250	1900	1240
31	1280	---	1190	931	---	998	---	3270	---	1250	1910	---
TOTAL	39300	37040	43370	33609	25881	29182	29187	82120	46990	38750	58980	47170
MEAN	1268	1235	1399	1084	924	941	973	2649	1566	1250	1903	1572
MAX	1320	1310	2650	1180	1010	1180	1090	3320	2800	1280	1970	1910
MIN	1200	1140	1190	931	875	853	899	1130	1410	1240	1250	1130
AC-FT	77950	73470	86020	66660	51330	57880	57890	162900	93200	76860	117000	93560

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2001, BY WATER YEAR (WY)

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	1310	1972	3126	3007	2623	2637	2737	2992	2565	2214	2210	1740												
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	2001	2001	1992	1994	1980												

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1978 - 2001
ANNUAL TOTAL	868520	511579	
ANNUAL MEAN	2373	1402	2428
HIGHEST ANNUAL MEAN			4012
LOWEST ANNUAL MEAN			1381
HIGHEST DAILY MEAN	11500	Jan 11	3320
LOWEST DAILY MEAN	1140	Nov 23	853
ANNUAL SEVEN-DAY MINIMUM	1180	Nov 20	872
ANNUAL RUNOFF (AC-FT)	1723000		1015000
10 PERCENT EXCEEDS	3460		1960
50 PERCENT EXCEEDS	2130		1250
90 PERCENT EXCEEDS	1250		920
			1150

e Estimated

ROGUE RIVER BASIN

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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. Turbidity values are considered relative to this site. 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, 19.8°C Aug. 7, 8; minimum, 2.2°C Feb. 13.

TURBIDITY: Maximum, 11 NTU Aug. 3, but may have been higher during period of missing record; minimum, <1 NTU many days.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	12.8	9.2	11.0	8.1	5.5	6.5	6.8	5.8	6.3	6.2	4.2	5.2
2	12.2	8.5	10.3	7.9	6.5	6.9	7.2	5.6	6.3	6.5	4.6	5.4
3	11.5	7.4	9.4	8.7	6.7	7.6	6.8	5.7	6.2	5.7	4.3	5.0
4	11.4	7.3	9.2	8.6	5.9	7.1	6.6	5.7	6.1	6.6	4.5	5.5
5	11.3	7.3	9.3	7.9	5.5	6.6	6.2	5.3	5.8	6.4	4.8	5.5
6	11.4	7.5	9.4	7.8	5.8	6.8	6.1	5.2	5.6	6.2	4.3	5.2
7	11.5	7.6	9.5	7.8	5.1	6.2	6.0	5.0	5.5	5.8	4.2	5.0
8	11.3	7.8	9.6	7.3	6.3	6.7	6.5	4.9	5.7	6.2	5.3	5.7
9	10.0	8.2	9.1	7.5	5.9	6.6	6.8	5.9	6.3	5.7	4.7	5.2
10	9.6	8.4	8.9	7.5	5.2	6.2	6.6	5.1	5.8	5.4	4.4	4.9
11	10.1	8.4	9.2	6.8	4.3	5.4	6.5	4.8	5.5	5.7	4.5	4.9
12	10.0	7.6	8.9	6.6	4.3	5.4	6.8	5.8	6.2	5.9	4.1	5.0
13	10.4	8.1	9.1	6.1	4.6	5.4	6.3	5.7	6.0	5.8	4.6	5.1
14	10.4	6.9	8.2	6.0	4.8	5.5	6.2	5.3	5.8	6.0	4.8	5.3
15	8.8	6.5	7.6	7.1	5.2	6.1	6.5	5.5	6.0	5.9	4.3	5.0
16	9.3	6.3	7.7	6.5	4.5	5.6	6.7	5.4	6.0	5.9	3.1	4.3
17	8.9	6.0	7.6	6.3	4.3	5.2	6.7	4.9	5.8	5.1	2.8	3.9
18	8.4	6.8	7.6	6.2	4.0	5.0	6.1	4.2	5.2	5.3	3.7	4.5
19	9.4	6.6	8.0	6.4	4.2	5.2	6.3	4.8	5.5	6.5	4.4	5.0
20	8.1	6.6	7.3	6.4	4.2	5.4	6.4	5.1	5.7	6.5	3.8	4.8
21	8.7	6.4	7.4	6.7	4.6	5.6	6.4	5.2	5.9	6.2	4.8	5.4
22	8.3	5.1	6.8	6.3	4.2	5.3	6.7	5.6	6.1	6.6	4.5	5.5
23	8.3	5.0	6.7	6.1	4.4	5.3	6.3	5.6	5.9	6.0	4.4	5.2
24	8.4	5.5	7.0	7.1	5.7	6.2	6.4	5.2	5.8	6.2	5.0	5.5
25	7.7	6.5	7.1	7.0	5.8	6.3	5.9	4.4	5.2	5.8	4.4	5.0
26	8.2	6.2	7.2	7.2	5.8	6.5	6.1	4.2	5.1	6.0	3.6	4.9
27	8.3	6.1	7.3	7.4	6.2	6.7	6.0	4.6	5.2	5.6	3.3	4.5
28	7.8	6.6	7.3	7.1	5.7	6.3	5.8	4.0	4.9	5.2	2.9	4.2
29	8.1	6.6	7.3	7.0	5.8	6.4	5.7	3.8	4.7	6.0	4.3	5.0
30	8.5	6.2	7.3	7.2	5.8	6.4	5.3	3.9	4.6	5.6	3.1	4.4
31	8.1	5.5	6.7	---	---	---	6.3	4.2	5.1	5.5	2.7	4.2
MONTH	12.8	5.0	8.2	8.7	4.0	6.1	7.2	3.8	5.7	6.6	2.7	5.0

ROGUE RIVER BASIN

14339000 ROGUE RIVER AT DODGE BRIDGE, NEAR EAGLE POINT, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	5.8	3.3	4.6	5.6	3.8	4.8	11.5	7.6	9.4	11.7	7.4	9.5
2	6.1	4.8	5.5	6.7	4.7	5.6	9.3	6.7	7.9	12.3	7.4	9.6
3	6.2	4.9	5.6	5.5	3.3	4.6	9.3	6.0	7.3	13.0	7.3	10.0
4	7.0	5.2	6.1	6.1	4.5	5.3	10.9	5.7	8.1	12.4	7.9	10.0
5	7.5	5.4	6.4	6.7	4.6	5.6	10.4	5.9	8.4	11.7	7.9	9.5
6	5.9	4.2	5.1	8.5	4.2	6.3	9.2	6.9	7.7	11.8	7.4	9.3
7	5.4	2.5	4.1	9.0	4.8	7.1	8.8	6.0	7.4	12.0	7.5	9.5
8	4.4	2.5	3.5	9.0	5.5	7.2	9.1	6.0	7.7	11.7	7.8	9.5
9	4.8	3.5	4.2	7.7	5.2	6.4	10.1	5.2	7.8	12.1	7.7	9.5
10	5.8	3.6	4.7	7.5	4.0	5.9	9.1	6.2	7.7	12.1	7.3	9.1
11	5.4	3.3	4.4	8.2	4.2	6.2	9.9	6.5	8.0	12.4	7.8	9.8
12	5.8	2.5	4.1	8.6	4.3	6.6	8.4	6.4	7.4	12.4	8.4	10.0
13	5.4	2.2	4.0	9.2	4.5	7.0	9.2	6.4	7.8	12.5	8.0	10.0
14	5.8	2.6	4.4	8.5	4.4	6.6	10.6	5.2	7.9	12.7	8.0	9.7
15	6.1	2.6	4.6	7.1	4.9	5.9	10.2	6.5	8.4	10.6	8.7	9.4
16	6.4	4.0	5.3	7.2	4.0	5.7	11.1	6.5	9.0	12.2	8.1	10.0
17	6.2	4.6	5.5	6.9	5.2	6.0	12.3	7.6	9.7	12.5	8.2	9.9
18	6.5	4.5	5.7	8.6	6.0	7.2	10.0	7.8	8.5	12.8	8.0	10.2
19	6.8	4.3	5.6	10.3	6.8	8.4	10.8	7.1	8.9	13.3	8.1	10.5
20	6.8	4.4	5.7	10.3	6.6	8.3	10.9	7.3	9.3	12.9	8.3	10.5
21	7.6	4.9	6.2	10.9	6.7	8.4	11.5	6.7	9.0	12.9	8.1	10.4
22	6.3	4.9	5.6	11.2	6.9	9.2	11.4	7.2	9.5	12.6	8.6	10.3
23	6.6	4.5	5.5	12.1	7.5	9.7	13.3	8.3	10.6	12.5	8.5	10.1
24	6.0	4.3	5.2	12.2	8.3	10.2	14.3	8.4	11.3	13.1	8.1	10.4
25	8.0	4.3	5.9	10.8	7.6	9.3	14.9	9.1	12.1	13.4	8.3	10.8
26	7.6	4.0	5.8	10.5	7.2	8.8	15.8	11.0	13.6	14.3	8.6	11.3
27	7.1	3.8	5.5	10.6	6.5	8.4	14.3	10.0	12.4	12.6	8.6	10.7
28	6.5	3.2	5.2	10.0	7.3	8.2	12.6	9.5	11.1	13.5	8.1	10.6
29	---	---	---	11.8	7.9	9.2	11.5	8.2	10.0	13.5	8.0	10.8
30	---	---	---	12.0	7.3	9.7	11.6	9.1	10.5	13.4	8.6	10.9
31	---	---	---	11.9	7.6	9.8	---	---	---	13.9	8.6	11.4
MONTH	8.0	2.2	5.1	12.2	3.3	7.3	15.8	5.2	9.1	14.3	7.3	10.1
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	13.3	9.6	11.3	17.4	11.4	14.1	19.2	12.8	16.0	17.5	11.8	14.3
2	13.2	9.0	11.0	18.5	11.8	14.9	19.3	13.9	16.5	16.8	11.6	13.7
3	13.4	8.7	11.0	18.3	12.5	15.1	18.3	14.1	16.0	16.5	10.9	13.1

TURBIDITY (NTU), OCTOBER 2000 TO MAY 2001

DAY	MAX	MIN	MEDIAN		MAX	MIN	MEDIAN		MAX	MIN	MEDIAN		MAX	MIN	MEDIAN
	FEBRUARY				MARCH				APRIL				MAY		
1	<1	<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		<1	<1	<1		1	<1	<1
6	<1	<1	<1		<1	<1	<1		<1	<1	<1		1	1	1
7	<1	<1	<1		<1	<1	<1		<1	<1	<1		1	1	1
8	<1	<1	<1		<1	<1	<1		<1	<1	<1		1	1	1
9	<1	<1	<1		<1	<1	<1		<1	<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		<1	<1	<1		1	1	1
12	<1	<1	<1		<1	<1	<1		<1	<1	<1		1	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		---	---	---
15	<1	<1	<1		<1	<1	<1		2	<1	<1		---	---	---
16	<1	<1	<1		<1	<1	<1		1	<1	<1		---	---	---
17	<1	<1	<1		<1	<1	<1		<1	<1	<1		---	---	---
18	<1	<1	<1		<1	<1	<1		<1	<1	<1		---	---	---
19	<1	<1	<1		<1	<1	<1		<1	<1	<1		---	---	---
20	<1	<1	<1		<1	<1	<1		<1	<1	<1		---	---	---
21	<1	<1	<1		<1	<1	<1		<1	<1	<1		---	---	---
22	<1	<1	<1		<1	<1	<1		<1	<1	<1		---	---	---
23	<1	<1	<1		2	<1	<1		<1	<1	<1		---	---	---
24	<1	<1	<1		<1	<1	<1		6	<1	<1		---	---	---
25	<1	<1	<1		<1	<1	<1		<1	<1	<1		---	---	---
26	4	<1	<1		<1	<1	<1		<1	<1	<1		---	---	---
27	<1	<1	<1		<1	<1	<1		<1	<1	<1		---	---	---
28	<1	<1	<1		1	<1	1		<1	<1	<1		---	---	---
29	---	---	---		1	1	1		<1	<1	<1		---	---	---
30	---	---	---		1	<1	<1		<1	<1	<1		---	---	---
31	---	---	---		1	<1	<1		---	---	---		---	---	---
MAX	4	<1	<1		2	1	1		6	<1	<1		---	---	---
MIN	<1	<1	<1		<1	<1	<1		<1	<1	<1		---	---	---

ROGUE RIVER BASIN

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 mi².

PERIOD OF RECORD.--July 1990 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,686.64 ft above sea level.

REMARKS.--No estimated daily discharges. Records fair. 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.--11 years (water years 1991-2001) 96.2 ft³/s, 69,670 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft³/s Jan. 1, 1997, gage height 11.00 ft; minimum discharge, 0.33 ft³/s Oct. 18, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 197 ft³/s Mar. 28, gage height, 1.58 ft; minimum daily discharge, 3.7 ft³/s Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	16	21	16	16	20	44	32	49	38	53	29
2	49	18	20	15	18	27	43	26	49	43	54	28
3	50	17	19	15	24	21	43	26	50	45	53	27
4	51	17	18	15	26	22	38	29	48	46	54	27
5	49	16	18	15	23	28	33	36	49	49	53	28
6	50	16	17	15	21	28	40	28	39	48	52	28
7	50	16	17	15	19	31	40	27	37	48	54	27
8	49	29	17	15	17	30	37	32	36	49	58	26
9	53	26	18	16	18	28	36	35	36	50	54	24
10	51	20	18	16	18	26	36	33	36	51	53	23
11	24	19	17	21	20	26	46	32	35	56	56	21
12	21	18	16	17	18	24	48	30	37	54	54	20
13	16	18	29	18	17	24	40	31	38	46	49	21
14	16	26	29	18	18	23	36	34	40	43	46	21
15	16	22	21	17	18	23	37	56	39	38	48	23
16	16	19	20	15	17	23	36	34	47	38	47	22
17	15	18	20	15	18	48	39	24	46	41	47	22
18	16	18	18	16	20	52	61	22	43	42	50	14
19	15	18	17	16	19	46	83	25	46	44	52	9.3
20	31	18	18	16	19	44	79	22	47	47	52	6.8
21	26	18	18	16	19	45	66	26	45	41	53	6.4
22	16	17	19	16	22	45	56	32	48	40	56	6.3
23	14	18	18	16	22	55	44	31	52	40	54	5.8
24	14	18	18	25	21	48	39	38	53	44	48	5.2
25	13	18	17	18	20	54	43	39	51	42	44	16
26	13	18	17	17	20	47	44	40	51	45	38	7.0
27	13	19	17	16	20	56	36	46	51	45	33	6.0
28	28	19	16	16	20	121	33	45	42	50	33	5.3
29	20	25	16	16	---	80	32	42	33	49	34	4.3
30	17	23	16	16	---	61	33	42	37	50	32	4.0
31	16	---	16	15	---	54	---	44	---	51	30	---
TOTAL	875	578	576	509	548	1260	1321	1039	1310	1413	1494	513.4
MEAN	28.2	19.3	18.6	16.4	19.6	40.6	44.0	33.5	43.7	45.6	48.2	17.1
MAX	53	29	29	25	26	121	83	56	53	56	58	29
MIN	13	16	16	15	16	20	32	22	33	38	30	4.0
AC-FT	1740	1150	1140	1010	1090	2500	2620	2060	2600	2800	2960	1020

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 2001, BY WATER YEAR (WY)

MEAN	18.3	42.1	140	199	140	139	140	132	74.6	50.5	50.5	28.4
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1991 - 2001

ANNUAL TOTAL	32957	11436.4	96.2
ANNUAL MEAN	90.0	31.3	226
HIGHEST ANNUAL MEAN			22.0
LOWEST ANNUAL MEAN			1997
HIGHEST DAILY MEAN	1030	121	6910
LOWEST DAILY MEAN	13	4.0	1.90
ANNUAL SEVEN-DAY MINIMUM	16	6.8	1.4
ANNUAL RUNOFF (AC-FT)	65370	22680	69670
10 PERCENT EXCEEDS	175	51	228
50 PERCENT EXCEEDS	69	28	42
90 PERCENT EXCEEDS	18	16	14

ROGUE RIVER BASIN

387

14357500 BEAR CREEK AT MEDFORD, OR

LOCATION.--Lat 42°19'28", long 122°51'55", in NW 1/4 sec.30, T.37 S., R.1 W., Jackson County, Hydrologic Unit 17100308, on left bank 300 ft upstream from 10th street Bridge, in Medford, and at mile 10.1.

DRAINAGE AREA.--289 mi².

PERIOD OF RECORD.--March 1915 to June 1920 (no low-flow records), October 1920 to September 1981, December 1983 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1044: 1944. WSP 1448: 1916, 1917(M), 1918-20, 1922, 1924, 1927(M), 1928, 1930. WSP 1568: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,343.27 ft above sea level. 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 fair. 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.--79 years (water years 1921-81, 1984-2001), 115 ft³/s, 82,990 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,600 ft³/s Jan. 1, 1997, gage height, 14.69 ft, present datum; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge 233 ft³/s Mar. 28, gage height, 1.67 ft; minimum daily discharge, 4.4 ft³/s Sept. 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	31	36	29	25	28	69	38	35	24	31	22
2	30	33	35	28	25	43	67	33	40	25	29	24
3	29	31	34	28	37	32	69	30	44	26	28	24
4	31	30	32	27	37	31	61	29	39	25	31	22
5	31	30	32	27	35	33	49	37	40	26	31	22
6	34	29	32	27	32	36	64	39	37	25	31	23
7	35	30	32	28	31	37	76	32	33	26	30	23
8	38	44	31	27	29	38	68	32	34	26	31	23
9	49	41	32	28	30	37	64	34	35	25	29	22
10	72	35	32	28	29	37	66	36	35	26	28	22
11	51	32	32	30	34	37	72	35	34	29	29	20
12	43	31	31	30	31	36	77	34	34	30	33	22
13	43	32	57	30	27	35	68	37	e35	28	30	21
14	36	42	72	30	27	37	70	41	30	25	29	21
15	23	38	41	28	26	44	70	77	32	25	27	37
16	26	33	38	27	26	43	71	55	33	24	26	33
17	31	33	38	26	26	66	78	44	34	27	26	32
18	29	31	35	27	28	67	126	35	31	27	27	25
19	29	31	33	27	27	63	167	32	31	27	27	17
20	61	31	33	27	28	63	167	31	30	28	28	10
21	49	31	33	26	28	61	149	32	30	27	28	10
22	34	31	34	27	30	63	132	33	28	27	32	7.2
23	29	32	33	27	31	71	e100	31	30	29	30	4.4
24	28	33	33	52	30	66	e80	31	32	25	30	5.0
25	27	34	31	32	28	70	e55	34	34	25	28	23
26	27	33	30	29	28	64	52	34	32	25	28	17
27	27	33	30	28	28	78	44	39	36	24	26	10
28	54	33	30	27	28	165	48	42	39	27	22	7.0
29	38	47	30	26	---	111	50	38	30	29	25	5.4
30	32	40	29	26	---	86	45	36	23	32	25	19
31	30	---	29	25	---	81	---	31	---	29	22	---
TOTAL	1128	1015	1080	884	824	1759	2374	1142	1010	823	877	573.0
MEAN	36.4	33.8	34.8	28.5	29.4	56.7	79.1	36.8	33.7	26.5	28.3	19.1
MAX	72	47	72	52	37	165	167	77	44	32	33	37
MIN	23	29	29	25	25	28	44	29	23	24	22	4.4
AC-FT	2240	2010	2140	1750	1630	3490	4710	2270	2000	1630	1740	1140

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1921 - 2001, BY WATER YEAR (WY)

	MEAN	32.5	63.3	158	221	213	197	195	139	75.1	33.5	34.1	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	.53	.39	.70	
(WY)	1932	1937	1937	1937	1931	1931	1931	1931	1931	1924	1924	1931	

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1921 - 2001

ANNUAL TOTAL	46988	13489.0	115
ANNUAL MEAN	128	37.0	304
HIGHEST ANNUAL MEAN			8.42
LOWEST ANNUAL MEAN			1974
HIGHEST DAILY MEAN	1330	167	10900
LOWEST DAILY MEAN	23	4.4	.20
ANNUAL SEVEN-DAY MINIMUM	30	10	.20
ANNUAL RUNOFF (AC-FT)	93200	26760	82990
10 PERCENT EXCEEDS	306	63	267
50 PERCENT EXCEEDS	64	31	52
90 PERCENT EXCEEDS	32	25	12

e Estimated

ROGUE RIVER BASIN

14359000 ROGUE RIVER AT RAYGOLD, NEAR CENTRAL POINT, OR

LOCATION.--Lat 42°26'15", long 122°59'10", in SW 1/4 sec.18, T.36 S., R.2 W., Jackson County, Hydrologic Unit 17100308, on right bank at Raygold, 0.1 mi downstream from Gold Ray Dam, 1.0 mi downstream from Bear Creek, 5.6 mi northwest of Central Point, and at mile 125.8.

DRAINAGE AREA.--2,053 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1905 to current year. Prior to October 1921, published as "near Tolo."

REVISED RECORDS.--WSP 1248: 1906, 1914(M), 1915. WSP 1398: 1910(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,121.78 ft above sea level. 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 fair. 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.--72 years (water years 1906-77), 2,976 ft³/s, 2,156,000 acre-ft/yr.
24 years (water years 1978-2001), 2,913 ft³/s, 2,110,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 131,000 ft³/s Dec. 23, 1964, gage height, 23.43 ft, from rating curve extended above 63,000 ft³/s on basis of slope-area measurement of 113,000 ft³/s; minimum discharge recorded, 418 ft³/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, 3,410 ft³/s May 20, gage height, 2.89 ft; minimum discharge, 979 ft³/s Mar. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1360	1390	1490	1360	1070	1070	1300	1290	2820	1270	1160	1780
2	1330	1390	1450	1350	1070	1200	1260	1710	2410	1210	1540	1790
3	1320	1390	1440	1350	1130	1260	1300	1630	2180	1190	1680	1790
4	1340	1380	1430	1350	1180	1130	1240	1900	1990	1190	1670	1800
5	1330	1380	1420	1350	1200	1090	1150	2280	1800	1180	1750	1790
6	1340	1380	1410	1360	1160	1080	1250	e2800	1640	1180	1740	1800
7	1300	1370	1410	1350	1140	1070	1540	e3000	1440	1160	1790	1800
8	1290	1420	1400	1350	1110	1060	1380	e2950	1420	1170	1790	1810
9	1330	1460	1410	1350	1140	1060	1320	e2900	1400	1150	1780	1800
10	1530	1440	1390	1330	1130	1120	1270	e2950	1420	1160	1760	1800
11	1440	1410	1810	1240	1080	1110	1320	e3000	1430	1190	1780	1670
12	1400	1390	2730	1230	1080	1090	1450	2740	1430	1230	1800	1560
13	1350	1400	2080	1250	1060	1030	1390	2580	1410	1260	1790	1550
14	1360	1480	2210	1280	1060	1010	1300	2390	1410	1210	1760	1560
15	1340	1490	1890	1270	1050	1050	1270	2390	1400	1200	1760	1630
16	1340	1440	1760	1240	1040	1030	1250	2610	1390	1190	1760	1640
17	1350	1420	1750	1230	1040	1110	1260	2930	1400	1170	1780	1610
18	1330	1400	1700	1240	1040	1270	1360	2930	1400	1170	1780	1580
19	1330	1380	1610	1170	1030	1340	1610	3040	1380	1170	1790	1530
20	1450	1370	1520	1140	1030	1280	1640	3320	1380	1170	1800	1550
21	1490	1350	1480	1140	1030	1230	1520	3340	1360	1160	1790	1380
22	1410	1310	1520	1140	1060	1210	1400	3290	1350	1160	1820	1160
23	1360	1290	1710	1140	1120	1210	1320	3260	1350	1150	1850	1110
24	1340	1320	1630	1360	1170	1190	1240	3230	1380	1130	1840	1120
25	1330	1320	1560	1330	1140	1230	1200	2830	1400	1130	1820	1240
26	1330	1340	1490	1240	1120	1210	1170	2400	1410	1130	1810	1220
27	1350	1360	1440	1200	1090	1190	1120	2350	1480	1140	1790	1260
28	1460	1380	1410	1180	1080	1730	1100	2360	1490	1120	1760	1260
29	1470	1500	1390	1180	---	1720	1190	2590	1460	1150	1770	1240
30	1420	1550	1380	1150	---	1520	1190	3100	1410	1190	1770	1230
31	1390	---	1370	1070	---	1390	---	3210	---	1170	1770	---
TOTAL	42510	41900	49690	38920	30650	37290	39310	83300	46640	36450	54250	46060
MEAN	1371	1397	1603	1255	1095	1203	1310	2687	1555	1176	1750	1535
MAX	1530	1550	2730	1360	1200	1730	1640	3340	2820	1270	1850	1810
MIN	1290	1290	1370	1070	1030	1010	1100	1290	1350	1120	1160	1110
AC-FT	84320	83110	98560	77200	60790	73960	77970	165200	92510	72300	107600	91360

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2001, BY WATER YEAR (WY)

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	1452	2403	4132	3911	3553	3452	3509	3477	2746	2251	2225	1862												
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	1512	1255	1095	1111	1125	1605	1555	1117	1744	1434												
(WY)	1995	1988	1990	2001	2001	1992	1992	1992	2001	1992	1994	1980												

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1978 - 2001

ANNUAL TOTAL	1019180	546970	
ANNUAL MEAN	2785	1499	2913
HIGHEST ANNUAL MEAN			5098
LOWEST ANNUAL MEAN			1491
HIGHEST DAILY MEAN	18400	Apr 18	53900
LOWEST DAILY MEAN	1290	Sep 28	880
ANNUAL SEVEN-DAY MINIMUM	1310	Sep 24	897
ANNUAL RUNOFF (AC-FT)	2022000	1085000	2110000
10 PERCENT EXCEEDS	4600	1870	5110
50 PERCENT EXCEEDS	2280	1370	2220
90 PERCENT EXCEEDS	1360	1120	1300

e Estimated

ROGUE RIVER BASIN

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14359000 ROGUE RIVER AT RAYGOLD, NEAR CENTRAL POINT, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1973 to current year.

