

Water-Data Report 2011

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA

Puget Sound Basin
Puyallup Subbasin

LOCATION.--Lat 47°14'18", long 122°13'37" referenced to North American Datum of 1927, in SW ¼ NW ¼ sec.7, T.20 N., R.5 E., Pierce County, WA, Hydrologic Unit 17110014, on right bank 850 ft downstream from White River Powerplant at Dieringer, and 1,400 ft upstream from mouth.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--April 1958 to January 2005, April 2005 to current year.

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

REMARKS.--Records are fair except estimated daily discharges and flows less than 5 ft³/s, which are poor. Flow regulated by White River Powerplant. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--52 years (water years 1959-2004, 2006-11), 823 ft³/s, 596,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,530 ft³/s, Jan. 29, 1965, gage height, 6.23 ft, datum then in use; maximum gage height, 12.66 ft, Jan. 9, 2009 (backwater from White River); no flow many days in July and August 1990, Sept. 29, 1993, July 8-10, Sept. 4, 2010.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 840 ft³/s, Sept. 26, gage height 7.81 ft; maximum gage height, 9.33 ft, Jan. 17 (backwater from White River); minimum daily discharge, 0.2 ft³/s, Oct. 8.

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0.5	19	107	115	21	106	e25	30	25	17	17	18
2	0.6	e75	107	115	18	104	e25	31	40	17	17	18
3	0.4	119	107	115	0.4	104	e25	31	50	17	17	18
4	0.6	110	107	115	0.6	104	25	30	50	17	18	19
5	0.4	109	107	115	0.8	104	366	30	50	17	18	19
6	0.4	111	107	115	0.9	104	537	31	33	17	18	19
7	0.4	112	107	116	1.6	104	e490	32	19	17	18	18
8	0.2	110	109	115	1.6	104	e30	32	19	17	18	18
9	0.7	109	110	115	0.9	108	30	32	18	17	18	18
10	2.5	109	110	114	0.7	111	30	32	18	17	18	18
11	0.9	109	114	114	0.6	107	30	32	18	17	18	18
12	0.3	109	e123	115	1.4	107	29	32	18	17	18	18
13	0.3	109	e121	e119	2.4	107	29	32	18	17	18	17
14	0.4	109	e119	e120	2.1	107	29	32	18	17	18	16
15	0.5	109	e117	e117	1.9	107	29	e35	18	17	18	16
16	0.9	109	e117	e115	1.5	107	29	e43	18	17	18	16
17	0.9	109	117	e115	26	74	29	e48	18	17	18	16
18	0.9	109	115	e115	104	25	29	e48	18	17	18	17
19	1.0	109	115	e115	103	9.6	29	e48	18	17	18	17
20	1.0	109	115	e53	102	8.6	29	e48	17	17	18	17
21	1.0	107	115	e23	102	8.6	29	49	17	17	18	17
22	1.0	107	115	e23	103	8.6	29	48	17	17	19	75
23	1.1	107	115	e23	103	8.6	29	48	17	17	19	122
24	2.6	107	115	e23	104	8.6	30	48	17	17	18	122
25	3.8	107	116	e23	104	9.9	31	39	17	18	18	122
26	3.2	109	115	e23	104	10	31	26	17	18	18	399
27	2.3	109	115	e23	104	10	31	26	17	17	18	343
28	1.2	108	115	23	106	9.6	32	26	17	17	18	62
29	0.9	107	115	23	---	9.4	31	25	17	17	18	37
30	0.9	108	115	22	---	10	30	25	17	17	18	37
31	1.6	---	115	22	---	18	---	25	---	17	18	---
Total	33.4	3,149	3,517	2,499	1,221.4	1,923.5	2,177	1,094	671	529	557	1,687
Mean	1.08	105	113	80.6	43.6	62.0	72.6	35.3	22.4	17.1	18.0	56.2
Max	3.8	119	123	120	106	111	537	49	50	18	19	399
Min	0.2	19	107	22	0.4	8.6	25	25	17	17	17	16
Ac-ft	66	6,250	6,980	4,960	2,420	3,820	4,320	2,170	1,330	1,050	1,100	3,350

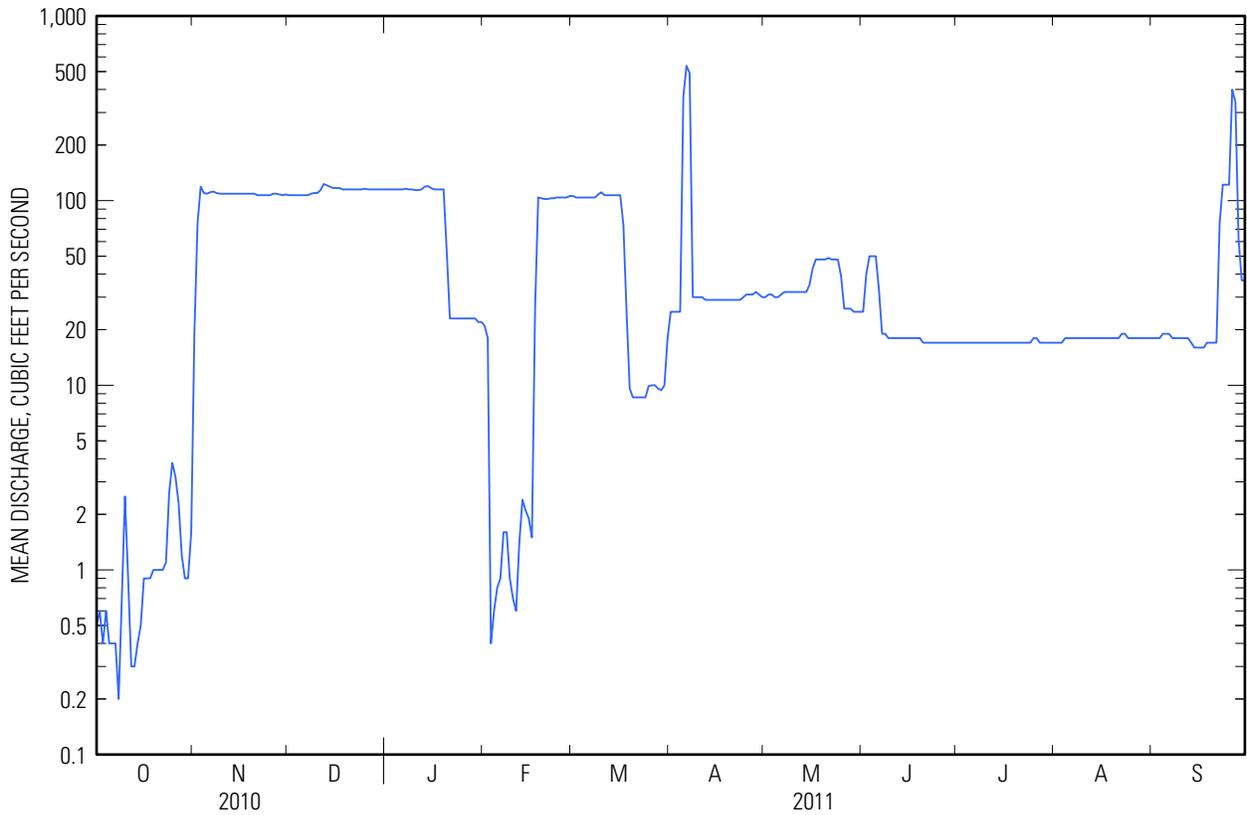
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2011, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	545	792	947	1,046	944	912	940	897	1,077	792	491	452
Max	1,443	1,516	1,719	1,939	1,819	1,545	1,716	1,715	1,925	1,807	1,018	1,251
(WY)	(1960)	(1959)	(1967)	(1967)	(1970)	(1961)	(1966)	(1961)	(2000)	(1999)	(1983)	(1974)
Min	1.08	105	55.8	35.9	18.9	22.3	4.46	7.21	21.4	0.60	0.99	0.47
(WY)	(2011)	(2011)	(2007)	(2009)	(2007)	(2006)	(2010)	(2010)	(2010)	(2010)	(2010)	(2010)

