

Figure 28. Location of surface-water stations in the Puyallup and White River Basins.

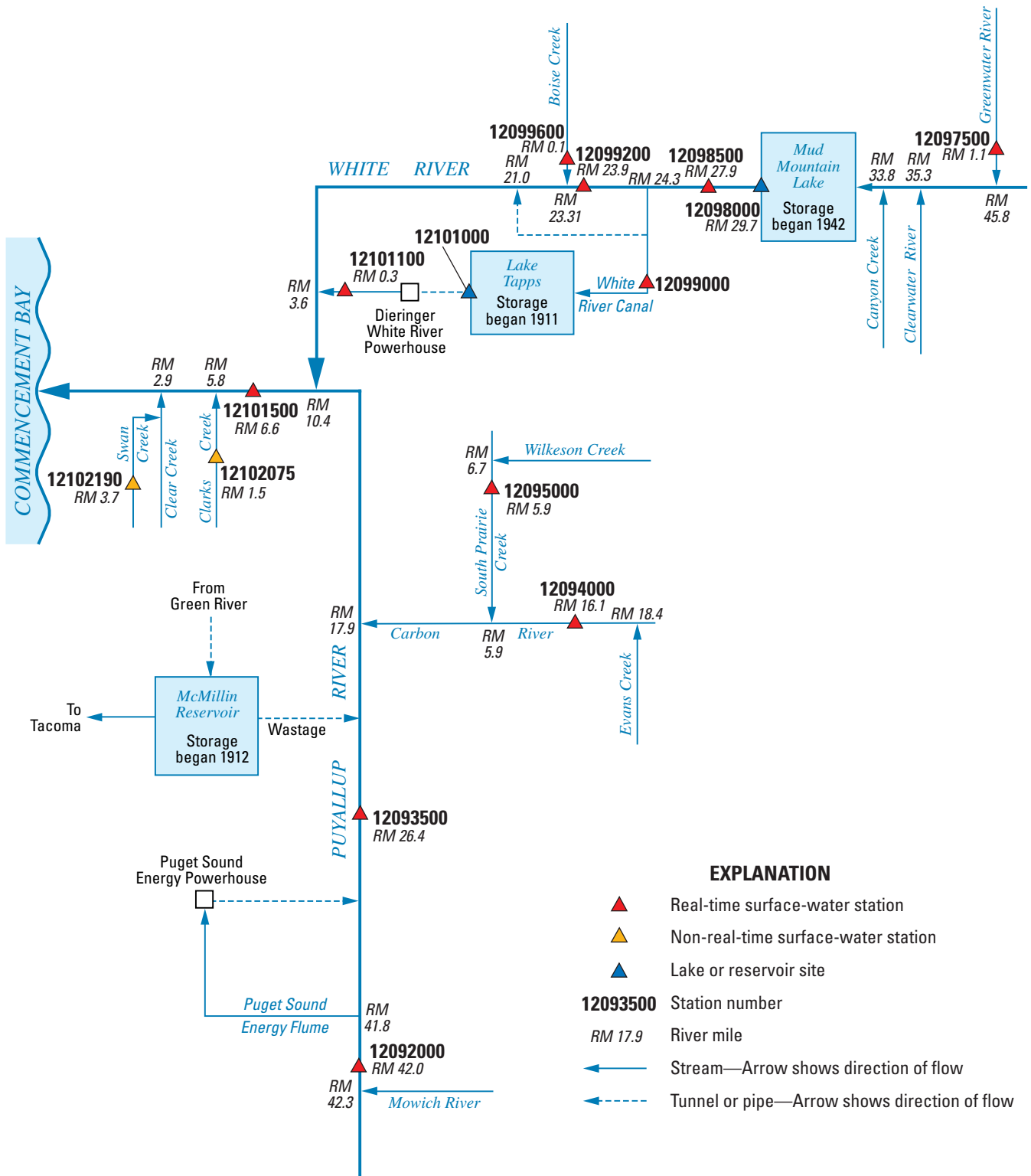


Figure 29. Schematic diagram showing surface-water stations in the Puyallup and White River Basins.

12092000 PUYALLUP RIVER NEAR ELECTRON, WA

LOCATION.--Lat 46°54'14", long 122°02'02", in SE¼NW¼ sec.3, T.16 N., R.6 E., Pierce County, Hydrologic Unit 17110014, on right bank 1,000 ft upstream from Puget Sound Energy's flume headworks, 0.3 mi downstream from Mowich River, 9.8 mi southeast of Electron, and at mile 42.0.

DRAINAGE AREA.--92.8 mi².

PERIOD OF RECORD.--October 1908 to December 1933, October 1944 to September 1949, October 1957 to current year.

REVISED RECORDS.--WSP 1092: 1946(M). WSP 1346: 1913, 1916-17(M), 1918-23, drainage area. WSP 1566: 1945(M), 1947(P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,632.7 ft above NGVD of 1929. Prior to Jan. 1, 1913, nonrecording gage, and Jan. 1, 1913, to Sept. 30, 1926, Oct. 1, 1944, to Sept. 30, 1949, and Oct. 1, 1957, to Nov. 22, 1959 (gage destroyed by flood), water-stage recorder, at sites near present gage at different datums. Aug. 19, 1960, to Dec. 23, 1980, at site 160 ft downstream at different datum. Dec. 24, 1980, to Dec. 24, 1987, at site 60 ft downstream at different datum. Dec. 24, 1987, to Feb. 8, 1996 (gage destroyed by flood), at site on left bank near present gage at same datum. Feb. 8 to June 5, 1996, no gage at site.

REMARKS.--Records fair except for estimated daily discharges and flows above 3,000 ft³/s, which are poor. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemetry at station.

AVERAGE DISCHARGE.--78 years (water years 1909-33, 1945-49, 1958-2005), 527 ft³/s, 77.15 in/yr, 381,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s, Feb. 8, 1996, gage height, 10.94 ft, from floodmarks, result of slope-area measurement; minimum daily discharge, 75 ft³/s, Oct. 19, 1994.

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)
Nov 25	0700	2,540	5.53	Jan 18	0730	*6,810	*7.76
Dec 11	0430	2,890	5.83	Sep 30	0830	4,510	6.92

Minimum discharge, 108 ft³/s, Sept. 23, 24.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	327	403	383	243	e242	161	473	452	653	570	524	375
2	305	1,320	341	230	e225	154	422	457	641	492	435	405
3	301	876	325	216	e225	149	381	453	583	448	456	321
4	301	629	318	209	e236	142	361	461	509	477	523	248
5	318	510	309	201	e231	139	309	468	480	524	574	232
6	563	437	286	204	e219	137	318	435	445	819	596	265
7	347	396	288	205	e203	147	404	404	449	666	605	332
8	559	355	483	196	e186	149	412	370	440	698	621	371
9	574	323	459	190	e163	151	357	420	402	770	612	302
10	422	303	1,410	187	e161	152	313	714	384	482	534	233
11	341	289	1,990	179	e159	159	368	648	498	488	466	185
12	419	269	1,090	188	e164	160	323	567	581	505	526	176
13	441	257	853	179	e180	153	287	510	522	464	562	171
14	409	249	937	169	e168	146	278	635	499	474	578	185
15	378	308	777	184	e160	143	298	801	477	e570	596	189
16	859	276	654	300	157	148	770	864	452	603	554	162
17	1,350	248	577	961	156	148	660	687	793	536	809	160
18	923	316	545	4,800	153	138	502	709	627	616	570	180
19	686	268	545	2,580	150	154	425	826	559	606	526	180
20	549	235	488	1,510	146	237	392	678	533	592	530	181
21	491	227	433	991	142	199	386	579	564	601	652	187
22	568	250	388	759	141	168	430	549	644	838	587	170
23	529	254	355	828	141	160	529	481	590	688	410	138
24	457	1,040	335	e551	145	153	694	426	527	532	386	137
25	407	1,750	332	e483	146	145	743	402	501	479	416	152
26	367	919	314	e433	144	309	690	409	486	523	448	187
27	332	643	286	e394	143	1,280	660	451	522	586	460	197
28	314	501	271	e365	163	821	691	554	556	625	523	209
29	296	426	298	e332	---	567	568	605	577	617	394	1,040
30	346	410	279	e304	---	431	491	621	587	596	287	3,220
31	302	---	256	e276	---	354	---	629	---	605	313	---
TOTAL	14,781	14,687	16,605	18,847	4,849	7,654	13,935	17,265	16,081	18,090	16,073	10,490
MEAN	477	490	536	608	173	247	464	557	536	584	518	350
MAX	1,350	1,750	1,990	4,800	242	1,280	770	864	793	838	809	3,220
MIN	296	227	256	169	141	137	278	370	384	448	287	137
AC-FT	29,320	29,130	32,940	37,380	9,620	15,180	27,640	34,250	31,900	35,880	31,880	20,810
CFSM	5.14	5.28	5.77	6.55	1.87	2.66	5.01	6.00	5.78	6.29	5.59	3.77
IN.	5.93	5.89	6.66	7.56	1.94	3.07	5.59	6.92	6.45	7.25	6.44	4.21

12092000 PUYALLUP RIVER NEAR ELECTRON, WA—Continued

DISCHARGE, CUBIC FEET PER SECOND—CONTINUED
 WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1909 - 2005, BY WATER YEAR (WY)												
MEAN	397	562	589	539	443	370	429	618	760	672	546	407
MAX (WY)	1,015 (1960)	1,468 (1933)	2,217 (1934)	1,071 (1918)	1,053 (1996)	944 (1972)	657 (1988)	1,019 (1929)	1,248 (1974)	1,256 (1917)	866 (2004)	727 (1927)
MIN (WY)	185 (1981)	134 (1930)	174 (1915)	193 (1979)	154 (1922)	146 (1922)	200 (1975)	380 (1909)	406 (1996)	407 (1996)	338 (1996)	257 (1996)

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1909 - 2005	
ANNUAL TOTAL	210,437		169,357			
ANNUAL MEAN	575		464		527	
HIGHEST ANNUAL MEAN					664 1928	
LOWEST ANNUAL MEAN					378 1994	
HIGHEST DAILY MEAN	2,600	Jan 29	4,800	Jan 18	10,000	Feb 8, 1996
LOWEST DAILY MEAN	203	Jan 5	137	Mar 6	75	Oct 19, 1994
ANNUAL SEVEN-DAY MINIMUM	246	Feb 26	143	Feb 21	104	Nov 18, 1929
ANNUAL RUNOFF (AC-FT)	417,400		335,900		381,700	
ANNUAL RUNOFF (CFSM)	6.20		5.00		5.68	
ANNUAL RUNOFF (INCHES)	84.36		67.89		77.15	
10 PERCENT EXCEEDS	934		711		891	
50 PERCENT EXCEEDS	460		416		440	
90 PERCENT EXCEEDS	286		160		221	

e Estimated

12093500 PUYALLUP RIVER NEAR ORTING, WA

LOCATION.--Lat 47°02'22", long 122°12'24", in SW¼SW¼ sec.17, T.18 N., R.5 E., Pierce County, Hydrologic Unit 17110014, on right bank 600 ft downstream from highway bridge, 4.0 mi south of Orting, 8.5 mi upstream from Carbon River, and at mile 26.4.

