



Water-Data Report 2007

14210000 CLACKAMAS RIVER AT ESTACADA, OR

Willamette Basin
Clackamas Subbasin

LOCATION.--Lat 45°18'00", long 122°21'10" referenced to North American Datum of 1927, in NE ¼ sec.19, T.3 S., R.4 E., Clackamas County, OR, Hydrologic Unit 17090011, on left bank, 0.2 mi downstream from River Mill Dam, 1.5 mi northwest of Estacada and at mile 23.1.

DRAINAGE AREA.--671 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April 1908 to current year. Monthly discharge only April 1908, published in WSP 1318. Published as "near Cazadero" January 1909 to September 1957.

REVISED RECORDS.--WSP 1248: 1908-9, 1910(M), 1916, 1917(M), 1922(M), 1923. WSP 1288: Drainage area (former site). WSP 1638: 1919(M).

GAGE.--Water-stage recorder. Datum of gage is 286.93 ft above NGVD of 1929 (levels by Portland General Electric Co.). See WSP 1738 for history of changes prior to Oct. 1, 1957. Oct. 1, 1957 to Feb. 16, 1965, water-stage recorder at same site at datum 12 ft higher. Feb. 17, 1965 to Sept. 30, 1991, water-stage recorder at same site at datum 10 ft higher.

REMARKS.--Records good. Diurnal fluctuations and some regulation caused by powerplants at River Mill Dam and since 1958, North Fork Dam. Minor regulation since 1956 by Timothy Lake (station 14208600). One small diversion upstream from station for city of Estacada municipal water supply.

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--50 years (water years 1909-1958), 2,689 ft³/s, 54.44 in/yr, 1,948,000 acre-ft/yr. 49 years (water years 1959-2007), 2,784 ft³/s, 56.37 in/yr, 2,017,000 acre-ft/yr, regulated period.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 86,900 ft³/s Dec. 22, 1964, gage height, 30.36 ft (present datum); minimum discharge, 50 ft³/s Mar. 10, 1961, from rating curve extended below 260 ft³/s; minimum daily, 285 ft³/s Oct. 4, 5, 1958, caused by filling of North Fork Dam forebay.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 15,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov 7	1130	*33,900	*22.29
Dec 13	1300	17,800	18.63
Dec 14	2000	31,000	21.71
Jan 3	1530	24,200	20.24
Feb 16	0730	15,200	17.86

Minimum discharge, 596 ft³/s, Sept. 20, gage height, 10.28 ft.

14210000 CLACKAMAS RIVER AT ESTACADA, OR—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	827	853	4,030	3,780	1,990	3,110	3,520	2,590	1,480	1,060	819	780
2	839	956	3,460	3,810	1,950	3,130	3,200	2,800	1,450	1,040	827	778
3	858	2,120	3,120	16,900	1,930	4,110	2,960	2,790	1,420	1,030	845	777
4	859	2,920	2,840	13,400	1,940	4,590	2,810	2,600	1,400	1,020	912	857
5	856	5,610	2,690	8,380	2,020	4,610	2,720	2,510	1,450	1,010	890	880
6	859	5,610	2,630	7,330	2,220	4,720	2,720	2,340	1,570	984	891	892
7	841	24,700	2,720	6,420	2,360	4,840	3,090	2,300	1,520	976	894	897
8	854	12,700	2,700	6,980	2,430	4,970	3,550	2,420	1,430	958	892	872
9	859	6,880	2,870	6,650	2,600	4,440	4,060	2,550	1,390	955	880	847
10	848	4,900	3,220	6,200	2,630	4,190	3,940	2,450	1,440	1,080	877	835
11	840	5,300	3,870	5,230	2,750	4,640	3,630	2,320	1,450	1,100	870	801
12	854	4,400	7,620	4,410	2,920	7,130	3,560	2,200	1,380	953	834	900
13	866	6,740	13,200	3,930	2,710	7,620	3,300	2,170	1,330	869	840	859
14	876	8,240	19,500	3,590	2,570	5,940	3,290	2,050	1,290	861	843	733
15	945	5,740	19,000	3,250	5,490	4,800	3,280	1,970	1,270	858	833	730
16	1,290	8,740	9,880	3,070	13,600	4,140	3,110	2,000	1,260	872	829	755
17	1,180	6,260	7,070	2,870	9,360	4,030	3,150	1,990	1,230	866	826	746
18	930	4,680	5,460	2,730	7,090	4,180	3,150	1,910	1,200	913	824	717
19	1,220	4,340	4,520	2,660	5,740	4,320	3,130	1,960	1,170	933	907	730
20	1,130	5,660	3,960	2,720	5,830	5,020	2,940	1,960	1,140	903	926	753
21	962	5,500	4,680	2,520	5,540	4,510	2,860	2,060	1,140	885	945	727
22	907	6,200	4,260	2,460	4,700	3,940	3,020	1,990	1,100	881	872	738
23	885	6,490	4,820	2,430	4,120	3,660	2,840	1,820	1,090	863	851	733
24	895	7,270	5,610	2,380	4,130	3,550	2,760	1,770	1,110	874	844	778
25	995	6,480	8,170	2,350	4,480	5,680	2,740	1,710	1,110	839	843	792
26	931	5,420	10,200	2,290	4,100	5,910	2,710	1,660	1,060	832	821	795
27	900	5,330	10,400	2,220	3,640	4,970	2,650	1,690	1,060	838	805	789
28	886	4,210	7,330	2,190	3,340	4,160	2,700	1,700	1,060	828	781	920
29	909	3,330	5,820	2,130	---	3,710	2,770	1,550	1,100	825	778	938
30	901	3,870	4,830	2,090	---	3,440	2,640	1,520	1,110	837	786	1,030
31	877	---	4,160	2,030	---	3,390	---	1,500	---	833	782	---
Total	28,679	181,449	194,640	139,400	114,180	141,450	92,800	64,850	38,210	28,576	26,367	24,379
Mean	925	6,048	6,279	4,497	4,078	4,563	3,093	2,092	1,274	922	851	813
Max	1,290	24,700	19,500	16,900	13,600	7,620	4,060	2,800	1,570	1,100	945	1,030
Min	827	853	2,630	2,030	1,930	3,110	2,640	1,500	1,060	825	778	717
Ac-ft	56,880	359,900	386,100	276,500	226,500	280,600	184,100	128,600	75,790	56,680	52,300	48,360
Cfsm	1.38	9.01	9.36	6.70	6.08	6.80	4.61	3.12	1.90	1.37	1.27	1.21
In.	1.59	10.06	10.79	7.73	6.33	7.84	5.14	3.60	2.12	1.58	1.46	1.35

