

Figure 28. Location of surface-water and water-quality stations in the Duwamish River Basin.

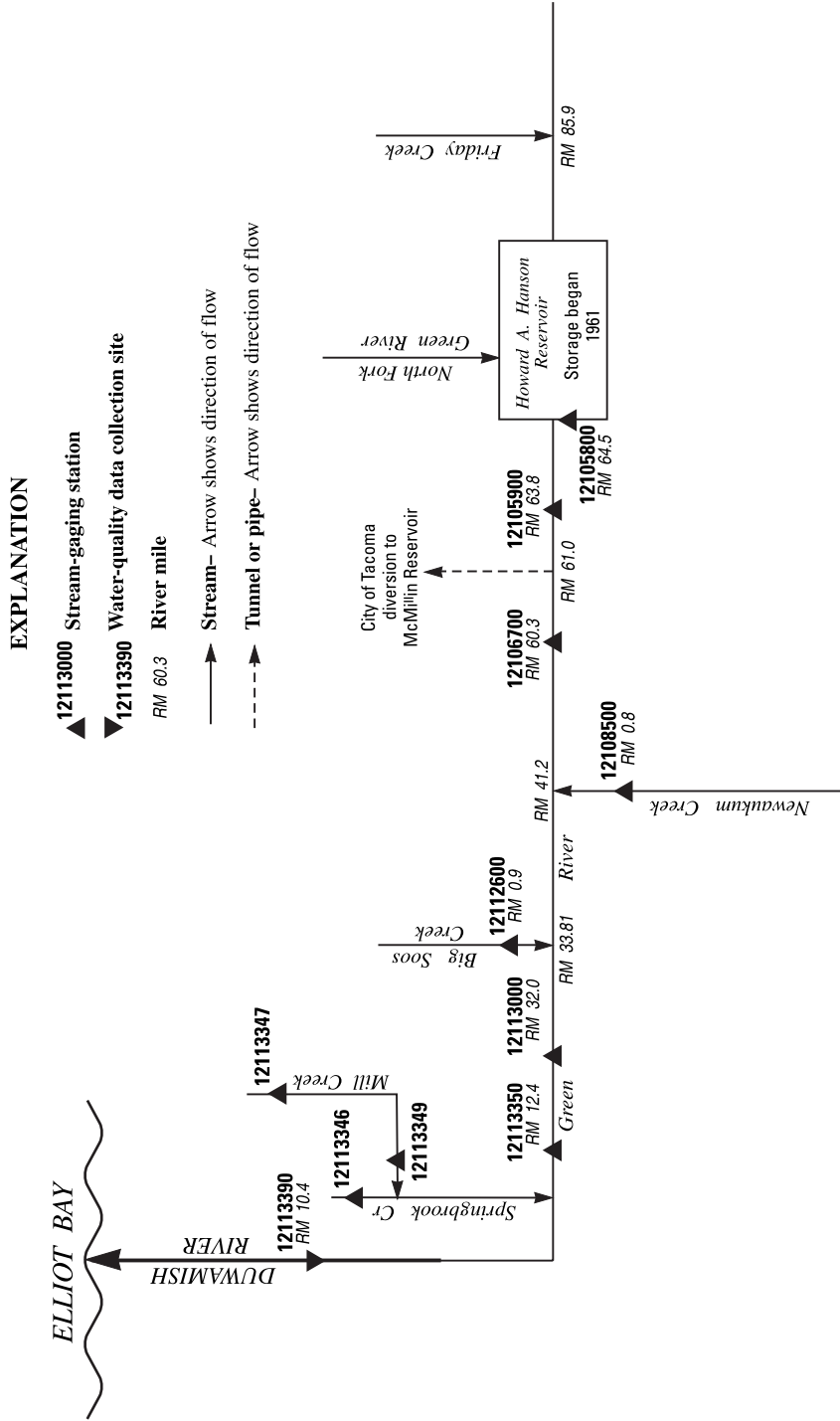


Figure 29. Schematic diagram showing surface-water and water-quality stations in the Duwamish River Basin.

12105800 HOWARD A. HANSON RESERVOIR NEAR PALMER, WA

LOCATION.--Lat 47°16'38", long 121°47'03", in NE ¼ SE ¼ sec.28, T.21 N., R.8 E., King County, Hydrologic Unit 17110013, near left bank on outlet gate structure, just upstream from Howard A. Hanson Dam on Green River, 1.4 mi upstream from Bear Creek, 5.1 mi southeast of Palmer, and at mile 64.5.

DRAINAGE AREA.--220 mi², approximately.

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

REVISED RECORDS.--WDR WA-96-1: 1985-1995 maximum and minimum contents.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929, supplementary adjustment of 1947.

REMARKS.--Reservoir is formed by earth-fill dam; completed Mar. 31, 1962; storage began Dec. 5, 1961. Capacity, 105,463 acre-ft between elevations 1,035 ft, invert of outlet tunnel, and 1,206 ft, top of spillway gates. Retained during initial flood conditions, storage is released as soon as possible after a flood to attenuate flows downstream and to maintain reservoir capacity for possible future floods. Storage is used during summer months to augment the natural river flow.

COOPERATION.--Elevations and capacity table furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 68,811 acre-ft Feb. 10, 1996, elevation, 1,182.0 ft; minimum contents observed, 34 acre-ft Nov. 2, 1962, elevation, 1,037.6 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 30,800 acre-ft May 28 to June 1, elevation, 1,147.6 ft; minimum contents 439 acre-ft Jan. 29, elevation, 1,060.0 ft.

CAPACITY TABLE
(Based on conic method by Corps of Engineers in 1984)

Elevation (feet)	Contents (acre-feet)	Elevation (feet)	Contents (acre-feet)	Elevation (feet)	Contents (acre-feet)
1,045	13	1,080	2,422	1,140	24,622
1,050	64	1,090	4,081	1,150	32,982
1,055	201	1,100	6,313	1,160	42,804
1,060	439	1,110	9,271	1,170	53,902
1,065	777	1,120	13,140	1,180	66,186
1,070	1,220	1,130	18,126	1,190	79,912

RESERVOIR STORAGE, ACRE FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY OBSERVATION AT 0800 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14,100	4,730	2,460	2,380	17,900	3,480	17,800	25,300	30,800	27,700	23,000	15,000
2	13,600	4,600	2,450	2,490	17,400	3,760	17,600	25,600	30,600	27,600	22,800	14,800
3	13,300	4,460	2,440	2,390	12,700	4,020	18,000	25,700	30,600	27,400	22,500	14,500
4	12,900	4,320	2,420	2,410	8,110	4,320	18,200	25,800	30,600	27,300	22,300	14,200
5	12,500	4,180	2,440	4,080	5,720	4,600	18,200	25,800	30,700	27,300	22,100	14,000
6	12,000	4,040	2,420	4,520	4,220	5,160	18,400	25,800	30,700	27,200	21,900	13,700
7	11,700	3,930	2,410	4,080	3,090	5,860	18,400	26,000	30,700	27,100	21,600	13,500
8	11,200	3,800	2,410	3,480	3,250	6,340	18,800	26,300	30,700	27,000	21,300	13,200
9	10,700	3,640	2,350	2,990	3,320	6,730	19,200	26,500	30,500	26,900	21,100	13,100
10	10,300	3,490	2,340	2,760	3,190	8,710	19,800	26,600	30,400	26,800	20,800	12,900
11	9,970	3,360	2,340	2,760	2,930	9,580	20,000	26,800	30,200	26,700	20,600	12,700
12	9,650	3,220	2,810	2,900	2,960	11,200	20,000	27,000	30,000	26,600	20,400	12,800
13	9,310	3,190	2,710	3,440	2,950	10,500	20,300	27,300	29,900	26,500	20,100	12,900
14	8,970	3,220	2,590	3,250	2,930	9,860	21,000	27,700	29,900	26,500	19,900	12,800
15	8,610	3,220	2,440	2,200	2,840	10,400	21,000	28,100	29,900	26,300	19,600	12,600
16	8,260	3,150	2,310	1,570	2,700	10,700	20,600	28,400	29,800	26,200	19,300	12,500
17	7,930	3,070	2,510	1,340	2,560	10,900	20,700	28,800	29,600	26,100	19,100	12,500
18	7,600	3,010	2,560	1,570	2,410	11,700	21,100	28,900	29,500	25,900	18,800	12,500
19	7,250	3,120	2,540	1,720	2,150	12,500	21,500	28,900	29,400	25,800	18,500	12,400
20	6,980	3,550	2,510	1,790	2,170	12,900	21,700	28,900	29,400	25,600	18,200	12,400
21	6,680	3,190	2,610	1,820	3,040	13,700	21,900	28,900	29,200	25,500	18,000	12,300
22	6,470	2,810	2,680	1,770	5,210	13,800	22,200	29,000	29,100	25,200	17,700	12,200
23	6,240	2,710	2,680	1,700	5,010	15,500	22,500	29,200	29,000	25,100	17,400	12,000
24	6,010	2,590	2,670	1,700	3,010	16,300	23,000	29,400	28,800	24,800	17,100	11,800
25	5,790	2,410	2,670	1,580	3,200	16,200	23,500	29,900	28,700	24,600	16,800	11,500
26	5,620	2,390	2,670	2,700	3,150	16,200	23,900	30,500	28,500	24,400	16,600	11,100
27	5,440	2,410	2,670	6,730	3,150	16,300	24,100	30,700	28,400	24,200	16,300	10,800
28	5,300	2,440	2,640	3,190	3,140	16,400	24,300	30,800	28,300	24,000	16,000	10,400
29	5,160	2,460	2,580	439	---	16,700	24,500	30,800	28,000	23,700	15,800	10,100
30	5,010	2,460	2,490	2,080	---	16,800	24,900	30,800	27,800	23,500	15,500	9,720
31	4,860	---	2,490	4,240	---	17,400	---	30,800	---	23,200	15,300	---
MEAN	8,691	3,306	2,526	2,647	4,800	10,920	20,903	28,097	29,657	25,894	19,239	12,564
MAX	14,100	4,730	2,810	6,730	17,900	17,400	24,900	30,800	30,800	27,700	23,000	15,000
MIN	4,860	2,390	2,310	439	2,150	3,480	17,600	25,300	27,800	23,200	15,300	9,720
††	1,093.4	1,080.3	1,080.0	1,125.0	1,085.8	1,129.3	1,140.7	1,147.6	1,143.9	1,137.9	1,124.3	1,110.6
†	4,770	2,464	2,422	15,482	3,321	17,737	25,147	30,832	27,674	23,103	15,137	9,476
‡	-9,458	-2,306	-42	+13,060	-12,161	+14,416	+7,410	+5,685	-3,158	-4,571	-7,966	-5,661
CAL YR	2002	MEAN 20,202	MAX 51,200	MIN 1,440	AC-FT‡ +167							
WTR YR	2003	MEAN 14,153	MAX 30,800	MIN 439	AC-FT‡ -4,752							

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

† Monthend contents, in acre-feet.