DRAINAGE AREA.--172 mi².

PERIOD OF RECORD.--September 1931 to current year.

REVISED RECORDS.--WSP 932: 1937-39. WSP 962: 1934. WSP 1246: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 352.5 ft above NGVD of 1929. Prior to Feb. 6, 1946, at site 600 ft upstream at datum 8.93 ft higher.

Supplementary water-stage recorder 200 ft upstream at datum 7.1 ft higher than present gage datum, used at times during 1942-46. Feb. 6, 1946, to Mar. 12, 1965, at present site at datum 5.0 ft higher.

REMARKS.--Records good except for Aug. 1-Sept. 29 and estimated daily discharges, which are fair. Up to 400 ft³/s diverted for Electron powerplant of Puget Sound Energy, which are returned to river 4.8 mi upstream from gage. Minor regulation by Electron powerplant. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--74 years (water years 1932-2005), 714 ft³/s, 56.39 in/yr, 517,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,300 ft³/s, Feb. 8, 1996, from slope area measurement, gage height, 11.37 ft; minimum discharge, 25 ft³/s, Nov. 28, 1952; minimum daily discharge, 59 ft³/s, Nov. 29, 1952.

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 11	0630	4,500	7.94	Sep 30	1030	5,390	8.30
Jan 18	0900	*11,500	*10.05				

Minimum discharge, 184 ft³/s, Sept. 27.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	446	432	664	381	417	261	804	635	836	629	597	390
2	420	1,660	587	362	e400	249	821	631	791	637	493	436
3	410	1,270	530	340	e400	245	710	671	733	552	492	379
4	411	912	523	327	e406	233	673	639	658	569	539	307
5	424	739	505	312	e400	225	588	663	625	620	588	284
6	663	625	471	312	e383	222	552	606	585	886	618	293
7	483	555	462	316	e366	227	641	569	591	799	608	354
8	646	500	701	307	e343	233	727	516	601	772	631	391
9	877	461	714	297	322	231	617	541	539	987	624	382
10	658	430	1,600	288	310	231	546	1,010	511	633	565	299
11	518	407	2,960	281	306	237	617	921	599	605	512	244
12	551	385	1,630	290	308	238	604	805	725	632	531	221
13	583	368	1,240	288	319	232	533	721	652	585	566	223
14	549	353	1,350	271	299	223	514	806	616	572	580	232
15	516	400	1,180	276	278	219	528	983	610	673	606	253
16	986	385	976	428	276	228	1,120	1,230	561	707	580	226
17	1,990	356	848	995	271	241	1,160	1,060	988	619	774	223
18	1,490	478	777	7,910	266	227	915	990	841	693	616	229
19	1,090	448	762	3,250	263	225	761	1,130	757	697	529	240
20	841	387	692	1,910	254	324	669	1,010	692	670	539	246
21	720	364	620	1,470	248	317	625	926	711	672	638	241
22	735	378	564	1,190	244	269	638	853	802	889	627	240
23	717	379	512	1,240	241	254	719	809	788	792	e442	212
24	621	1,130	484	e774	239	247	910	696	678	642	e415	209
25	547	2,410	468	e665	239	235	940	629	640	552	e447	212
26	496	1,370	457	e615	235	349	893	605	622	589	e472	236
27	453	1,000	422	e583	233	1,630	851	658	654	646	e494	244
28	426	796	400	e543	251	1,420	875	695	701	682	e528	259
29	404	677	434	511	---	1,090	775	753	706	679	e420	740
30	447	670	438	474	---	895	699	764	725	645	e322	3,590
31	413	---	401	453	---	705	---	760	---	649	330	---
TOTAL	20,531	20,725	24,372	27,659	8,517	12,162	22,025	24,285	20,538	20,974	16,723	12,035
MEAN	662	691	786	892	304	392	734	783	685	677	539	401
MAX	1,990	2,410	2,960	7,910	417	1,630	1,160	1,230	988	987	774	3,590
MIN	404	353	400	271	233	219	514	516	511	552	322	209
AC-FT	40,720	41,110	48,340	54,860	16,890	24,120	43,690	48,170	40,740	41,600	33,170	23,870
CFSM	3.85	4.02	4.57	5.19	1.77	2.28	4.27	4.55	3.98	3.93	3.14	2.33
IN.	4.44	4.48	5.27	5.98	1.84	2.63	4.76	5.25	4.44	4.54	3.62	2.60

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1932 - 2005, BY WATER YEAR (WY)

	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	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	2002	2003	2004	2005
MEAN	479	814	948	893	762	615	650	786	875	727	568	449																																																														
MAX	1,291	2,149	3,015	2,314	2,291	1,619	1,038	1,282	1,470	1,239	1,000	773																																																														
(WY)	(1960)	(1996)	(1934)	(1934)	(1996)	(1972)	(1991)	(1936)	(1974)	(1933)	(2004)	(2004)																																																														
MIN	210	92.8	205	205	280	266	303	494	311	483	373	283																																																														
(WY)	(1953)	(1953)	(1953)	(1937)	(1977)	(1941)	(1975)	(1941)	(1934)	(1977)	(1957)	(1936)																																																														

12093500 PUYALLUP RIVER NEAR ORTING, WA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1932 - 2005	
ANNUAL TOTAL	278,676		230,546			
ANNUAL MEAN	761		632		714	
HIGHEST ANNUAL MEAN					1,174	1996
LOWEST ANNUAL MEAN					465	1941
HIGHEST DAILY MEAN	4,040	Jan 29	7,910	Jan 18	13,400	Feb 8, 1996
LOWEST DAILY MEAN	316	Jan 5	209	Sep 24	59	Nov 29, 1952
ANNUAL SEVEN-DAY MINIMUM	358	Apr 19	228	Sep 21	66	Nov 25, 1952
ANNUAL RUNOFF (AC-FT)	552,800		457,300		517,100	
ANNUAL RUNOFF (CFSM)	4.43		3.67		4.15	
ANNUAL RUNOFF (INCHES)	60.27		49.86		56.39	
10 PERCENT EXCEEDS	1,200		986		1,180	
50 PERCENT EXCEEDS	622		569		588	
90 PERCENT EXCEEDS	411		244		309	

e Estimated

12094000 CARBON RIVER NEAR FAIRFAX, WA

LOCATION.--Lat 47°01'41", long 122°01'53", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.22, T.18 N., R.6 E., Pierce County, Hydrologic Unit 17110014, on left bank, 1.1 mi upstream from State Highway 165 (Fairfax) bridge, 1.2 mi northwest of Fairfax, 2.3 mi downstream from Evans Creek, 4 mi south of Carbonado, and at mile 16.1.

DRAINAGE AREA.--78.9 mi².

PERIOD OF RECORD.--December 1910 to June 1912, April 1929 to May 1978, October 1991 to current year. Published as "at Fairfax" (station 12093900) 1910-12, 1966-78.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,201.7 ft above NGVD of 1929 (USGS National Mapping Division). Prior to July 12, 1912, nonrecording gage at railroad crossing 1.7 mi upstream at different datum. March 1929 to September 1965, recording gage 350 ft upstream at datum 1,212.6 ft above NGVD of 1929. October 1965 to May 1978, recording gage 1.7 mi upstream at datum then in use.

REMARKS.--Records fair except for estimated daily discharges, Oct. 11-21, which are poor. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--62 years (water years 1930-77, 1992-2005), 427 ft³/s, 73.49 in/yr, 309,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft³/s, Feb. 8, 1996, gage height, 15.85 ft; minimum discharge, 32 ft³/s, Nov. 24, 1993.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 24, 1990, reached a stage of 8.68 ft, from floodmark at former site and datum 350 ft upstream, discharge, 13,000 ft³/s, from rating extended above 6,200 ft³/s.

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)
Nov 25	0800	2,520	10.52	Jan 18	0915	*7,650	*13.91
Dec 11	0445	3,340	11.21	Sep 30	0730	4,790	12.25

Minimum discharge, 79 ft³/s, Sept. 24, 25.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	201	259	e332	237	226	122	355	442	500	364	307	169
2	186	1,070	e291	228	213	120	365	434	456	325	248	194
3	175	827	e282	217	201	118	326	445	402	287	225	174
4	166	540	267	210	218	113	301	427	369	291	258	147
5	162	431	269	201	205	110	276	432	353	317	281	137
6	238	371	242	205	194	107	275	417	346	391	300	137
7	296	329	237	204	183	109	349	383	376	469	275	148
8	288	299	300	197	171	115	394	335	382	471	293	158
9	448	271	327	192	165	116	330	367	343	583	285	163
10	375	248	1,080	187	158	117	288	670	325	421	263	149
11	e314	230	2,320	181	154	117	295	589	381	366	224	124
12	e365	215	1,090	195	164	117	278	518	439	356	232	105
13	e382	202	750	186	166	114	253	461	416	360	246	102
14	e365	194	746	174	155	108	245	525	397	329	232	103
15	e322	209	669	181	138	105	278	617	397	364	280	111
16	e707	211	554	271	133	113	555	769	363	395	260	109
17	e1,070	201	487	744	131	115	569	686	534	352	327	100
18	e835	254	454	5,960	129	115	437	606	502	369	333	96
19	e596	220	463	2,420	127	120	368	614	504	416	222	100
20	e485	195	439	1,220	123	136	343	522	481	370	199	104
21	e433	184	389	935	120	139	349	472	463	342	261	97
22	443	199	353	683	119	125	407	436	485	416	244	90
23	451	204	326	719	118	119	511	412	467	396	176	87
24	374	870	310	585	117	116	683	355	411	318	142	83
25	332	1,660	300	478	115	112	717	336	388	291	157	81
26	298	846	288	395	114	194	625	333	357	287	164	83
27	266	576	274	354	112	836	579	340	369	324	181	89
28	243	436	262	317	117	743	631	372	373	338	175	93
29	225	378	273	289	---	512	558	416	343	348	177	543
30	250	370	265	267	---	388	504	455	353	329	139	3,290
31	225	---	249	252	---	313	---	444	---	328	152	---
TOTAL	11,516	12,499	14,888	18,884	4,286	5,904	12,444	14,630	12,275	11,313	7,258	7,166
MEAN	371	417	480	609	153	190	415	472	409	365	234	239
MAX	1,070	1,660	2,320	5,960	226	836	717	769	534	583	333	3,290
MIN	162	184	237	174	112	105	245	333	325	287	139	81
AC-FT	22,840	24,790	29,530	37,460	8,500	11,710	24,680	29,020	24,350	22,440	14,400	14,210
CFSM	4.71	5.28	6.09	7.72	1.94	2.41	5.26	5.98	5.19	4.63	2.97	3.03
IN.	5.43	5.89	7.02	8.90	2.02	2.78	5.87	6.90	5.79	5.33	3.42	3.38

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2005, BY WATER YEAR (WY)