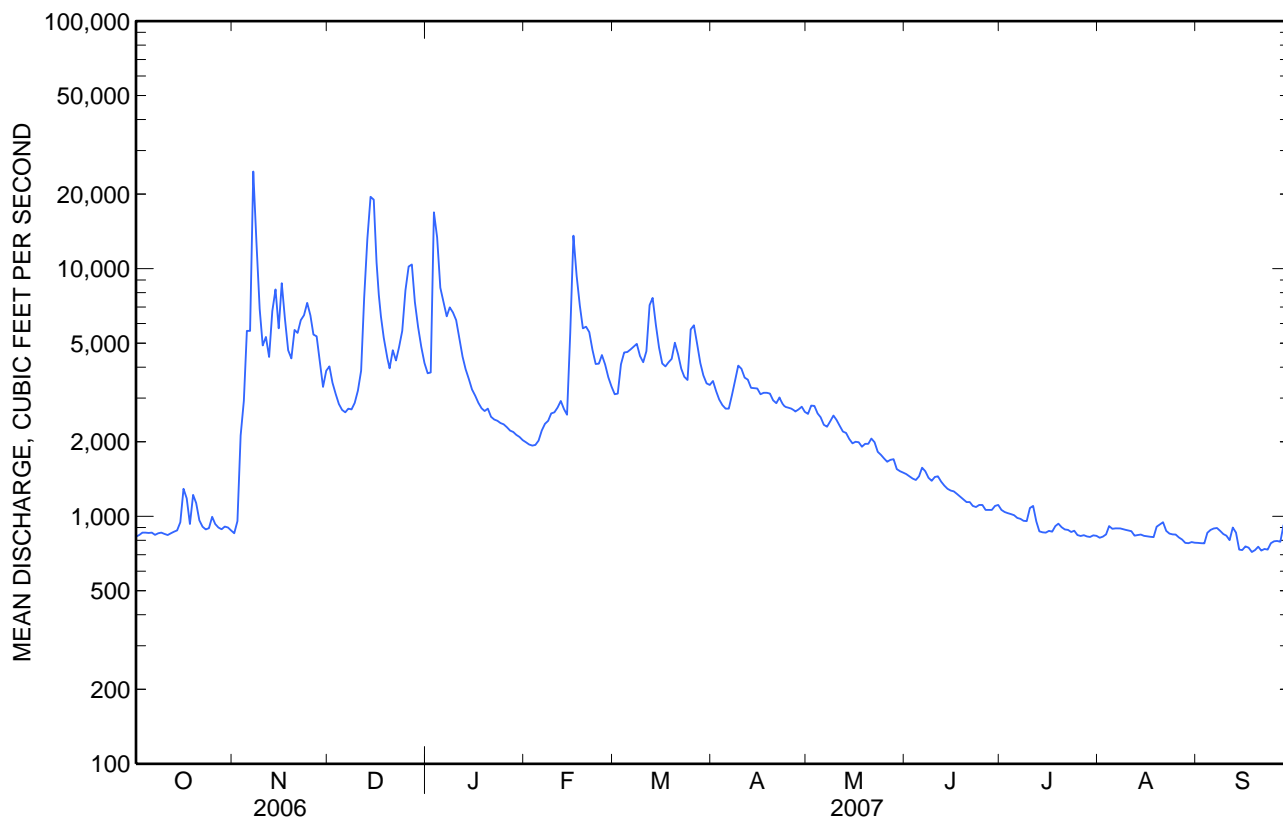
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2007, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	1,321	3,231	4,469	4,536	4,183	3,674	3,614	3,332	2,160	1,144	882	944
Max	2,712	6,494	11,170	8,821	10,650	8,921	5,296	6,396	5,143	2,018	1,208	1,602
(WY)	(1969)	(1996)	(1965)	(1974)	(1996)	(1972)	(1993)	(1969)	(1974)	(1974)	(1974)	(1959)
Min	725	806	1,030	1,036	977	1,850	1,867	1,456	882	763	659	613
(WY)	(1989)	(1988)	(1977)	(1977)	(1977)	(1992)	(1967)	(1992)	(1992)	(1992)	(1992)	(1994)

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SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 1959 - 2007	
Annual total	1,202,421		1,074,980			
Annual mean	3,294		2,945		2,784	
Highest annual mean					4,407	1974
Lowest annual mean					1,454	1977
Highest daily mean	25,400	Jan 11	24,700	Nov 7	57,900	Feb 7, 1996
Lowest daily mean	729	Sep 27	717	Sep 18	285	Oct 4, 1958
Annual seven-day minimum	771	Aug 17	735	Sep 17	507	Oct 3, 1958
Annual runoff (ac-ft)	2,385,000		2,132,000		2,017,000	
Annual runoff (cfsm)	4.91		4.39		4.15	
Annual runoff (inches)	66.66		59.60		56.37	
10 percent exceeds	6,960		5,860		5,250	
50 percent exceeds	2,410		2,170		2,160	
90 percent exceeds	816		835		799	



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WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: July 2001 to current year.

pH: July 2001 to current year.

WATER TEMPERATURE: July 2001 to current year.

DISSOLVED OXYGEN: July 2001 to current year.

TURBIDITY: July 2001 to current year.

INSTRUMENTATION.--Water-quality monitor. Any use of trade, product, or firm names in this publication is for descriptive purposes only and does not imply endorsement by the U.S. Government.

REMARKS.--

SPECIFIC CONDUCTANCE: Records excellent except those for June 28 to Aug. 30, which are good.

PH: Records excellent except those for Sept. 27-30, which are good and Oct. 11 to Nov. 16, which are fair.

WATER TEMPERATURE: Records excellent.

DISSOLVED OXYGEN: Records excellent except those for Jan. 22 to Mar. 26, which are good and April 22 to May 25, which are fair. :TAB:

TURBIDITY: Records excellent except those for June 28 to Aug. 30, which are good, Sept. 27-30, which are fair and Oct. 1 -11, which are poor. Data collected using a YSI 6026 turbidity sensor. Manufacturer's stated accuracy is the greater of +/- 5 percent or 2 Formazin Nephelometric Units.

FNU values below 10 are reported to nearest 0.1 FNU. Negative recorded values are reported as 0.0 FNU.

EXTREMES FOR PERIOD OF RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 77 microsiemens Sept. 3, 2006; minimum recorded, 24 microsiemens Apr. 14, 15, 2002.

pH: Maximum recorded, 8.0 units Dec. 23, 24, 2004; minimum recorded, 6.4 units December 23, 2005.

WATER TEMPERATURE: Maximum recorded, 19.5°C July 31, 2003; minimum recorded, 1.1°C Jan. 8-10, 2004, Feb. 20, 2006.

DISSOLVED OXYGEN: Maximum recorded, 14.6 mg/L Dec. 23, 2005; minimum recorded, 8.2 mg/L Aug. 17, 2001.

TURBIDITY: Maximum, 182 FNU Dec. 15, 2006; minimum, <1 FNU on many days each year.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 73 microsiemens Sept. 19; minimum, 27 microsiemens Nov. 7, 8, Dec. 15, Jan. 4.

pH: Maximum, 7.8 units Aug. 10, 11; minimum, 6.7 units Nov. 7, 8.

WATER TEMPERATURE: Maximum, 19.0°C July 15; minimum recorded, 1.6°C Jan. 15-17, but may have been lower during period of missing record.

DISSOLVED OXYGEN: Maximum recorded, 14.1 mg/l Dec. 14, but may have been higher during periods of missing record; minimum, 8.8 mg/L July 18, 19.

TURBIDITY: Maximum, 182 FNU Dec. 15; minimum, 0.0 FNU on many days during year.

14210000 CLACKAMAS RIVER AT ESTACADA, OR—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	68	66	66	65	65	65	45	44	45	40	38	39
2	68	66	67	65	65	65	45	43	43	41	40	40
3	66	66	66	65	64	65	43	43	43	41	36	39
4	66	66	66	65	64	65	44	43	44	36	27	29
5	66	66	66	64	51	58	45	44	45	32	29	31
6	66	66	66	51	40	44	47	45	46	35	32	34
7	66	66	66	40	27	33	47	47	47	36	35	35
8	66	66	66	29	27	28	48	47	48	37	36	37
9	66	66	66	33	29	31	48	47	48	36	35	36
10	66	66	66	36	33	34	48	47	47	36	35	36
11	67	66	66	38	36	37	47	46	46	37	36	36
12	67	67	67	39	38	39	46	40	44	38	37	37
13	67	67	67	41	39	40	40	31	36	39	38	38
14	67	67	67	41	35	38	31	28	30	40	39	39
15	67	67	67	36	35	36	28	27	27	41	40	40
16	67	67	67	39	36	38	32	28	30	42	41	41
17	67	67	67	37	34	34	34	32	32	43	41	42
18	67	67	67	36	34	35	36	34	34	44	43	43
19	67	66	66	39	36	37	36	36	36	44	43	44
20	66	65	65	41	39	40	38	36	37	45	44	44
21	65	65	65	40	39	39	40	38	38	45	45	45
22	65	65	65	39	38	38	40	40	40	45	44	45
23	65	65	65	39	38	38	40	38	39	45	44	45
24	65	64	64	40	39	39	40	38	39	46	45	45
25	64	64	64	39	39	39	39	36	37	46	46	46
26	65	64	64	41	39	40	36	34	35	47	46	47
27	65	64	65	42	41	41	34	32	33	47	47	47
28	65	65	65	42	41	41	34	32	33	47	47	47
29	65	65	65	42	41	42	36	34	35	48	47	48
30	65	65	65	44	42	43	37	36	36	48	48	48
31	65	65	65	---	---	---	38	37	38	48	48	48
Month	68	64	66	65	27	42	48	27	39	48	27	41

