SNOHOMISH COUNTY PUD
PUBLIC UTILITY DISTRICT NO. 1

Your Community Energy Partner

June 26, 2018

VIA ELECTRONIC FILING

Kimberly D. Bose, Secretary
Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

Re: Jackson Hydroelectric Project, FERC No. 2157
Water Quality Monitoring Plan – 2017 Annual Report
License Article 401 (b)

Dear Secretary Bose:

Enclosed is Public Utility District No. 1 of Snohomish County's Water Quality Monitoring Plan Annual Report for 2017 pursuant to License Article 401 (b) for the Jackson Hydroelectric Project. The draft report was provided to the Aquatic Resources Committee for a 30-day review and comment period. Consultation documentation is included in the report's appendices.

If you have any questions on the Water Quality Monitoring Plan Annual Report for 2017, please contact Keith Binkley, Natural Resources Manager, at (425) 783-1769 or KMBinkley@snopud.com.

Sincerely,

/s/ Tom DeBoer

Tom DeBoer
Assistant General Manager of Generation, Power, Rates and Transmission Management
TADeBoer@snopud.com
(425) 783-1825

Enclosed: Water Quality Monitoring Plan Annual Report for 2017

cc: Aquatic Resource Committee
Monika Kannadaguli, Ecology Northwest Regional Office Water Quality Program

Henry M. Jackson Hydroelectric Project
(FERC No. 2157)

License Article 401: Water Quality Monitoring Plan – 2017 Annual Report

SNOHOMISH COUNTY PUD
PUBLIC UTILITY DISTRICT NO. 1

Everett, WA

June 2018

Final – This document has been prepared for the District. It has been peer-reviewed by the District for accuracy and formatting based on information known at the time of its preparation and with that understanding is considered complete by the District. The document may be cited as:

District. 2018. Water Quality Monitoring Plan 2017 Annual Report, License Article 401, for the Henry M. Jackson Hydroelectric Project, FERC No. 2157. June 2018.

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List of Acronyms and Abbreviations

7-DAD Max	seven-day average of the daily maximum
ARC	Aquatic Resource Committee
District	Public Utility District No. 1 of Snohomish County
Ecology	Washington Department of Ecology
FERC	Federal Energy Regulatory Commission
Project	Henry M. Jackson Hydroelectric Project, FERC No 2157
RM	river mile
USGS	U.S. Geological Survey
WQMP	Water Quality Monitoring Plan

1. INTRODUCTION

Public Utility District No. 1 of Snohomish County (the District) received a license on September 2, 2011 (License), from the Federal Energy Regulatory Commission (FERC) for the Henry M. Jackson Hydroelectric Project (Project). The FERC approved the Water Quality Monitoring Plan (WQMP) on March 30, 2012, pursuant to License Article 401(a). The District is to file a report with the FERC by June 30 of each year detailing the monitoring efforts of the previous calendar year, pursuant to License Article 401(b).

This WQMP Annual Report covers activities conducted in calendar year 2017. Monthly measurements of reservoir water quality are presented in Appendix A. Appendices B, C, and D present the data from continuous monitoring of water temperature in the river and tributary systems. Appendix B shows graphical data, Appendix C shows tabular data, and Appendix D shows seven-day average of the daily maximum water temperature in tabular format. This WQMP Annual Report was provided to the Aquatic Resources Committee (ARC) [consisting of the City of Everett, City of Sultan, Snohomish County, Washington Department of Ecology (Ecology), Washington Department of Fish and Wildlife, Tulalip Tribes, U.S. Forest Service, National Marine Fisheries Service, U.S. Fish and Wildlife Service and American Whitewater] for a 30-day review and comment period. Consultation documentation regarding the draft report is included in Appendices E and F.

The annual report fulfills monitoring and reporting requirements as stipulated in Ecology's 401 Water Quality Certification Order (Order No. 7918, October 18, 2010). As described in the 401 Certification Order (Section 9.0, Monitoring and Reporting Requirements), the report includes summaries of the water quality data, and includes sample dates, times, locations, and results. Compliance with state water quality standards is discussed, as well. The report will be submitted to the hydropower certification manager at Ecology's Water Quality Program Northwest Regional Office, and FERC.

The WQMP requires the District to collect water quality data in and around Spada Lake Reservoir, Sultan River between river mile (RM) 16.2 and RM 0.2, and Skykomish River at RM 14.1 and RM 13.2 (Table 1-1).

Table 1-1. Parameters to be monitored, locations, and sampling frequency.

Parameter	South Fork Sultan River	Spada Lake Reservoir (near log boom)	RM 16.1	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	Skyko. RM 14.1	Skyko. RM 13.2	Frequency
Water temperature	●	●	●	●	●	●	●	●	●	●	Year-round (hourly) in stream reaches. Monthly between May 1 and October 31 for lake profile.
Dissolved oxygen	●	●		●			●				May 1 to October 31. Monthly in stream reaches. Monthly for lake profile.
Turbidity	●	●		●			●				May 1 to October 31. Monthly in stream reaches. Monthly for lake profile.
pH	●	●		●			●				May 1 to October 31. Monthly in stream reaches. Monthly for lake profile.
Secchi transparency		●									May 1 to October 31. Monthly.
Flow discharge	●		●	●	●	●	●				Year-round. Daily.
Reservoir elevation		●									Year-round. Daily.

The following sections of this report are organized and structured as water flows, beginning in the upper portion of the Sultan watershed.

2. RESERVOIR MONITORING

2.1. Climatic Conditions

2.1.1. Rainfall Data

During 2017, a total rainfall of 155.4 inches was recorded at the Culmback Dam Weather Station. The rainfall measured during 2017 was slightly less than the historical annual average of 162.5 inches. Monthly rainfall averaged 13 inches and ranged between a low of 0 inches in July and a high of 32.1 inches in March (Table 2-1). During 2017, the highest recorded daily rainfall (5 inches) occurred on December 17, 2017.

Table 2-1. Monthly rainfall, Culmback Dam Weather Station, 2017.

Month	Rainfall (inches)
January	7.1
February	18.9
March	32.1
April	14.5
May	9.1
June	5.8
July	0
August	0.6
September	4.9
October	15.8
November	26.5
December	20.1

2.1.2. Snow Survey Measurements

Beginning in 1986, the District has conducted annual surveys of the snowpack typically during late March. Since inception, the annual mean snow and water depth at Stickney Ridge (elevation 3,600 feet) are 97.8 and 41.3 inches, respectively. During the 2017 survey, there were 102.5 inches of snow at the Stickney Ridge station (Figure 2-1); which was 105 percent of historical mean. In terms of water content, the 44.4 inches recorded equated to 108 percent of the historic mean.

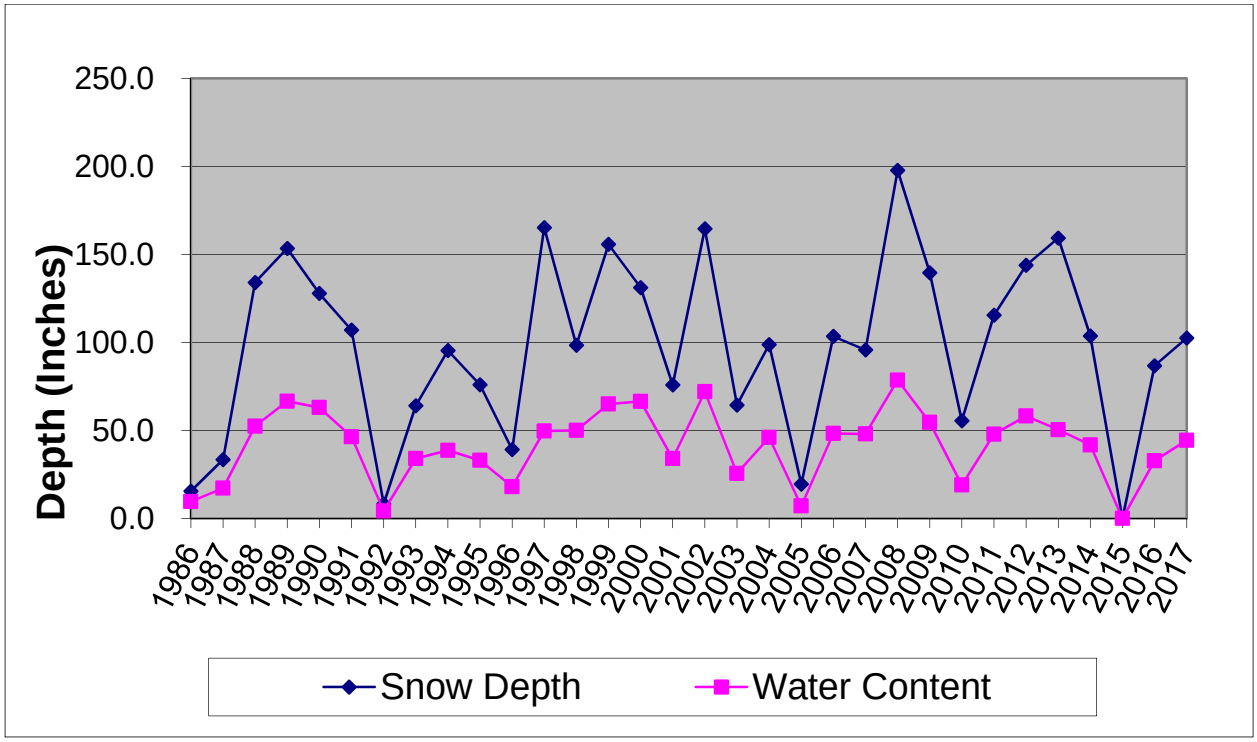


Figure 2-1. Snow survey data, Stickney Ridge, Sultan Watershed, 1986-2017.

2.1.3. Reservoir Inflow

Three tributaries feed into Spada Lake Reservoir: the South Fork Sultan River, Williamson Creek, and the mainstem Sultan River, including Elk Creek. Historically, the U.S. Geological Survey (USGS) has operated gages at several locations within the basin. Currently, the South Fork Sultan River is the only tributary that is actively gaged. At this location, the USGS operates Station No. 12137290, South Fork Sultan River near Sultan, WA, which provides real time information for Project operations. Hydrologic modeling indicates that the South Fork Sultan River, on average, accounts for between 14 and 22 percent of total inflow into the reservoir, depending on conditions. The 2017 hydrograph for this station is presented in Figure 2-2. Instantaneous flow values ranged from 6 to 5,350 cfs. Mean daily flow during 2017 averaged 137 cfs and ranged between a low of 6 cfs and a high flow of 1,890 cfs. The average mean annual flow, based on the USGS Water Year, for this station is 132 cfs (Period of Record 1992-2017).

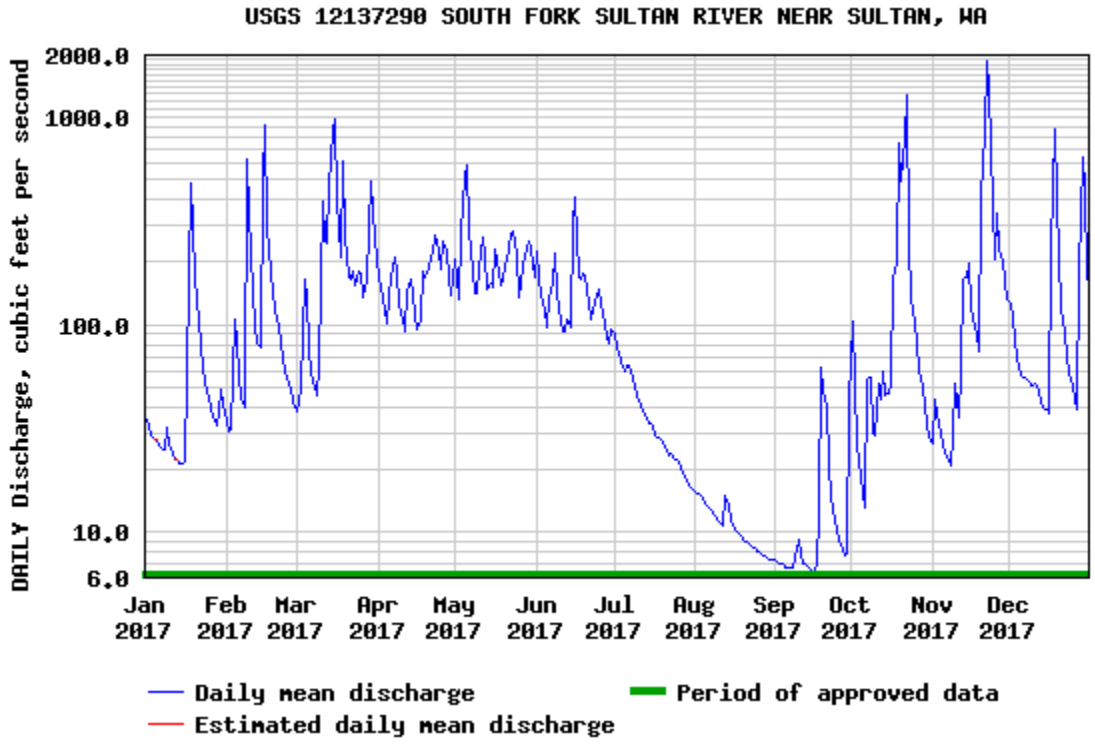


Figure 2-2. Hydrograph for the South Fork Sultan River, USGS Station No. 12137290, 2017 calendar year.

2.2. Reservoir Operations

2.2.1 Project Outflow

In the absence of reservoir spill, the vast majority of Project outflow occurs through the power tunnel, as indexed by daily plant generation. In 2017, the Project did not experience spill events. Daily plant generation during 2017 closely mimicked Project inflows (Figure 2-3). A total of 453,432 megawatt hours were produced during 2017 equating to 109 percent of the historic annual average of 417,554 megawatts.

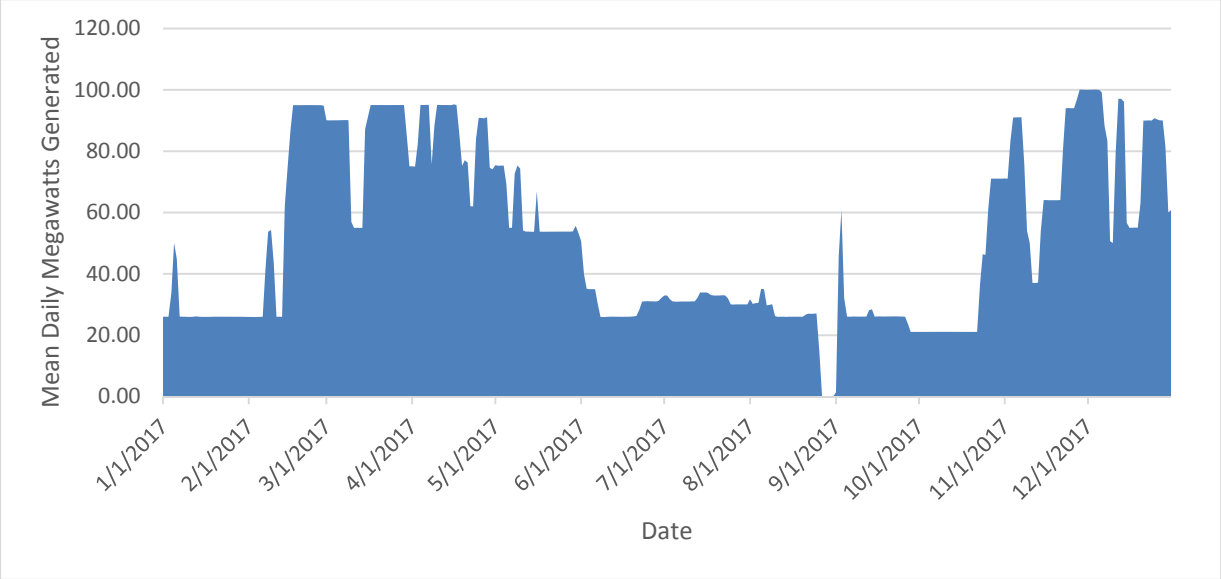


Figure 2-3. Daily plant generation, Jackson Hydroelectric Project, 2017.

2.2.2. Reservoir Elevation

Water surface elevation in Spada Lake Reservoir is partitioned into five states, which define how the Project is to be operated through the year. States 1 and 2 require full generation to withdraw 1,300 cfs for spill/flood control. State 3 is a discretionary zone, which allows the District to operate in a range defined by the maximum of states 1 and 2 or minimum defined by State 4. State 4 requires minimum generation to maintain the instream flows for fish and habitat protection and water supply for the City of Everett. A fifth state (State 5) lies below reservoir elevation 1,380 feet msl, during which the Project does not operate. During 2017, Spada Lake Reservoir was drafted and filled in accordance with the rule curves established for the Project (Figure 2-4).

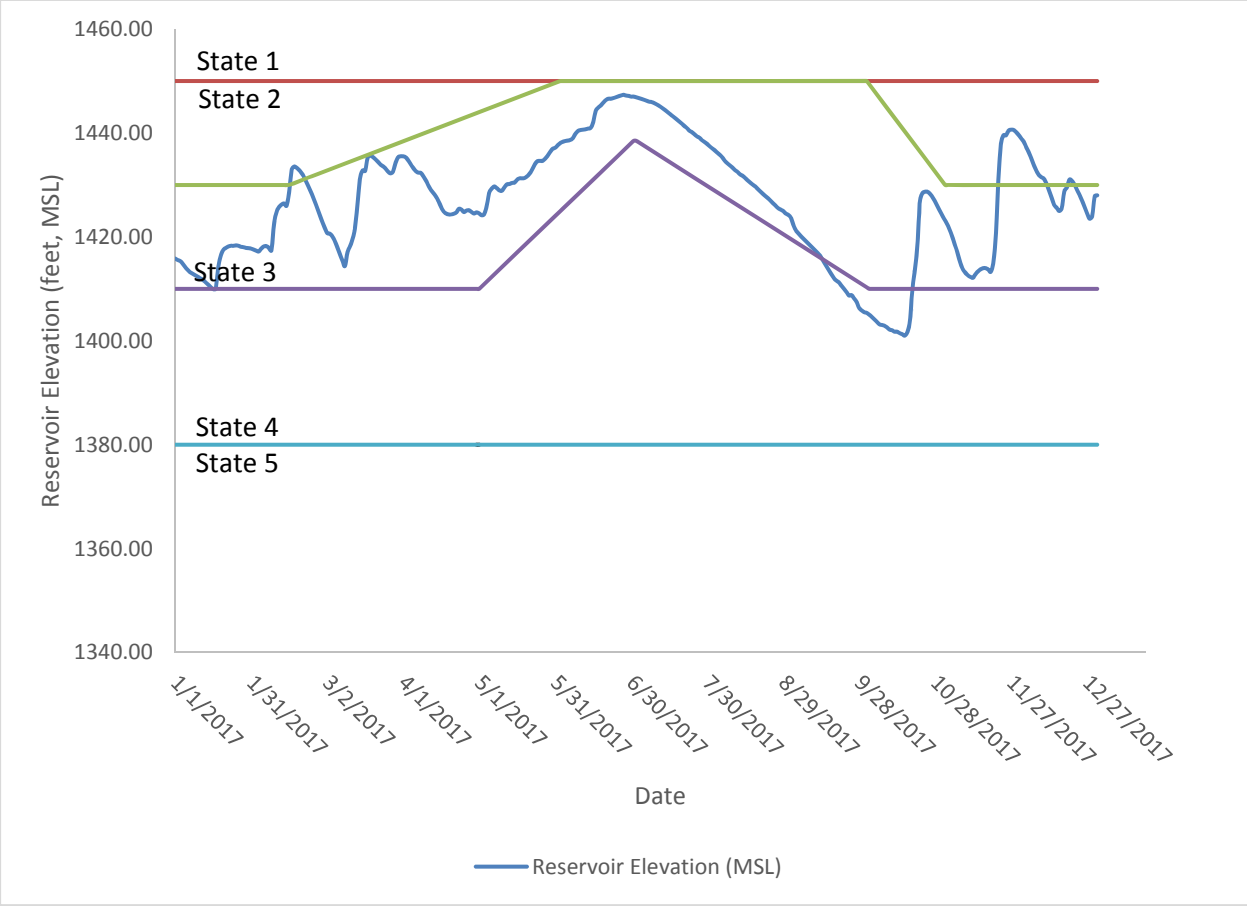


Figure 2-4. Daily water surface elevation, Spada Lake Reservoir, 2017.

2.3. Water Quality

Monthly sampling of water quality in Spada Lake Reservoir occurred on the following dates during 2017: April 20, May 16, June 13, July 11, August 8, September 19, and October 24. Sampling included profile measurements of conventional parameters including temperature, pH, dissolved oxygen, conductivity, and turbidity. Additional sampling was conducted cooperatively with the City of Everett during 2017, and included measurements of nutrients, phytoplankton, and zooplankton.

By summary, Spada Lake Reservoir was cold and thoroughly oxygenated during April and May. Temperature stratification was first evident during the April sampling session. Zooplankton, in particular *Holopedium,* had reached their summer maximum in July. The highest phytoplankton biovolume of the year was recorded in July. By August, the warmest water temperature was documented and the thermocline was set near 23 feet in depth. The effects of the thermocline on dissolved oxygen were apparent as dissolved oxygen levels below saturation persisted near the bottom of the reservoir during late summer / early fall. During the course of the year, most biological activity took place in the epi- and metalimnion. Additional water quality information is provided below, by parameter.