MEAN	312	488	537	476	378	313	385	555	642	479	316	245
MAX	830	1,732	1,952	948	1,301	879	577	854	1,083	828	500	538
(WY)	(1960)	(1996)	(1934)	(1934)	(1996)	(1972)	(1938)	(1936)	(1964)	(1972)	(1964)	(1959)
MIN	105	59.0	110	110	131	143	134	346	306	264	201	158
(WY)	(2003)	(1930)	(1953)	(1937)	(1966)	(1941)	(1975)	(1941)	(1992)	(1940)	(1994)	(1930)

12094000 CARBON RIVER NEAR FAIRFAX, WA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1930 - 2005	
ANNUAL TOTAL	169,719		133,063			
ANNUAL MEAN	464		365		427	
HIGHEST ANNUAL MEAN					664	1996
LOWEST ANNUAL MEAN					276	1941
HIGHEST DAILY MEAN	2,320	Dec 11	5,960	Jan 18	9,020	Feb 8, 1996
LOWEST DAILY MEAN	162	Oct 5	81	Sep 25	40	Nov 28, 1952
ANNUAL SEVEN-DAY MINIMUM	192	Sep 30	87	Sep 22	42	Nov 25, 1952
ANNUAL RUNOFF (AC-FT)	336,600		263,900		309,200	
ANNUAL RUNOFF (CFSM)	5.88		4.62		5.41	
ANNUAL RUNOFF (INCHES)	80.02		62.74		73.49	
10 PERCENT EXCEEDS	824		587		764	
50 PERCENT EXCEEDS	362		299		336	
90 PERCENT EXCEEDS	238		117		157	

e Estimated

12095000 SOUTH PRAIRIE CREEK AT SOUTH PRAIRIE, WA

LOCATION.--Lat 47°08'23", long 122°05'29", in NE¼NW¼ sec.18, T.19 N., R.6 E., Pierce County, Hydrologic Unit 17110014, on left bank 300 ft upstream from bridge on State Highway 162, 0.8 mi downstream from Wilkeson Creek, 0.3 mi east of South Prairie, and at mile 5.9.

DRAINAGE AREA.--79.5 mi².

PERIOD OF RECORD.--June 1949 to September 1971, October 1987 to current year.

REVISED RECORDS.--WSP 1932: Drainage area. WDR WA-96-1: 1980(M), 1991(P).

GAGE.--Water-stage recorder. Datum of gage is 400.0 ft above NGVD of 1929. June 1949 to June 1969, water-stage recorder at site 400 ft downstream at different datum. June 1969 to September 1971, at present site at different datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. Diversion of 2.1 ft³/s, 9.7 mi upstream, by City of Buckley for municipal use. Unused water, 1.5 ft³/s or less, is returned 1.5 mi upstream. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--40 years (water years 1950-71, 1988-2005), 232 ft³/s, 39.57 in/yr, 167,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,170 ft³/s, Feb. 8, 1996, gage height, 35.14 ft, on basis of contracted-opening measurement of peak flow; minimum discharge, 20 ft³/s, Sept. 23, 1967.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 11	0615	1,450	29.87	Mar 27	1900	1,490	29.91
Jan 18	0845	*3,510	*31.71				

Minimum daily discharge, 30 ft³/s, Sept. 28.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70	90	250	117	137	80	288	274	163	124	e53	e36
2	64	506	211	110	127	77	328	268	203	116	e54	e36
3	60	443	186	103	121	79	301	326	189	111	e52	e35
4	58	294	173	97	134	71	271	282	164	106	e52	e35
5	56	234	174	91	134	67	224	265	162	98	e49	e37
6	71	194	153	94	122	65	205	232	161	144	e48	e35
7	72	168	152	95	122	65	244	200	202	125	e47	e35
8	101	145	192	94	113	65	299	178	233	132	e47	e34
9	218	128	228	90	107	65	232	194	199	383	e46	e37
10	140	115	536	87	103	67	194	536	173	239	e46	e69
11	109	104	1,020	85	100	64	211	406	214	e176	e46	e64
12	94	96	558	88	101	62	206	331	232	e153	e45	46
13	85	92	382	91	109	60	175	271	197	135	e44	40
14	79	89	374	83	99	58	175	268	179	116	e43	37
15	74	88	351	82	91	55	190	367	170	99	e43	37
16	255	93	289	137	87	62	603	689	149	88	e42	36
17	786	95	254	302	86	75	573	538	310	87	e60	38
18	431	184	230	2,780	84	68	387	450	277	84	e70	36
19	310	163	219	1,190	82	66	297	398	227	80	e47	34
20	234	132	201	635	79	85	248	349	187	74	e43	33
21	201	117	179	481	76	92	222	358	162	70	e42	32
22	183	122	165	363	75	81	221	346	177	90	e41	31
23	179	133	151	344	73	74	243	367	193	85	e41	31
24	153	368	142	275	72	69	373	304	159	67	e40	31
25	134	672	138	235	70	70	316	249	142	59	e40	31
26	122	383	132	210	69	156	268	209	134	e58	e39	32
27	108	284	124	208	69	1,120	243	178	169	e57	e39	31
28	101	228	118	185	73	919	271	159	160	e56	e38	30
29	95	189	130	167	---	554	259	141	145	e55	e55	34
30	104	214	140	155	---	385	324	133	137	e54	e53	614
31	96	---	127	147	---	277	---	131	---	e53	e37	---
TOTAL	4,843	6,163	7,679	9,221	2,715	5,153	8,391	9,397	5,569	3,374	1,442	1,687
MEAN	156	205	248	297	97.0	166	280	303	186	109	46.5	56.2
MAX	786	672	1,020	2,780	137	1,120	603	689	310	383	70	614
MIN	56	88	118	82	69	55	175	131	134	53	37	30
AC-FT	9,610	12,220	15,230	18,290	5,390	10,220	16,640	18,640	11,050	6,690	2,860	3,350
CFSM	1.97	2.58	3.12	3.74	1.22	2.09	3.52	3.81	2.34	1.37	0.59	0.71
IN.	2.27	2.88	3.59	4.31	1.27	2.41	3.93	4.40	2.61	1.58	0.67	0.79

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2005, BY WATER YEAR (WY)

MEAN	137	302	353	380	339	272	287	259	215	108	64.3	69.5
MAX	349	723	728	732	966	527	517	463	439	270	193	233
(WY)	(1960)	(1991)	(1956)	(1997)	(1996)	(1950)	(1991)	(1960)	(1964)	(1993)	(1968)	(1968)
MIN	26.4	35.2	61.5	126	97.0	138	150	131	59.1	43.6	30.3	30.7
(WY)	(1988)	(1953)	(1953)	(1957)	(2005)	(1992)	(2004)	(1992)	(1992)	(2003)	(2003)	(2003)

12095000 SOUTH PRAIRIE CREEK AT SOUTH PRAIRIE, WA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1949 - 2005	
ANNUAL TOTAL	74,743		65,634			
ANNUAL MEAN	204		180		232	
HIGHEST ANNUAL MEAN					338	1997
LOWEST ANNUAL MEAN					141	1994
HIGHEST DAILY MEAN	1,440	Jan 29	2,780	Jan 18	6,700	Feb 8, 1996
LOWEST DAILY MEAN	31	Aug 18	30	Sep 28	21	Oct 2, 2003
ANNUAL SEVEN-DAY MINIMUM	32	Aug 14	31	Sep 22	22	Sep 29, 2003
ANNUAL RUNOFF (AC-FT)	148,300		130,200		167,700	
ANNUAL RUNOFF (CFSM)	2.57		2.26		2.91	
ANNUAL RUNOFF (INCHES)	34.97		30.71		39.57	
10 PERCENT EXCEEDS	391		354		445	
50 PERCENT EXCEEDS	163		128		174	
90 PERCENT EXCEEDS	55		43		46	

e Estimated

12097500 GREENWATER RIVER AT GREENWATER, WA

LOCATION.--Lat 47°09'13", long 121°38'04", in NE¹/₄NE¹/₄ sec.10, T.19 N., R.9 E., Pierce County, Hydrologic Unit 17110014, on left bank at bridge crossing, 0.7 mi east of Greenwater, and at mile 1.1.

DRAINAGE AREA.--73.5 mi².

PERIOD OF RECORD.--October 1911 to March 1912, May 1929 to September 1977, July 1980 to September 1993 (seasonal records), October 1993 to current year. Published as "near Enumclaw" 1911-12.

REVISED RECORDS.--WSP 1716: 1947(M). WA-94-1: 1990(M), 1993(M). WSP 1932: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,720 ft above NGVD of 1929, from river-profile survey. Prior to Aug. 10, 1912, nonrecording gages at sites approximately 500 ft upstream at different datums. May 1, 1929, to Aug. 14, 1934, water-stage recorder at site 1,400 ft upstream at different datum. Aug. 17, 1934, to Sept. 30, 1977, water-stage recorder at site 500 ft upstream at different datum. U.S. Geological Survey satellite telemeter at station.

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

AVERAGE DISCHARGE.--60 years (water years 1930-77, 1994-2005), 209 ft³/s, 38.57 in/yr, 151,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,900 ft³/s, Feb. 8, 1996, gage height, 8.94 ft, from rating curve extended above 2,400 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 22 ft³/s, Oct. 27-31, 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 2, 1977, reached a stage of 9.8 ft former site and datum, from floodmarks, discharge, about 10,500 ft³/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 638 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 18	1530	*1,090	*5.49	No other peak greater than base discharge.			

Minimum discharge, 31 ft³/s, Sept. 26-29, minimum gage height, 2.83 ft, Sept. 28, 29.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52	66	120	99	160	69	123	173	131	93	53	38
2	50	110	112	95	153	68	135	166	131	90	52	36
3	49	134	108	91	145	68	136	163	126	87	50	36
4	48	114	106	86	143	67	136	158	118	83	49	36
5	48	105	104	83	135	65	126	157	116	81	48	36
6	51	97	98	82	128	64	123	151	118	84	48	35
7	49	91	96	82	121	63	137	146	120	81	47	34
8	49	85	105	80	115	63	142	141	122	84	47	34
9	60	80	113	78	112	63	133	152	115	99	46	34
10	53	76	293	75	110	62	126	260	111	88	46	48
11	49	72	461	72	107	62	125	248	112	82	46	42
12	48	70	364	72	105	61	118	241	139	80	45	38
13	47	68	274	70	100	59	113	230	134	78	44	36
14	46	66	234	68	97	58	109	221	126	76	43	35
15	45	65	208	67	91	58	107	220	118	74	43	34
16	58	66	185	71	89	59	116	245	112	74	43	34
17	92	64	171	92	86	59	119	251	129	72	48	34
18	87	68	163	851	84	58	117	250	117	69	47	34
19	78	67	162	717	83	57	115	248	123	68	44	33
20	73	63	159	494	81	58	115	235	118	67	42	33
21	75	60	155	398	79	61	116	225	112	65	41	33
22	83	63	148	343	78	58	122	215	112	69	41	33
23	89	67	138	314	76	56	136	205	110	67	40	33
24	85	144	133	285	74	55	169	191	105	63	40	33
25	81	228	130	257	71	55	186	178	101	61	39	32
26	77	212	125	240	70	73	198	167	98	59	39	32
27	72	174	117	227	69	149	198	158	106	58	38	32
28	69	148	113	207	69	155	193	151	103	57	38	31
29	68	131	113	193	---	141	186	143	98	56	40	36
30	71	127	110	180	---	127	182	135	95	54	57	135
31	68	---	105	171	---	114	---	132	---	53	42	---
TOTAL	1,970	2,981	5,023	6,240	2,831	2,285	4,157	5,956	3,476	2,272	1,386	1,150
MEAN	63.5	99.4	162	201	101	73.7	139	192	116	73.3	44.7	38.3
MAX	92	228	461	851	160	155	198	260	139	99	57	135
MIN	45	60	96	67	69	55	107	132	95	53	38	31
AC-FT	3,910	5,910	9,960	12,380	5,620	4,530	8,250	11,810	6,890	4,510	2,750	2,280
CFSM	0.86	1.35	2.20	2.74	1.38	1.00	1.89	2.61	1.58	1.00	0.61	0.52
IN.	1.00	1.51	2.54	3.16	1.43	1.16	2.10	3.01	1.76	1.15	0.70	0.58