14210000 CLACKAMAS RIVER AT ESTACADA, OR—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	49	48	49	43	42	43	41	40	40	44	44	44
2	49	49	49	44	43	43	41	41	41	44	44	44
3	49	49	49	45	44	44	41	41	41	44	44	44
4	50	49	50	45	43	44	42	41	42	44	43	43
5	50	50	50	43	42	42	42	42	42	43	43	43
6	50	50	50	42	41	42	42	42	42	44	43	44
7	50	50	50	42	41	41	44	42	43	44	44	44
8	50	50	50	41	41	41	43	43	43	44	44	44
9	50	48	49	41	40	40	43	40	42	44	44	44
10	48	47	48	40	40	40	40	38	40	45	44	45
11	47	47	47	41	40	40	40	38	38	45	44	44
12	47	45	46	41	38	40	40	40	40	44	44	44
13	45	44	45	38	32	34	40	39	39	45	44	44
14	44	44	44	32	31	32	40	39	39	45	44	45
15	44	43	43	34	32	33	40	39	40	45	45	45
16	43	28	34	35	34	35	41	40	41	45	45	45
17	30	28	29	37	35	37	41	41	41	46	45	46
18	32	30	31	39	37	38	41	41	41	47	46	46
19	33	32	33	39	38	39	42	41	42	47	47	47
20	35	33	34	39	37	38	42	41	42	48	47	47
21	35	35	35	37	36	36	42	42	42	49	47	48
22	36	35	36	36	36	36	43	42	43	49	48	48
23	38	36	37	37	36	37	43	43	43	48	47	48
24	39	38	38	38	37	38	43	43	43	48	47	47
25	40	39	40	40	38	39	43	43	43	49	47	48
26	40	40	40	40	36	38	45	43	44	49	48	48
27	41	40	41	36	35	35	44	44	44	49	49	49
28	42	41	42	36	35	36	44	44	44	50	49	49
29	---	---	---	37	36	37	44	44	44	51	50	50
30	---	---	---	38	37	38	44	44	44	51	51	51
31	---	---	---	40	38	39	---	---	---	51	51	51
Month	50	28	42	45	31	39	45	38	42	51	43	46

14210000 CLACKAMAS RIVER AT ESTACADA, OR—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	52	51	51	61	60	61	66	66	66	67	67	67
2	52	52	52	61	61	61	66	66	66	68	67	67
3	53	52	52	61	61	61	67	66	66	68	67	67
4	54	53	53	62	61	61	67	66	67	68	67	68
5	54	54	54	62	61	62	67	67	67	68	68	68
6	55	54	55	62	62	62	67	67	67	68	68	68
7	56	55	56	62	61	62	67	66	66	68	68	68
8	56	55	55	62	61	61	66	66	66	68	67	67
9	56	55	55	62	62	62	66	65	65	68	67	67
10	57	55	55	63	62	62	66	65	66	67	67	67
11	56	54	55	63	63	63	66	66	66	67	67	67
12	56	56	56	64	63	63	66	66	66	67	67	67
13	56	56	56	64	64	64	66	66	66	67	67	67
14	56	55	56	64	64	64	66	66	66	67	67	67
15	55	55	55	64	63	64	66	66	66	68	67	67
16	55	55	55	65	64	64	67	66	66	67	67	67
17	56	55	55	64	64	64	67	66	66	68	67	68
18	57	56	56	65	64	64	67	66	67	68	68	68
19	57	57	57	65	64	65	67	66	67	73	68	70
20	58	57	57	66	65	65	67	66	67	72	68	69
21	58	57	57	66	65	66	67	66	67	68	68	68
22	58	57	58	66	65	65	67	66	66	69	68	68
23	58	58	58	65	64	64	66	65	65	69	68	69
24	58	58	58	65	64	65	65	65	65	68	68	68
25	59	58	59	65	64	64	66	65	65	68	68	68
26	60	59	60	65	64	65	66	66	66	68	68	68
27	60	60	60	65	65	65	66	66	66	68	68	68
28	61	60	60	65	65	65	66	66	66	68	68	68
29	60	60	60	65	65	65	67	66	66	68	68	68
30	60	60	60	66	65	66	69	66	67	68	68	68
31	---	---	---	66	66	66	67	67	67	---	---	---
Month	61	51	56	66	60	64	69	65	66	73	67	68

	Max	Min	Mean
Year	73	27	51

14210000 CLACKAMAS RIVER AT ESTACADA, OR—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	October			November			December			January		
1	7.5	7.4	7.5	7.4	7.3	7.3	7.2	7.1	7.1	7.2	7.1	7.1
2	7.6	7.4	7.5	7.4	7.3	7.3	7.2	7.1	7.1	7.2	7.1	7.1
3	7.6	7.5	7.5	7.3	7.2	7.3	7.1	7.1	7.1	7.2	7.1	7.1
4	7.6	7.5	7.5	7.3	7.2	7.3	7.2	7.1	7.1	7.1	6.9	6.9
5	7.5	7.4	7.5	7.4	7.1	7.1	7.2	7.1	7.2	7.0	6.9	7.0
6	7.5	7.4	7.5	7.1	6.9	7.0	7.2	7.1	7.2	7.0	7.0	7.0
7	7.5	7.4	7.5	7.0	6.7	6.8	7.2	7.1	7.2	7.1	7.0	7.0
8	7.5	7.5	7.5	6.8	6.7	6.8	7.2	7.2	7.2	7.1	7.0	7.1
9	7.5	7.4	7.5	6.9	6.8	6.9	7.2	7.2	7.2	7.1	7.1	7.1
10	7.5	7.4	7.5	7.0	6.8	6.9	7.2	7.2	7.2	7.1	7.0	7.1
11	7.6	7.5	7.5	7.0	6.9	6.9	7.2	7.2	7.2	7.1	7.0	7.1
12	7.6	7.5	7.5	7.0	6.9	6.9	7.2	7.1	7.2	7.1	7.0	7.1
13	7.6	7.5	7.5	7.0	6.8	6.9	7.1	7.0	7.1	7.1	7.1	7.1
14	7.6	7.5	7.5	6.9	6.8	6.9	7.0	6.9	7.0	7.2	7.1	7.1
15	7.6	7.5	7.5	6.9	6.8	6.8	6.9	6.8	6.8	7.2	7.1	7.1
16	7.5	7.4	7.5	7.5	6.8	6.9	7.0	6.9	7.0	7.2	7.1	7.2
17	7.5	7.4	7.5	7.1	7.0	7.0	7.0	7.0	7.0	7.2	7.1	7.2
18	7.5	7.4	7.5	7.1	7.0	7.1	7.0	7.0	7.0	7.2	7.2	7.2
19	7.5	7.3	7.4	7.2	7.0	7.1	7.1	7.0	7.1	7.2	7.2	7.2
20	7.5	7.3	7.4	7.2	7.1	7.1	7.1	7.0	7.1	7.2	7.2	7.2
21	7.4	7.3	7.4	7.2	7.1	7.1	7.1	7.1	7.1	7.3	7.2	7.2
22	7.4	7.4	7.4	7.2	7.1	7.1	7.2	7.1	7.1	7.3	7.2	7.3
23	7.4	7.3	7.4	7.2	7.0	7.1	7.1	7.1	7.1	7.3	7.2	7.3
24	7.4	7.3	7.4	7.2	7.0	7.1	7.2	7.1	7.1	7.3	7.2	7.2
25	7.4	7.3	7.4	7.2	7.0	7.1	7.1	7.1	7.1	7.3	7.2	7.2
26	7.4	7.3	7.4	7.2	7.0	7.1	7.1	7.0	7.1	7.3	7.2	7.2
27	7.4	7.3	7.4	7.2	7.1	7.1	7.1	7.0	7.0	7.3	7.2	7.3
28	7.3	7.3	7.3	7.1	7.1	7.1	7.1	7.0	7.0	7.3	7.2	7.3
29	7.3	7.3	7.3	7.2	7.0	7.1	7.1	7.0	7.0	7.3	7.3	7.3
30	7.3	7.3	7.3	7.2	7.1	7.1	7.1	7.0	7.1	7.3	7.3	7.3
31	7.3	7.3	7.3	---	---	---	7.1	7.1	7.1	7.3	7.3	7.3
Max	7.6	7.5	7.5	7.5	7.3	7.3	7.2	7.2	7.2	7.3	7.3	7.3
Min	7.3	7.3	7.3	6.8	6.7	6.8	6.9	6.8	6.8	7.0	6.9	6.9