INSTRUMENTATION.--Temperature recorder since August 1973.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 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 recorded, 20.3°C Aug. 7-9; minimum recorded, 2.7°C Jan. 17, Feb. 8.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	13.9	12.6	13.3	8.0	6.7	7.2	6.6	6.3	6.4	5.2	4.3	4.7
2	13.8	12.6	13.0	8.5	7.3	7.7	6.5	6.0	6.2	5.4	4.6	5.0
3	12.8	10.9	11.5	9.3	8.4	8.8	6.4	5.8	6.0	5.4	4.4	4.7
4	11.5	10.5	11.0	9.2	7.8	8.3	6.3	5.8	6.0	5.7	4.7	5.0
5	11.6	10.4	10.9	8.3	7.0	7.4	5.9	5.4	5.6	5.7	5.1	5.4
6	11.8	10.5	11.1	7.8	7.1	7.4	5.4	5.1	5.2	5.6	4.6	5.0
7	12.0	10.7	11.3	7.7	6.1	6.6	5.2	4.9	5.0	5.1	4.2	4.6
8	12.0	10.9	11.4	7.8	6.7	7.3	5.3	4.9	5.0	6.0	4.9	5.6
9	12.0	10.3	11.0	7.5	6.8	7.2	6.2	5.3	5.8	5.9	4.9	5.2
10	10.9	10.4	10.6	7.2	6.0	6.5	6.2	5.8	6.0	5.0	4.5	4.7
11	10.8	9.9	10.3	6.4	5.1	5.5	5.8	4.7	5.1	4.7	4.3	4.5
12	10.6	9.3	9.9	5.4	4.5	5.0	6.4	5.4	5.9	5.2	4.5	4.7
13	11.5	10.2	10.7	5.4	4.6	4.9	6.2	5.7	5.9	5.3	4.8	5.0
14	11.5	9.9	10.5	5.3	4.9	5.1	5.9	5.4	5.6	5.6	4.8	5.1
15	10.4	8.9	9.4	6.4	5.2	5.6	6.3	5.5	5.9	5.2	4.3	4.6
16	9.8	8.5	9.0	6.4	5.4	5.8	6.2	5.4	5.7	4.5	3.2	3.7
17	9.8	8.7	9.2	5.7	4.4	4.9	6.0	5.2	5.5	3.7	2.7	3.1
18	9.8	8.8	9.2	4.8	4.1	4.4	5.6	4.1	4.7	4.2	3.4	3.7
19	10.4	8.7	9.4	4.9	4.1	4.5	5.6	4.7	5.1	5.5	4.1	4.7
20	10.3	8.9	9.5	5.1	4.6	4.8	5.7	5.1	5.3	5.5	4.0	4.6
21	9.2	8.4	8.8	5.5	4.7	5.0	6.1	5.5	5.8	5.5	4.4	4.9
22	9.0	7.5	8.0	5.5	4.5	5.0	6.4	5.9	6.1	6.0	5.0	5.4
23	8.4	7.2	7.7	5.2	4.4	4.7	6.3	5.7	5.9	5.9	5.1	5.4
24	8.8	7.6	8.1	6.3	5.1	5.6	6.0	5.4	5.7	5.9	5.4	5.6
25	8.9	8.4	8.7	6.4	6.1	6.3	6.0	4.8	5.3	5.7	4.6	5.0
26	9.4	8.0	8.6	6.8	6.2	6.4	5.0	4.2	4.6	5.3	4.4	4.9
27	9.3	8.2	8.7	7.3	6.7	6.9	5.0	4.5	4.7	5.3	4.0	4.5
28	9.2	8.7	8.9	7.3	6.4	6.8	4.8	3.9	4.3	4.4	3.2	3.7
29	8.8	8.0	8.5	6.8	6.4	6.6	4.5	3.8	4.1	5.3	4.2	4.6
30	9.0	8.1	8.6	6.6	6.0	6.3	4.1	3.6	3.9	5.3	3.7	4.3
31	8.8	7.4	7.9	---	---	---	5.1	4.0	4.3	4.2	3.2	3.7
MONTH	13.9	7.2	9.8	9.3	4.1	6.2	6.6	3.6	5.4	6.0	2.7	4.7

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	4.7	3.6	4.0	6.0	4.8	5.2	12.1	10.9	11.3	13.3	11.0	11.8
2	5.9	4.7	5.3	6.7	5.0	5.7	11.1	9.2	9.8	12.4	9.7	11.3
3	6.0	5.6	5.8	6.0	4.3	4.9	9.3	7.5	8.3	13.3	10.1	11.7
4	6.4	5.9	6.0	6.2	4.8	5.3	10.1	7.3	8.5	13.2	10.9	12.2
5	7.4	6.4	6.8	6.3	5.5	5.9	10.1	8.7	9.5	12.9	9.8	11.6
6	7.3	5.0	6.0	7.8	5.8	6.5	9.9	8.2	9.2	12.7	8.8	11.0
7	5.0	3.3	4.0	9.0	7.3	8.0	8.4	6.9	7.7	13.3	8.9	11.2
8	4.2	2.7	3.2	9.2	8.1	8.7	9.4	7.3	8.3	12.8	9.3	11.3
9	4.0	2.9	3.4	8.1	7.1	7.5	9.6	7.3	8.4	12.9	9.4	11.2
10	4.6	3.7	4.0	7.3	6.3	6.8	9.5	8.6	8.8	13.2	9.0	11.1
11	4.8	4.2	4.5	7.8	6.1	6.9	9.6	8.2	8.9	13.6	9.4	11.5
12	4.4	3.3	3.8	8.5	6.8	7.6	9.4	8.0	8.4	13.7	9.9	11.9
13	4.2	3.3	3.8	9.0	7.5	8.3	9.3	7.8	8.5	13.3	9.8	11.7
14	4.5	3.3	3.9	9.0	7.8	8.3	10.1	7.5	8.6	12.9	9.9	10.7
15	5.0	3.8	4.2	8.5	6.8	7.4	10.2	9.0	9.7	11.6	10.1	10.8
16	6.4	4.9	5.4	7.1	6.3	6.7	11.4	9.3	10.2	13.6	9.8	11.6
17	6.4	5.7	6.0	8.2	6.8	7.0	12.6	10.5	11.4	13.3	9.7	11.6
18	6.5	5.5	5.9	8.8	7.2	7.8	12.3	9.8	11.0	13.9	9.9	11.9
19	6.9	5.7	6.3	11.1	8.6	9.6	11.1	9.0	10.0	14.4	10.2	12.3
20	6.9	6.3	6.7	11.1	9.7	10.2	11.7	9.7	10.7	14.6	10.4	12.4
21	7.4	6.3	6.8	11.9	9.4	10.5	11.5	9.4	10.4	14.6	10.3	12.4
22	7.3	6.0	6.6	12.6	10.7	11.5	12.0	10.5	11.2	14.4	10.2	12.4
23	6.5	5.6	6.0	13.1	11.4	12.1	14.3	11.2	12.6	14.2	10.0	12.2
24	6.3	5.4	5.7	13.1	11.1	11.9	15.0	12.6	13.8	14.6	10.1	12.3
25	7.2	5.0	5.9	11.1	10.1	10.6	16.0	13.9	14.9	14.8	10.6	12.7
26	7.2	6.2	6.7	10.7	9.5	10.1	17.0	15.0	16.2	15.5	11.3	13.4
27	7.0	5.8	6.3	10.7	8.6	9.3	17.0	14.9	15.5	15.3	11.7	13.0
28	6.7	5.4	5.9	10.6	8.5	9.3	14.9	13.3	13.9	14.5	10.9	12.6
29	---	---	---	12.5	9.8	11.0	13.7	11.5	12.2	14.6	10.6	12.7
30	---	---	---	12.2	10.2	11.3	13.3	12.1	12.6	15.1	10.4	12.7
31	---	---	---	12.1	10.6	11.4	---	---	---	15.7	11.1	13.3
MONTH	7.4	2.7	5.3	13.1	4.3	8.5	17.0	6.9	10.7	15.7	8.8	12.0

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	14.8	11.4	13.0	17.6	15.9	16.8	18.9	17.4	18.0	17.9	14.8	16.3
2	14.0	10.6	12.7	19.1	16.5	17.6	19.2	17.6	18.4	17.2	14.2	15.7
3	14.0	11.1	12.6	19.1	17.7	18.4	19.1	16.6	17.8	16.7	13.5	15.1
4	13.7	11.1	12.5	19.7	18.4	18.9	19.3	16.2	17.7	16.1	13.0	14.6
5	13.7	11.5	12.6	19.8	18.6	19.3	19.4	16.1	17.8	15.7	12.8	14.0
6	15.4	11.6	13.2	19.6	17.7	18.4	20.1	16.9	18.5	14.4	11.5	13.0
7	16.7	13.6	15.1	19.0	17.6	18.2	20.3	17.1	18.9	14.8	11.8	13.4
8	16.6	14.5	15.6	19.6	17.7	18.5	20.3	17.2	18.9	14.9	12.2	13.6
9	16.0	14.6	15.5	19.9	18.5	19.1	20.3	17.3	19.0	15.0	12.4	13.8
10	15.9	13.2	14.1	20.0	18.6	19.2	20.2	17.3	18.9	15.3	12.7	14.0
11	13.9	13.0	13.5	18.7	16.7	17.6	20.0	16.6	18.2	15.3	13.0	13.8
12	15.5	12.1	13.6	19.0	16.8	17.7	19.0	16.1	17.4	15.1	13.2	14.2
13	15.7	12.9	14.3	19.5	17.7	18.4	19.4	16.3	17.8	15.2	14.3	14.8
14	16.2	13.7	15.0	19.5	18.1	18.7	19.6	16.7	18.3	16.5	13.9	15.0
15	16.3	14.0	15.2	19.1	17.5	18.2	19.6	16.6	18.2	16.6	15.0	15.8
16	16.2	13.9	15.1	18.8	17.5	18.0	19.5	16.7	18.3	16.5	14.1	15.2
17	15.9	13.6	14.9	18.2	16.6	17.2	19.2	16.0	17.8	15.6	13.6	14.6
18	15.9	13.8	14.8	19.0	16.7	17.6	19.0	15.7	17.2	15.2	13.3	14.2
19	16.6	14.0	15.3	19.4	17.8	18.5	18.4	15.1	16.8	14.8	13.2	13.9
20	17.6	15.0	16.2	19.2	18.0	18.5	18.3	15.2	16.9	14.6	12.9	13.8
21	18.0	15.8	17.0	18.9	17.1	17.9	18.2	15.1	16.8	14.5	13.1	13.7
22	17.9	16.0	16.9	19.0	17.4	18.1	18.1	15.5	16.4	14.5	13.3	13.9
23	17.6	15.7	16.5	19.7	18.0	18.7	17.1	14.9	15.9	14.9	13.8	14.4
24	16.5	14.2	15.3	19.8	18.5	19.1	17.9	14.7	16.2	14.9	14.1	14.4
25	15.3	13.9	14.4	19.8	18.8	19.2	18.6	15.3	16.9	14.6	13.0	13.9
26	14.7	13.1	13.8	19.7	18.2	18.7	18.7	15.7	17.4	13.0	11.6	12.1
27	16.8	13.3	14.8	19.3	18.1	18.6	18.6	15.9	17.4	12.2	11.0	11.5
28	17.8	14.9	16.3	19.1	18.0	18.4	18.4	15.2	16.9	12.2	11.2	11.6
29	17.9	15.3	16.7	18.9	16.4	17.4	18.5	15.7	17.2	12.1	10.9	11.5
30	17.9	15.8	16.7	17.6	16.2	16.7	18.4	15.6	17.1	12.5	11.4	11.9
31	---	---	---	18.6	16.5	17.3	18.0	15.3	16.7	---	---	---
MONTH	18.0	10.6	14.8	20.0	15.9	18.2	20.3	14.7	17.6	17.9	10.9	13.9

YEAR	20.3	2.7	10.6									
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ROGUE RIVER BASIN

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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 mi².

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 sea level. 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.--No estimated daily discharges. 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 ft³/s, 2,566,000 acre-ft/yr.
24 years (water years 1978-2001), 3,294 ft³/s, 2,386,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 152,000 ft³/s Dec. 23, 1964, gage height, 35.15 ft, present datum, from rating curve extended above 93,000 ft³/s; minimum discharge, 195 ft³/s Jan. 30, 1961; minimum daily, 606 ft³/s Sept. 10, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1861 reached a stage of about 43 ft, present datum (information furnished by Corps of Engineers). Flood in February 1890 reached a stage of about 36 ft, present datum, and that of Feb. 21, 1927, about 32 ft, present datum, according to local resident.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,070 ft³/s May 31, gage height, 3.52 ft; minimum discharge, 994 ft³/s July 8, 10, result of regulation at Savage Rapids Dam.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1270	1420	1530	1410	1240	1240	1420	1380	3370	1430	1270	1910
2	1270	1420	1480	1400	1220	1290	1380	1370	2760	1310	1380	1910
3	1260	1420	1460	1390	1250	1400	1390	1650	2390	1270	1810	1920
4	1260	1410	1450	1390	1290	1310	1370	1830	2150	1270	1810	1920
5	1270	1410	1440	1390	1310	1270	1320	2400	1910	1260	1860	1920
6	1280	1410	1430	1400	1290	1260	1340	2960	1730	1260	1880	1920
7	1270	1410	1430	1390	1290	1250	1580	3210	1500	1260	1910	1900
8	1260	1430	1420	1400	1260	1240	1480	3140	1420	1190	1930	1930
9	1350	1470	1430	1400	1270	1230	1440	3030	1430	1220	1950	1950
10	1930	1470	1430	1390	1260	1260	1390	3120	1440	1320	1910	1930
11	1470	1440	1510	1350	1250	1270	1400	3210	1450	1350	1930	1900
12	1410	1420	3010	1320	1240	1260	1520	3020	1470	1290	1960	1710
13	1330	1420	2350	1330	1220	1230	1490	2790	1450	1350	1950	1650
14	1390	1470	2500	1360	1220	1210	1420	2580	1440	1310	1940	1660
15	1380	1520	2030	1360	1210	1220	1390	2540	1410	1280	1910	1700
16	1370	1460	1870	1340	1210	1230	1380	2810	1390	1280	1910	1810
17	1380	1440	1800	1320	1210	1260	1370	3140	1430	1270	1920	1770
18	1370	1430	1780	1330	1220	1340	1420	3290	1450	1260	1950	1800
19	1370	1420	1670	1300	1220	1420	1640	3360	1430	1260	1970	1830
20	1460	1410	1570	1270	1220	1380	1720	3640	1420	1260	1960	1850
21	1510	1390	1530	1270	1230	1350	1630	3780	1430	1270	1950	1720
22	1460	1370	1540	1270	1230	1330	1500	3720	1420	1260	1970	1540
23	1400	1360	1820	1270	1270	1330	1440	3670	1410	1260	2020	1400
24	1380	1370	1740	1380	1300	1340	1380	3690	1430	1240	2000	1360
25	1370	1380	1660	1420	1300	1340	1350	3330	1450	1230	1970	1430
26	1370	1390	1550	1360	1280	1350	1330	2660	1480	1220	2010	1430
27	1380	1400	1500	1340	1250	1310	1300	2480	1560	1230	1930	1330
28	1470	1410	1460	1330	1240	1650	1280	2510	1580	1230	1900	1350
29	1500	1510	1430	1330	---	1860	1340	2720	1580	1240	1880	1350
30	1450	1600	1420	1320	---	1620	1430	3370	1520	1280	1880	1340
31	1420	---	1420	1270	---	1490	---	3840	---	1290	1900	---
TOTAL	43060	42880	51660	41800	35000	41540	42840	90240	49300	39450	58520	51140
MEAN	1389	1429	1666	1348	1250	1340	1428	2911	1643	1273	1888	1705
MAX	1930	1600	3010	1420	1310	1860	1720	3840	3370	1430	2020	1950
MIN	1260	1360	1420	1270	1210	1210	1280	1370	1390	1190	1270	1330
AC-FT	85410	85050	102500	82910	69420	82390	84970	179000	97790	78250	116100	101400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2001, BY WATER YEAR (WY)

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	1503	2738	4905	4889	4614	4174	4033	3752	2816	2185	2161	1818												
MAX	2282	7669	17620	16600	10960	8119	6843	6428	4572	3485	3080	2642												
(WY)	1984	1985	1997	1997	1983	1983	1998	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 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1978 - 2001
ANNUAL TOTAL	1152040	587430	
ANNUAL MEAN	3148	1609	3294
HIGHEST ANNUAL MEAN			5840
LOWEST ANNUAL MEAN			1538
HIGHEST DAILY MEAN	21200	Jan 11	69000
LOWEST DAILY MEAN	1240	Sep 22	744
ANNUAL SEVEN-DAY MINIMUM	1260	Sep 28	799
ANNUAL RUNOFF (AC-FT)	2285000	1165000	2386000
10 PERCENT EXCEEDS	5820	2010	6120
50 PERCENT EXCEEDS	2140	1420	2280
90 PERCENT EXCEEDS	1390	1260	1310

ROGUE RIVER BASIN

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 mi².

PERIOD OF RECORD.--December 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (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, 37,440 acre-ft Oct. 1, elevation, 1,931.28 ft; minimum observed contents, 8,290 acre-ft Mar. 19, elevation, 1,859.8 ft, but may have been lower during period of no gage height Mar. 3-19.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1930.30	1904.39	1881.06	1868.47	1863.89	1860.77	1888.84	1901.10	1904.18	1903.67	1900.72	1894.53
2	1929.30	1903.70	1880.34	1868.04	1863.74	1860.70	1889.71	1901.43	1904.16	1903.66	1900.53	1894.29
3	1928.29	1903.05	1879.61	1867.80	1863.66	---	1890.38	1901.69	1904.15	1903.62	1900.36	1894.06
4	1927.26	1902.34	1878.98	1867.67	1863.82	---	1890.90	1901.91	1904.14	1903.57	1900.18	1893.82
5	1926.21	1901.60	1878.48	1867.58	1864.08	---	1891.31	1902.14	1904.12	1903.51	1900.00	1893.58
6	1925.16	1900.83	1877.96	1867.48	1864.20	---	1891.76	1902.34	1904.14	1903.44	1899.82	1893.36
7	1924.08	1900.04	1877.44	1867.35	1864.23	---	1892.13	1902.52	1904.16	1903.36	1899.67	1893.12
8	1923.00	1899.32	1876.90	1867.42	1864.18	---	1892.44	1902.73	1904.17	1903.28	1899.48	1892.88
9	1921.96	1898.61	1876.38	1867.50	1864.12	---	1892.69	1902.94	1904.16	1903.19	1899.28	1892.63
10	1920.99	1897.84	1875.92	1867.60	1864.00	---	1892.92	1903.09	1904.15	1903.14	1899.08	1892.38
11	1920.16	1897.01	1875.42	1867.58	1863.89	---	1893.09	1903.19	1904.13	1903.11	1898.88	1892.15
12	1919.28	1896.15	1874.91	1867.49	1863.70	---	1893.12	1903.28	1904.11	1903.20	1898.67	1891.89
13	1918.40	1895.28	1874.59	1867.36	1863.47	---	1893.14	1903.30	1904.08	1903.15	1898.46	1891.68
14	1917.51	1894.40	1874.48	1867.22	1863.21	---	1893.12	1903.33	1904.02	1903.08	1898.25	1891.44
15	1916.62	1893.52	1874.29	1867.05	1862.87	---	1893.10	1904.17	1903.98	1902.99	1898.05	1891.27
16	1915.69	1892.62	1873.94	1866.83	1862.51	---	1893.16	1904.78	1903.92	1902.89	1897.84	1891.08
17	1914.76	1891.71	1873.54	1866.61	1862.20	---	1893.66	1905.04	1903.86	1902.79	1897.62	1890.85
18	1913.80	1890.78	1873.06	1866.38	1862.06	---	1894.18	1905.17	1903.79	1902.69	1897.41	1890.61
19	1912.84	1889.82	1872.58	1866.20	1861.82	---	1894.60	1905.22	1903.72	1902.60	1897.20	1890.37
20	1912.07	1888.86	1872.06	1865.97	1861.60	1863.82	1894.98	1905.24	1903.64	1902.50	1896.98	1890.14
21	1911.50	1887.86	1871.74	1865.76	1861.72	1865.62	1895.31	1905.20	1903.56	1902.39	1896.77	1889.90
22	1910.83	1886.99	1871.76	1865.54	1861.92	1867.74	1895.62	1905.12	1903.46	1902.28	1896.56	1889.64
23	1910.13	1886.22	1871.75	1865.36	1861.92	1870.04	1895.98	1904.98	1903.36	1902.18	1896.39	1889.40
24	1909.41	1885.48	1871.56	1865.40	1861.84	1872.83	1896.48	1904.82	1903.26	1902.05	1896.22	1889.16
25	1908.69	1884.70	1871.24	1865.34	1861.67	1876.74	1897.27	1904.64	1903.18	1901.89	1896.02	1889.00
26	1907.96	1883.92	1870.86	1865.21	1861.46	1878.64	1898.25	1904.55	1903.18	1901.72	1895.82	1888.85
27	1907.20	1883.16	1870.45	1865.04	1861.22	1880.06	1899.06	1904.42	1903.56	1901.54	1895.61	1888.64
28	1906.81	1882.38	1870.04	1864.82	1860.96	1882.98	1899.71	1904.30	1903.68	1901.37	1895.40	1888.42
29	1906.33	1882.16	1869.68	1864.65	---	1885.02	1900.15	1904.30	1903.69	1901.20	1895.18	1888.19
30	1905.76	1881.71	1869.30	1864.42	---	1886.55	1900.59	1904.28	1903.67	1901.04	1894.97	1887.97
31	1905.10	---	1868.90	1864.16	---	1887.78	---	1904.24	---	1900.89	1894.76	---
MAX	1930.30	1904.39	1881.06	1868.47	1864.23	---	1900.59	1905.24	1904.18	1903.67	1900.72	1894.53
MIN	1905.10	1881.71	1868.90	1864.16	1860.96	---	1888.84	1901.10	1903.18	1900.89	1894.76	1887.97
(†)	23620	14450	10580	9340	8560	16560	21630	23230	22980	21760	19210	16630
(‡)	-13810	-9170	-3870	-1240	-780	+8000	+5070	+1600	-250	-1220	-2550	-2580

CAL YR 2000 MAX 1986.75 MIN 1868.90 AC-FT† -1740
WTR YR 2001 MAX --- MIN --- AC-FT‡ -20800

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

ROGUE RIVER BASIN

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14362000 APPLEGATE RIVER NEAR COPPER, OR

LOCATION.--Lat 42°03'50", long 123°06'37", in SW 1/4 NW 1/4 sec.30, T.40 S., R.3 W., Jackson County, Hydrologic Unit 17100309, U.S. Corps of Engineers land, on left bank 0.1 mi downstream from Brushy Gulch, 0.6 mi downstream from Applegate Dam, 3.1 mi northeast of former town of Copper, and at mile 45.7.

DRAINAGE AREA.--225 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year. Prior to January 1939 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WDR OR-78-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,747.51 ft above sea level. Prior to Oct. 1, 1977, at site 0.6 mi upstream at datum 12.15 ft higher.

REMARKS.--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 ft³/s, 317,300 acre-ft/yr.
20 years (water years 1982-2001), 435 ft³/s, 314,800 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,800 ft³/s Jan. 15, 1974, gage height, 25.38 ft, site and datum then in use, from high-water mark in well, from rating curve extended above 12,000 ft³/s on basis of four slope-area measurements of peak flows made in 1950, 1955, 1964, and 1974; minimum discharge, 1.5 ft³/s Dec. 20, 1980, result of regulation at Applegate dam, 0.6 mi upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 369 ft³/s Oct. 4, 5, gage height, 2.19 ft; minimum discharge, 50 ft³/s July 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	353	237	197	151	110	110	101	137	90	51	65	66
2	354	237	197	151	110	111	100	137	79	53	65	66
3	357	238	196	127	110	110	99	137	79	57	65	66
4	363	239	178	113	110	109	98	138	80	57	66	66
5	363	240	151	113	111	109	98	138	78	57	65	66
6	361	241	151	113	110	108	97	139	69	57	65	65
7	360	240	150	113	109	107	98	139	67	56	65	65
8	359	239	150	113	109	107	99	140	67	56	65	66
9	357	238	150	113	109	107	99	140	67	56	66	66
10	341	237	149	113	109	107	99	140	67	57	66	66
11	294	238	149	113	109	106	111	141	67	57	66	66
12	295	242	150	113	108	105	130	141	67	58	66	66
13	295	240	150	113	107	105	130	141	66	56	66	66
14	294	239	150	113	112	105	129	142	66	56	66	66
15	293	238	150	113	119	104	131	143	66	56	66	e66
16	294	237	151	113	117	104	132	143	66	56	66	e66
17	294	236	153	113	117	104	132	142	66	56	66	e66
18	296	237	153	112	117	104	133	144	66	56	66	e65
19	297	240	153	112	116	104	132	144	66	56	66	e65
20	286	238	152	112	115	105	132	144	66	56	66	e65
21	237	239	152	112	115	105	132	144	67	56	66	e65
22	236	215	152	112	115	105	132	145	67	56	66	e64
23	236	199	152	112	115	104	133	145	67	56	66	e64
24	235	198	152	112	113	105	134	145	66	e57	67	e65
25	e233	198	152	112	113	104	135	146	66	66	66	65
26	e233	197	152	112	113	102	135	122	67	66	66	65
27	e237	194	151	111	112	101	136	122	67	65	66	65
28	237	194	151	111	111	102	138	116	67	65	65	65
29	239	197	152	111	---	102	138	88	67	65	65	65
30	238	198	152	111	---	101	138	90	65	65	65	65
31	238	---	152	111	---	100	---	91	---	65	66	---
TOTAL	9105	6800	4850	3574	3141	3262	3631	4164	2071	1802	2037	1963
MEAN	294	227	156	115	112	105	121	134	69.0	58.1	65.7	65.4
MAX	363	242	197	151	119	111	138	146	90	66	67	66
MIN	233	194	149	111	107	100	97	88	65	51	65	64
AC-FT	18060	13490	9620	7090	6230	6470	7200	8260	4110	3570	4040	3890

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2001, BY WATER YEAR (WY)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	341	393	544	658	568	535	424	624	234	223	273									
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	204	187	121	115	112	105	118	134	69.0	58.1	65.7	65.4								
(WY)	1982	1988	1995	1991	2001	2001	1994	2001	2001	2001	2001	2001								