‡ Change in Contents, in acre-feet.

12105900 GREEN RIVER BELOW HOWARD A. HANSON RESERVOIR, WA

LOCATION.--Lat 47°17'02", long 121°47'48", in NE ¼ NW ¼ sec.28, T.21 N., R.8 E., King County, Hydrologic Unit 17110013, on right bank 0.7 mi upstream from Bear Creek, 0.7 mi downstream from Howard A. Hanson Dam, 5.0 mi southeast of Palmer, and at mile 63.8.

DRAINAGE AREA.--221 mi².

PERIOD OF RECORD.--October 1960 (monthly discharge only), November 1960 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 990 ft above NGVD of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Howard A. Hanson Reservoir (station 12105800) for flood control and during summer months to augment the natural river flow.

AVERAGE DISCHARGE.--43 years (water years 1961-2003), 995 ft³/s, 61.14 in/yr, 720,900 acre-ft/yr, adjusted for storage in Howard A. Hanson Reservoir since December 1961.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,200 ft³/s Feb. 21, 1961, gage height, 14.40 ft; minimum discharge, 87 ft³/s Dec. 29, 1961, gage height, 3.49 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,970 ft³/s Jan. 31, gage height, 12.09 ft; minimum discharge, 155 ft³/s Dec. 10, 11, gage height, 3.85 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	366	191	173	374	6,030	691	2,260	856	759	275	251	234
2	364	189	173	640	5,930	703	1,790	953	682	258	251	236
3	371	189	165	788	5,420	661	1,360	1,100	556	252	251	239
4	381	188	159	751	3,980	580	1,260	1,100	536	241	246	239
5	380	187	159	1,040	2,710	589	1,080	1,040	499	242	239	239
6	378	186	158	1,240	2,230	603	1,080	894	488	241	246	238
7	382	185	157	1,160	1,430	659	1,050	774	464	241	250	237
8	389	204	157	982	1,040	701	993	712	461	241	249	227
9	355	216	157	774	1,050	718	963	702	455	241	249	216
10	317	214	157	582	1,040	1,330	1,050	683	464	238	248	209
11	303	212	190	516	902	2,070	1,200	683	480	232	242	207
12	296	212	430	526	798	3,750	1,200	683	435	232	243	202
13	294	211	597	730	753	4,450	1,200	712	353	232	248	202
14	306	211	590	1,120	748	3,140	1,470	726	333	231	248	202
15	301	211	583	1,090	742	2,450	1,660	745	333	231	253	208
16	284	211	556	805	737	2,200	1,460	756	342	231	256	211
17	282	210	529	499	728	1,690	1,210	724	339	230	256	201
18	279	198	495	427	717	1,270	1,070	724	319	233	255	198
19	279	446	421	433	626	1,150	1,010	723	311	240	254	206
20	277	731	335	436	658	1,070	1,010	692	326	239	253	211
21	252	632	291	513	2,050	1,420	982	662	363	239	260	211
22	236	431	292	742	3,390	2,200	921	685	363	242	263	225
23	234	319	292	878	3,300	2,240	924	739	362	246	262	228
24	233	315	272	1,090	2,050	2,220	928	806	362	246	261	258
25	214	255	260	1,190	1,400	2,050	952	805	338	249	261	286
26	204	194	260	2,570	1,240	1,880	992	805	315	253	254	286
27	203	181	274	4,740	1,060	1,790	993	807	322	253	249	287
28	202	175	296	4,380	877	1,510	954	851	335	249	240	287
29	202	174	295	2,470	---	1,390	852	885	335	246	228	285
30	201	175	294	4,250	---	1,390	823	820	317	249	234	284
31	197	---	328	6,010	---	1,910	---	761	---	252	234	---
TOTAL	8,962	7,653	9,495	43,746	53,636	50,475	34,697	24,608	12,347	7,525	7,734	6,999
MEAN	289	255	306	1,411	1,916	1,628	1,157	794	412	243	249	233
MAX	389	731	597	6,010	6,030	4,450	2,260	1,100	759	275	263	287
MIN	197	174	157	374	626	580	823	662	311	230	228	198
AC-FT	17,780	15,180	18,830	86,770	106,400	100,100	68,820	48,810	24,490	14,930	15,340	13,880
MEAN†	135	216	316	1,623	1,697	1,862	1,281	886	359	168	120	138
CFSM†	0.61	0.98	1.38	7.34	7.68	8.43	5.80	4.01	1.62	0.76	0.54	0.62
IN.†	0.71	1.09	1.59	8.47	8.00	9.71	6.47	4.62	1.81	0.88	0.63	0.70
AC-FT†	8,320	12,870	18,790	99,830	94,240	114,500	76,230	54,500	21,330	10,360	7,370	8,220
CAL YR	2002	TOTAL 324,501	MEAN 889	MAX 5,590	MIN 157	AC-FT 643,600	MEAN† 889	CFSM† 4.02	IN.† 54.62	AC-FT† 643,800		
WTR YR	2003	TOTAL 267,877	MEAN 734	MAX 6,030	MIN 157	AC-FT 531,300	MEAN† 727	CFSM† 3.29	IN.† 44.67	AC-FT† 526,500		

† Adjusted for change in contents in Howard A. Hanson Reservoir.

12106700 GREEN RIVER AT PURIFICATION PLANT, NEAR PALMER, WA

LOCATION.--Lat 47°18'19", long 121°50'58", in NE 1/4 SE 1/4 sec.13, T.21 N., R.7 E., King County, Hydrologic Unit 17110013, on left bank at City of Tacoma purification plant, 0.7 mi downstream from diversion dam, 2 mi southeast of Palmer, and at mile 60.3.

DRAINAGE AREA.--231 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 859.53 ft above NGVD of 1929. Prior to Oct. 1, 1987, water-stage recorder at site 0.1 mi upstream at same datum.

REMARKS.--No estimated daily discharges. Records good except for period Aug. 18 to Sept. 24, which are fair. Since Dec. 5, 1961, flow regulated by Howard A. Hanson Reservoir (station 12105800), 4.1 mi upstream for flood control and during summer months to augment the natural river flow. City of Tacoma diverted an average daily discharge of about 57 ft³/s upstream from station for municipal supply, of which a small amount is returned to the river 300 ft upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--40 years (water years 1964-2003), 951 ft³/s, 689,100 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,500 ft³/s Feb. 12, 1981, gage height, 12.05 ft, at site then in use; minimum discharge, 20 ft³/s part or all of each day Oct. 26, 27, Nov. 3, 4, 6, 1974, gage height, 3.90 ft, at site then in use.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 23, 1959, had a discharge of 27,800 ft³/s, on basis of slope-area measurement at site 0.5 mi downstream from present gage.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,990 ft³/s Jan. 31, gage height, 10.10 ft; minimum discharge, 93 ft³/s Dec. 9.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	249	116	108	331	5,910	644	2,330	905	783	172	139	114
2	247	116	108	623	5,740	661	1,880	996	713	153	138	117
3	275	114	102	816	5,300	630	1,450	1,160	553	148	137	125
4	286	114	97	813	3,960	535	1,350	1,160	545	138	134	125
5	281	114	96	1,120	2,760	553	1,170	1,100	502	138	127	124
6	276	113	96	1,250	2,260	577	1,180	948	473	138	135	123
7	279	112	96	1,130	1,510	636	1,160	817	441	137	143	124
8	286	129	95	929	1,090	676	1,110	743	440	137	143	116
9	260	146	95	726	1,070	905	1,100	733	430	134	143	107
10	221	145	96	537	1,020	1,520	1,150	712	437	130	143	108
11	206	141	145	461	874	2,150	1,290	712	454	123	138	126
12	195	147	402	495	779	3,750	1,290	713	415	124	137	113
13	195	145	615	677	691	4,450	1,300	733	332	126	142	100
14	211	145	593	1,050	691	3,200	1,520	751	310	124	144	98
15	216	141	569	1,040	682	2,480	1,700	772	309	123	190	102
16	195	141	541	796	679	2,200	1,530	787	316	123	160	121
17	193	140	501	486	692	1,700	1,300	750	310	122	158	120
18	191	131	473	376	700	1,270	1,180	749	293	124	144	115
19	192	399	392	379	630	1,140	1,100	746	304	129	131	134
20	189	701	268	379	665	1,070	1,100	723	318	128	141	135
21	167	605	214	461	2,150	1,380	1,060	683	259	128	147	131
22	150	410	212	730	3,520	2,270	991	710	259	130	151	181
23	147	275	210	866	3,350	2,290	990	760	263	134	151	228
24	146	258	193	1,060	2,140	2,210	1,010	835	261	134	150	226
25	129	184	177	1,150	1,420	2,030	1,030	835	236	136	149	220
26	119	119	180	2,620	1,230	1,850	1,070	831	209	140	145	220
27	120	115	192	4,620	1,040	1,780	1,060	834	216	139	138	223
28	120	110	217	4,320	863	1,520	1,020	877	230	137	128	220
29	120	109	216	2,500	---	1,390	903	918	231	134	110	219
30	115	110	225	4,080	---	1,380	872	845	216	136	118	217
31	119	---	267	6,100	---	1,960	---	784	---	140	115	---
TOTAL	6,095	5,745	7,791	42,921	53,416	50,807	37,196	25,622	11,058	4,159	4,369	4,432
MEAN	197	192	251	1,385	1,908	1,639	1,240	827	369	134	141	148
MAX	286	701	615	6,100	5,910	4,450	2,330	1,160	783	172	190	228
MIN	115	109	95	331	630	535	872	683	209	122	110	98
AC-FT	12,090	11,400	15,450	85,130	106,000	100,800	73,780	50,820	21,930	8,250	8,670	8,790