14210000 CLACKAMAS RIVER AT ESTACADA, OR—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	February			March			April			May		
1	7.3	7.3	7.3	7.3	7.1	7.1	7.2	7.1	7.1	7.4	7.3	7.3
2	7.3	7.3	7.3	7.2	7.1	7.1	7.2	7.1	7.1	7.3	7.2	7.3
3	7.3	7.3	7.3	7.2	7.1	7.1	7.2	7.1	7.2	7.3	7.3	7.3
4	7.4	7.3	7.3	7.1	7.1	7.1	7.3	7.1	7.2	7.4	7.3	7.3
5	7.3	7.3	7.3	7.1	7.1	7.1	7.3	7.2	7.3	7.3	7.3	7.3
6	7.3	7.3	7.3	7.1	7.0	7.1	7.3	7.2	7.3	7.4	7.2	7.3
7	7.3	7.3	7.3	7.1	7.0	7.1	7.4	7.2	7.2	7.3	7.2	7.2
8	7.4	7.3	7.3	7.1	7.0	7.1	7.3	7.2	7.2	7.2	7.2	7.2
9	7.4	7.3	7.3	7.1	7.0	7.1	7.3	7.2	7.2	7.3	7.2	7.2
10	7.3	7.3	7.3	7.1	7.0	7.1	7.3	7.2	7.2	7.2	7.2	7.2
11	7.3	7.3	7.3	7.2	7.1	7.1	7.2	7.1	7.2	7.3	7.2	7.2
12	7.3	7.2	7.3	7.2	7.1	7.1	7.2	7.2	7.2	7.3	7.2	7.2
13	7.3	7.2	7.3	7.1	7.0	7.0	7.3	7.2	7.2	7.3	7.2	7.2
14	7.3	7.2	7.3	7.0	6.9	7.0	7.3	7.1	7.2	7.3	7.2	7.3
15	7.3	7.2	7.2	7.0	6.9	7.0	7.3	7.2	7.2	7.4	7.2	7.3
16	7.3	6.9	7.0	7.1	7.0	7.0	7.3	7.2	7.2	7.3	7.2	7.2
17	7.0	6.9	7.0	7.1	7.0	7.0	7.3	7.2	7.2	7.3	7.2	7.2
18	7.1	7.0	7.0	7.1	7.0	7.0	7.3	7.2	7.2	7.3	7.2	7.2
19	7.1	7.0	7.1	7.1	7.0	7.1	7.3	7.2	7.2	7.3	7.2	7.2
20	7.1	7.0	7.1	7.1	7.0	7.0	7.3	7.2	7.3	7.3	7.2	7.2
21	7.1	7.1	7.1	7.1	7.0	7.0	7.3	7.2	7.2	7.3	7.2	7.2
22	7.1	7.1	7.1	7.1	7.0	7.0	7.3	7.2	7.2	7.3	7.2	7.3
23	7.2	7.1	7.1	7.1	7.0	7.0	7.3	7.2	7.3	7.4	7.2	7.3
24	7.2	7.1	7.2	7.1	7.0	7.1	7.4	7.2	7.3	7.4	7.2	7.3
25	7.2	7.1	7.2	7.1	7.0	7.1	7.3	7.2	7.2	7.4	7.2	7.3
26	7.2	7.1	7.2	7.1	7.0	7.0	7.4	7.2	7.3	7.4	7.2	7.3
27	7.2	7.1	7.2	7.0	7.0	7.0	7.4	7.2	7.3	7.3	7.2	7.3
28	7.2	7.2	7.2	7.1	7.0	7.0	7.4	7.2	7.3	7.3	7.2	7.3
29	---	---	---	7.1	7.0	7.0	7.4	7.3	7.3	7.4	7.2	7.3
30	---	---	---	7.2	7.0	7.1	7.4	7.2	7.3	7.4	7.3	7.3
31	---	---	---	7.2	7.1	7.1	---	---	---	7.4	7.2	7.3
Max	7.4	7.3	7.3	7.3	7.1	7.1	7.4	7.3	7.3	7.4	7.3	7.3
Min	7.0	6.9	7.0	7.0	6.9	7.0	7.2	7.1	7.1	7.2	7.2	7.2

14210000 CLACKAMAS RIVER AT ESTACADA, OR—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	June			July			August			September		
1	7.4	7.2	7.3	7.4	7.3	7.4	7.5	7.4	7.5	7.5	7.4	7.4
2	7.4	7.3	7.3	7.5	7.3	7.4	7.6	7.4	7.5	7.5	7.4	7.4
3	7.4	7.3	7.3	7.5	7.3	7.4	7.7	7.4	7.5	7.4	7.3	7.4
4	7.4	7.3	7.3	7.5	7.3	7.4	7.6	7.4	7.4	7.4	7.3	7.4
5	7.4	7.2	7.3	7.4	7.3	7.3	7.5	7.3	7.4	7.4	7.3	7.3
6	7.4	7.2	7.3	7.4	7.3	7.4	7.5	7.3	7.5	7.3	7.3	7.3
7	7.4	7.2	7.3	7.4	7.3	7.3	7.6	7.4	7.5	7.4	7.3	7.4
8	7.4	7.3	7.4	7.4	7.3	7.4	7.6	7.5	7.6	7.5	7.4	7.4
9	7.5	7.3	7.4	7.5	7.3	7.4	7.7	7.5	7.6	7.5	7.4	7.5
10	7.4	7.3	7.3	7.4	7.3	7.4	7.8	7.6	7.7	7.5	7.4	7.5
11	7.4	7.3	7.3	7.4	7.3	7.4	7.8	7.6	7.7	7.5	7.4	7.4
12	7.5	7.3	7.4	7.4	7.3	7.3	7.7	7.6	7.7	7.5	7.3	7.4
13	7.5	7.3	7.4	7.4	7.2	7.4	7.7	7.6	7.6	7.4	7.4	7.4
14	7.5	7.3	7.4	7.5	7.3	7.4	7.6	7.6	7.6	7.4	7.3	7.4
15	7.4	7.3	7.3	7.5	7.3	7.4	7.7	7.5	7.6	7.4	7.3	7.4
16	7.3	7.2	7.3	7.4	7.3	7.4	7.7	7.6	7.6	7.4	7.4	7.4
17	7.4	7.2	7.2	7.4	7.3	7.3	7.6	7.5	7.6	7.4	7.4	7.4
18	7.4	7.2	7.3	7.3	7.2	7.3	7.6	7.5	7.5	7.4	7.3	7.4
19	7.5	7.3	7.4	7.3	7.2	7.3	7.5	7.4	7.5	7.4	7.3	7.4
20	7.5	7.3	7.4	7.4	7.3	7.3	7.6	7.4	7.5	7.5	7.4	7.4
21	7.5	7.3	7.4	7.4	7.3	7.4	7.6	7.4	7.5	7.5	7.4	7.4
22	7.4	7.3	7.3	7.5	7.3	7.4	7.6	7.5	7.5	7.5	7.4	7.5
23	7.4	7.2	7.3	7.5	7.4	7.4	7.6	7.5	7.6	7.5	7.4	7.4
24	7.4	7.2	7.3	7.5	7.4	7.4	7.6	7.5	7.6	7.5	7.4	7.4
25	7.4	7.2	7.3	7.5	7.4	7.4	7.6	7.5	7.5	7.5	7.4	7.4
26	7.5	7.3	7.4	7.5	7.4	7.4	7.6	7.4	7.5	7.5	7.4	7.4
27	7.6	7.3	7.4	7.4	7.3	7.4	7.5	7.4	7.5	7.5	7.4	7.5
28	7.5	7.3	7.4	7.4	7.3	7.4	7.5	7.4	7.5	7.6	7.4	7.5
29	7.5	7.3	7.4	7.4	7.3	7.4	7.6	7.4	7.5	7.5	7.4	7.5
30	7.4	7.3	7.3	7.4	7.3	7.4	7.6	7.4	7.5	7.5	7.4	7.5
31	---	---	---	7.5	7.4	7.4	7.5	7.4	7.5	---	---	---
Max	7.6	7.3	7.4	7.5	7.4	7.4	7.8	7.6	7.7	7.6	7.4	7.5
Min	7.3	7.2	7.2	7.3	7.2	7.3	7.5	7.3	7.4	7.3	7.3	7.3