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1982 - 2001

ANNUAL TOTAL	137393	46400	435
ANNUAL MEAN	375	127	829
HIGHEST ANNUAL MEAN			127
LOWEST ANNUAL MEAN			15500
HIGHEST DAILY MEAN	3220	Jan 15	51
LOWEST DAILY MEAN	149	Dec 10	55
ANNUAL SEVEN-DAY MINIMUM	150	Dec 7	55
ANNUAL RUNOFF (AC-FT)	272500	92030	314800
10 PERCENT EXCEEDS	678	238	886
50 PERCENT EXCEEDS	265	111	263
90 PERCENT EXCEEDS	195	65	121

e Estimated

ROGUE RIVER BASIN

14362000 APPLEGATE RIVER NEAR COPPER, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: 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, 21.7°C Sept. 14, but may have been higher during period of missing record; minimum, 3.9°C Jan. 31.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	12.5	11.4	12.0	7.5	7.3	7.4	8.0	7.6	7.8	5.3	4.8	4.9
2	12.8	11.8	12.2	7.9	7.5	7.7	7.9	7.5	7.6	5.3	4.7	4.9
3	13.0	12.0	12.6	8.1	7.7	7.9	7.7	7.3	7.5	5.4	4.7	4.9
4	13.2	12.3	12.8	8.4	7.8	8.1	7.6	7.1	7.3	5.9	5.2	5.4
5	13.3	12.6	13.0	8.5	8.1	8.3	7.6	7.0	7.2	5.7	5.2	5.3
6	13.4	12.9	13.2	8.9	8.4	8.6	7.4	6.8	7.0	5.8	5.0	5.3
7	13.7	13.0	13.3	9.2	8.7	8.9	7.1	6.6	6.8	5.7	5.0	5.3
8	13.8	12.9	13.4	9.7	9.2	9.4	7.0	6.6	6.7	5.6	5.0	5.4
9	13.8	13.1	13.4	10.1	9.6	9.8	6.7	6.5	6.6	5.2	4.9	5.0
10	13.5	13.0	13.3	10.2	9.9	10.0	6.9	6.4	6.6	5.1	4.9	5.0
11	13.3	12.8	13.0	10.3	9.9	10.0	6.8	6.4	6.6	5.2	4.8	4.9
12	13.0	9.4	10.4	10.3	9.7	9.9	6.9	6.6	6.7	5.4	4.6	4.9
13	9.5	9.0	9.2	9.8	9.5	9.7	7.1	6.5	6.7	5.2	4.7	4.9
14	9.4	9.0	9.1	9.6	9.3	9.5	7.0	6.5	6.7	5.1	4.6	4.8
15	9.4	9.0	9.1	9.6	9.1	9.3	6.8	6.5	6.6	5.3	4.4	4.8
16	9.5	8.9	9.1	9.4	9.0	9.2	6.8	6.3	6.5	5.1	4.3	4.5
17	9.5	9.0	9.2	9.4	8.9	9.1	6.6	6.2	6.3	5.0	4.2	4.4
18	9.2	8.7	8.9	9.3	8.7	9.0	6.6	6.0	6.2	4.7	4.3	4.4
19	9.1	8.6	8.7	8.9	8.5	8.7	6.3	5.6	5.9	5.0	4.3	4.5
20	9.1	7.4	8.5	8.8	8.2	8.4	5.8	5.4	5.6	4.8	4.2	4.4
21	7.9	7.3	7.5	8.4	8.0	8.2	5.9	5.4	5.6	4.9	4.4	4.5
22	8.0	7.4	7.6	8.5	8.0	8.2	6.4	5.8	6.1	5.1	4.3	4.6
23	8.0	7.4	7.6	8.4	8.0	8.2	6.3	5.8	6.0	5.1	4.5	4.7
24	8.2	7.5	7.8	8.3	7.9	8.1	6.3	5.9	6.0	4.9	4.4	4.6
25	8.1	7.5	7.8	8.0	7.7	7.8	6.3	5.7	5.9	4.8	4.4	4.5
26	7.9	6.9	7.4	8.0	7.6	7.7	5.8	5.2	5.5	5.2	4.3	4.5
27	7.4	6.8	7.0	7.9	7.6	7.7	5.5	4.9	5.2	5.0	4.2	4.5
28	7.4	6.9	7.1	8.0	7.7	7.7	5.4	4.9	5.0	5.0	4.2	4.5
29	7.4	7.0	7.1	8.0	7.7	7.8	5.3	4.9	5.0	5.2	4.3	4.6
30	7.6	7.1	7.2	8.2	7.8	7.9	5.4	4.9	5.1	4.9	4.2	4.4
31	7.5	7.1	7.3	---	---	---	5.4	4.9	5.0	4.8	3.9	4.2
MONTH	13.8	6.8	9.9	10.3	7.3	8.6	8.0	4.9	6.3	5.9	3.9	4.8

ROGUE RIVER BASIN

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14362000 APPLEGATE RIVER NEAR COPPER, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4.8	4.0	4.3	5.5	4.9	5.2	8.5	7.0	7.5	8.8	7.4	7.8
2	5.0	4.3	4.6	5.9	5.0	5.3	8.1	7.0	7.4	9.0	7.4	7.9
3	4.8	4.5	4.6	5.7	5.1	5.3	8.1	7.0	7.3	8.9	7.6	8.0
4	5.4	4.3	4.6	5.6	5.1	5.3	8.5	6.9	7.5	9.1	7.6	8.1
5	5.3	4.3	4.6	5.8	5.2	5.4	8.6	6.9	7.4	9.2	7.6	8.1
6	4.6	4.2	4.4	6.6	5.2	5.8	7.5	7.0	7.2	9.2	7.7	8.3
7	5.2	4.2	4.5	7.0	5.5	6.0	7.9	6.9	7.3	9.4	8.0	8.4
8	4.6	4.1	4.3	6.4	5.2	5.8	8.3	6.9	7.2	9.4	8.1	8.5
9	4.6	4.2	4.4	6.2	5.4	5.7	8.4	6.9	7.3	9.5	8.2	8.6
10	5.1	4.1	4.4	6.6	5.4	5.8	7.8	6.9	7.2	9.6	8.2	8.8
11	5.2	4.0	4.5	7.1	5.6	6.0	7.9	6.9	7.2	9.8	8.3	8.9
12	5.4	4.2	4.6	7.3	5.8	6.3	7.6	6.8	7.1	10.1	8.3	9.0
13	5.2	4.0	4.4	7.6	6.1	6.7	8.0	6.8	7.1	10.0	8.2	9.0
14	5.3	4.0	4.3	7.6	6.0	6.7	8.1	6.8	7.3	9.3	8.2	9.0
15	5.0	4.1	4.5	7.4	6.7	6.9	8.1	6.9	7.3	9.4	8.5	9.8
16	5.3	4.4	4.8	7.4	6.1	6.7	7.9	6.9	7.3	10.0	8.7	9.2
17	5.4	4.5	4.8	7.1	6.4	6.7	8.1	7.0	7.4	10.1	8.8	9.3
18	5.0	4.6	4.7	8.0	6.8	7.4	7.3	7.1	7.2	10.2	9.0	9.4
19	5.5	4.6	4.9	8.8	6.8	7.6	8.1	7.0	7.3	10.2	9.0	9.5
20	5.3	4.8	5.0	8.0	7.3	7.6	8.0	7.1	7.3	10.4	9.2	9.7
21	5.6	4.9	5.1	8.7	7.3	7.8	8.3	7.1	7.4	10.6	9.2	9.8
22	5.3	5.0	5.1	8.9	7.2	7.9	8.4	7.1	7.5	10.8	9.4	10.0
23	5.5	4.9	5.1	8.9	7.3	7.9	8.6	7.2	7.7	11.0	9.4	10.0
24	5.2	4.8	5.0	8.6	7.4	7.7	8.6	7.3	7.7	10.9	9.5	10.1
25	6.1	4.9	5.3	8.6	7.2	7.8	8.7	7.4	7.8	11.1	9.7	10.2
26	6.3	4.9	5.3	8.5	7.0	7.6	8.9	7.3	7.9	11.4	9.7	10.4
27	6.0	4.8	5.2	8.0	7.2	7.5	8.8	7.2	7.8	11.1	9.6	10.2
28	6.3	5.0	5.4	8.4	7.2	7.6	8.6	7.1	7.7	11.4	9.7	10.4
29	---	---	---	8.6	7.1	7.6	8.5	7.2	7.8	12.3	9.8	10.7
30	---	---	---	8.6	7.1	7.6	9.0	7.4	7.8	12.1	9.8	10.9
31	---	---	---	8.8	7.1	7.6	---	---	---	12.3	10.2	11.1
MONTH	6.3	4.0	4.7	8.9	4.9	6.7	9.0	6.8	7.4	12.3	7.4	9.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	12.0	10.1	10.9	14.8	11.6	12.9	16.8	14.2	15.2	20.6	17.9	18.7
2	12.6	10.0	10.9	14.9	11.8	13.1	17.0	14.2	15.3	20.5	17.9	18.8
3	12.4	10.1	10.9	14.7	11.9	13.1	16.8	14.4	15.3	20.6	17.8	18.8
4	12.6	10.0	10.9	14.6	12.1	13.3	16.9	14.5	15.6	20.9	18.0	19.0
5	11.9	10.3	10.9	15.0	12.3	13.4	17.2	14.5	15.7	20.4	18.2	18.8
6	12.9	10.3	11.3	14.9	11.8	13.2	17.3	14.7	15.9	20.9	18.2	19.0
7	13.4	10.5	11.7	14.6	12.0	13.1	17.4	15.1	16.0	21.2	18.3	19.2
8	13.1	10.8	11.7	14.9	12.3	13.4	17.6	15.2	16.2	21.4	18.5	19.4
9	12.9	10.6	11.5	15.0	12.5	13.5	17.6	15.4	16.2	21.4	18.4	19.4
10	12.4	10.5	11.3	15.1	12.6	13.5	17.7	15.3	16.3	21.5	18.7	19.6
11	12.6	10.6	11.4	14.0	12.6	13.2	17.4	15.2	16.2	20.6	18.7	19.4
12	13.1	10.6	11.6	15.1	12.2	13.3	17.6	15.5	16.3	20.4	18.9	19.5
13	13.3	10.5	11.7	15.3	12.3	13.6	17.8	15.5	16.4	21.4	19.0	19.7
14	13.4	10.6	11.8	15.4	12.5	13.7	18.7	15.6	16.8	21.7	18.9	19.8
15	13.4	10.6	11.9	15.4	12.6	13.7	18.6	15.8	16.8	---	---	---
16	13.4	10.7	11.9	15.4	12.7	13.8	18.6	15.8	16.8	---	---	---
17	13.6	10.7	11.9	15.6	12.6	13.8	18.7	15.9	16.9	---	---	---
18	13.6	10.8	12.0	15.6	12.5	13.9	18.5	16.0	16.8	---	---	---
19	13.8	10.8	12.1	15.8	13.0	14.1	19.0	15.9	17.0	---	---	---
20	13.8	11.1	12.3	15.8	13.2	14.2	19.1	16.0	17.1	---	---	---
21	14.0	11.4	12.4	15.8	13.0	14.2	18.6	16.3	17.2	---	---	---
22	14.1	11.4	12.5	15.9	13.0	14.3	17.8	16.7	17.1	---	---	---
23	13.9	11.2	12.4	16.0	13.3	14.5	18.7	16.6	17.3	---	---	---
24	13.5	11.0	12.0	16.5	13.6	14.7	19.5	16.6	17.6	---	---	---
25	13.2	11.4	12.1	16.1	13.7	14.6	19.9	16.8	17.9	19.9	18.5	19.1
26	12.4	11.5	12.0	16.2	13.6	14.6	20.2	17.0	18.1	20.2	18.4	19.0
27	13.2	11.3	12.3	16.2	13.7	14.7	20.4	17.1	18.2	20.1	18.2	18.8
28	14.2	11.8	12.6	16.4	13.9	14.8	20.4	17.1	18.3	20.2	18.1	18.6
29	14.2	11.9	12.7	16.2	13.9	14.7	20.5	17.4	18.5	20.3	17.9	18.6
30	14.1	11.8	12.8	16.1	14.1	14.9	20.7	17.6	18.6	20.4	17.8	18.5
31	---	---	---	16.5	14.0	15.1	20.7	17.7	18.6	---	---	---
MONTH	14.2	10.0	11.8	16.5	11.6	13.9	20.7	14.2	16.8	---	---	---

ROGUE RIVER BASIN

14362250 STAR GULCH NEAR RUCH, OR

LOCATION.--Lat 42°09'15", long 123°04'27", in NE 1/4 NE 1/4 sec.29, T.39 S., R.3 W., Jackson County, Hydrologic Unit 17100309, Bureau of Land Management land, on left bank 1.0 mi downstream from Benson Gulch, 6.0 mi southwest of Ruch, and at mile 1.1.

DRAINAGE AREA.--16.0 mi².

PERIOD OF RECORD.--July 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,667.04 ft above sea level.

REMARKS.--No estimated daily discharges. Records fair.

AVERAGE DISCHARGE.--18 years (water years 1984-2001), 5.17 ft³/s, 3,750 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,050 ft³/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 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 29	1300	*4.6	*1.21				

Minimum discharge, no flow ft³/s many days in June, July, August, and September.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.90	1.7	1.9	1.2	1.1	1.1	.96	.98	.22	.27	.00	.00
2	.91	1.7	1.8	1.2	1.1	1.2	.93	.26	.13	.00	.00	.00
3	.96	1.7	1.7	1.1	1.3	1.2	.89	.90	.32	.07	.00	.00
4	1.0	1.7	1.6	1.1	1.5	1.2	.86	.87	.38	.00	.00	.00
5	1.0	1.6	1.5	1.1	1.4	1.2	.84	.83	.45	.00	.00	.00
6	.97	1.6	1.3	1.1	1.3	1.2	.90	.80	.53	.00	.00	.00
7	.90	1.6	1.3	1.1	1.3	1.1	1.1	.80	.47	.00	.00	.00
8	.86	1.7	1.3	1.2	1.2	1.1	1.1	.76	.37	.00	.00	.00
9	1.2	1.8	1.3	1.3	1.2	1.1	1.2	.72	.32	.00	.00	.00
10	1.7	1.7	1.3	1.7	1.2	1.1	1.2	.68	.31	.00	.00	.00
11	1.7	1.6	1.3	1.4	1.2	1.0	1.2	.65	.34	.00	.00	.00
12	1.6	1.6	1.3	1.2	1.1	.96	1.2	.58	.38	.33	.00	.00
13	1.6	1.7	1.7	1.2	1.1	.91	1.2	.57	.34	.43	.00	.00
14	1.5	1.8	2.9	1.2	1.1	.87	1.1	.63	.29	.14	.00	.00
15	1.5	1.8	1.8	1.2	1.1	.84	1.1	.97	.24	.02	.00	.00
16	1.5	1.7	1.5	1.2	1.1	.84	1.0	.99	.21	.00	.00	.00
17	1.4	1.7	1.6	1.1	1.1	.89	1.3	.80	.18	.00	.00	.00
18	1.4	1.6	1.5	1.1	1.4	.89	1.3	.71	.15	.00	.00	.00
19	1.4	1.6	1.4	1.1	1.4	.86	1.7	.64	.07	.00	.00	.00
20	2.1	1.6	1.4	1.1	1.3	.84	1.8	.60	.01	.00	.00	.00
21	2.4	1.6	1.4	1.1	1.6	.84	1.7	.57	.00	.00	.00	.00
22	2.0	1.6	1.6	1.1	1.8	.81	1.4	.51	.00	.00	.00	.00
23	2.0	1.7	1.5	1.1	1.8	.80	1.3	.44	.00	.00	.00	.00
24	2.0	1.7	1.4	1.9	1.6	.93	1.2	.40	.00	.00	.00	.00
25	1.9	1.7	1.3	1.8	1.4	1.5	1.1	.37	.00	.00	.00	.00
26	1.9	1.7	1.3	1.6	1.3	1.2	1.0	.34	.08	.00	.00	.00
27	1.9	1.6	1.2	1.4	1.2	1.1	1.0	.34	.71	.00	.00	.00
28	2.7	1.6	1.2	1.2	1.1	1.2	1.0	.36	.62	.00	.00	.33
29	2.3	3.3	1.2	1.2	---	1.2	1.0	.37	.46	.00	.00	.50
30	1.9	2.4	1.2	1.1	---	1.1	1.0	.36	.38	.00	.00	.51
31	1.8	---	1.2	1.1	---	1.0	---	.31	---	.00	.00	---
TOTAL	48.90	52.4	45.9	38.5	36.3	32.08	34.58	19.78	8.09	1.39	0.00	1.34
MEAN	1.58	1.75	1.48	1.24	1.30	1.03	1.15	.64	.27	.045	.000	.045
MAX	2.7	3.3	2.9	1.9	1.8	1.5	1.8	.99	.71	.43	.00	.51
MIN	.86	1.6	1.2	1.1	1.1	.80	.84	.31	.00	.00	.00	.00
AC-FT	97	104	91	76	72	64	69	39	16	2.8	.00	2.7

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 2001, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)
1984	.86	1.98	1985	.021	1993
1985	3.18	18.0	1986	.23	1993
1986	7.81	50.7	1987	.87	1990
1987	12.4	75.3	1988	1.13	1992
1988	12.6	49.3	1989	1.30	2001
1989	11.5	34.0	1990	.95	1992
1990	6.85	19.6	1991	1.00	1994
1991	3.44	9.08	1992	.22	1992
1992	1.92	6.07	1993	.012	1992
1993	.92	3.11	1994	.000	1994
1994	.48	1.61	1995	.000	1988
1995	.43	1.09	1996	.000	1991

SUMMARY STATISTICS

	FOR 2000 CALENDAR YEAR	FOR 2001 WATER YEAR	WATER YEARS 1984 - 2001
ANNUAL TOTAL	1916.60	319.26	
ANNUAL MEAN	5.24	.87	5.17
HIGHEST ANNUAL MEAN			15.1
LOWEST ANNUAL MEAN			.60
HIGHEST DAILY MEAN	72	3.3	621
LOWEST DAILY MEAN	.56	.00	.00
ANNUAL SEVEN-DAY MINIMUM	.62	.00	.00
ANNUAL RUNOFF (AC-FT)	3800	633	3750
10 PERCENT EXCEEDS	14	1.7	12
50 PERCENT EXCEEDS	1.9	1.0	1.5
90 PERCENT EXCEEDS	.78	.00	.07

ROGUE RIVER BASIN

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14366000 APPLEGATE RIVER NEAR APPLEGATE, OR

LOCATION.--Lat 42°14'30", long 123°08'20", in NE 1/4 sec.26, T.38 S., R.4 W., Jackson County, Hydrologic Unit 17100309, on left bank 0.9 mi downstream from Keeler Creek, 1.8 mi southeast of Applegate, and at mile 26.7.

DRAINAGE AREA.--483 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to current year.

RECORDS.--WSP 1738: Drainage area. WSP 1935: 1953(M). WDR OR-76-1: 1956(M), 1965(M).

GAGE.--Water-stage recorder. Datum of gage is 1,285.33 ft above sea level. 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 ft³/s, 397,000 acre-ft/yr.
20 years (water years 1982-2001), 542 ft³/s, 392,600 acre-ft/yr, regulated.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,200 ft³/s Jan. 15, 1974, gage height, 20.41 ft, from rating curve extended above 18,000 ft³/s on basis of slope-area measurements of flow at gage heights 18.00 ft and 19.57 ft; minimum discharge, 4.6 ft³/s Sept. 22-25, 1979. Minimum since first filling of Applegate Lake, 22 ft³/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, 360 ft³/s Oct. 9, 10, gage height, 2.00 ft; minimum discharge, 22 ft³/s July 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	349	250	225	164	130	145	185	216	70	31	34	38
2	346	248	223	163	131	148	181	206	65	27	33	40
3	346	247	222	153	136	146	175	202	63	29	35	40
4	343	247	e200	127	140	148	171	197	63	32	36	40
5	346	247	e175	127	137	151	172	196	60	31	35	40
6	343	247	e165	126	136	153	176	189	e57	31	35	37
7	342	247	e165	e125	134	153	172	184	53	33	34	37
8	344	247	e165	e127	131	154	168	181	54	33	33	37
9	347	247	e165	e130	136	153	166	179	53	30	34	38
10	358	247	e165	136	134	153	162	172	53	31	37	38
11	305	247	e165	133	135	153	163	160	56	33	37	40
12	301	247	165	133	132	151	188	150	56	34	38	42
13	300	247	171	132	129	151	188	148	50	65	36	41
14	301	247	181	131	132	152	180	152	44	45	36	42
15	297	247	171	131	145	153	180	168	39	44	35	46
16	293	247	169	128	145	153	184	168	36	40	36	45
17	290	247	171	125	145	160	192	165	36	39	37	45
18	288	246	170	130	149	180	203	160	38	38	38	45
19	291	244	170	130	147	179	205	155	39	38	40	44
20	306	244	169	128	147	179	199	154	40	34	39	44
21	289	244	170	128	150	180	195	150	38	35	38	44
22	278	244	170	128	152	185	194	e140	39	37	40	45
23	272	239	170	129	151	188	194	e138	40	35	41	46
24	265	235	169	142	150	195	205	e136	44	30	41	45
25	260	233	167	136	148	207	227	136	41	30	40	54
26	258	230	167	133	146	186	242	123	39	33	38	62
27	255	226	168	132	146	181	236	116	47	34	38	53
28	254	225	167	129	144	213	229	115	47	33	39	51
29	257	225	166	132	---	215	217	90	44	33	37	46
30	254	225	165	129	---	204	214	82	41	37	37	46
31	251	---	165	128	---	190	---	75	---	36	36	---
TOTAL	9329	7263	5416	4125	3938	5259	5763	4803	1445	1091	1143	1311
MEAN	301	242	175	133	141	170	192	155	48.2	35.2	36.9	43.7
MAX	358	250	225	164	152	215	242	216	70	65	41	62
MIN	251	225	165	125	129	145	162	75	36	27	33	37
AC-FT	18500	14410	10740	8180	7810	10430	11430	9530	2870	2160	2270	2600

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2001, BY WATER YEAR (WY)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MEAN	343	449	733	885	828	759	595	768	470	228	201	256								
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	218	195	149	133	141	142	139	155	48.2	35.2	36.9	43.7								
(WY)	1982	1988	1995	2001	2001	1992	1992	2001	2001	2001	2001	2001								

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1982 - 2001

ANNUAL TOTAL	171928		50886									
ANNUAL MEAN	470		139					542				
HIGHEST ANNUAL MEAN								1072			1983	
LOWEST ANNUAL MEAN								139			2001	
HIGHEST DAILY MEAN	3620	Jan 15	358	Oct 10	24400	Jan 1	1997					
LOWEST DAILY MEAN	165	Dec 6	27	Jul 2	27	Jul 2	2001					
ANNUAL SEVEN-DAY MINIMUM	165	Dec 6	31	Jul 1	31	Jul 1	2001					
ANNUAL RUNOFF (AC-FT)	341000		100900					392600				
10 PERCENT EXCEEDS	880		247					1180				
50 PERCENT EXCEEDS	299		147					286				
90 PERCENT EXCEEDS	210		36					138				

e Estimated

ROGUE RIVER BASIN

14366000 APPLEGATE RIVER NEAR APPLEGATE, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: August 1973 to current year.

INSTRUMENTATION.--Temperature recorder since August 1973.

REMARKS.--Records good except for the period Oct. 1 to Jan. 15, which is poor.

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, 26.2°C Aug. 9; minimum, 0.2°C Jan. 17.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER				NOVEMBER			DECEMBER			JANUARY		
1	16.4	11.8	14.2	8.9	4.8	7.0	8.3	4.4	6.6	5.8	2.1	3.9
2	16.3	11.8	13.9	10.4	6.6	8.5	8.6	4.9	6.6	6.1	2.6	4.2
3	15.0	10.1	12.7	11.4	7.5	9.2	7.8	3.9	6.2	5.2	1.8	3.8
4	15.6	9.4	12.7	9.8	7.0	8.3	7.2	4.5	5.9	5.8	2.4	4.2
5	15.7	10.3	13.0	9.7	6.3	8.2	7.0	3.6	5.5	5.6	3.3	4.6
6	15.7	10.5	13.4	10.1	6.3	8.4	6.3	3.0	4.9	5.3	2.6	4.0
7	15.6	10.8	13.5	9.3	4.4	7.2	6.0	2.9	4.5	---	3.0	---
8	15.6	10.7	13.4	10.2	7.6	8.7	6.3	3.4	5.0	---	---	---
9	14.8	11.0	13.0	10.1	6.0	8.3	7.3	4.4	5.7	5.5	---	---
10	14.4	11.5	13.0	9.9	6.2	7.9	7.9	4.7	6.0	5.4	2.1	3.8
11	14.2	11.1	12.7	8.8	5.0	7.0	6.5	3.0	4.6	5.1	1.6	3.6
12	14.2	10.3	12.1	8.9	4.5	6.6	6.9	3.8	5.5	5.3	1.8	3.7
13	13.3	9.9	11.6	8.3	4.6	6.6	7.2	3.4	5.8	5.8	3.2	4.4
14	13.4	8.8	11.2	8.8	5.7	7.4	7.6	3.5	5.8	5.9	2.8	4.2
15	11.8	8.9	10.6	9.4	6.3	7.9	7.3	4.2	5.9	5.6	2.5	4.1
16	12.3	7.1	10.1	9.5	6.0	7.7	7.7	3.2	5.6	3.4	1.1	2.0
17	12.1	7.3	10.1	8.3	4.5	6.2	6.7	3.5	5.5	3.7	.2	1.8
18	12.2	8.8	10.5	7.2	3.8	5.8	6.2	1.6	4.0	3.5	.7	2.6
19	12.7	7.6	10.3	7.9	3.3	6.0	6.4	2.2	4.8	4.8	2.8	3.6
20	11.5	8.7	10.1	7.4	4.2	6.1	6.8	3.6	5.0	4.3	2.6	3.5
21	11.3	7.9	9.6	8.0	4.0	6.4	6.3	3.4	5.1	5.5	3.7	4.5
22	10.7	6.5	8.6	7.7	4.2	5.9	7.5	4.5	5.8	5.7	3.8	4.5
23	10.4	5.7	8.1	7.6	3.6	5.5	6.8	3.7	5.6	5.8	3.6	4.8
24	10.8	5.8	8.5	8.7	4.9	6.8	6.7	3.7	5.0	6.2	4.7	5.4
25	10.8	7.4	9.2	8.9	5.8	7.1	5.3	2.7	4.1	4.8	3.8	4.2
26	10.6	7.2	9.1	9.0	5.9	7.1	6.2	2.1	4.2	5.7	3.3	4.3
27	10.3	6.0	8.6	9.1	6.6	7.7	6.0	2.8	4.2	4.6	2.2	3.5
28	11.1	7.2	9.1	9.6	6.8	8.0	5.2	1.1	3.6	4.3	1.5	3.0
29	9.3	5.7	7.9	9.0	6.0	7.4	5.0	1.1	3.3	5.6	4.0	4.6
30	10.6	6.9	8.3	8.7	4.0	6.7	5.2	1.2	2.9	4.2	2.7	3.5
31	9.4	4.6	7.4	---	---	---	5.3	2.1	3.6	4.0	1.5	2.8
MONTH	16.4	4.6	10.9	11.4	3.3	7.3	8.6	1.1	5.1	---	---	---