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2003, BY WATER YEAR (WY)

MEAN	466	1,242	1,539	1,593	1,467	1,167	1,323	1,249	697	320	161	227
MAX	1,198	4,074	4,591	3,225	3,481	3,801	2,376	2,605	2,514	809	306	757
(WY)	(1996)	(1991)	(1976)	(1984)	(1982)	(1972)	(1985)	(1972)	(1974)	(1972)	(1974)	(1968)
MIN	66.2	82.7	251	399	367	432	286	381	129	118	98.6	109
(WY)	(1975)	(1988)	(2003)	(1979)	(1969)	(1981)	(1992)	(1994)	(1987)	(1965)	(1969)	(1979)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1963 - 2003

ANNUAL TOTAL	305,331	253,611	
ANNUAL MEAN	837	695	
HIGHEST ANNUAL MEAN			951
LOWEST ANNUAL MEAN			1,562
HIGHEST DAILY MEAN	5,400	Jan 8	6,100
LOWEST DAILY MEAN	95	Dec 8	95
ANNUAL SEVEN-DAY MINIMUM	96	Dec 4	96
ANNUAL RUNOFF (AC-FT)	605,600		503,000
10 PERCENT EXCEEDS	1,840		1,520
50 PERCENT EXCEEDS	652		293
90 PERCENT EXCEEDS	119		119
			792
			2,001
			10,900
			20
			22
			689,100
			2,060
			610
			133

12108500 NEWAUKUM CREEK NEAR BLACK DIAMOND, WA

LOCATION.--Lat 47°16'33", long 122°03'30", in NW ¼ SW ¼ sec.28, T.21 N., R.6 E., King County, Hydrologic Unit 17110013, on right bank 0.1 mi downstream from West Whitney Hill bridge, 0.8 mi upstream from mouth, and 3.5 mi southwest of Black Diamond.

DRAINAGE AREA.--27.4 mi².

PERIOD OF RECORD.--July 1944 to November 1950, water years 1951-52 (annual maximum), September 1952 to current year.

REVISED RECORDS.--WSP 1396: 1946(M), 1949(P). WSP 1932: Drainage area. WDR WA-74-1: 1973(M). WDR WA-76-1: 1975. WDR WA-00-1: 1999 (m).

GAGE.--Water-stage recorder. Elevation of gage is 310 ft above NGVD of 1929, from topographic map. November 1950 to September 1952 stilling well with nonrecording gage only.

REMARKS.--No estimated daily discharges. Records good except for those above 80 ft³/s, which are fair and those above 200 ft³/s and period Oct. 20 to Dec. 10, which are poor. Many small diversions upstream from station for irrigation and domestic use. No regulation.

AVERAGE DISCHARGE.--57 years (water years 1945-50, 1953-2003), 59.4 ft³/s, 29.44 in/yr, 43,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,640 ft³/s Feb. 8, 1996, gage height, 3.95 ft from rating curve extended above 1,260 ft³/s; minimum discharge, 8.0 ft³/s Oct. 13, 14, 1952.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 450 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 9	2045	*255	*2.55				

Minimum discharge, 9.0 ft³/s, Sept. 2-7 and 24-30, gage height, 1.56 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	14	14	59	204	45	72	51	28	19	12	9.8
2	13	13	14	84	143	42	63	48	27	18	12	9.7
3	21	13	13	67	119	59	60	47	26	17	12	9.2
4	29	14	14	63	97	49	58	48	25	17	12	9.1
5	16	13	14	76	79	45	54	46	24	17	12	9.0
6	14	15	13	48	67	54	65	56	23	17	12	9.0
7	13	15	13	37	59	115	70	50	23	17	12	9.5
8	13	15	12	31	55	89	80	45	22	16	11	12
9	13	14	12	28	48	154	84	42	23	17	11	11
10	27	18	13	25	46	207	67	40	23	17	12	11
11	22	15	23	22	44	139	62	39	23	16	12	13
12	15	23	39	38	41	142	58	38	22	16	12	18
13	14	21	49	36	38	173	94	36	24	17	11	12
14	13	18	24	55	37	112	96	35	24	17	11	11
15	13	13	21	39	36	83	71	38	22	16	11	10
16	13	13	48	32	44	72	64	43	20	16	11	11
17	13	15	40	28	49	69	92	43	20	15	11	13
18	12	12	33	25	47	65	92	42	19	15	11	11
19	13	14	24	24	42	62	73	37	20	15	11	12
20	15	23	19	21	50	64	62	35	22	14	11	12
21	14	19	17	39	76	80	64	38	23	14	11	10
22	13	17	15	96	156	193	69	36	26	14	11	9.9
23	13	17	14	92	95	165	66	34	24	13	11	9.8
24	13	16	14	76	65	102	120	32	21	14	11	9.5
25	13	15	14	65	55	85	102	33	20	13	10	9.2
26	14	14	15	144	49	91	85	32	20	13	10	9.0
27	13	14	19	154	45	78	79	29	19	13	10	9.0
28	13	14	20	121	45	74	65	28	19	13	9.8	9.0
29	13	14	27	98	---	66	58	28	18	12	9.8	9.0
30	12	14	32	119	---	61	54	27	18	12	9.8	9.0
31	13	---	57	206	---	80	---	28	---	12	9.8	---
TOTAL	459	465	696	2,048	1,931	2,915	2,199	1,204	668	472	343.2	315.7
MEAN	14.8	15.5	22.5	66.1	69.0	94.0	73.3	38.8	22.3	15.2	11.1	10.5
MAX	29	23	57	206	204	207	120	56	28	19	12	18
MIN	12	12	12	21	36	42	54	27	18	12	9.8	9.0
AC-FT	910	922	1,380	4,060	3,830	5,780	4,360	2,390	1,320	936	681	626
CFSM	0.54	0.57	0.82	2.41	2.52	3.43	2.68	1.42	0.81	0.56	0.40	0.38
IN.	0.62	0.63	0.94	2.78	2.62	3.96	2.99	1.63	0.91	0.64	0.47	0.43

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2003, BY WATER YEAR (WY)

	24.6	65.4	96.2	114	104	88.6	69.4	48.4	39.1	26.1	19.8	19.6
MEAN	24.6	65.4	96.2	114	104	88.6	69.4	48.4	39.1	26.1	19.8	19.6
MAX	58.9	215	225	252	267	215	134	97.0	98.1	48.6	32.2	39.2
(WY)	(1956)	(1991)	(1956)	(1975)	(1996)	(1950)	(1991)	(1984)	(1990)	(1997)	(1976)	(1959)
MIN	9.42	9.99	11.2	37.4	34.4	40.7	40.0	31.0	20.7	15.2	11.1	10.5
(WY)	(1953)	(1953)	(1953)	(1977)	(1977)	(1992)	(1977)	(1992)	(1992)	(2003)	(2003)	(2003)

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR		FOR 2003 WATER YEAR		WATER YEARS 1944 - 2003	
ANNUAL TOTAL	16,635		13,715.9			
ANNUAL MEAN	45.6		37.6		59.4	
HIGHEST ANNUAL MEAN					85.9	
LOWEST ANNUAL MEAN					33.7	
HIGHEST DAILY MEAN	422	Mar 20	207	Mar 10	1,670	Feb 9, 1996
LOWEST DAILY MEAN	12	Sep 25	9.0	Sep 5	8.3	Oct 11, 1952
ANNUAL SEVEN-DAY MINIMUM	12	Sep 24	9.1	Sep 24	8.3	Oct 11, 1952
ANNUAL RUNOFF (AC-FT)	33,000		27,210		43,010	
ANNUAL RUNOFF (CFSM)	1.66		1.37		2.17	
ANNUAL RUNOFF (INCHES)	22.58		18.62		29.44	
10 PERCENT EXCEEDS	95		83		117	
50 PERCENT EXCEEDS	27		22		40	
90 PERCENT EXCEEDS	13		11		17	

DUWAMISH RIVER BASIN
12112600 BIG SOOS CREEK ABOVE HATCHERY, NEAR AUBURN, WA

LOCATION.--Lat 47°18'45", long 122°09'51", on west line NW ¼ sec.15, T.21 N., R.5 E., King County, Hydrologic Unit 17110013, on left bank 0.2 mi upstream from fish hatchery, 2.7 mi east of Auburn, and at mile 0.9.

DRAINAGE AREA.--66.7 mi², excludes 3.67 mi² in vicinity of Youngs Lake (flow from which has been diverted to Cedar River since about 1935).

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

GAGE.--Water-stage recorder. Datum of gage is 77.2 ft above NGVD of 1929.

REMARKS.--Records good. City of Seattle diverts probably less than 2 ft³/s from Youngs Lake into Little Soos Creek, a tributary, during low flows. Prior to October 1966, fish hatchery 0.5 mi upstream from station diverted up to 19 ft³/s which was returned downstream from the station. U.S Geological Survey satellite telemeter at station. Chemical analyses October 1962 to September 1971, at site 1.0 mi upstream.