	Max	Min	Median
Year			
Maximum	7.8	7.6	7.7
Year			
Minimum	6.8	6.7	6.8

14210000 CLACKAMAS RIVER AT ESTACADA, OR—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	12.8	12.5	12.6	7.8	7.5	7.6	4.2	4.1	4.2	---	---	---
2	12.6	12.4	12.5	7.6	7.3	7.4	4.8	4.2	4.5	---	---	---
3	12.5	12.3	12.4	7.8	6.6	7.4	4.8	4.8	4.8	---	---	---
4	12.4	12.1	12.2	7.0	6.3	6.6	4.8	4.6	4.7	---	---	---
5	12.1	11.8	11.9	8.4	7.0	7.6	4.6	4.4	4.5	---	---	---
6	12.0	11.8	11.9	9.5	8.4	9.0	4.4	4.2	4.2	---	---	---
7	11.9	11.6	11.7	10.8	9.5	10.4	4.6	4.2	4.4	---	---	---
8	11.6	11.4	11.5	10.4	9.2	9.8	4.7	4.6	4.6	---	---	---
9	11.5	11.3	11.4	9.2	8.6	9.0	4.9	4.7	4.8	---	---	---
10	11.4	11.1	11.3	8.6	8.1	8.3	5.2	4.9	5.0	---	---	---
11	11.3	10.9	11.0	8.1	7.5	7.8	5.7	5.2	5.4	---	---	---
12	11.0	10.7	10.8	7.5	7.4	7.4	6.1	5.7	5.9	---	---	---
13	10.8	10.6	10.7	7.4	7.3	7.3	6.6	6.1	6.3	3.3	2.3	2.8
14	10.7	10.5	10.5	7.5	7.2	7.3	6.6	6.3	6.4	2.3	1.8	2.0
15	10.5	10.3	10.3	7.4	7.1	7.2	6.6	5.4	6.2	1.8	1.6	1.7
16	10.3	10.2	10.2	7.9	7.2	7.5	---	---	---	1.7	1.6	1.6
17	10.3	10.2	10.2	7.8	7.4	7.6	---	---	---	1.8	1.6	1.6
18	10.2	10.0	10.1	7.4	6.9	7.0	---	---	---	2.6	1.8	2.1
19	10.3	10.0	10.1	6.9	6.8	6.9	---	---	---	3.1	2.6	2.8
20	10.4	10.2	10.3	7.0	6.7	6.8	---	---	---	3.4	3.1	3.2
21	10.3	10.0	10.2	7.4	7.0	7.3	---	---	---	3.7	3.4	3.5
22	10.2	9.9	10.1	7.4	6.9	7.2	---	---	---	4.0	3.7	3.8
23	10.3	10.0	10.1	6.9	6.2	6.5	---	---	---	4.0	3.8	3.9
24	10.3	10.0	10.1	6.3	6.2	6.2	---	---	---	4.1	3.8	3.9
25	10.0	9.4	9.6	6.6	6.2	6.4	---	---	---	4.2	4.0	4.1
26	9.4	9.3	9.3	6.5	6.1	6.4	---	---	---	4.2	4.0	4.1
27	9.3	9.0	9.1	6.1	5.7	5.9	---	---	---	4.1	3.8	3.9
28	9.1	8.9	9.0	5.7	5.2	5.4	---	---	---	3.8	3.5	3.6
29	9.0	8.6	8.7	5.2	4.6	4.8	---	---	---	3.5	3.3	3.4
30	8.6	8.2	8.3	4.6	4.2	4.5	---	---	---	3.4	3.1	3.2
31	8.2	7.8	7.9	---	---	---	---	---	---	3.1	2.8	2.9
Month	12.8	7.8	10.5	10.8	4.2	7.2	---	---	---	---	---	---

14210000 CLACKAMAS RIVER AT ESTACADA, OR—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	2.8	2.6	2.7	4.7	4.5	4.5	7.1	6.3	6.7	10.4	9.6	9.9
2	2.7	2.5	2.6	4.5	4.2	4.3	7.1	6.8	6.9	10.0	9.6	9.8
3	2.6	2.5	2.5	4.3	4.0	4.2	6.9	6.4	6.6	9.8	9.1	9.4
4	2.7	2.6	2.7	5.4	4.2	4.7	6.7	6.2	6.4	9.6	8.8	9.1
5	3.0	2.7	2.8	5.8	5.3	5.5	7.1	6.2	6.5	9.1	8.5	8.7
6	3.7	3.0	3.4	6.2	5.6	5.9	8.2	7.1	7.5	9.0	8.6	8.8
7	4.0	3.7	3.8	6.1	5.9	6.0	8.3	7.8	8.0	9.3	8.8	9.0
8	4.9	4.0	4.5	6.0	5.8	5.9	9.0	8.0	8.4	9.8	9.2	9.5
9	5.2	4.9	5.0	5.8	5.7	5.8	9.0	8.4	8.6	10.3	9.6	9.9
10	5.4	5.1	5.2	6.0	5.8	5.9	8.4	7.9	8.2	11.5	10.3	10.9
11	5.5	5.3	5.4	6.7	6.0	6.3	7.9	6.9	7.3	11.7	11.2	11.4
12	5.5	5.3	5.4	7.3	6.5	6.9	7.6	6.7	7.0	11.6	10.8	11.2
13	5.4	5.2	5.3	7.2	6.5	6.9	6.9	6.5	6.7	11.0	10.7	10.8
14	5.4	5.3	5.3	6.5	6.0	6.1	7.0	6.6	6.8	10.7	10.5	10.6
15	5.4	5.3	5.4	6.1	5.6	5.9	7.8	7.0	7.2	11.0	10.6	10.9
16	6.3	5.4	6.0	6.0	5.5	5.8	7.8	7.3	7.5	11.3	10.9	11.2
17	6.4	6.1	6.2	6.4	5.6	5.9	7.7	7.1	7.4	11.5	11.2	11.4
18	6.2	6.1	6.1	6.9	6.2	6.5	7.3	6.7	7.0	11.9	11.5	11.8
19	6.1	5.8	6.0	7.4	6.8	7.1	7.5	6.8	7.1	12.3	11.8	12.1
20	5.8	5.4	5.5	7.4	7.1	7.3	7.6	6.8	7.2	12.0	11.7	11.9
21	5.5	5.2	5.4	7.1	6.6	6.8	7.6	6.8	7.1	11.8	11.4	11.7
22	5.2	4.7	4.9	6.6	5.8	6.1	7.3	7.1	7.2	11.4	10.9	11.2
23	4.8	4.7	4.7	6.4	5.8	6.0	7.8	7.0	7.3	10.9	10.6	10.8
24	4.9	4.8	4.8	6.8	6.3	6.5	8.0	7.5	7.7	11.2	10.6	11.0
25	4.8	4.5	4.7	7.4	6.8	7.0	8.6	7.9	8.1	11.6	11.1	11.3
26	4.8	4.3	4.5	7.6	7.0	7.4	9.1	8.6	8.7	11.9	11.3	11.6
27	4.9	4.6	4.7	7.0	6.1	6.3	9.5	8.8	9.1	12.1	11.7	12.0
28	4.9	4.7	4.8	6.2	5.9	6.0	9.6	9.0	9.3	12.2	11.6	11.8
29	---	---	---	6.4	5.6	5.9	10.0	9.2	9.5	12.9	12.1	12.5
30	---	---	---	6.4	6.0	6.2	10.3	9.6	9.9	13.1	12.5	12.9
31	---	---	---	6.6	6.2	6.3	---	---	---	13.5	13.0	13.2
Month	6.4	2.5	4.7	7.6	4.0	6.1	10.3	6.2	7.6	13.5	8.5	10.9

14210000 CLACKAMAS RIVER AT ESTACADA, OR—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	13.8	13.3	13.6	15.8	15.3	15.5	17.9	17.6	17.8	16.3	16.2	16.2
2	14.3	13.7	14.0	15.9	15.6	15.7	18.0	17.7	17.9	16.3	16.1	16.2
3	14.8	14.2	14.5	16.1	15.8	15.9	18.2	17.8	18.0	16.5	16.2	16.4
4	15.2	14.7	14.9	16.4	16.0	16.3	17.9	17.6	17.8	16.6	16.4	16.5
5	15.2	14.8	15.0	16.8	16.4	16.6	17.6	17.5	17.5	16.5	16.2	16.4
6	15.1	14.7	14.9	17.0	16.7	16.9	17.5	17.2	17.3	16.2	15.9	16.0
7	15.0	14.3	14.8	17.2	16.9	17.0	17.2	17.0	17.0	15.9	15.7	15.8
8	14.3	14.0	14.1	17.3	16.9	17.1	17.0	16.5	16.7	15.7	15.4	15.6
9	14.0	13.5	13.8	17.8	17.2	17.5	16.5	16.3	16.4	15.9	15.4	15.6
10	13.6	13.2	13.4	18.4	17.6	17.9	16.5	16.2	16.3	15.7	15.2	15.4
11	13.6	13.3	13.5	18.4	18.1	18.3	16.5	16.2	16.4	15.3	15.1	15.2
12	13.5	13.1	13.3	18.6	18.1	18.3	16.5	16.4	16.5	15.3	14.9	15.0
13	13.8	13.4	13.5	18.8	18.5	18.7	16.5	16.2	16.4	15.0	14.6	14.8
14	13.5	13.3	13.4	18.9	18.7	18.8	16.7	16.4	16.5	14.6	14.4	14.5
15	13.8	13.4	13.6	19.0	18.8	18.9	16.9	16.6	16.7	14.5	14.4	14.4
16	13.6	13.3	13.4	18.9	18.8	18.8	16.9	16.7	16.8	14.4	14.3	14.4
17	13.7	13.4	13.5	18.8	18.6	18.7	16.8	16.5	16.6	14.3	14.2	14.2
18	13.8	13.5	13.7	18.6	18.1	18.3	16.5	16.4	16.4	14.2	14.1	14.2
19	14.2	13.7	14.0	18.2	17.9	18.0	16.5	16.2	16.3	14.2	13.9	14.0
20	14.6	14.1	14.3	18.0	17.7	17.9	16.3	16.0	16.1	14.0	13.8	13.8
21	14.9	14.6	14.7	17.7	17.2	17.4	16.0	15.6	15.8	13.8	13.5	13.6
22	14.9	14.7	14.8	17.3	17.1	17.2	15.7	15.5	15.6	13.6	13.5	13.6
23	14.8	14.5	14.6	17.3	17.0	17.2	15.6	15.4	15.5	13.6	13.4	13.5
24	14.8	14.5	14.6	17.2	17.0	17.1	15.8	15.4	15.6	13.4	13.0	13.1
25	14.9	14.4	14.7	17.4	17.0	17.3	16.1	15.8	15.9	13.0	12.8	12.9
26	15.5	14.8	15.1	17.6	17.4	17.5	16.3	16.0	16.1	12.9	12.7	12.8
27	15.2	14.9	15.1	17.6	17.3	17.4	16.2	16.0	16.1	12.8	12.6	12.7
28	15.1	14.9	15.0	17.8	17.5	17.7	16.1	15.9	16.1	12.7	12.4	12.5
29	15.2	14.9	15.0	17.6	17.4	17.5	16.3	16.0	16.2	12.4	12.0	12.1
30	15.3	14.8	15.0	17.6	17.3	17.4	16.4	16.2	16.3	12.0	11.8	11.9
31	---	---	---	17.8	17.4	17.6	16.4	16.2	16.3	---	---	---
Month	15.5	13.1	14.3	19.0	15.3	17.5	18.2	15.4	16.5	16.6	11.8	14.4