12097500 GREENWATER RIVER AT GREENWATER, WA—Continued

DISCHARGE, CUBIC FEET PER SECOND—CONTINUED
 WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2005, BY WATER YEAR (WY)												
MEAN	72.6	178	251	246	218	194	280	424	357	143	64.7	51.6
MAX	347	784	1,116	597	809	640	457	833	900	371	133	128
(WY)	(1960)	(1996)	(1934)	(1934)	(1996)	(1972)	(1956)	(1949)	(1950)	(1950)	(1976)	(1959)
MIN	24.1	29.7	35.0	45.3	70.3	73.7	124	158	83.0	51.6	36.5	30.9
(WY)	(1988)	(1937)	(1953)	(1937)	(1936)	(2005)	(1973)	(1941)	(1992)	(1934)	(1934)	(1987)

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1929 - 2005	
ANNUAL TOTAL	55,326		39,727			
ANNUAL MEAN	151		109		209	
HIGHEST ANNUAL MEAN					328	
LOWEST ANNUAL MEAN					92.4	
HIGHEST DAILY MEAN	875	Jan 30	851	Jan 18	4,800	Nov 29, 1995
LOWEST DAILY MEAN	40	Aug 19	31	Sep 28	22	Oct 28, 1987
ANNUAL SEVEN-DAY MINIMUM	41	Aug 15	32	Sep 22	23	Oct 24, 1987
ANNUAL RUNOFF (AC-FT)	109,700		78,800		151,200	
ANNUAL RUNOFF (CFSM)	2.06		1.48		2.84	
ANNUAL RUNOFF (INCHES)	28.00		20.11		38.57	
10 PERCENT EXCEEDS	284		193		454	
50 PERCENT EXCEEDS	114		87		144	
90 PERCENT EXCEEDS	50		42		44	

12098000 MUD MOUNTAIN LAKE NEAR BUCKLEY, WA

LOCATION.--Lat 47°08'27", long 121°55'48", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.17, T.19 N., R.7 E., Pierce County, Hydrologic Unit 17110014, on left bank of reservoir just upstream from Mud Mountain Dam on White River, 5 mi southeast of Buckley, 5.6 mi downstream from Clearwater River, and at mile 29.7.

DRAINAGE AREA.--400 mi².

PERIOD OF RECORD.--October 1943 to current year. Daily elevation at 0800 hours only October 1988 to September 1992. Month-end contents only October 1943 to September 1944, published in WSP 1316. Prior to October 1970, published as Mud Mountain Reservoir near Buckley.

GAGE.--Nonrecording gage. Datum of gage is NGVD of 1929 (levels by Corps of Engineers).

REMARKS.--Lake, for flood control, is formed by earth fill dam. Embankment completed and storage began on small scale in 1942. Capacity, 106,000 acre-ft between elevations 895 ft, invert of outlet tunnel, and 1,215 ft, spillway crest. Storage is dissipated as soon after a flood as is possible, without creating damaging flows downstream, in order to have the maximum capacity available for any following flood which might develop.

COOPERATION.--Records of lake elevations and capacity table furnished by Corps of Engineers (revised by USGS below 917 ft). Table uncertain below about 970 ft, due to siltation. Mud Mountain Lake is considered to have no appreciable storage below 917 ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed since dam was completed, 89,245 acre-ft, Feb. 9, 1996, elevation, 1,196.1 ft; no contents at times in most years.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 18,900 acre-ft, Jan. 20, elevation, 1,074.5 ft; no contents many days during the year.

RESERVOIR STORAGE, ACRE FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	104	104	0	0	0	0	0	0	0	0	0	0
2	101	151	0	0	0	0	0	0	0	0	0	0
3	100	0	0	0	0	0	0	0	0	0	0	0
4	99	0	---	0	0	0	0	0	0	0	0	0
5	98	0	0	0	0	0	0	0	0	0	0	0
6	104	0	0	0	0	0	0	0	0	0	0	0
7	103	0	0	0	0	0	0	0	0	0	0	0
8	100	0	0	0	0	0	0	0	0	0	0	0
9	125	0	0	0	0	0	0	0	0	0	0	0
10	110	0	93	0	0	0	0	0	0	0	0	0
11	103	0	1,280	0	0	0	0	0	0	0	0	0
12	100	0	1,980	0	0	0	0	0	0	0	0	0
13	103	0	454	0	0	0	0	0	0	0	0	0
14	103	0	0	0	0	0	0	0	0	0	0	0
15	102	0	0	0	0	0	0	0	0	0	0	0
16	107	0	0	0	0	0	0	0	0	0	0	0
17	185	0	0	0	0	0	0	0	0	0	0	0
18	153	0	0	3,400	0	0	0	0	0	0	0	0
19	138	0	0	14,700	0	0	0	0	0	0	0	0
20	128	0	0	18,900	0	0	0	0	0	0	0	0
21	123	0	0	17,900	0	0	0	0	0	0	0	0
22	120	0	0	15,000	0	0	0	0	0	0	0	0
23	145	0	0	11,500	0	0	0	0	0	0	0	0
24	134	0	0	7,800	0	0	0	0	0	0	0	0
25	126	0	0	4,190	0	0	0	0	0	0	0	0
26	119	0	0	1,440	0	0	0	0	0	0	0	0
27	113	0	0	104	0	0	0	0	0	0	0	0
28	107	0	0	0	0	0	0	0	0	0	0	0
29	106	0	0	0	---	0	0	0	0	0	0	0
30	108	0	0	0	---	0	0	0	0	0	0	236
31	107	---	0	0	---	0	---	0	---	0	0	---
MAX	185	151	1,980	18,900	0	0	0	0	0	0	0	236
MIN	98	0	0	0	0	0	0	0	0	0	0	0
††	919.6	904.5	902.5	909.5	901.4	906.1	907.5	908.0	905.4	903.5	901.7	923.0
†	105	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	127
‡	-3	-105	0	0	0	0	0	0	0	0	0	+127
CAL YR	2004	AC-FT‡	0									
WTR YR	2005	AC-FT‡	+19									

†† Monthend elevation, in feet, at 2400 hours.

† Monthend contents, in acre-feet.

‡ Change in contents, in acre-feet.

12098500 WHITE RIVER NEAR BUCKLEY, WA

LOCATION.--Lat 47°09'05", long 121°56'55", in SW¹/₄NW¹/₄ sec.8, T.19 N., R.7 E., King County, Hydrologic Unit 17110014, on right bank 0.4 mi upstream from Red Creek, 1.7 mi downstream from Mud Mountain Dam, 3.8 mi east of Buckley, 7.4 mi downstream from Clearwater River and at mile 27.9.

DRAINAGE AREA.--401 mi².

PERIOD OF RECORD.--October 1928 to November 1933, October 1938 to September 2003 (discharge only). October 2003 to current year (stage only).

REVISED RECORDS.--WSP 1247: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929 (Corps of Engineers benchmark). Gage relocated 50 ft downstream of stilling well on Oct. 26, 2004. Oct. 26 to Dec. 9, 1928, nonrecording gage, and Dec. 9, 1928, to Nov. 30, 1933, water-stage recorder at site 3.0 mi upstream at different datum. Nov. 26, 1938, to Feb. 14, 1939, nonrecording gage at stilling well with present datum.

REMARKS.--Flow regulated by Mud Mountain Lake (station 12098000) for flood control. Storage is not retained and observed annual runoff closely represents natural runoff of the basin. No diversion upstream from station. U.S. Geological Survey satellite telemeter at station. Chemical analyses July 1981; water temperatures March 1971 to September 1972; sediment records November 1971 to November 1972.

COOPERATION.--Water-stage recorder inspected by Corps of Engineers.

AVERAGE DISCHARGE.--70 years (water years 1929-33, 1939-2003), 1,435 ft³/s, 48.60 in/yr, 1,040,000 acre-ft/yr, adjusted for storage since December 1943.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,000 ft³/s, Feb. 26, 1932, gage height, 17.5 ft, site and datum then in use, from rating curve extended above 3,500 ft³/s; probably no flow for part of each day Oct. 1, 2, 7, 8, Nov. 14, Dec. 1, 5, 15, 1958; Jan. 3, Mar. 24, June 8, Aug. 19, 1959; minimum daily discharge, 59 ft³/s, June 25, 1957, Mar. 26, 1958.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1933 reached a stage of 23.4 ft, from floodmarks, at former site, discharge, 28,000 ft³/s, from rating curve extended above 3,500 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum elevation 805.46 ft, Jan. 18; minimum elevation unknown, occurred during period of unuseable record; minimum recorded elevation, 801.36 ft, Nov. 21, but may have been lower during a period of unusable record.