AVERAGE DISCHARGE.--37 years (water years 1967-2003), 124 ft³/s, 25.22 in/yr, 89,680 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,200 ft³/s Feb. 9, 1996, gage height, 8.88 ft, estimated from slope-area measurement of peak flow; minimum discharge, 11 ft³/s Sept. 5, 1963, gage height, 1.07 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 440 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar 13	0745	*393	*4.63				

Minimum discharge, 19 ft³/s, Sept. 3, 4, 5, gage height, 2.32 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	23	29	102	331	119	172	110	58	31	23	21
2	21	25	29	150	281	116	162	e105	57	32	24	21
3	28	26	28	175	251	131	157	e104	53	31	25	19
4	32	25	28	172	225	122	151	e106	53	32	24	19
5	30	24	28	162	201	117	145	102	51	31	22	19
6	31	26	27	125	183	115	159	103	49	31	22	21
7	28	28	27	103	170	124	161	99	48	30	23	22
8	23	30	27	91	161	127	177	98	47	28	22	25
9	23	34	27	83	153	167	192	92	46	28	23	22
10	25	40	30	77	148	195	177	90	44	27	25	22
11	23	36	44	75	141	197	167	89	44	27	25	25
12	25	37	65	94	133	261	159	85	44	28	22	29
13	25	41	92	97	127	378	206	80	44	29	22	25
14	25	40	86	111	121	338	223	e78	46	28	22	24
15	24	34	96	98	116	284	187	e80	45	25	22	23
16	24	36	146	87	131	246	172	e84	42	25	23	24
17	23	41	135	81	148	222	175	91	39	25	24	26
18	22	37	109	76	138	204	164	91	39	25	23	24
19	26	36	89	74	129	188	156	82	38	26	21	26
20	26	39	73	71	131	192	146	77	38	26	21	28
21	25	36	64	87	141	212	144	78	44	25	21	26
22	23	34	60	153	183	313	142	74	50	23	21	24
23	23	33	55	180	171	321	137	72	45	24	22	22
24	23	32	54	180	151	277	163	70	40	24	23	23
25	22	31	57	177	138	249	160	71	38	24	22	23
26	25	31	56	325	131	237	149	69	36	25	20	22
27	25	31	64	372	123	214	140	65	34	25	21	22
28	25	31	66	326	120	204	130	62	34	25	21	22
29	22	30	68	285	---	183	121	61	34	22	21	21
30	21	30	74	291	---	170	116	60	33	23	22	22
31	22	---	88	353	---	182	---	60	---	22	22	---
TOTAL	762	977	1,921	4,833	4,577	6,405	4,810	2,588	1,313	827	694	692
MEAN	24.6	32.6	62.0	156	163	207	160	83.5	43.8	26.7	22.4	23.1
MAX	32	41	146	372	331	378	223	110	58	32	25	29
MIN	21	23	27	71	116	115	116	60	33	22	20	19
AC-FT	1,510	1,940	3,810	9,590	9,080	12,700	9,540	5,130	2,600	1,640	1,380	1,370
CFSM	0.37	0.49	0.93	2.34	2.45	3.10	2.40	1.25	0.66	0.40	0.34	0.35
IN.	0.42	0.54	1.07	2.70	2.55	3.57	2.68	1.44	0.73	0.46	0.39	0.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2003, BY WATER YEAR (WY)

	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			
MEAN	42.2	110	211	249	240	208	154	96.5	70.7	44.1	32.6	32.9																												
MAX	90.9	433	401	535	555	453	343	174	150	78.6	46.8	57.9																												
(WY)	(1998)	(1991)	(1976)	(1997)	(1996)	(1972)	(1991)	(1984)	(1990)	(1997)	(1976)	(1978)																												
MIN	24.6	32.6	58.0	84.3	73.6	102	80.5	57.0	34.7	26.4	22.4	20.4																												
(WY)	(2003)	(2003)	(1977)	(1977)	(1977)	(2001)	(1977)	(1985)	(1992)	(1985)	(2003)	(1995)																												

SUMMARY STATISTICS

	FOR 2002 CALENDAR YEAR	FOR 2003 WATER YEAR	WATER YEARS 1967 - 2003
ANNUAL TOTAL	37,190	30,399	
ANNUAL MEAN	102	83.3	
HIGHEST ANNUAL MEAN			124
LOWEST ANNUAL MEAN			195
HIGHEST DAILY MEAN	437	378	1991
LOWEST DAILY MEAN	21	19	63.5
ANNUAL SEVEN-DAY MINIMUM	23	20	18
ANNUAL RUNOFF (AC-FT)	73,770	60,300	89,680
ANNUAL RUNOFF (CFSM)	1.53	1.25	1.86
ANNUAL RUNOFF (INCHES)	20.74	16.95	25.22
10 PERCENT EXCEEDS	234	183	274
50 PERCENT EXCEEDS	56	45	80
90 PERCENT EXCEEDS	24	22	30

e Estimated

12113000 GREEN RIVER NEAR AUBURN, WA

LOCATION.--Lat 47°18'45", long 122°12'10", in NW ¼ NW ¼ sec.17, T.21 N., R.5 E., King County, Hydrologic Unit 17110013, on left bank 1.2 mi east of Auburn, 1.8 mi downstream from Big Soos Creek, and at mile 32.0.

DRAINAGE AREA.--399 mi², excludes 3.67 mi² in the vicinity of Youngs Lake, flow from which has been diverted to Cedar River basin since about 1935.

PERIOD OF RECORD.--August 1936 to current year.

REVISED RECORDS.--WSP 1932: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929. Prior to Oct. 19, 1936, nonrecording gage at same site and datum.

REMARKS.--Records good except estimated daily discharges, which are fair. Since Dec. 5, 1961, flow regulated by Howard A. Hanson Reservoir (station 12105800), 32.5 mi upstream from station, for flood control and during summer months, to augment the natural river flow. City of Tacoma diverted an average daily discharge of about 57 ft³/s from river at headworks near Palmer, 29 mi upstream from station, for municipal use. Minor diversions on upstream tributaries for domestic use. U.S. Geological Survey satellite telemeter at station. Water temperatures March 1952 to September 1986.

AVERAGE DISCHARGE.--42 years (water years 1962-2003), 1,328 ft³/s, 961,700 acre-ft/yr, regulated. 25 years (water years 1937-61), 1,346 ft³/s, 974,500 acre-ft/yr, unregulated.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,100 ft³/s Nov. 23, 1959, elevation, 69.75 ft; minimum discharge, 81 ft³/s Sept. 23, 1952; minimum elevation, 52.76 ft Oct. 22, 29-31, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan 27	2115	7,120	60.37	Mar 13	0700	6,270	59.75
Jan 31	1830	*8,590	*61.39				

Minimum daily discharge, 180 ft³/s, Dec. 9.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	350	204	199	570	8,180	1,070	2,950	1,330	1,030	350	232	204
2	347	202	197	831	7,340	1,050	2,710	1,330	1,020	313	234	204
3	385	204	197	1,220	6,920	1,100	2,000	1,540	827	297	235	205
4	430	201	e195	1,150	5,610	956	1,950	1,560	794	286	235	207
5	404	200	e190	1,420	3,770	933	1,660	1,540	746	276	224	206
6	397	209	e185	1,630	3,120	954	1,690	1,410	720	274	223	208
7	390	207	e185	1,510	2,370	1,070	1,700	1,260	674	270	235	216
8	390	208	e185	1,290	1,630	1,130	1,670	1,140	662	264	236	234
9	401	242	e180	1,060	1,560	1,340	1,720	1,120	655	263	238	210
10	363	259	e185	840	1,500	2,040	1,610	1,080	641	258	247	207
11	337	246	213	686	1,380	2,660	1,810	1,070	665	249	244	228
12	310	264	371	745	1,220	4,120	1,790	1,060	664	245	228	265
13	303	280	816	827	1,110	6,130	1,940	1,050	578	250	230	215
14	299	268	795	1,220	1,080	4,730	2,070	1,060	541	251	231	204
15	323	254	779	1,440	1,070	3,480	2,300	1,080	517	240	234	204
16	301	255	886	1,160	1,090	3,080	2,210	1,140	510	236	267	219
17	295	261	799	829	1,110	2,640	1,940	1,100	515	e236	240	239
18	292	252	754	632	1,100	1,980	1,780	1,090	483	e235	236	221
19	294	247	618	595	1,060	1,740	1,650	1,060	489	235	231	233
20	295	790	532	584	976	1,730	1,600	1,050	500	237	229	248
21	291	772	386	646	1,860	1,680	1,600	1,010	509	235	229	237
22	253	636	364	1,040	4,300	3,250	1,500	1,030	484	230	235	232
23	244	414	349	1,320	4,180	3,310	1,490	1,020	460	233	237	294
24	241	389	345	1,460	3,230	3,100	1,610	1,120	444	234	238	312
25	238	357	316	1,620	1,970	2,890	1,590	1,130	434	233	236	306
26	215	252	316	2,840	1,750	2,600	1,600	1,120	390	239	234	303
27	210	224	331	5,210	1,500	2,520	1,580	1,110	379	240	230	305
28	209	212	363	6,120	1,380	2,250	1,540	1,110	390	238	225	304
29	204	204	383	3,770	---	1,980	1,400	1,180	394	229	212	304
30	203	201	400	4,470	---	1,940	1,310	1,130	391	226	206	302
31	200	---	470	7,490	---	2,300	---	1,050	---	228	207	---
TOTAL	9,414	8,914	12,484	56,225	73,366	71,753	53,970	36,080	17,506	7,830	7,198	7,276
MEAN	304	297	403	1,814	2,620	2,315	1,799	1,164	584	253	232	243
MAX	430	790	886	7,490	8,180	6,130	2,950	1,560	1,030	350	267	312
MIN	200	200	180	570	976	933	1,310	1,010	379	226	206	204
AC-FT	18,670	17,680	24,760	111,500	145,500	142,300	107,000	71,560	34,720	15,530	14,280	14,430