14210000 CLACKAMAS RIVER AT ESTACADA, OR—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	10.5	10.3	10.4	11.5	11.3	11.4	13.0	12.8	12.9	12.6	11.6	12.1
2	10.5	10.3	10.4	11.4	11.2	11.4	12.8	12.7	12.8	12.3	11.0	11.8
3	10.6	10.4	10.5	12.1	11.2	11.5	12.8	12.5	12.6	13.6	11.5	12.8
4	10.6	10.4	10.5	12.1	11.8	11.9	12.9	12.6	12.7	12.9	12.1	12.5
5	10.6	10.4	10.5	12.1	11.7	12.0	13.0	12.7	12.8	12.7	12.1	12.4
6	10.6	10.4	10.6	11.9	11.4	11.6	13.0	12.8	12.9	---	---	---
7	10.6	10.5	10.6	13.2	11.5	12.8	13.0	12.5	12.6	---	---	---
8	10.6	10.4	10.5	12.8	12.0	12.2	12.6	12.3	12.5	12.4	11.6	11.9
9	10.5	10.4	10.5	12.0	11.8	11.9	12.5	12.3	12.4	---	---	---
10	10.6	10.4	10.5	11.8	11.6	11.7	12.4	12.2	12.3	---	---	---
11	10.7	10.5	10.6	12.0	11.8	11.9	12.5	12.0	12.2	---	---	---
12	10.8	10.6	10.7	11.8	11.7	11.7	12.9	12.4	12.7	---	---	---
13	10.7	10.6	10.7	12.5	11.7	12.0	13.5	12.3	13.0	---	---	---
14	10.8	10.6	10.7	12.8	12.3	12.6	14.1	13.0	13.4	---	---	---
15	10.8	10.7	10.7	12.3	11.9	12.1	14.0	13.3	13.6	---	---	---
16	10.7	10.5	10.6	12.9	12.1	12.6	13.6	12.6	13.1	---	---	---
17	10.7	10.5	10.6	12.4	12.2	12.3	12.9	12.7	12.8	---	---	---
18	10.9	10.5	10.7	12.4	12.2	12.3	13.1	12.6	12.8	---	---	---
19	10.8	10.5	10.7	12.3	12.1	12.2	12.9	12.5	12.7	---	---	---
20	10.7	10.5	10.6	12.5	12.1	12.3	12.8	12.5	12.6	---	---	---
21	10.7	10.5	10.7	12.1	12.0	12.0	12.7	12.3	12.6	---	---	---
22	10.8	10.6	10.7	12.3	12.1	12.2	12.5	12.0	12.3	---	---	---
23	10.8	10.6	10.7	12.7	12.3	12.5	12.4	11.9	12.1	13.1	13.0	13.0
24	10.8	10.6	10.7	12.8	12.6	12.7	12.3	11.7	12.0	13.0	12.9	13.0
25	11.0	10.8	10.9	12.8	12.4	12.6	12.7	11.7	12.3	12.9	12.9	12.9
26	11.1	10.9	11.0	12.4	12.1	12.2	12.8	12.0	12.2	12.9	12.9	12.9
27	11.2	11.0	11.1	12.6	12.3	12.4	12.8	12.0	12.3	13.0	12.9	12.9
28	11.2	11.1	11.1	12.6	12.3	12.4	12.8	12.1	12.3	13.1	13.0	13.0
29	11.2	11.1	11.2	12.8	12.5	12.7	12.3	11.6	12.1	13.1	13.1	13.1
30	11.3	11.2	11.2	13.0	12.7	12.9	12.4	11.7	12.0	13.2	13.1	13.1
31	11.4	11.2	11.3	---	---	---	12.2	10.9	12.1	13.2	13.1	13.2
Month	11.4	10.3	10.7	13.2	11.2	12.2	14.1	10.9	12.6	---	---	---

14210000 CLACKAMAS RIVER AT ESTACADA, OR—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	13.4	13.1	13.2	13.0	12.7	12.8	12.4	12.2	12.2	11.1	11.0	11.0
2	13.5	13.4	13.4	13.2	12.9	13.0	12.4	12.1	12.2	11.1	10.9	11.0
3	13.5	13.4	13.5	13.2	13.0	13.1	12.4	12.2	12.3	11.1	10.9	11.0
4	13.5	13.5	13.5	13.1	12.8	12.9	12.5	12.3	12.4	11.2	11.1	11.2
5	13.6	13.3	13.5	12.8	12.6	12.7	12.5	12.2	12.3	11.4	11.2	11.3
6	13.4	13.2	13.3	12.6	12.4	12.5	12.2	11.9	12.0	11.5	11.4	11.4
7	13.3	13.0	13.1	12.5	12.3	12.4	12.0	11.6	11.8	11.5	11.4	11.5
8	13.1	12.7	12.9	12.5	12.3	12.4	11.8	11.5	11.6	11.5	11.3	11.4
9	12.8	12.5	12.6	12.6	12.4	12.5	11.7	11.3	11.5	11.3	11.0	11.2
10	12.6	12.4	12.4	12.7	12.5	12.6	11.8	11.4	11.7	11.0	10.7	10.9
11	12.4	12.2	12.3	12.6	12.3	12.5	12.0	11.8	11.9	10.8	10.7	10.7
12	12.4	12.3	12.4	12.7	12.3	12.4	12.1	11.8	12.0	10.8	10.7	10.7
13	12.4	12.3	12.3	12.9	12.7	12.8	13.1	12.0	12.3	10.9	10.7	10.8
14	12.5	12.3	12.3	12.8	12.5	12.6	12.2	12.1	12.2	11.0	10.8	10.9
15	13.6	12.4	12.6	12.7	12.4	12.6	12.2	12.0	12.1	10.9	10.7	10.8
16	13.8	13.6	13.8	12.9	12.7	12.8	12.5	11.8	12.0	10.8	10.7	10.8
17	13.9	13.4	13.7	12.9	12.7	12.8	12.3	11.8	12.0	10.7	10.5	10.6
18	13.4	12.8	13.2	12.7	12.4	12.5	12.3	12.1	12.2	10.5	10.3	10.4
19	12.8	12.3	12.4	12.4	12.1	12.2	12.2	12.0	12.1	10.4	10.2	10.3
20	12.6	12.3	12.5	12.1	11.9	12.0	12.2	12.0	12.1	10.4	10.1	10.3
21	12.6	12.3	12.4	12.5	12.0	12.3	12.1	11.8	11.9	10.3	10.2	10.2
22	12.7	12.3	12.5	12.8	12.5	12.7	12.0	11.8	11.9	10.6	10.3	10.5
23	12.7	12.4	12.6	12.8	12.6	12.7	12.0	11.8	11.9	10.8	10.6	10.7
24	12.7	12.5	12.6	12.6	12.4	12.5	12.0	11.7	11.8	10.8	10.5	10.7
25	12.8	12.5	12.6	13.3	12.2	12.7	11.8	11.6	11.7	11.0	10.6	10.8
26	12.8	12.7	12.7	13.0	11.8	12.2	11.7	11.1	11.5	11.0	10.7	10.8
27	12.7	12.4	12.6	12.7	11.8	12.2	11.4	11.1	11.2	10.8	10.6	10.7
28	12.8	12.6	12.7	12.5	12.2	12.3	11.3	11.1	11.2	10.8	10.6	10.7
29	---	---	---	12.5	12.4	12.5	11.3	11.2	11.2	10.7	10.4	10.6
30	---	---	---	12.6	12.3	12.4	11.2	11.0	11.1	10.7	10.3	10.5
31	---	---	---	12.6	12.4	12.4	---	---	---	10.6	10.3	10.4
Month	13.9	12.2	12.8	13.3	11.8	12.5	13.1	11.0	11.9	11.5	10.1	10.8