2.3.1. Temperature

Spada Lake Reservoir temperatures ranged from 4.6 to 22.9 °C depending on month and depth (Appendix A). Temperature stratification was first evident during the April sampling session. April had the coolest water temperatures while August had the warmest water temperatures. The thermocline was strongest in September. July and August also had a high resistance to mixing. The strongest point in the thermocline dropped from 23 to 39 feet over the course of the summer and early fall. The thermocline was no longer present in October.

2.3.2. pH

The highest measured pH was 7.3 in July. The lowest pH of 5.6 was measured in October at a depth of 160 feet, and was likely due to increased bacterial degradation of organic matter.

2.3.3. Dissolved Oxygen

Dissolved oxygen ranged from a low of 8.1 mg/L in September to a high of 11.9 mg/L in April. By saturation values, the maximum of 109 percent in July was likely due to increasing primary production, and the minimum of 66 percent of saturation at depth in October was likely due to limited photosynthetic oxygen production and bacterial degradation of organic matter.

2.3.4. Turbidity

In April, May, June, July, August, and September, the surface was less turbid than at depth. Turbidities at the surface and at depth decreased through July and August. In September, there was a slight increase at depth. In October, turbidity increased throughout the water column. Through most of the season, the cut-off points between higher and lower turbidities can be traced to the thermal structure of the reservoir.

2.3.5. Secchi Transparency

Secchi transparency ranged from a high of 19.5 feet in July to a low of 2 feet in October (Table 2-2).

Table 2-2. Secchi transparency, Spada Lake Reservoir, 2017.

Date	Result (feet)
4/20/2017	4
5/16/2017	6
6/13/2017	12
7/11/2017	19.5
8/8/2017	21
9/19/2017	11.5
10/24/2017	2

2.3.6. Nutrients

Total phosphorus concentrations were between 1.2 and 8.8 µg/L for most of the summer, both at the surface and at depth. An increase in total phosphorus was noted during October sampling. Total nitrogen was also relatively constant between 42.4 and 207.0 µg/L for most of the summer with an increase noted in October. Nitrate showed less variation over time and depth, with values ranging between 0.0 and 0.6 µg/L from April through October. Silica concentrations were similar throughout the water column, ranging from 1,440 and 2,069 µg/L.

2.3.7. Phytoplankton

The greatest total volume (μm^3/mL) of phytoplankton occurred in the July sample. *Bacillariophyta* was the predominant taxon by total volume for June, and *Chrysophyta* was the predominant taxon by total volume for July and August. By September, *Cyanophyta* (Colony/mL) increased 4-fold from August, as *Chlorophyta* and *Chrysophyta* decreased by nearly 50% and 80%, respectively. In situ chlorophyll and dissolved oxygen readings indicate that primary production took place predominantly between the surface and a depth of 36 feet, peaking in June (4.1 µg/L) and again in September (1.3 µg/L).

2.3.8. Zooplankton

Holopedium were the dominant zooplankter in all samples collected during July. *Conochilus* (single) were the most abundant zooplankter during April, May, August, September, and October. *Daphnia* reached a peak density in October, following the precipitous decline in *Conochilus* (single) and *Holopedium* abundance from September to October. The largest diversity in zooplankton species occurred from July through October. The total number of zooplankton/L was less than three on all sample dates except July (5.03/L), August (25.6/L), September (23.84/L), and October (3.94/L).

3. RIVER MONITORING

3.1. Background

Maintaining suitable water temperatures in the Sultan River is an important aspect of the Project operation. Water temperature influences fish behavior, especially anadromous fish during the freshwater phase of their life cycle. The Sultan River produces Chinook, coho, chum and pink salmon, and steelhead trout, plus resident fish species.

The Project's water storage and conveyance system is complex with discharge into the Sultan River occurring at three facilities – Culmback Dam, Diversion Dam, and Powerhouse (Figure 3-1). At Culmback Dam, a 10-inch cone valve is used to variably release an annual water budget of 20,362 acre feet into Reach 3 of the Sultan River, immediately downstream of the dam. Further downstream, the additional water necessary to meet instream flow requirements (at the Diversion Dam) is routed through the Francis turbine units at the powerhouse, then the Lake Chaplain pipeline to a former City Water diversion tunnel connected to another water line discharging into the river at the Diversion Dam at RM 9.8. Except for infrequent spill at Culmback Dam, these releases, plus tributary flows to the river, provide the instream flow for fish species throughout eleven river miles upstream from the powerhouse. Pelton turbines, which discharge directly to the river at RM 4.5, provide additional water when needed to meet minimum instream flow requirements below the powerhouse.

Water temperatures in Reach 3, immediately downstream of Culmback Dam, are seasonally influenced to a variable extent by releases through an auxiliary line down the face of Culmback Dam. The releases are described in detail in the annual reporting for the Water Temperature Conditioning Plan for Reach 3 (District 2010). Downstream, water temperatures at the Diversion Dam are influenced by the amount and depth of release at Culmback Dam (whether through the intake structure, cone or Howell-Bunger valves, or by spill), by tributary flows, and by meteorological conditions. Moveable panels at the Spada Lake Reservoir intake structure control the level and, hence, the temperature at which water is withdrawn from the reservoir to the powerhouse intake when conditions allow. When isothermal conditions exist in the reservoir, no change in water temperature can be achieved through moving the panels on the intake structure. The degree of temperature control possible by panel manipulation varies seasonally with the degree of temperature stratification in the reservoir. Panel position settings during 2017 are presented in Table 3-1.

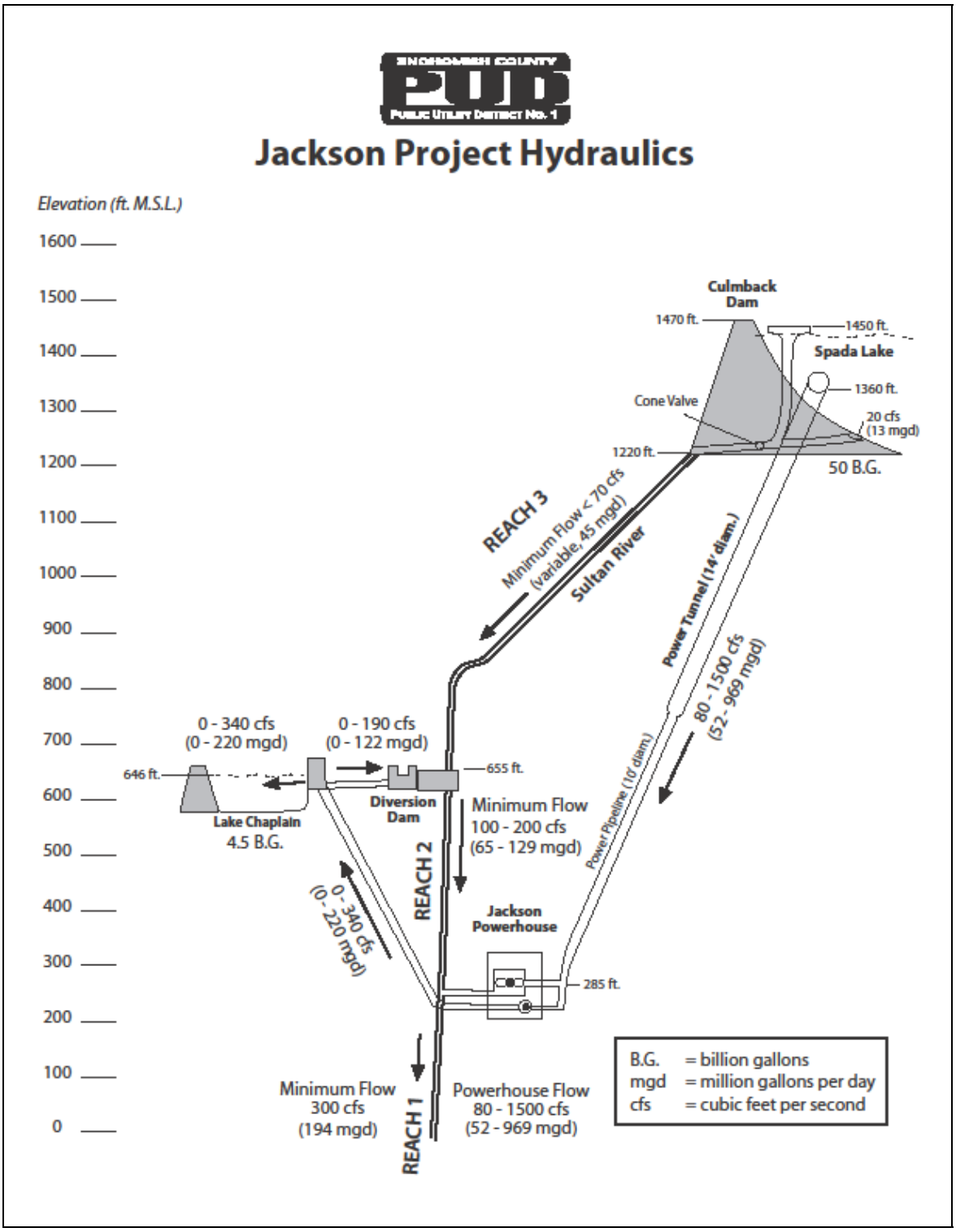


Figure 3-1. Schematic of water conveyance system, Jackson Hydroelectric Project.

Table 3-1. Settings for selective withdrawal panels, Spada Lake Reservoir, 2017.

Dates	Panel Setting	Upper Opening (elevation in feet msl)	Lower Opening (elevation in feet msl)
Beginning of year to 5/11/17	C	1,420 – 1,400	None
5/11/17 to 5/23/17	D	1,405 – 1,385	None
5/23/17 to 7/31/17	E	1,385 – 1,360	None
7/31/17 to end of year	E	1,390 – 1,360	None

3.2. Continuous Temperature Monitoring

The District continuously monitored water temperature at 12 locations within the Project area during 2017 (Figure 3-2). These locations, in order from upstream to downstream, include:

- South Fork Sultan River, upstream of Culmback Dam, near RM 18.2;
- Sultan River, within the bypass reach immediately downstream of Culmback Dam, at RM 15.8;
- Sultan River, within the bypass reach at the base of the Sultan River Canyon Trail, at RM 15.5;
- Sultan River, within the bypass reach, near RM 14.3;
- Sultan River, within the bypass reach, near RM 11.3;
- Sultan River, within the bypass reach immediately upstream of the Diversion Dam, near RM 9.8;
- Sultan River, immediately downstream of the Diversion Dam, near RM 9.6;
- Sultan River, upstream of the Powerhouse, near RM 4.9;
- Sultan River, downstream of the Powerhouse, near RM 4.4,
- Sultan River, near the confluence with the Skykomish River, at RM 0.2;
- Skykomish River, upstream of the confluence with the Sultan River, at RM 14.1; and
- Skykomish River, downstream of the confluence with the Sultan River, at RM 13.2.

Water temperature monitoring at Sultan River RM 14.3 and 11.3, are part of the Water Temperature Conditioning Plan monitoring sites for Reach 3; the remaining 10 stations are those required for monitoring under the WQMP.

In general, water temperatures in the Sultan Basin during 2017 were slightly cooler than 2016 and consistent with those collected during 2008 and 2009 by CH2M Hill and presented in the Water Quality Final Technical Report (CH2M Hill 2009). Figures depicting water temperatures during 2017 are presented in Appendix B. A tabulation of all mean daily temperature data for 2017 is presented in Appendix C. The seven-day average of the daily maximum temperature (7-DAD Max) is presented in Appendix D. Data gaps are attributed to malfunctioning equipment or equipment lost due to vandalism.

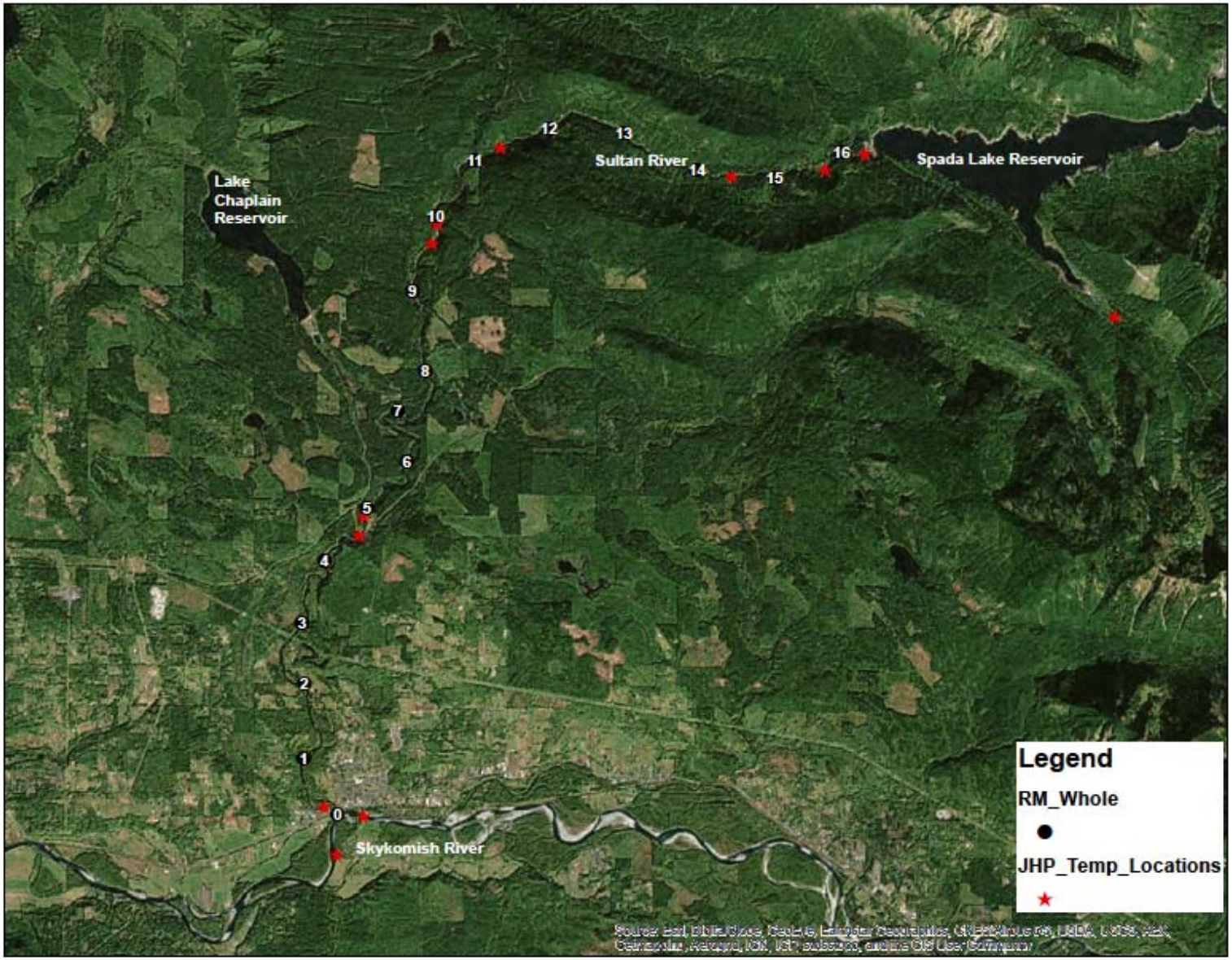


Figure 3-2. Locations of water temperature monitoring, Jackson Hydroelectric Project.

3.3. Synoptic Measurements of Water Quality

Synoptic measurements of water quality were collected during late spring, summer, and early fall 2017 at the South Fork Sultan River (tributary to Spada Lake Reservoir) and at two locations in the Sultan River downstream of Culmback Dam (Table 3-2).

Table 3-2. Synoptic monthly measurements of water quality, Sultan River, 2017.

Location	Date	Temp ºC	pH Units	TurbSC NTU	LDO mg/l
South Fork Sultan River (SF)					
	4/20/2017	4.4	7.0	0.2	12.3
	5/16/2017	4.5	6.7	0.8	12.3
	6/16/2017	7.2	6.8	0.2	11.7
	7/28/2017	14.1	6.8	0.7	10.2
	8/8/2017	14.3	6.4	0.7	11.1
	9/29/2017	10.6	6.6	0.3	11.2
	10/24/2017	6.9	6.5	0.7	11.7
Sultan River upstream of Diversion Dam (RM 9.8)					
	4/20/2017	7.0	7.1	2.4	11.8
	5/16/2017	6.4	7.5	18.6	11.9
	6/16/2017	9.5	6.8	2.8	11.4
	7/28/2017	15.2	6.8	1.0	10.3
	8/8/2017	14.7	6.5	2.5	10.3
	9/29/2017	8.3	6.4	2.9	12.2
	10/24/2017	7.9	6.6	4.1	11.6
Sultan River downstream of Powerhouse (RM 4.4)					
	4/20/2017	6.5	7.1	5.2	12.3
	5/16/2017	7.8	7.2	20.3	11.9
	6/16/2017	9.0	7.0	3.0	11.8
	7/28/2017	11.2	6.7	2.4	10.6
	8/8/2017	11.0	6.6	1.4	10.8
	9/29/2017	12.3	6.4	3.1	11.1
	10/24/2017	8.8	6.4	13.8	11.3

4. DATA QUALITY AND COMPLIANCE

Monitoring of water quality during 2017 adhered to the protocols and procedures outlined in the WQMP. All surveys locations and parameters of measurement were consistent with those outlined in the WQMP. All data were reviewed and accepted to accurately represent conditions

at the time of sampling. On August 2, 3, and 4, 2017, water temperature exceeded the state water temperature criteria at the monitoring site on the South Fork Sultan River (RM 18.2). Additionally, state temperature criteria were exceeded at three sites on the Sultan River, downstream of the reservoir. These sites were, RM 15.5 (3 days), RM 11.3 (35 days) and RM 9.8 (39 days). These exceedances were attributable to longitudinal warming in the 6-mile bypass reach. Both stations on the Skykomish River also exceeded the state water temperature criteria during summer 2017 (Appendix D). Project operations were conducted in accordance with License conditions throughout the sampling period.

5. REFERENCES

CH2M Hill. 2009. Water Quality Final Technical Report. Henry M. Jackson Hydroelectric Project (FERC No. 2157) Water Quality Parameter Study (RSP 1). Prepared for Public Utility District No. 1 of Snohomish County. August 2009.

District. 2010. Water Temperature Conditioning Plan for Reach 3. Henry M. Jackson Hydroelectric Project (FERC No. 2157). 2010.