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

SUMMARY STATISTICS

	Calendar Year 2010		Water Year 2011		Water Years 1958 - 2011	
Annual total	14,720.2		19,058.3			
Annual mean	40.3		52.2		823	
Highest annual mean					1,232	1961
Lowest annual mean					52.2	2011
Highest daily mean	221	Jan 12	537	Apr 6	2,210	Jan 9, 1964
Lowest daily mean	0.1	Jul 9	0.2	Oct 8	0.0	Jul 27, 1990
Annual seven-day minimum	0.2	Sep 1	0.4	Oct 2	0.0	Jul 27, 1990
Annual runoff (ac-ft)	29,200		37,800		596,500	
10 percent exceeds	115		115		1,620	
50 percent exceeds	5.8		25		816	
90 percent exceeds	0.4		1.6		30	



12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--

CHEMICAL DATA: July to December 2010.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 2010 to current year.

pH: May 2010 to current year.

WATER TEMPERATURE: May 2010 to current year.

DISSOLVED OXYGEN: May 2010 to current year.

TURBIDITY: May 2010 to current year.

INSTRUMENTATION.--Multiparameter water quality sonde interfaced with a Data Collection Platform/Electronic Datalogger with 15-min recording interval, since May 2010.

REMARKS.--SPECIFIC CONDUCTANCE records are excellent, except Oct. 1 to Nov. 1, Dec. 31 to Jan. 16, Feb. 2-17, and March 18 to Sept. 30, which are good, Dec. 3-30, which are fair. pH records are excellent, except Jan. 16 to Feb. 1, Mar. 18 to May 4, July 1-4, Aug. 3-7, 9-16, which are good, Oct. 1 to Nov. 1, Feb. 2-17, July 5-7, Aug. 8, 17-19, which are fair, Dec. 15 to Jan. 4, and July 8, which are poor. WATER TEMPERATURE records are excellent, except Jan. 16 to Feb. 1, Mar. 18 to Sep. 13, and Sep. 29, 30, which are good, Oct. 1 to Nov. 1 and Feb. 2-17, which are fair to poor. DISSOLVED OXYGEN records are excellent, except Aug. 14-19, 22-25, which are good, Mar. 18-31, Aug. 26-30, which are fair, Oct. 1 to Nov. 1 and Feb. 2-17, which are poor. TURBIDITY records are poor. Additional details are available from the Tacoma Field Office.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 2,270 $\mu\text{S}/\text{cm}$, Aug. 31, 2010; minimum, 53 $\mu\text{S}/\text{cm}$, Oct. 30, 2010.

pH: Maximum, 9.5 units, Mar. 25, 28, 2011; minimum recorded, 6.4 units, Aug. 31, 2010.

WATER TEMPERATURE: Maximum recorded, 18.7°C, July 10, 2010; minimum, 4.5°C, Jan. 11, 12, 2011.

DISSOLVED OXYGEN: Maximum recorded, 22.0 mg/L, July 8, 2010; minimum recorded, 0.7 mg/L, Aug. 9, 2010.

TURBIDITY: Maximum recorded, 1,110 FNU, June 2, 2010; minimum recorded (more than 20 percent missing record), 0.5 FNU, July 6, 2011.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 208 $\mu\text{S}/\text{cm}$, Feb. 13; minimum, 53 $\mu\text{S}/\text{cm}$, Oct. 30.

pH: Maximum, 9.5 units, Mar. 25, 28; minimum, 6.6 units, Feb. 14.

WATER TEMPERATURE: Maximum, 15.2°C, Oct. 10, but may have been higher during period of missing record; minimum, 4.5°C, Jan. 11, 12.

DISSOLVED OXYGEN: Maximum, 13.8 mg/L, several days Jan. to Apr.; minimum, 4.4 mg/L, Oct. 3.

TURBIDITY: Maximum recorded (more than 20 percent missing record), 72 FNU, Oct. 9, but may have been higher during periods of missing record; minimum recorded (more than 20 percent missing record), 0.5 FNU, July 6.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 1 of 3

[MF, membrane filter; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; col/100 mL, colonies per 100 milliliters; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; $\mu\text{S}/\text{cm}$, microsiemens per centimeter; --, no data; <, less than]

Date	Sample start time	Barometric pressure, mm Hg (00025)	Temperature, air, °C (00020)	Discharge, instantaneous, ft ³ /s (00061)	Dissolved oxygen, unfiltered, mg/L (00300)	pH, unfiltered, field, standard units (00400)	Specific conductance, unfiltered, water, $\mu\text{S}/\text{cm}$ at 25 °C (00095)	Temperature, water, °C (00010)	Turbidity, water, unfiltered, broad band light source (400-680 nm), detectors at multiple angles including 90 +/- 30 degrees, ratiometric correction, NTRU (63676)
11-16-2010	1040	--	--	109	11.7	7.4	66	11.5	2.5
12-07-2010	1040	762	9.2	107	12.9	7.5	67	7.0	2.4

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 2 of 3

[MF, membrane filter; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; col/100 mL, colonies per 100 milliliters; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than]

Date	Sample start time	Suspended solids, water, unfiltered, mg/L (00530)	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (00631)	Nitrite, water, filtered, mg/L as N (00613)	Orthophosphate, water, filtered, mg/L as P (00671)	Phosphorus, water, filtered, mg/L as P (00666)	Phosphorus, water, unfiltered, mg/L as P (00665)	Total nitrogen, water, filtered, analytically determined, mg/L (62854)
11-16-2010	1040	< 1.1	.018	.024	.002	< .004	< .003	.008	.12
12-07-2010	1040	< 1.1	.027	.035	.001	.005	< .003	.011	.20

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Part 3 of 3

[MF, membrane filter; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; col/100 mL, colonies per 100 milliliters; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; --, no data; <, less than]

Date	Sample start time	Total nitrogen, water, unfiltered, analytically determined, mg/L (62855)	Fecal coliform, M-FC MF (0.45 micron) method, water, col/100 mL (31616)
11-16-2010	1040	.16	2
12-07-2010	1040	.17	10

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	141	139	140	121	56	84	70	66	68	66	63	64
2	142	139	141	65	61	64	67	65	66	67	63	65
3	143	140	142	66	64	65	66	64	65	67	64	65
4	142	140	141	65	64	64	64	62	63	66	63	65
5	142	139	141	64	63	63	67	59	63	67	64	66
6	142	139	141	66	63	65	67	66	66	67	66	66
7	143	140	141	66	65	65	71	66	67	72	67	70
8	142	140	141	65	65	65	74	70	72	69	63	66
9	153	124	138	65	65	65	72	70	71	67	65	66
10	125	81	99	65	65	65	72	67	70	65	62	64
11	108	87	95	66	65	65	72	64	68	66	62	65
12	128	108	121	66	65	65	71	67	69	71	65	67
13	137	128	135	66	65	66	68	67	67	72	68	70
14	148	137	139	66	65	66	69	67	68	70	68	69
15	139	131	134	66	65	66	68	66	67	68	66	67
16	137	131	136	67	64	66	68	66	67	68	65	67
17	140	136	139	66	65	66	68	66	67	68	67	67
18	142	138	140	66	65	65	68	65	67	68	67	67
19	142	139	141	66	65	66	68	64	68	68	67	67
20	142	140	141	69	64	66	68	66	67	74	67	71
21	143	140	141	69	64	66	67	64	65	78	72	76
22	142	140	141	66	64	65	---	---	---	78	74	76
23	142	60	138	66	65	65	67	66	66	76	72	74
24	139	61	120	66	64	65	66	63	65	78	72	74
25	93	61	84	66	66	66	69	59	65	77	71	74
26	94	54	82	67	66	66	68	65	66	73	71	72
27	93	77	82	68	67	67	65	59	63	75	71	72
28	104	93	97	68	66	67	67	57	65	76	73	74
29	113	73	102	69	66	67	67	63	65	85	74	79
30	125	53	105	70	66	68	66	57	61	86	76	80
31	106	56	94	---	---	---	66	66	66	76	74	75
Month	153	53	125	121	56	66	---	---	---	86	62	70