ROGUE RIVER BASIN

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14366000 APPLEGATE RIVER NEAR APPLEGATE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY			MARCH			APRIL			MAY			
1	4.8	2.0	3.5	5.4	4.0	4.8	13.0	9.8	11.2	13.9	9.0	11.1
2	7.0	4.5	5.8	8.1	4.9	6.3	10.6	7.3	8.9	14.5	8.7	11.5
3	6.7	5.7	6.2	5.9	3.8	5.0	10.6	6.0	7.9	15.3	8.8	12.0
4	7.9	5.7	6.6	7.1	4.9	5.9	11.8	5.9	8.7	15.4	9.9	12.7
5	8.3	6.5	7.2	7.1	5.1	6.1	11.0	6.3	8.8	15.9	10.8	13.2
6	6.5	4.2	5.2	9.5	4.3	6.8	9.0	7.1	8.4	16.1	10.0	13.0
7	5.3	2.7	4.0	10.5	5.9	8.1	9.0	6.2	7.5	17.5	10.9	14.1
8	3.5	1.9	2.8	9.9	7.1	8.2	9.5	5.8	7.5	17.5	12.4	14.9
9	4.7	2.5	3.5	8.0	6.2	7.0	11.4	6.3	8.6	17.2	12.1	14.5
10	5.2	3.0	4.1	8.9	5.2	7.0	9.5	7.0	8.3	17.6	11.3	14.5
11	5.0	2.9	3.8	9.3	5.5	7.3	10.5	7.4	8.8	18.2	12.0	15.1
12	5.6	3.2	4.2	10.3	5.2	7.6	8.8	6.5	7.7	16.8	13.1	15.0
13	4.8	1.9	3.4	10.7	5.6	8.1	10.2	6.9	8.5	14.7	11.7	13.3
14	5.2	1.6	3.4	10.6	6.6	8.4	11.6	5.5	8.5	12.9	12.2	12.5
15	5.6	2.0	3.8	7.9	6.4	7.0	12.0	7.2	9.6	13.5	12.1	12.7
16	6.5	3.8	5.0	8.8	5.6	7.3	12.1	7.7	10.0	15.7	11.4	13.5
17	6.9	4.3	5.6	9.0	6.9	7.9	13.5	9.2	11.2	15.3	11.6	13.5
18	7.0	5.2	6.0	11.4	7.5	9.4	11.1	8.6	9.7	16.1	12.5	14.2
19	7.4	5.0	6.1	12.7	8.9	10.8	11.5	7.8	9.6	16.7	12.5	14.7
20	7.7	5.4	6.4	11.6	9.1	10.3	11.4	8.2	9.6	17.0	12.9	15.0
21	8.4	5.8	7.0	14.0	8.5	11.1	13.2	7.6	10.2	17.6	13.4	15.6
22	7.1	5.6	6.3	14.4	9.2	11.9	12.7	9.0	10.9	---	13.9	---
23	7.5	5.1	6.1	14.6	10.1	12.3	15.4	9.6	12.3	---	---	---
24	6.3	4.9	5.6	12.2	10.0	11.0	16.1	10.2	13.1	17.9	---	---
25	7.6	3.9	5.6	12.0	8.3	10.1	16.5	11.0	13.7	17.1	14.6	15.9
26	8.1	4.1	6.0	11.9	8.2	10.0	17.0	11.9	14.3	21.5	14.6	16.8
27	7.8	3.7	5.7	9.5	7.2	8.2	14.7	10.5	12.7	19.1	12.9	15.1
28	7.1	3.5	5.3	12.1	7.9	9.8	13.1	10.1	11.4	19.4	11.9	14.9
29	---	---	---	14.5	9.6	11.6	13.3	8.1	10.6	---	---	---
30	---	---	---	13.2	8.0	10.6	12.4	10.3	11.4	---	---	---
31	---	---	---	13.9	8.3	11.0	---	---	---	---	---	---
MONTH	8.4	1.6	5.2	14.6	3.8	8.6	17.0	5.5	10.0	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE			JULY			AUGUST			SEPTEMBER			
1	---	---	---	22.8	17.6	20.1	23.9	18.4	21.0	23.4	19.0	21.2
2	---	---	---	24.2	18.0	20.9	24.0	18.7	21.3	23.1	18.6	20.9
3	---	---	---	24.5	19.1	21.6	22.3	19.0	20.8	22.2	17.8	20.2
4	---	---	---	25.2	20.1	22.5	23.6	19.2	21.1	22.3	18.0	20.2
5	---	---	---	24.5	20.1	22.2	24.2	18.8	21.4	20.2	17.3	18.8
6	---	---	---	24.3	18.5	21.3	24.6	19.1	21.7	19.7	15.4	17.7
7	---	---	---	23.8	18.5	21.1	25.5	20.6	22.9	20.1	15.6	17.9
8	---	---	---	25.3	18.9	21.9	25.7	20.4	23.0	20.9	15.8	18.4
9	---	---	---	25.8	19.8	22.7	26.2	21.2	23.7	20.6	16.0	18.5
10	---	---	---	25.2	21.0	23.2	25.9	21.3	23.6	21.3	17.0	19.2
11	17.7	---	---	22.3	20.0	20.9	25.3	20.9	23.1	19.8	17.0	18.6
12	20.6	14.6	17.4	24.6	18.5	21.3	24.1	20.4	22.2	19.3	16.8	18.0
13	20.9	14.4	17.6	25.0	18.3	21.6	23.7	19.5	21.6	21.1	17.8	19.4
14	21.5	15.5	18.4	24.8	19.5	21.9	24.8	19.9	22.2	22.3	17.8	20.0
15	21.7	16.4	18.9	24.1	18.8	21.2	25.0	20.3	22.6	22.1	18.7	20.4
16	21.2	16.2	18.6	23.7	18.6	21.0	24.8	20.6	22.6	22.0	18.4	20.2
17	21.4	16.1	18.6	23.6	17.6	20.5	24.1	19.8	21.9	21.1	17.1	19.3
18	21.4	16.1	18.6	24.9	18.3	21.4	22.0	19.2	20.5	20.3	16.6	18.6
19	21.7	16.0	18.8	24.9	19.5	22.0	22.7	17.5	20.0	20.1	16.2	18.3
20	23.2	17.2	20.0	24.5	19.5	21.8	22.2	17.5	19.9	19.7	15.7	17.8
21	24.3	18.2	21.0	24.6	18.7	21.5	21.6	17.7	19.8	19.5	15.6	17.6
22	24.0	18.8	21.3	24.8	18.4	21.5	20.6	19.1	19.7	19.5	15.3	17.5
23	22.3	18.8	20.4	25.5	19.3	22.2	20.7	17.9	19.1	19.7	16.0	18.0
24	19.6	17.0	18.4	25.3	19.5	22.4	22.0	16.9	19.4	19.2	16.1	17.9
25	18.9	16.3	17.7	25.2	20.0	22.5	22.8	17.6	20.2	18.9	17.5	18.2
26	17.9	16.1	16.8	24.5	19.0	21.7	23.7	18.9	21.3	18.0	16.1	17.0
27	20.4	16.2	18.1	24.1	19.0	21.5	23.7	19.3	21.5	18.2	15.4	16.7
28	22.2	17.3	19.4	23.9	19.2	21.4	23.2	18.5	20.9	17.6	14.6	16.2
29	23.1	18.0	20.3	21.7	19.2	20.3	23.7	19.3	21.5	17.9	13.8	16.0
30	22.9	18.1	20.4	22.3	18.2	20.1	23.4	19.2	21.3	18.5	14.5	16.6
31	---	---	---	23.6	17.8	20.5	23.4	19.4	21.3	---	---	---
MONTH	---	---	---	25.8	17.6	21.5	26.2	16.9	21.4	23.4	13.8	18.5

ROGUE RIVER BASIN

14369500 APPLEGATE RIVER NEAR WILDERVILLE, OR

LOCATION.--Lat 42°21'15", long 123°24'20", in SE 1/4 NE 1/4 sec.16, T.37 S., R.6 W., Josephine County, Hydrologic Unit 17100309, on left bank 0.3 mi downstream from Jackson Creek, 3.6 mi southeast of Wilderville, and at mile 7.6.

DRAINAGE AREA.--698 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to September 1955, September 1978 to current year.

REVISED RECORDS.--WSP 1318: 1943. WSP 1738: 1951, 1953, drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 947.18 ft above sea level (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.--Records good. Flow regulated since December 1980 by Applegate Lake (station 14361900). Many diversions for irrigation upstream from station. Wilderville ditch diverts up to 16 ft³/s 0.3 mi upstream and at the mouth of Jackson Creek. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--19 years (water years 1939-55, 1979, 1980), 717 ft³/s, 519,500 acre-ft/yr.
20 years (water years 1982-2001), 747 ft³/s, 540,900 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,500 ft³/s Jan. 18, 1953, gage height, 18.3 ft, from floodmark, site and datum then in use, from rating curve extended above 12,000 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 0.78 ft³/s Aug. 22-24, 1979. Minimum since first filling of Applegate Lake, 7.0 ft³/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 ft³/s, from rating curve extended above 12,000 ft³/s on basis of slope-area measurement of peak flow.

Flood of February 1927 reached a stage of 22 ft at former site, from local resident. Floods of Dec. 22, 1964, and Jan. 15, 1974, are known to have exceeded the December 1955 flood.

No flow was observed at present site during the late summer of 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 471 ft³/s Nov. 1, gage height, 2.78 ft; minimum discharge, 7.0 ft³/s July 26-28, Aug. 11, 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	336	316	281	219	176	191	229	224	72	35	19	17
2	330	303	266	217	178	200	225	216	58	36	22	25
3	330	304	259	215	185	202	220	211	54	25	24	35
4	330	298	255	195	193	201	213	203	53	12	11	31
5	343	296	233	185	195	202	208	186	50	11	11	19
6	337	296	216	182	190	203	214	182	35	9.3	11	22
7	324	295	213	181	188	200	219	172	35	8.7	9.9	21
8	325	299	211	182	185	201	213	158	32	11	9.7	19
9	331	312	210	188	184	200	212	152	31	11	9.7	20
10	354	301	210	201	183	198	209	143	23	9.2	9.1	26
11	339	295	211	195	186	195	214	139	34	8.8	9.2	26
12	326	295	210	189	184	193	226	130	32	29	15	26
13	322	296	225	188	178	191	234	130	23	33	26	38
14	321	299	299	187	177	188	226	132	26	29	22	38
15	323	296	256	184	183	185	221	154	26	20	14	27
16	320	292	239	182	188	188	224	164	23	20	12	33
17	316	289	241	178	189	190	231	160	25	17	11	35
18	315	286	234	180	194	207	234	156	24	16	14	35
19	316	288	228	181	196	209	252	147	22	16	22	34
20	340	288	225	179	195	210	249	151	21	17	24	32
21	335	287	239	178	201	210	243	152	32	15	20	31
22	294	288	307	177	208	211	238	136	32	21	16	30
23	285	261	293	177	208	213	234	125	18	29	34	38
24	282	257	275	191	204	219	232	123	19	21	35	46
25	281	255	258	190	201	242	240	122	19	9.0	21	50
26	280	253	244	186	197	232	251	122	23	8.3	22	55
27	284	251	236	183	194	219	252	109	36	7.7	22	61
28	308	249	230	180	192	241	250	109	39	8.2	18	58
29	347	293	227	180	---	260	236	100	36	10	20	54
30	322	320	224	180	---	253	226	81	33	14	22	e52
31	308	---	221	177	---	235	---	80	---	16	19	---
TOTAL	9904	8658	7476	5807	5332	6489	6875	4569	986	533.2	554.6	1034
MEAN	319	289	241	187	190	209	229	147	32.9	17.2	17.9	34.5
MAX	354	320	307	219	208	260	252	224	72	36	35	61
MIN	280	249	210	177	176	185	208	80	18	7.7	9.1	17
AC-FT	19640	17170	14830	11520	10580	12870	13640	9060	1960	1060	1100	2050

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 2001, BY WATER YEAR (WY)

	MEAN	373	632	1164	1405	1389	1161	869	849	501	217	181	252
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	253	239	196	187	190	209	173	147	32.9	17.2	17.9	34.5	
(WY)	1995	1988	1991	2001	2001	2001	1994	2001	2001	2001	2001	2001	

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1982 - 2001

ANNUAL TOTAL	225641	58217.8	
ANNUAL MEAN	617	160	
HIGHEST ANNUAL MEAN			747
LOWEST ANNUAL MEAN			1546
HIGHEST DAILY MEAN	5370	Jan 14	160
LOWEST DAILY MEAN	210	Dec 9	36500
ANNUAL SEVEN-DAY MINIMUM	212	7.7	Jan 1 1997
ANNUAL RUNOFF (AC-FT)	447600	9.9	Jul 27 2001
10 PERCENT EXCEEDS	1240		9.9
50 PERCENT EXCEEDS	317		
90 PERCENT EXCEEDS	231		

e Estimated

ROGUE RIVER BASIN

401

14369500 APPLEGATE RIVER NEAR WILDERVILLE, OR--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: September 1978 to current year.

INSTRUMENTATION.--Temperature recorder since September 1978.

REMARKS.--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, 28.6°C Aug. 9; minimum, 3.5°C Jan. 17.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	18.1	16.1	17.3	10.0	9.0	9.4	7.9	7.6	7.8	5.2	4.9	5.0
2	17.9	16.1	17.0	10.4	9.4	9.9	8.0	7.4	7.7	5.6	5.0	5.3
3	16.7	13.9	15.2	11.2	10.1	10.6	7.7	7.3	7.5	5.6	5.0	5.4
4	15.4	13.1	14.5	11.0	9.9	10.3	7.7	7.4	7.6	6.0	5.4	5.7
5	15.5	13.3	14.6	10.1	9.3	9.8	7.5	7.1	7.3	6.2	5.8	6.0
6	15.8	13.6	15.0	10.2	9.3	9.8	7.1	6.8	6.9	6.0	5.5	5.7
7	15.8	13.8	15.1	9.7	8.2	8.7	6.8	6.4	6.6	5.6	5.3	5.4
8	15.8	13.7	14.9	9.4	8.8	9.1	6.8	6.5	6.6	6.4	5.6	6.0
9	15.5	13.9	14.9	9.5	8.7	9.2	7.2	6.7	6.9	6.3	5.3	5.7
10	14.8	13.7	14.2	9.1	8.2	8.6	7.3	6.8	7.1	5.3	5.0	5.2
11	14.1	13.3	13.7	8.5	7.3	7.8	6.8	6.0	6.3	5.0	4.5	4.8
12	13.9	12.4	13.2	7.6	6.3	6.7	6.7	6.1	6.3	5.1	4.7	4.9
13	14.7	10.7	13.6	6.8	6.1	6.5	6.8	6.5	6.7	5.6	5.1	5.3
14	14.7	---	---	7.5	6.7	7.1	7.2	6.5	6.8	5.8	5.3	5.6
15	---	---	---	8.5	7.4	7.9	7.6	6.9	7.2	6.0	5.4	5.7
16	---	---	---	8.6	8.1	8.3	7.5	6.4	6.8	5.4	4.1	4.8
17	---	---	---	8.2	6.7	7.2	6.7	6.1	6.3	4.2	3.5	3.8
18	11.0	10.3	10.8	6.9	6.2	6.5	6.2	5.0	5.5	4.3	3.7	4.0
19	13.5	10.1	11.6	6.6	6.1	6.4	5.8	5.3	5.5	5.0	4.2	4.6
20	13.6	12.5	12.9	6.8	6.2	6.5	6.1	5.7	5.9	4.9	4.6	4.8
21	12.5	11.6	12.1	7.0	6.4	6.7	6.4	5.9	6.1	5.4	4.7	5.0
22	12.0	10.6	11.2	6.9	6.0	6.3	7.3	6.4	6.8	5.5	5.0	5.3
23	11.2	9.9	10.7	6.5	6.0	6.2	7.4	6.7	7.0	5.5	5.3	5.4
24	11.3	10.0	10.7	7.5	6.3	6.8	6.7	6.4	6.6	6.0	5.4	5.7
25	11.6	11.0	11.3	8.0	7.5	7.7	6.7	5.7	6.1	5.8	5.1	5.3
26	11.8	10.9	11.3	8.1	7.8	7.9	5.7	5.2	5.5	5.7	4.9	5.2
27	11.6	10.2	10.8	8.6	7.9	8.2	5.6	5.3	5.4	5.6	5.0	5.2
28	11.5	10.5	11.0	9.0	8.5	8.7	5.3	4.9	5.1	5.0	4.4	4.6
29	11.2	10.3	10.7	8.8	8.4	8.6	5.1	4.8	5.0	5.5	4.7	5.1
30	10.8	9.9	10.3	8.4	7.7	8.0	5.1	4.8	4.9	5.3	4.7	4.9
31	10.3	9.4	9.9	---	---	---	5.2	4.8	5.0	4.7	4.0	4.3
MONTH	---	---	---	11.2	6.0	8.0	8.0	4.8	6.4	6.4	3.5	5.2

ROGUE RIVER BASIN

14369600 APPLEGATE RIVER NEAR WILDERVILLE, OR--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
FEBRUARY				MARCH			APRIL			MAY		
1	4.6	4.0	4.3	6.8	6.3	6.5	12.9	12.2	12.6	14.7	13.6	14.2
2	5.8	4.6	5.2	7.0	6.2	6.5	12.4	11.2	11.6	14.8	13.1	13.9
3	6.5	5.7	6.1	6.7	6.1	6.3	11.2	10.1	10.5	15.2	13.6	14.3
4	7.1	6.5	6.8	6.8	6.1	6.4	11.3	9.9	10.5	16.0	14.5	15.2
5	7.7	7.0	7.3	6.9	6.3	6.6	11.2	10.4	10.9	16.2	14.9	15.5
6	7.5	6.4	7.1	7.7	6.5	7.0	11.1	10.4	10.8	16.9	14.8	15.8
7	6.4	5.6	5.9	8.9	7.7	8.1	10.4	9.5	10.0	17.6	15.5	16.3
8	5.7	4.6	5.0	9.3	8.8	9.0	10.2	9.5	9.8	18.5	16.7	17.4
9	4.8	4.2	4.5	9.1	8.4	8.6	10.6	9.4	9.9	18.6	16.8	17.6
10	5.6	4.7	5.1	8.5	7.7	8.0	10.4	10.0	10.1	18.7	16.7	17.6
11	5.9	5.5	5.6	8.5	7.6	8.0	10.8	9.8	10.1	18.9	17.0	17.8
12	5.7	5.1	5.4	9.1	7.9	8.4	10.7	9.8	10.2	19.6	17.6	18.5
13	5.4	4.7	5.0	9.9	8.6	9.2	10.6	9.8	10.2	19.1	17.2	18.1
14	5.3	4.4	4.8	9.9	9.0	9.5	11.2	9.6	10.3	18.2	15.9	16.9
15	5.6	4.7	5.1	9.6	9.1	9.3	12.1	10.7	11.3	15.9	14.9	15.4
16	6.5	5.6	6.0	9.1	8.4	8.8	12.0	11.3	11.7	16.6	14.7	15.4
17	6.5	6.2	6.4	9.3	8.8	9.0	12.8	11.2	11.8	17.3	15.5	16.1
18	6.8	6.2	6.4	10.4	9.2	9.6	12.8	11.6	12.2	18.4	16.0	16.9
19	7.0	6.5	6.8	11.8	10.4	10.9	11.6	10.9	11.3	19.5	16.8	17.8
20	7.5	6.8	7.1	12.0	11.4	11.7	11.7	11.0	11.4	20.5	17.7	18.7
21	8.2	7.4	7.7	12.6	11.2	11.9	11.8	10.9	11.4	20.5	18.1	19.1
22	7.9	7.3	7.5	13.5	12.3	12.8	12.8	11.5	12.0	21.8	19.0	20.1
23	7.6	6.8	7.2	14.1	13.0	13.5	14.4	12.4	13.2	22.1	19.7	20.8
24	7.5	7.0	7.3	13.9	12.4	13.2	15.2	13.7	14.3	22.2	19.8	21.0
25	7.4	6.4	6.9	12.4	11.4	11.8	16.6	14.9	15.6	22.4	20.1	21.2
26	7.6	6.7	7.2	11.7	11.0	11.4	17.1	15.8	16.5	21.9	20.0	20.9
27	7.7	6.7	7.2	11.7	10.6	11.0	17.0	15.3	16.0	21.5	19.9	20.5
28	7.3	6.5	6.9	11.4	10.2	10.7	15.8	14.3	14.9	20.5	18.4	19.2
29	---	---	---	12.8	11.1	11.7	15.0	13.5	14.0	19.8	17.7	18.8
30	---	---	---	12.9	11.8	12.4	14.8	13.8	14.2	20.8	17.9	19.0
31	---	---	---	12.9	12.2	12.7	---	---	---	22.4	19.2	20.4
MONTH	8.2	4.0	6.2	14.1	6.1	9.7	17.1	9.4	12.0	22.4	13.1	17.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
JUNE				JULY			AUGUST			SEPTEMBER		
1	22.2	20.3	20.8	---	---	---	25.3	20.9	23.2	24.4	20.8	22.7
2	20.4	18.5	19.4	---	---	---	25.4	21.3	23.0	23.8	20.4	22.1
3	19.8	17.6	18.5	---	---	---	25.1	21.4	23.0	22.5	19.5	21.5
4	19.1	17.2	18.1	---	---	---	24.4	21.4	22.6	23.2	19.9	21.8
5	18.4	17.1	17.7	27.5	---	---	25.8	20.6	22.7	22.1	19.2	20.6
6	19.5	17.4	18.3	25.9	21.5	23.7	25.6	20.9	22.9	20.2	17.1	19.1
7	20.5	18.5	19.4	25.9	21.4	23.4	26.2	22.7	24.1	20.4	17.3	19.2
8	---	19.7	---	26.7	21.4	23.6	26.2	22.6	24.4	21.1	17.6	19.6
9	---	---	---	26.1	22.0	24.1	28.6	23.2	25.1	21.3	17.9	19.9
10	---	---	---	25.7	23.6	24.7	28.1	23.5	25.1	21.9	18.7	20.6
11	---	---	---	24.8	22.7	23.6	26.3	23.1	24.7	21.4	18.6	20.2
12	---	---	---	25.1	21.3	23.4	25.8	22.6	24.0	20.6	18.3	19.6
13	---	---	---	26.1	22.3	24.4	25.5	22.1	23.9	22.2	19.1	20.8
14	---	---	---	26.2	22.6	24.6	26.8	22.6	24.6	22.7	20.0	21.7
15	---	---	---	25.6	21.8	23.8	27.7	22.9	24.7	23.0	20.4	21.8
16	---	---	---	24.6	21.3	23.1	26.9	22.7	24.6	22.7	20.0	21.5
17	---	---	---	24.5	20.3	22.6	26.7	22.2	24.2	21.9	19.1	20.8
18	---	---	---	25.0	20.6	22.8	23.8	21.7	22.6	21.2	18.5	20.2
19	---	---	---	25.8	21.8	23.5	23.6	19.5	21.7	20.8	18.2	19.9
20	---	---	---	25.3	22.0	23.5	23.7	19.5	21.8	20.4	17.5	19.3
21	---	---	---	25.3	21.4	23.3	23.0	19.7	21.3	19.9	17.3	19.1
22	---	---	---	25.0	21.5	23.5	22.1	20.4	20.9	20.0	17.2	19.0
23	---	---	---	25.9	22.2	24.2	22.2	19.7	20.8	19.9	17.5	19.0
24	---	---	---	26.8	22.6	24.7	22.3	18.9	21.0	19.8	17.4	18.6
25	---	---	---	26.9	22.5	24.5	23.3	19.6	21.7	19.6	18.0	18.9
26	---	---	---	27.1	21.8	24.0	24.3	20.5	22.6	18.8	17.5	17.8
27	---	---	---	26.2	21.8	23.8	24.4	21.0	22.9	18.6	16.4	17.4
28	---	---	---	26.1	21.9	23.7	24.7	20.8	22.8	18.4	15.4	16.9
29	---	---	---	24.0	21.8	22.9	24.9	21.7	23.2	18.6	15.2	17.0
30	---	---	---	24.1	20.5	22.0	24.4	21.3	23.1	19.1	15.8	17.5
31	---	---	---	25.0	20.6	22.8	24.8	21.2	23.0	---	---	---
MONTH	---	---	---	---	---	---	28.6	18.9	23.1	24.4	15.2	19.8

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.

WATER-DISCHARGE RECORDS

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 113.81 ft above sea level (levels by U.S. Bureau of Public Roads).

AVERAGE DISCHARGE.--17 years, (water years 1961-77), 6,326 ft³/s, 4,583,000 acre-ft/yr.
24 years (water years 1978-2001), 5,524 ft³/s, 4,002,000 acre-ft/yr (since operation began at
Lost Creek Lake).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,900 ft³/s Dec. 22, gage height, 5.12 ft; minimum discharge, 731 ft³/s July 9.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1660	1990	2870	2070	1680	1910	2340	2030	3750	1440	1140	1810
2	1710	1980	2450	2020	1680	1970	2210	1950	3180	1300	1100	1810
3	1690	1950	2260	1950	1700	2020	2120	1880	2720	1170	1300	1850
4	1700	1940	2160	1910	1790	2250	2090	2280	2450	1090	1730	1860
5	1710	1910	2090	1870	1850	2170	1980	2540	2210	1050	1700	1850
6	1730	1910	2020	1830	1870	2060	1890	3010	2010	1050	1770	1850
7	1720	1900	1980	1820	1790	2000	2000	3580	1780	1050	1750	1870
8	1690	1940	1950	1900	1730	1930	2350	3580	1510	1050	1800	1800
9	1740	2070	1920	1990	1690	1880	2160	3480	1450	992	1800	1890
10	1970	2110	1920	2560	1720	1830	2070	3440	1430	1030	1810	1870
11	2540	2040	1910	2340	1760	1830	2070	3570	1440	1180	1790	1850
12	1980	1980	2480	2080	1680	1790	2140	3550	1460	1240	1800	1710
13	1900	1950	3670	2010	1640	1730	2320	3280	1460	1140	1830	1590
14	1770	2070	4610	2010	1580	1630	2220	3200	1410	1220	1820	1560
15	1840	2140	4590	2010	1570	1570	2070	3620	1380	1150	1800	1580
16	1830	2130	3600	1970	1570	1590	2050	3690	1330	1110	1770	1650
17	1810	2040	3380	1900	1610	1670	2220	3700	1310	1120	1780	1680
18	1830	1990	3120	1830	2280	1760	2130	3890	1330	1100	1770	1670
19	1810	1960	2860	1830	2270	1970	2280	3780	1340	1080	1820	1670
20	1960	1940	2620	1730	2160	2070	2590	3840	1320	1080	1850	1600
21	2230	1930	2550	1690	2430	1970	2610	4090	1300	1100	1850	1620
22	2110	1890	4870	1660	2870	1890	2420	4050	1290	1080	1880	1500
23	1940	1880	5110	1650	2780	1840	2220	3940	1270	1080	1950	1280
24	1840	1880	4470	1700	2640	1830	2090	3870	1250	1080	1970	1120
25	1810	1870	3740	1990	2480	2220	1970	3850	1290	1050	1930	1160
26	1790	1890	3180	2010	2260	2270	1900	3340	1360	1020	1880	1350
27	1800	1910	2780	1850	2100	2200	1850	2850	1640	1010	1940	1360
28	2100	1920	2540	1760	1960	2380	1900	2770	1620	1020	1860	1340
29	2600	2510	2350	1930	---	3000	1840	2770	1560	1030	1800	1360
30	2330	3360	2230	1900	---	2900	1920	3040	1530	1060	1820	1340
31	2080	---	2150	1820	---	2580	---	3690	---	1120	1810	---
TOTAL	59220	60980	90430	59590	55140	62710	64020	102150	50380	34292	54620	48450
MEAN	1910	2033	2917	1922	1969	2023	2134	3295	1679	1106	1762	1615
MAX	2600	3360	5110	2560	2870	3000	2610	4090	3750	1440	1970	

MEAN	2008	4762	9339	10040	10120	8042	6590	5231	3545	2453	2306	2107
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	1421	1386	2124	1922	1969	2023	2083	2124	1679	1106	1671	1346
(WY)	1989	1988	1990	2001	2001	2001	1994	1992	2001	2001	1994	1980

SUMMARY STATISTICS	FOR 2000 CALENDAR YEAR		FOR 2001 WATER YEAR		WATER YEARS 1978 - 2001	
ANNUAL TOTAL	1884620		741982			
ANNUAL MEAN	5149		2033		5524	
HIGHEST ANNUAL MEAN					10180	1997
LOWEST ANNUAL MEAN					2033	2001
HIGHEST DAILY MEAN	54700	Jan 14	5110	Dec 23	194000	Jan 2 1997
LOWEST DAILY MEAN	1520	Sep 23	992	Jul 9	979	Oct 8 1979
ANNUAL SEVEN-DAY MINIMUM	1580	Sep 23	1040	Jul 24	1020	Oct 4 1980
ANNUAL RUNOFF (AC-FT)	3738000		1472000		4002000	
10 PERCENT EXCEEDS	9720		3020		11300	
50 PERCENT EXCEEDS	3340		1890		3080	
90 PERCENT EXCEEDS	1900		1290		1700	

ROGUE RIVER BASIN

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 from October 1960 to September 1987, January 1995 to current year.