FERC. 2011. Order Issuing New License, Project No. 2157-188. 136 FERC ¶ 62,188. September 2, 2011. Available at: http://www.snopud.com/Site/Content/Documents/relicensing/License/20110902LICENSE.pdf

APPENDIX A

Monthly Reservoir Water Quality Sampling

Date	Depth	Depth	Elevation	Temperature	Conductivity	pH	Dissolved Oxygen	Chlorophyll	Turbidity
M/D/Y	meters	feet	feet	degrees C	mS/cm		mg/L	RFU	NTU
4/20/2017	0.5	1.6	1422.6	5.9	0.02	6.9	11.9	0.2	6.4
4/20/2017	1	3.3	1420.9	5.9	0.02	6.9	11.9	0.1	6.8
4/20/2017	2	6.5	1417.6	5.9	0.02	6.9	11.9	0.1	6.6
4/20/2017	3	8.7	1415.4	5.9	0.02	7.0	11.9	0.1	6.2
4/20/2017	4	13.2	1411.0	5.9	0.02	6.9	11.9	0.1	6.4
4/20/2017	5	16.4	1407.8	5.9	0.02	7.0	11.9	0.1	6.1
4/20/2017	6	19.8	1404.4	5.9	0.02	7.0	11.9	0.2	6.5
4/20/2017	7	23.0	1401.2	5.9	0.02	6.9	11.9	0.2	6.4
4/20/2017	8	26.2	1397.9	5.9	0.02	7.0	11.9	0.3	6.4
4/20/2017	9	29.5	1394.7	5.9	0.02	7.0	11.9	0.3	7.1
4/20/2017	10	32.7	1391.5	5.9	0.02	7.0	11.9	0.2	6.4
4/20/2017	11	36.1	1388.0	5.9	0.02	7.0	11.9	0.1	6.1
4/20/2017	12	39.3	1384.9	5.8	0.02	7.0	11.9	0.2	6.6
4/20/2017	13	42.9	1381.2	5.7	0.02	7.0	11.9	0.1	6.1
4/20/2017	14	45.9	1378.3	5.7	0.02	7.0	11.9	0.2	6.9
4/20/2017	15	49.2	1374.9	5.5	0.02	7.0	11.9	0.1	6.8
4/20/2017	17	55.8	1368.3	5.1	0.02	7.0	11.9	0.2	6.9
4/20/2017	19	62.3	1361.9	4.9	0.02	6.9	11.9	0.0	7.0
4/20/2017	21	68.8	1355.4	4.7	0.02	6.9	11.9	0.1	6.9
4/20/2017	23	75.4	1348.7	4.7	0.02	6.9	11.9	0.1	7.8
4/20/2017	25	82.1	1342.1	4.7	0.02	6.9	11.9	0.1	7.7
4/20/2017	27	88.7	1335.5	4.7	0.02	6.9	11.8	0.1	7.6
4/20/2017	29	95.1	1329.1	4.7	0.02	6.9	11.8	0.2	7.5
4/20/2017	31	101.8	1322.4	4.6	0.02	6.9	11.8	0.2	8.0
4/20/2017	34	111.7	1312.5	4.6	0.02	6.9	11.8	0.3	7.7
4/20/2017	37	121.4	1302.8	4.6	0.02	6.9	11.8	0.1	7.6
4/20/2017	40	131.3	1292.9	4.6	0.02	6.9	11.7	0.3	7.6
4/20/2017	43	141.2	1282.9	4.6	0.02	6.9	11.7	0.2	8.0
4/20/2017	46	151.0	1273.1	4.6	0.02	6.8	11.7	0.3	8.3
4/20/2017	49	160.7	1263.5	4.6	0.02	6.8	11.7	0.2	8.5
4/20/2017	48	160.0	1264.2	4.6	0.02	6.8	11.7	0.2	8.6

Date	Depth	Depth	Elevation	Temperature	Conductivity	pH	Dissolved Oxygen	Chlorophyll	Turbidity
M/D/Y	meters	feet	feet	degrees C	mS/cm		mg/L	RFU	NTU
5/16/2017	0.5	1.6	1428.5	9.9	0.02	7.1	10.9	0.5	3.4
5/16/2017	1	3.3	1426.8	9.9	0.02	7.2	11.0	0.5	3.4
5/16/2017	2	6.6	1423.5	9.9	0.02	7.1	11.0	0.6	3.3
5/16/2017	3	9.8	1420.3	9.9	0.02	7.1	11.0	0.6	3.4
5/16/2017	4	13.1	1417.0	9.9	0.02	7.1	11.0	0.7	3.4
5/16/2017	5	16.4	1413.7	9.9	0.02	7.1	10.9	0.5	3.6
5/16/2017	6	19.7	1410.4	9.8	0.02	7.1	10.9	0.4	3.7
5/16/2017	7	23.1	1407.0	9.8	0.02	7.1	10.9	0.4	3.6
5/16/2017	8	26.3	1403.8	9.7	0.02	7.1	11.0	0.5	3.4
5/16/2017	9	29.5	1400.6	8.6	0.02	7.1	11.1	0.4	3.5
5/16/2017	10	33.0	1397.1	7.6	0.02	6.8	11.4	0.3	3.7
5/16/2017	11	36.2	1393.9	7.3	0.02	6.8	11.4	0.2	4.0
5/16/2017	12	39.4	1390.7	7.0	0.02	6.8	11.4	0.4	4.0
5/16/2017	13	42.8	1387.3	6.8	0.02	6.8	11.5	0.3	4.1
5/16/2017	14	45.9	1384.2	6.7	0.02	6.8	11.5	0.3	4.3
5/16/2017	15	49.2	1380.9	6.6	0.02	6.8	11.5	0.3	4.3
5/16/2017	17	55.8	1374.3	6.3	0.02	6.8	11.5	0.2	4.5
5/16/2017	19	62.3	1367.7	6.0	0.02	6.8	11.5	0.3	4.4
5/16/2017	21	68.8	1361.3	5.8	0.02	6.8	11.5	0.3	4.5
5/16/2017	23	75.4	1354.6	5.7	0.02	6.8	11.6	0.1	4.4
5/16/2017	25	82.1	1348.0	5.5	0.02	6.8	11.6	0.2	4.5
5/16/2017	27	88.5	1341.5	5.4	0.02	6.8	11.6	0.3	4.7
5/16/2017	29	95.1	1335.0	5.3	0.02	6.8	11.6	0.2	4.7
5/16/2017	31	101.7	1328.3	5.2	0.02	6.8	11.6	0.3	5.3
5/16/2017	34	111.6	1318.5	5.1	0.02	6.7	11.5	0.2	5.5
5/16/2017	37	121.4	1308.7	5.0	0.02	6.7	11.5	0.2	6.2
5/16/2017	40	131.2	1298.9	4.9	0.02	6.7	11.4	0.2	6.8
5/16/2017	43	141.2	1288.9	4.9	0.02	6.7	11.3	0.4	7.3
5/16/2017	46	150.9	1279.2	4.9	0.02	6.7	11.2	0.3	8.8
5/16/2017	49	160.8	1269.3	4.9	0.02	6.7	11.1	0.4	9.6
5/16/2017	52	169.7	1260.3	4.9	0.02	6.6	11.0	0.3	10.1

Date	Depth	Depth	Elevation	Temperature	Conductivity	pH	Dissolved Oxygen	Chlorophyll	Turbidity
M/D/Y	meters	feet	feet	degrees C	mS/cm		mg/L	RFU	NTU
6/13/2017	0.5	1.6	1439.1	14.2	0.02	7.2	10.1	0.3	1.3
6/13/2017	1	3.2	1437.5	14.2	0.02	7.2	10.1	0.4	1.3
6/13/2017	2	6.6	1434.1	14.2	0.02	7.2	10.1	0.4	1.3
6/13/2017	3	9.8	1430.9	13.1	0.02	7.1	10.8	0.6	1.2
6/13/2017	4	13.2	1427.5	12.6	0.02	7.1	10.9	1.1	1.4
6/13/2017	5	16.4	1424.3	12.3	0.02	7.1	11.0	1.2	1.3
6/13/2017	6	19.6	1421.1	11.8	0.02	7.0	11.0	1.2	1.3
6/13/2017	7	23.0	1417.7	11.0	0.02	7.0	11.0	0.8	1.2
6/13/2017	8	26.2	1414.5	10.3	0.02	6.8	11.0	0.6	1.2
6/13/2017	9	29.5	1411.2	9.9	0.02	6.7	10.9	0.3	1.2
6/13/2017	10	32.7	1408.0	9.6	0.02	6.7	10.9	0.3	1.2
6/13/2017	11	36.1	1404.6	9.3	0.02	6.6	10.9	0.3	1.2
6/13/2017	12	39.5	1401.2	8.8	0.02	6.6	10.9	0.3	1.4
6/13/2017	13	42.7	1398.0	8.2	0.02	6.6	11.0	0.2	1.4
6/13/2017	14	46.0	1394.7	7.7	0.02	6.6	11.0	0.2	1.5
6/13/2017	15	49.2	1391.5	7.3	0.02	6.6	11.1	0.1	1.7
6/13/2017	17	55.8	1384.9	6.8	0.02	6.6	11.1	0.1	1.9
6/13/2017	19	62.3	1378.4	6.4	0.02	6.6	11.2	0.0	2.2
6/13/2017	21	68.9	1371.8	6.1	0.02	6.6	11.2	0.1	2.8
6/13/2017	23	75.4	1365.3	5.9	0.02	6.6	11.2	0.1	3.2
6/13/2017	25	82.1	1358.6	5.8	0.02	6.6	11.2	0.1	3.1
6/13/2017	27	88.6	1352.1	5.7	0.02	6.6	11.2	0.2	3.3
6/13/2017	29	95.1	1345.6	5.7	0.02	6.6	11.2	0.3	3.9
6/13/2017	31	101.7	1339.0	5.6	0.02	6.6	11.2	0.1	4.0
6/13/2017	34	111.6	1329.1	5.5	0.02	6.6	11.2	0.2	4.0
6/13/2017	37	121.5	1319.2	5.4	0.02	6.6	11.2	0.1	4.1
6/13/2017	40	131.3	1309.4	5.3	0.02	6.6	11.2	0.2	4.9
6/13/2017	43	141.1	1299.6	5.2	0.02	6.6	11.1	0.1	5.3
6/13/2017	49	160.7	1280.0	5.1	0.02	6.6	10.9	0.1	7.7
6/13/2017	50	165.5	1275.2	5.0	0.02	6.6	10.5	0.6	16.8

Date	Depth	Depth	Elevation	Temperature	Conductivity	pH	Dissolved Oxygen	Chlorophyll	Turbidity
M/D/Y	meters	feet	feet	degrees C	mS/cm		mg/L	RFU	NTU
7/11/2017	0.5	1.6	1443.8	19.6	0.02	6.8	9.0	0.1	0.7
7/11/2017	1	3.5	1442.0	19.2	0.02	7.0	9.2	0.1	0.7
7/11/2017	2	6.6	1438.8	19.1	0.02	7.0	9.2	0.1	0.7
7/11/2017	3	9.7	1435.7	18.9	0.02	7.0	9.3	0.1	0.6
7/11/2017	4	13.1	1432.4	18.9	0.02	7.0	9.3	0.2	0.6
7/11/2017	5	16.5	1428.9	18.5	0.02	7.0	9.6	0.1	0.6
7/11/2017	6	19.7	1425.7	17.5	0.02	7.1	10.0	0.1	0.7
7/11/2017	7	23.1	1422.4	15.8	0.02	7.2	10.7	0.6	0.7
7/11/2017	8	26.2	1419.2	14.1	0.02	7.3	11.3	1.0	0.6
7/11/2017	9	29.5	1415.9	12.9	0.02	7.2	11.4	1.3	0.4
7/11/2017	10	32.8	1412.6	11.9	0.02	7.0	11.3	1.2	0.4
7/11/2017	11	36.1	1409.3	11.4	0.02	7.0	11.2	1.1	0.4
7/11/2017	12	39.4	1406.0	10.8	0.02	6.9	10.9	0.8	0.4
7/11/2017	13	42.8	1402.6	10.3	0.02	6.8	10.7	0.7	0.5
7/11/2017	14	46.1	1399.3	10.0	0.02	6.7	10.5	0.6	0.6
7/11/2017	15	49.1	1396.3	9.3	0.02	6.7	10.5	0.3	0.6
7/11/2017	17	55.8	1389.6	8.3	0.02	6.6	10.5	0.0	0.9
7/11/2017	19	62.2	1383.3	7.5	0.02	6.6	10.6	0.0	1.3
7/11/2017	21	68.9	1376.5	7.1	0.02	6.5	10.7	0.0	1.3
7/11/2017	23	75.5	1369.9	6.7	0.02	6.5	10.7	0.1	1.9
7/11/2017	25	82.1	1363.4	6.5	0.02	6.5	10.8	0.1	2.0
7/11/2017	27	88.7	1356.8	6.3	0.02	6.5	10.8	0.1	2.3
7/11/2017	29	95.2	1350.2	6.2	0.02	6.5	10.8	0.1	2.5
7/11/2017	31	101.6	1343.8	6.1	0.02	6.5	10.8	0.1	2.6
7/11/2017	34	111.5	1333.9	6.0	0.02	6.5	10.9	0.1	2.5
7/11/2017	37	121.3	1324.1	5.8	0.02	6.6	10.9	0.1	2.8
7/11/2017	40	131.2	1314.3	5.6	0.02	6.6	11.0	0.1	2.8
7/11/2017	43	141.1	1304.3	5.5	0.02	6.5	11.0	0.1	3.0
7/11/2017	46	150.9	1294.5	5.4	0.02	6.5	10.9	0.1	3.4
7/11/2017	49	160.8	1284.6	5.3	0.02	6.6	10.9	0.1	3.7
7/11/2017	50	162.0	1283.4	5.3	0.02	6.6	10.8	0.0	3.9

Date	Depth	Depth	Elevation	Temperature	Conductivity	pH	Dissolved Oxygen	Chlorophyll	Turbidity
M/D/Y	meters	feet	feet	degrees C	mS/cm		mg/L	RFU	NTU
8/8/2017	0.5	1.7	1432.4	22.9	0.02	7.1	8.2	0.1	1.1
8/8/2017	1	3.3	1430.8	22.9	0.02	7.1	8.2	0.1	0.9
8/8/2017	2	6.6	1427.5	22.8	0.02	7.2	8.2	0.1	0.9
8/8/2017	3	9.7	1424.3	22.7	0.02	7.2	8.2	0.2	0.9
8/8/2017	4	13.1	1421.0	22.6	0.02	7.1	8.2	0.1	0.9
8/8/2017	5	16.5	1417.6	22.6	0.02	7.1	8.2	0.1	0.9
8/8/2017	6	19.8	1414.3	22.6	0.02	7.1	8.2	0.1	1.0
8/8/2017	7	23.0	1411.1	21.5	0.03	7.1	8.5	0.2	1.1
8/8/2017	8	26.2	1407.9	19.4	0.02	7.0	9.0	0.3	0.8
8/8/2017	9	29.5	1404.6	17.2	0.02	7.0	9.7	0.2	0.7
8/8/2017	10	32.8	1401.3	14.8	0.02	6.6	10.3	0.5	0.8
8/8/2017	11	36.1	1398.0	13.1	0.02	6.6	10.4	0.6	0.9
8/8/2017	12	39.4	1394.6	12.0	0.02	6.4	10.3	0.2	0.9
8/8/2017	13	42.8	1391.3	11.3	0.02	6.2	10.2	0.2	0.8
8/8/2017	14	45.8	1388.3	10.3	0.02	6.2	10.0	0.4	0.8
8/8/2017	15	49.3	1384.8	9.2	0.02	6.1	9.9	0.3	0.8
8/8/2017	17	55.8	1378.3	7.9	0.02	6.2	10.0	0.2	1.0
8/8/2017	19	62.3	1371.8	7.2	0.02	6.1	10.0	0.2	1.2
8/8/2017	21	68.9	1365.2	6.9	0.02	6.1	10.1	0.2	1.4
8/8/2017	23	75.6	1358.5	6.7	0.02	6.1	10.1	0.3	1.5
8/8/2017	25	82.0	1352.1	6.5	0.02	6.1	10.2	0.2	1.7
8/8/2017	27	88.6	1345.5	6.5	0.02	6.1	10.2	0.3	1.6
8/8/2017	29	95.1	1339.0	6.4	0.02	6.1	10.2	0.1	1.8
8/8/2017	31	101.6	1332.5	6.3	0.02	6.1	10.4	0.4	1.8
8/8/2017	34	111.6	1322.5	6.1	0.02	6.2	10.5	0.2	1.7
8/8/2017	37	121.5	1312.6	6.0	0.02	6.2	10.6	0.1	1.9
8/8/2017	40	131.2	1302.9	5.8	0.02	6.2	10.6	0.1	2.1
8/8/2017	43	141.4	1292.7	5.6	0.02	6.2	10.5	0.3	2.5
8/8/2017	46	150.8	1283.3	5.5	0.02	6.2	10.4	0.2	2.5

Date	Depth	Depth	Elevation	Temperature	Conductivity	pH	Dissolved Oxygen	Chlorophyll	Turbidity
M/D/Y	meters	feet	feet	degrees C	mS/cm		mg/L	RFU	NTU
9/19/2017	0.5	1.6	1410.3	18.4	0.03	6.8	8.3	0.4	1.4
9/19/2017	1	3.3	1408.6	18.4	0.03	6.8	8.3	0.4	1.4
9/19/2017	2	6.6	1405.3	18.4	0.03	6.9	8.3	0.3	1.5
9/19/2017	3	9.8	1402.1	18.4	0.03	6.8	8.4	0.4	1.5
9/19/2017	4	13.1	1398.8	18.4	0.03	6.8	8.3	0.5	1.5
9/19/2017	5	16.4	1395.4	18.4	0.03	6.7	8.3	0.4	1.4
9/19/2017	6	19.7	1392.2	18.4	0.03	6.7	8.3	0.4	1.4
9/19/2017	7	22.9	1388.9	18.4	0.03	6.8	8.3	0.4	1.8
9/19/2017	8	26.2	1385.7	18.4	0.03	6.7	8.3	0.5	1.8
9/19/2017	9	29.5	1382.3	18.4	0.03	6.8	8.3	0.3	2.0
9/19/2017	10	32.7	1379.1	18.3	0.03	6.8	8.3	0.3	2.4
9/19/2017	11	36.0	1375.8	18.3	0.03	6.8	8.1	0.4	2.8
9/19/2017	12	39.5	1372.4	14.4	0.02	6.4	8.2	0.2	1.5
9/19/2017	14	45.9	1365.9	11.1	0.02	6.2	8.4	0.2	1.8
9/19/2017	15	49.2	1362.6	9.7	0.02	6.2	8.5	0.3	1.9
9/19/2017	17	55.8	1356.1	7.8	0.02	6.1	8.9	0.2	1.8
9/19/2017	19	62.4	1349.5	7.2	0.02	6.1	9.1	0.1	1.7
9/19/2017	21	68.9	1343.0	6.9	0.02	6.1	9.3	0.3	1.8
9/19/2017	23	75.5	1336.4	6.8	0.02	6.1	9.4	0.2	1.7
9/19/2017	25	82.0	1329.9	6.7	0.02	6.1	9.4	0.2	1.8
9/19/2017	27	88.7	1323.1	6.6	0.02	6.1	9.4	0.3	1.9
9/19/2017	29	95.1	1316.7	6.5	0.02	6.1	9.6	0.3	1.8
9/19/2017	31	101.7	1310.2	6.4	0.02	6.1	9.7	0.1	1.7
9/19/2017	34	111.6	1300.3	6.3	0.02	6.0	9.7	0.3	1.8
9/19/2017	37	121.4	1290.4	6.2	0.02	6.0	9.5	0.2	2.1
9/19/2017	40	131.2	1280.7	6.1	0.02	5.9	9.2	0.4	2.6
9/19/2017	43	141.2	1270.7	6.0	0.02	5.9	8.8	0.2	3.6
9/19/2017	46	150.9	1260.9	6.0	0.02	5.9	8.6	0.2	3.6

Date	Depth	Depth	Elevation	Temperature	Conductivity	pH	Dissolved Oxygen	Chlorophyll	Turbidity
M/D/Y	meters	feet	feet	degrees C	mS/cm		mg/L	RFU	NTU
10/24/2017	0.5	1.6	1427.0	10.3	0.03	6.3	9.8	No Data	10.7
10/24/2017	1	3.4	1425.2	10.3	0.03	6.3	9.8	No Data	11.5
10/24/2017	2	6.6	1422.0	10.3	0.03	6.3	9.8	No Data	11.1
10/24/2017	3	9.9	1418.7	10.3	0.03	6.3	9.8	No Data	10.9
10/24/2017	4	13.1	1415.5	10.3	0.03	6.3	9.8	No Data	11.1
10/24/2017	5	16.4	1412.2	10.3	0.03	6.3	9.8	No Data	11.4
10/24/2017	6	19.6	1409.0	10.3	0.03	6.3	9.7	No Data	10.9
10/24/2017	7	23.0	1405.6	10.1	0.02	6.3	9.6	No Data	13.7
10/24/2017	8	26.1	1402.5	9.6	0.02	6.2	9.6	No Data	22.1
10/24/2017	9	29.6	1399.1	9.3	0.02	6.1	9.6	No Data	20.7
10/24/2017	9	29.4	1399.2	9.3	0.02	6.1	9.6	No Data	20.2
10/24/2017	10	32.9	1395.8	9.2	0.02	6.0	9.6	No Data	21.7
10/24/2017	11	36.2	1392.4	9.1	0.02	6.0	9.5	No Data	19.1
10/24/2017	12	39.4	1389.2	9.0	0.02	6.0	9.5	No Data	19.5
10/24/2017	13	42.7	1385.9	8.9	0.02	6.0	9.6	No Data	21.5
10/24/2017	14	45.9	1382.7	8.9	0.02	5.9	9.6	No Data	18.4
10/24/2017	15	49.2	1379.4	8.6	0.02	5.9	9.3	No Data	17.8
10/24/2017	17	55.9	1372.8	8.1	0.02	5.8	9.2	No Data	14.7
10/24/2017	19	62.4	1366.2	7.9	0.02	5.7	8.9	No Data	11.2
10/24/2017	21	68.9	1359.7	7.7	0.02	5.7	8.6	No Data	10.5
10/24/2017	23	75.4	1353.2	7.7	0.02	5.7	8.8	No Data	20.2
10/24/2017	25	82.0	1346.6	7.6	0.02	5.7	8.8	No Data	21.4
10/24/2017	27	88.5	1340.1	7.6	0.02	5.7	8.9	No Data	28.1
10/24/2017	29	95.2	1333.4	7.3	0.02	5.7	8.7	No Data	18.2
10/24/2017	31	101.7	1326.9	7.2	0.02	5.6	8.5	No Data	13.7
10/24/2017	34	111.6	1317.0	7.0	0.02	5.6	8.5	No Data	6.5
10/24/2017	37	121.4	1307.3	6.8	0.02	5.6	8.5	No Data	4.3
10/24/2017	40	131.3	1297.4	6.6	0.02	5.6	8.8	No Data	3.6
10/24/2017	43	141.1	1287.5	6.5	0.02	5.6	8.9	No Data	4.3
10/24/2017	46	151.0	1277.7	6.4	0.02	5.6	8.6	No Data	4.4
10/24/2017	49	160.8	1267.8	6.4	0.02	5.6	8.5	No Data	6.6
10/24/2017	52	169.0	1259.6	6.4	0.02	5.6	8.2	No Data	7.4

APPENDIX B

Continuous Water Temperature Monitoring – Figures

Figure B-1. Mean Daily Water Temperature in the South Fork Sultan (RM 18.2), and the mainstem Sultan River immediately downstream of Culmback Dam (RM 15.8) during 2017