ELEVATION ABOVE NGVD 1929, FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	801.42	802.04	801.91	802.66	802.03	802.79	802.98	803.01	802.67	802.47	802.15
2	---	802.37	801.93	801.86	802.60	802.01	802.87	802.95	802.96	802.63	802.33	802.19
3	---	802.52	801.85	801.80	802.55	802.00	802.85	802.95	802.86	802.54	802.31	802.15
4	---	802.23	801.82	801.76	802.58	801.96	802.84	802.94	802.83	802.55	802.33	802.04
5	---	802.05	801.83	801.71	802.54	801.95	802.74	802.95	802.79	802.55	802.37	801.97
6	---	801.91	801.75	801.73	802.49	801.93	802.68	802.95	802.74	802.71	802.39	801.98
7	---	801.80	801.73	801.76	802.44	801.93	802.77	802.94	802.75	802.66	802.41	801.99
8	---	801.72	801.91	801.73	802.40	801.94	802.85	802.87	802.72	802.70	802.38	802.03
9	---	801.65	802.05	801.69	802.36	801.93	802.74	802.93	802.66	803.05	802.38	802.06
10	---	801.59	803.21	801.66	802.33	801.93	802.65	803.45	802.62	802.83	802.38	802.25
11	---	801.54	803.85	801.63	802.31	801.93	802.67	803.34	802.68	802.71	802.33	802.11
12	---	801.49	803.80	801.65	802.31	801.93	802.62	803.27	802.87	802.67	802.32	801.94
13	---	801.46	803.24	801.62	802.30	801.91	802.55	803.21	802.80	802.63	802.34	801.88
14	---	801.43	803.05	801.58	802.26	801.89	802.51	803.22	802.74	802.59	802.34	801.88
15	---	801.44	802.90	801.53	802.21	801.88	802.51	803.31	802.71	802.61	802.36	801.90
16	---	801.47	802.74	801.66	802.19	801.92	802.90	803.51	802.66	802.64	802.36	801.90
17	---	801.43	802.62	802.09	802.17	801.96	803.04	803.41	802.93	802.57	802.46	801.86
18	---	801.61	802.54	804.63	802.16	801.92	802.94	803.32	802.86	802.58	802.36	801.83
19	---	801.53	802.53	803.58	802.14	801.91	802.83	803.33	802.89	802.59	802.28	801.84
20	---	801.43	802.47	803.91	802.12	802.04	802.76	803.23	802.88	802.55	802.28	801.84
21	---	801.39	802.40	804.11	802.09	802.07	802.73	803.20	802.87	802.54	802.33	801.80
22	---	801.42	802.32	804.09	802.07	801.98	802.75	803.17	802.90	802.68	802.35	801.78
23	---	801.45	802.25	804.05	802.05	801.93	802.84	803.14	802.82	802.64	802.24	801.76
24	---	802.30	802.20	---	802.04	801.89	803.08	803.05	802.74	802.53	802.16	801.74
25	---	802.96	802.16	---	802.02	801.86	803.18	802.98	802.70	802.46	802.15	801.73
26	---	802.67	802.14	803.48	802.01	802.14	803.23	802.94	802.70	802.45	802.17	801.74
27	801.53	802.39	802.07	803.07	801.99	803.32	803.22	802.95	802.73	802.46	802.20	801.75
28	801.47	802.17	802.02	802.96	802.00	803.33	803.21	803.00	802.71	802.48	802.21	801.74
29	801.44	802.01	802.04	802.87	---	803.09	803.12	803.07	802.70	802.49	802.26	801.97
30	801.52	802.05	802.03	802.80	---	802.91	803.06	803.08	802.70	802.48	802.33	803.94
31	801.47	---	801.96	802.73	---	802.75	---	803.07	---	802.48	802.16	---
MEAN	---	801.83	802.37	---	802.26	802.13	802.85	803.12	802.78	802.60	802.31	801.99
MAX	---	802.96	803.85	---	802.66	803.33	803.23	803.51	803.01	803.05	802.47	803.94
MIN	---	801.39	801.73	---	801.99	801.86	802.51	802.87	802.62	802.45	802.15	801.73

PUYALLUP RIVER BASIN

12099000 WHITE RIVER CANAL AT BUCKLEY, WA

LOCATION.--Lat 47°10'19", long 122°01'13", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.34, T.20 N., R.6 E., Pierce County, Hydrologic Unit 17110014, on right bank 0.8 mi downstream from diversion dam, and 0.8 mi northwest of Buckley.

PERIOD OF RECORD.--February 1913 to September 1938 (monthly runoff only, published in WSP 1316), October 1981 to September 2004 (discharge only). October 2004 to September 2005 (gage height only). Records for September 1958 to September 1981 available in files of the U.S. Geological Survey. Records prior to October 1961, published as White River flume near Buckley, at site 0.5 mi downstream from White River diversion dam. September 1959 to September 1992 station at site 4.0 mi downstream from diversion dam.

GAGE.--Water-stage recorder. Elevation of gage is 650 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good. Stage completely regulated at White River diversion dam about 0.8 mi upstream from gage. U.S. Geological Survey satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,340 ft³/s, Dec. 17, 2001; no flow on many days during most years.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 5.79 ft, Mar. 28, minimum gage height, 0.74 ft, Sept. 20.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.70	3.37	3.37	3.30	2.25	3.68	3.80	3.47	3.62	3.63	2.46	2.25
2	3.54	3.38	3.49	3.48	2.57	3.35	3.99	3.41	3.63	3.47	2.54	2.33
3	3.46	3.33	3.39	3.28	2.79	3.33	3.91	3.33	3.74	3.66	2.19	2.50
4	3.46	3.38	3.57	2.87	3.21	3.39	3.91	3.46	4.02	3.43	2.05	2.22
5	3.43	3.38	3.47	2.87	3.45	3.28	3.71	3.67	3.91	3.77	1.97	2.39
6	3.74	3.28	3.33	3.28	3.32	3.17	3.53	3.25	3.83	3.48	2.00	2.25
7	3.93	3.38	3.38	3.41	3.35	3.09	3.74	3.56	3.90	3.46	2.02	2.06
8	3.65	3.54	3.13	3.40	3.41	3.05	3.96	3.46	3.53	3.36	2.12	1.45
9	3.95	3.60	3.24	3.39	3.58	3.03	3.51	3.45	3.33	1.58	2.14	1.62
10	3.76	3.40	3.33	3.35	3.74	3.02	3.52	3.35	3.40	1.59	2.28	1.54
11	3.83	3.34	3.34	3.34	3.62	3.03	3.69	3.38	3.37	1.63	2.23	2.00
12	3.72	3.32	3.22	3.45	3.66	3.05	3.73	3.40	3.40	1.65	2.46	2.03
13	3.71	3.23	3.25	3.44	3.45	3.05	3.48	3.36	3.61	1.92	2.28	2.12
14	3.81	3.37	3.39	3.58	3.45	3.04	3.46	3.43	3.41	1.81	2.21	1.02
15	3.53	3.36	3.34	3.75	3.45	3.04	3.43	3.41	3.53	1.84	2.36	0.76
16	3.68	3.33	3.26	3.64	3.49	3.05	4.10	3.40	3.57	2.12	2.00	0.80
17	3.56	3.32	3.21	3.78	3.39	3.20	4.50	3.39	3.37	2.54	2.25	0.91
18	3.51	3.48	3.22	3.20	3.40	3.27	4.17	3.43	3.49	2.50	2.03	0.89
19	3.47	3.45	3.08	2.50	3.36	3.29	3.86	3.52	3.45	2.68	2.05	0.78
20	3.55	3.36	3.13	2.57	3.46	3.31	3.75	3.38	3.29	2.80	2.08	0.75
21	3.44	3.42	3.16	2.41	3.38	3.36	3.81	3.31	3.58	2.27	2.11	1.48
22	3.65	3.40	3.17	3.07	3.31	3.30	3.91	3.58	3.50	1.94	2.08	1.85
23	3.49	3.38	3.14	4.26	3.50	3.31	4.20	3.60	3.40	2.04	1.60	2.34
24	3.68	3.40	3.10	4.74	3.40	3.01	3.74	3.47	3.41	1.95	2.32	1.66
25	3.57	3.43	3.02	4.07	3.64	2.70	3.02	3.44	3.35	1.97	1.91	1.97
26	3.69	3.32	2.92	3.29	3.51	3.37	2.98	3.38	3.53	1.90	1.89	2.24
27	3.42	3.33	2.77	3.16	3.38	4.97	3.75	3.41	3.37	1.95	2.05	2.46
28	3.35	3.29	2.76	2.89	3.39	5.41	3.46	3.35	3.35	2.16	2.09	1.45
29	3.49	3.36	3.04	2.57	---	4.67	3.48	3.42	3.30	3.13	2.78	1.27
30	3.48	3.34	3.44	2.28	---	4.07	3.44	3.42	3.46	2.71	2.81	2.92
31	3.47	---	3.33	2.03	---	3.79	---	3.44	---	2.41	2.77	---
TOTAL	111.72	101.27	99.99	100.65	93.91	105.68	111.54	106.33	105.65	77.35	68.13	52.31
MEAN	3.60	3.38	3.23	3.25	3.35	3.41	3.72	3.43	3.52	2.50	2.20	1.74
MAX	3.95	3.60	3.57	4.74	3.74	5.41	4.50	3.67	4.02	3.77	2.81	2.92
MIN	3.35	3.23	2.76	2.03	2.25	2.70	2.98	3.25	3.29	1.58	1.60	0.75
WTR YR	2005	TOTAL 1,134.53	MEAN 3.11	MAX 5.41	MIN 0.75							

12099200 WHITE RIVER ABOVE BOISE CREEK, AT BUCKLEY, WA

LOCATION.--Lat 47°10'26", long 122°00'29", in SE¼SW¼ sec.35, T.20 N., R.6 E., Pierce County, Hydrologic Unit 17110014, on left bank 1,500 ft downstream from diversion dam, 1.5 mi northeast of Buckley, and at mile 23.9.

DRAINAGE AREA.--411 mi²

PERIOD OF RECORD.--July 2003 to current year. Prior to July 2003 records for "White River above Boise Creek at Buckley, WA" (station 12099100) published for station 1,200 ft upstream are not equivalent because of inflows between sites.

GAGE.--Water-stage recorder. Elevation of gage is 650 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. Since November 1911, White River Canal has diverted water from left bank, 1,500 ft upstream, for storage in Lake Tapps. Water is returned to the White River 20.3 mi downstream via Lake Tapps Diversion, after power development at Dieringer Powerplant. Since 1942, flows have been regulated by Mud Mountain Dam for flood control. U.S. Geological Survey telemeter at station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9,030 ft³/s, Jan. 18, gage height, 45.82 ft; minimum discharge, 271 ft³/s, Sept. 24-26, 28, 29.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	378	567	1,070	712	1,130	440	461	1,350	1,360	865	699	495
2	359	1,630	950	675	1,050	426	482	1,300	1,270	815	623	525
3	354	1,720	890	624	989	426	471	1,300	1,110	713	641	498
4	340	1,260	853	597	1,020	419	468	1,270	959	670	662	441
5	339	1,080	865	547	981	468	469	1,280	898	657	697	398
6	419	943	800	540	912	458	472	1,290	856	832	718	399
7	372	866	785	559	855	460	535	1,270	851	833	707	405
8	404	793	931	541	774	460	490	1,160	822	886	677	428
9	689	739	1,060	517	737	460	477	1,220	753	1,480	683	458
10	497	696	2,680	499	702	460	478	2,280	711	1,100	717	526
11	398	643	4,000	476	684	458	496	2,050	813	947	668	462
12	376	605	3,690	490	682	458	466	1,900	1,090	903	655	383
13	407	581	2,590	478	681	446	468	1,750	1,020	855	679	357
14	402	557	2,140	451	642	430	470	1,770	948	796	678	351
15	391	563	1,870	419	592	425	477	1,980	922	830	702	365
16	808	584	1,620	498	571	444	565	2,460	855	860	691	364
17	1,860	563	1,440	859	535	465	501	2,260	1,260	796	640	341
18	1,480	697	1,330	7,240	520	441	468	2,070	1,160	772	581	331
19	1,140	648	1,300	3,900	508	428	489	2,050	1,180	786	585	334
20	985	569	1,230	3,890	520	519	576	1,830	1,170	727	573	335
21	905	533	1,140	4,370	472	545	576	1,770	1,140	715	604	314
22	902	553	1,070	4,110	459	477	591	1,710	1,140	865	696	306
23	943	577	990	3,690	448	447	643	1,640	1,040	866	593	296
24	851	1,390	933	3,310	440	441	1,150	1,480	929	724	527	288
25	775	2,390	908	3,030	433	435	1,690	1,350	900	654	513	285
26	721	1,900	887	2,560	424	487	1,780	1,280	895	653	528	289
27	668	1,450	833	1,780	416	1,590	1,770	1,280	932	680	561	294
28	616	1,180	785	1,570	422	586	1,720	1,370	911	695	557	287
29	586	1,020	808	1,420	---	407	1,560	1,460	900	626	589	394
30	646	1,060	800	1,320	---	424	1,500	1,480	900	649	609	2,820
31	614	---	754	1,240	---	418	---	1,450	---	641	513	---
TOTAL	20,625	28,357	42,002	52,912	18,599	15,248	22,759	50,110	29,695	24,891	19,566	13,769
MEAN	665	945	1,355	1,707	664	492	759	1,616	990	803	631	459
MAX	1,860	2,390	4,000	7,240	1,130	1,590	1,780	2,460	1,360	1,480	718	2,820
MIN	339	533	754	419	416	407	461	1,160	711	626	513	285
AC-FT	40,910	56,250	83,310	105,000	36,890	30,240	45,140	99,390	58,900	49,370	38,810	27,310