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	75	72	74	71	69	70	77	66	71	69	67	68
2	75	71	73	71	68	70	69	63	68	69	68	68
3	114	75	96	68	67	67	70	65	69	69	67	68
4	133	114	123	68	66	67	71	68	69	69	67	68
5	128	123	125	68	66	67	70	65	69	68	67	68
6	131	124	128	66	64	65	72	67	69	72	67	68
7	133	117	129	67	63	64	76	66	68	74	67	69
8	190	126	141	67	66	67	77	70	74	73	69	71
9	159	130	134	74	66	70	76	72	74	69	67	68
10	184	132	145	77	68	71	76	73	74	115	67	68
11	141	131	134	70	66	68	75	72	73	71	67	68
12	148	89	129	67	64	65	73	72	73	71	67	69
13	208	120	145	70	64	66	74	72	72	68	67	68
14	154	93	127	69	68	69	74	70	72	71	66	68
15	147	99	126	70	68	68	73	70	71	67	62	65
16	151	115	129	69	68	68	71	70	71	65	64	65
17	140	67	111	70	67	68	71	68	70	66	65	65
18	67	66	67	90	69	75	71	68	69	67	65	66
19	67	66	66	88	79	84	71	68	70	68	66	67
20	68	66	66	87	78	81	70	68	69	68	66	66
21	67	66	67	82	75	79	70	68	69	67	66	66
22	67	66	67	82	74	79	70	68	69	67	66	66
23	67	66	67	81	74	77	69	67	68	67	66	66
24	67	66	67	80	73	78	74	67	68	67	66	66
25	67	66	67	90	77	84	77	68	71	70	66	68
26	67	66	67	88	79	82	76	69	72	70	68	69
27	68	67	67	86	75	81	75	68	70	74	68	70
28	72	68	71	87	72	78	74	71	72	74	69	71
29	---	---	---	81	73	78	71	68	69	70	68	69
30	---	---	---	92	74	77	69	68	68	70	68	69
31	---	---	---	80	67	72	---	---	---	70	68	70
Month	208	66	100	92	63	73	77	63	70	115	62	68

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	70	66	68	70	68	69	71	68	70	70	68	69
2	67	64	66	70	68	69	71	69	70	70	68	69
3	65	64	65	71	68	69	71	69	70	70	67	69
4	---	---	---	71	67	69	71	68	70	70	68	69
5	---	---	---	72	68	70	71	69	70	70	68	69
6	---	---	---	74	68	70	71	69	70	70	68	69
7	---	---	---	71	68	69	71	69	70	71	68	69
8	---	---	---	71	67	69	71	68	70	71	68	70
9	---	---	---	71	68	70	70	68	69	72	68	70
10	---	---	---	71	69	70	70	69	69	71	69	70
11	70	66	68	71	69	70	70	68	69	71	68	69
12	80	65	68	72	69	70	70	68	69	71	68	70
13	68	65	67	73	69	70	71	68	69	71	69	70
14	68	65	67	72	70	71	70	68	69	---	---	---
15	68	65	66	71	69	70	71	68	69	---	---	---
16	71	67	69	74	70	71	70	68	69	---	---	---
17	70	68	69	73	71	72	71	68	69	---	---	---
18	76	69	71	73	68	70	71	68	70	---	---	---
19	76	71	73	70	68	69	71	68	69	---	---	---
20	72	70	71	70	68	69	70	68	69	---	---	---
21	71	68	70	72	68	69	70	68	69	---	---	---
22	70	67	69	71	68	69	73	68	70	---	---	---
23	68	66	67	71	68	69	73	69	70	---	---	---
24	71	67	69	71	68	69	71	68	69	---	---	---
25	72	67	69	73	69	70	71	68	69	---	---	---
26	71	68	69	70	69	69	71	68	70	---	---	---
27	70	68	69	70	68	69	71	68	69	---	---	---
28	70	68	69	71	68	69	70	68	69	---	---	---
29	70	69	70	71	68	69	71	68	70	69	68	68
30	71	68	70	71	68	70	71	67	69	69	68	68
31	---	---	---	71	69	70	71	68	70	---	---	---
Month	---	---	---	74	67	70	73	67	69	---	---	---

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	October			November			December			January		
1	7.4	7.1	7.2	7.2	6.8	7.1	7.4	7.3	7.3	7.4	7.3	7.3
2	7.2	7.1	7.2	7.2	7.0	7.1	7.4	7.3	7.3	7.3	7.3	7.3
3	7.3	7.1	7.2	7.4	7.2	7.4	7.3	7.3	7.3	7.3	7.3	7.3
4	7.4	7.2	7.2	7.4	7.4	7.4	7.4	7.3	7.3	---	---	---
5	7.7	7.2	7.4	7.4	7.3	7.4	7.4	7.3	7.3	7.3	7.3	7.3
6	7.7	7.2	7.4	7.4	7.3	7.4	7.4	7.3	7.3	7.4	7.3	7.4
7	7.6	7.2	7.3	7.5	7.3	7.4	7.4	7.3	7.3	7.4	7.3	7.4
8	7.4	7.2	7.3	7.5	7.3	7.4	7.4	7.3	7.3	7.4	7.4	7.4
9	7.5	6.9	7.2	7.5	7.3	7.3	7.4	7.3	7.3	7.4	7.4	7.4
10	7.6	7.0	7.2	7.5	7.3	7.3	7.4	7.3	7.4	7.4	7.3	7.4
11	7.9	7.0	7.1	7.5	7.3	7.3	7.4	7.3	7.3	7.5	7.4	7.4
12	7.6	7.1	7.2	7.5	7.3	7.3	7.4	7.3	7.4	7.5	7.4	7.4
13	7.6	7.2	7.2	7.4	7.3	7.3	7.4	7.3	7.3	7.4	7.3	7.4
14	7.5	7.2	7.2	7.4	7.3	7.3	7.4	7.3	7.4	7.4	7.3	7.4
15	7.5	7.2	7.2	7.4	7.3	7.4	---	---	---	7.4	7.3	7.3
16	7.5	7.2	7.3	7.4	7.3	7.4	7.3	7.2	7.3	7.4	7.4	7.4
17	7.6	7.3	7.3	7.5	7.3	7.4	7.4	7.2	7.3	7.5	7.1	7.4
18	7.5	7.3	7.4	7.6	7.4	7.4	7.3	7.2	7.3	7.4	7.3	7.3
19	7.6	7.3	7.4	7.4	7.3	7.4	7.3	7.3	7.3	7.5	7.3	7.3
20	7.4	7.2	7.3	7.4	7.3	7.4	7.3	7.3	7.3	7.3	7.2	7.3
21	7.4	7.2	7.3	7.4	7.4	7.4	7.3	7.3	7.3	7.3	7.2	7.2
22	7.4	7.2	7.3	7.4	7.3	7.4	7.4	7.3	7.3	7.5	7.2	7.2
23	7.4	6.8	7.2	7.5	7.4	7.4	7.3	7.3	7.3	7.4	7.2	7.2
24	7.4	6.8	7.2	7.5	7.4	7.4	7.3	7.3	7.3	7.3	7.2	7.2
25	7.6	6.9	7.2	7.4	7.3	7.4	7.3	7.3	7.3	7.4	7.2	7.2
26	7.3	6.9	7.1	7.4	7.4	7.4	7.4	7.3	7.3	7.4	7.2	7.2
27	7.4	7.0	7.1	7.4	7.3	7.4	7.4	7.3	7.3	7.4	7.2	7.2
28	7.3	6.9	7.0	7.4	7.3	7.4	7.3	7.3	7.3	7.4	7.2	7.2
29	7.3	6.8	7.0	7.4	7.3	7.3	7.4	7.3	7.3	7.4	7.2	7.2
30	7.3	6.7	7.0	7.3	7.3	7.3	7.4	7.3	7.3	7.4	7.2	7.2
31	7.3	6.8	7.0	---	---	---	7.4	7.3	7.3	7.4	7.2	7.2
Max	7.9	7.3	7.4	7.6	7.4	7.4	---	---	---	---	---	---
Min	7.2	6.7	7.0	7.2	6.8	7.1	---	---	---	---	---	---