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2003, BY WATER YEAR (WY)

MEAN	623	1,562	2,115	2,278	2,122	1,716	1,807	1,582	977	525	310	365
MAX	1,364	5,045	5,654	3,908	4,969	4,994	3,023	2,896	2,849	1,069	514	955
(WY)	(1996)	(1991)	(1976)	(1975)	(1996)	(1972)	(1989)	(1972)	(1974)	(1972)	(1974)	(1968)
MIN	173	194	403	703	720	891	601	603	330	253	227	210
(WY)	(1988)	(1988)	(2003)	(1988)	(1977)	(1963)	(1992)	(1994)	(1987)	(2003)	(1989)	(1989)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1962 - 2003

ANNUAL TOTAL	439,371	362,016	
ANNUAL MEAN	1,204	992	1,328
HIGHEST ANNUAL MEAN			2,071
LOWEST ANNUAL MEAN			785
HIGHEST DAILY MEAN	7,020	Apr 15	8,180
LOWEST DAILY MEAN	180	Dec 9	180
ANNUAL SEVEN-DAY MINIMUM	186	Dec 4	186
ANNUAL RUNOFF (AC-FT)	871,500		718,100
10 PERCENT EXCEEDS	2,410		2,050
50 PERCENT EXCEEDS	1,050		484
90 PERCENT EXCEEDS	241		210

e Estimated

DUWAMISH RIVER BASIN

12113346 SPRING BROOK CREEK NEAR ORILLIA, WA

LOCATION.--Lat 47°25'53", long 122°13'35", in SW ¼ SW ¼ sec.31, T.23 N., R.5 E., King County, Hydrologic Unit 17110013, on right bank 50 ft upstream from 84th Avenue South (East Valley Highway), 1.2 mi upstream from confluence with Mill Creek, and 1.0 mi southeast of Orillia.

DRAINAGE AREA.--8.44 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is NGVD of 1929 (City of Kent benchmark). U.S. Geological Survey satellite telemeter at station.

REMARKS.--Records poor. Natural flow affected by urbanization and construction of flood-control catchments.

AVERAGE DISCHARGE.--10 years (water years 1994-2003), 10.4 ft³/s, 16.74 in/yr, 7,530 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 450 ft³/s Feb. 9, 1996, elevation, 19.55 ft; minimum discharge, 0.52 ft³/s Sept. 30, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 130 ft³/s Mar. 12, elevation, 17.24 ft; minimum discharge, 0.52 ft³/s Sept. 30.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	2.8	3.2	38	22	5.8	9.1	4.5	3.1	3.1	2.2	e2.0
2	2.2	3.0	3.1	45	15	8.8	9.6	4.5	3.1	2.9	2.2	e2.0
3	31	3.0	3.2	43	15	10	9.1	4.5	2.9	2.9	2.1	e2.1
4	18	3.1	6.8	35	11	6.3	7.8	7.2	3.0	2.7	2.2	e2.2
5	4.0	3.2	3.7	18	9.3	5.5	7.7	6.1	2.9	2.8	2.6	2.3
6	2.9	18	3.2	11	8.4	5.3	12	5.4	2.9	2.8	3.7	2.4
7	2.8	11	3.1	8.2	8.0	11	15	4.3	2.9	3.5	2.4	2.6
8	2.8	18	3.0	6.6	7.6	8.7	12	4.3	3.0	2.9	2.1	6.7
9	2.8	18	4.3	5.8	7.3	36	26	4.1	3.1	2.9	3.2	e3.6
10	4.7	23	16	5.4	7.1	16	10	3.9	3.5	2.7	6.5	e4.5
11	3.2	5.7	26	7.6	6.8	23	9.9	3.9	3.3	2.8	4.3	e6.0
12	2.7	46	30	25	6.7	50	8.4	3.8	3.2	2.8	2.7	e8.5
13	2.7	9.8	27	14	6.7	50	36	3.6	4.4	2.9	2.5	e4.2
14	2.8	11	44	19	6.3	22	12	3.6	3.8	3.3	2.3	e2.7
15	2.8	4.5	29	9.0	7.7	16	8.3	3.9	3.2	2.8	2.1	e1.8
16	2.8	21	58	6.8	24	17	7.1	4.1	3.0	2.6	2.2	1.1
17	2.8	9.9	27	5.9	15	12	8.2	14	3.0	2.7	2.2	1.1
18	2.8	5.9	18	5.4	11	11	6.4	3.9	3.1	2.5	2.1	0.87
19	2.9	12	9.7	5.1	9.4	13	5.8	3.5	3.2	2.4	2.1	4.4
20	3.2	9.1	6.7	4.9	11	14	5.7	4.2	3.3	2.5	2.0	3.0
21	3.1	4.6	5.5	22	16	25	10	4.1	4.6	2.4	2.1	1.2
22	2.9	3.9	4.8	38	17	55	6.5	3.6	4.6	2.3	2.1	1.0
23	2.9	3.5	4.6	24	9.7	23	7.6	3.4	6.1	2.4	2.0	0.94
24	3.0	3.1	7.5	28	7.3	14	21	3.4	4.4	2.2	2.0	0.91
25	2.9	2.9	7.5	20	6.5	13	8.6	6.1	3.1	2.3	2.0	0.81
26	2.9	3.1	11	73	6.1	14	6.2	3.5	3.0	2.2	2.1	0.69
27	2.9	3.0	16	36	5.6	9.1	5.3	3.3	2.9	2.2	2.1	0.66
28	2.9	3.0	8.4	21	6.9	7.8	5.0	3.2	2.8	2.2	2.0	0.71
29	3.0	3.1	12	29	---	7.3	4.9	3.1	3.0	2.1	2.1	0.84
30	2.7	3.3	17	33	---	7.5	4.6	3.4	3.5	2.1	e2.1	0.82
31	2.7	---	19	43	---	18	---	3.4	---	2.1	e2.1	---
TOTAL	133.9	271.5	438.3	685.7	290.4	535.1	305.8	137.8	101.9	81.0	76.4	72.65
MEAN	4.32	9.05	14.1	22.1	10.4	17.3	10.2	4.45	3.40	2.61	2.46	2.42
MAX	31	46	58	73	24	55	36	14	6.1	3.5	6.5	8.5
MIN	2.1	2.8	3.0	4.9	5.6	5.3	4.6	3.1	2.8	2.1	2.0	0.66
AC-FT	266	539	869	1,360	576	1,060	607	273	202	161	152	144
CFSM	0.51	1.07	1.68	2.62	1.23	2.05	1.21	0.53	0.40	0.31	0.29	0.29
IN.	0.59	1.20	1.93	3.02	1.28	2.36	1.35	0.61	0.45	0.36	0.34	0.32

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

	8.76	18.3	19.5	18.1	15.6	12.5	9.22	5.78	5.51	3.94	4.14	3.74
MEAN	8.76	18.3	19.5	18.1	15.6	12.5	9.22	5.78	5.51	3.94	4.14	3.74
MAX	15.5	43.5	30.9	25.0	35.8	17.3	15.0	8.00	10.5	5.92	7.51	7.23
(WY)	(2001)	(2000)	(1999)	(1996)	(1996)	(2003)	(1996)	(1996)	(2001)	(1997)	(2001)	(1997)
MIN	4.32	5.08	9.55	7.46	6.97	6.41	5.81	3.34	2.99	2.59	2.14	1.71
(WY)	(2003)	(1994)	(2001)	(1994)	(1997)	(1996)	(1995)	(1995)	(1996)	(1994)	(1994)	(1999)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1994 - 2003

ANNUAL TOTAL	3,174.0											
ANNUAL MEAN	8.70											
HIGHEST ANNUAL MEAN										10.4		
LOWEST ANNUAL MEAN										14.5		1996
HIGHEST DAILY MEAN	67	Jan 7					73	Jan 26		303	Feb 8, 1996	
LOWEST DAILY MEAN	1.8	Sep 14					0.66	Sep 27		0.66	Sep 27, 2003	
ANNUAL SEVEN-DAY MINIMUM	2.0	Sep 21					0.78	Sep 24		0.78	Sep 24, 2003	
ANNUAL RUNOFF (AC-FT)	6,300						6,210			7,530		
ANNUAL RUNOFF (CFSM)	1.03						1.02			1.23		
ANNUAL RUNOFF (INCHES)	13.99						13.80			16.74		
10 PERCENT EXCEEDS	20						21			23		
50 PERCENT EXCEEDS	4.4						4.3			5.3		
90 PERCENT EXCEEDS	2.4						2.1			2.3		

e Estimated

12113347 MILL CREEK AT EARTHWORKS PARK, AT KENT, WA

LOCATION.--Lat 47°23'00", long 122°13'25", in SW ¼ NW ¼ sec.19, T.22 N., R.5 E., King County, Hydrologic Unit 17110013, at control-manhole of flood-detention basin in Earthworks Park, 250 ft upstream from Titus St., and 0.6 mi east of Kent City Hall.

DRAINAGE AREA.--2.49 mi².

PERIOD OF RECORD.--January 1994 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is NGVD of 1929 (City of Kent benchmark).