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2003 - 2005, BY WATER YEAR (WY)

MEAN	533	641	775	1,347	879	708	960	1,769	1,445	818	648	450
MAX	665	945	1,355	1,707	1,086	924	1,160	1,921	1,900	832	787	579
(WY)	(2005)	(2005)	(2005)	(2005)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)	(2004)
MIN	401	337	195	987	664	492	759	1,616	990	803	526	312
(WY)	(2004)	(2004)	(2004)	(2004)	(2005)	(2005)	(2005)	(2005)	(2005)	(2005)	(2003)	(2003)

SUMMARY STATISTICS

FOR 2004 CALENDAR YEAR

FOR 2005 WATER YEAR

WATER YEARS 2003 - 2005

ANNUAL TOTAL	400,616	338,533	
ANNUAL MEAN	1,095	927	926
HIGHEST ANNUAL MEAN			927
LOWEST ANNUAL MEAN			924
HIGHEST DAILY MEAN	4,190	Feb 1	7,240
LOWEST DAILY MEAN	65	Jan 5	285
ANNUAL SEVEN-DAY MINIMUM	203	Jan 1	292
ANNUAL RUNOFF (AC-FT)	794,600		671,500
10 PERCENT EXCEEDS	1,950		1,710
50 PERCENT EXCEEDS	895		696
90 PERCENT EXCEEDS	437		419
			7,240
			65
			111
			Nov 2, 2003
			670,700
			1,780
			702
			295

12099600 BOISE CREEK AT BUCKLEY, WA

LOCATION.--Lat 47°10'34", long 122°01'02", in NE¼SE¼ sec.34, T.20 N., R.6 E., King County, Hydrologic Unit 17110014, on left bank at downstream side of county road bridge, 1.0 mi northeast of Buckley, and at mile 0.1.

DRAINAGE AREA.--15.4 mi².

PERIOD OF RECORD.--March 1977 to September 1981, December 1981 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 640 ft above NGVD of 1929, from topographic map. Prior to January 25, 1984, at site 25 ft upstream at datum 0.91 ft higher. Prior to March 27, 1996, at site 10 ft downstream, at datum 1.00 ft higher.

REMARKS.--No estimated daily discharges. Records fair, except for discharges above 200 ft³/s and below 6.0 ft³/s, which are poor. Flow partly regulated by millpond at mile 5.6. Diversions upstream from station for domestic and industrial use. Interbasin diversion from Scatter Creek of about 2 ft³/s during low-flow periods enters Boise Creek upstream from millpond. U.S. Geological Survey satellite telemeter at station. Chemical analyses November 1961 to July 1964.

AVERAGE DISCHARGE.--27 years (water years 1978-81, 1983-2005), 31.9 ft³/s, 23,090 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,200 ft³/s, Feb. 8, 1996, gage height, 4.26 ft, from rating curve extended above 180 ft³/s, on basis of slope-area measurement of peak flow 0.94 mi upstream from station; minimum discharge, 1.7 ft³/s, Sept. 19, 1979.

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)
Dec 11	0400	203	2.52	Apr 16	1315	219	2.66
Jan 18	0430	*402	*3.42				

Minimum discharge, 5.1 ft³/s, Aug. 27, 28, gage height, 1.17 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	14	62	21	22	11	47	27	21	15	7.5	7.2
2	9.4	73	42	20	21	9.7	52	26	28	15	7.3	6.8
3	8.9	46	35	19	20	9.8	50	31	26	14	7.2	6.8
4	8.7	31	33	18	23	9.0	47	24	22	13	7.1	6.5
5	8.5	26	35	17	21	8.7	38	23	22	13	6.9	7.4
6	12	22	31	17	24	8.8	33	21	22	26	6.8	6.7
7	9.1	20	35	17	23	8.6	41	19	23	17	6.8	6.4
8	27	18	55	16	20	8.3	39	18	27	21	6.7	6.1
9	29	15	62	16	18	8.2	31	23	22	34	6.5	6.0
10	16	13	93	15	17	8.2	28	55	20	24	6.5	17
11	13	13	158	13	17	8.0	39	40	27	22	6.5	9.9
12	11	11	98	13	17	7.7	37	33	44	19	6.3	7.6
13	9.9	12	70	13	17	7.7	30	29	39	17	6.3	6.8
14	9.5	11	74	12	16	7.6	29	32	32	16	6.3	6.5
15	9.0	12	58	12	15	7.4	32	50	30	14	6.2	6.5
16	65	12	45	19	14	9.7	107	74	26	16	6.1	6.6
17	122	12	38	77	13	8.7	67	63	53	14	7.8	6.4
18	66	33	35	319	13	8.4	52	58	35	12	6.8	6.2
19	41	19	32	180	13	10	43	46	29	11	6.1	6.1
20	29	16	30	105	12	11	37	44	26	11	5.9	5.9
21	28	14	28	80	12	13	32	45	24	10	5.8	5.7
22	26	16	26	60	11	10	29	42	28	15	5.9	5.5
23	24	17	24	53	11	8.7	29	36	25	10	5.6	5.7
24	21	62	24	41	10	8.0	35	32	20	9.0	5.5	5.8
25	20	119	23	35	9.9	7.8	30	28	21	8.7	5.4	6.0
26	17	77	23	32	9.8	24	26	25	19	8.2	5.4	6.1
27	16	65	21	33	9.5	128	23	22	23	8.0	5.2	6.1
28	15	48	21	29	10	93	23	21	20	7.9	5.3	5.9
29	15	35	26	26	---	83	33	20	19	7.7	12	11
30	18	59	27	25	---	51	40	19	17	7.6	26	126
31	14	---	25	24	---	39	---	19	---	7.4	8.4	---
TOTAL	728.0	941	1,389	1,377	439.2	642.0	1,179	1,045	790	443.5	224.1	329.2
MEAN	23.5	31.4	44.8	44.4	15.7	20.7	39.3	33.7	26.3	14.3	7.23	11.0
MAX	122	119	158	319	24	128	107	74	53	34	26	126
MIN	8.5	11	21	12	9.5	7.4	23	18	17	7.4	5.2	5.5
AC-FT	1,440	1,870	2,760	2,730	871	1,270	2,340	2,070	1,570	880	445	653

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2005, BY WATER YEAR (WY)

MEAN	13.9	43.7	50.0	54.9	53.8	43.8	39.1	30.7	23.2	14.2	9.07	9.57
MAX	29.8	124	96.2	162	145	76.7	69.3	57.5	55.1	35.5	16.3	29.5
(WY)	(1986)	(1991)	(1978)	(1984)	(1996)	(1997)	(1991)	(1984)	(1990)	(1983)	(1993)	(1978)
MIN	4.65	6.61	12.7	20.9	15.7	20.7	15.8	15.6	8.45	5.80	3.65	3.37
(WY)	(1990)	(2003)	(2003)	(2001)	(2005)	(2005)	(2004)	(1982)	(1982)	(2003)	(2003)	(1989)

12099600 BOISE CREEK AT BUCKLEY, WA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1977 - 2005	
ANNUAL TOTAL	10,493.2		9,527.0			
ANNUAL MEAN	28.7		26.1		31.9	
HIGHEST ANNUAL MEAN					50.4 1991	
LOWEST ANNUAL MEAN					21.3 2001	
HIGHEST DAILY MEAN	242	Jan 29	319	Jan 18	898	Feb 8, 1996
LOWEST DAILY MEAN	4.9	Aug 13	5.2	Aug 27	2.0	Sep 23, 1989
ANNUAL SEVEN-DAY MINIMUM	5.2	Aug 10	5.5	Aug 22	2.4	Sep 20, 1989
ANNUAL RUNOFF (AC-FT)	20,810		18,900		23,090	
10 PERCENT EXCEEDS	61		52		65	
50 PERCENT EXCEEDS	21		19		23	
90 PERCENT EXCEEDS	7.6		6.6		6.7	

PUYALLUP RIVER BASIN

12101000 LAKE TAPPS NEAR SUMNER, WA

LOCATION.--Lat 47°14'28", long 122°11'26", in NE¹/₄NE¹/₄ sec.8, T.20 N., R.5 E., Pierce County, Hydrologic Unit 17110014, 1.7 mi east of Dieringer, and 3.5 mi northeast of Sumner.

PERIOD OF RECORD.--November 1911 to current year. October 1934 to October 1950, change in contents published with records for Puyallup River at Puyallup. Monthend contents only November 1911 to September 1950, published in WSP 1316.

GAGE.--Water-stage recorder. Datum of gage is 0.7 ft above NGVD of 1929 (levels by Puget Sound Energy).

REMARKS.--Reservoir is formed by a diked natural lake into which a large part of the low-water flow of White River is diverted. Construction of dike began June 1910; storage began in 1911. Usable capacity (based on 1959 resurvey; capacity table dated July 28, 1959, put into use Oct. 1, 1958), 46,660 acre-ft between gage heights of 515 ft, normal minimum pool, and 543 ft, normal maximum pool. Storage below 515 ft unknown. Figures given herein represent usable contents. Reservoir was used for power development at the White River Powerplant at Dieringer until Jan. 15, 2004. U.S. Geological Survey satellite telemeter at station.

COOPERATION.--Prior to Oct. 1, 1990, and July 1996 to May 1997, gage-height record furnished by Puget Sound Energy. Contents curve furnished by Puget Sound Energy.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 51,710 acre-ft, June 30, 1958, gage height, 541.57 ft, capacity table dated Jan. 19, 1920; maximum gage height observed, 543.07 ft, July 8, 1990; minimum contents observed, not determined (below normal minimum pool) Jan. 23 to Apr. 16, 2003; minimum gage height, 498.91 ft, Mar. 14, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 46,126 acre-ft, Aug. 1, 2, gage height, 542.79 ft; minimum contents 10,206 acre-ft, Feb. 16, gage height, 524.47 ft.