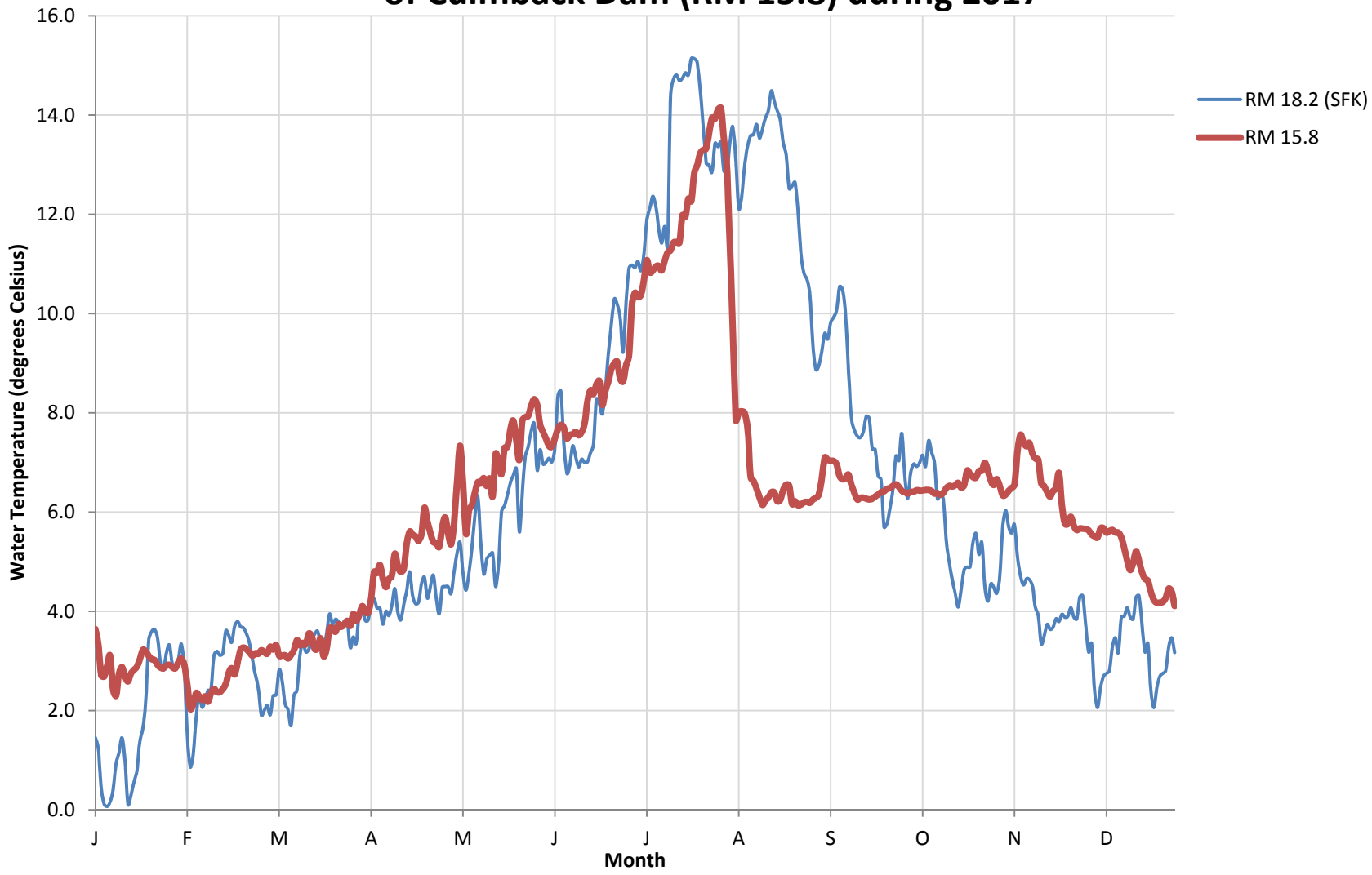


Figure B-2. Longitudinal Depiction of Mean Daily Water Temperature in the Bypass Reach (Reach 3) of the Sultan River during 2017

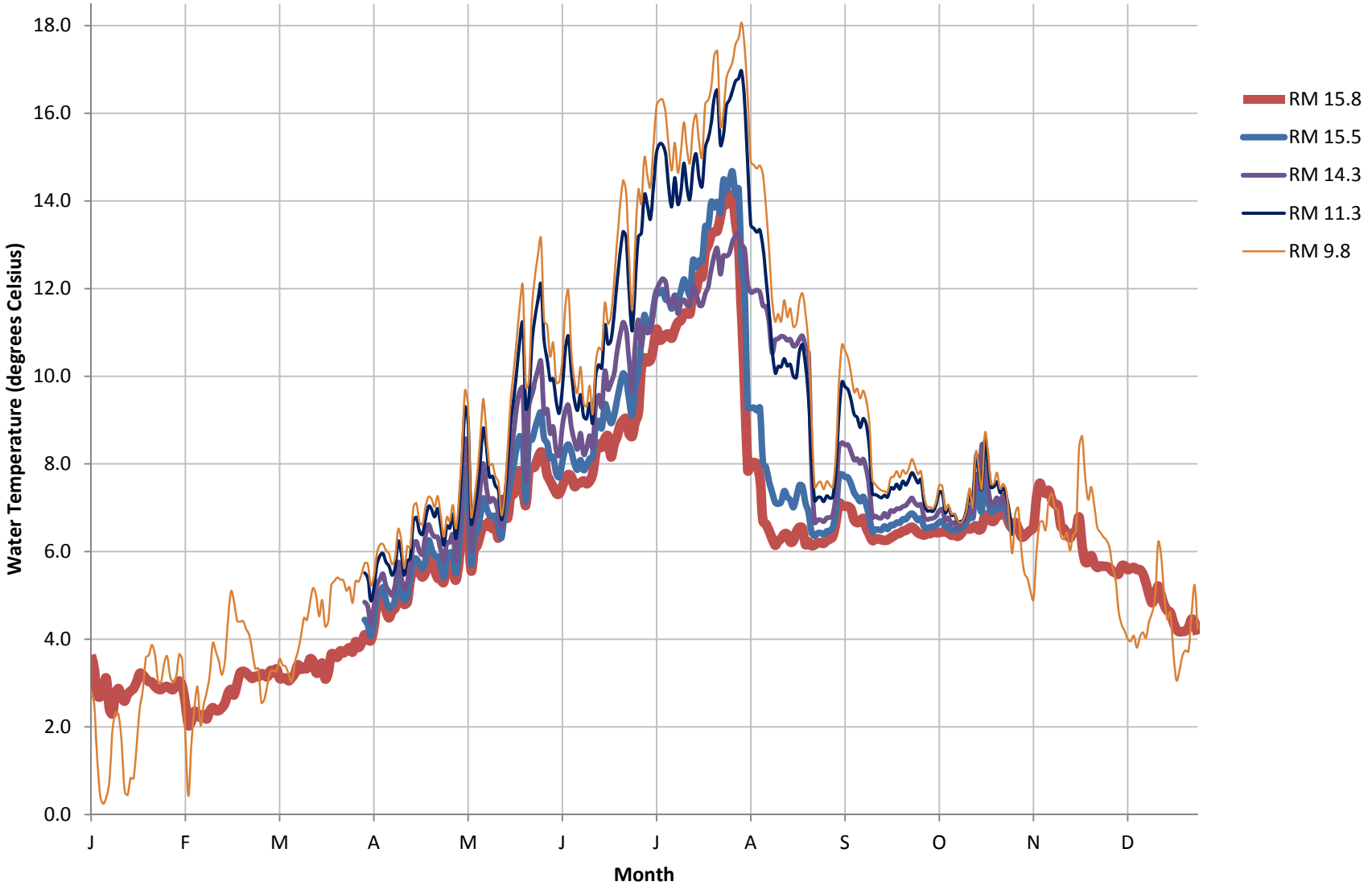
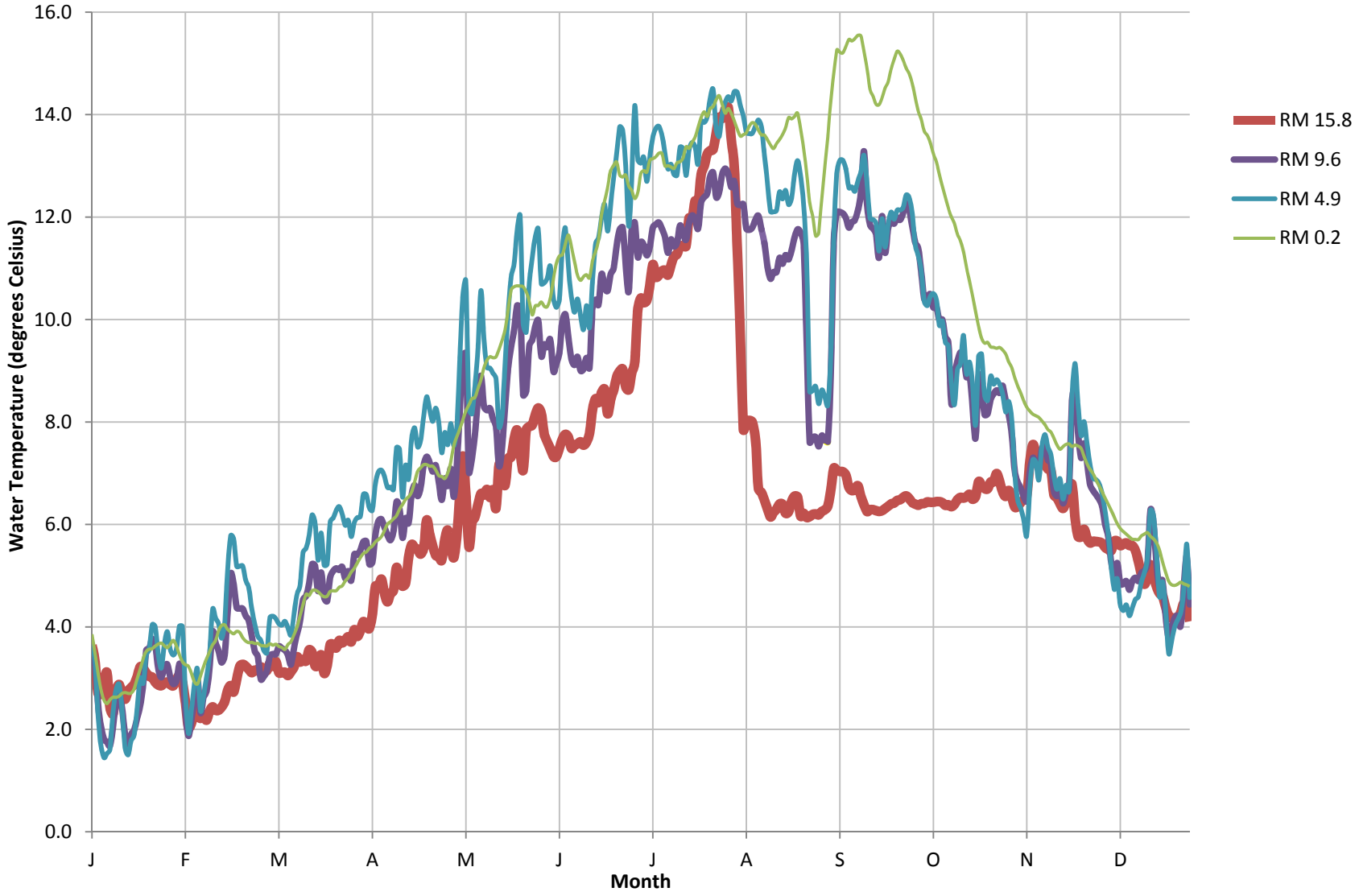


Figure B-3. Longitudinal Depiction of Mean Daily Water Temperature, Sultan River downstream of Culmback Dam during 2017



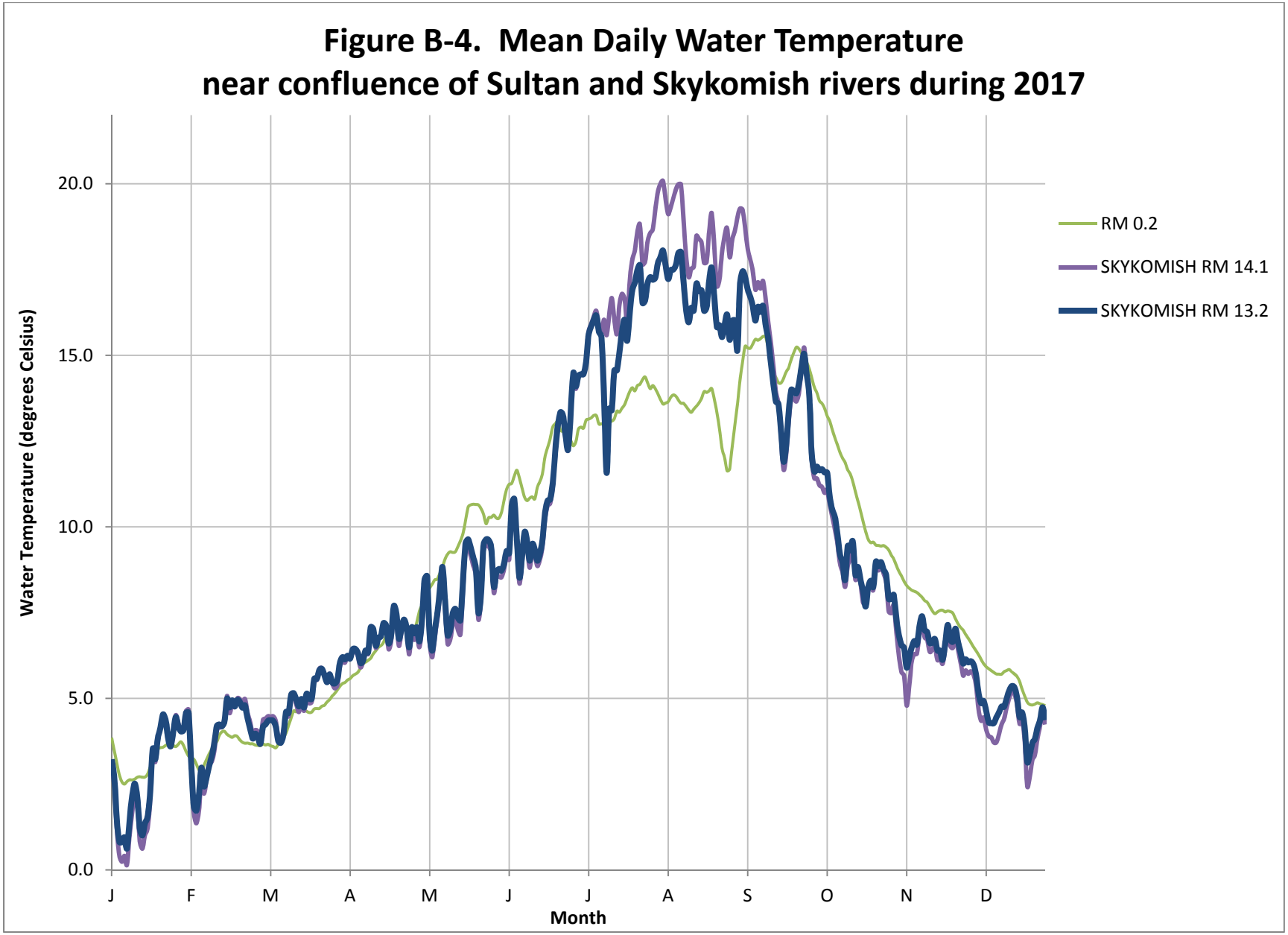


Figure B-4. Mean Daily Water Temperature
near confluence of Sultan and Skykomish rivers during 2017
Water Temperature (degrees Celsius)
20.0
15.0
10.0
5.0
0.0
J
F
M
A
M
J
J
A
S
O
N
D
Month
RM 0.2
SKYKOMISH RM 14.1
SKYKOMISH RM 13.2

APPENDIX C

Continuous Daily Water Temperature Data in Tabular Format

		Sultan River									Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
1/1	1.5	3.6				2.8	3.6	3.6	5.3	3.9	3.0	3.2
1/2	1.2	3.3				2.5	3.3	3.4	5.2	3.5	2.5	2.7
1/3	0.4	2.7				1.3	2.5	2.3	4.8	3.1	1.2	1.5
1/4	0.1	2.7				0.4	2.1	1.7	4.3	2.8	0.4	0.8
1/5	0.1	2.9				0.2	1.8	1.4	3.0	2.6	0.2	0.8
1/6	0.2	3.1				0.4	1.8	1.5	2.6	2.5	0.4	0.9
1/7	0.4	2.4				0.8	1.7	1.6	1.8	2.6	0.2	0.6
1/8	0.9	2.3				1.9	2.1	2.3	2.3	2.6	1.0	1.5
1/9	1.2	2.7				2.3	2.5	2.8	2.8	2.6	1.7	2.1
1/10	1.5	2.9				2.3	2.7	2.9	2.9	2.6	2.1	2.5
1/11	1.0	2.7				1.7	2.4	2.4	2.6	2.7	1.8	2.1
1/12	0.1	2.6				0.5	1.9	1.6	2.1	2.7	0.8	1.2
1/13	0.3	2.7				0.4	1.7	1.5	1.9	2.7	0.6	1.0
1/14	0.6	2.8				0.8	1.9	1.8	2.1	2.7	1.0	1.4
1/15	0.8	2.9				0.8	2.0	1.9	2.2	2.8	1.2	1.5
1/16	1.4	3.0				1.6	2.2	2.4	2.5	3.0	2.0	2.2
1/17	1.6	3.2				2.4	2.5	3.0	2.8	3.2	3.5	3.5
1/18	2.2	3.2				2.8	2.9	2.9	2.9	3.4	3.1	3.2
1/19	3.4	3.1				3.6	3.5	3.4	3.4	3.5	3.8	3.8
1/20	3.6	3.0				3.6	3.6	3.6	3.3	3.6	4.1	4.1
1/21	3.6	3.0				3.9	3.8	4.0	3.5	3.6	4.5	4.5
1/22	3.5	2.9				3.7	3.6	4.0	3.3	3.6	4.4	4.4
1/23	3.0	2.9				3.1	3.2	3.5	3.0	3.7	3.8	3.8
1/24	2.8	2.9				3.0	3.0	3.2	2.9	3.7	3.6	3.6
1/25	3.2	2.9				3.4	3.2	3.7	3.0	3.6	4.0	4.0
1/26	3.3	2.9				3.6	3.3	3.9	3.2	3.6	4.5	4.5
1/27	2.9	2.9				3.1	3.0	3.6	3.0	3.7	4.3	4.2
1/28	2.9	2.9				3.0	2.9	3.5	2.9	3.7	4.1	4.0
1/29	3.0	3.0				3.2	2.9	3.6	2.9	3.6	4.1	4.1
1/30	3.3	3.0				3.7	3.3	4.0	3.2	3.5	4.6	4.6
1/31	2.9	2.9				3.5	3.2	4.0	3.3	3.3	4.7	4.6

DATE	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
2/1	1.5	2.5				1.8	2.4	2.7	2.6	3.3	3.2	3.1
2/2	0.9	2.0				0.4	1.9	1.9	2.2	3.2	1.7	1.9
2/3	1.1	2.1				1.6	2.2	2.4	2.4	3.1	1.4	1.7
2/4	1.8	2.4				2.4	2.6	2.9	2.8	2.9	1.7	2.2
2/5	2.3	2.3				2.9	3.0	3.2	3.1	2.9	2.6	3.0
2/6	2.1	2.2				2.0	2.3	2.4	2.4	3.0	2.2	2.4
2/7	2.2	2.3				2.5	2.6	2.7	2.4	3.2	2.6	2.7
2/8	2.4	2.2				2.8	2.7	3.0	2.3	3.4	3.1	3.0
2/9	2.4	2.4				3.2	3.2	3.5	3.1	3.5	3.2	3.3
2/10	3.1	2.4				3.9	3.9	4.3	4.0	3.6	3.4	3.7
2/11	3.2	2.4				3.7	3.7	4.2	3.9	3.7	4.1	4.2
2/12	3.1	2.4				3.5	3.5	4.1	3.7	3.9	4.2	4.2
2/13	3.2	2.4				3.2	3.3	3.8	3.3	4.0	4.2	4.2
2/14	3.6	2.5				3.5	3.4	4.1	3.0	4.0	4.4	4.3
2/15	3.5	2.8				4.4	4.3	5.1	3.7	4.0	5.1	5.0
2/16	3.4	2.9				5.1	5.0	5.8	4.5	3.9	4.6	4.7
2/17	3.7	2.7				4.9	4.8	5.7	3.8	3.9	4.8	4.9
2/18	3.8	3.0				4.4	4.4	5.2	3.5	3.9	4.7	4.8
2/19	3.7	3.2				4.4	4.4	5.2	3.5	3.9	5.0	5.0
2/20	3.7	3.3				4.4	4.4	5.2	3.5	3.8	5.0	4.9
2/21	3.5	3.2				4.2	4.2	4.9	3.4	3.7	4.9	4.7
2/22	3.4	3.2				4.1	4.1	4.8	3.5	3.7	5.0	4.8
2/23	3.0	3.1				3.7	3.8	4.4	3.3	3.7	4.6	4.4
2/24	2.7	3.2				3.3	3.5	4.1	3.2	3.7	4.3	4.1
2/25	2.4	3.1				3.3	3.4	3.8	3.1	3.7	4.0	3.8
2/26	1.9	3.2				2.6	3.0	3.7	3.2	3.6	4.1	4.0
2/27	2.0	3.2				2.6	3.0	3.5	3.2	3.6	4.0	3.9
2/28	2.1	3.1				3.0	3.1	3.5	3.2	3.6	3.7	3.7