14210000 CLACKAMAS RIVER AT ESTACADA, OR—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	10.5	10.1	10.3	10.0	9.6	9.8	9.8	9.5	9.6	10.0	9.8	9.9
2	10.3	10.0	10.2	10.1	9.7	9.9	9.9	9.4	9.6	9.9	9.7	9.8
3	10.2	9.8	10.0	10.1	9.7	9.9	9.6	9.1	9.4	9.8	9.5	9.7
4	10.0	9.7	9.9	10.0	9.6	9.8	9.4	9.1	9.2	9.7	9.4	9.6
5	9.9	9.7	9.8	9.9	9.6	9.7	9.4	9.1	9.2	9.7	9.4	9.5
6	10.0	9.6	9.8	9.9	9.5	9.7	9.3	9.1	9.2	9.7	9.4	9.6
7	10.0	9.6	9.8	9.9	9.5	9.6	9.5	9.2	9.3	9.9	9.6	9.7
8	10.1	9.8	10	9.8	9.4	9.6	9.6	9.3	9.5	10.1	9.8	10
9	10.2	9.9	10.1	9.7	9.3	9.5	9.9	9.5	9.7	10.1	9.9	10
10	10.3	10.0	10.1	9.6	9.1	9.3	10.0	9.7	9.8	10.1	9.9	10.0
11	10.2	10.0	10.1	9.5	9.1	9.3	10.0	9.8	9.9	10.2	9.9	10.0
12	10.3	10.0	10.1	9.7	9.3	9.5	10.0	9.7	9.9	10.1	9.9	10.0
13	10.3	10.0	10.1	9.7	9.3	9.5	9.9	9.7	9.8	10.2	10.0	10.1
14	10.3	10.0	10.2	9.7	9.2	9.5	9.9	9.6	9.8	10.2	9.8	10
15	10.3	10.0	10.1	9.5	9.1	9.3	9.9	9.6	9.7	10.2	10.0	10.1
16	10.2	9.9	10	9.4	9.0	9.2	9.9	9.6	9.7	10.3	10.0	10.1
17	10.1	9.8	9.9	9.2	9.0	9.1	9.8	9.6	9.7	10.2	10.1	10.2
18	10.2	9.8	10	9.0	8.8	8.9	9.8	9.5	9.6	10.2	10.0	10.1
19	10.2	9.9	10.1	9.2	8.8	9.0	9.7	9.3	9.5	10.2	10.0	10.1
20	10.2	9.9	10.0	9.4	9.0	9.2	9.8	9.4	9.5	10.4	10.2	10.3
21	10.2	9.8	10	9.6	9.2	9.4	9.8	9.5	9.7	10.4	10.2	10.3
22	10.1	9.8	9.9	9.8	9.4	9.6	10.1	9.7	9.9	10.4	10.2	10.3
23	10.0	9.8	9.9	9.8	9.5	9.6	10.1	9.8	10	10.3	10.1	10.2
24	10.0	9.7	9.9	9.9	9.5	9.7	10.2	9.8	10	10.4	10.2	10.3
25	10.0	9.7	9.9	9.9	9.6	9.7	10.1	9.8	9.9	10.5	10.3	10.4
26	10.0	9.5	9.7	9.7	9.4	9.6	10.0	9.7	9.8	10.4	10.3	10.4
27	10.0	9.5	9.8	9.7	9.3	9.5	9.9	9.7	9.8	10.4	10.2	10.3
28	10.2	9.7	9.9	9.7	9.3	9.5	10.0	9.7	9.8	10.3	9.9	10.2
29	10.0	9.7	9.9	9.6	9.3	9.4	10.0	9.7	9.8	10.4	10.2	10.3
30	9.9	9.7	9.8	9.6	9.4	9.5	10.1	9.7	9.9	10.3	10.1	10.3
31	---	---	---	9.8	9.4	9.6	10.1	9.8	9.9	---	---	---
Month	10.5	9.5	10.0	10.1	8.8	9.5	10.2	9.1	9.7	10.5	9.4	10.1

14210000 CLACKAMAS RIVER AT ESTACADA, OR—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	October			November			December			January		
1	2.1	0.4	0.5	0.1	0.0	0.0	6.8	0.9	1.3	4.8	1.5	1.9
2	0.9	0.4	0.5	0.6	0.0	0.0	8.5	0.9	1.4	4.2	1.5	1.8
3	1.7	0.3	0.5	3.2	0.1	0.4	5.5	1.1	1.3	23	2.1	12
4	0.9	0.4	0.5	1.8	0.1	0.5	2.0	0.7	1.2	67	23	44
5	0.9	0.3	0.5	15	1.1	4.3	1.8	0.6	0.8	29	11	18
6	0.8	0.3	0.4	16	5.5	7.6	2.5	0.5	0.6	11	6.0	7.9
7	1.8	0.3	0.4	176	7.5	96	2.7	0.4	0.6	9.0	5.3	6.3
8	3.4	0.3	0.5	157	52	94	2.9	0.3	0.5	7.8	4.0	4.4
9	0.9	0.3	0.4	52	19	31	3.1	0.3	0.4	15	4.0	4.4
10	0.8	0.3	0.4	20	9.5	13	3.1	0.2	0.4	6.9	3.2	4.0
11	0.9	0.0	0.3	17	5.9	7.2	9.4	0.7	2.0	4.7	2.7	3.6
12	0.1	0.0	0.0	18	5.2	5.7	12	1.9	2.9	4.1	1.8	2.5
13	0.1	0.0	0.0	9.6	4.2	5.1	70	9.1	15	6.3	1.3	1.7
14	0.2	0.0	0.0	14	6.6	11	171	37	56	3.2	1.2	1.4
15	1.5	0.0	0.0	16	7.8	11	182	68	111	1.8	1.0	1.2
16	5.0	0.0	0.0	17	5.4	11	68	27	41	2.2	0.7	1.0
17	1.9	0.0	0.0	26	13	16	36	11	21	2.9	0.7	0.9
18	2.3	0.0	0.0	13	5.5	7.5	19	6.8	11	2.7	0.7	0.9
19	1.3	0.0	0.0	11	3.2	4.8	6.8	4.1	5.6	3.0	0.7	0.9
20	0.6	0.0	0.0	12	2.3	3.1	4.8	3.2	3.9	2.8	0.6	0.9
21	2.6	0.0	0.0	8.9	2.8	3.6	3.6	2.3	2.8	1.1	0.6	0.8
22	0.4	0.0	0.0	9.5	3.1	3.8	3.0	1.7	2.2	2.3	0.5	0.8
23	0.5	0.0	0.0	11	3.7	4.9	3.9	2.6	3.5	6.2	0.6	0.8
24	0.6	0.0	0.0	8.6	4.2	5.2	5.1	2.6	3.5	3.7	0.5	0.6
25	0.7	0.0	0.1	16	5.2	6.6	13	4.3	5.4	6.2	0.5	0.7
26	0.4	0.0	0.0	19	3.6	5.0	18	8.1	12	9.0	0.5	0.7
27	0.1	0.0	0.0	14	2.5	3.3	30	10	24	7.0	0.2	0.6
28	0.1	0.0	0.0	12	2.3	2.9	30	8.7	13	3.1	0.3	0.5
29	0.1	0.0	0.0	18	1.6	2.1	8.7	5.3	6.6	2.0	0.3	0.4
30	0.2	0.0	0.0	17	1.3	1.7	5.4	3.3	4.3	1.0	0.2	0.4
31	0.6	0.0	0.0	---	---	---	3.3	2.4	2.6	1.1	0.2	0.4
Max	5.0	0.4	0.5	176	52	96	182	68	111	67	23	44
Min	0.1	0.0	0.0	0.1	0.0	0.0	1.8	0.2	0.4	1.0	0.2	0.4