REMARKS.--Records fair, except for estimated daily discharges, which are poor. Natural flow affected by urbanization and construction of flood-control catchments. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--9 years (water year 1995-2003), 4.09 ft³/s, 22.33 in/yr, 2,960 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, not determined Feb. 9, 1996, elevation, 47.52 ft, affected by backwater from debris caught on downstream culvert grates; maximum elevation, 48.05 ft May 13, 1996, affected by backwater from debris caught on downstream culvert grates; minimum discharge, 0.31 ft³/s July 5, 1995, Aug. 12, 1997.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 114 ft³/s Jan. 2, elevation, 46.01 ft; minimum daily discharge, 0.53 ft³/s, Sept. 14, 15, 30.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.76	e0.68	0.75	11	8.9	1.6	2.3	1.3	0.82	0.68	0.68	0.60
2	0.77	e0.66	0.75	21	5.3	2.5	2.3	1.3	0.81	0.68	0.71	0.61
3	3.4	e0.64	0.75	32	4.3	2.4	2.7	1.5	0.80	0.68	0.71	0.59
4	0.94	e0.69	0.96	12	3.1	1.7	1.9	1.6	0.81	0.68	0.74	0.55
5	0.78	e0.69	0.61	7.0	2.6	1.6	2.4	1.4	0.80	0.68	0.77	0.56
6	0.75	2.6	0.61	4.4	2.4	2.1	4.5	1.5	0.80	0.68	0.73	0.56
7	0.75	1.3	0.69	3.6	2.1	2.3	4.4	1.9	0.79	0.68	0.72	1.5
8	0.75	1.8	0.61	3.1	1.9	2.5	3.3	1.6	0.79	0.68	0.72	1.1
9	0.79	2.4	0.71	2.7	1.8	7.3	6.5	1.2	0.80	0.68	0.77	0.61
10	0.90	1.3	2.0	2.5	1.8	3.4	3.0	1.2	0.80	0.67	0.98	0.78
11	0.75	0.85	4.1	3.5	1.7	6.3	2.9	1.1	0.79	0.67	0.75	1.0
12	0.75	3.3	6.2	7.5	1.6	15	2.3	1.1	0.80	0.67	0.73	1.4
13	0.75	1.4	3.7	5.5	1.6	15	6.7	1.0	1.2	0.83	0.73	0.59
14	0.75	1.7	6.8	5.8	1.5	8.3	3.2	1.0	0.82	0.72	0.73	0.53
15	0.75	0.84	3.4	3.5	1.8	5.3	2.4	1.1	0.78	0.70	0.74	0.53
16	0.75	2.5	34	2.9	5.9	4.3	3.0	1.2	0.78	0.69	0.73	0.88
17	0.75	1.0	15	2.7	3.3	3.0	2.9	1.9	0.77	0.69	0.74	0.55
18	e0.75	1.3	5.9	2.5	2.6	2.8	2.0	1.1	0.78	0.68	0.92	0.54
19	e0.73	2.2	3.8	2.4	2.6	3.1	1.8	1.0	0.77	0.68	0.61	1.6
20	e0.80	0.85	3.0	2.3	2.6	4.1	1.7	1.1	0.76	0.68	0.74	0.59
21	e0.74	0.70	2.7	7.9	4.3	7.1	2.9	1.2	1.2	0.68	0.73	0.59
22	e0.74	0.76	2.4	12	4.3	15	1.9	1.0	0.79	0.68	0.70	0.57
23	e0.69	0.75	2.3	9.0	2.6	7.8	2.2	0.99	0.73	0.68	0.68	0.56
24	e0.72	0.75	3.2	10	2.1	4.3	5.0	0.96	0.71	0.68	0.66	0.58
25	e0.77	0.75	2.9	8.7	1.9	3.6	2.5	1.8	0.71	0.68	0.66	0.55
26	e0.70	0.75	3.4	31	1.8	3.9	2.0	1.0	0.69	0.67	0.67	0.56
27	e0.72	0.75	4.8	18	1.7	2.6	1.7	0.94	0.68	0.67	0.67	0.55
28	e0.72	0.78	3.0	12	1.9	2.2	1.6	0.93	0.68	0.67	0.65	0.55
29	e0.72	0.78	4.0	12	---	2.0	1.5	0.90	0.68	0.68	0.63	0.56
30	e0.68	0.75	5.2	12	---	2.0	1.4	0.89	0.71	0.67	0.62	0.53
31	e0.66	---	6.1	13	---	5.7	---	0.88	---	0.66	0.61	---
TOTAL	25.98	36.22	134.34	283.5	80.0	150.8	84.9	37.59	23.85	21.22	22.23	21.27
MEAN	0.84	1.21	4.33	9.15	2.86	4.86	2.83	1.21	0.80	0.68	0.72	0.71
MAX	3.4	3.3	34	32	8.9	15	6.7	1.9	1.2	0.83	0.98	1.6
MIN	0.66	0.64	0.61	2.3	1.5	1.6	1.4	0.88	0.68	0.66	0.61	0.53
AC-FT	52	72	266	562	159	299	168	75	47	42	44	42
CFSM	0.34	0.48	1.74	3.67	1.15	1.95	1.14	0.49	0.32	0.27	0.29	0.28
IN.	0.39	0.54	2.01	4.24	1.20	2.25	1.27	0.56	0.36	0.32	0.33	0.32

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

MEAN	2.09	7.31	8.19	8.56	7.22	5.12	3.25	1.98	1.68	1.08	1.04	1.08
MAX	4.44	13.2	12.6	15.1	20.0	8.34	8.03	3.09	3.45	1.66	1.40	1.88
(WY)	(1998)	(2000)	(1996)	(1997)	(1996)	(1999)	(1996)	(1996)	(1997)	(1997)	(1999)	(1997)
MIN	0.84	1.21	2.29	2.73	2.43	2.55	1.69	1.08	0.80	0.68	0.59	0.71
(WY)	(2003)	(2003)	(2001)	(2001)	(2001)	(2001)	(1998)	(1995)	(2003)	(2003)	(1994)	(2003)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1994 - 2003

ANNUAL TOTAL	1,058.39	921.90		
ANNUAL MEAN	2.90	2.53	4.09	
HIGHEST ANNUAL MEAN			6.32	1996
LOWEST ANNUAL MEAN			2.21	2001
HIGHEST DAILY MEAN	34	Dec 16	34	Dec 16
LOWEST DAILY MEAN	0.61	Dec 5	0.53	Sep 14
ANNUAL SEVEN-DAY MINIMUM	0.67	Oct 30	0.55	Sep 24
ANNUAL RUNOFF (AC-FT)	2,100		1,830	2,960
ANNUAL RUNOFF (CFSM)	1.16		1.01	1.64
ANNUAL RUNOFF (INCHES)	15.81		13.77	22.33
10 PERCENT EXCEEDS	6.2		5.7	9.7
50 PERCENT EXCEEDS	1.3		1.0	1.8
90 PERCENT EXCEEDS	0.75		0.66	0.76

e Estimated

12113349 MILL CREEK NEAR MOUTH, AT ORILLIA, WA

LOCATION.--Lat 47°26'20", long 122°14'26", in SE 1/4 NW 1/4 sec.36, T.23 N., R.4 E., King County, Hydrologic Unit 17110013, on left bank 15 ft upstream from Burlington-Northern railroad trestle, in Orillia.

DRAINAGE AREA.--6.03 mi².

PERIOD OF RECORD.--February 1994 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is NGVD of 1929 (City of Kent benchmark).

REMARKS.--Records fair, except for periods of Jan. 5 to Mar. 5 and Sept. 20-30, which are poor. Natural flow affected by Green River Natural Resource area located 1.75 miles upstream and urbanization. U.S. Geological satellite telemeter at station.

AVERAGE DISCHARGE.--9 years (water year 1995-2003), 16.0 ft³/s, 11,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 376 ft³/s Feb. 9, 1996, from rating curve extended above 133 ft³/s, elevation, 18.77 ft; minimum discharge, 0.35 ft³/s Aug. 12, 2001, result of construction upstream from station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 197 ft³/s Jan. 26, elevation, 14.46 ft; minimum discharge, 0.61 ft³/s Sept. 27, 30.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.1	2.2	61	55	7.4	13	5.3	2.4	1.7	1.0	0.90
2	1.1	1.1	2.1	89	39	11	14	5.2	2.3	1.5	0.98	0.86
3	22	1.1	2.1	95	35	16	13	5.0	2.3	1.5	0.94	1.0
4	9.0	1.1	5.8	78	27	7.7	10	8.9	2.3	1.5	0.99	1.0
5	1.9	1.1	2.6	e38	21	6.6	9.3	7.2	2.2	1.3	1.3	1.0
6	1.5	13	2.1	e24	17	6.7	16	6.9	2.2	1.4	1.9	1.0
7	1.4	6.9	2.1	e17	14	15	17	4.8	2.3	1.5	1.1	1.1
8	1.4	13	2.1	e14	12	11	17	5.7	2.2	1.4	1.1	5.5
9	1.5	11	3.1	9.3	11	73	41	4.4	2.2	1.3	1.6	1.7
10	2.7	14	19	7.5	10	30	16	3.9	2.2	1.4	6.0	2.6
11	1.7	2.6	35	11	9.2	43	16	3.8	2.2	1.3	2.1	4.0
12	1.3	40	43	54	9.0	80	12	3.8	2.0	1.2	1.1	7.4
13	1.3	13	49	26	8.8	107	55	3.6	3.1	1.2	1.0	1.8
14	1.2	11	71	42	7.8	49	21	3.5	2.6	1.2	1.1	1.3
15	1.2	4.1	73	15	10	33	14	3.5	2.0	1.1	1.0	1.2
16	1.3	20	109	10	42	30	12	4.2	1.9	1.3	1.1	1.7
17	1.3	12	65	8.3	29	23	15	15	1.9	1.2	1.2	2.2
18	1.2	6.4	45	6.9	17	19	15	4.3	2.0	1.2	1.2	1.4
19	1.2	14	26	5.9	14	21	8.1	3.5	2.1	1.2	1.2	3.8
20	1.3	8.8	18	5.3	15	23	7.4	3.7	2.0	1.2	1.1	1.6
21	1.2	4.0	13	40	23	39	15	4.2	2.8	1.2	1.0	0.79
22	1.2	3.3	10	75	28	96	8.8	3.4	3.3	1.2	1.1	0.73
23	1.2	3.0	8.4	45	14	46	10	3.2	4.0	1.2	1.0	0.71
24	1.2	2.7	12	50	10	27	25	3.2	1.9	1.1	1.1	0.69
25	1.2	2.6	12	33	8.7	23	12	5.6	1.7	0.89	1.1	0.69
26	1.1	2.5	21	141	8.2	26	8.3	3.2	1.7	0.79	1.1	0.67
27	1.1	2.3	28	68	7.5	16	7.1	2.9	1.7	0.90	1.2	0.66
28	1.1	2.3	12	31	9.1	13	6.5	2.7	1.6	0.92	0.97	0.70
29	1.2	2.3	20	47	---	11	6.0	2.6	1.5	1.0	0.96	0.70
30	1.1	2.2	26	63	---	10	5.5	2.7	1.8	1.0	0.93	0.68
31	1.1	---	30	92	---	27	---	2.7	---	1.0	1.1	---
TOTAL	69.3	222.5	769.6	1,302.2	511.3	946.4	446.0	142.6	66.4	37.80	40.57	50.08
MEAN	2.24	7.42	24.8	42.0	18.3	30.5	14.9	4.60	2.21	1.22	1.31	1.67
MAX	22	40	109	141	55	107	55	15	4.0	1.7	6.0	7.4
MIN	1.1	1.1	2.1	5.3	7.5	6.6	5.5	2.6	1.5	0.79	0.93	0.66
AC-FT	137	441	1,530	2,580	1,010	1,880	885	283	132	75	80	99