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	February			March			April			May		
1	7.4	7.2	7.2	7.5	7.4	7.4	7.6	7.3	7.3	8.0	7.2	7.4
2	7.4	7.2	7.2	7.6	7.4	7.4	7.7	7.2	7.3	7.7	7.2	7.3
3	7.2	7.1	7.1	7.6	7.4	7.4	7.6	7.2	7.3	7.9	7.3	7.4
4	7.3	6.8	7.1	7.6	7.4	7.4	7.5	7.2	7.3	8.1	7.2	7.4
5	7.3	7.0	7.2	7.7	7.4	7.4	7.5	7.1	7.3	8.2	7.2	7.3
6	7.3	7.1	7.2	7.9	7.4	7.4	7.5	7.4	7.5	8.2	7.2	7.3
7	7.4	6.9	7.2	8.0	7.4	7.4	7.5	7.4	7.5	8.5	7.2	7.4
8	7.4	7.0	7.2	8.0	7.4	7.4	7.6	7.3	7.4	8.1	7.2	7.4
9	7.4	7.0	7.3	7.6	7.4	7.4	7.4	6.7	7.2	8.0	7.2	7.3
10	7.3	7.0	7.2	7.6	7.3	7.4	7.5	7.2	7.4	7.9	7.2	7.4
11	7.3	7.0	7.2	7.6	7.3	7.4	7.7	7.3	7.4	7.6	7.2	7.3
12	7.4	7.1	7.3	7.5	7.3	7.4	7.7	7.3	7.4	7.9	7.2	7.4
13	7.3	6.7	7.2	7.5	7.4	7.4	7.6	7.3	7.4	7.9	7.2	7.3
14	7.2	6.6	6.9	7.6	7.4	7.4	7.6	7.3	7.4	8.0	7.2	7.3
15	7.3	6.7	7.1	7.5	7.3	7.4	7.7	7.4	7.5	7.5	7.2	7.2
16	7.3	6.8	7.1	7.6	7.3	7.4	7.8	7.4	7.5	7.6	7.2	7.3
17	7.4	7.0	7.2	7.7	7.3	7.4	7.7	7.3	7.4	8.0	7.2	7.4
18	7.4	7.3	7.3	7.7	7.2	7.4	7.8	7.3	7.4	7.6	7.2	7.4
19	7.4	7.3	7.4	8.2	7.2	7.4	8.0	7.3	7.5	7.7	7.3	7.4
20	7.4	7.4	7.4	8.3	7.2	7.4	8.0	7.3	7.5	7.7	7.3	7.4
21	7.5	7.4	7.4	8.4	7.2	7.4	7.9	7.3	7.4	7.5	7.3	7.3
22	7.5	7.4	7.4	8.4	7.2	7.5	8.1	7.3	7.5	7.6	7.3	7.4
23	7.5	7.4	7.4	8.7	7.2	7.5	8.0	7.3	7.4	7.6	7.3	7.4
24	7.6	7.4	7.4	9.3	7.2	7.6	8.0	7.3	7.4	7.6	7.3	7.4
25	7.6	7.4	7.4	9.5	7.1	7.6	7.9	7.3	7.4	7.5	7.2	7.3
26	7.5	7.4	7.4	8.6	7.2	7.5	8.0	7.3	7.4	7.6	7.2	7.4
27	7.5	7.4	7.4	9.0	7.2	7.5	8.1	7.3	7.4	7.5	7.2	7.3
28	7.5	7.4	7.4	9.5	7.2	7.8	8.0	7.3	7.4	7.5	7.2	7.3
29	---	---	---	8.8	7.2	7.5	8.0	7.3	7.4	7.6	7.2	7.3
30	---	---	---	8.1	7.2	7.4	8.0	7.2	7.4	7.6	7.2	7.4
31	---	---	---	7.9	7.2	7.4	---	---	---	7.5	7.2	7.3
Max	7.6	7.4	7.4	9.5	7.4	7.8	8.1	7.4	7.5	8.5	7.3	7.4
Min	7.2	6.6	6.9	7.5	7.1	7.4	7.4	6.7	7.2	7.5	7.2	7.2

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	June			July			August			September		
1	7.6	7.2	7.3	7.3	7.0	7.1	7.4	7.1	7.1	7.4	7.0	7.1
2	7.8	7.2	7.4	7.3	7.0	7.1	7.5	7.0	7.1	7.4	7.0	7.1
3	7.9	7.2	7.4	7.3	7.0	7.1	7.7	7.0	7.2	7.4	7.0	7.1
4	7.9	7.2	7.4	7.3	7.0	7.1	8.0	7.0	7.1	7.4	7.0	7.1
5	7.6	7.2	7.4	7.4	7.0	7.1	7.4	7.0	7.1	7.4	7.0	7.1
6	7.9	7.2	7.3	7.4	7.0	7.1	7.8	7.0	7.1	7.5	7.0	7.1
7	7.8	7.2	7.3	7.4	7.0	7.1	8.5	7.0	7.1	7.5	7.0	7.0
8	7.8	7.2	7.3	7.5	7.0	7.2	7.8	7.0	7.2	7.4	7.0	7.0
9	8.2	7.2	7.3	7.3	7.1	7.2	7.5	7.1	7.2	7.5	7.0	7.0
10	7.7	7.2	7.2	7.4	7.1	7.2	7.6	7.1	7.1	7.5	6.9	7.0
11	7.8	7.2	7.3	7.3	7.1	7.2	7.8	7.0	7.2	7.5	6.9	7.0
12	7.6	7.1	7.3	7.3	7.1	7.2	7.7	7.0	7.1	7.5	7.0	7.0
13	7.8	7.2	7.3	7.4	7.2	7.2	7.5	7.0	7.1	7.2	7.0	7.0
14	7.7	7.1	7.3	7.3	7.1	7.2	7.7	7.0	7.1	---	---	---
15	7.6	7.1	7.3	7.5	7.1	7.3	8.3	7.0	7.1	---	---	---
16	7.5	7.1	7.3	7.5	7.1	7.2	9.4	6.9	7.1	---	---	---
17	7.7	7.1	7.3	7.3	7.1	7.2	8.3	7.0	7.0	---	---	---
18	7.7	7.2	7.2	7.3	7.1	7.2	9.1	6.9	7.1	---	---	---
19	8.5	7.1	7.3	7.4	7.1	7.2	7.4	7.0	7.1	---	---	---
20	7.7	7.1	7.3	7.3	7.1	7.2	7.4	7.0	7.1	---	---	---
21	7.3	7.1	7.2	7.3	7.1	7.2	7.5	7.0	7.1	---	---	---
22	7.2	7.1	7.2	7.3	7.1	7.2	7.4	7.0	7.1	---	---	---
23	7.3	7.1	7.2	7.3	7.1	7.2	7.5	7.0	7.1	---	---	---
24	7.3	7.1	7.2	7.3	7.1	7.2	7.5	7.0	7.1	---	---	---
25	7.3	7.1	7.2	7.4	7.1	7.2	7.5	7.0	7.1	---	---	---
26	7.3	7.0	7.1	7.3	7.1	7.2	7.5	7.0	7.1	---	---	---
27	7.3	7.0	7.1	7.3	7.1	7.2	7.4	7.0	7.1	---	---	---
28	7.4	7.0	7.1	7.4	7.1	7.2	7.5	7.0	7.1	---	---	---
29	7.3	7.0	7.2	7.3	7.1	7.2	7.4	7.0	7.1	7.0	6.9	7.0
30	7.3	7.0	7.1	7.3	7.1	7.2	7.4	7.0	7.1	7.0	6.9	6.9
31	---	---	---	7.3	7.1	7.2	7.4	7.0	7.1	---	---	---
Max	8.5	7.2	7.4	7.5	7.2	7.3	9.4	7.1	7.2	---	---	---
Min	7.2	7.0	7.1	7.3	7.0	7.1	7.4	6.9	7.0	---	---	---