14210000 CLACKAMAS RIVER AT ESTACADA, OR—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	February			March			April			May		
1	3.0	0.2	0.3	22	1.7	2.5	4.7	0.8	1.1	1.9	0.8	1.2
2	2.2	0.1	0.3	7.6	1.4	1.8	6.7	0.9	1.1	2.6	0.9	1.3
3	3.6	0.0	0.2	9.5	1.0	1.6	1.9	0.8	1.0	2.2	1.0	1.3
4	5.8	0.1	0.2	12	1.4	2.8	1.3	0.6	0.9	2.1	1.0	1.3
5	2.1	0.0	0.2	8.5	3.1	3.6	3.9	0.5	0.7	2.0	0.9	1.1
6	7.8	0.2	0.3	7.3	2.4	3.3	2.9	0.5	0.7	2.3	0.8	1.1
7	4.3	0.1	0.3	18	2.1	2.6	3.3	0.6	1.0	3.0	0.8	1.1
8	3.1	0.1	0.4	8.3	1.9	2.2	9.8	0.8	1.1	3.8	0.8	1.0
9	1.6	0.0	0.5	15	2.2	2.6	5.6	1.1	1.5	2.1	0.9	1.1
10	2.6	0.3	0.5	6.4	1.4	1.9	6.2	1.5	1.8	1.6	0.8	1.0
11	2.1	0.4	0.8	5.9	1.4	1.7	8.3	1.5	2.2	2.1	0.9	1.1
12	7.3	0.9	1.1	13	1.7	2.5	8.7	1.1	1.7	1.9	0.7	1.0
13	4.9	0.7	0.9	14	3.6	7.1	3.6	1.1	1.5	2.4	0.8	1.0
14	1.6	0.9	1.1	16	4.9	6.9	1.7	1.1	1.3	2.6	0.8	1.0
15	56	1.0	1.3	10	2.8	4.1	1.7	1.0	1.2	2.6	0.8	1.0
16	99	5.8	38	6.1	1.6	2.5	2.3	0.8	1.1	1.7	0.9	1.1
17	90	14	33	13	1.0	1.6	5.2	0.8	1.2	3.1	0.9	1.0
18	77	6.6	16	5.3	1.0	1.3	2.3	0.9	1.1	3.1	0.8	1.0
19	32	4.7	8.0	5.1	1.0	1.4	3.0	1.0	1.2	3.4	0.7	1.0
20	42	3.4	8.3	11	1.4	1.9	2.1	1.0	1.2	2.4	0.7	0.9
21	13	3.0	6.2	12	1.7	2.6	4.0	1.0	1.4	1.6	0.8	1.0
22	17	4.3	6.8	8.6	1.8	2.5	2.1	0.9	1.3	1.6	0.7	0.9
23	18	2.4	4.3	11	1.1	1.7	1.7	0.9	1.1	2.1	0.6	0.8
24	21	2.0	3.0	11	0.9	1.3	2.3	0.9	1.2	1.9	0.6	0.9
25	13	1.3	2.9	12	1.6	2.6	2.0	0.8	1.2	2.6	0.6	0.8
26	23	1.5	5.8	12	2.0	4.2	2.2	0.8	1.0	4.1	0.7	0.9
27	26	2.7	6.0	8.2	2.5	3.4	3.1	0.8	1.3	1.4	0.6	0.8
28	28	2.7	8.3	8.6	2.0	2.6	2.0	0.9	1.2	2.5	0.6	0.8
29	---	---	---	13	1.6	2.0	4.4	0.8	1.1	1.7	0.5	0.7
30	---	---	---	7.3	1.0	1.4	2.0	0.8	1.1	1.0	0.5	0.7
31	---	---	---	5.9	0.9	1.1	---	---	---	5.2	0.6	0.7
Max	99	14	38	22	4.9	7.1	9.8	1.5	2.2	5.2	1.0	1.3
Min	1.6	0.0	0.2	5.1	0.9	1.1	1.3	0.5	0.7	1.0	0.5	0.7

14210000 CLACKAMAS RIVER AT ESTACADA, OR—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	June			July			August			September		
1	2.5	0.6	0.7	4.7	0.6	0.7	2.2	0.4	0.7	1.5	0.7	0.9
2	1.2	0.5	0.7	1.8	0.5	0.7	5.5	0.6	0.8	2.3	0.6	0.8
3	1.0	0.5	0.6	1.6	0.5	0.7	1.2	0.5	0.7	2.7	0.6	0.8
4	0.8	0.4	0.6	1.4	0.6	0.8	1.6	0.5	0.7	1.7	0.7	1.2
5	1.8	0.4	0.6	1.4	0.6	0.8	1.1	0.4	0.7	1.7	0.8	1.0
6	1.1	0.5	0.7	1.2	0.6	0.8	1.1	0.6	0.7	2.2	0.8	1.0
7	1.2	0.5	0.7	3.6	0.6	0.7	1.2	0.6	0.8	1.3	0.7	1.0
8	1.7	0.6	0.8	1.4	0.5	0.7	4.3	0.7	1.0	1.9	0.9	1.1
9	2.2	0.5	0.8	1.3	0.5	0.7	3.6	0.7	1.3	3.2	0.8	1.1
10	2.4	0.6	0.8	2.0	0.5	0.7	5.5	0.6	0.9	1.6	0.7	1.0
11	2.9	0.6	0.7	1.1	0.5	0.8	6.5	0.6	0.9	1.8	0.9	1.1
12	1.0	0.6	0.7	1.1	0.6	0.8	2.6	0.5	0.7	5.6	0.9	1.1
13	1.2	0.5	0.7	3.4	0.5	0.7	1.5	0.3	0.6	2.4	0.9	1.0
14	3.8	0.5	0.7	1.1	0.5	0.7	1.8	0.3	0.5	2.4	0.8	1.0
15	2.4	0.5	0.7	1.0	0.5	0.6	2.0	0.2	0.4	2.5	0.7	1.0
16	3.1	0.6	0.8	1.2	0.5	0.7	2.5	0.1	0.3	1.5	0.7	0.9
17	2.3	0.6	0.8	5.8	0.5	0.7	1.4	0.1	0.3	2.0	0.8	1.0
18	3.4	0.6	0.7	1.5	0.6	0.9	4.9	0.1	0.4	1.8	0.8	1.0
19	1.4	0.4	0.7	1.6	0.7	0.9	5.5	0.2	0.4	1.2	0.7	1.0
20	1.0	0.4	0.6	5.5	0.5	0.7	1.3	0.4	0.6	1.6	0.7	0.9
21	2.0	0.5	0.7	1.2	0.5	0.7	2.9	0.5	0.8	2.5	0.7	0.9
22	1.6	0.5	0.7	1.5	0.5	0.7	2.4	0.4	0.7	1.3	0.6	0.8
23	1.7	0.5	0.7	7.8	0.5	0.6	5.6	0.5	0.7	4.7	0.7	0.8
24	2.0	0.5	0.7	5.0	0.5	0.6	1.3	0.4	0.6	1.1	0.7	0.9
25	2.7	0.4	0.6	1.5	0.5	0.7	5.9	0.3	0.6	2.6	0.6	0.8
26	1.9	0.4	0.6	1.4	0.4	0.6	3.0	0.4	0.6	1.0	0.6	0.8
27	4.6	0.5	0.6	1.3	0.4	0.7	2.8	0.4	0.6	5.1	0.5	0.7
28	1.1	0.5	0.7	2.3	0.4	0.6	1.1	0.4	0.6	3.7	0.6	0.9
29	3.1	0.7	0.8	1.7	0.5	0.7	7.6	0.5	0.7	4.5	0.7	1.0
30	5.3	0.6	0.8	1.9	0.5	0.7	1.8	0.5	0.7	1.6	0.6	0.8
31	---	---	---	1.5	0.5	0.7	4.7	0.5	0.8	---	---	---
Max	5.3	0.7	0.8	7.8	0.7	0.9	7.6	0.7	1.3	5.6	0.9	1.2
Min	0.8	0.4	0.6	1.0	0.4	0.6	1.1	0.1	0.3	1.0	0.5	0.7

	Max	Min	Median
Year			
Maximum	182	68	111
Year			
Minimum	0.1	0.0	0.0