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

MEAN	9.20	26.1	32.2	32.8	29.4	22.4	14.2	8.04	6.50	3.53	3.29	3.33
MAX	18.5	50.7	51.8	50.8	64.8	38.5	27.2	12.5	13.3	6.66	6.57	9.19
(WY)	(1998)	(2000)	(1997)	(1997)	(1996)	(1997)	(1996)	(1996)	(2001)	(1997)	(2001)	(1997)
MIN	2.24	7.42	11.1	13.3	11.9	12.4	6.53	3.75	2.21	1.22	1.24	1.50
(WY)	(2003)	(2003)	(2001)	(2001)	(2001)	(2001)	(1998)	(1995)	(2003)	(2003)	(2002)	(2002)

SUMMARY STATISTICS

FOR 2002 CALENDAR YEAR

FOR 2003 WATER YEAR

WATER YEARS 1994 - 2003

ANNUAL TOTAL	4,610.8											
ANNUAL MEAN	12.6											
HIGHEST ANNUAL MEAN										16.0		
LOWEST ANNUAL MEAN										21.4		1999
HIGHEST DAILY MEAN	124	Jan 7								10.5		2001
LOWEST DAILY MEAN	1.0	Sep 14								323	Feb 9, 1996	
ANNUAL SEVEN-DAY MINIMUM	1.1	Sep 21								0.66	Sep 27, 2003	
ANNUAL RUNOFF (AC-FT)	9,150									0.68	Sep 24, 2003	
10 PERCENT EXCEEDS	35									11,600		
50 PERCENT EXCEEDS	4.7									41		
90 PERCENT EXCEEDS	1.2									7.6		
										1.5		

e Estimated

12113350 GREEN RIVER AT TUKWILA, WA

LOCATION.--Lat 47°27'55", long 122°14'48", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.24, T.23 N., R.4 E., King County, Hydrologic Unit 17110013, on left bank under West Valley Freeway bridge 0.6 mi southeast of Tukwila, 1.4 mi upstream from Black River, and at mile 12.4.

DRAINAGE AREA.--440 mi².

PERIOD OF RECORD.--October 1960 to September 1984 (discharge). October 1998 to current year (stage only).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is NGVD of 1929 (Corps of Engineers bench mark).

REMARKS.--Flow regulated by Howard A. Hanson Reservoir (station 12105800) for flood control and during summer months to augment the natural river flow. Minor diversions and regulation on upstream tributaries. River stage is affected daily by backwater during high tide. Chemical analyses October 1967 to September 1970. U.S. Geological Survey satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 21.70 ft Jan. 31, 1965; minimum observed elevation 1.00 ft Sept. 2, 1999.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 24, 1959, reached a stage of 22.63 ft.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 17.29 ft Feb. 1, minimum elevation, 1.58 ft Dec. 9.

ELEVATION ABOVE NGVD 1929, FEET
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.18	2.88	3.37	5.43	16.88	5.94	9.27	5.99	5.16	3.79	3.36	3.10
2	3.17	3.12	3.61	6.40	16.43	5.71	9.28	6.03	5.10	3.61	3.24	3.08
3	3.51	3.32	3.86	6.77	15.95	5.75	7.91	6.36	4.80	3.43	3.15	3.10
4	3.71	3.59	3.94	6.68	14.80	5.51	7.52	6.50	4.54	3.31	3.11	3.18
5	3.75	3.78	3.98	6.42	11.93	5.40	7.02	6.40	4.45	3.16	3.16	3.19
6	3.73	4.18	3.93	6.76	10.35	5.38	6.86	6.16	4.34	3.08	3.28	3.29
7	3.80	4.58	3.57	6.58	9.20	5.53	6.84	5.84	4.25	3.14	3.45	3.32
8	3.87	4.61	3.39	6.08	7.48	5.57	6.91	5.53	4.18	3.19	3.59	3.42
9	3.94	4.15	3.38	5.51	6.99	6.04	7.07	5.36	4.18	3.32	3.68	3.49
10	3.84	3.82	3.46	4.96	6.73	7.15	6.78	5.25	4.28	3.57	3.74	3.29
11	3.34	3.39	3.44	4.47	6.51	8.70	7.10	5.23	4.44	3.75	3.70	3.26
12	3.11	3.68	4.00	4.70	6.11	10.52	7.14	5.22	4.70	3.95	3.66	3.16
13	3.03	3.34	4.65	4.65	---	14.52	7.59	5.25	4.74	3.89	3.50	2.97
14	2.96	3.23	5.39	5.41	5.89	13.55	7.71	5.49	4.63	3.83	3.37	2.91
15	3.03	3.20	5.41	6.19	6.02	11.20	8.22	5.59	4.50	3.76	3.26	2.84
16	3.10	3.66	6.22	5.72	6.31	10.24	8.18	5.75	4.38	3.54	3.12	2.93
17	3.17	3.42	5.76	5.23	6.26	9.47	7.74	5.77	4.29	3.27	2.96	2.77
18	3.20	3.58	5.43	4.79	6.10	8.11	7.38	5.53	4.08	3.04	2.85	2.83
19	3.18	3.61	5.33	4.63	6.02	7.58	7.04	5.37	3.89	2.91	2.75	---
20	3.24	4.24	5.31	4.56	5.83	7.39	6.88	5.26	3.78	2.80	2.73	2.71
21	3.29	4.76	4.90	4.66	6.30	7.27	6.78	5.10	3.70	2.76	2.89	2.68
22	3.28	4.53	4.35	5.43	10.98	9.73	6.54	5.07	3.61	2.79	3.01	2.78
23	3.21	4.17	4.16	6.22	11.61	10.40	6.45	5.02	3.48	2.84	3.07	3.01
24	3.27	3.73	4.03	6.45	10.78	9.95	6.72	5.26	3.39	2.96	3.14	3.24
25	3.24	3.46	4.08	6.81	7.92	9.57	6.69	5.33	3.37	3.17	3.29	3.40
26	3.12	3.25	3.89	8.18	7.33	9.08	6.63	5.25	3.40	3.22	3.43	3.46
27	2.95	3.03	4.10	12.23	6.80	8.75	6.56	5.15	3.52	3.26	3.44	3.61
28	2.89	3.01	4.18	15.00	6.49	8.27	6.48	5.25	3.64	3.34	3.44	3.75
29	2.77	2.99	4.26	12.32	---	7.63	6.27	5.41	3.91	3.43	3.33	3.74
30	2.70	3.16	4.75	11.24	---	7.45	5.99	5.45	3.90	3.51	3.31	3.60
31	2.67	---	5.07	15.38	---	7.76	---	5.27	---	3.46	3.19	---
MAX	3.94	4.76	6.22	15.38	---	14.52	9.28	6.50	5.16	3.95	3.74	---
MIN	2.67	2.88	3.37	4.47	---	5.38	5.99	5.02	3.37	2.76	2.73	---

12113390 DUWAMISH RIVER AT GOLF COURSE, AT TUKWILA, WA

WATER-QUALITY RECORDS

LOCATION.--Lat 47°28'45", long 122°15'27", in NE ¼ SW ¼ sec.14, T.23 N., R.4 E., King County, Hydrologic Unit 17110012, on left bank at footbridge, 0.5 mi downstream from Black River confluence, at Tukwila, 10.4 mi upstream from mouth.

DRAINAGE AREA.--461 mi².

PERIOD OF RECORD.--March 1996 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1996 to September 1999 (discontinued).

WATER TEMPERATURE: March 1996 to September 1999 (discontinued).

REMARKS.--During periods of low flow, river stage and water-quality parameters are affected to an unknown degree by daily tide cycle.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 386 microsiemens Sept 8, 1999, but may have been higher during periods of missing record; minimum, 34 microsiemens Jan. 2, 1999, but may have been lower during periods of missing record.

TEMPERATURE: Maximum, 23.5°C July 25, 1996; minimum, 1.0°C Dec. 22-23, 1998.