		Sultan River									Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
3/1	1.9	3.3				3.3	3.4	4.2	3.3	3.7	4.4	4.2
3/2	2.3	3.2				3.3	3.5	4.2	3.4	3.6	4.4	4.2
3/3	2.3	3.3				3.3	3.5	4.2	3.4	3.7	4.5	4.4
3/4	2.8	3.1				3.6	3.6	4.1	3.4	3.6	4.5	4.4
3/5	2.6	3.1				3.4	3.6	4.0	3.3	3.6	4.5	4.3
3/6	2.1	3.1				3.4	3.5	4.1	3.2	3.6	4.3	4.2
3/7	2.0	3.1				3.2	3.4	4.0	3.1	3.7	3.8	3.8
3/8	1.7	3.1				3.0	3.3	3.8	3.1	3.7	3.8	3.7
3/9	2.3	3.2				3.5	3.6	4.2	3.2	3.9	4.1	3.9
3/10	2.4	3.4				3.7	3.9	4.6	4.2	4.0	4.5	4.6
3/11	3.1	3.3				4.1	4.1	4.8	4.1	4.2	4.5	4.6
3/12	3.4	3.4				4.5	4.5	5.5	4.5	4.4	5.0	5.1
3/13	3.2	3.3				4.4	4.6	5.5	4.7	4.6	5.1	5.2
3/14	3.2	3.6				4.8	4.8	5.8	5.1	4.6	4.8	5.0
3/15	3.4	3.5				5.2	5.2	6.2	4.9	4.7	4.6	4.8
3/16	3.5	3.2				5.0	5.2	6.0	4.4	4.7	4.9	5.0
3/17	3.6	3.3				4.5	4.7	5.3	3.9	4.7	4.6	4.7
3/18	3.4	3.5				4.9	5.1	5.8	4.4	4.6	5.0	5.1
3/19	3.2	3.1				4.3	4.6	5.2	4.1	4.6	4.9	5.0
3/20	3.5	3.2				4.4	4.5	5.2	3.9	4.6	4.9	5.0
3/21	3.9	3.7				5.2	5.0	6.0	4.2	4.7	5.5	5.6
3/22	3.7	3.7				5.3	5.1	6.1	4.2	4.7	5.5	5.6
3/23	3.8	3.6				5.4	5.1	6.3	4.3	4.7	5.9	5.8
3/24	3.8	3.7				5.4	5.1	6.3	4.4	4.8	5.9	5.9
3/25	3.7	3.7				5.3	5.2	6.2	4.5	4.8	5.7	5.7
3/26	3.8	3.7				5.1	4.9	6.0	4.3	4.9	5.5	5.5
3/27	3.8	3.8				5.2	5.1	6.1	4.5	5.0	5.7	5.7
3/28	3.3	3.7				4.8	4.9	5.8	4.6	5.1	5.4	5.5
3/29	3.5	3.9				5.3	5.4	6.0	5.1	5.1	5.3	5.4
3/30	3.4	3.8				5.3	5.4	6.1	5.3	5.3	5.4	5.5
3/31	4.0	3.9				5.5	5.5	6.2	5.1	5.4	5.9	6.0

		Sultan River									Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
4/1	4.1	4.1	4.4	4.8	5.5	5.7	5.7	6.6	5.2	5.4	6.1	6.2
4/2	3.8	4.0	4.3	4.7	5.4	5.7	5.7	6.6	5.1	5.5	6.0	6.1
4/3	3.8	4.0	4.1	4.4	4.9	5.2	5.2	6.3	4.9	5.5	6.2	6.2
4/4	4.1	4.2	4.4	4.7	5.2	5.4	5.3	6.3	4.8	5.6	6.2	6.2
4/5	4.3	4.8	5.0	5.2	5.7	6.0	5.8	6.8	5.3	5.7	6.4	6.4
4/6	4.1	4.8	5.0	5.4	5.9	6.2	6.1	7.0	5.5	5.7	6.4	6.4
4/7	4.1	4.9	5.2	5.5	6.0	6.2	6.1	7.1	5.5	5.8	6.2	6.3
4/8	3.7	4.7	4.9	5.2	5.8	6.0	5.9	6.9	5.6	5.9	5.9	6.0
4/9	4.0	4.5	4.7	5.1	5.7	5.9	5.8	6.7	5.3	6.0	6.1	6.1
4/10	3.9	4.7	4.8	5.0	5.5	5.7	5.7	6.7	5.5	6.1	6.4	6.4
4/11	4.1	4.7	4.9	5.2	5.6	5.9	5.9	6.7	5.6	6.1	6.3	6.3
4/12	4.5	5.2	5.4	5.8	6.2	6.5	6.4	7.5	5.9	6.2	7.1	7.1
4/13	4.0	4.9	5.1	5.4	6.0	6.3	6.3	7.5	5.8	6.3	7.0	7.0
4/14	3.8	4.8	4.9	5.1	5.5	5.6	5.7	6.5	5.6	6.4	6.5	6.5
4/15	4.1	4.9	5.0	5.3	5.8	6.1	6.1	7.2	5.6	6.5	6.8	6.8
4/16	4.4	5.4	5.4	5.6	5.9	6.1	6.0	6.9	6.0	6.5	6.8	6.8
4/17	4.8	5.6	5.8	6.2	6.7	7.0	6.6	7.7	6.1	6.6	7.2	7.2
4/18	4.3	5.5	5.8	6.2	6.8	7.1	6.8	7.9	6.3	6.8	7.1	7.1
4/19	4.2	5.5	5.7	6.0	6.5	6.7	6.6	7.5	6.4	7.0	6.4	6.6
4/20	4.2	5.4	5.6	5.9	6.4	6.6	6.7	7.6	6.5	7.1	6.7	6.8
4/21	4.6	5.5	5.8	6.4	6.7	7.0	7.2	8.1	7.0	7.2	7.6	7.7
4/22	4.7	6.1	6.3	6.6	7.0	7.2	7.3	8.5	7.5	7.2	7.3	7.5
4/23	4.3	5.8	6.1	6.4	7.0	7.2	7.2	8.2	6.9	7.1	6.5	6.7
4/24	4.5	5.6	5.9	6.3	6.8	7.0	7.0	8.0	6.5	7.1	6.9	7.0
4/25	4.7	5.4	5.9	6.3	7.0	7.3	7.2	8.3	6.3	7.1	7.2	7.3
4/26	4.3	5.4	5.7	6.0	6.6	6.8	6.8	8.0	6.3	7.0	7.0	7.1
4/27	4.0	5.3	5.4	5.8	6.1	6.3	6.5	7.4	6.4	6.9	6.3	6.5
4/28	4.5	5.7	5.8	6.2	6.6	6.8	6.9	7.8	6.7	6.9	6.9	7.1
4/29	4.5	5.9	6.0	6.2	6.5	6.7	6.8	7.6	6.7	7.0	6.7	6.9
4/30	4.5	5.6	6.0	6.4	6.9	7.1	7.1	8.0	6.6	7.2	6.9	7.1

		Sultan River									Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
5/1	4.4	5.4	5.5	5.8	6.3	6.5	6.5	7.5	6.3	7.5	6.5	6.7
5/2	4.8	5.8	6.1	6.4	6.9	7.2	7.2	7.9	6.9	7.7	7.1	7.3
5/3	5.2	6.6	7.1	7.4	8.0	8.3	8.2	9.3	7.5	7.9	8.3	8.5
5/4	5.4	7.3	7.9	8.6	9.3	9.7	9.3	10.5	8.2	8.0	8.4	8.6
5/5	4.8	6.6	7.6	8.2	9.0	9.3	9.3	10.7	8.4	8.2	6.6	6.8
5/6	4.4	5.6	5.7	6.1	6.6	6.8	7.0	8.3	7.6	8.3	6.2	6.4
5/7	4.8	6.0	6.3	6.6	6.9	7.2	7.3	8.2	7.3	8.5	6.8	7.0
5/8	5.3	6.1	6.5	6.9	7.4	7.7	7.8	8.7	7.3	8.5	7.3	7.5
5/9	5.9	6.4	6.8	7.4	8.0	8.6	8.5	9.4	7.4	8.7	8.0	8.2
5/10	6.3	6.6	7.2	8.0	8.8	9.5	8.9	10.6	7.8	8.8	8.7	8.8
5/11	5.4	6.6	7.0	7.5	8.4	8.7	8.3	9.6	8.6	9.1	7.6	7.9
5/12	4.8	6.7	6.8	7.1	7.7	8.0	8.2	9.1	8.8	9.2	6.6	6.8
5/13	5.0	6.5	6.8	7.2	7.7	8.0	8.3	9.1	8.7	9.3	6.7	7.0
5/14	5.1	6.7	6.8	7.1	7.5	7.7	8.1	8.9	8.8	9.3	7.1	7.5
5/15	5.2	6.3	6.6	6.9	7.4	7.6	7.9	8.8	8.6	9.3	7.3	7.6
5/16	4.5	7.2	6.3	6.6	6.7	6.8	7.1	7.9	8.1	9.4	7.0	7.4
5/17	5.0	7.0	6.9	7.1	7.2	7.3	7.5	8.1	8.1	9.6	6.9	7.3
5/18	6.0	6.8	7.2	7.7	8.0	8.3	8.3	9.1	8.6	9.8	8.2	8.4
5/19	6.1	7.3	7.6	8.2	8.9	9.5	9.0	10.1	9.3	10.2	9.3	9.5
5/20	6.4	7.3	8.0	8.7	9.5	10.1	9.5	10.8	9.5	10.6	9.4	9.6
5/21	6.6	7.7	8.4	9.3	10.1	10.8	9.8	11.1	9.6	10.6	9.2	9.4
5/22	6.7	7.8	8.6	9.7	10.8	11.6	10.3	11.7	10.3	10.7	8.9	9.1
5/23	6.9	7.4	8.5	9.7	11.2	12.1	10.2	12.0	10.0	10.7	8.6	8.8
5/24	5.6	7.1	7.1	7.6	9.3	9.7	8.5	9.9	8.6	10.6	7.3	7.5
5/25	6.4	7.8	8.6	9.3	9.5	9.9	8.6	9.8	8.4	10.5	7.8	8.0
5/26	7.1	7.9	8.5	9.6	10.7	11.5	9.5	10.7	9.1	10.4	9.3	9.5
5/27	7.3	7.9	8.8	9.9	11.3	12.3	9.6	11.2	9.3	10.1	9.5	9.6
5/28	7.6	8.1	9.0	10.1	11.7	12.8	9.9	11.6	9.5	10.3	9.4	9.6
5/29	7.8	8.3	9.2	10.3	12.1	13.1	10.0	11.8	9.6	10.3	9.2	9.4
5/30	6.8	8.2	8.6	9.2	10.8	11.3	9.3	10.7	9.2	10.3	8.1	8.3
5/31	7.3	7.8	8.5	9.2	10.4	11.2	9.5	10.7	9.1	10.3	8.5	8.7

		Sultan River									Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
6/1	7.0	7.6	8.1	8.7	9.9	10.5	9.5	10.8	9.0	10.3	8.6	8.8
6/2	7.0	7.5	8.2	8.8	9.9	10.8	9.6	11.0	8.9	10.4	8.5	8.7
6/3	7.1	7.3	7.8	8.3	9.4	9.9	9.0	10.4	8.8	10.8	8.8	8.9
6/4	7.0	7.3	7.7	8.2	9.2	9.9	9.1	10.2	8.8	11.1	9.1	9.3
6/5	7.3	7.5	8.0	8.9	9.7	10.4	9.3	10.4	8.8	11.2	9.0	9.2
6/6	8.3	7.7	8.3	9.2	10.6	11.6	10.0	11.4	9.3	11.3	10.5	10.6
6/7	8.4	7.8	8.4	9.3	10.9	12.0	10.1	11.8	10.0	11.5	10.6	10.8
6/8	7.4	7.7	8.3	8.8	10.1	10.5	9.6	11.0	9.8	11.6	9.4	9.6
6/9	6.8	7.5	8.0	8.5	9.4	9.9	9.2	10.4	9.4	11.4	8.4	8.5
6/10	6.9	7.6	7.9	8.3	9.2	9.6	9.1	10.1	9.4	11.1	8.9	9.1
6/11	7.3	7.6	8.1	8.7	9.6	10.2	9.3	10.4	9.4	10.9	9.7	9.8
6/12	7.1	7.6	7.9	8.2	9.1	9.4	9.0	10.1	9.3	10.8	9.4	9.6
6/13	6.9	7.5	8.0	8.4	9.0	9.3	9.0	9.8	9.2	10.8	8.8	9.0
6/14	7.1	7.6	8.1	8.6	9.4	9.8	9.3	10.3	9.3	10.9	9.3	9.5
6/15	7.0	7.8	8.2	8.4	8.9	9.1	9.1	9.8	9.2	10.8	9.2	9.3
6/16	7.0	8.2	8.9	9.4	10.0	10.3	10.2	10.8	9.7	11.2	8.9	9.0
6/17	7.2	8.5	9.0	9.6	10.3	10.7	10.4	11.5	9.4	11.3	9.1	9.2
6/18	7.4	8.4	8.8	9.3	10.2	10.6	10.3	11.6	9.6	11.6	9.4	9.6
6/19	8.3	8.6	9.4	10.1	11.2	11.7	10.9	12.0	9.7	12.1	10.2	10.4
6/20	8.2	8.6	9.2	9.7	10.7	11.2	10.6	12.2	9.7	12.3	10.6	10.8
6/21	8.0	8.2	8.9	9.8	10.8	11.4	10.6	11.7	9.5	12.6	10.7	10.8
6/22	8.4	8.4	9.1	10.0	11.4	12.1	10.9	12.2	9.7	12.9	11.2	11.3
6/23	9.2	8.6	9.5	10.6	12.1	13.1	11.0	12.8	10.0	13.0	12.1	12.2
6/24	9.8	8.9	9.8	10.9	12.8	13.9	11.4	13.2	10.2	13.1	12.9	13.0
6/25	10.3	9.0	10.1	11.2	13.3	14.5	11.8	13.8	10.4	12.8	13.2	13.3
6/26	10.2	9.0	9.9	11.1	13.2	14.2	11.8	13.7	10.3	12.8	13.1	13.3
6/27	9.9	8.7	9.5	10.3	11.9	12.7	11.1	13.0	10.0	12.8	12.6	12.7
6/28	9.2	8.6	9.1	9.7	11.0	11.5	10.6	11.8	9.7	12.6	12.2	12.3
6/29	10.2	9.0	9.7	10.8	12.1	13.1	11.8	12.8	10.0	12.5	13.3	13.3
6/30	10.9	9.2	10.1	11.3	13.2	14.3	11.9	14.2	10.4	12.4	14.4	14.5

		Sultan River									Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
7/1	11.0	10.2	10.8	10.7	13.3	13.9	11.2	13.1	10.2	12.5	14.0	14.1
7/2	10.9	10.4	11.4	11.1	14.1	15.0	11.5	13.1	10.1	12.8	14.4	14.4
7/3	11.1	10.3	11.0	11.0	13.9	14.6	11.5	13.2	10.3	12.9	14.5	14.4
7/4	10.9	10.4	11.1	11.1	13.6	14.3	11.3	12.7	10.1	12.9	14.5	14.5
7/5	11.2	10.7	11.6	11.5	14.3	15.3	11.4	13.2	10.4	13.1	14.8	14.8
7/6	11.9	11.1	11.9	12.0	15.1	16.2	11.8	13.6	10.5	13.1	15.7	15.6
7/7	12.1	10.8	11.9	12.1	15.3	16.3	11.9	13.7	10.6	13.2	15.9	15.8
7/8	12.4	10.9	12.0	12.2	15.3	16.3	11.9	13.8	10.6	13.2	16.1	16.0
7/9	12.2	10.9	11.8	12.1	15.1	16.0	11.8	13.6	10.6	13.2	16.3	16.2
7/10	11.7	11.0	11.7	11.7	14.3	15.2	11.6	13.2	10.5	13.0	15.9	15.7
7/11	11.4	10.9	11.5	11.6	13.9	14.7	11.3	12.9	10.4	13.0	15.6	15.5
7/12	11.8	11.1	11.8	11.8	14.5	15.3	11.6	13.0	10.5	13.0	16.0	13.8
7/13	11.4	11.2	11.7	11.4	13.9	14.6	11.4	12.8	10.5	12.9	15.6	11.6
7/14	11.7	11.3	11.9	11.7	14.2	15.1	11.5	12.8	10.5	13.1	16.2	13.4
7/15	12.1	11.4	12.2	11.7	14.9	15.8	11.8	13.4	10.8	13.1	16.7	13.4
7/16	11.6	11.4	12.0	11.6	14.3	15.2	11.7	13.3	10.8	13.2	16.1	14.6
7/17	11.3	11.4	11.9	11.6	14.0	14.9	11.6	12.8	10.7	13.4	15.6	14.6
7/18	12.1	12.0	12.6	12.1	14.8	15.7	11.9	13.3	10.9	13.3	16.5	15.1
7/19	12.2	12.0	12.5	11.9	15.1	16.0	12.0	13.5	11.0	13.5	16.8	15.7
7/20	11.9	12.3	12.6	11.6	14.5	15.3	12.0	13.4	11.0	13.6	16.6	16.0
7/21	12.1	12.3	12.6	11.6	14.3	15.0	11.8	13.0	10.9	13.8	16.0	15.4
7/22	12.6	12.8	13.4	11.9	15.2	16.2	12.3	13.9	11.2	13.9	17.2	16.2
7/23	13.1	13.0	13.4	12.0	15.4	16.3	12.4	13.8	11.3	14.1	17.8	16.9
7/24	13.1	13.2	14.0	12.4	15.8	16.6	12.5	13.9	11.4	14.0	18.1	17.1
7/25	13.6	13.3	13.9	12.7	16.4	17.3	12.8	14.3	11.6	14.1	18.6	17.5
7/26	13.7	13.3	14.0	12.9	16.5	17.4	12.9	14.5	11.7	14.2	18.8	17.6
7/27	13.4	13.6	13.7	12.3	15.3	15.7	12.4	13.7	11.5	14.3	17.7	16.5
7/28	13.4	13.9	14.5	12.7	15.5	16.0	12.5	13.6	11.5	14.4	17.7	16.6
7/29	13.4	13.9	14.2	12.7	16.2	16.8	12.8	14.0	11.8	14.2	18.3	17.1
7/30	13.5	14.1	14.5	12.8	16.3	17.0	12.9	14.2	11.9	14.0	18.6	17.3
7/31	13.7	14.1	14.7	13.1	16.5	17.2	12.8	14.4	11.5	14.1	18.7	17.2

		Sultan River									Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
8/1	14.2	13.5	14.1	13.2	16.7	17.6	12.6	14.3	10.8	11.8	19.2	17.3
8/2	12.9	13.0	14.3	13.3	16.8	17.7	12.7	14.4	11.0	13.9	19.8	17.7
8/3	13.4	11.3	12.5	13.0	17.0	18.1	12.3	14.4	11.1	13.7	20.0	17.9
8/4	13.8	9.7	11.9	12.9	16.2	17.5	12.2	14.2	11.4	13.6	20.1	18.1
8/5	13.1	7.9	9.3	12.1	14.8	16.3	12.2	14.0	11.4	13.6	19.6	17.6
8/6	12.1	8.0	9.3	11.9	13.5	14.9	11.8	13.7	11.3	13.6	19.1	17.2
8/7	12.4	8.0	9.3	11.9	13.4	14.8	11.7	13.6	11.3	13.8	19.3	17.5
8/8	13.0	8.0	9.2	12.0	13.3	14.7	11.8	13.6	11.2	13.8	19.6	17.5
8/9	13.4	7.7	9.3	11.9	13.3	14.8	11.9	13.8	11.3	13.8	19.8	17.6
8/10	13.6	6.7	8.0	11.6	12.9	14.6	12.0	13.9	11.6	13.7	20.0	18.0
8/11	13.6	6.6	7.9	11.6	12.3	13.9	11.8	13.8	11.6	13.6	20.0	18.0
8/12	13.8	6.5	7.6	11.2	11.5	12.9	11.5	13.2	11.4	13.6	18.9	17.1
8/13	13.5	6.3	7.4	10.5	10.6	11.8	11.0	12.7	11.2	13.5	17.9	16.3
8/14	13.7	6.1	7.1	10.8	10.1	11.3	10.8	12.1	11.1	13.4	17.3	16.0
8/15	13.9	6.2	7.1	10.9	10.2	11.4	10.9	12.1	11.3	13.3	17.5	16.4
8/16	14.1	6.3	7.1	10.9	10.2	11.2	10.9	12.1	11.3	13.4	17.6	16.3
8/17	14.5	6.4	7.4	10.9	10.4	11.7	11.2	12.5	11.5	13.5	18.5	17.1
8/18	14.3	6.4	7.2	10.8	10.2	11.3	11.1	12.4	11.5	13.6	18.4	16.9
8/19	14.1	6.2	7.2	10.8	10.3	11.5	11.3	12.5	11.6	13.7	18.3	16.9
8/20	13.9	6.2	7.0	10.7	10.0	11.1	11.2	12.2	11.6	13.9	17.7	16.3
8/21	13.4	6.4	7.2	10.7	10.0	11.2	11.3	12.4	11.7	13.9	17.7	16.4
8/22	13.2	6.6	7.5	10.9	10.6	11.7	11.6	12.8	12.0	14.0	18.6	17.2
8/23	12.5	6.5	7.5	10.9	10.7	11.9	11.8	13.1	12.2	14.0	19.1	17.5
8/24	12.6	6.2	7.1	10.7	10.3	11.4	11.7	12.8	12.1	13.7	18.1	16.7
8/25	12.6	6.2	6.9	10.5	9.5	10.7	11.5	12.2	12.0	13.3	17.0	15.8
8/26	12.0	6.1	6.4	7.9	8.1	9.0	9.6	11.1	11.3	12.9	17.2	15.9
8/27	11.2	6.2	6.4	6.7	7.2	7.5	7.6	8.6	8.7	12.3	18.0	15.5
8/28	10.8	6.2	6.4	6.7	7.2	7.6	7.7	8.6	8.7	12.0	18.5	15.9
8/29	10.7	6.2	6.4	6.7	7.2	7.6	7.7	8.7	8.8	11.6	18.7	16.2
8/30	10.4	6.2	6.4	6.7	7.1	7.4	7.5	8.4	8.4	11.7	17.9	15.5
8/31	9.4	6.3	6.5	6.8	7.3	7.6	7.7	8.6	8.7	12.4	18.4	16.0