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 recorded, 25.7°C July 9, 10; minimum, 4.2°C Jan. 20.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
OCTOBER			NOVEMBER			DECEMBER			JANUARY			
1	18.2	16.8	17.4	10.7	10.3	10.5	8.2	7.8	8.0	5.4	4.8	5.1
2	17.6	16.5	17.0	11.1	10.0	10.4	8.1	7.6	7.8	5.7	4.9	5.3
3	17.1	15.9	16.5	10.9	9.9	10.2	8.1	7.6	7.7	5.8	5.2	5.5
4	16.6	15.3	15.9	10.9	9.9	10.2	8.1	7.3	7.7	6.4	5.5	5.9
5	16.1	14.6	15.4	10.8	10.0	10.4	7.7	6.9	7.3	6.6	5.7	6.1
6	15.7	14.2	15.0	11.1	9.9	10.4	7.2	6.5	6.9	6.7	5.8	6.2
7	15.2	13.8	14.5	10.0	9.4	9.7	6.9	6.3	6.6	6.6	5.8	6.2
8	15.0	13.5	14.3	9.6	8.9	9.2	6.8	6.1	6.3	7.2	6.4	6.7
9	14.5	14.2	14.4	8.9	8.4	8.6	6.7	6.2	6.4	6.7	6.1	6.3
10	14.5	13.9	14.3	9.2	8.0	8.5	6.5	6.0	6.2	6.5	5.9	6.2
11	14.3	13.5	13.9	8.6	7.5	7.9	6.2	5.7	6.0	6.4	5.7	6.0
12	13.6	12.7	13.3	8.1	7.1	7.5	6.6	5.9	6.2	6.5	5.8	6.0
13	13.6	12.4	12.9	7.1	6.5	6.9	6.6	6.1	6.3	6.2	5.6	5.9
14	13.9	12.6	13.2	6.5	5.9	6.2	7.3	6.3	6.9	6.5	5.8	6.1
15	14.4	13.2	13.7	6.4	5.7	6.1	7.5	7.1	7.3	6.6	5.8	6.1
16	14.8	13.0	13.6	7.0	6.1	6.4	7.6	7.1	7.3	6.2	5.4	5.7
17	13.9	12.7	13.3	6.8	6.0	6.3	7.4	6.5	7.1	5.5	4.8	5.2
18	13.6	12.4	12.9	6.8	6.0	6.3	6.6	6.0	6.3	5.1	4.6	4.8
19	13.5	12.1	12.8	6.2	5.6	5.9	6.2	5.7	6.0	5.4	4.4	4.8
20	13.1	12.2	12.6	5.9	5.3	5.5	6.2	5.8	6.0	4.8	4.2	4.5
21	13.5	12.1	12.6	6.0	5.2	5.5	6.3	5.9	6.1	5.9	4.7	5.3
22	12.5	11.2	11.8	6.0	5.2	5.5	7.6	6.1	7.0	6.4	5.7	6.0
23	11.9	10.5	11.1	6.0	5.2	5.6	8.0	7.5	7.7	6.4	5.8	6.1
24	11.1	9.9	10.4	6.4	5.7	6.0	7.9	7.4	7.7	6.6	6.1	6.3
25	11.0	9.9	10.3	6.5	5.9	6.2	7.5	6.8	7.1	6.5	5.8	6.2
26	11.4	10.0	10.5	7.0	6.3	6.6	6.9	6.4	6.7	6.8	5.9	6.3
27	11.1	10.2	10.6	7.6	6.6	7.0	6.8	6.2	6.4	6.3	5.4	5.8
28	11.5	10.6	11.0	8.0	7.1	7.5	6.3	5.6	6.1	6.1	5.2	5.6
29	11.2	10.6	10.9	8.3	7.7	8.0	5.9	5.4	5.7	6.2	5.5	5.8
30	11.6	10.6	10.9	8.5	7.9	8.2	5.6	5.1	5.3	6.2	5.2	5.7
31	11.5	10.5	10.8	---	---	---	5.6	4.9	5.2	5.9	5.0	5.4
MONTH	18.2	9.9	13.2	11.1	5.2	7.6	8.2	4.9	6.7	7.2	4.2	5.8

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	5.8	5.0	5.4	7.8	7.0	7.5	13.5	12.4	12.8	15.3	14.1	14.6
2	5.9	5.5	5.7	8.2	7.2	7.7	12.4	11.7	12.1	15.4	12.8	14.1
3	6.1	5.6	5.8	7.5	6.7	7.1	12.4	11.0	11.6	16.0	12.8	14.3
4	7.3	6.0	6.6	7.7	6.7	7.2	12.6	10.3	11.3	16.4	14.1	15.0
5	7.7	6.7	7.1	7.6	6.7	7.1	11.6	10.1	10.7	17.0	14.3	15.4
6	7.7	6.9	7.2	8.6	6.8	7.6	10.7	10.0	10.3	17.0	14.6	15.6
7	7.7	6.4	7.0	9.1	7.5	8.1	11.2	9.4	10.2	17.1	15.2	16.0
8	6.4	5.9	6.1	9.4	8.1	8.7	10.6	9.4	10.1	16.5	15.2	15.9
9	6.5	5.8	6.1	10.1	8.8	9.2	11.6	9.5	10.2	16.9	15.4	16.0
10	6.0	5.1	5.6	10.1	8.9	9.5	10.1	9.4	9.7	17.3	15.3	16.1
11	5.7	4.8	5.1	10.0	8.6	9.3	11.5	9.3	10.2	17.3	15.5	16.3
12	5.8	4.8	5.2	10.3	8.5	9.3	10.5	9.5	10.0	17.3	15.7	16.3
13	5.8	4.6	5.1	10.2	8.7	9.4	11.0	9.4	10.1	17.2	15.8	16.3
14	5.7	4.8	5.1	10.3	8.8	9.5	11.7	9.2	10.3	16.0	14.7	15.6
15	5.2	4.8	5.0	9.6	9.4	9.5	11.5	9.8	10.5	14.7	13.3	14.2
16	5.9	5.2	5.5	9.8	9.3	9.5	11.9	10.0	10.9	14.9	13.0	13.7
17	6.1	5.6	5.8	9.6	9.4	9.5	12.8	10.5	11.5	14.9	13.2	13.9
18	7.0	6.0	6.5	10.2	9.4	9.8	12.6	11.2	11.9	16.1	14.1	15.0
19	7.4	6.5	6.9	11.0	9.8	10.3	12.9	11.4	12.2	16.8	14.9	15.8
20	8.1	7.1	7.5	12.1	10.1	11.0	12.8	11.5	12.1	17.4	15.6	16.5
21	8.3	7.7	8.0	13.1	10.7	11.8	13.5	11.8	12.4	18.1	16.2	17.2
22	8.3	7.3	7.8	13.7	11.5	12.4	12.7	11.7	12.1	18.6	16.6	17.7
23	8.9	7.6	8.1	14.7	12.4	13.3	14.4	11.6	12.8	18.9	17.2	18.2
24	8.3	7.7	8.0	14.0	13.0	13.5	15.7	12.9	14.1	18.9	17.4	18.3
25	9.0	7.5	8.2	13.8	12.8	13.4	17.3	14.1	15.4	18.6	17.5	18.3
26	8.9	7.6	8.1	13.2	12.0	12.6	18.2	15.5	16.6	19.0	17.4	18.2
27	8.7	7.2	7.9	12.4	11.7	12.0	16.8	16.4	16.6	18.5	17.1	17.9
28	8.0	7.1	7.6	12.5	11.1	11.8	16.6	15.4	16.1	18.1	16.7	17.2
29	---	---	---	12.9	11.0	11.9	15.7	14.9	15.2	18.5	16.0	17.1
30	---	---	---	13.0	11.7	12.2	15.4	14.7	15.0	18.6	16.5	17.4
31	---	---	---	13.4	12.0	12.7	---	---	---	19.3	17.0	18.1
MONTH	9.0	4.6	6.6	14.7	6.7	10.1	18.2	9.2	12.2	19.3	12.8	16.2

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	18.2	16.9	17.4	22.4	19.4	20.6	23.9	21.0	22.3	22.6	20.1	21.3
2	17.2	15.8	16.8	23.3	20.5	21.6	24.3	21.2	22.5	22.3	20.0	21.1
3	17.3	15.6	16.3	24.2	21.1	22.4	23.6	21.2	22.3	22.1	19.5	20.7
4	16.5	15.1	15.7	24.9	21.5	22.9	22.8	21.4	22.0	21.7	19.3	20.4
5	16.3	15.0	15.5	24.7	21.2	22.7	23.2	21.0	21.9	20.6	18.5	19.5
6	17.8	14.8	16.1	24.8	21.2	22.7	23.7	21.1	22.3	19.9	17.7	18.8
7	19.0	15.7	17.1	25.3	21.4	23.1	24.2	21.5	22.7	19.4	17.1	18.2
8	20.0	16.9	18.2	25.4	21.6	23.3	24.9	21.9	23.3	19.5	16.8	18.0
9	20.0	18.3	19.0	25.9	22.0	23.7	25.3	22.5	23.7	18.9	16.6	17.7
10	19.7	18.5	19.0	25.9	22.6	24.1	24.9	22.3	23.5	19.4	16.9	18.0
11	18.7	17.9	18.5	24.8	22.7	23.7	25.1	22.3	23.6	19.4	17.1	18.2
12	20.0	17.6	18.5	25.6	22.3	23.6	24.9	22.4	23.5	19.1	17.2	18.2
13	20.4	17.6	18.7	25.5	22.3	23.7	24.6	22.2	23.3	19.5	17.4	18.3
14	20.2	17.8	18.7	25.1	22.0	23.3	24.6	21.8	23.1	19.4	17.7	18.5
15	20.7	18.0	19.1	24.7	21.7	22.9	24.5	21.6	22.9	20.2	18.6	19.3
16	20.8	18.5	19.4	23.9	21.4	22.5	24.1	21.4	22.7	20.5	19.1	19.6
17	21.2	18.5	19.6	23.7	20.4	21.9	24.0	21.4	22.6	20.5	19.0	19.7
18	21.4	18.6	19.7	23.7	20.5	21.9	23.6	21.3	22.3	20.2	18.5	19.3
19	21.7	18.9	20.0	23.9	20.6	22.1	22.8	20.3	21.6	19.9	18.2	19.1
20	22.2	19.1	20.3	23.7	21.0	22.2	22.2	19.9	21.0	19.1	17.5	18.4
21	22.8	19.4	20.8	24.0	20.6	22.1	21.0	19.5	20.3	18.6	17.2	17.9
22	23.0	20.0	21.2	24.6	21.1	22.6	20.3	19.4	19.9	18.4	17.0	17.6
23	22.6	20.1	21.2	25.0	21.6	23.1	21.3	18.8	19.9	18.5	17.1	17.7
24	21.2	19.7	20.5	25.5	22.1	23.6	21.2	18.8	19.8	18.8	16.6	17.5
25	21.1	18.9	19.9	25.6	22.3	23.8	21.9	19.0	20.2	18.5	16.7	17.4
26	19.4	18.1	19.1	25.4	22.4	23.7	21.8	18.8	20.2	18.1	16.8	17.3
27	18.4	18.0	18.2	25.3	22.1	23.5	22.2	19.3	20.6	18.0	16.5	17.1
28	19.3	17.7	18.3	25.3	22.1	23.5	22.8	19.8	21.1	17.7	16.0	16.8
29	20.6	17.9	19.0	23.6	21.9	22.6	23.1	20.3	21.5	17.4	15.4	16.4
30	21.1	19.1	19.9	23.9	21.3	22.3	23.3	20.7	21.8	17.3	15.5	16.2
31	---	---	---	24.1	21.0	22.3	23.1	20.4	21.6	---	---	---
MONTH	23.0	14.8	18.7	25.9	19.4	22.8	25.3	18.8	21.9	22.6	15.4	18.5

YEAR	25.9	4.2	13.4									
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ROGUE RIVER BASIN

14377100 ILLINOIS RIVER NEAR KERBY, OR

LOCATION.--Lat 42°13'55", long 123°39'45", in SE 1/4 SE 1/4 sec.29, T.38 S., R.8 W., Josephine County, Hydrologic Unit 17100311, Siskiyou National Forest, on right bank 1.6 mi upstream from Josephine Creek, 2.5 mi northwest of Kerby, and at mile 50.3.

DRAINAGE AREA.--380 mi².

PERIOD OF RECORD.--October 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,198.8 ft above sea level. 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.--Records good. No regulation. Diversions for irrigation upstream from station. Several observations of water temperature were obtained during the year. National Weather Service telephone telemeter at station.

AVERAGE DISCHARGE.--40 years (water years 1962-2001), 1,262 ft³/s, 45.11 in/yr, 914,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92,200 ft³/s Dec. 22, 1964, gage height, 45.28 ft, from floodmark, site and datum then in use, from rating curve extended above 30,000 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 12 ft³/s Aug. 24, 1992.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 22	1830	*3,220	*9.00				
Minimum discharge, 15 ft ³ /s Aug. 15-18.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	211	804	387	379	539	613	442	147	95	28	20
2	44	166	532	355	371	775	562	410	146	84	28	19
3	44	154	417	330	479	795	523	379	145	74	28	19
4	45	146	355	310	536	783	476	355	140	70	27	20
5	46	137	309	294	531	910	439	341	141	63	28	22
6	46	128	276	280	487	865	428	328	140	58	30	24
7	46	120	249	271	441	802	445	312	135	55	30	24
8	46	117	229	301	402	741	432	300	127	53	28	22
9	49	158	214	354	396	674	423	290	122	52	26	19
10	56	145	203	741	379	604	414	267	120	48	25	19
11	61	132	202	646	405	544	430	248	119	48	22	21
12	61	124	222	540	380	496	439	236	119	49	22	25
13	61	120	303	486	361	460	430	226	117	47	22	24
14	61	124	2080	462	350	435	407	223	111	46	20	20
15	62	133	1940	428	340	416	391	455	106	51	18	19
16	64	135	1100	398	335	401	392	902	103	55	16	18
17	69	131	866	371	353	388	581	638	99	42	16	18
18	63	124	687	349	635	420	608	485	95	44	16	17
19	61	121	566	333	715	462	573	402	96	41	18	17
20	73	119	482	321	644	490	540	347	92	42	18	17
21	109	120	519	311	1070	487	507	301	83	42	17	20
22	102	119	2300	304	1550	500	475	270	77	39	18	19
23	85	125	2310	303	1250	506	448	247	78	37	21	21
24	76	179	1980	325	1020	519	435	227	78	35	23	23
25	72	198	1310	345	863	872	446	216	82	31	24	25
26	73	181	944	371	737	878	464	204	91	30	24	26
27	77	172	744	347	651	718	441	193	142	28	24	22
28	108	167	619	333	586	984	454	186	163	28	23	22
29	378	596	535	400	---	919	491	175	127	29	22	23
30	475	1470	473	442	---	774	447	164	103	29	21	23
31	340	---	425	408	---	672	---	153	---	28	20	---
TOTAL	2998	6072	24195	11846	16646	19829	14154	9922	3444	1473	703	628
MEAN	96.7	202	780	382	594	640	472	320	115	47.5	22.7	20.9
MAX	475	1470	2310	741	1550	984	613	902	163	95	30	26
MIN	44	117	202	271	335	388	391	153	77	28	16	17
AC-FT	5950	12040	47990	23500	33020	39330	28070	19680	6830	2920	1390	1250
CFSM	.25	.53	2.05	1.01	1.56	1.68	1.24	.84	.30	.13	.06	.06
IN.	.29	.59	2.37	1.16	1.63	1.94	1.39	.97	.34	.14	.07	.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2001, BY WATER YEAR (WY)

	MEAN	221	1463	2603	2933	2593	2323	1579	912	370	99.5	47.1	63.2
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 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1962 - 2001

ANNUAL TOTAL	380696	111910	
ANNUAL MEAN	1040	307	
HIGHEST ANNUAL MEAN			1262
LOWEST ANNUAL MEAN			2372
HIGHEST DAILY MEAN	20000	Jan 14	275
LOWEST DAILY MEAN	35	Aug 30	1977
ANNUAL SEVEN-DAY MINIMUM	38	Aug 16	64000
ANNUAL RUNOFF (AC-FT)	755100		13
ANNUAL RUNOFF (CFSM)	2.74		14
ANNUAL RUNOFF (INCHES)	37.27		914000
10 PERCENT EXCEEDS	2450		3.32
50 PERCENT EXCEEDS	370		45.11
90 PERCENT EXCEEDS	45		3100
			497
			39

14400000 CHETCO RIVER NEAR BROOKINGS, OR

LOCATION.--Lat 42°07'25", long 124°11'10", in SE 1/4 sec.12, T.40 S., R.13 W., Curry County, Hydrologic Unit 17100312, on right bank 16 ft upstream from bridge, 0.5 mi upstream from Elk Creek, 6.8 mi northeast of Brookings, and at mile 10.7.

DRAINAGE AREA.--271 mi².

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 50 ft above sea level, from topographic map.

REMARKS.--Records fair. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--32 years (water years 1970-2001), 2,246 ft³/s, 112.63 in/yr, 1,627,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,100 ft³/s Nov. 19, 1996, gage height, 28.56 ft; minimum discharge, 42 ft³/s Oct. 14, 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 32.25 ft, from high-water mark on bridge pier, discharge, 85,400 ft³/s, from rating curve extended above 45,000 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 14	2300	*9,860	*9.39				

Minimum discharge, 57 ft³/s Oct. 7-9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64	494	2280	1160	1010	1430	1140	846	455	259	108	86
2	63	387	1500	1050	1020	1720	1080	796	443	237	104	85
3	61	303	1130	968	1130	1550	1010	745	424	223	102	84
4	59	255	912	902	1170	1660	936	699	408	209	103	82
5	58	224	759	841	1140	1850	871	655	406	200	103	82
6	58	203	653	794	1040	1690	872	623	401	191	100	81
7	58	185	576	751	946	1550	854	593	382	181	99	81
8	57	187	518	885	878	1440	847	562	357	176	97	81
9	85	241	477	994	909	1320	842	535	344	170	95	82
10	142	232	437	1890	930	1210	811	514	331	166	92	81
11	115	206	464	1480	1050	1100	912	493	326	169	91	81
12	89	190	670	1240	1030	1020	911	475	334	169	91	81
13	78	197	2190	1150	979	953	887	464	310	161	90	81
14	74	422	7080	1070	948	903	836	516	293	155	89	81
15	72	e450	6680	989	921	868	796	1760	281	148	89	81
16	70	e400	3600	934	944	843	824	2900	270	143	89	81
17	69	e350	2710	882	1060	842	1420	1830	260	140	88	81
18	71	322	2160	839	2340	833	1280	1520	248	136	87	81
19	72	290	1840	810	2110	859	1160	1200	240	135	85	81
20	182	267	1600	774	1850	831	1140	1040	231	133	84	81
21	343	255	1600	794	3230	765	1060	934	224	132	84	81
22	184	246	6540	748	3940	715	996	851	217	130	90	81
23	123	293	6410	735	3120	680	936	779	211	125	206	81
24	100	440	5210	757	2600	712	883	721	211	121	157	81
25	90	431	3610	862	2220	1500	832	674	210	115	115	81
26	87	382	2740	982	1920	1710	784	630	241	111	101	82
27	86	350	2190	896	1700	1420	746	595	582	107	96	86
28	599	323	1840	853	1530	1730	855	567	516	105	94	84
29	1790	1620	1610	1180	---	1580	851	537	362	104	90	81
30	1640	4300	1430	1200	---	1400	818	505	291	112	88	81
31	796	---	1280	1100	---	1250	---	477	---	113	88	---
TOTAL	7435	14445	72696	30510	43665	37934	28190	26036	9809	4776	3095	2454
MEAN	240	482	2345	984	1559	1224	940	840	327	154	99.8	81.8
MAX	1790	4300	7080	1890	3940	1850	1420	2900	582	259	206	86
MIN	57	185	437	735	878	680	746	464	210	104	84	81
AC-FT	14750	28650	144200	60520	86610	75240	55910	51640	19460	9470	6140	4870
CFSM	.89	1.78	8.65	3.63	5.75	4.52	3.47	3.10	1.21	.57	.37	.30
IN.	1.02	1.98	9.98	4.19	5.99	5.21	3.87	3.57	1.35	.66	.42	.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2001, BY WATER YEAR (WY)

MEAN	566	3250	5004	5158	4652	3820	2347	1197	591	196	116	190
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	1973	1987	1987

SUMMARY STATISTICS

FOR 2000 CALENDAR YEAR

FOR 2001 WATER YEAR

WATER YEARS 1970 - 2001

ANNUAL TOTAL	675343	281045	2246
ANNUAL MEAN	1845	770	3911
HIGHEST ANNUAL MEAN			549
LOWEST ANNUAL MEAN			1977
HIGHEST DAILY MEAN	35900	7080	57000
LOWEST DAILY MEAN	57	57	44
ANNUAL SEVEN-DAY MINIMUM	59	59	46
ANNUAL RUNOFF (AC-FT)	1340000	557500	1627000
ANNUAL RUNOFF (CFSM)	6.81	2.84	8.29
ANNUAL RUNOFF (INCHES)	92.70	38.58	112.63
10 PERCENT EXCEEDS	4930	1670	5970
50 PERCENT EXCEEDS	660	505	782
90 PERCENT EXCEEDS	83	82	82

e Estimated

CHEMICAL QUALITY OF PRECIPITATION

SANDY RIVER BASIN

452650122091801 BULL RUN RESERVOIR NUMBER TWO, OR

LOCATION.--Lat 45°26'55", long 122°08'45", in SE 1/4 SE 1/2 sec.26, T.1 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on headworks dam on Bull Run River, 4.4 mi northeast of town of Bull Run, and approximately 20 mi east of Portland.

PERIOD OF RECORD.--June 1980 to September 1981 (event sampling), September 1981 to November 1981 (weekly composite), July 1982 to current year (weekly composite).

INSTRUMENTATION.--A bulk-type plastic double cylinder with receiving funnel directing deposition to inner cylinder was used for the period of record June 1980 to September 1981. The wet-deposition sample collector is an Aerochem Model 301 wet/dry deposition collector. Refer to WDR OR-92-1 for further description of instrumentation.

REMARKS.--Previously unpublished 2000 water year data are included in the following table as well as data through the second of October for the 2002 water year. Inches of precipitation obtained from an on-site recording weighing-bucket gage. The sample collector is located in the restricted access area of the city of Portland's Bull Run River Watershed. Samples are collected by Bull Run Headworks Water Quality Laboratory personnel and analyzed by the Illinois supply Central Analytical Laboratory.