MONTH-END GAGE HEIGHT AND CONTENTS AT 2400
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005

Date	Gage height (feet)	Contents (acre-feet)	Change in contents (acre-feet)
September 30	542.25	44,766	
October 31	539.74	38,699	-6,067
November 30	535.41	28,956	-9,743
December 31	530.23	18,972	-9,984
Calendar Year 2004	--	--	-20,669
January 31	526.25	12,711	-6,261
February 28	525.20	11,212	-1,499
March 31	530.86	20,061	+8,849
April 30	542.14	44,490	+24,429
May 31	542.06	44,288	-202
June 30	542.49	45,371	+1,083
July 31	542.76	46,051	+680
August 31	542.21	44,666	-1,385
September 30	542.00	44,137	-529
Water Year 2005	--	--	-629

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA

LOCATION.--Lat 47°14'18", long 122°13'37", in SW¹/₄NW¹/₄ sec.7, T.20 N., R.5 E., Pierce County, Hydrologic Unit 17110014, on right bank 850 ft downstream from White River Powerplant at Dieringer, and 1,400 ft upstream from mouth.

PERIOD OF RECORD.--April 1958 to January 2005, April to September 2005.

GAGE.--Water-stage recorder. Datum of gage is 42.36 ft above NGVD of 1929 (levels by Puget Sound Power and Light Co.). Prior to Sept. 30, 1990, at same site at datum 5.00 ft higher.

REMARKS.--Records good, except for estimated daily discharges, which are fair. Flow regulated by White River Powerplant. U.S. Geological Survey satellite telemeter at station. Station temporarily discontinued Jan. 4 to Apr. 28, 2005.

AVERAGE DISCHARGE.--46 years (water years 1959-2004), 922 ft³/s, 667,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,530 ft³/s, Jan. 29, 1965, gage height, 6.23 ft, datum then in use; maximum gage height, 12.44 ft, Dec. 1, 1995 (backwater from White River); no flow many days in July and August 1990, Sept. 29, 1993.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 229 ft³/s, Oct. 1-5, gage height, 6.66 ft, but may have been higher during a period of no record, Jan. 14 to April 28; minimum discharge, 1.0 ft³/s, Oct. 5, gage height, 5.61 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	229	208	171	201	---	---	---	156	157	162	31	39
2	228	209	187	201	---	---	---	156	158	162	31	39
3	229	208	206	201	---	---	---	156	157	163	31	39
4	228	208	206	---	---	---	---	156	157	163	32	39
5	78	208	206	---	---	---	---	156	158	163	33	39
6	42	208	205	---	---	---	---	156	158	165	37	39
7	68	208	207	---	---	---	---	156	158	164	38	39
8	70	208	207	---	---	---	---	155	158	165	38	39
9	70	208	207	---	---	---	---	155	158	165	38	39
10	69	208	208	---	---	---	---	156	161	165	39	39
11	119	208	207	---	---	---	---	156	162	165	39	39
12	159	208	206	---	---	---	---	156	162	165	39	40
13	159	208	204	---	---	---	---	156	162	165	39	39
14	159	208	205	---	---	---	---	156	162	165	39	39
15	159	208	204	---	---	---	---	156	162	162	39	39
16	191	208	203	---	---	---	---	156	162	165	38	39
17	215	208	202	---	---	---	---	156	163	165	38	39
18	215	208	201	---	---	---	---	156	162	165	38	39
19	213	208	201	---	---	---	---	156	162	165	39	39
20	211	208	201	---	---	---	---	156	162	165	39	39
21	211	208	201	---	---	---	---	156	e162	165	39	39
22	211	208	201	---	---	---	---	156	e162	165	39	39
23	209	208	201	---	---	---	---	156	162	165	39	39
24	208	208	201	---	---	---	---	156	e162	165	39	39
25	208	208	201	---	---	---	---	156	e162	165	39	39
26	208	208	201	---	---	---	---	156	162	127	39	39
27	208	208	201	---	---	---	---	156	162	75	39	39
28	208	207	201	---	---	---	---	156	162	40	39	39
29	208	207	201	---	---	---	156	156	162	32	39	41
30	208	208	201	---	---	---	156	156	162	32	39	39
31	208	---	201	---	---	---	---	156	---	32	39	---
TOTAL	5,406	6,239	6,255	---	---	---	---	4,834	4,821	4,447	1,164	1,173
MEAN	174	208	202	---	---	---	---	156	161	143	37.5	39.1
MAX	229	209	208	---	---	---	---	156	163	165	39	41
MIN	42	207	171	---	---	---	---	155	157	32	31	39
AC-FT	10,720	12,380	12,410	---	---	---	---	9,590	9,560	8,820	2,310	2,330

e Estimated

12101500 PUYALLUP RIVER AT PUYALLUP, WA

LOCATION.--Lat 47°12'31", long 122°19'33", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.20, T.20 N., R.4 E., Pierce County, Hydrologic Unit 17110014, on left bank 0.8 mi upstream from bridge at Clark Creek, 2.0 mi northwest of Puyallup City Hall, and at mile 6.6.

DRAINAGE AREA.--948 mi².

PERIOD OF RECORD.--May 1914 to current year.

REVISED RECORDS.--WSP 832: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. Prior to Dec. 3, 1919, at sites 1.2 mi upstream and 900 ft upstream at different datums. Dec. 3, 1919, to Nov. 9, 1935, at site 500 ft upstream at datum 9.61 ft higher.

REMARKS.--Records good. All diverted water returned to river upstream from gage. Large part of flow of White River (a tributary) diverted through Lake Tapps (station 12101000). Flood flow regulated by Mud Mountain Lake (station 12098000) on White River. Some pondage on tributaries and upper Puyallup River. Diurnal fluctuations caused by powerplants and glacial melt upstream from station. U.S. Geological Survey satellite telemeter at station. Chemical analyses October 1958 to September 1968, October 1970 to September 1972, October 1974 to September 1994. Water temperatures July 1959 to September 1961, August 1965 to September 1966. Since 1912 the City of Tacoma pipeline diversion from Green River has released as much as 123 ft³/s daily, and from 1957-90 an average of about 15 ft³/s per month into Puyallup River 0.5 mi east of McMillin. Since 1990 releases have been minimal.

AVERAGE DISCHARGE.--91 years (water years 1915-2005), 3,313 ft³/s, 2,400,000 acre-ft/yr, adjusted for storage in Lake Tapps since October 1934, and Mud Mountain Lake, October 1944 to September 1947.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 57,000 ft³/s, Dec. 10, 1933, elevation, 31.0 ft, present datum; minimum discharge, 306 ft³/s, Sept. 25, 1955, elevation, 8.23 ft; minimum daily discharge, 400 ft³/s, Nov. 30, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 29,600 ft³/s, Jan. 18, gage height, 24.98 ft; minimum discharge, 709 ft³/s, Sept. 25, gage height, 9.21 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,760	1,710	3,080	2,310	3,030	1,600	2,990	3,650	3,520	2,400	1,870	1,300
2	1,790	4,210	2,700	2,180	2,920	1,560	3,290	3,460	3,420	2,330	1,660	1,410
3	1,680	5,070	2,490	2,030	2,820	1,540	3,010	3,630	3,150	2,100	1,610	1,370
4	1,660	3,860	2,410	1,930	2,880	1,470	2,840	3,410	2,890	2,020	1,650	1,200
5	1,510	3,220	2,440	1,820	2,970	1,510	2,530	3,450	2,720	2,040	1,750	1,110
6	1,900	2,830	2,300	1,750	2,620	1,490	2,380	3,290	2,630	2,530	1,830	1,070
7	1,860	2,570	2,290	1,820	2,570	1,490	2,580	3,180	2,690	2,680	1,850	1,150
8	1,930	2,350	2,760	1,800	2,290	1,510	3,090	2,920	2,740	2,530	1,840	1,210
9	3,120	2,160	3,180	1,730	2,180	1,490	2,640	2,950	2,520	3,810	1,830	1,310
10	2,490	2,030	5,560	1,680	2,100	1,500	2,370	4,880	2,350	2,960	1,820	1,290
11	1,980	1,910	10,100	1,610	2,060	1,490	2,620	4,730	2,500	2,550	1,710	1,250
12	1,860	1,810	8,000	1,620	2,050	1,490	2,620	4,270	3,040	2,450	1,650	1,040
13	1,940	1,750	5,570	1,660	2,150	1,460	2,310	3,890	2,910	2,320	1,760	979
14	1,880	1,690	4,900	1,560	2,010	1,410	2,220	3,890	2,720	2,190	1,770	947
15	1,810	1,740	4,490	1,490	1,870	1,390	2,230	4,260	2,680	2,250	1,820	969
16	2,550	1,830	3,900	1,920	1,820	1,430	4,100	5,600	2,470	2,370	1,800	946
17	5,190	1,730	3,600	2,850	1,720	1,570	4,580	5,190	3,570	2,260	1,930	895
18	4,760	2,240	3,430	22,100	1,660	1,490	3,620	4,720	3,450	2,260	1,960	867
19	3,930	2,220	3,400	13,400	1,640	1,440	3,170	4,740	3,210	2,290	1,650	865
20	3,290	1,870	3,300	8,230	1,600	1,680	3,040	4,380	3,040	2,170	1,620	876
21	2,880	1,730	3,070	7,760	1,560	1,820	2,900	4,160	2,920	2,120	1,700	859
22	2,760	1,730	2,980	6,580	1,530	1,640	2,920	3,950	3,000	2,440	1,880	851
23	2,990	1,820	2,830	6,150	1,510	1,530	3,120	3,870	3,130	2,630	1,620	786
24	2,590	3,850	2,730	5,350	1,500	1,480	4,010	3,520	2,680	2,200	1,380	759
25	2,320	6,680	2,700	4,880	1,490	1,430	4,490	3,250	2,530	1,920	1,390	743
26	2,140	5,770	2,690	4,610	1,480	1,680	4,440	3,080	2,460	1,860	1,420	770
27	1,970	4,260	2,540	3,980	1,460	5,840	4,300	3,070	2,560	1,880	1,500	814
28	1,840	3,560	2,400	3,680	1,490	5,650	4,300	3,130	2,610	1,930	1,540	825
29	1,790	2,880	2,480	3,460	---	4,310	4,110	3,280	2,530	1,880	1,600	1,020
30	1,880	2,940	2,610	3,310	---	3,470	4,030	3,380	2,520	1,870	1,430	8,910
31	1,870	---	2,430	3,230	---	2,840	---	3,320	---	1,840	1,290	---
TOTAL	73,920	84,020	109,360	128,480	56,980	61,700	96,850	118,500	85,160	71,020	52,130	38,391
MEAN	2,385	2,801	3,528	4,145	2,035	1,990	3,228	3,823	2,839	2,291	1,682	1,280
MAX	5,190	6,680	10,100	22,100	3,030	5,840	4,580	5,600	3,570	3,810	1,960	8,910
MIN	1,510	1,690	2,290	1,490	1,460	1,390	2,220	2,920	2,350	1,840	1,290	743
AC-FT	146,600	166,700	216,900	254,800	113,000	122,400	192,100	235,000	168,900	140,900	103,400	76,150
MEAN†	2,285	2,639	3,364	4,041	2,008	2,133	3,639	3,818	2,858	2,302	1,659	1,271
CFSM†	2.41	2.78	3.55	4.26	2.12	2.25	3.84	4.03	3.01	2.43	1.75	1.34
IN.†	2.78	3.10	4.09	4.92	2.20	2.59	4.28	4.64	3.36	2.80	2.02	1.50
AC-FT†	140,500	157,000	206,900	248,500	111,500	131,200	216,500	234,800	170,000	141,600	102,000	75,620

CAL YR 2004 TOTAL 1,128,360 MEAN 3,083 MAX 12,500 MIN 1,510 AC-FT 2,238,000 MEAN† 3,055 CFSM† 3.22 IN.† 43.85
AC-FT† 2,217,000

WTR YR 2005 TOTAL 976,511 MEAN 2,675 MAX 22,100 MIN 743 AC-FT 1,937,000 MEAN† 2,674 CFSM† 2.82 IN.† 38.29
AC-FT† 1,936,000

† Adjusted for change in contents in Lake Tapps.