		Sultan River									Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
9/1	8.9	6.3	6.5	6.8	7.2	7.5	7.6	8.5	8.6	13.0	18.6	16.0
9/2	8.9	6.4	6.6	6.8	7.2	7.5	7.6	8.3	10.5	13.6	19.0	15.2
9/3	9.2	6.7	6.9	7.3	7.9	8.2	8.9	9.3	13.6	14.3	19.3	17.1
9/4	9.6	7.1	7.7	8.4	9.1	9.8	11.5	11.6	13.1	14.8	19.2	17.4
9/5	9.5	7.1	7.8	8.5	9.9	10.7	12.1	12.9	13.4	15.3	18.7	17.3
9/6	9.8	7.0	7.7	8.4	9.8	10.6	12.1	13.1	13.6	15.2	18.1	16.9
9/7	9.9	7.0	7.7	8.4	9.7	10.4	12.1	13.1	13.7	15.2	17.8	16.7
9/8	10.1	7.0	7.5	8.3	9.5	10.0	12.0	12.9	13.7	15.3	17.5	16.4
9/9	10.5	6.7	7.3	8.1	9.1	9.6	11.8	12.6	13.7	15.5	16.9	16.0
9/10	10.5	6.7	7.2	8.1	9.1	9.7	11.9	12.6	13.8	15.4	17.1	16.4
9/11	10.0	6.7	7.1	8.0	8.8	9.5	11.9	12.5	13.9	15.5	16.9	16.3
9/12	8.9	6.8	7.2	8.1	9.0	9.7	12.1	12.7	14.0	15.5	17.2	16.4
9/13	7.9	6.5	7.1	7.9	8.9	9.4	12.5	12.9	14.1	15.5	16.6	15.9
9/14	7.7	6.4	6.8	7.5	8.4	8.9	13.3	13.2	14.1	15.2	16.0	15.5
9/15	7.5	6.3	6.5	6.8	7.3	7.6	12.2	12.7	13.1	14.9	15.4	14.8
9/16	7.5	6.3	6.5	6.8	7.3	7.5	11.9	12.0	12.8	14.5	14.7	14.2
9/17	7.6	6.3	6.5	6.8	7.3	7.4	11.8	12.0	12.8	14.4	13.9	13.7
9/18	7.9	6.3	6.5	6.8	7.2	7.4	11.7	11.9	12.7	14.2	13.6	13.6
9/19	7.9	6.3	6.6	6.9	7.3	7.4	11.2	11.3	12.4	14.2	12.6	12.8
9/20	7.3	6.3	6.5	6.8	7.2	7.4	12.0	12.0	12.9	14.3	11.7	11.9
9/21	7.3	6.3	6.6	6.9	7.5	7.7	11.3	11.4	12.9	14.5	12.1	12.4
9/22	6.7	6.4	6.6	6.9	7.4	7.7	11.8	11.9	13.2	14.6	13.1	13.4
9/23	6.6	6.4	6.7	7.0	7.5	7.8	11.9	12.1	13.4	14.9	13.7	14.0
9/24	5.7	6.4	6.7	7.0	7.4	7.7	11.9	12.0	13.4	15.1	13.8	13.9
9/25	5.8	6.5	6.7	7.0	7.6	7.9	12.0	12.1	13.5	15.2	13.7	13.9
9/26	6.1	6.5	6.7	7.1	7.5	7.8	11.9	12.1	13.5	15.2	13.9	14.2
9/27	6.5	6.5	6.8	7.1	7.6	7.9	12.1	12.2	13.5	15.1	14.6	14.7
9/28	7.1	6.6	6.9	7.2	7.8	8.1	12.3	12.4	13.6	14.9	15.2	15.0
9/29	7.0	6.5	6.8	7.1	7.7	8.0	12.1	12.4	13.5	14.8	14.5	14.5
9/30	7.6	6.4	6.7	7.1	7.6	7.8	11.8	12.1	13.2	14.6	13.8	13.9

		Sultan River									Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
10/1	6.7	6.4	6.7	7.1	7.6	7.8	11.5	11.5	12.7	14.3	11.9	12.1
10/2	6.3	6.4	6.6	6.8	7.1	7.3	11.4	11.2	12.6	14.1	11.4	11.6
10/3	6.8	6.4	6.5	6.7	6.9	7.0	10.9	10.9	12.4	13.9	11.4	11.8
10/4	7.0	6.4	6.6	6.7	6.9	7.0	10.4	10.4	12.2	13.7	11.2	11.6
10/5	6.9	6.4	6.6	6.8	6.9	7.0	10.4	10.3	12.1	13.6	11.2	11.7
10/6	7.0	6.4	6.6	6.8	7.1	7.2	10.5	10.4	12.1	13.5	11.0	11.6
10/7	7.1	6.4	6.7	6.9	7.4	7.5	10.2	10.5	12.1	13.2	11.1	11.6
10/8	6.9	6.4	6.7	7.0	7.3	7.5	10.3	10.4	12.0	13.1	10.6	10.9
10/9	7.4	6.4	6.6	6.7	6.9	7.0	10.0	9.9	11.7	12.8	10.3	10.5
10/10	7.2	6.4	6.6	6.8	7.0	7.1	10.0	10.0	11.6	12.6	9.9	10.3
10/11	7.0	6.4	6.5	6.6	6.8	6.9	9.7	9.6	11.1	12.4	9.5	9.8
10/12	6.3	6.4	6.5	6.7	6.8	6.9	9.5	9.5	11.0	12.2	8.9	9.2
10/13	6.4	6.3	6.5	6.6	6.7	6.7	8.4	8.8	10.3	12.0	8.7	9.0
10/14	6.3	6.4	6.5	6.6	6.7	6.7	8.9	8.3	10.0	11.9	8.3	8.5
10/15	5.4	6.5	6.6	6.7	6.7	6.7	9.2	9.0	10.4	11.7	8.8	9.4
10/16	5.0	6.5	6.7	6.8	7.0	7.0	9.4	9.1	10.4	11.5	9.1	9.3
10/17	4.6	6.5	6.8	7.0	7.3	7.4	9.3	9.7	10.6	11.3	9.4	9.6
10/18	4.4	6.5	6.8	6.9	7.0	7.0	8.9	8.9	10.2	11.0	8.5	8.6
10/19	4.1	6.6	7.5	7.8	8.2	8.3	8.9	9.2	9.7	10.7	8.8	8.8
10/20	4.4	6.5	7.2	7.4	7.8	7.9	8.3	8.8	9.1	10.5	8.4	8.5
10/21	4.8	6.5	6.9	8.4	7.4	7.4	7.7	7.9	8.5	10.2	7.8	8.1
10/22	4.9	6.8	7.8	8.0	8.6	8.7	8.9	9.3	9.3	9.9	7.8	7.7
10/23	4.9	6.8	7.2	7.5	8.1	8.3	8.6	9.3	9.2	9.6	8.3	8.2
10/24	5.4	6.7	6.9	7.1	7.5	7.5	8.1	8.5	8.7	9.5	8.3	8.4
10/25	5.6	6.7	6.9	7.1	7.5	7.5	8.2	8.4	8.7	9.6	8.2	8.3
10/26	5.1	6.8	7.0	7.2	7.6	7.8	8.4	8.9	8.9	9.5	8.9	9.0
10/27	5.4	6.8	7.0	7.1	7.3	7.4	8.6	8.7	8.9	9.5	8.7	8.9
10/28	4.5	7.0	7.2	7.3	7.5	7.5	8.6	8.8	9.0	9.4	8.9	9.0
10/29	4.2	6.8	7.0	7.1	7.3	7.4	8.6	8.7	8.9	9.5	8.6	8.7
10/30	4.5	6.6	6.7	6.8	6.9	6.8	8.7	8.5	9.1	9.4	8.4	8.6
10/31	4.5	6.5	6.5	6.5	6.4	6.0	8.4	8.2	8.8	9.3	7.5	7.9

		Sultan River									Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
11/1	4.4	6.7				6.9	8.1	8.4	8.8	9.2	7.5	7.9
11/2	4.7	6.5				7.0	7.8	8.1	8.9	9.1	7.7	8.0
11/3	5.7	6.3				6.0	7.0	7.0	8.6	8.9	6.9	7.3
11/4	6.0	6.4				5.5	6.8	6.5	8.3	8.7	6.2	6.8
11/5	5.7	6.4				5.4	6.7	6.3	8.3	8.6	5.8	6.5
11/6	5.6	6.5				5.1	6.5	6.1	8.1	8.4	5.7	6.5
11/7	5.7	6.6				4.9	6.5	5.8	7.9	8.3	4.8	5.9
11/8	5.1	7.2				6.0	7.0	6.7	7.9	8.2	5.4	6.2
11/9	4.7	7.6				6.7	7.3	7.3	7.8	8.2	6.1	6.5
11/10	4.5	7.4				6.7	7.2	7.2	7.7	8.1	6.3	6.7
11/11	4.7	7.3				6.5	7.1	6.9	7.5	8.1	6.3	6.6
11/12	4.6	7.4				7.2	7.5	7.5	7.7	8.0	6.9	7.1
11/13	4.5	7.2				7.3	7.5	7.8	7.7	7.9	7.2	7.4
11/14	4.1	7.1				7.0	7.3	7.5	7.6	7.9	6.8	7.0
11/15	3.9	7.1				6.9	7.2	7.4	7.5	7.8	6.7	6.9
11/16	3.4	6.6				6.4	6.6	6.9	7.2	7.7	6.4	6.6
11/17	3.5	6.5				6.3	6.6	6.7	7.0	7.6	6.4	6.6
11/18	3.7	6.4				6.4	6.7	6.9	7.1	7.5	6.5	6.7
11/19	3.6	6.3				6.0	6.4	6.5	7.0	7.5	6.1	6.4
11/20	3.7	6.4				6.4	6.6	6.8	7.0	7.6	6.2	6.4
11/21	3.9	6.5				6.5	6.7	6.6	6.8	7.6	6.0	6.1
11/22	3.8	6.8				8.4	8.4	8.5	7.9	7.5	6.4	6.6
11/23	3.9	6.1				8.6	8.7	9.1	7.7	7.5	6.9	7.1
11/24	3.9	5.8				7.7	7.8	8.3	7.2	7.5	6.5	6.7
11/25	3.9	5.8				7.2	7.3	7.7	7.0	7.5	6.5	6.7
11/26	4.1	5.9				7.5	7.6	8.0	7.2	7.3	6.8	7.0
11/27	3.9	5.7				7.0	7.2	7.6	7.0	7.2	6.4	6.7
11/28	3.8	5.6				6.5	6.8	7.2	6.8	7.1	6.1	6.4
11/29	4.3	5.7				6.4	6.7	6.9	6.7	7.0	5.7	6.0
11/30	4.3	5.7				6.3	6.6	6.9	6.6	6.9	5.8	6.1

		Sultan River									Skykomish River	
DATE	RM 18.2 (SFK)	RM 15.8	RM 15.5	RM 14.3	RM 11.3	RM 9.8	RM 9.6	RM 4.9	RM 4.4	RM 0.2	RM 14.1	RM 13.2
12/1	3.7	5.7				6.3	6.5	6.8	6.6	6.8	5.7	6.1
12/2	3.2	5.6				6.1	6.3	6.6	6.5	6.6	5.8	6.1
12/3	3.3	5.5				5.6	6.0	6.2	6.3	6.5	5.7	6.0
12/4	2.4	5.5				5.4	5.8	5.8	6.2	6.4	5.4	5.7
12/5	2.1	5.5				4.6	5.3	5.2	6.0	6.3	4.7	5.2
12/6	2.5	5.7				4.3	5.0	4.7	5.9	6.1	4.4	4.9
12/7	2.7	5.7				4.2	5.2	4.9	5.7	6.0	4.4	4.9
12/8	2.7	5.6				4.0	4.8	4.4	5.6	5.9	4.1	4.6
12/9	2.8	5.6				4.0	4.8	4.3	5.4	5.9	3.9	4.3
12/10	3.3	5.6				4.1	4.9	4.4	5.5	5.8	3.9	4.3
12/11	3.5	5.6				3.8	4.7	4.2	5.5	5.8	3.7	4.3
12/12	3.2	5.6				4.1	4.9	4.4	5.5	5.7	3.7	4.4
12/13	3.9	5.5				4.2	5.0	4.5	5.5	5.7	4.0	4.6
12/14	3.9	5.3				4.0	4.9	4.6	5.5	5.7	4.2	4.8
12/15	4.1	5.0				4.4	5.1	4.9	5.3	5.8	4.4	4.8
12/16	3.9	4.8				4.6	5.1	5.1	5.3	5.8	4.7	5.0
12/17	3.8	5.0				4.9	5.2	5.3	5.4	5.8	5.0	5.2
12/18	4.3	5.2				6.2	6.3	6.3	6.2	5.8	5.2	5.4
12/19	4.3	5.0				5.9	6.0	6.2	6.1	5.7	5.1	5.3
12/20	3.7	4.8				5.0	5.2	5.4	5.4	5.6	4.8	5.0
12/21	3.2	4.7				4.5	4.8	4.6	5.0	5.5	4.3	4.5
12/22	3.3	4.6				4.6	4.9	4.9	5.0	5.3	4.4	4.6
12/23	2.4	4.4				3.7	4.2	4.4	4.8	5.1	3.8	4.2
12/24	2.1	4.2				3.1	3.8	3.5	4.6	4.9	2.4	3.2
12/25	2.5	4.2				3.3	4.0	3.7	4.5	4.8	2.7	3.4
12/26	2.7	4.2				3.6	4.2	4.0	4.5	4.8	3.2	3.7
12/27	2.7	4.2				3.7	4.2	4.1	4.5	4.8	3.4	3.8
12/28	2.8	4.3				3.7	4.0	4.3	4.4	4.9	3.8	4.1
12/29	3.3	4.5				4.6	4.7	4.7	4.7	4.8	4.2	4.4
12/30	3.5	4.4				5.2	5.4	5.6	5.3	4.8	4.6	4.7
12/31	3.2	4.1				4.2	4.4	4.6	4.5	4.8	4.2	4.4

APPENDIX D

Seven-Day Average of the Daily Maximum (7-DAD Max) Water Temperature in Tabular Format

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 15.5 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
1/1	1.8	3.6				2.9	3.6	3.7	5.4	3.9	3.0	3.2
1/2	1.4	3.5				2.4	3.2	3.3	5.0	3.5	2.6	2.8
1/3	1.0	3.4				1.9	2.9	2.9	4.6	3.1	2.1	2.4
1/4	0.8	3.3				1.6	2.5	2.5	4.1	2.8	1.6	1.9
1/5	0.7	3.1				1.4	2.3	2.4	3.7	2.6	1.3	1.7
1/6	0.7	3.1				1.4	2.2	2.3	3.4	2.5	1.2	1.6
1/7	0.8	3.0				1.5	2.2	2.3	3.1	2.6	1.3	1.7
1/8	1.0	3.0				1.7	2.3	2.4	2.8	2.6	1.5	1.9
1/9	1.0	3.0				1.8	2.3	2.4	2.7	2.6	1.6	2.0
1/10	1.0	2.9				1.8	2.3	2.4	2.6	2.6	1.6	2.0
1/11	1.0	2.9				1.8	2.3	2.4	2.6	2.7	1.8	2.1
1/12	1.0	2.9				1.6	2.3	2.4	2.6	2.7	1.9	2.2
1/13	1.0	2.9				1.6	2.3	2.4	2.5	2.7	2.0	2.2
1/14	1.1	3.0				1.6	2.2	2.4	2.5	2.7	2.2	2.4
1/15	1.4	3.1				1.8	2.4	2.5	2.6	2.8	2.4	2.6
1/16	1.8	3.1				2.2	2.6	2.7	2.8	3.0	2.8	2.9
1/17	2.3	3.2				2.6	2.8	3.0	3.0	3.2	3.2	3.4
1/18	2.7	3.2				3.1	3.1	3.3	3.2	3.4	3.7	3.8
1/19	3.1	3.2				3.5	3.4	3.6	3.3	3.5	4.1	4.2
1/20	3.3	3.2				3.6	3.5	3.8	3.4	3.6	4.3	4.3
1/21	3.5	3.1				3.7	3.6	3.8	3.4	3.6	4.3	4.3
1/22	3.5	3.1				3.8	3.6	3.9	3.4	3.6	4.4	4.4
1/23	3.5	3.1				3.8	3.6	4.0	3.3	3.7	4.5	4.5
1/24	3.4	3.0				3.7	3.5	4.0	3.3	3.7	4.6	4.5
1/25	3.3	3.0				3.6	3.4	3.9	3.2	3.6	4.5	4.5
1/26	3.3	3.0				3.6	3.3	3.8	3.2	3.6	4.5	4.4
1/27	3.3	3.0				3.7	3.3	3.9	3.2	3.7	4.6	4.5
1/28	3.4	3.0				3.7	3.3	4.0	3.2	3.7	4.7	4.7
1/29	3.2	3.0				3.6	3.2	3.9	3.2	3.6	4.7	4.6
1/30	2.8	2.9				3.2	3.0	3.6	3.1	3.5	4.3	4.2
1/31	2.6	2.8				3.0	2.9	3.5	3.0	3.3	3.8	3.9

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 15.5 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
2/1	2.5	2.7				2.9	2.9	3.4	3.0	3.3	3.5	3.6
2/2	2.4	2.6				2.8	2.9	3.3	3.0	3.2	3.3	3.5
2/3	2.2	2.5				2.7	2.8	3.2	2.9	3.1	3.0	3.2
2/4	2.1	2.4				2.5	2.7	3.0	2.8	2.9	2.7	2.9
2/5	2.1	2.3				2.5	2.7	3.0	2.7	2.9	2.6	2.8
2/6	2.4	2.4				3.0	3.0	3.2	3.0	3.0	2.8	3.0
2/7	2.7	2.4				3.2	3.2	3.5	3.2	3.2	3.1	3.3
2/8	2.9	2.4				3.5	3.4	3.7	3.3	3.4	3.5	3.6
2/9	3.0	2.4				3.6	3.5	3.8	3.4	3.5	3.7	3.8
2/10	3.2	2.5				3.7	3.6	4.0	3.5	3.6	4.0	4.1
2/11	3.4	2.5				3.9	3.8	4.3	3.7	3.7	4.3	4.3
2/12	3.6	2.6				4.2	4.0	4.6	3.9	3.9	4.5	4.6
2/13	3.7	2.7				4.3	4.2	4.9	4.1	4.0	4.7	4.8
2/14	3.8	2.7				4.5	4.3	5.1	4.1	4.0	4.9	5.0
2/15	3.8	2.8				4.6	4.4	5.2	4.0	4.0	5.0	5.0
2/16	3.9	2.9				4.7	4.5	5.4	3.9	3.9	5.1	5.0
2/17	4.0	3.0				4.8	4.6	5.5	3.9	3.9	5.1	5.1
2/18	3.9	3.1				4.9	4.7	5.5	3.9	3.9	5.1	5.1
2/19	3.9	3.2				4.8	4.7	5.5	3.8	3.9	5.1	5.1
2/20	3.9	3.2				4.7	4.5	5.2	3.6	3.8	5.2	5.1
2/21	3.8	3.3				4.5	4.3	5.0	3.5	3.7	5.1	5.0
2/22	3.6	3.3				4.4	4.2	4.8	3.5	3.7	5.0	4.8
2/23	3.4	3.3				4.2	4.1	4.7	3.4	3.7	4.9	4.7
2/24	3.2	3.2				4.0	3.9	4.5	3.4	3.7	4.8	4.6
2/25	3.0	3.2				3.8	3.8	4.3	3.3	3.7	4.7	4.5
2/26	2.8	3.2				3.7	3.7	4.2	3.3	3.6	4.6	4.4
2/27	2.7	3.3				3.5	3.6	4.2	3.3	3.6	4.6	4.3
2/28	2.6	3.3				3.5	3.6	4.2	3.4	3.6	4.5	4.3