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	12.8	11.5	11.9	12.3	10.3	11.2	7.8	7.7	7.7	5.2	5.0	5.1
2	12.6	11.9	12.2	13.0	12.2	12.7	7.7	7.6	7.7	5.0	4.8	4.9
3	12.6	12.0	12.3	12.9	12.8	12.9	7.6	7.5	7.6	4.8	4.7	4.7
4	12.3	11.3	11.7	12.9	12.8	12.8	7.5	7.3	7.4	4.7	4.6	4.7
5	12.1	10.7	11.5	12.9	12.8	12.8	7.3	7.1	7.2	4.8	4.6	4.7
6	11.8	10.4	11.2	12.8	12.7	12.8	7.1	7.1	7.1	5.0	4.8	4.9
7	11.8	10.5	11.0	12.8	12.6	12.6	7.2	7.1	7.1	5.2	5.0	5.1
8	12.3	11.2	11.7	12.6	12.3	12.4	7.2	7.1	7.2	5.2	5.1	5.2
9	14.6	11.6	12.2	12.3	12.0	12.1	7.3	7.2	7.2	5.2	5.1	5.1
10	15.2	12.6	14.0	12.0	11.8	11.9	7.3	7.2	7.2	5.1	4.8	5.0
11	14.0	12.8	13.4	11.8	11.7	11.7	7.2	7.0	7.1	4.8	4.5	4.7
12	12.8	10.7	11.5	11.7	11.6	11.6	7.4	7.1	7.3	4.7	4.5	4.6
13	11.8	10.2	10.8	11.6	11.5	11.5	7.6	7.4	7.5	5.0	4.7	4.9
14	12.2	9.8	10.6	11.5	11.4	11.5	7.6	7.4	7.5	5.2	5.0	5.1
15	11.3	10.2	10.8	11.6	11.5	11.5	7.5	7.3	7.4	5.5	5.2	5.3
16	10.9	9.0	9.8	11.5	11.4	11.4	7.3	7.2	7.3	5.7	5.5	5.6
17	10.0	8.7	9.4	11.4	11.0	11.2	7.2	6.9	7.0	5.7	5.6	5.6
18	9.9	8.7	9.4	11.0	10.7	10.8	6.9	6.6	6.7	5.7	5.6	5.6
19	10.2	8.8	9.5	10.7	10.6	10.6	6.6	6.4	6.5	5.7	5.5	5.6
20	10.5	9.2	9.8	10.6	10.2	10.4	6.4	6.3	6.3	5.7	5.5	5.6
21	10.4	9.2	9.8	10.2	9.8	10.0	6.3	6.2	6.3	6.0	5.7	5.9
22	11.3	10.2	10.7	9.8	9.2	9.5	6.3	6.2	6.3	6.1	5.8	5.9
23	12.5	10.2	10.7	9.2	8.5	8.8	6.2	6.2	6.2	6.0	5.8	5.9
24	12.2	10.3	10.9	8.5	8.1	8.2	6.3	6.2	6.2	6.2	5.9	6.0
25	11.9	10.2	11.1	8.1	8.0	8.0	6.3	6.2	6.3	6.2	5.8	6.0
26	10.9	9.6	10.1	8.0	7.9	8.0	6.3	6.2	6.3	6.3	5.8	5.9
27	11.0	9.8	10.4	8.0	7.8	7.9	6.2	6.2	6.2	6.2	5.8	6.0
28	11.3	10.3	10.6	7.9	7.8	7.8	6.2	6.2	6.2	6.2	5.8	6.0
29	11.1	10.2	10.7	7.8	7.7	7.8	6.2	5.8	6.1	6.6	6.1	6.3
30	10.5	8.8	9.6	7.7	7.7	7.7	5.9	5.5	5.7	6.4	6.0	6.2
31	10.9	9.9	10.4	---	---	---	5.5	5.2	5.4	6.4	5.8	6.1
Month	15.2	8.7	11.0	13.0	7.7	10.7	7.8	5.2	6.8	6.6	4.5	5.4