12102075 CLARKS CREEK AT TACOMA ROAD, NEAR PUYALLUP, WA

LOCATION.--Lat 47°11'52", long 122°20'10", in NE¼NE¼ sec.30, T.20 N., R.4 E., Pierce County, Hydrologic Unit 17110014, at private bridge at end of Tacoma Road, 1.0 mi northwest of Puyallup, and at mile 1.5.

DRAINAGE AREA.--13.0 mi².

PERIOD OF RECORD.--October 1992 to February 1995 (discharge measurements only). March 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929.

REMARKS.--Records fair except estimated daily discharges, which are poor.

AVERAGE DISCHARGE.--10 years (water year 1996-2005), 58.5 ft³/s, 61.09 in/yr, 42,350 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 190 ft³/s, Nov. 14, 2001, elevation 23.13 ft, but was likely exceeded Feb. 8 or 9, 1996; maximum elevation, 25.60 ft, Feb. 8 or 9, 1996, from inside high-water mark, affected by backwater from the Puyallup River; minimum daily discharge, 33 ft³/s, June 26-29, 1995, July 14, 19, 21, 23, 2004; July 4, 2005.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 165 ft³/s, Jan. 18, gage height, 22.30 ft; minimum discharge, 32 ft³/s, Sept. 2, 7.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	50	55	53	48	47	60	41	37	34	37	35
2	45	78	52	51	48	48	51	41	37	34	38	34
3	45	54	52	50	48	47	52	40	35	34	37	35
4	44	50	53	50	49	46	49	39	34	33	37	35
5	46	49	55	48	47	46	48	39	35	34	36	36
6	49	50	55	50	52	46	48	39	34	41	38	34
7	45	50	62	52	50	46	51	38	35	35	38	35
8	66	49	64	51	47	46	48	38	36	40	38	35
9	57	50	68	50	46	47	47	40	35	38	38	35
10	47	50	66	49	47	47	47	46	35	37	39	43
11	46	49	67	48	47	47	58	37	38	37	39	36
12	47	50	55	48	47	47	49	37	36	37	40	35
13	48	50	56	48	47	46	46	37	36	37	41	35
14	48	50	67	47	46	47	45	37	35	38	39	35
15	48	54	56	49	46	47	47	41	37	38	39	35
16	52	51	54	53	47	52	84	39	45	39	41	37
17	79	51	52	88	46	47	55	37	48	39	43	36
18	55	63	53	140	46	47	47	45	39	39	44	36
19	57	52	52	76	46	50	45	45	37	40	42	35
20	51	51	51	59	46	50	44	46	37	40	41	36
21	50	51	51	54	46	49	43	41	38	41	42	36
22	50	50	52	56	45	48	43	41	41	48	41	36
23	49	51	51	54	45	47	43	37	39	43	38	37
24	49	56	51	51	46	47	43	36	38	42	36	37
25	50	64	55	49	46	48	42	36	37	41	36	36
26	50	53	53	50	46	68	41	35	37	41	36	37
27	49	52	51	49	46	90	41	34	39	41	36	38
28	49	50	51	49	47	61	41	34	35	40	36	38
29	49	52	55	48	---	66	51	35	34	38	36	42
30	50	56	53	48	---	52	45	35	34	39	37	50
31	49	---	51	48	---	49	---	35	---	38	35	---
TOTAL	1,565	1,586	1,719	1,716	1,313	1,571	1,454	1,201	1,113	1,196	1,194	1,100
MEAN	50.5	52.9	55.5	55.4	46.9	50.7	48.5	38.7	37.1	38.6	38.5	36.7
MAX	79	78	68	140	52	90	84	46	48	48	44	50
MIN	44	49	51	47	45	46	41	34	34	33	35	34
AC-FT	3,100	3,150	3,410	3,400	2,600	3,120	2,880	2,380	2,210	2,370	2,370	2,180
CFSM	3.88	4.07	4.27	4.26	3.61	3.90	3.73	2.98	2.85	2.97	2.96	2.82
IN.	4.48	4.54	4.92	4.91	3.76	4.50	4.16	3.44	3.18	3.42	3.42	3.15

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1995 - 2005, BY WATER YEAR (WY)

MEAN	57.0	64.5	66.4	64.8	61.8	59.0	58.5	54.4	51.0	50.3	52.9	52.6
MAX	68.0	75.9	84.3	83.3	88.8	87.6	82.3	77.6	67.9	66.2	66.3	64.6
(WY)	(1998)	(1999)	(1997)	(1997)	(1996)	(1997)	(1997)	(1997)	(1998)	(1999)	(1997)	(1997)
MIN	46.9	51.8	48.9	55.4	46.9	42.3	42.9	38.7	37.1	35.1	38.5	36.7
(WY)	(1996)	(2004)	(2004)	(2005)	(2005)	(1995)	(2004)	(2005)	(2005)	(2004)	(2005)	(2005)

PUYALLUP RIVER BASIN

12102075 CLARKS CREEK AT TACOMA ROAD, NEAR PUYALLUP, WA—Continued

SUMMARY STATISTICS	FOR 2004 CALENDAR YEAR		FOR 2005 WATER YEAR		WATER YEARS 1995 - 2005	
ANNUAL TOTAL	16,894		16,728			
ANNUAL MEAN	46.2		45.8		58.5	
HIGHEST ANNUAL MEAN					73.8	
LOWEST ANNUAL MEAN					45.8	
HIGHEST DAILY MEAN	97	Jan 29	140	Jan 18	190	Feb 9, 1996
LOWEST DAILY MEAN	33	Jul 14	33	Jul 4	33	Jun 26, 1995
ANNUAL SEVEN-DAY MINIMUM	34	Jul 19	34	Jun 29	34	Jul 19, 2004
ANNUAL RUNOFF (AC-FT)	33,510		33,180		42,350	
ANNUAL RUNOFF (CFSM)	3.55		3.53		4.50	
ANNUAL RUNOFF (INCHES)	48.34		47.87		61.09	
10 PERCENT EXCEEDS	55		55		74	
50 PERCENT EXCEEDS	44		46		57	
90 PERCENT EXCEEDS	38		35		43	

12102190 SWAN CREEK AT 80TH STREET EAST, NEAR TACOMA, WA

LOCATION.--Lat 47°11'05", long 122°23'33", in SE¹/₄SW¹/₄ sec.26, T.20 N., R.3 E., Pierce County, Hydrologic Unit 17110014, on right bank, downstream from 80th Street East crossing, 5.1 mi south-southeast of Tacoma.

DRAINAGE AREA.--2.35 mi².

PERIOD OF RECORD.--October 1989 to September 1991, October 1994 to September 1997, October 1997 to current year (seasonal records).

REVISED RECORDS.--WDR WA-97-1: 1996 (M).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 395 ft above NGVD of 1929, from topographic map. Prior to November 1994, at datum 5.00 ft higher.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--5 years (water years 1990-91, 1995-97), 4.78 ft³/s, 27.66 in/yr, 3,470 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, not determined but occurred Feb. 8, 1996, elevation, 10.85 ft, from outside high-water mark; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 105 ft³/s, Jan. 18, gage height, 8.40 ft; minimum discharge, no flow on many days.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR
1	0.00	1.1	3.3	2.5	2.6	0.84	13
2	0.00	10	2.1	2.0	2.4	1.1	9.3
3	0.00	5.2	1.5	1.5	2.2	1.8	8.1
4	0.00	2.3	1.8	1.0	2.4	1.5	7.0
5	0.00	1.4	3.3	0.84	2.6	1.2	4.6
6	e0.16	0.98	3.4	0.67	3.4	1.0	3.7
7	0.11	0.72	5.2	1.9	5.3	0.94	4.2
8	e2.0	0.58	7.7	2.5	3.4	0.79	5.2
9	5.2	0.44	9.6	2.2	2.6	0.64	3.3
10	2.5	0.36	14	1.7	2.3	0.58	2.3
11	1.1	0.31	15	1.3	2.2	0.53	13
12	0.48	0.19	5.7	1.1	2.1	0.51	10
13	0.22	0.16	4.6	0.83	2.1	0.42	5.6
14	0.13	0.11	7.1	0.68	1.9	0.37	3.7
15	0.08	0.71	5.4	0.66	1.6	0.32	4.0
16	0.26	1.1	3.5	3.2	1.5	0.82	45
17	10	0.87	2.6	29	1.4	2.0	18
18	6.7	2.9	2.1	75	1.4	1.6	9.2
19	6.0	2.1	1.8	19	1.3	1.5	5.7
20	4.7	1.3	1.4	9.8	1.3	2.0	3.9
21	3.0	0.97	1.2	7.6	1.1	2.0	2.8
22	2.4	0.76	1.0	8.0	0.94	1.6	2.4
23	2.0	0.69	0.91	9.5	0.87	1.3	2.1
24	1.6	1.4	0.87	6.6	0.87	1.0	3.5
25	1.3	6.0	1.5	5.1	0.87	0.67	3.4
26	1.2	2.8	2.8	4.5	0.83	9.8	2.4
27	1.1	1.8	1.9	4.1	0.75	39	1.9
28	0.82	1.3	1.3	3.7	0.73	19	1.5
29	0.57	1.0	1.9	3.3	---	20	7.5
30	0.87	2.3	2.6	3.0	---	10	12
31	1.1	---	1.9	2.9	---	6.7	---
TOTAL	55.60	51.85	118.98	215.68	52.96	131.53	218.3
MEAN	1.79	1.73	3.84	6.96	1.89	4.24	7.28
MAX	10	10	15	75	5.3	39	45
MIN	0.00	0.11	0.87	0.66	0.73	0.32	1.5
AC-FT	110	103	236	428	105	261	433
CFSM	0.76	0.74	1.63	2.96	0.80	1.81	3.10
IN.	0.88	0.82	1.88	3.41	0.84	2.08	3.46

e Estimated