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Time	Instantaneous discharge, cfs (00061)	Barometric pressure, mm Hg (00025)	Dissolved oxygen, mg/L (00300)	Dissolved oxygen, percent of saturation (00301)	pH, water, unfltrd field, std units (00400)	Specific conductance, wat unfltrd uS/cm 25 degC (00095)	Temperature, air, deg C (00020)	Temperature, water, deg C (00010)	Alkalinity, wat flt inc tit field, mg/L as CaCO ₃ (39086)	Bicarbonate, wat flt incrm. titr., field, mg/L (00453)	Carbonate, wat flt incrm. titr., field, mg/L (00452)	Chloride, water, fltrd, mg/L (00940)
NOV 05...	1130	512	765	--	--	7.3	167	14.3	5.8	55	67	0.0	13.9
DEC 05...	1210	802	771	9.6	77	7.7	188	9.1	6.2	57	69	0.0	16.4
JAN 03...	1240	1,920	768	10.6	87	7.4	88	13.4	7.0	26	31	0.0	2.89
FEB 04...	1450	5,460	776	11.8	93	7.4	47	9.6	6.1	17	20	0.0	1.16
MAR 04...	1320	1,270	762	10.9	89	7.2	101	10.7	6.8	33	40	0.0	6.52
APR 03...	1340	2,260	762	10.8	91	7.4	75	6.4	7.9	28	34	0.0	2.21
MAY 15...	1220	1,150	765	9.9	89	7.5	88	9.1	10.6	32	39	0.0	5.14
JUN 11...	1100	791	765	8.7	83	7.6	113	16.5	13.3	37	45	0.0	8.14
JUL 15...	1410	523	765	9.1	103	7.8	183	21.1	21.4	52	64	0.0	17.9
AUG 08...	1030	350	763	7.5	82	7.7	154	20.7	19.4	48	58	0.0	13.1
SEP 09...	1230	375	759	7.6	79	7.6	159	19.4	17.2	48	58	0.0	14.9

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Sulfate water, fltrd, mg/L (00945)	Ammonia + org-N, water, unfltrd mg/L as N (00625)	Ammonia water, fltrd, mg/L as N (00608)	Nitrite + nitrate water, fltrd, mg/L as N (00631)	Nitrite water, fltrd, mg/L as N (00613)	Orthophosphate, water, fltrd, mg/L as P (00671)	Phosphorus, water, unfltrd mg/L (00665)	Total nitrogen, water, unfltrd mg/L (00600)	2,6-Diethyl-aniline water fltrd 0.7u GF ug/L (82660)	CIAT, water, fltrd, ug/L (04040)	Aceto-chlor, water, fltrd, ug/L (49260)	Ala-chlor, water, fltrd, ug/L (46342)	alpha-HCH, water, fltrd, ug/L (34253)
NOV 05...	4.4	0.14	E.03	0.37	E.005	E.01	0.041	0.51	<0.006	<0.006	<0.006	<0.004	<0.005
DEC 05...	4.6	0.20	0.10	0.47	0.008	0.02	0.058	0.67	--	--	--	--	--
JAN 03...	5.3	0.45	E.03	0.87	E.004	0.04	0.159	1.3	<0.006	<0.006	<0.006	<0.004	<0.005
FEB 04...	2.2	0.20	<0.04	0.37	<0.008	E.02	0.113	0.56	--	--	--	--	--
MAR 04...	3.8	0.12	<0.04	0.51	<0.008	E.01	0.033	0.62	<0.006	<0.006	<0.006	<0.004	<0.005
APR 03...	3.2	0.14	<0.04	0.33	<0.008	E.01	0.049	0.46	<0.006	<0.006	<0.006	<0.004	<0.005
MAY 15...	3.0	0.16	<0.04	0.25	E.004	<0.02	0.037	0.41	<0.006	<0.006	<0.006	<0.004	<0.005
JUN 11...	3.0	0.18	E.03	0.29	<0.008	E.01	0.066	0.47	<0.006	<0.006	<0.006	<0.004	<0.005
JUL 15...	4.6	0.23	<0.04	0.34	E.004	E.01	0.059	0.57	<0.006	<0.006	<0.006	<0.004	<0.005
AUG 08...	4.0	0.27	<0.04	0.18	E.005	0.02	0.071	0.45	<0.006	<0.006	<0.006	<0.004	<0.005
SEP 09...	4.5	0.20	<0.04	0.25	<0.008	0.02	0.074	0.45	<0.006	<0.006	<0.006	<0.004	<0.005

12113390 DUWAMISH RIVER AT GOLF COURSE, AT TUKWILA, WA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	alpha-HCH-d6, surrog. wat flt 0.7u GF percent recovry (91065)	Atrazine, water, fltrd, ug/L (39632)	Azin-phos-methyl, water, fltrd 0.7u GF ug/L (82686)	Ben-flur-alin, water, fltrd 0.7u GF ug/L (82673)	Butyl-ate, water, fltrd, ug/L (04028)	Car-baryl, water, fltrd 0.7u GF ug/L (82680)	Carbo-furan, water, fltrd 0.7u GF ug/L (82674)	Chlor-pyri-fos water, fltrd, ug/L (38933)	cis-Per-methrin water fltrd 0.7u GF ug/L (82687)	Cyana-zine, water, fltrd, ug/L (04041)	DCPA, water fltrd 0.7u GF ug/L (82682)	Desulf-inyl fipro-nil, water, fltrd, ug/L (62170)	Diazi-non, water, fltrd, ug/L (39572)
NOV 05...	124	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005
DEC 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN 03...	99.1	E.005	<0.050	<0.010	<0.002	E.044	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005
FEB 04...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 04...	98.1	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005
APR 03...	126	<0.007	<0.050	<0.010	<0.002	E.006	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005
MAY 15...	98.1	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005
JUN 11...	90.6	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005
JUL 15...	92.8	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005
AUG 08...	89.6	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005
SEP 09...	88.0	<0.007	<0.050	<0.010	<0.002	<0.041	<0.020	<0.005	<0.006	<0.018	<0.003	<0.004	<0.005

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Diazi-non-d10 surrog. wat flt 0.7u GF percent recovry (91063)	Diel-drin, water, fltrd, ug/L (39381)	Disul-foton, water, fltrd 0.7u GF ug/L (82677)	EPTC, water, fltrd 0.7u GF ug/L (82668)	Ethal-flur-alin, water, fltrd 0.7u GF ug/L (82663)	Etho-prop, water, fltrd 0.7u GF ug/L (82672)	Desulf-inyl-fipro-nil amide, wat flt ug/L (62169)	Fipro-nil sulfide water, fltrd, ug/L (62167)	Fipro-nil sulfone water, fltrd, ug/L (62168)	Fipro-nil, water, fltrd, ug/L (62166)	Fonofos water, fltrd, ug/L (04095)	Lindane water, fltrd, ug/L (39341)	Linuron water fltrd 0.7u GF ug/L (82666)
NOV 05...	132	<0.005	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035
DEC 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN 03...	112	<0.005	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035
FEB 04...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 04...	108	<0.005	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035
APR 03...	134	<0.005	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035
MAY 15...	113	<0.005	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035
JUN 11...	106	<0.005	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035
JUL 15...	117	<0.005	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035
AUG 08...	95.4	<0.005	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035
SEP 09...	115	<0.005	<0.02	<0.002	<0.009	<0.005	<0.009	<0.005	<0.005	<0.007	<0.003	<0.004	<0.035

DUWAMISH RIVER BASIN

12113390 DUWAMISH RIVER AT GOLF COURSE, AT TUKWILA, WA—Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Malathion, water, fltrd, ug/L (39532)	Methyl parathion, water, fltrd, 0.7u GF ug/L (82667)	Metolachlor, water, fltrd, ug/L (39415)	Metribuzin, water, fltrd, ug/L (82630)	Molinate, water, fltrd, 0.7u GF ug/L (82671)	Napropamide, water, fltrd, 0.7u GF ug/L (82684)	p,p'-DDE, water, fltrd, ug/L (34653)	Parathion, water, fltrd, ug/L (39542)	Pebulate, water, fltrd, 0.7u GF ug/L (82669)	Pendimethalin, water, fltrd, 0.7u GF ug/L (82683)	Phorate water fltrd, 0.7u GF ug/L (82664)	Prometon, water, fltrd, ug/L (04037)	Pronamide, water, fltrd, 0.7u GF ug/L (82676)
NOV 05...	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004
DEC 05...	--	--	--	--	--	--	--	--	--	--	--	--	--
JAN 03...	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	E.01	<0.004
FEB 04...	--	--	--	--	--	--	--	--	--	--	--	--	--
MAR 04...	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004
APR 03...	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004
MAY 15...	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004
JUN 11...	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004
JUL 15...	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004
AUG 08...	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004
SEP 09...	<0.027	<0.006	<0.013	<0.006	<0.002	<0.007	<0.003	<0.010	<0.004	<0.022	<0.011	<0.01	<0.004

WATER-QUALITY DATA, WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003

Date	Propachlor, water, fltrd, ug/L (04024)	Propanil, water, fltrd, 0.7u GF ug/L (82679)	Propargite, water, fltrd, 0.7u GF ug/L (82685)	Simazine, water, fltrd, ug/L (04035)	Tebu-thiuron water fltrd, 0.7u GF ug/L (82670)	Terbacil, water, fltrd, 0.7u GF ug/L (82665)	Terbufos, water, fltrd, 0.7u GF ug/L (82675)	Thio-bencarb water fltrd, 0.7u GF ug/L (82681)	Tri-allate, water, fltrd, 0.7u GF ug/L (82678)	Tri-fluralin, water, fltrd, 0.7u GF ug/L (82661)	Suspended sediment concentration mg/L (80154)	Suspended sediment load, tons/d (80155)
NOV 05...	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	3	4.1
DEC 05...	--	--	--	--	--	--	--	--	--	--	7	15
JAN 03...	<0.010	<0.011	<0.02	0.011	E.01	<0.034	<0.02	<0.005	<0.002	<0.009	39	202
FEB 04...	--	--	--	--	--	--	--	--	--	--	90	1,330
MAR 04...	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	8	27
APR 03...	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	26	159
MAY 15...	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	19	59
JUN 11...	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	26	56
JUL 15...	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	8	11
AUG 08...	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	12	11
SEP 09...	<0.010	<0.011	<0.02	<0.005	<0.02	<0.034	<0.02	<0.005	<0.002	<0.009	9	9.1

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