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	6.4	5.6	5.8	4.9	4.8	4.8	8.8	8.0	8.3	9.8	8.8	9.3
2	6.4	5.4	5.8	5.2	4.8	5.0	8.9	8.2	8.5	9.7	9.0	9.2
3	7.2	5.3	6.2	5.2	5.0	5.0	8.5	8.0	8.2	10.1	9.1	9.5
4	8.4	7.1	7.8	5.1	5.0	5.0	8.3	8.0	8.1	10.0	9.1	9.4
5	8.6	7.9	8.3	5.3	5.0	5.1	8.2	7.8	8.0	9.9	9.0	9.3
6	8.9	8.0	8.4	5.4	5.1	5.2	8.2	8.0	8.1	9.7	9.3	9.5
7	8.6	7.4	8.0	5.4	5.2	5.2	8.1	8.0	8.1	10.1	9.5	9.7
8	8.7	6.9	7.6	5.6	5.2	5.4	8.9	7.9	8.2	10.7	9.7	10
9	7.5	5.8	6.7	6.2	5.4	5.7	8.7	8.0	8.2	9.9	9.5	9.7
10	7.3	5.5	6.6	6.4	6.1	6.2	8.5	8.0	8.2	10.3	9.4	9.7
11	7.8	6.2	7.0	6.4	6.1	6.2	9.1	8.1	8.5	9.9	9.5	9.7
12	8.2	6.7	7.3	6.4	6.2	6.3	9.1	7.9	8.4	10.6	9.6	10
13	8.8	6.6	7.6	6.3	6.2	6.3	8.7	8.3	8.4	10.2	9.3	9.6
14	8.6	7.6	8.0	6.6	6.3	6.4	8.6	8.2	8.4	11.1	9.3	9.9
15	8.6	7.1	7.7	6.7	6.4	6.6	9.1	8.4	8.7	12.3	10.9	11.5
16	8.2	6.5	7.2	6.9	6.6	6.7	9.2	8.4	8.7	10.9	10.1	10.7
17	8.6	5.9	6.8	6.9	6.6	6.7	9.1	8.1	8.4	10.9	9.9	10.3
18	6.0	5.8	5.9	7.2	6.7	6.9	9.3	8.1	8.5	11.2	9.9	10.4
19	6.0	5.8	5.8	8.2	6.8	7.3	9.6	8.3	8.8	11.4	10.1	10.6
20	5.8	5.6	5.7	7.7	6.4	7.0	9.3	8.4	8.7	11.0	10.0	10.4
21	5.8	5.6	5.7	7.9	7.0	7.3	9.1	8.3	8.6	10.3	10.0	10.2
22	5.9	5.6	5.7	8.0	6.7	7.1	9.6	8.3	8.8	10.5	10.1	10.2
23	5.7	5.3	5.6	8.2	6.2	7.0	9.4	8.3	8.7	10.8	10.1	10.3
24	5.4	5.2	5.3	8.2	6.6	7.3	9.2	8.5	8.8	10.8	10.2	10.4
25	5.3	5.0	5.2	8.7	7.3	7.7	9.8	8.9	9.2	10.2	10.0	10.1
26	5.1	4.9	5.0	8.4	7.4	7.7	9.8	8.9	9.2	10.7	9.9	10.2
27	5.0	4.9	4.9	8.1	7.4	7.7	9.3	8.8	9.0	10.9	9.8	10.2
28	5.0	4.8	4.8	8.3	7.4	7.7	9.8	9.2	9.4	10.9	9.9	10.2
29	---	---	---	8.0	7.5	7.7	10.0	9.1	9.4	10.3	9.8	10
30	---	---	---	8.3	7.6	8.0	10.0	8.9	9.3	10.6	9.7	10.1
31	---	---	---	8.6	8.0	8.3	---	---	---	10.4	9.6	9.9
Month	8.9	4.8	6.5	8.7	4.8	6.5	10.0	7.8	8.6	12.3	8.8	10.0

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	10.6	9.9	10.2	11.8	10.3	10.9	12.9	11.2	11.9	13.7	12.2	12.8
2	10.8	10.2	10.5	11.9	10.4	11.0	12.6	11.4	11.8	13.7	12.2	12.8
3	11.0	10.2	10.6	11.4	10.5	10.9	13.0	11.4	12.0	13.8	12.2	12.8
4	11.5	10.2	10.9	11.9	10.3	11.0	13.0	11.6	12.1	13.7	12.2	12.8
5	11.3	10.6	10.9	12.0	10.5	11.1	12.2	11.6	11.8	13.8	12.2	12.8
6	11.8	10.2	10.8	11.9	10.5	11.0	12.7	11.6	12.0	13.9	12.4	13.0
7	11.0	10.2	10.4	11.7	10.7	11.0	12.9	11.6	12.1	13.9	12.3	13.0
8	10.8	10.1	10.4	11.8	10.6	10.9	12.5	11.6	12.0	13.8	12.6	13.0
9	11.2	10.0	10.3	12.2	10.5	11.1	12.5	11.8	12.1	14.0	12.6	13.1
10	10.9	10.0	10.3	11.9	10.6	11.1	12.7	11.8	12.1	14.1	12.7	13.2
11	10.9	10.0	10.3	11.7	10.6	11.0	13.0	11.7	12.2	14.1	12.7	13.2
12	11.2	9.9	10.4	11.5	10.8	11.0	13.1	11.7	12.2	13.9	12.8	13.1
13	11.1	10.1	10.4	12.1	10.9	11.3	12.7	11.8	12.1	13.4	12.9	13.1
14	10.8	10.1	10.4	11.5	11.0	11.2	13.2	11.8	12.2	---	---	---
15	11.3	10.1	10.5	11.8	10.9	11.2	13.2	11.8	12.3	---	---	---
16	11.2	10.0	10.4	12.0	10.9	11.4	13.2	11.7	12.3	---	---	---
17	11.4	10.0	10.6	11.3	10.9	11.1	13.3	11.8	12.4	---	---	---
18	11.1	10.3	10.7	12.0	10.9	11.3	13.4	11.7	12.4	---	---	---
19	11.1	10.6	10.9	11.5	10.9	11.1	13.4	11.8	12.4	---	---	---
20	11.0	10.2	10.6	12.1	11.0	11.3	13.5	11.9	12.5	---	---	---
21	11.7	10.2	10.8	12.0	11.0	11.4	13.5	11.9	12.5	---	---	---
22	10.8	10.3	10.5	12.3	10.9	11.4	13.2	12.1	12.5	---	---	---
23	11.5	10.2	10.6	12.6	10.9	11.5	13.5	12.3	12.8	---	---	---
24	11.2	10.3	10.7	12.5	11.1	11.6	13.7	12.2	12.7	---	---	---
25	11.7	10.4	10.8	11.8	11.0	11.3	13.6	12.2	12.7	---	---	---
26	11.8	10.2	10.8	12.1	11.3	11.6	13.8	12.2	12.8	---	---	---
27	10.9	10.4	10.6	12.5	11.2	11.6	13.8	12.2	12.8	---	---	---
28	11.5	10.3	10.7	12.5	11.1	11.7	13.9	12.2	12.8	---	---	---
29	11.3	10.6	10.8	12.6	11.3	11.8	13.1	12.3	12.7	14.6	13.5	14.0
30	11.2	10.4	10.7	12.7	11.3	11.8	13.3	12.4	12.7	14.4	13.8	14.0
31	---	---	---	12.2	11.3	11.6	13.3	12.2	12.6	---	---	---
Month	11.8	9.9	10.6	12.7	10.3	11.3	13.9	11.2	12.3	---	---	---