WATER-QUALITY DATA

DATE	TOTAL PRECIP- ITATION FOR DEFINED PERIOD (IN) (00193)	PH FIELD ATM DEP WET T (UNITS) (83106)	PH LAB ATM DEP WET T (UNITS) (83107)	SPEC. CONDUCT- TANCE FIELD ATM DEP WET TOT (US/CM) (83154)	SPEC. CONDUCT- TANCE LAB ATM DEP WET TOT (US/CM) (83156)	CALCIUM ATM DEP WET DIS (MG/L) (82932)	MAG- NESIUM ATM DEP WET DIS (MG/L) (83002)	POTAS- SIUM ATM DEP WET DIS (MG/L) (83120)	SODIUM ATM DEP WET DIS (MG/L) (83138)	CHLO- RIDE ATM DEP WET DIS (MG/L) (82944)	SULFATE ATM DEP WET DIS AS SO4 (MG/L) (83160)	NI- TROGEN AMMON. ATM DEP WET DIS AS NH4 (MG/L) (83047)	NI- TROGEN NITRATE ATM DEP WET DIS AS NO3 (MG/L) (83071)
AUG 29- SEP 05 SEP	.45	4.82	4.81	11.4	12.6	.10	.044	.028	.344	.59	1.01	.24	.91
SEP 05-12	1.87	4.96	5.06	6.0	8.6	.03	.017	.007	.152	.25	.43	.09	.43
SEP 12-19	.13	5.00	5.21	11.7	4.2	.03	.007	.013	.046	.07	.32	.06	.23
SEP 19-26	.38	4.62	4.67	10.3	11.1	.02	<.003	.006	.008	.02	.79	.07	.53
SEP 26- OCT 03	3.07	5.12	5.34	9.8	3.5	.02	<.003	.006	.019	.04	.20	.07	.12
OCT 03-10	.60	4.68	4.85	10.2	11.5	.04	.040	.025	.399	.68	.58	.11	.71
OCT 10-17	1.01	4.56	--	18.8	--	--	--	--	--	--	--	--	--
OCT 17-24	2.28	4.81	5.22	5.9	6.6	.04	.046	.025	.434	.77	.31	.05	.23
OCT 24-31	.90	4.83	5.04	5.3	5.5	.04	.004	.016	.020	.04	.21	.06	.50
OCT 31- NOV 07	1.03	4.75	5.26	7.6	8.0	.04	.058	.031	.565	.98	.44	.14	.42
NOV 07-14	1.20	4.89	5.30	5.8	6.8	.05	.054	.034	.495	.88	.32	.05	.26
NOV 14-21	<.01	--	--	--	--	--	--	--	--	--	--	--	--
NOV 21-28	2.40	5.11	5.24	4.0	3.7	.02	.013	.006	.130	.28	.13	<.02	.16
NOV 28- DEC 05	.71	E4.71	5.06	E6.2	6.0	.03	.019	.013	.175	.29	.32	.04	.29
DEC 05-12	.48	4.70	4.69	13.2	14.5	.04	.047	.028	.455	.77	.77	.20	1.10
DEC 12-19	2.21	4.98	5.28	10.6	11.8	.06	.124	.048	1.29	2.32	.47	.05	.19
DEC 19-26	1.70	5.13	5.20	9.7	4.2	.03	.016	.007	<.153	.27	.18	<.02	.14
DEC 26 2000- JAN 02 2001	.22	5.02	5.08	5.2	4.8	.02	.007	.004	<.073	.11	.29	<.02	.26
JAN 02-09	.39	4.86	4.97	6.6	8.0	.03	.020	.019	<.191	.29	.42	.11	.67
JAN 09-16	1.80	4.90	4.92	12.2	8.0	.02	.016	.010	<.183	.30	.32	.07	.72
JAN 16-23	.25	4.98	5.13	6.0	5.7	.03	.021	.009	<.197	.36	.31	.03	.21
JAN 23-30	.81	5.09	5.20	14.0	16.4	.09	.162	.064	1.57	2.77	.86	.19	.48
JAN 30- FEB 06	2.29	5.09	5.25	9.2	10.9	.10	.099	.035	.949	1.62	.67	.08	.27
FEB 06-13	.17	4.71	4.67	19.2	19.7	.12	.091	.041	.785	1.39	1.15	.24	1.37
FEB 13-20	.47	4.82	4.94	9.7	11.0	.07	.046	.023	<.406	.61	.56	.13	1.04
FEB 20-27	.43	5.18	5.38	4.2	3.7	.04	.006	.009	<.013	.04	.13	.10	.38
FEB 27- MAR 06	1.14	5.03	5.34	12.4	11.6	.07	.125	.046	1.25	2.07	.53	.07	.21
MAR 06-13	.99	5.13	5.45	5.9	5.7	.03	.023	.010	<.195	.32	.43	.25	.59
MAR 13-20	3.55	5.08	5.29	4.9	5.4	.04	.029	.023	<.285	.49	.34	.07	.22
MAR 20-27	1.19	5.00	5.24	10.7	10.1	.07	.078	.037	.668	1.16	.59	.19	.55
MAR 27- APR 03	2.58	5.16	5.23	6.1	6.0	.07	.016	.020	.101	.17	.50	.15	.51
APR 03-10	1.33	5.22	5.44	7.2	7.1	.07	.033	.020	.273	.45	.57	.28	.57
APR 10-17	1.86	5.14	5.29	9.5	6.8	.12	.036	.027	.250	.39	.45	.12	.75
APR 17-24	.96	5.33	5.35	9.3	10.4	.35	.084	.037	.422	.63	.80	.24	1.58
APR 24- MAY 01	3.19	5.40	5.64	5.3	4.3	.09	.023	.041	.154	.27	.35	.11	.23

E Estimated.

CHEMICAL QUALITY OF PRECIPITATION

409

SANDY RIVER BASIN

452650122091801 BULL RUN RESERVOIR NUMBER TWO, OR--Continued

WATER-QUALITY DATA

DATE	TOTAL PRECIP- ITATION FOR DEFINED PERIOD (IN) (00193)	PH FIELD ATM DEP WET T (UNITS) (83106)	PH LAB ATM DEP WET T (UNITS) (83107)	SPEC. CONDUCT- TANCE FIELD ATM DEP WET TOT (US/CM) (83154)	SPEC. CONDUCT- TANCE LAB ATM DEP WET TOT (US/CM) (83156)	CALCIUM ATM DEP WET DIS (MG/L) (82932)	MAG- NESIUM ATM DEP WET DIS (MG/L) (83002)	POTAS- SIUM ATM DEP WET DIS (MG/L) (83120)	SODIUM ATM DEP WET DIS (MG/L) (83138)	CHLO- RIDE ATM DEP WET DIS (MG/L) (82944)	SULFATE ATM DEP WET DIS AS SO4 (MG/L) (83160)	NI- TROGEN AMMON. ATM DEP WET DIS AS NH4 (MG/L) (83047)	NI- TROGEN NITRATE ATM DEP WET DIS AS NO3 (MG/L) (83071)
MAY 01-08 2001	.62	4.76	--	17.9	--	--	--	--	--	--	--	--	--
MAY 08-15	1.85	5.44	5.37	3.1	2.5	.02	.003	.004	.007	.01	.14	<.02	.07
MAY 15-22	.65	5.18	5.23	5.8	5.7	.03	.031	.013	.305	.57	.29	.02	.19
MAY 22-29	.31	5.05	5.31	10.5	9.1	.11	.053	.046	.423	.82	.69	.23	.46
MAY 29-JUN 05	1.73	5.10	5.07	8.1	8.2	.04	.029	.019	.253	.44	.67	.17	.41
JUN 05-12	2.37	5.27	5.36	4.1	4.1	.02	.007	.010	.054	.12	.29	.13	.34
JUN 12-19	.05	5.04	5.30	23.8	23.8	.18	.243	.111	2.32	4.42	1.38	.32	.78
JUN 19-26	.54	5.31	5.21	4.2	4.1	.02	.005	.007	.024	.05	.24	.07	.33
JUN 26-JUL 03	.86	5.09	5.20	4.3	4.3	.02	<.003	.006	.004	.02	.14	.07	.40
JUL 03-10	<.01	--	--	--	--	--	--	--	--	--	--	--	--
JUL 10-17	.58	4.96	4.99	10.3	9.4	.05	.020	.020	.140	.26	.89	.32	.78
JUL 17-24	.07	4.49	--	21.9	--	--	--	--	--	--	--	--	--
JUL 24-31	1.00	5.18	5.34	4.1	3.3	.02	.003	.008	.014	.03	.17	.08	.26
JUL 31-AUG 07	<.01	--	--	--	--	--	--	--	--	--	--	--	--
AUG 07-14	0	--	--	--	--	--	--	--	--	--	--	--	--
AUG 14-21	0	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21-28	1.34	5.07	5.21	3.7	3.9	.03	.007	.009	.070	.14	.21	.05	.21
AUG 28-SEP 05	.01	--	4.62	--	21.6	.11	.099	.037	1.07	1.93	1.45	.25	.70
SEP 05-11	<.01	--	--	--	--	--	--	--	--	--	--	--	--
SEP 11-18	.04	--	4.42	--	27.1	.28	.035	.054	.066	.24	1.89	.54	3.21
SEP 18-25	<.01	--	--	--	--	--	--	--	--	--	--	--	--
SEP 25-OCT 02	1.30	5.15	5.24	4.4	3.6	.02	.004	.006	.036	.07	.19	.06	.25

E Estimated.

CHEMICAL QUALITY OF PRECIPITATION

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.--Previously unpublished 2000 water year data are included in the following table through October 2 of the 2002 water year. 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	TOTAL PRECIP- ITATION FOR DEFINED PERIOD (IN) (00193)	PH FIELD ATM DEP WET T (UNITS) (83106)	PH LAB ATM DEP WET T (UNITS) (83107)	SPEC. CONDCU- TANCE FIELD ATM DEP WET TOT (US/CM) (83154)	SPEC. CONDCU- TANCE LAB ATM DEP WET TOT (US/CM) (83156)	CALCIUM ATM DEP WET DIS (MG/L) (82932)	MAG- NESIUM ATM DEP WET DIS (MG/L) (83002)	POTAS- SIUM ATM DEP WET DIS (MG/L) (83120)	SODIUM ATM DEP WET DIS (MG/L) (83138)	CHLO- RIDE ATM DEP WET DIS (MG/L) (82944)	SULFATE ATM DEP WET DIS AS SO4 (MG/L) (83160)	NI- TROGEN AMMON. ATM DEP WET DIS AS NH4 (MG/L) (83047)	NI- TROGEN NITRATE ATM DEP WET DIS AS NO3 (MG/L) (83071)
AUG 29- SEP 05 SEP	.12	E4.55	4.81	--	9.3	.06	.015	.015	.084	.13	.47	.11	.94
05-12 SEP	0	--	--	--	--	--	--	--	--	--	--	--	--
12-19 SEP	0	--	--	--	--	--	--	--	--	--	--	--	--
19-26 SEP 26- OCT 03 OCT	0	--	--	--	--	--	--	--	--	--	--	--	--
03-10 OCT	.59	5.13	5.26	3.0	3.2	.01	<.003	.005	.005	.02	.08	<.02	.16
10-17 OCT	.56	E4.99	5.07	E3.7	4.1	.02	<.003	<.003	<.003	.02	.10	<.02	.37
17-24 OCT	.05	E4.71	5.50	E5.7	3.2	.02	<.003	.011	.006	.03	.12	.05	.27
24-31 OCT 31- NOV 07 NOV	.43	E4.98	5.39	3.6	2.8	.02	<.003	.006	.006	.02	.09	.06	.28
07-14 NOV	.04	5.11	5.40	3.0	2.7	.04	<.008	<.008	.009	<.01	.10	<.06	.16
14-21 NOV	.19	E4.89	5.23	E4.5	4.3	.03	<.003	.017	.015	.05	.08	.08	.54
21-28 NOV 28- DEC 05 DEC	<.01	--	--	--	--	--	--	--	--	--	--	--	--
05-12 DEC	.03	--	5.56	--	3.2	.08	.009	.016	.012	.07	.12	.07	.44
12-19 DEC	.14	E4.97	5.41	3.6	2.8	.01	<.003	.004	.006	.02	.10	.03	.21
19-26 DEC 26 2000- JAN 02 2001 JAN	.28	E4.86	5.40	5.1	2.4	.01	<.003	<.003	<.003	<.01	.08	.03	.12
02-09 JAN	.29	E4.87	5.33	E2.9	2.5	.02	.005	<.003	.012	.03	.07	.02	.15
09-16 JAN	<.01	--	--	--	--	--	--	--	--	--	--	--	--
16-23 JAN	<.01	--	--	--	--	--	--	--	--	--	--	--	--
23-30 JAN 30- FEB 06 FEB	.03	--	5.63	--	3.3	.07	.011	.016	.139	.13	.16	<.06	.41
06-13 FEB	.04	--	--	--	--	--	--	--	--	--	--	--	--
13-20 FEB	.19	E4.57	4.97	E8.3	7.6	.03	<.003	.005	<.013	.04	.20	.21	1.22
20-27 FEB 27- MAR 06 MAR	.04	--	5.58	--	2.5	.10	.007	.006	<.035	.05	.12	<.02	.16
06-13 MAR	.29	E4.78	5.45	E4.6	4.1	.06	.011	.006	<.081	.12	.19	.08	.47
13-20 MAR	.03	--	5.82	--	7.9	.13	.014	.022	<.068	.14	.62	.66	1.55
20-27 MAR 27- APR 03 APR	.31	5.20	5.35	5.2	4.2	.04	.005	<.003	<.013	.03	.23	.10	.37
03-10 APR	.04	--	5.25	--	3.7	.04	<.003	<.003	<.018	.05	.20	.07	.35
10-17 APR	.03	--	5.10	--	6.0	.13	.018	<.013	.014	.10	.47	.12	.79
17-24 APR 24- MAY 01	.04	--	5.24	--	3.8	.05	.006	.008	<.014	.08	.09	<.02	.27
	.34	5.10	5.28	4.2	3.2	.04	.006	.005	<.007	.03	.14	.04	.23
	.17	E5.00	5.40	E3.9	2.8	.07	.011	.006	<.018	.03	.15	<.02	.21
	.09	--	5.32	--	3.7	.06	.011	.024	.028	.05	.39	.09	.13
	.04	--	5.26	--	3.1	.10	.015	<.011	.011	.09	.14	<.08	.17
	.79	5.28	5.73	3.4	2.6	.10	.017	.008	.018	.03	.18	.06	.25
	.26	5.30	5.86	6.5	4.9	.28	.032	.027	.045	.06	.51	.20	.65

E Estimated.

CHEMICAL QUALITY OF PRECIPITATION

411

SILVER LAKE BASIN

430701121040001 SILVER LAKE RANGER STATION, OR--Continued

WATER-QUALITY DATA

DATE	TOTAL PRECIP- ITATION FOR DEFINED PERIOD (IN) (00193)	PH FIELD ATM DEP WET T (UNITS) (83106)	PH LAB ATM DEP WET T (UNITS) (83107)	SPEC. CONDUCT- TANCE FIELD ATM DEP WET TOT (US/CM) (83154)	SPEC. CONDUCT- TANCE LAB ATM DEP WET TOT (US/CM) (83156)	CALCIUM ATM DEP WET DIS (MG/L) (82932)	MAG- NESIUM ATM DEP WET DIS (MG/L) (83002)	POTAS- SIUM ATM DEP WET DIS (MG/L) (83120)	SODIUM ATM DEP WET DIS (MG/L) (83138)	CHLO- RIDE ATM DEP WET DIS (MG/L) (82944)	SULFATE ATM DEP WET DIS AS SO4 (MG/L) (83160)	NI- TROGEN AMMON. ATM DEP WET DIS AS NH4 (MG/L) (83047)	NI- TROGEN NITRATE ATM DEP WET DIS AS NO3 (MG/L) (83071)
MAY 2001													
01-08	0	--	--	--	--	--	--	--	--	--	--	--	--
MAY 08-15	.19	4.99	5.34	4.6	3.2	.04	.007	.009	.010	.03	.10	<.02	.25
MAY 15-22	.14	4.88	4.96	6.0	5.7	.02	.006	.003	.003	.05	.03	<.02	.56
MAY 22-29	.24	4.74	4.85	8.3	8.2	.14	.033	.111	.053	.06	.51	<.02	.51
MAY 29- JUN 05	.07	--	5.44	--	2.6	.04	.007	.010	.013	.06	.08	<.02	.14
JUN 05-12	0	--	--	--	--	--	--	--	--	--	--	--	--
JUN 12-19	0	--	--	--	--	--	--	--	--	--	--	--	--
JUN 19-26	.06	4.57	5.18	11.3	4.8	.03	.005	.010	.017	.03	.27	.12	.17
JUN 26- JUL 03	.08	5.11	5.80	3.6	3.3	.05	.006	.005	.013	.04	.06	.21	.36
JUL 03-10	.09	--	--	--	--	--	--	--	--	--	--	--	--
JUL 10-17	.11	--	--	--	--	--	--	--	--	--	--	--	--
JUL 17-24	.15	4.80	4.88	7.7	9.1	.08	.018	.042	.076	.08	.43	.14	1.07
JUL 24-31	.42	5.01	5.29	3.7	3.0	.02	<.003	.005	<.003	.02	.04	.02	.17
JUL 31- AUG 07	0	--	--	--	--	--	--	--	--	--	--	--	--
AUG 07-14	.04	--	4.68	--	20.2	.46	.070	.095	.190	.20	1.14	.54	2.98
AUG 14-21	0	--	--	--	--	--	--	--	--	--	--	--	--
AUG 21-28	.03	--	5.26	--	6.4	.09	.020	.026	.044	.14	.24	.25	.71
AUG 28- SEP 04	0	--	--	--	--	--	--	--	--	--	--	--	--
SEP 04-11	0	--	--	--	--	--	--	--	--	--	--	--	--
SEP 11-18	.40	4.99	5.51	5.1	5.1	.14	.015	.035	.216	.09	.39	.13	.69
SEP 18-25	.04	4.46	4.96	16.0	9.1	.07	.007	.010	.052	.13	.49	.36	1.54
SEP 25- OCT 02	.06	5.09	5.23	4.1	3.6	.03	.003	.009	.033	.06	.07	.05	.23

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 usable 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 2001

Station name and number	Location and drainage area	Period of record	Date	Water year 2001 maximum		Period of record maximum		
				Gage height (ft)	Dis- charge (ft ³ /s)	Date	Gage height (ft)	Dis- charge (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, andat mile 0.5. Drainage area s 2.72 mi ² .	1992-2001	12/23/00	2.35	79.9	2-08-96	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 1987-2001	03/28/01	3.67	144	01/09/95	11.09	9,120
Lookingglass Creek at Brockway (14311500)	Lat 43°07'50", lojng 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 .	1956-2000	03/28/01	4.80	898	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 2001.

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, Hydrologic Unit 18010204, 600 ft downstream from Link River gage, and 1,200 ft upstream from Main Street Bridge.	3,810	1961-2000	10/20/00	273
					12/14/00	284
					04/09/01	289
GRANDE RONDE RIVER BASIN						
13324280 Lookingglass Creek below Intake, near Looking Glass	Grande Ronde River	Lat 45°44'05", long 117°51'48", in SE 1/4 SW 1/4 sec.18, T.3 N., R.40 E., Union County, Hydrologic Unit 17060104, on right bank, 150 ft downstream from intake to Looking Glass Fish Hatchery, 1,300 ft upstream from gaging station (13324300), 2.5 mi northwest of Looking Glass, and at mile 2.5.	---	1999-2000	10/25/00	30
					06/19/01	39
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‡ 1998-2000	10/11/00	no flow
					11/14/00	1.8
					01/10/01	1.6
					03/19/01	5.2
					05/17/01	0.4
					07/25/01	no flow
COLUMBIA RIVER MAIN STEM						
14128910 Columbia River at Warrendale	Pacific Ocean	Lat 45°36'45", long 122°01'35", in NE 1/4 SE 1/4 sec.35, T.2 N., R.6 E., Multnomah County, Hydrologci Unit 17080001, 10.1 mi downstream from Tumult Creek, 1.0 mi west of Warrendale, 5.1 mi downstream from Bonneville Dam, andat mile 141.0.	240,000 (approx)	1998-2000	08/29/01	116,300
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‡ 1999-2000	02/10/01	57
					05/04/01	95
					08/17/01	52
14138700 Bull Run River at Upper Flume, near Brightwood	Sandy River	Lat 45°28'05", long 121°51'16", in SE 1/4 NW 1/4 sec.20, T.1 S., R.8 E., Multnomah County, Hydrologic Unit 17080001, at flume, 0.67 mi downstream from outlet structure, at Bull Run Lake, and 9.9 mi northeast of Brightwood	---	1992-2000	10/18/00	1.8
					12/20/00	1.8
					05/08/01	8.4
					07/11/01	5.3
WILLAMETTE RIVER BASIN						
Separation Creek	Horse Creek	Lat 44°04'50", long 121°56'32", Lane County, Hydrologic Unit 17090004, 1.8 mi downstream from Sphinx Creek, 12 mi southeast of McKenzie Bridge and at approximately mile 6.5.	---	1990	07/25/01	124
Side channel Separation Creek	.....do.....	Lat 44°04'49", long 121°56'34", Lane County, Hydrologic Unit 17090004, 1.8 mi downstream from Sphinx Creek, 12 mi southeast of McKenzie Bridge and approximately mile 6.5.	---	---	07/25/01	5.5
Willamette River at Corvallis	Columbia River	Lat 44°34'00", long 123°15'36", Benton County, Hydrologic Unit 17090003, on Hwy 34 Bridge and approximately at mile 131.5.	---	---	08/31/01	4,000
Molalla River upstream from Cooper Creek	Willamette River	Lat 44°55'28", long 122°20'21", Clackamas County, Hydrologic Unit 17090009.	---	---	07/30/01	18
					08/20/01	5.7
Cooper Creek	Molalla River	Lat 44°55'27", long 122°20'22", Clackamas County, Hydrologic Unit 17090009.	---	---	07/30/01	9.6
					08/20/01	3.3
Molalla River upstream from Table Rock Fork	Willamette River	Lat 44°57'33", long 122°24'19", Clackamas County, Hydrologic Unit 17090009.	---	---	07/31/01	20
					08/20/01	13
Table Rock Fork near mouth	Molalla River	Lat 44°57'41", long 122°24'36", Clackamas County, Hydrologic Unit 17090009.	---	---	07/31/01	21
					08/20/01	10
					09/05/01	11
Molalla River upstream from Gawley Creek	Willamette River	Lat 44°57'35", long 122°26'44", Clackamas County, Hydrologic Unit 17090009.	---	---	07/31/01	47
					09/06/01	22
Gawley Creek near mouth	Molalla River	Lat 44°57'39", long 122°27'22", Clackamas County, Hydrologic Unit 17090009.	---	---	09/06/01	2.8
Pine Creek	.....do.....	Lat 45°00'52", long 122°28'49". Clackamas County, Hydrologic Unit 17090009.	---	---	08/20/01	3.0

‡ Operated as a continuous record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites during water year 2001--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
WILLAMETTE RIVER BASIN--Continued						
Molalla River downstream from Pine Creek	Willamette River	Lat 45°02'23", long 122°29'17", Clackamas County, Hydrologic Unit 17090009.	---	---	07/30/01	79
Trout Creek	Molalla River	Lat 45°04'24", long 122°29'00", Clackamas County, Hydrologic Unit 17090009.	---	---	07/30/01 08/20/01	10 3.5
North Fork Molalla River near mouth	.....do.....	Lat 45°05'03", long 122°29'19", Clackamas County, Hydrologic Unit 17090009.	---	---	08/21/01 09/06/01	15 16
Molalla River downstream from North Fork	Willamette River	Lat 45°05'48", long 122°30'41", Clackamas County, Hydrologic Unit 17090009.	---	---	08/21/01	49
Dickey Creek	Molalla River	Lat 45°07'10", long 122°31'56", Clackamas County, Hydrologic Unit 17090009.	---	---	08/21/01	0.06
Milk Creek upstream from Colton	.....do.....	Lat 45°10'30", long 122°25'37", Clackamas County, Hydrologic Unit 17090009.	---	---	08/21/01	3.0
Milk Creek downstream from Camp Ad	.....do.....	Lat 45°09'55", long 122°29'12", Clackamas County, Hydrologic Unit 17090009.	---	---	08/21/01	9.4
Milk Creek near mouth	Molalla River	Lat 45°13'57", long 122°37'00", Clackamas County, Hydrologic Unit 17090009.	---	---	08/21/01	17
Gribble Creek	.....do.....	Lat 45°14'14", long 122°41'58", Clackamas County, Hydrologic Unit 17090009.	---	---	08/21/01	0.2
Molalla River downstream from Knights Bridge	Willamette River	Lat 45°16'07", long 122°42'37", Clackamas County, Hydrologic Unit 17090009.	---	---	09/06/01	49
14202000 Pudding River at Aurora	Molalla River	Lat 45°14'00", long 122°44'56", Clackamas-Marion County, Hydrologic Unit 17090009, at Aurora, and at mile 8.1.	479	1928-64‡, 1993-97‡, 1999, 2000	08/22/01	25
Woods Creek	Fanno Creek	Lat 45°28'20", long 122°45'17", Washington County, Hydrologic Unit 17090010, at SW Aloma Way, 1.0 mi south of Raleigh Hills, and at mile 0.3.	---	---	04/26/01	0.44
Fanno Creek nr Progress	Tualatin River	Lat 45°27'18", long 122°47'41", Washington County, Hydrologic Unit 17090010, 0.8 mi west of Progress, and at mile 7.0.	---	---	09/28/01	1.2
Fanno Creek (Hwy 210)	.....do.....	Lat 45°26'49", long 122°47'27", Washington County, Hydrologic Unit 17090010, at Scholls Ferry Road (Hwy210), 1.5 mi northwest of Tigard, and at mile 6.2.	---	---	04/24/01	6.0
Ash Creek	Fanno Creek	Lat 45°26'30", long 122°46'31", Washington County, Hydrologic Unit 17090010, downstream side of Shady Lane Bridge, off Greenburg Road, Tigard.	3.26	---	03/27/01 15:35 03/27/01 18:19 05/14/01 17:40 05/14/01 19:50	55 53 9.4 19
Ash Creek at mouth	.....do.....	Lat 45°26'22", long 122°46'53", Washington County, Hydrologic Unit 17090010, at SW North Dakota St., 0.8 mi northwest of Tigard, and at mouth.	---	---	04/24/01	2.2
Fanno Creek	Tualatin River	Lat 45°26'02", long 122°47'04", Washington County Hydrologic Unit 17090010, at Tiedermann Ave., upstream from Summer Creek, 0.6 mi northwest of Tigard, and at mile 5.0.	---	---	04/24/01	9.4
Summer Creek	Fanno Creek	Lat 45°25'58", long 122°47'23", Washington County, Hydrologic Unit 17090010, on downstream side of bridge behind Fowler Middle School, on Tiedeman Road, Tigard.	6.04	---	03/27/01 16:49 03/27/01 19:19 05/14/01 16:32 05/14/01 18:43	40 45 6.7 22
Summer Creek	.....do.....	Lat 45°26'00", long 122°47'06", Washington County, Hydrologic Unit 17090010, at SW Tiedermann Ave., 0.6 mi northwest of Tigard, and at mouth.	---	---	04/24/01	3.2
Fanno Creek	Tualatin River	Lat 45°25'30", long 122°45'52", Washington County, Hydrologic Unit 17090010, at Hall Blvd., 0.5 mi southeast of Tigard, and at mile 3.3.	---	---	04/24/01	14
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‡, 1997-2000	01/05/01 05/14/01 09/11/01	327 475 208

‡ Operated as a continuous record gaging station.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites during water year 2001--Continued

Stream	Tributary to	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
WILLAMETTE RIVER BASIN--Continued						
Eagle Creek at Bonnie Lure State Park	Clackamas River	Lat 45°21'05", long 122°22'32", Clackamas County, Hydrologic Unit 17090011, 200 ft downstream from Dowty Road Bridge, at Bonnie Lure State Park.	97.87	1998-2000	10/21/00	482
Deep Creek at Hwy 224	.....do.....	Lat 45°23'40", long 122°25'10", Clackamas County, Hydrologic Unit 17090011, 50 ft upstream from Highway 224 bridge.	53.14	1998-2000	10/20/00	36
Richardson Creek at Hwy 224	.....do.....	Lat 45°23'52", long 122°28'15", Clackamas County, Hydrologic Unit 17090011, 50 ft downstream from Highway 224.	4.25	1998-2000	10/20/00	8.6
Clear Creek at Carver	.....do.....	Lat 45°23'25", long 122°29'35", Clackamas County, Hydrologic Unit 17090011, 150 ft upstream from mouth.	78.58	1998-2000	10/21/00	141
Clackamas River at Carver	Willamette River	Lat 45°23'35", long 122°29'45", Clackamas County, Hydrologic Unit 17090011, at Carver Bridge, at Carver.	---	1998,2000	10/20/00	1,350
Rock Creek near mouth	Clackamas River	Lat 45°24'31", long 122°30'32", Clackamas County, Hydrologic Unit 17090011, 500 ft upstream from confluence with Clackamas River.	10.21	1998-2000	10/20/00	10
Sieben Creek at Hwy 224	.....do.....	Lat 45°24'27", long 122°33'33", Clackamas County, Hydrologic Unit 17090011, 50 ft downstream from Highway 224.	0.85	1998	05/11/00 10/09/00 10/20/00	a4.8 3.9 32
Errol Spring	Johnson Creek	Lat 45°27'49", long 122°37'00", Multnomah County, Hydrologic Unit 17090012, at 44th Avenue in Portland, at mouth.	---	1988, 1999-2000	08/21/01	0.34
Crystal Springs Creek	Johnson Creek	Lat 45°28'56", long 122°38'00", Multnomah County, Hydrologic Unit 17090012, on Reed College Campus, 0.1 mi downstream from Reed Lake, and at mile 1.8.	---	1997-2000	08/21/01	1.0
14211542 Crystal Springs Creek	.....do.....	Lat 45°28'27", long 122°38'27", Multnomah County, Hydrologic Unit 17090012, at Bybee Street, and at mile 1.0.	---	1977, 1987 1997-98, 2000	09/12/01	11
14211546 Crystal Springs Creek	.....do	Lat 45°27'39", long 122°38'30", Multnomah County, Hydrologic Unit 17090012, at mouth.	---	1987-90 1997-2000	03/08/01 08/21/01	13 11
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.3S., R.6 W., Yamhill County, Hydrologic Unit 17100203, 5.3 mi southwest of Fairdale, and at mile 0.5.	2.72	1991-2000	10/12/00 12/14/00 02/27/01 06/07/01 08/22/01	0.42 15 8.6 3.1 3.8
UMPUQUA 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.31S., 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‡, 1987-2000‡	04/06/01	61
14311500 Lookingglass Creek at Brockway	.....do.....	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.	158	1956-2000	10/16/2000	12

a Not previously published.