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 15.5 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
3/1	2.6	3.3				3.6	3.6	4.3	3.4	3.7	4.6	4.4
3/2	2.7	3.3				3.6	3.7	4.3	3.5	3.6	4.7	4.5
3/3	2.7	3.3				3.7	3.7	4.3	3.5	3.7	4.8	4.5
3/4	2.7	3.2				3.6	3.7	4.4	3.5	3.6	4.7	4.5
3/5	2.6	3.2				3.7	3.7	4.3	3.5	3.6	4.6	4.4
3/6	2.6	3.2				3.7	3.8	4.4	3.4	3.6	4.6	4.4
3/7	2.7	3.3				3.8	3.8	4.4	3.6	3.7	4.6	4.4
3/8	2.7	3.3				3.8	3.9	4.5	3.7	3.7	4.6	4.5
3/9	2.8	3.4				3.9	4.0	4.7	3.8	3.9	4.7	4.6
3/10	2.9	3.4				4.1	4.1	4.9	4.1	4.0	4.7	4.7
3/11	3.1	3.5				4.3	4.4	5.2	4.4	4.2	4.9	4.9
3/12	3.3	3.6				4.6	4.6	5.6	4.7	4.4	5.0	5.1
3/13	3.5	3.5				4.8	4.9	5.8	5.0	4.6	5.1	5.2
3/14	3.7	3.5				5.0	5.0	5.9	4.9	4.6	5.2	5.3
3/15	3.8	3.6				5.1	5.1	6.0	5.0	4.7	5.2	5.3
3/16	3.9	3.6				5.2	5.1	6.1	4.9	4.7	5.3	5.4
3/17	4.0	3.6				5.3	5.2	6.1	4.8	4.7	5.3	5.4
3/18	4.1	3.6				5.3	5.2	6.1	4.6	4.6	5.4	5.5
3/19	4.2	3.6				5.4	5.2	6.1	4.5	4.6	5.5	5.6
3/20	4.2	3.7				5.5	5.2	6.2	4.3	4.6	5.7	5.7
3/21	4.2	3.7				5.6	5.3	6.3	4.4	4.7	5.9	5.9
3/22	4.2	3.7				5.6	5.3	6.4	4.4	4.7	6.0	6.0
3/23	4.3	3.7				5.7	5.4	6.4	4.4	4.7	6.0	6.0
3/24	4.3	3.8				5.7	5.4	6.5	4.5	4.8	6.1	6.1
3/25	4.2	3.8				5.7	5.4	6.5	4.5	4.8	6.1	6.1
3/26	4.1	3.9				5.7	5.5	6.5	4.7	4.9	6.1	6.1
3/27	4.0	3.9				5.7	5.5	6.5	4.9	5.0	6.0	6.0
3/28	4.1	4.0				5.8	5.7	6.5	5.0	5.1	6.1	6.2
3/29	4.2	4.0				5.8	5.7	6.6	5.1	5.1	6.2	6.3
3/30	4.2	4.1				6.0	5.9	6.7	5.2	5.3	6.3	6.4
3/31	4.3	4.1				6.1	6.0	6.8	5.3	5.4	6.5	6.5

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 15.5 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
4/1	4.5	4.2	4.7	5.3	5.9	6.3	6.1	6.8	5.4	5.4	6.6	6.6
4/2	4.6	4.3	4.8	5.4	5.9	6.3	6.2	6.9	5.4	5.5	6.6	6.7
4/3	4.7	4.5	4.9	5.4	6.0	6.4	6.3	7.0	5.3	5.5	6.8	6.8
4/4	4.6	4.6	5.0	5.4	6.0	6.4	6.2	7.1	5.4	5.6	6.7	6.7
4/5	4.5	4.7	5.0	5.5	6.0	6.5	6.3	7.1	5.4	5.7	6.6	6.7
4/6	4.6	4.7	5.1	5.5	6.1	6.5	6.3	7.1	5.5	5.7	6.7	6.7
4/7	4.6	4.8	5.1	5.6	6.1	6.5	6.3	7.2	5.6	5.8	6.6	6.6
4/8	4.6	4.9	5.2	5.8	6.2	6.6	6.4	7.2	5.7	5.9	6.7	6.7
4/9	4.7	4.9	5.3	5.8	6.4	6.8	6.6	7.4	5.8	6.0	6.9	6.9
4/10	4.7	5.0	5.3	5.8	6.4	6.8	6.6	7.4	5.8	6.1	6.9	6.9
4/11	4.7	4.9	5.3	5.8	6.3	6.8	6.6	7.4	5.9	6.1	7.1	7.1
4/12	4.8	5.0	5.3	6.0	6.4	6.9	6.7	7.5	5.9	6.2	7.3	7.2
4/13	4.9	5.1	5.5	6.2	6.5	7.0	6.8	7.6	6.0	6.3	7.4	7.4
4/14	5.1	5.3	5.7	6.3	6.7	7.2	6.9	7.7	6.1	6.4	7.5	7.5
4/15	5.0	5.4	5.8	6.2	6.8	7.3	7.0	7.9	6.2	6.5	7.5	7.5
4/16	5.0	5.4	5.8	6.3	6.8	7.3	6.9	7.8	6.2	6.5	7.4	7.4
4/17	4.9	5.5	5.8	6.6	6.9	7.3	7.0	7.9	6.3	6.6	7.4	7.4
4/18	5.2	5.6	6.0	6.8	7.2	7.7	7.3	8.2	6.6	6.8	7.6	7.6
4/19	5.1	5.8	6.2	6.8	7.3	7.7	7.4	8.4	6.9	7.0	7.7	7.8
4/20	5.0	5.9	6.3	6.9	7.3	7.8	7.5	8.5	7.0	7.1	7.6	7.7
4/21	5.0	5.9	6.3	6.9	7.4	7.7	7.6	8.6	7.1	7.2	7.6	7.7
4/22	5.1	5.9	6.3	6.9	7.4	7.8	7.7	8.7	7.1	7.2	7.6	7.7
4/23	5.1	5.9	6.3	7.0	7.4	7.8	7.7	8.7	7.0	7.1	7.7	7.8
4/24	5.1	5.9	6.3	6.8	7.4	7.8	7.7	8.8	7.1	7.1	7.7	7.8
4/25	5.0	5.9	6.3	6.8	7.4	7.7	7.6	8.6	6.9	7.1	7.6	7.6
4/26	5.0	5.8	6.3	6.8	7.3	7.6	7.5	8.5	6.8	7.0	7.4	7.5
4/27	5.0	5.8	6.3	6.6	7.3	7.7	7.6	8.5	6.8	6.9	7.5	7.6
4/28	4.9	5.8	6.2	6.7	7.2	7.6	7.4	8.4	6.8	6.9	7.4	7.5
4/29	5.0	5.9	6.2	7.0	7.3	7.7	7.5	8.4	6.9	7.0	7.5	7.5
4/30	5.2	6.1	6.5	7.6	7.6	8.0	7.9	8.7	7.1	7.2	7.7	7.8

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 15.5 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
5/1	5.5	6.4	6.9	7.8	8.2	8.7	8.4	9.2	7.4	7.5	8.0	8.1
5/2	5.5	6.6	7.2	7.8	8.5	9.1	8.7	9.7	7.7	7.7	8.1	8.2
5/3	5.4	6.6	7.2	7.9	8.6	9.1	8.8	9.9	7.8	7.9	8.0	8.2
5/4	5.6	6.7	7.3	8.2	8.7	9.3	9.0	10.0	7.9	8.0	8.1	8.3
5/5	5.8	6.8	7.5	8.4	8.9	9.6	9.3	10.2	8.0	8.2	8.3	8.5
5/6	6.0	6.9	7.7	8.6	9.1	9.9	9.6	10.4	8.1	8.3	8.5	8.6
5/7	6.4	6.9	7.7	8.2	9.2	10.2	9.7	10.6	8.2	8.5	8.6	8.7
5/8	6.2	6.8	7.5	8.1	9.0	9.8	9.3	10.4	8.3	8.5	8.6	8.7
5/9	6.2	6.8	7.4	8.3	8.7	9.6	9.2	10.1	8.4	8.7	8.4	8.6
5/10	6.4	6.9	7.6	8.3	8.8	9.8	9.3	10.1	8.5	8.8	8.5	8.6
5/11	6.4	7.0	7.6	8.3	8.9	9.8	9.3	10.1	8.6	9.1	8.4	8.6
5/12	6.3	7.0	7.6	8.0	8.8	9.6	9.2	10.1	8.8	9.2	8.4	8.6
5/13	5.9	7.1	7.4	7.7	8.4	9.0	8.8	9.8	8.9	9.3	8.1	8.3
5/14	5.6	7.1	7.3	7.8	8.1	8.5	8.5	9.4	8.8	9.3	7.8	8.1
5/15	5.8	7.1	7.3	8.1	8.0	8.5	8.6	9.3	8.7	9.3	7.8	8.1
5/16	6.1	7.2	7.5	8.4	8.4	8.9	8.8	9.6	8.9	9.4	8.2	8.5
5/17	6.3	7.4	7.8	8.9	8.7	9.3	9.0	9.8	9.1	9.6	8.6	8.9
5/18	6.7	7.6	8.2	9.6	9.2	10.0	9.4	10.3	9.3	9.8	9.0	9.3
5/19	7.1	8.0	8.7	10.4	9.9	10.9	9.9	10.8	9.6	10.2	9.3	9.6
5/20	7.6	8.1	9.1	10.5	10.8	11.9	10.5	11.5	9.9	10.6	9.7	9.9
5/21	7.6	8.2	9.2	10.9	11.2	12.4	10.6	11.9	10.0	10.6	9.9	10.1
5/22	7.8	8.4	9.5	11.3	11.6	12.8	10.7	12.0	10.0	10.7	9.9	10.1
5/23	7.9	8.5	9.7	11.6	11.9	13.2	10.7	12.2	9.9	10.7	10.0	10.2
5/24	8.2	8.5	9.8	11.7	12.4	13.6	10.7	12.3	9.9	10.6	10.1	10.2
5/25	8.3	8.5	9.9	11.8	12.6	13.9	10.6	12.4	9.8	10.5	10.1	10.3
5/26	8.5	8.4	9.9	11.4	12.9	14.1	10.5	12.5	9.6	10.4	10.2	10.4
5/27	8.3	8.5	9.8	11.7	12.8	13.9	10.3	12.2	9.6	10.1	10.2	10.4
5/28	8.7	8.6	9.9	11.3	12.9	14.2	10.5	12.3	9.7	10.3	10.3	10.5
5/29	8.6	8.5	9.7	11.1	12.8	14.0	10.6	12.4	9.8	10.3	10.3	10.5
5/30	8.5	8.4	9.6	10.5	12.6	13.8	10.5	12.3	9.8	10.3	10.2	10.4
5/31	8.3	8.3	9.2	10.0	12.1	13.1	10.3	12.1	9.7	10.3	10.0	10.2

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 15.5 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
6/1	8.1	8.1	8.9	9.7	11.6	12.6	10.2	11.9	9.6	10.3	10.0	10.1
6/2	8.0	8.1	8.7	10.0	11.3	12.3	10.2	11.7	9.5	10.4	9.9	10.1
6/3	8.4	7.9	8.7	10.1	11.3	12.5	10.3	11.9	9.4	10.8	10.2	10.3
6/4	8.6	7.8	8.8	10.1	11.4	12.7	10.4	12.0	9.6	11.1	10.4	10.6
6/5	8.8	7.8	8.8	10.0	11.5	12.8	10.4	12.1	9.7	11.2	10.7	10.9
6/6	8.7	7.8	8.7	10.0	11.3	12.5	10.3	12.0	9.8	11.3	10.6	10.8
6/7	8.6	7.9	8.8	10.2	11.2	12.5	10.3	11.9	9.9	11.5	10.6	10.8
6/8	8.7	7.9	8.9	9.8	11.3	12.6	10.4	11.9	9.9	11.6	10.7	10.9
6/9	8.5	7.9	8.7	9.4	11.0	12.1	10.2	11.8	10.0	11.4	10.7	10.9
6/10	8.1	7.9	8.6	9.2	10.6	11.5	9.9	11.4	10.0	11.1	10.4	10.6
6/11	7.8	7.9	8.5	9.2	10.2	11.0	9.7	11.1	9.8	10.9	10.3	10.4
6/12	7.7	7.9	8.5	9.2	10.0	10.7	9.7	10.9	9.7	10.8	10.1	10.3
6/13	7.7	8.0	8.6	9.4	10.1	10.8	9.9	10.9	9.8	10.8	10.2	10.3
6/14	7.8	8.1	8.8	9.4	10.3	11.0	10.2	11.1	9.8	10.9	10.2	10.3
6/15	7.7	8.3	8.9	9.9	10.3	10.9	10.3	11.2	9.8	10.8	10.0	10.2
6/16	8.0	8.4	9.2	10.1	10.8	11.4	10.7	11.5	9.8	11.2	10.2	10.3
6/17	8.2	8.6	9.4	10.4	11.0	11.7	10.9	11.8	10.0	11.3	10.4	10.6
6/18	8.4	8.6	9.5	10.9	11.5	12.1	11.3	12.1	10.0	11.6	10.6	10.8
6/19	8.8	8.7	9.8	11.3	12.1	12.9	11.8	12.6	10.1	12.1	11.0	11.2
6/20	9.3	8.8	10.0	11.7	12.7	13.5	11.9	13.0	10.1	12.3	11.6	11.8
6/21	9.8	8.8	10.2	12.2	13.3	14.2	12.1	13.4	10.2	12.6	12.3	12.4
6/22	10.4	8.9	10.5	12.4	14.0	15.0	12.3	13.8	10.3	12.9	12.9	13.1
6/23	10.7	9.0	10.6	12.6	14.3	15.4	12.4	14.1	10.4	13.0	13.2	13.4
6/24	11.1	9.1	10.7	12.4	14.6	15.6	12.4	14.2	10.5	13.1	13.5	13.6
6/25	11.1	9.2	10.6	12.5	14.3	15.3	12.2	14.0	10.5	12.8	13.7	13.8
6/26	11.3	9.3	10.7	12.5	14.5	15.5	12.3	14.2	10.6	12.8	14.1	14.2
6/27	11.6	9.3	10.7	12.3	14.6	15.6	12.4	14.4	10.7	12.8	14.4	14.5
6/28	11.7	9.6	10.9	12.2	14.7	15.4	12.2	14.3	10.7	12.6	14.5	14.5
6/29	11.8	9.8	11.1	12.1	14.9	15.5	12.2	14.2	10.7	12.5	14.6	14.7
6/30	11.9	10.1	11.2	12.1	14.8	15.4	12.0	14.1	10.8	12.4	14.9	14.9

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 15.5 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
7/1	12.1	10.3	11.5	12.5	15.2	15.8	12.1	14.2	10.7	12.5	15.2	15.2
7/2	12.6	10.5	12.0	12.5	16.0	16.7	12.3	14.6	10.8	12.8	15.6	15.7
7/3	12.8	10.8	12.4	12.5	16.4	17.1	12.2	14.7	10.9	12.9	15.9	16.0
7/4	13.0	11.2	12.6	12.7	16.6	17.3	12.1	14.6	10.9	12.9	16.1	16.2
7/5	13.2	11.3	12.8	12.8	16.9	17.8	12.3	14.8	10.9	13.1	16.5	16.6
7/6	13.3	11.5	12.8	12.9	16.9	17.8	12.3	14.8	11.0	13.1	16.8	16.9
7/7	13.4	11.6	12.9	13.0	17.0	18.0	12.3	14.9	11.0	13.2	17.0	17.0
7/8	13.4	11.6	12.9	13.0	16.9	18.0	12.3	14.9	11.1	13.2	17.3	17.3
7/9	13.5	11.7	12.9	12.8	16.9	17.9	12.3	14.9	11.1	13.2	17.4	17.2
7/10	13.3	11.8	12.7	12.8	16.5	17.5	12.2	14.6	11.1	13.0	17.3	16.4
7/11	12.5	11.8	12.8	12.6	16.4	17.4	12.2	14.5	11.1	13.0	17.4	16.2
7/12	13.7	11.9	12.8	12.4	16.3	17.3	12.1	14.5	11.2	13.0	17.5	15.8
7/13	12.1	11.9	12.9	12.5	16.1	17.1	12.1	14.4	11.2	12.9	17.5	15.5
7/14	13.7	11.9	13.1	12.6	16.4	17.3	12.1	14.5	11.2	13.1	17.6	15.5
7/15	13.8	12.1	13.3	12.6	16.7	17.5	12.2	14.6	11.2	13.1	17.8	15.5
7/16	12.5	12.2	13.4	12.6	16.7	17.6	12.3	14.7	11.3	13.2	17.9	15.7
7/17	13.1	12.4	13.6	12.5	16.7	17.6	12.3	14.8	11.4	13.4	18.2	16.4
7/18	14.0	12.5	13.6	12.5	16.5	17.4	12.3	14.7	11.4	13.3	18.1	16.6
7/19	14.0	12.7	13.7	12.6	16.5	17.5	12.4	14.7	11.4	13.5	18.2	17.1
7/20	12.4	12.9	13.9	12.7	16.7	17.7	12.5	14.8	11.5	13.6	18.5	17.5
7/21	13.4	13.2	14.3	12.8	17.0	18.0	12.7	15.0	11.6	13.8	18.9	17.9
7/22	14.1	13.3	14.5	13.0	17.2	18.2	12.8	15.1	11.7	13.9	19.2	18.2
7/23	14.7	13.5	14.7	13.1	17.4	18.4	12.9	15.3	11.8	14.1	19.5	18.6
7/24	15.0	13.8	14.9	13.4	17.5	18.5	13.0	15.3	12.0	14.0	19.7	18.6
7/25	15.5	14.1	15.4	13.6	17.9	18.8	13.2	15.5	12.1	14.1	20.0	18.9
7/26	15.5	14.4	15.6	13.8	18.1	18.9	13.2	15.6	12.2	14.2	20.2	19.0
7/27	14.9	14.6	15.9	13.9	18.3	19.1	13.3	15.7	12.3	14.3	20.4	19.2
7/28	15.1	14.9	16.1	14.0	18.4	19.2	13.4	15.8	12.4	14.4	20.4	19.2
7/29	15.1	15.0	16.1	14.0	18.4	19.2	13.3	15.7	12.4	14.2	20.6	19.1
7/30	15.2	15.1	16.1	14.2	18.4	19.2	13.3	15.7	12.3	14.0	20.7	19.0
7/31	15.4	14.7	16.0	14.1	18.8	19.7	13.3	15.9	12.1	14.1	21.1	19.3

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 15.5 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
8/1	15.9	14.1	15.5	13.9	18.8	19.8	13.2	15.9	12.1	14.0	21.4	19.4
8/2	16.3	13.0	14.6	13.6	18.4	19.5	13.2	15.8	12.0	13.9	21.4	19.3
8/3	16.4	12.0	13.7	13.3	17.9	19.1	13.0	15.6	12.0	13.7	21.4	19.2
8/4	16.4	11.0	12.8	13.0	17.3	18.7	12.8	15.5	11.9	13.6	21.5	19.2
8/5	14.7	10.1	12.0	12.7	16.8	18.3	12.7	15.3	11.9	13.6	21.5	19.2
8/6	14.8	9.2	11.2	12.5	16.3	17.8	12.6	15.3	12.0	13.6	21.5	19.1
8/7	14.9	8.6	10.5	12.3	15.7	17.3	12.6	15.2	12.0	13.8	21.5	19.2
8/8	15.0	7.9	9.9	12.2	15.1	16.8	12.5	15.1	12.1	13.8	21.4	19.2
8/9	15.0	7.7	9.6	12.0	14.7	16.3	12.4	15.0	12.1	13.8	21.3	19.1
8/10	15.0	7.5	9.3	11.9	14.1	15.7	12.3	14.8	12.1	13.7	21.0	18.8
8/11	14.9	7.2	8.9	11.7	13.6	15.1	12.1	14.5	12.0	13.6	20.7	18.6
8/12	14.7	6.9	8.6	11.5	13.1	14.7	12.0	14.3	12.0	13.6	20.4	18.6
8/13	14.6	6.7	8.3	11.4	12.6	14.0	11.8	14.0	12.1	13.5	20.0	18.4
8/14	14.4	6.6	8.2	11.3	12.1	13.6	11.7	13.8	12.0	13.4	19.8	18.3
8/15	14.1	6.5	8.0	11.2	11.7	13.2	11.5	13.5	12.1	13.3	19.6	18.1
8/16	13.9	6.5	8.0	11.2	11.6	13.1	11.5	13.5	12.1	13.4	19.5	18.2
8/17	13.6	6.5	8.0	11.2	11.6	13.1	11.5	13.5	12.1	13.5	19.6	18.3
8/18	13.3	6.6	8.0	11.1	11.7	13.1	11.6	13.6	12.2	13.6	19.7	18.3
8/19	13.0	6.6	8.0	11.1	11.7	13.2	11.7	13.7	12.2	13.7	19.8	18.4
8/20	12.6	6.7	8.1	11.1	11.8	13.3	11.8	13.8	12.3	13.9	20.1	18.7
8/21	12.2	6.6	8.0	11.1	11.8	13.2	11.8	13.8	12.4	13.9	19.9	18.5
8/22	11.7	6.6	8.0	11.0	11.8	13.2	11.9	13.8	12.4	14.0	19.7	18.4
8/23	11.2	6.6	7.8	10.4	11.4	12.9	11.9	13.6	12.5	14.0	19.6	18.2
8/24	10.7	6.6	7.7	9.9	10.9	12.3	11.5	13.1	12.1	13.7	19.7	18.2
8/25	10.4	6.5	7.5	9.3	10.3	11.6	11.0	12.5	11.8	13.3	19.8	18.0
8/26	10.2	6.4	7.2	8.7	9.7	10.8	10.5	11.8	11.4	12.9	19.7	17.8
8/27	10.1	6.3	6.9	8.2	9.0	10.1	10.0	11.1	10.9	12.3	19.5	17.4
8/28	10.0	6.3	6.8	7.7	8.6	9.5	9.6	10.5	10.4	12.0	19.6	17.5
8/29	10.1	6.3	6.7	7.2	8.1	9.0	9.1	10.0	10.0	11.6	19.8	17.5
8/30	10.3	6.3	6.7	7.4	7.9	8.5	8.7	9.5	10.3	11.7	20.1	17.4
8/31	10.5	6.5	6.8	7.7	8.0	8.7	9.1	9.6	11.0	12.4	20.2	17.5