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	8.3	5.2	6.7	10.4	6.5	9.0	12.7	12.5	12.6	13.6	13.4	13.5
2	7.2	5.0	6.0	10.6	8.1	10.4	12.8	12.5	12.6	13.7	13.5	13.6
3	7.1	4.4	5.8	11.2	10.5	10.9	12.9	12.6	12.7	13.8	13.6	13.6
4	9.2	5.6	7.3	11.2	11.0	11.0	12.9	12.6	12.7	13.8	13.6	13.7
5	10.9	6.1	8.5	11.1	10.9	11.0	12.9	12.7	12.7	13.7	13.6	13.6
6	10.8	6.1	8.3	11.0	10.9	11.0	12.9	12.7	12.8	13.7	13.5	13.6
7	9.9	5.9	7.4	11.2	10.9	11.0	12.9	12.6	12.8	13.5	13.3	13.4
8	8.9	5.3	7.2	11.3	11.1	11.2	12.9	12.6	12.7	13.5	13.4	13.4
9	11.4	4.8	7.2	11.2	11.1	11.2	12.8	12.5	12.6	13.6	13.4	13.5
10	11.1	5.3	8.0	11.5	11.2	11.3	12.9	12.6	12.7	13.7	13.5	13.6
11	11.9	5.7	8.2	11.6	11.4	11.5	12.8	12.6	12.7	13.8	13.5	13.6
12	11.2	5.0	7.5	11.8	11.5	11.6	12.7	12.6	12.6	13.7	13.4	13.5
13	10.7	5.3	7.3	11.7	11.5	11.6	12.8	12.3	12.6	13.5	13.3	13.4
14	11.9	5.6	7.6	11.6	11.5	11.5	12.5	12.3	12.4	13.6	13.4	13.4
15	10.2	5.5	7.0	11.5	11.3	11.4	12.8	12.5	12.6	13.5	13.1	13.3
16	11.3	6.2	8.1	11.6	11.4	11.5	12.8	12.6	12.7	13.4	13.1	13.2
17	11.1	6.6	8.5	11.5	11.4	11.4	12.8	12.6	12.7	13.6	13.3	13.4
18	10.9	6.9	8.4	11.7	11.4	11.6	12.8	12.5	12.7	13.6	13.4	13.4
19	10.9	6.9	8.5	11.7	11.5	11.6	12.8	12.6	12.7	13.7	13.4	13.5
20	9.2	6.3	7.6	11.8	11.5	11.6	12.9	12.7	12.8	13.5	12.5	13.0
21	8.6	5.7	7.2	11.9	11.7	11.7	13.1	12.8	12.9	12.6	12.3	12.5
22	9.3	5.0	7.2	11.9	11.8	11.8	13.1	12.9	13.0	13.1	12.3	12.6
23	9.3	5.7	6.9	12.4	11.9	12.2	13.1	12.9	13.0	13.0	12.3	12.6
24	10.5	5.8	7.9	12.7	12.3	12.5	13.1	12.9	13.0	12.6	12.2	12.4
25	11.5	7.3	9.0	12.6	12.4	12.5	13.0	12.8	12.9	13.1	12.3	12.6
26	10.2	7.0	8.5	12.6	12.3	12.4	13.1	12.8	12.9	13.2	12.3	12.6
27	11.2	7.5	9.2	12.5	12.3	12.4	13.3	12.9	13.1	13.2	12.1	12.6
28	9.3	6.1	7.5	12.7	12.4	12.5	13.1	12.8	12.9	13.0	12.1	12.4
29	11.3	6.0	8.2	12.8	12.5	12.6	13.1	12.8	12.9	12.7	12.0	12.3
30	9.6	5.6	7.5	12.6	12.5	12.5	13.4	13.0	13.2	13.1	12.0	12.4
31	11.5	6.8	9.0	---	---	---	13.5	13.3	13.4	13.3	12.2	12.6
Month	11.9	4.4	7.7	12.8	6.5	11.5	13.5	12.3	12.8	13.8	12.0	13.1

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	13.3	12.3	12.7	13.7	13.2	13.5	12.5	11.2	11.8	13.5	11.5	12.4
2	13.4	11.8	12.6	13.6	13.2	13.4	12.7	11.3	11.8	13.1	11.5	12.1
3	11.9	9.6	10.7	13.8	13.4	13.5	12.8	11.5	12.1	13.4	11.6	12.3
4	11.2	8.5	9.9	13.8	13.4	13.5	12.6	11.5	11.9	13.5	11.6	12.4
5	11.3	8.4	10	13.8	13.4	13.6	12.0	11.5	11.8	13.2	11.5	12.2
6	11.2	9.1	9.9	13.8	13.3	13.5	12.0	11.8	11.9	13.1	11.3	12.0
7	11.9	9.0	10.1	13.8	13.3	13.5	11.9	11.7	11.9	13.1	11.2	11.9
8	12.5	9.8	10.8	13.7	13.2	13.4	12.2	11.1	11.8	13.0	11.2	11.9
9	11.9	9.0	10.4	13.6	12.8	13.2	12.2	10.9	11.6	13.1	11.3	12.0
10	11.8	7.8	10.1	13.3	12.7	13.0	12.3	11.5	12.0	13.2	11.3	12.1
11	11.0	8.9	10.0	13.5	12.9	13.2	12.3	11.4	11.9	12.4	11.3	11.8
12	11.7	8.8	10.1	13.4	12.9	13.0	12.3	11.4	11.9	13.0	11.3	12.1
13	12.8	8.4	10.6	13.2	12.8	12.9	12.3	11.3	11.8	13.0	11.4	12.1
14	11.4	7.6	9.4	13.5	12.8	13.1	12.8	11.5	12.1	12.7	10.7	11.9
15	11.8	8.3	9.8	13.2	12.7	12.8	12.8	11.8	12.3	11.7	10.6	11.0
16	11.1	8.6	9.8	13.3	12.7	12.9	12.9	11.8	12.3	12.1	10.9	11.5
17	12.9	8.7	10.7	13.5	12.3	13.0	13.0	11.9	12.4	12.2	11.3	11.8
18	13.1	12.9	13.0	13.1	11.2	12.3	13.0	11.8	12.3	12.1	11.5	11.8
19	13.3	13.0	13.1	13.4	11.2	12.1	13.2	11.8	12.4	12.1	11.5	11.8
20	13.3	13.1	13.2	13.5	11.2	12.1	13.2	11.8	12.4	12.2	11.5	11.9
21	13.4	13.1	13.2	13.3	11.0	12.0	13.2	11.7	12.4	12.2	11.5	11.8
22	13.3	13.0	13.2	13.6	11.2	12.3	13.4	11.7	12.5	12.3	11.5	11.9
23	13.4	13.1	13.2	13.8	11.3	12.3	13.3	11.7	12.4	12.3	11.5	11.9
24	13.5	13.1	13.3	13.6	11.0	12.0	13.2	11.6	12.2	12.3	11.4	11.9
25	13.7	13.3	13.5	13.5	10.8	11.9	12.8	11.5	12.0	12.3	11.1	11.7
26	13.7	13.3	13.4	13.4	10.8	11.8	13.2	11.6	12.2	12.6	11.3	11.9
27	13.5	13.2	13.3	13.4	10.8	11.9	13.4	11.3	12.2	12.6	11.3	11.8
28	13.6	13.1	13.3	13.7	11.3	12.3	13.3	11.4	12.2	12.6	11.3	11.9
29	---	---	---	13.4	11.2	12.1	13.8	11.5	12.3	12.7	11.3	11.8
30	---	---	---	12.6	11.2	11.7	13.6	11.6	12.4	12.7	11.3	12.0
31	---	---	---	12.9	11.0	11.9	---	---	---	12.6	11.4	11.9
Month	13.7	7.6	11.5	13.8	10.8	12.7	13.8	10.9	12.1	13.5	10.6	11.9