‡ Operated as a continuous record gaging station.

LOW-FLOW DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Measurements were made August to October 2001 to document low-flow conditions in Oregon. Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table. Measurements were made by the US Geological Survey (USGS), Oregon Water Resources Division (OWRD), US Forest Service (USFS), and the Bureau of Land Management (BLM).

Station Number	Station Name	Tributary to	Latitude	Longitude	Date	Measurements		Water Temperature (°C)
						Discharge (ft ³ /s)	Specific Conductance (microsiemens)	
10371500	Deep Creek above Adel	Warner Lakes	421121	1200002	9/05/01	6.4	--	--
10378500	Honey Creek near Plush	Warner Lakes	422700	1200400	8/15/01	0.28	--	--
10384000	Chewaucan River near Paisley	Albert Lake	424105	1203408	9/05/01	16.5	--	--
10388001	Ana River plus canal, near Summer Lake	Albert Lake	425942	1204454	9/12/01	14.7	217	17.6
10390001	Silver Creek plus canal near, Silver Lake	Summer Lake	430640	1210405	9/12/01	39.9	86	18.2
11340500	Cottonwood Creek near Lakeview	Goose Lake	421405	1203005	9/13/01	2.8	81	13.9
11497500	Sprague near Beatty	Klamath River	422650	1211415	9/14/01	107	--	--
11499000	Sycan River near Beatty	Klamath River	423300	1211900	9/14/01	18.7	--	--
11503100	Munson Creek near Rim Village	Klamath River	425245	1220815	9/12/01	2	47	5.9
	Sun Creek at Sun Meadow	Klamath River	424545	1220053	9/12/01	7	66	11.6
	Bear Creek at Crater Lake	Klamath River	425850	1215835	9/13/01	0	--	--
	Park Boundary							
	Spring Creek at Collier State Park	Klamath River	423838	1215244	9/13/01	281	75	7.3
	Wood River Springs above	Klamath River	424403	1215914	9/13/01	18.8	81	5
	Wood River							
11504000	Wood River at Ft Klamath	Klamath River	424200	1215900	9/13/01	132	96	8.1
11504040	Ft Creek near Ft Klamath	Klamath River	424053	1215828	9/13/01	52.5	97	9
11510000	Spencer Creek near Keno	Klamath River	420930	1220140	9/13/01	2.2	123	16.3
13181500	Crooked Creek near Rome	Owyhee River	424800	1174400	9/11/01	21.8	--	--
13214000	Malheur River near Drewesey	Malheur River	434705	1181950	9/13/01	1.8	--	--
13216500	North Fork Malheur River above Beulah Reservoir	Malheur River	435654	1181024	9/24/01	38	--	--
13270800	SF Burnt River near Unity	Burnt River	442423	1181802	10/1/01	16.8	--	--
13288200	Eagle Creek near New Bridge	Powder River	445250	1171510	8/30/01	63.6	--	--
	Little Sheep Creek near Innaha	Innaha River	453049	1165143	9/6/01	12	--	--
	Chesnimus Creek near Lewis	Grande Ronde R	454250	1170911	10/11/01	7.5	--	--
13319000	Grande Ronde River at LaGrande	Grande Ronde R	452047	1180726	9/21/01	18.2	--	--
13320000	Catherine Creek near Union	Grande Ronde R	450920	1174626	9/24/01	17.5	--	--
13323600	Indian Creek near Imbler	Grande Ronde R	452600	1174920	10/11/01	14	--	--
13324300	Lookingglass Creek at Palmer Junction	Grande Ronde R	454227	1175032	10/10/01	52	--	--
13333000	Wenaha River at Troy	Grande Ronde R	455644	1172703	9/18/01	144	--	--
	Line Creek near Conway	Umatilla River	453849	1182128	9/19/01	0.03	--	--
14022500	McKay Creek near Pilot Rock	Umatilla River	453257	1184624	9/22/01	0	--	--
	Boston Creek near Gibbon	Umatilla River	454104	1182143	9/19/01	0.31	--	--
	Umatilla River near Thorn Hollow	Umatilla River	454107	1182709	9/18/01	50	--	--
	Eagle Creek near Athena	Umatilla River	454551	1182640	9/12/01	0	--	--
14034800	Rhea Creek near Heppner	Umatilla River	451541	1193722	9/13/01	1.6	--	--
	South Fork John Day River near Poison Creek, near Izee	John Day River	440401	1192410	9/19/01	1.7	--	--
	Deer Creek near McMullen	John Day River	441148	1192809	9/19/01	0.3	--	--
	Spring, near Dalyville							
	Tex Creek near mouth near Mount Vernon	John Day River	441602	1191713	9/21/01	0	--	--
	Murderers Creek at mouth near Dayville	John Day River	441853	1193218	9/19/01	2.7	--	--
	Black Canyon Creek above Black Canyon, near Dayville	John Day River	442002	1193356	9/19/01	7.7	--	--
14038530	John Day River near John Day	John Day River	442507	1185419	8/22/01	6.5	--	--
	Desolation Creek above Dale	John Day River	445500	1185030	9/26/01	13.2	--	14
14041000	Desolation Creek near Dale	John Day River	445920	1185510	9/20/01	7.8	--	--
14041500	North Fork John Day River nr Dale	John Day River	445955	1185625	9/20/01	49	--	--
	North Fork John Day River above Oriental	John Day River	445830	1184339	9/24/01	35.9	--	--
14042000	Camas Creek near Lehman	John Day River	451016	1184353	9/21/01	1	--	--
14043000	Cable Creek near Ukiah	John Day River	450900	1185000	9/21/01	1.3	--	--
	Wall Creek nr Monument	John Day River	445337	1192446	9/18/01	0	--	--
14047380	Lone Rock Creek near Lone Rock	John Day River	450530	1195310	9/13/01	0	--	--
14047390	Rock Creek near Condon	John Day River	451553	1200115	9/19/01	0.28	--	--
14050000	Deschutes below Snow Creek, near La Pine	Deschutes River	434851	1214633	9/14/01	64.7	--	12.2
14052000	Deer Creek above Crane, near La Pine	Deschutes River	434818	1215018	9/14/01	0.04	--	--
14052500	Quinn River near LaPine	Deschutes River	434703	1215006	9/14/01	12.1	--	5.5
14054500	Brown Creek near LaPine	Deschutes River	434247	1214810	9/14/01	23.1	--	10
14057500	Fall River near LaPine	Deschutes River	434748	1213418	9/21/01	120	--	10.5
14073000	Tumalo Creek near Bend	Deschutes River	440220	1213020	9/12/01	34.5	47	13
14079500	Crooked River near Post	Deschutes River	440700	1201500	9/11/01	8.3	254	19.6
14080250	Bear Creek near Prineville	Deschutes River	440340	1204354	9/12/01	0.32	613	14
	Trout Creek near Gateway at, Highway 97	Deschutes River	444845	1205553	9/11/01	0.13	329	23
14097200	White River nr Government Camp	Deschutes River	451040	1213430	9/11/01	36.7	91	11.2
14099000	White River near Wapinitia	Deschutes River	450910	1213020	9/11/01	59.1	83	11.3
	Badger Creek near Warm Springs	Deschutes River	445638	1212722	9/10/01	6.1	74	15
14113200	Mosier Creek near Mosier	Mosier Creek	453855	1212235	9/11/01	1.7	151	13.6
14113400	Dog River near Parkdale	Hood River	452430	1213110	9/11/01	1.5	55	6.2
14118500	West Fk Hood River near Dee	Hood River	453555	1213805	9/12/01	97	--	--
14131400	Zigzag River near Rhododendron	Sandy River	451832	1215131	9/10/01	44.8	81	6.9

LOW-FLOW DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES--Continued

Station Number	Station Name	Tributary to	Latitude	Longitude	Date	Measurements		Water Temperature (°C)
						Discharge (ft ³ /s)	Specific Conductance (microsiemens)	
14134000	Salmon River near Government Camp	Sandy River	451600	1214300	9/10/01	0.36	129	7.5
14144800	MF Willamette River nr Oakridge	Willamette River	433550	1222720	9/11/01	193	54	10.6
14146000	Salt Creek near Oakridge	Willamette River	434340	1222530	9/11/01	81.2	74	11.5
14146500	Salmon Creek near Oakridge	Willamette River	434545	1222218	9/11/01	98.7	64	11.8
14147500	North Fork of Middle Fork Willamette River near Oakridge	Willamette River	434530	1223030	9/11/01	111	52	16.8
14151500	Little Fall Creek near Fall Creek	Willamette River	435810	1224520	9/11/01	9.5	48	16.4
14152500	Coast Fork Willamette River at London	Willamette River	433830	1230505	9/11/01	7	103	18.1
14156500	Mosby Creek at mouth, near Cottage Grove	Willamette River	434635	1225955	9/11/01	0	--	--
14159030	Separation Creek near McKenzie Bridge	Willamette River	440729	1220208	9/10/01	243	72	8.6
14159100	Horse Creek nr McKenzie Bridge	Willamette River	440948	1220332	9/7/01	234	79	11
14159190	French Pete Creek near Rainbow	Willamette River	440232	1221140	9/6/01	9.1	49	11.4
	Quartz Creek near Finn Rock	Willamette River	440719	1222222	9/4/01	7.1	--	18.5
	Lost Creek at Rattlesnake Road, near Dexter	Willamette River	435407	1224924	9/12/01	2.4	67	15.3
14163000	Gate Creek at Vida	Willamette River	440845	1223415	9/4/01	14.7	--	16.8
14167000	Coyote Creek near Crow	Willamette River	440119	1231517	9/12/01	0.04	378	23.6
14170500	Rock Creek near Philomath	Willamette River	443005	1232620	9/13/01	1.5	154	15.9
14172000	Calapooia River at Holley	Willamette River	442105	1224710	9/14/01	14.7	59	19.3
14185800	Middle Santiam River nr Cascadia	Willamette River	443055	1222215	9/13/01	22.8	67	15.9
	Little North Santiam River at Elkhorn	Willamette River	445010	1222116	9/11/01	13.1	49	15
	Marion Forks Creek near Marion Forks	Willamette River	443600	1215612	9/12/01	92.8	46	12.6
	North Fork Breitenbush River below Breitenbush Lake	Willamette River	444556	1214657	9/11/01	0.02	12	18.4
14188800	Thomas Creek near Scio	Willamette River	444242	1224555	9/13/01	13.7	55	19
14188700	Crabtree Creek near Crabtree	Willamette River	443915	1225105	9/13/01	19.2	63	19.4
14190660	Rickreall Creek above Mercer Reservoir, near Falls City	Willamette River	445405	1232933	9/14/01	2.8	--	--
14192500	South Yamhill River nr Willamina	Willamette River	450250	1233010	10/8/01	12.8	--	--
14193000	Willamina Creek near Willamina	Willamette River	450835	1232935	10/5/01	13.1	--	11.5
14194300	North Yamhill River near Fairdale	Willamette River	452155	1232240	9/19/01	2.6	--	16.5
14198500	Mollalla River near Wilhoit	Willamette River	450035	1222845	9/6/01	27.6	63	13.8
14201500	Butte Creek at Monitor	Willamette River	450606	1224442	9/13/01	3.3	82	17.9
14202510	Tualatin River near Gaston	Willamette River	452620	1230823	9/8/01	16.7	--	--
14202850	Scoggins Creek above Hagg Lake, near Gaston	Willamette River	453006	1231506	9/25/01	1.8	--	--
14204500	Gales Creek near Forest Grove	Willamette River	453320	1231105	9/14/01	6.9	138	21
14205780	East Fk Dairy Creek near Roy	Willamette River	453444	1230411	9/14/01	5.1	78	17.5
14206450	Rock Creek near Hillsboro	Willamette River	453009	1225648	8/20/01	5.8	--	17.5
14207740	Willamette River above Willamette Falls	Willamette River	452024	1223834	9/28/01	8,190	--	18.6
14208000	Clackamas River at Big Bottom	Willamette River	450100	1215510	9/11/01	207	65	8.4
	Eagle Crk at Bonny Lure State Pk	Willamette River	452107	1222257	9/11/01	23.1	52	--
14211000	Clackamas River near Clackamas	Willamette River	452336	1223154	9/11/01	744	73	--
14211542	Crystal Springs Creek at Bybee St.	Willamette River	452827	1223827	9/12/01	11	206	15.6
14247000	Clatskanie River near Clatskanie	Columbia River	460255	1230720	9/11/01	8.1	128	13
14251500	Young's River near Astoria	Columbia River	460400	1234720	9/11/01	12.4	63	12.3
14299800	Nehalem River near Vernonia	Nehalem River	454800	1231730	9/11/01	4.4	90	17.7
	Salmonberry River nr Salmonberry	Nehalem River	454502	1233903	9/11/01	33.4	70	14.6
14303600	Nestucca River near Beaver	Trask River	451600	1235045	9/10/01	83.6	95	18.4
14303748	Salmon River near Otis	Salmon River	450125	1235643	9/11/01	41.6	89	12.6
14304350	Sunshine Creek near Valestz	Siletz River	444841	1234434	9/15/01	1.2	--	--
14306010	Rocky Creek near Depoe Bay	Rocky Creek	444413	1240142	9/12/01	1.8	106	12.6
	Big Elk Creek near Elk City	Yaquina River	443624	1235108	9/12/01	9.8	81	16.7
14306030	Yaquina River near Chitwood	Yaquina River	443929	1235015	9/15/01	4.2	--	--
14306400	Five Rivers near Fisher	Alsea River	442015	1234935	9/11/01	23	56	16.7
14306600	Drift Creek near Salado	Alsea River	443050	1235050	9/12/01	7	58	16.3
	Tennile Creek nr Searose Beach	Tennile Creek	441323	1240610	9/11/01	12.3	62	16.3
14306900	Big Creek near Roosevelt Beach	Big Creek	441005	1240355	9/15/01	5.5	--	--
14306920	Siuslaw River near Lorane	Siuslaw River	435105	1232210	9/12/01	3.7	72	--
14306980	Wolf Creek near Austa	Siuslaw River	435800	1233630	9/13/01	5.7	63	18.2
14307000	Siuslaw River above Wildcat, at Austa	Siuslaw River	435935	1233720	9/13/01	17.3	64	18.2
14307500	Lake Creek at Triangle Lake	Siuslaw River	440940	1233410	9/13/01	5.8	41	23.3
14307600	Indian C nreek near Rainrock	Siuslaw River	440645	1235055	9/13/01	14.1	43	18.4
14307625	Knowles Creek near Mapleton	Siuslaw River	440140	1235010	9/12/01	0.32	67	18.9
14307645	North Fork Siuslaw River near Minerva	Siuslaw River	440250	1240010	9/13/01	16.2	45	16.8
	Middle Creek at mouth nr Riddle	Umpqua River	424843	1233545	9/12/01	0.56	328	15.7
14307700	Jackson Creek near Tiller	Umpqua River	425715	1224940	9/12/01	10.8	88	15
	North Umpqua at Highway 60, upstream from Spring River	Umpqua River	431836	1220711	9/13/01	26.8	35	9.6
	North Umpqua blw Spring River	Umpqua River	431838	1220918	9/13/01	259	39	5.9
14308500	Elk Creek near Drew	Umpqua River	425325	1225500	9/12/01	0	--	--
14308700	Days Creek at Days Creek	Umpqua River	425855	1230855	9/17/01	0.14	358	15.9
14311000	North Myrtle Crk nr Myrtle Creek	Umpqua River	430230	1231530	9/12/01	1.3	224	17.5
14312400	Silent Creek near Diamond Lake	Umpqua River	430736	1220933	9/13/01	25.1	32	5.2
14317530	Canton Creek near Glide	Umpqua River	432230	1224540	9/11/01	7.8	--	17.2
14317600	Rock Creek near Glide	Umpqua River	432045	1225930	9/19/01	11.2	77	13.9

LOW-FLOW DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES--Continued

Station Number	Station Name	Tributary to	Latitude	Longitude	Date	Measurements		Water Temperature ("C)
						Discharge (ft ³ /s)	Specific Conductance (microsiemens)	
14317800	Cavitt Creek near Peel	Umpqua River	431320	1230105	9/25/01	5.3	--	--
14321400	Elk Creek near Elkhead	Umpqua River	433545	1231135	9/13/01	0.88	344	14.9
14323100	Smith River near Gardiner	Smith River	434705	1234850	9/11/01	0.6	113	15
14323200	Tenmile Creek near Lakeside	Coos River	433435	1241130	9/10/01	16	--	15.8
14323300	Eel Creek at Lakeside	Coos River	433440	1241117	9/10/01	2.1	--	13
14323500	Tioga Creek near Tioga	Coos River	431555	1234840	9/11/01	0.86	--	14
14324500	West Fork Millicoma River near Allegany	Coos River	432835	1240320	9/12/01	4.5	--	15.5
	East Fk Coquille River nr Dora	Coquille River	430924	1235920	9/13/01	10.2	--	15
	Elk Creek near Gravelford	Coquille River	430639	1240104	9/13/01	0.28	--	12.5
14326800	North Fork Coquille River near Fairview	Coquille River	431045	1240510	9/13/01	7.2	--	14.5
14327150	Sixes River at Sixes	Elk River	424905	1242900	9/12/01	16.6	93	19.1
14327300	Elk River near Sixes	Elk River	424745	1242920	9/12/01	51.3	86	17.4
	Whisky Creek near Rim Village	Rogue River	425446	1221907	9/12/01	0.38	62	8.1
	Thousand Springs nr Castle Point	Rogue River	425258	1221711	9/13/01	27.6	61	4.8
14333500	Red Blanket Creek near Prospect	Rogue River	424640	1222535	9/13/01	49.6	45	11.6
14335500	South Fork Big Butte nr Butte Falls	Rogue River	423225	1223315	9/11/01	67.9	67	14.2
14353000	West Fork Ashland Creek near Ashland	Rogue River	420830	1224310	9/11/01	2.1	81	12
14353500	East Fork Ashland Creek near Ashland	Rogue River	420910	1224230	9/11/01	2.1	54	11.4
	Galls Creek near Rock Point	Rogue River	422600	1230411	9/11/01	0	--	--
14361590	Middle Fork Applegate River near Copper	Rogue River	420023	1230923	9/12/01	6.2	114	14.3
14361600	Elliott Creek near Copper	Rogue River	420016	1230900	9/12/01	6.6	217	14
14361700	Carberry Creek near Copper	Rogue River	420134	1231010	9/12/01	5.9	153	14.2
14371500	Grave Creek at Pease Bridge, near Placer	Rogue River	423830	1231240	9/11/01	0	--	--
14372500	East Fork Illinois River near Takilma	Rogue River	420410	1233730	9/10/01	5.4	--	18
14373500	Althouse Creek near Holland	Rogue River	420600	1233130	9/12/01	5.7	--	13
14375100	Sucker Creek blw Little Grayback	Rogue River	420935	1232840	9/10/01	14.9	--	13.5
14375500	West Fork Illinois River near O'Brien	Rogue River	420220	1234450	9/12/01	1.7	--	17.5
14377500	Deer Creek near Dryden	Rogue River	421550	1232700	9/12/01	0	--	--
14378200	Illinois River near Agness	Rogue River	423115	1240235	9/11/01	145	157	21.6
14400060	North Fork Chetco River near Brookings	Chetco River	420437	1241241	9/10/01	4	--	15.5

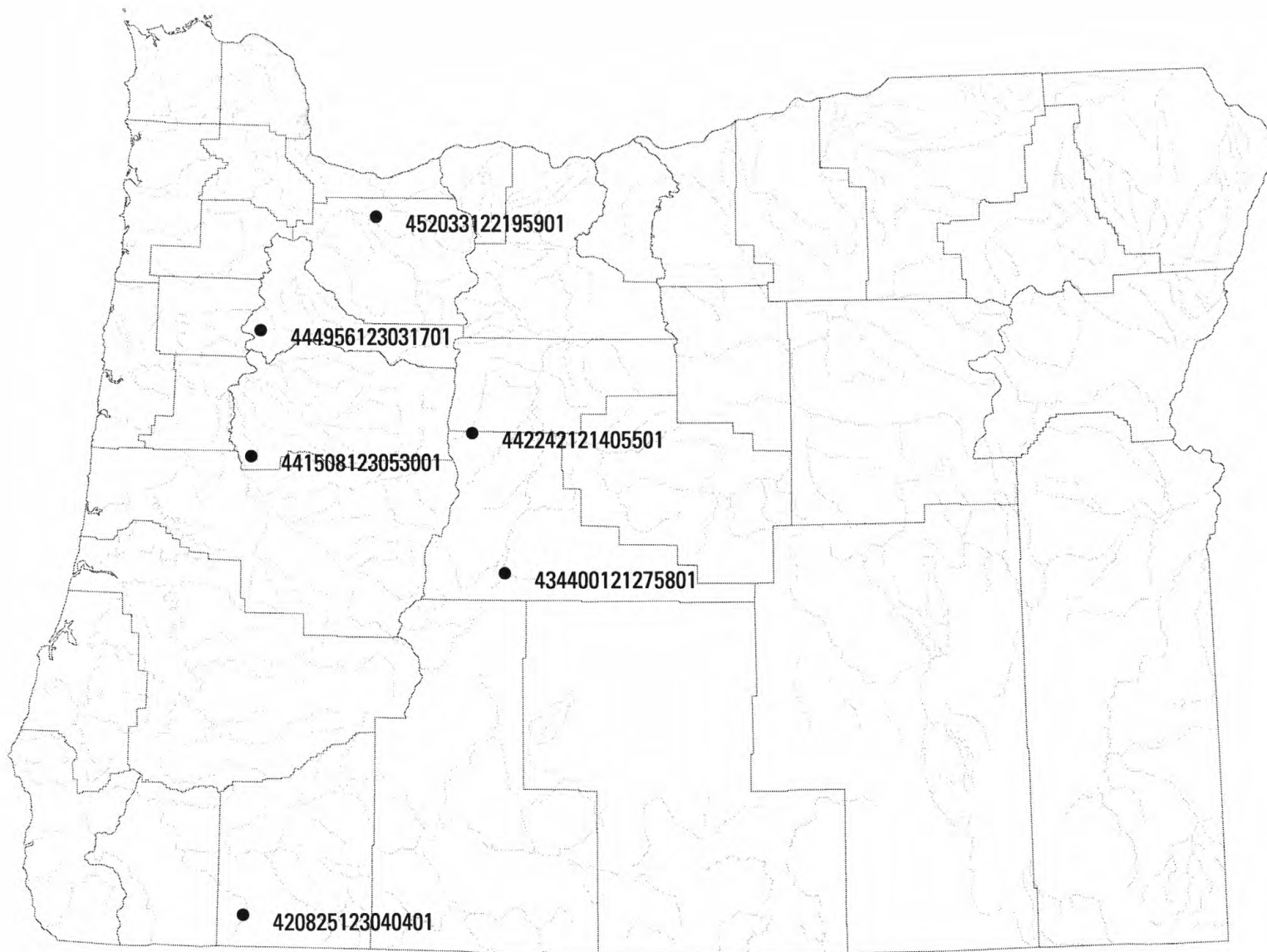


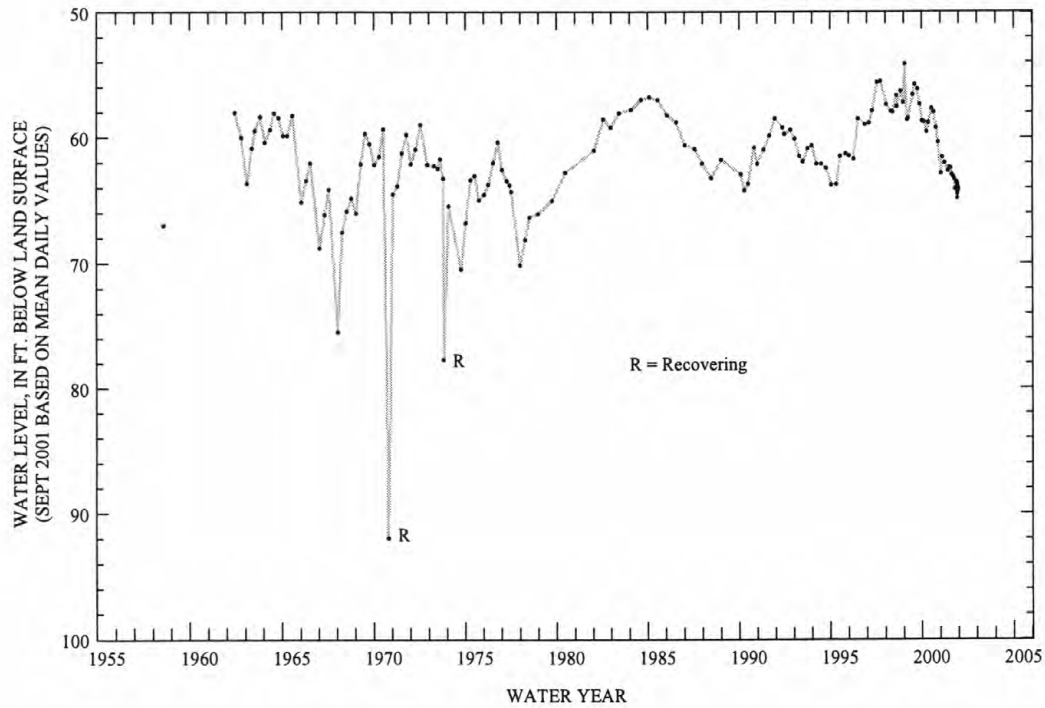
Figure 36. Location of observation wells in Oregon.