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 15.5 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
9/1	10.6	6.6	7.1	7.9	8.3	9.1	9.6	10.0	11.5	13.0	20.3	17.8
9/2	10.6	6.8	7.3	8.2	8.7	9.6	10.2	10.6	12.1	13.6	20.2	17.8
9/3	10.5	6.9	7.5	8.4	9.0	10.0	10.9	11.2	12.8	14.3	20.1	18.0
9/4	10.2	7.0	7.7	8.6	9.3	10.3	11.6	11.8	13.4	14.8	19.9	17.9
9/5	9.9	7.1	7.8	8.7	9.6	10.6	12.3	12.2	14.0	15.3	19.6	17.8
9/6	9.5	7.2	7.9	8.9	9.8	10.8	12.3	12.8	13.9	15.2	19.1	17.7
9/7	9.1	7.1	7.9	8.8	10.0	11.0	12.4	13.3	13.9	15.2	18.8	17.7
9/8	8.7	7.1	7.9	8.8	9.9	10.9	12.4	13.3	14.0	15.3	18.5	17.6
9/9	8.4	7.0	7.8	8.7	9.9	10.9	12.5	13.4	14.1	15.5	18.4	17.5
9/10	8.3	6.9	7.7	8.6	9.7	10.6	12.7	13.3	14.2	15.4	18.2	17.4
9/11	8.2	6.8	7.6	8.4	9.6	10.5	12.8	13.5	14.3	15.5	18.0	17.3
9/12	8.1	6.7	7.4	8.3	9.3	10.2	13.0	13.5	14.2	15.5	17.9	17.3
9/13	7.9	6.7	7.3	8.0	9.1	10.0	13.1	13.5	14.1	15.5	17.6	17.1
9/14	7.7	6.6	7.2	7.8	8.8	9.6	13.2	13.3	14.0	15.2	17.1	16.5
9/15	7.5	6.5	7.0	7.5	8.5	9.1	13.6	13.2	13.8	14.9	16.4	16.0
9/16	7.2	6.4	6.9	7.4	8.2	8.7	12.6	13.0	13.6	14.5	15.7	15.3
9/17	7.0	6.4	6.8	7.2	7.9	8.4	12.3	12.9	13.5	14.4	14.9	14.8
9/18	6.9	6.3	6.8	7.2	7.7	8.1	12.3	12.5	13.3	14.2	14.3	14.2
9/19	6.9	6.4	6.8	7.2	7.7	8.1	12.2	12.4	13.2	14.2	14.0	14.0
9/20	7.0	6.4	6.8	7.3	7.7	8.1	12.2	12.3	13.3	14.3	14.0	14.0
9/21	7.1	6.4	6.8	7.4	7.8	8.2	12.2	12.4	13.4	14.5	14.1	14.2
9/22	7.2	6.4	6.9	7.4	7.8	8.3	12.3	12.4	13.5	14.6	14.1	14.2
9/23	7.3	6.5	6.9	7.6	7.9	8.4	12.4	12.5	13.6	14.9	14.4	14.6
9/24	7.3	6.5	7.0	7.6	8.0	8.6	12.4	12.5	13.6	15.1	14.9	15.1
9/25	7.4	6.5	7.0	7.6	8.1	8.6	12.5	12.6	13.7	15.2	15.4	15.5
9/26	7.3	6.6	7.1	7.6	8.1	8.6	12.5	12.7	13.8	15.2	15.6	15.6
9/27	7.2	6.6	7.0	7.5	8.0	8.5	12.4	12.6	13.7	15.1	15.5	15.5
9/28	7.1	6.5	7.0	7.5	8.0	8.5	12.4	12.5	13.6	14.9	15.1	15.1
9/29	7.1	6.5	7.0	7.5	8.0	8.4	12.3	12.4	13.5	14.8	14.9	14.9
9/30	7.2	6.5	7.0	7.4	7.9	8.3	12.1	12.2	13.4	14.6	14.5	14.6

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 15.5 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
10/1	7.3	6.5	7.0	7.3	7.8	8.2	11.9	11.9	13.2	14.3	14.0	14.1
10/2	7.3	6.5	6.9	7.3	7.6	8.0	11.6	11.6	13.0	14.1	13.4	13.5
10/3	7.2	6.5	6.9	7.3	7.5	7.9	11.4	11.3	12.8	13.9	12.8	13.1
10/4	7.1	6.5	6.9	7.3	7.5	7.8	11.1	11.1	12.6	13.7	12.4	12.8
10/5	7.0	6.5	6.9	7.2	7.5	7.8	11.0	11.0	12.6	13.6	12.2	12.5
10/6	6.8	6.5	6.9	7.2	7.4	7.7	10.8	10.8	12.4	13.5	12.0	12.4
10/7	6.5	6.5	6.8	7.1	7.4	7.7	10.6	10.6	12.3	13.2	11.6	12.0
10/8	6.1	6.5	6.8	7.1	7.4	7.6	10.5	10.5	12.1	13.1	11.3	11.7
10/9	5.7	6.5	6.8	7.0	7.4	7.6	10.3	10.3	11.9	12.8	10.8	11.2
10/10	5.4	6.5	6.7	7.0	7.3	7.5	10.1	10.1	11.7	12.6	10.5	10.8
10/11	5.1	6.5	6.8	7.0	7.2	7.4	10.0	9.9	11.4	12.4	10.1	10.4
10/12	4.9	6.5	6.7	7.0	7.1	7.3	9.8	9.7	11.2	12.2	9.9	10.2
10/13	4.8	6.5	6.7	7.0	7.2	7.3	9.7	9.6	11.0	12.0	9.8	10.0
10/14	4.8	6.5	6.8	7.1	7.2	7.3	9.6	9.6	10.9	11.9	9.7	9.9
10/15	4.9	6.5	6.9	7.3	7.3	7.4	9.5	9.5	10.7	11.7	9.5	9.7
10/16	5.1	6.6	7.1	7.4	7.5	7.5	9.4	9.5	10.6	11.5	9.4	9.6
10/17	5.2	6.6	7.2	7.6	7.6	7.7	9.4	9.5	10.4	11.3	9.3	9.5
10/18	5.3	6.6	7.4	7.7	7.7	7.8	9.2	9.3	10.1	11.0	9.2	9.3
10/19	5.4	6.7	7.6	7.8	8.0	8.0	9.1	9.4	10.0	10.7	8.9	9.0
10/20	5.3	6.7	7.6	7.8	8.1	8.2	9.0	9.3	9.8	10.5	8.7	8.8
10/21	5.2	6.8	7.7	7.7	8.1	8.2	8.8	9.2	9.6	10.2	8.6	8.6
10/22	5.1	6.8	7.6	7.6	8.1	8.2	8.7	9.1	9.3	9.9	8.5	8.6
10/23	5.0	6.8	7.5	7.6	8.0	8.2	8.6	9.1	9.2	9.6	8.6	8.6
10/24	4.9	6.9	7.4	7.5	7.9	8.1	8.6	9.1	9.1	9.5	8.6	8.7
10/25	5.1	7.0	7.3	7.4	7.9	8.1	8.7	9.2	9.2	9.6	8.8	8.9
10/26	5.3	7.0	7.2	7.3	7.7	8.0	8.6	9.1	9.1	9.5	9.0	9.1
10/27	5.4	7.0	7.1	7.2	7.6	7.8	8.6	9.0	9.1	9.5	9.0	9.1
10/28	5.6	6.9	7.1	7.2	7.4	7.7	8.7	8.9	9.1	9.4	8.9	9.1
10/29	5.8	6.9	7.1	7.1	7.3	7.6	8.7	8.9	9.1	9.5	8.8	9.0
10/30	5.9	6.9	7.0	7.0	7.2	7.4	8.6	8.8	9.0	9.4	8.6	8.8
10/31	5.9	6.8	6.8	7.0	7.1	7.3	8.4	8.6	9.0	9.3	8.4	8.6

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 15.5 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
11/1	5.7	6.7				6.9	8.1	8.2	8.9	9.2	7.9	8.2
11/2	5.4	6.6				6.6	7.9	7.9	8.8	9.1	7.5	7.9
11/3	5.3	6.5				6.4	7.6	7.5	8.7	8.9	7.1	7.6
11/4	5.1	6.6				6.2	7.3	7.2	8.5	8.7	6.7	7.2
11/5	4.8	6.7				6.1	7.1	7.0	8.4	8.6	6.4	7.0
11/6	4.7	6.9				6.1	7.1	6.8	8.2	8.4	6.2	6.8
11/7	4.5	7.0				6.1	7.1	6.8	8.1	8.3	6.1	6.8
11/8	4.3	7.2				6.3	7.1	6.9	8.0	8.2	6.2	6.8
11/9	4.2	7.3				6.6	7.2	7.1	7.9	8.2	6.4	6.9
11/10	4.0	7.4				6.9	7.4	7.3	7.8	8.1	6.5	7.0
11/11	3.9	7.5				7.1	7.4	7.5	7.8	8.1	6.8	7.1
11/12	3.8	7.4				7.1	7.4	7.6	7.7	8.0	6.9	7.2
11/13	3.8	7.3				7.1	7.4	7.5	7.6	7.9	6.9	7.2
11/14	4.0	7.2				7.0	7.3	7.5	7.5	7.9	6.9	7.1
11/15	4.0	7.0				7.0	7.2	7.4	7.5	7.8	6.9	7.1
11/16	4.1	6.9				6.8	7.1	7.3	7.4	7.7	6.8	7.0
11/17	4.1	6.8				6.7	7.0	7.2	7.3	7.6	6.6	6.8
11/18	4.2	6.7				6.8	7.0	7.1	7.2	7.5	6.6	6.8
11/19	4.2	6.7				7.0	7.2	7.3	7.3	7.5	6.6	6.8
11/20	4.2	6.6				7.4	7.5	7.6	7.4	7.6	6.7	6.9
11/21	4.2	6.5				7.6	7.7	7.9	7.5	7.6	6.7	6.8
11/22	4.2	6.5				7.7	7.8	8.0	7.5	7.5	6.6	6.8
11/23	4.1	6.4				7.9	8.0	8.3	7.5	7.5	6.7	6.9
11/24	4.0	6.3				8.0	8.0	8.3	7.5	7.5	6.8	7.0
11/25	3.9	6.1				7.9	7.9	8.4	7.5	7.5	6.8	7.0
11/26	3.7	5.9				7.6	7.7	8.1	7.2	7.3	6.6	6.9
11/27	3.4	5.8				7.2	7.3	7.7	7.0	7.2	6.4	6.7
11/28	3.2	5.8				7.0	7.1	7.5	6.9	7.1	6.3	6.6
11/29	3.0	5.8				6.8	7.0	7.3	6.8	7.0	6.2	6.5
11/30	3.0	5.7				6.5	6.7	7.0	6.7	6.9	6.0	6.3

DATE	RM 18.2 (SFK) 7 Day Avg Max	RM 15.8 7 Day Avg Max	RM 15.5 7 Day Avg Max	RM 14.3 7 Day Avg Max	RM 11.3 7 Day Avg Max	RM 9.8 7 Day Avg Max	RM 9.6 7 Day Avg Max	RM 4.9 7 Day Avg Max	RM 4.4 7 Day Avg Max	RM 0.2 7 Day Avg Max	Skykomish Above 7 Day Avg Max	Skykomish Below 7 Day Avg Max
12/1	3.0	5.7				6.3	6.5	6.8	6.6	6.8	5.9	6.2
12/2	3.0	5.7				6.0	6.3	6.6	6.5	6.6	5.7	6.1
12/3	3.2	5.7				5.7	6.1	6.2	6.4	6.5	5.6	5.9
12/4	3.3	5.7				5.4	5.9	6.0	6.3	6.4	5.4	5.8
12/5	3.4	5.7				5.1	5.7	5.7	6.1	6.3	5.2	5.6
12/6	3.5	5.7				4.8	5.5	5.4	6.0	6.1	5.0	5.4
12/7	3.8	5.7				4.6	5.3	5.1	5.9	6.0	4.8	5.2
12/8	3.8	5.7				4.3	5.2	4.9	5.8	5.9	4.5	5.0
12/9	4.0	5.7				4.3	5.1	4.7	5.7	5.9	4.4	4.9
12/10	4.0	5.7				4.3	5.1	4.7	5.6	5.8	4.3	4.8
12/11	4.1	5.7				4.3	5.0	4.6	5.6	5.8	4.3	4.8
12/12	4.1	5.6				4.3	5.0	4.7	5.5	5.7	4.3	4.8
12/13	4.2	5.5				4.4	5.1	4.8	5.5	5.7	4.4	4.9
12/14	4.2	5.4				4.6	5.2	5.0	5.5	5.7	4.6	5.0
12/15	4.2	5.4				5.0	5.4	5.2	5.6	5.8	4.8	5.1
12/16	4.2	5.3				5.2	5.6	5.5	5.7	5.8	4.9	5.2
12/17	4.2	5.2				5.3	5.7	5.7	5.8	5.8	5.0	5.3
12/18	4.1	5.1				5.4	5.6	5.7	5.8	5.8	5.0	5.2
12/19	4.0	5.1				5.4	5.6	5.7	5.7	5.7	5.0	5.2
12/20	3.9	5.0				5.4	5.5	5.6	5.6	5.6	4.9	5.1
12/21	3.7	4.9				5.0	5.3	5.4	5.5	5.5	4.5	4.8
12/22	3.4	4.7				4.6	5.0	5.0	5.2	5.3	4.2	4.5
12/23	3.2	4.5				4.3	4.7	4.7	5.0	5.1	3.9	4.3
12/24	3.0	4.4				4.1	4.5	4.4	4.8	4.9	3.7	4.1
12/25	3.0	4.4				4.0	4.4	4.4	4.7	4.8	3.7	4.1
12/26	3.0	4.4				4.1	4.5	4.4	4.7	4.8	3.7	4.1
12/27	3.0	4.4				4.2	4.6	4.5	4.8	4.8	3.7	4.1
12/28	3.2	4.4				4.4	4.7	4.7	4.8	4.9	4.0	4.3
12/29	3.3	4.3				4.5	4.7	4.8	4.8	4.8	4.1	4.4
12/30	3.4	4.3				4.5	4.7	4.8	4.8	4.8	4.2	4.4
12/31	3.5	4.3				4.5	4.7	4.9	4.8	4.8	4.4	4.5

APPENDIX E

Consultation Documentation Regarding Draft Report

Presler, Dawn

From: Binkley, Keith
Sent: Monday, June 18, 2018 2:38 PM
To: Presler, Dawn
Cc: 'Applegate, Brock A (DFW)'
Subject: FW: WDFW comments for draft Water Quality Monitoring Plan 2017 Annual Report -- Jackson Hydro
Attachments: WQMP 2017 Draft Annual Rpt.pdf

Dawn – here are comments from Brock on the WQMP. I will work with staff on addressing them.

Keith

From: Applegate, Brock A (DFW) [mailto:Brock.Applegate@dfw.wa.gov]
Sent: Monday, June 18, 2018 1:05 PM
To: 'Vacirca, Richard -FS' <rvacirca@fs.fed.us>; 'Anne Savery' <asavery@tulaliptribes-nsn.gov>; Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>; 'Rustay, Michael' <mike.rustay@co.snohomish.wa.us>; Jim Miller (JMiller@everettwa.gov) (JMiller@everettwa.gov) <JMiller@everettwa.gov>; 'Thomas O'Keefe' <okeefe@americanwhitewater.org>; 'Janet Curran - NOAA Federal' <janet.curran@noaa.gov>; 'Asman, Lindsy' <lindsy_asman@fws.gov>; nate.morgan@ci.sultan.wa.us
Cc: Binkley, Keith <KMBinkley@SNOPUD.com>; Kannadaguli, Monika (ECY) <MKAN461@ECY.WA.GOV>
Subject: WDFW comments for draft Water Quality Monitoring Plan 2017 Annual Report -- Jackson Hydro

---

Hi Dawn, WDFW would like to make a few comments in regards to the draft Water Quality Monitoring Plan:

1) Table 3-1-- SnoPUD may consider a diagram that shows the withdrawal panel settings for each alphabet letter. A diagram may help the reader connect water withdrawal area with the temperature of the water.

2) Page 13, Section 4-- The right margins block the right side of the paragraph, so the reader cannot see the text.

3) Page 14-- WDFW has concerns with this statement:

" Additionally, state temperature criteria were exceeded at three sites on the Sultan River, downstream of the reservoir. These sites were, RM 15.5 (3 days), RM 11.3 (35 days) and RM 9.8 (39 days). These exceedances were attributable to longitudinal warming in the 6-mile bypass reach."

WDFW recommends that the Aquatic Resources Committee (ARC) have a discussion on this topic. The ARC should discuss any actions that that they can implement to reduce the amount of days the bypass reach, particularly the downstream end, violates the state temperature criteria. The ARC should balance any Reach 3 flow discussions for next year in regards to the temperature violations, with spawning and outmigration of anadromous fish flows. WDFW would like to explore any possibilities for better temperatures in the bypass reach.

WDFW appreciates the creation of this annual report.

Sincerely, Brock

From: Applegate, Brock A (DFW)
Sent: Wednesday, June 13, 2018 3:58 PM
To: Applegate, Brock A (DFW) <Brock.Applegate@dfw.wa.gov>
Subject: FW: JHP (FERC No. 2157) - draft WQMP 2017 Annual Report for 30-day review and comment by June 16

From: Presler, Dawn [mailto:DJPresler@SNOPUD.com]
Sent: Thursday, May 17, 2018 10:57 AM
To: Applegate, Brock A (DFW) <Brock.Applegate@dfw.wa.gov>; 'Vacirca, Richard -FS' <rvacirca@fs.fed.us>; 'Anne Savery' <asavery@tulaliptribes-nsn.gov>; Pacheco, James (ECY) <JPAC461@ECY.WA.GOV>; 'Rustay, Michael' <mike.rustay@co.snohomish.wa.us>; 'Jim Miller (JMiller@everettwa.gov)' <JMiller@everettwa.gov>; 'Thomas O'Keefe' <okeefe@americanwhitewater.org>; 'Janet Curran - NOAA Federal' <janet.curran@noaa.gov>; 'Asman, Lindsy' <lindsy_asman@fws.gov>; 'nate.morgan@ci.sultan.wa.us' <nate.morgan@ci.sultan.wa.us>
Cc: Binkley, Keith <KMBinkley@SNOPUD.com>; Kannadaguli, Monika (ECY) <MKAN461@ECY.WA.GOV>
Subject: JHP (FERC No. 2157) - draft WQMP 2017 Annual Report for 30-day review and comment by June 16

Dear ARC Members,
Attached is the Jackson Project's draft Water Quality Monitoring Plan 2017 Annual Report for a 30-day review and comment period. Please provide comments, if any, back to me (with cc: to Keith) by June 16. If you have any general questions on the report, please contact Keith.

Dawn Presler
Sr. Environmental Coordinator
Generation Resources
(425) 783-1709

PUD No. 1 of Snohomish County
PO Box 1107
Everett, WA 98206-1107

APPENDIX F

Response to Comments Regarding Draft Report

No.	Comment	Response
WDFW B. Applegate, via email dated 6/18/18		
1	Table 3-1-- SnoPUD may consider a diagram that shows the withdrawal panel settings for each alphabet letter. A diagram may help the reader connect water withdrawal area with the temperature of the water.	The District will consider this addition for next year's annual report.
2	Page 13, Section 4-- The right margins block the right side of the paragraph, so the reader cannot see the text.	This issue was fixed in this final report.
3	Page 14-- WDFW has concerns with this statement: " Additionally, state temperature criteria were exceeded at three sites on the Sultan River, downstream of the reservoir. These sites were, RM 15.5 (3 days), RM 11.3 (35 days) and RM 9.8 (39 days). These exceedances were attributable to longitudinal warming in the 6-mile bypass reach." WDFW recommends that the Aquatic Resources Committee (ARC) have a discussion on this topic…	This will be added to the ARC agenda for discussion.