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	12.6	11.3	11.8	12.0	10.9	11.4	11.7	10.5	11.1	12.4	10.0	11.1
2	12.4	11.2	11.7	11.9	10.8	11.3	11.8	10.4	11.1	12.4	10.0	11.0
3	12.2	11.4	11.8	11.9	10.8	11.4	11.8	10.4	11.1	12.3	9.9	11.0
4	12.0	11.3	11.7	11.9	10.8	11.4	11.8	10.3	11.0	12.4	9.9	10.9
5	12.0	11.3	11.6	11.9	10.8	11.3	11.8	10.4	11.0	12.4	9.9	10.9
6	12.2	11.0	11.7	11.8	10.8	11.3	11.9	10.4	11.0	12.5	9.9	10.9
7	12.3	10.9	11.5	11.9	10.8	11.3	12.0	10.3	11.1	12.5	9.9	10.9
8	12.4	10.9	11.5	11.9	10.8	11.3	12.0	10.3	11.0	12.6	9.8	10.9
9	12.8	10.8	11.7	11.7	10.8	11.2	11.9	10.4	11.1	12.5	9.8	10.9
10	12.5	11.0	11.6	11.7	10.7	11.2	11.9	10.3	11.0	12.7	9.8	10.9
11	12.5	11.0	11.6	11.7	10.7	11.2	12.0	10.3	11.1	12.6	9.7	10.8
12	12.5	10.9	11.6	11.6	10.8	11.2	11.9	10.3	10.9	12.4	9.8	10.6
13	12.4	10.8	11.6	11.6	10.6	11.1	11.8	10.2	10.9	11.7	9.9	10.6
14	12.5	10.9	11.7	11.5	10.7	11.0	11.8	10.2	10.9	---	---	---
15	12.7	10.8	11.6	11.6	10.7	11.1	11.9	10.2	10.9	---	---	---
16	12.5	10.5	11.6	11.5	10.7	11.0	11.9	10.1	10.9	---	---	---
17	12.5	10.9	11.6	11.4	10.7	11.0	12.5	10.1	11.0	---	---	---
18	11.8	10.8	11.2	11.6	10.6	11.1	13.0	9.9	11.0	---	---	---
19	12.2	10.8	11.5	11.6	10.6	11.1	12.3	9.9	11.0	---	---	---
20	12.3	10.9	11.5	11.7	10.8	11.2	12.3	10.2	11.0	---	---	---
21	12.2	10.8	11.5	11.6	10.7	11.1	12.4	10.1	11.0	---	---	---
22	12.0	10.9	11.4	11.6	10.6	11.1	12.2	10.1	10.9	---	---	---
23	12.2	10.9	11.5	11.6	10.6	11.1	12.7	9.7	11.0	---	---	---
24	12.1	10.9	11.4	11.6	10.6	11.1	12.5	9.3	11.0	---	---	---
25	12.1	10.8	11.5	11.5	10.6	11.0	13.0	9.9	11.0	---	---	---
26	12.0	10.8	11.4	11.6	10.7	11.1	13.2	9.8	11.1	---	---	---
27	11.9	10.8	11.3	11.7	10.7	11.2	12.6	9.8	10.8	---	---	---
28	11.9	10.8	11.3	11.7	10.6	11.2	11.8	10.0	10.7	---	---	---
29	11.8	10.8	11.3	11.7	10.6	11.1	11.5	9.8	10.5	10.9	10.4	10.7
30	12.0	10.9	11.4	11.6	10.5	11.0	12.4	9.5	10.7	10.9	10.4	10.6
31	---	---	---	11.7	10.5	11.0	12.4	10.0	10.9	---	---	---
Month	12.8	10.5	11.5	12.0	10.5	11.2	13.2	9.3	11.0	---	---	---

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	October			November			December			January		
1	7.6	2.4	3.6	41	1.1	2.0	2.8	1.5	1.6	---	---	---
2	38	2.6	3.3	31	1.1	1.3	2.2	1.5	1.7	---	---	---
3	3.6	2.0	2.4	5.1	1.1	1.9	2.7	1.6	1.8	---	---	---
4	2.5	1.7	2.1	2.8	1.7	2.0	---	---	---	---	---	---
5	3.7	1.7	2.0	---	---	---	---	---	---	---	---	---
6	2.8	1.7	2.1	---	---	---	---	---	---	6.4	1.3	1.5
7	4.9	1.7	2.1	---	---	---	---	---	---	3.2	1.3	1.5
8	8.4	1.9	2.3	---	---	---	7.8	1.8	3.0	2.8	1.0	1.2
9	72	2.5	3.7	2.4	1.0	1.2	---	---	---	2.1	1.0	1.1
10	7.6	2.1	3.2	2.6	1.1	1.4	---	---	---	2.1	0.9	1.0
11	2.9	1.4	1.9	3.7	1.2	1.4	---	---	---	1.4	0.9	1.0
12	16	1.4	1.7	2.4	1.4	1.6	---	---	---	2.4	1.1	1.2
13	6.2	1.4	1.7	2.4	1.7	1.8	---	---	---	8.3	1.2	1.4
14	9.7	1.5	1.8	2.3	1.7	1.9	---	---	---	14	1.0	1.2
15	15	1.8	3.3	2.5	1.8	1.9	---	---	---	2.0	0.9	1.1
16	5.4	2.0	2.6	4.2	1.9	2.1	1.7	0.8	1.0	2.2	1.1	1.3
17	3.1	1.8	2.3	3.2	1.9	2.2	---	---	---	1.2	1.0	1.1
18	3.6	1.6	1.9	7.9	1.8	2.6	---	---	---	1.6	0.9	1.1
19	4.1	1.5	2.1	9.8	1.8	2.3	---	---	---	---	---	---
20	2.8	1.4	1.8	3.6	1.8	2.3	---	---	---	---	---	---
21	7.3	1.6	1.8	3.1	1.8	1.9	---	---	---	---	---	---
22	2.5	1.4	1.8	3.3	1.9	2.0	---	---	---	---	---	---
23	65	1.3	1.6	2.8	1.9	2.0	---	---	---	---	---	---
24	55	1.4	3.4	3.2	1.8	2.0	---	---	---	---	---	---
25	30	2.5	3.9	9.6	1.8	2.0	---	---	---	---	---	---
26	63	1.9	4.7	---	---	---	---	---	---	---	---	---
27	3.4	1.2	2.3	---	---	---	---	---	---	1.9	0.9	1.0
28	22	1.1	1.7	---	---	---	---	---	---	2.5	1.1	1.3
29	20	1.1	1.8	---	---	---	---	---	---	10	1.1	1.8
30	49	1.3	2.2	---	---	---	---	---	---	12	1.4	1.8
31	13	1.2	1.8	---	---	---	---	---	---	3.1	1.4	1.7
Max	72	2.6	4.7	---	---	---	---	---	---	---	---	---
Min	2.5	1.1	1.6	---	---	---	---	---	---	---	---	---

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	February			March			April			May		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	2.5	1.4	1.5	---	---	---
16	---	---	---	---	---	---	2.2	1.5	1.7	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
Max	---	---	---	---	---	---	---	---	---	---	---	---
Min	---	---	---	---	---	---	---	---	---	---	---	---

12101100 LAKE TAPPS DIVERSION AT DIERINGER, WA—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	June			July			August			September		
1	---	---	---	1.5	0.6	0.7	---	---	---	---	---	---
2	---	---	---	3.0	0.7	0.8	---	---	---	---	---	---
3	---	---	---	8.3	0.7	1.3	---	---	---	---	---	---
4	---	---	---	2.0	0.8	1.1	---	---	---	---	---	---
5	---	---	---	8.0	0.7	0.8	---	---	---	---	---	---
6	---	---	---	1.2	0.5	0.7	---	---	---	---	---	---
7	---	---	---	1.3	0.6	0.7	---	---	---	---	---	---
8	---	---	---	1.5	0.7	0.9	---	---	---	---	---	---
9	---	---	---	3.1	0.8	1.0	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	4.3	1.6	2.1	---	---	---	---	---	---
15	---	---	---	3.9	1.9	2.7	---	---	---	---	---	---
16	---	---	---	6.7	2.4	3.9	---	---	---	---	---	---
17	---	---	---	5.4	1.5	2.3	---	---	---	---	---	---
18	---	---	---	3.6	1.5	1.9	---	---	---	---	---	---
19	---	---	---	2.1	1.6	1.8	---	---	---	---	---	---
20	---	---	---	1.8	1.4	1.6	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	2.3	1.2	1.4	---	---	---	---	---	---
25	---	---	---	3.7	1.1	1.3	---	---	---	---	---	---
26	---	---	---	5.1	1.1	1.5	---	---	---	---	---	---
27	---	---	---	2.2	1.4	1.6	---	---	---	---	---	---
28	1.8	0.8	0.9	3.5	1.4	1.6	---	---	---	---	---	---
29	1.0	0.7	0.8	---	---	---	---	---	---	12	7.4	8.8
30	1.2	0.7	0.8	---	---	---	---	---	---	11	7.9	10
31	---	---	---	---	---	---	---	---	---	---	---	---
Max	---	---	---	---	---	---	---	---	---	---	---	---
Min	---	---	---	---	---	---	---	---	---	---	---	---