[illegible]

GROUND WATER LEVELS

CLACKAMAS COUNTY--Continued

Well identifier continued: 452033122195901. Local number, 02S/04E-29DAD



GROUND WATER LEVELS

DESCHUTES COUNTY

434400121275801. Local number, 21S/11E-19CCC. Formerly 21S/10E-25A1.

LOCATION.--Lat 43°44'01", long 121°27'57", 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 measured, 11.98 ft below land-surface datum, Oct. 24, 1984; lowest measurement, 41.63 ft below land-surface datum, Oct. 23, 1964.

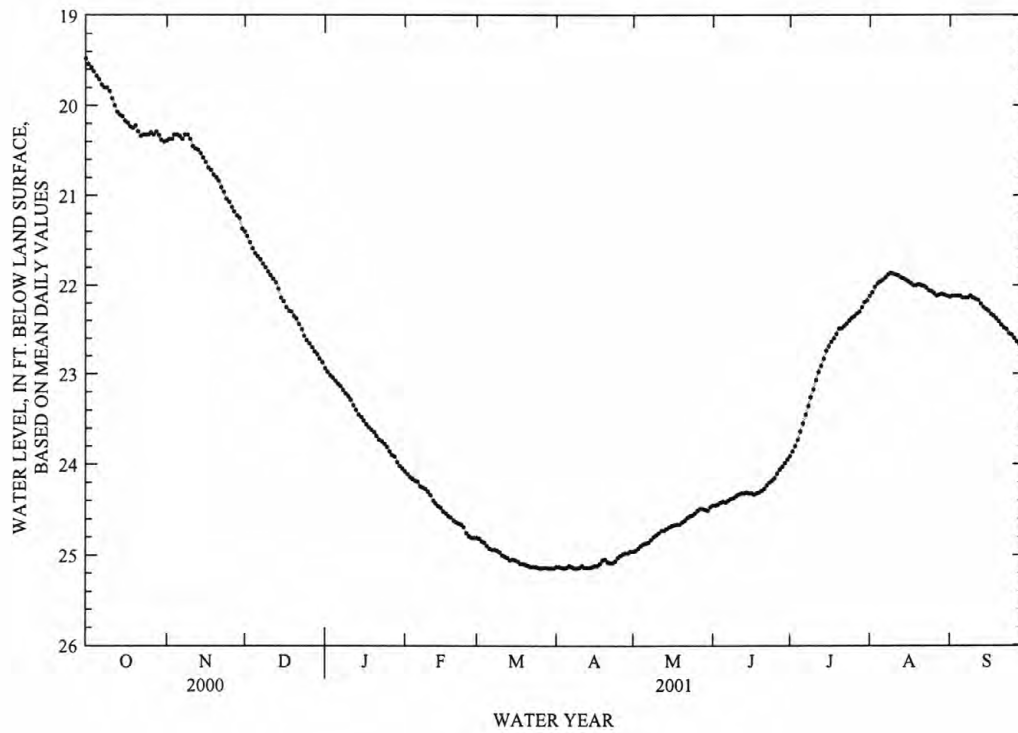
EXTREMES FOR CURRENT YEAR.--Highest water level measured, 19.45 ft below land-surface datum, Oct. 1; lowest measurement, 25.16 ft below land-surface datum, Mar. 26, 27, 30, 31, Apr. 4.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.48	20.39	21.40	22.94	24.08	24.81	25.13	24.96	24.45	23.91	22.12	22.13
2	19.54	20.37	21.45	22.98	24.11	24.82	25.13	24.95	24.45	23.86	22.08	22.12
3	19.58	20.37	21.52	23.02	24.14	24.85	25.14	24.93	24.44	23.80	22.02	22.12
4	19.62	20.32	21.59	23.04	24.16	24.86	25.15	24.90	24.42	23.73	21.98	22.12
5	19.67	20.32	21.64	23.08	24.18	24.90	25.14	24.88	24.41	23.64	21.96	22.12
6	19.71	20.34	21.68	23.11	24.19	24.93	25.12	24.87	24.42	23.55	21.94	22.14
7	19.77	20.37	21.71	23.14	24.24	24.94	25.13	24.86	24.40	23.45	21.91	22.14
8	19.80	20.32	21.76	23.18	24.26	24.94	25.15	24.83	24.38	23.36	21.88	22.14
9	19.80	20.32	21.80	23.22	24.27	24.95	25.15	24.80	24.37	23.26	21.86	22.12
10	19.84	20.37	21.85	23.25	24.30	24.97	25.14	24.78	24.35	23.17	21.87	22.14
11	19.92	20.45	21.89	23.29	24.34	25.00	25.12	24.76	24.33	23.07	21.88	22.16
12	20.00	20.48	21.93	23.35	24.40	25.02	25.14	24.73	24.32	22.98	21.89	22.17
13	20.07	20.49	21.97	23.40	24.43	25.03	25.14	24.73	24.32	22.91	21.91	22.21
14	20.10	20.53	22.04	23.45	24.46	25.06	25.14	24.71	24.31	22.83	21.92	22.25
15	20.12	20.58	22.14	23.48	24.48	25.05	25.13	24.69	24.32	22.74	21.94	22.27
16	20.17	20.63	22.18	23.52	24.52	25.06	25.12	24.68	24.32	22.69	21.96	22.29
17	20.19	20.69	22.25	23.56	24.54	25.07	25.12	24.67	24.33	22.64	21.98	22.33
18	20.23	20.72	22.29	23.59	24.57	25.10	25.10	24.66	24.32	22.60	22.00	22.35
19	20.25	20.77	22.30	23.62	24.58	25.10	25.06	24.66	24.31	22.55	22.00	22.38
20	20.22	20.80	22.35	23.65	24.62	25.11	25.05	24.64	24.29	22.49	21.99	22.41
21	20.29	20.84	22.38	23.69	24.64	25.12	25.08	24.62	24.27	22.49	22.00	22.45
22	20.34	20.91	22.44	23.73	24.65	25.13	25.09	24.59	24.23	22.46	22.01	22.48
23	20.32	20.96	22.50	23.75	24.66	25.13	25.09	24.57	24.20	22.43	22.03	22.50
24	20.32	21.04	22.57	23.78	24.69	25.13	25.07	24.56	24.18	22.40	22.06	22.55
25	20.32	21.07	22.62	23.81	24.76	25.14	25.03	24.54	24.15	22.37	22.07	22.56
26	20.30	21.13	22.66	23.86	24.79	25.15	25.01	24.51	24.10	22.35	22.09	22.60
27	20.32	21.18	22.70	23.90	24.81	25.14	24.99	24.49	24.06	22.32	22.12	22.64
28	20.29	21.22	22.75	23.92	24.81	25.14	24.98	24.49	24.03	22.30	22.11	22.67
29	20.33	21.25	22.78	23.98	---	25.15	24.98	24.50	23.99	22.25	22.10	22.70
30	20.38	21.37	22.83	24.02	---	25.15	24.96	24.51	23.95	22.19	22.11	22.69
31	20.40	---	22.87	24.05	---	25.15	---	24.47	---	22.17	22.12	---
MEAN	20.05	20.69	22.16	23.50	24.45	25.04	25.09	24.69	24.28	22.87	22.00	22.33
MAX	20.40	21.37	22.87	24.05	24.81	25.15	25.15	24.96	24.45	23.91	22.12	22.70
MIN	19.48	20.32	21.40	22.94	24.08	24.81	24.96	24.47	23.95	22.17	21.86	22.12

GROUND WATER LEVELS
DESCHUTES COUNTY--Continued

Well identifier continued: 434400121275801. Local number, 21S/11E-19CCC. Formerly 21S/10E-25A1.



GROUND WATER LEVELS

DESCHUTES COUNTY

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.--Periodic measurements using electric sounder tape by Oregon Water Resources Department personnel from August 1993 to May 1999; electronic data logger 120 minute interval record Nov. 23, 1993 to Dec. 16, 1993, fifteen-minute interval Dec. 16, 1993 to Feb. 2, 1994, 120-minute intervals Feb. 2, 1994 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. Entire historical record prior to the 1999 water year available in the 1998 Water-Data Report (WDR-OR-98-1).

PERIOD OF RECORD.--May 1985, August 1993 to current year. Hydrograph in USGS OFR 97-197, pg. 10, Figure 6 depicts record between November 1993 and December 1996. Measurement August 1993 published in same OFR, pg. 35, Table 1.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 284.20 ft below land-surface datum, Oct. 8, 1997, lowest measurement, 304.17 ft below land-surface datum, Feb. 1, 1995.

EXTREMES FOR CURRENT YEAR.--Highest water level measured, 286.40 ft below land-surface datum, Oct. 1, lowest measurement, 292.39 ft below land-surface datum, Sept. 29, 30.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	286.43	286.63	287.05	287.51	287.95	288.32	288.93	289.57	290.18	290.82	291.35	291.84
2	286.46	286.66	287.07	287.53	287.98	288.35	288.96	289.59	290.22	290.83	291.36	291.85
3	286.47	286.66	287.09	287.54	288.01	288.35	288.99	289.59	290.25	290.85	291.37	291.88
4	286.48	286.64	287.12	287.54	288.01	288.36	289.02	289.60	290.24	290.86	291.39	291.89
5	286.50	286.67	287.15	287.57	288.03	288.43	288.99	289.65	290.28	290.87	291.41	291.93
6	286.50	286.71	287.13	287.57	288.02	288.45	288.99	289.67	290.32	290.90	291.43	291.95
7	286.51	286.70	287.14	287.55	288.07	288.45	289.03	289.70	290.32	290.92	291.44	291.96
8	286.50	286.67	287.13	287.56	288.04	288.47	289.07	289.71	290.33	290.95	291.45	291.97
9	286.47	286.68	287.15	287.53	288.05	288.49	289.09	289.73	290.35	290.96	291.47	291.96
10	286.47	286.71	287.17	287.53	288.02	288.52	289.07	289.76	290.37	290.97	291.49	292.00
11	286.49	286.76	287.17	287.54	288.04	288.56	289.11	289.75	290.38	290.99	291.50	292.01
12	286.51	286.76	287.17	287.57	288.09	288.58	289.14	289.77	290.43	291.02	291.52	292.01
13	286.53	286.75	287.13	287.58	288.09	288.59	289.17	289.80	290.44	291.04	291.54	292.05
14	286.52	286.77	287.16	287.62	288.09	288.62	289.18	289.82	290.46	291.04	291.55	292.06
15	286.52	286.79	287.24	287.63	288.10	288.61	289.20	289.83	290.48	291.05	291.57	292.08
16	286.54	286.84	287.20	287.66	288.14	288.65	289.20	289.87	290.51	291.08	291.59	292.10
17	286.54	286.88	287.28	287.69	288.13	288.67	289.25	289.87	290.54	291.10	291.61	292.12
18	286.56	286.89	287.26	287.70	288.15	288.69	289.24	289.91	290.56	291.11	291.64	292.13
19	286.56	286.91	287.24	287.72	288.17	288.72	289.26	289.94	290.58	291.12	291.64	292.16
20	286.54	286.92	287.26	287.73	288.20	288.74	289.28	289.97	290.60	291.14	291.65	292.17
21	286.61	286.93	287.23	287.76	288.21	288.76	289.33	289.98	290.61	291.17	291.67	292.21
22	286.63	286.96	287.27	287.77	288.20	288.77	289.36	289.99	290.62	291.18	291.68	292.21
23	286.61	286.96	287.29	287.76	288.22	288.78	289.38	290.02	290.64	291.20	291.72	292.22
24	286.61	287.00	287.35	287.78	288.23	288.78	289.40	290.05	290.69	291.21	291.73	292.24
25	286.60	286.98	287.36	287.79	288.30	288.84	289.40	290.07	290.68	291.23	291.74	292.28
26	286.59	287.00	287.37	287.83	288.33	288.86	289.42	290.06	290.70	291.24	291.76	292.31
27	286.57	287.03	287.40	287.85	288.33	288.85	289.42	290.08	290.74	291.27	291.78	292.31
28	286.57	287.01	287.43	287.83	288.32	288.89	289.47	290.12	290.77	291.29	291.78	292.34
29	286.59	287.00	287.43	287.91	---	288.91	289.49	290.17	290.77	291.29	291.79	292.36
30	286.62	287.06	287.44	287.93	---	288.94	289.51	290.19	290.79	291.32	291.82	292.36
31	286.64	---	287.47	287.94	---	288.94	---	290.15	---	291.34	291.83	---
MEAN	286.54	286.83	287.24	287.68	288.13	288.64	289.21	289.87	290.49	291.08	291.59	292.10
MAX	286.64	287.06	287.47	287.94	288.33	288.94	289.51	290.19	290.79	291.34	291.83	292.36
MIN	286.43	286.63	287.05	287.51	287.95	288.32	288.93	289.57	290.18	290.82	291.35	291.84

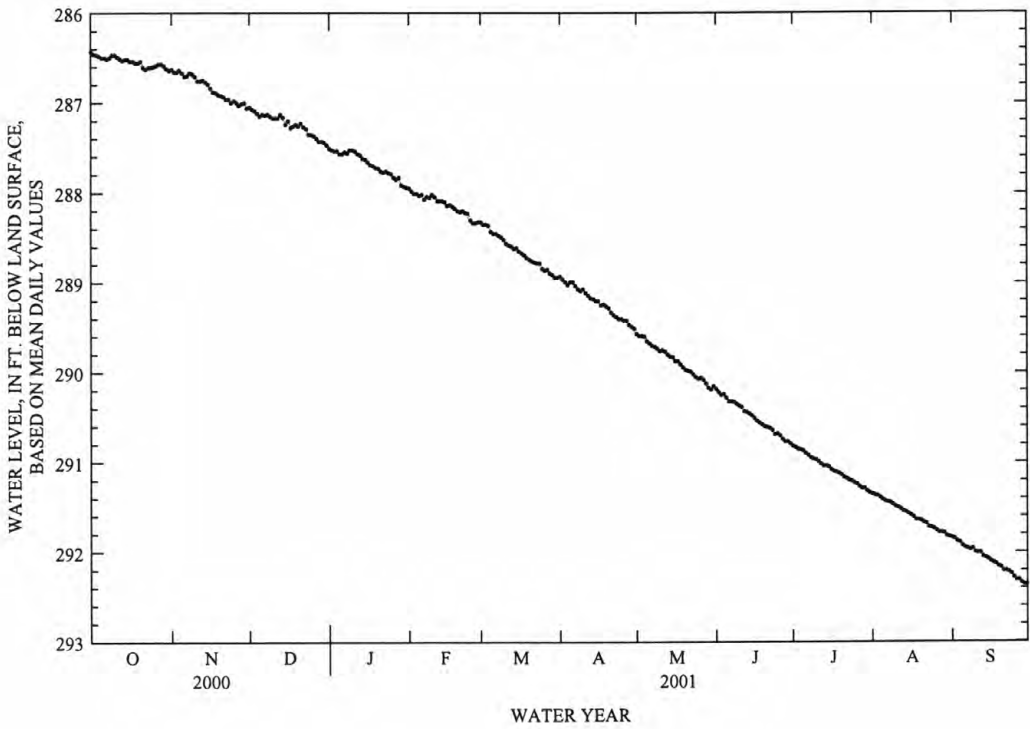
CAL YR 2000 MEAN 286.28 HIGH 285.62 LOW 287.47

WTR YR 2001 MEAN 289.12 HIGH 286.43 LOW 292.36

GROUND WATER LEVELS

DESCHUTES COUNTY--Continued

Well identifier continued: 442242121405501. Local number, 14S/09E-08ABA



GROUND WATER LEVELS

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 30 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.

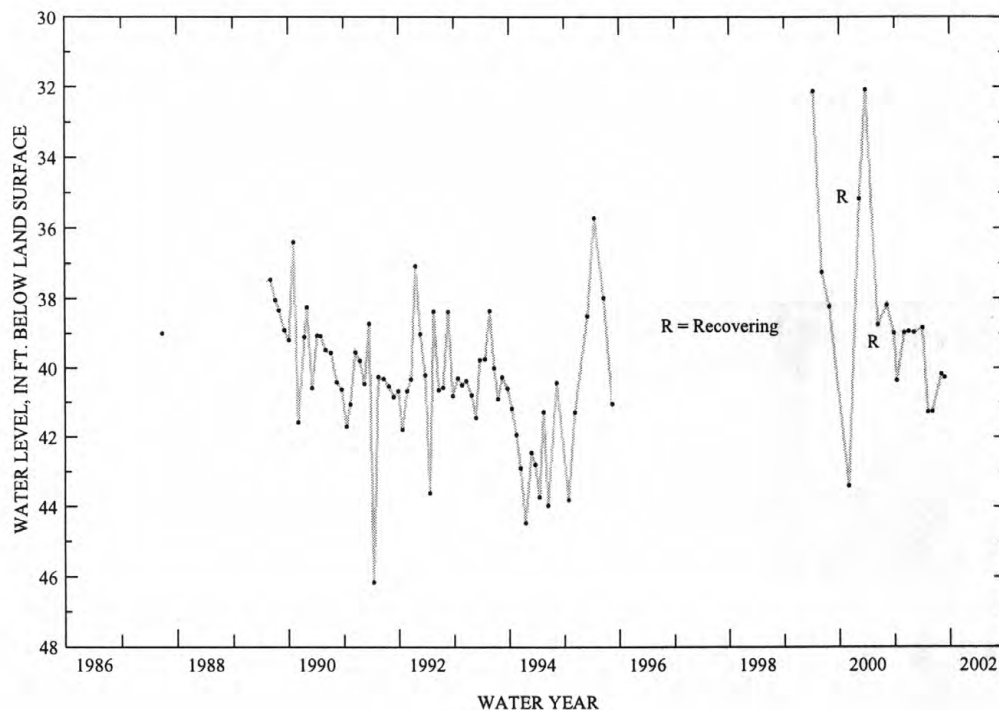
REMARKS.--Used. State well identification JACK 18427. Entire record from June 1987 to July 1999 published in the 1999 Water Data Report (WDR-OR-99-1).

PERIOD OF RECORD.--June 1987, June 1989 to June 1991, April 1999 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.08 ft below land-surface datum, Mar.23, 2000; lowest measurement, 46.16 ft below land-surface datum, Apr. 15, 1991.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM
WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 16	40.36	FEB 06	38.97	JUN 06	41.27
DEC 05	38.98	APR 05	38.84	AUG 07	40.18
JAN 03	38.94	MAY 08	41.29	27	40.27



GROUND WATER LEVELS

LINN COUNTY

441508123053001. Local number, 15S/03W-19ACD

LOCATION.--Lat 44°15'08", long 123°05'31", 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 1.27 ft above land-surface datum.

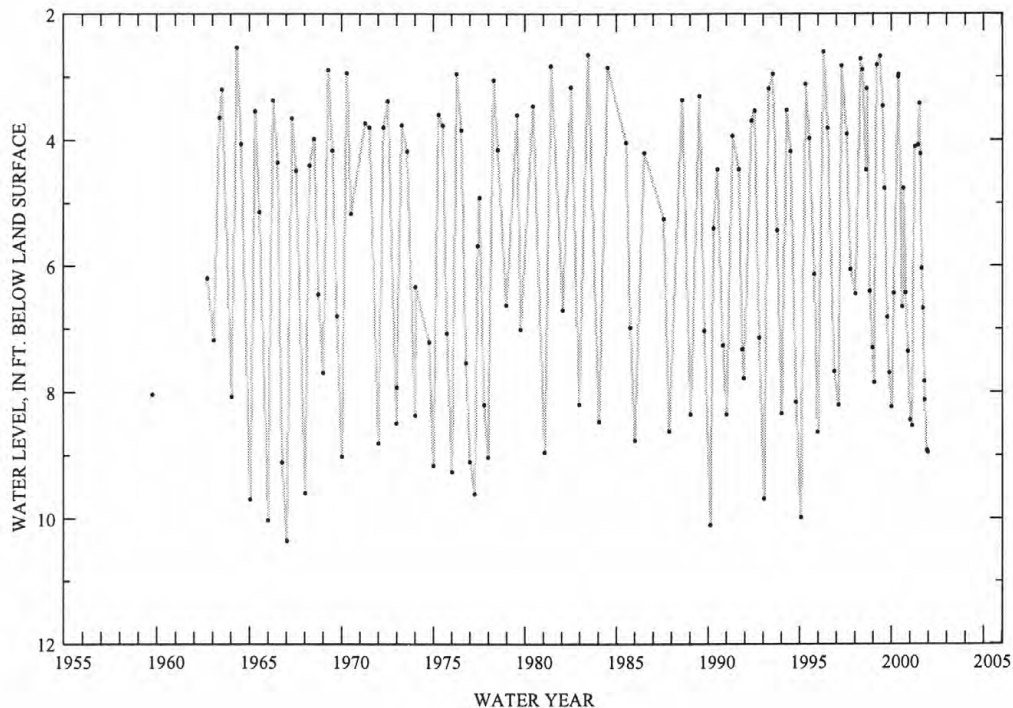
REMARKS.--Unused. State observation well number 510. State well identification LINN 14047. Entire record from July 1959 to September 1998 published in the 1998 Water Data Report (WDR-OR-98-1).

PERIOD OF RECORD.--July 1959, June 1962 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.53 ft below land-surface datum, Jan. 21, 1964; lowest measurement, 10.35 ft below land-surface datum, Oct. 11, 1966.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM
WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
OCT 12	8.44	MAR 09	4.08	MAY 31	6.04	JUL 23	8.12
NOV 16	8.53	APR 05	3.42	JUN 20	6.67	AUG 31	8.92
JAN 03	4.10	26	4.22	JUL 18	7.82	SEP 26	8.95



GROUND WATER LEVELS

MARION COUNTY

444956123031701. Local number, 08S/03W-33DAB

LOCATION.--Lat 44°49'55", long 123°03'16", Hydrologic Unit 17090007, 1 mile east of the summit of Bunker Hill.

Owner: Carma Meyers.

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.

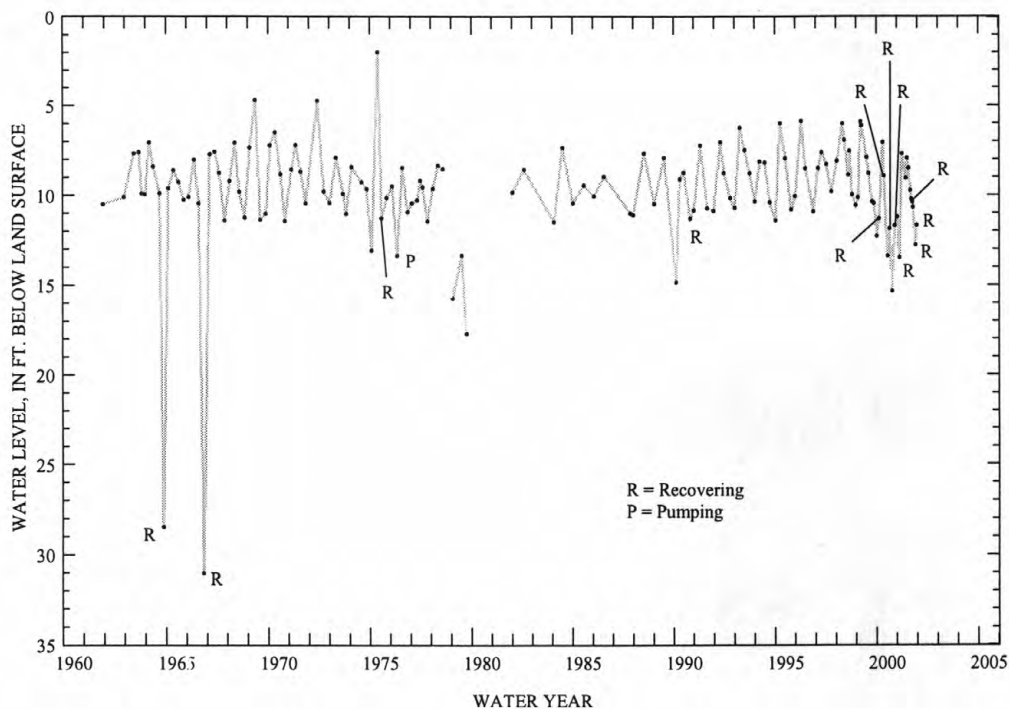
Entire record from September 1961 to September 1998 published in the 1998 Water Data Report (WDR-OR-98-1).

PERIOD OF RECORD.--September 1961 to July 1979, October 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.98 ft below land-surface datum, Feb. 20, 1975; lowest measurement, 31.02 ft below land-surface datum, Aug. 5, 1966 (recovering).

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM
WATER YEAR OCTOBER 2000 TO SEPTEMBER 2001

Date	Water Level	Date	Water Level	Date	Water Level	Date	Water Level
OCT 11	11.21	MAR 09	9.06	MAY 31	9.74	JUL 18	10.67
NOV 16	13.46	APR 02	7.94	JUN 20	10.22	AUG 31	12.76
DEC 28	7.69	26	8.49	JUL 02	10.37	SEP 26	11.66



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CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
Length		
inch (in.)	2.54×10^1	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^0	kilometer
Area		
acre	4.047×10^3	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi ²)	2.590×10^0	square kilometer
Volume		
gallon (gal)	3.785×10^0	liter
	3.785×10^0	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^3	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft ³)	2.832×10^1	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic-foot-per-second day [(ft ³ /s) d]	2.447×10^3	cubic meter
	2.447×10^{-3}	cubic hectometer
acre-foot (acre-ft)	1.233×10^3	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
Flow		
cubic foot per second (ft ³ /s)	2.832×10^1	liter per second
	2.832×10^1	cubic decimeter per second
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^1	cubic decimeter per second
	4.381×10^{-2}	cubic meter per second
Mass		
ton (short)	9.072×10^{-1}	megagram or metric ton

Sea level: In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment for the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

MAPPING SOURCES

Base map modified from U.S. Geological Survey Digital Line Graphs published at 1:100,000
 Publication projection is Lambert Conformal Conic
 Standard parallels 33°00' and 45°00', central meridian 120°30'. Datum is North American Datum of 1927.

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