City of White Salmon
Office of City Hall

DEPARTMENT OF ECOLOGY
MAY 01 2015
WATER QUALITY PROGRAM

April 28, 2015

Mr. Patrick Lizon
Washington State Department of Ecology
Water Quality Program
P.O. Box 47600, Olympia, WA 98504-7600

Re: Proposed Addition of Buck Creek and White Salmon River to the 303(d) List for Impaired Waters

Dear Mr. Lizon:

The City of White Salmon (City) is submitting this letter to supplement previous comments provided to the Department of Ecology (Ecology) on the proposed addition of Buck Creek and the lower reach of the White Salmon River to the 303(d) list of Category 5 waters impaired for temperature. The City's earlier comments were provided in a letter dated March 31, 2015. The City has further reviewed the proposed 303(d) listings and temperature data on which the proposed listings are based and believes, for the reasons discussed below, that the Category 5 listings are not warranted. Specifically:

- The temperature data indicating exceedances of surface water temperature criteria were collected prior to demolition and removal of Condit Dam and from locations where streamflow conditions and water quality were likely affected by the dam impoundment (Northwestern Lake);
- Temperature data collected from free-flowing reaches of Buck Creek and the White Salmon River upstream from effects of the dam impoundment show considerably lower temperatures and no exceedances of surface water temperature criteria; and
- With breaching of Condit Dam in October 2011, conditions that were apparently leading to the observed temperature exceedances have been considerably altered and the temperature data for reaches that were affected by the dam are no longer representative of current streamflow and water quality conditions.

Given that there are no temperature data representative of conditions in the lower reach of Buck Creek or the reach of the White Salmon River below the former Condit Dam, the City requests that the proposed Category 5 temperature listings for Buck Creek (listing ID 21594) and the White Salmon River (listing ID 72898) be changed to Category 3 (insufficient data). Under Water Quality Program Policy 1-11 the City understands that a requested change in listing from Category 5 requires that the request include data and information necessary to enable Ecology to conduct a review. In this case there are no new data available, but the City notes the rare occurrence of dam removal and restoration of a free-flowing river in Washington State as a basis for reassessing the representativeness of available temperature data.

If Ecology is unable to revise the Category 5 listing for all of Buck Creek based on the removal of Condit Dam and associated effects on temperature, the City requests that as an alternative Buck

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Creek be divided into two stream segments to more accurately characterize temperature regimes within the watershed. Currently the proposed Category 5 listed reach extends from the confluence of Buck Creek and the South Fork Buck Creek to the confluence with the Salmon River (Figure 1). We understand that hydrologic changes are the likely delineation points in the current Ecology methodology. When the current water quality assessment data were collected the lowest reach of Buck Creek affected by the Condit Dam impoundment represented a hydrologic flow regime distinct from the free-flowing reaches located upstream. As such it is appropriate to separate the creek into two reaches, one representing the area affected by the impoundment and the second representing the free-flowing creek. As presented below, temperature data collected about 1.5 miles upstream in Buck Creek were considerably lower than at the confluence with the White Salmon River, exhibiting no exceedances. Therefore, the City would request that the reach of Buck Creek unaffected by the former Condit dam impoundment be changes to Category 1 (meets standards) or Category 3 (insufficient data). The lowest reach affected by the impoundment would remain listed as a Category 5 water impaired for temperature pending new data.

In addition to the requested changes to the proposed Category 5 listings, the City wishes to remind Ecology of the ongoing development and pending permitting and implementation of the state-funded White Salmon Aquifer Storage and Recovery (ASR) project. This project, funded in part through an Office of Columbia River (OCR) grant, will rely on surface water diversion from Buck Creek during winter and spring, when flows are higher and temperatures lower, with underground storage in a hydraulically confined aquifer using an existing City well. The intent is to use stored water to help meet peak summer demands. Successful implementation of ASR would both improve reliability of the City's water supply and reduce reliance on surface water from Buck Creek, benefiting critical summer flows. The City is concerned that permitting of this project could be delayed by the proposed Category 5 listing and possible implementation of a total maximum daily load (TMDL) study. The City requests coordination between the City, Water Quality Program, and OCR to incorporate the ASR project under development and not delay authorization until a TMDL study, if required, is completed. The City believes this request is reasonable given that diversions under the ASR project would be limited to wintertime flows and would result in reduced diversions during critical summer flow periods, benefiting instream flow and temperature conditions in the creek.

The remainder of this letter provides a review of the water temperature data for Buck Creek and the White Salmon River in support of the requests outlined above.

Buck Creek Temperature Data

The proposed 303(d) listing for temperature for Buck Creek is based on data collected at monitoring station WQ-2, located near the confluence of Buck Creek and the White Salmon River (Figure 1), between 1995 and 2001. In 2001 the 7-day mean of daily maximum temperature values (7DADmax) exceeded the temperature criterion for aquatic life in Buck Creek of 16°C on 21 of 78 days, with a maximum exceedance during this period of 17.12°C for the 7-day period centered on August 14.

The City believes the data for station WQ-2 were influenced by the impoundment from Condit Dam and are not representative of surface water temperatures in free-flowing reaches of Buck Creek. Temperatures in reaches upstream from WQ-2 that clearly were not affected by the impoundment show consistently lower temperatures, with no exceedances of the temperature criterion. Further, because Condit Dam was breached and removed in 2011, the conditions that led to temperature exceedances at station WQ-2 are no longer present and the pre-breach data are not

suitable for assessing current water quality. With removal of the dam and restoration of the lowest reach of Buck Creek to free-flowing conditions the elevated temperatures are not expected to persist and should be more similar to ambient temperatures further upstream.

This interpretation of the effects of the Conduit Dam impoundment on temperature data is supported by two lines of evidence. First, the data logger for the temperature probe at station WQ-2 was located at a point that was damaged by scour when Condit Dam was breached and impoundment drained. This implies that the WQ-2 station was located within the dam impoundment in an area with relatively slack flows, and that higher flow velocities occurred as the impoundment was drained and new surface water flow regime was established. Second, water temperatures measured at station WQ-2A, located on Buck Creek approximately 1.5 miles upstream of station WQ-2, were consistently lower with no exceedances of the temperature criterion. Data from both stations downloaded from Ecology's Environmental Information Management (EIM) database are plotted on the attached Figure 2.

Based on the evidence of a new flow regime being established in Buck Creek at station WQ-2 following the removal of Condit Dam and the temperatures 1.5 miles upstream at station WQ-2A meeting the applicable criterion, it is clear that the impoundment from Condit Dam influenced temperature measurements at station WQ-2. As a result, there are not sufficient, representative data to determine if the lowest reach of Buck Creek is currently impaired for temperature and a Category 3 listing, pending new data, is appropriate.

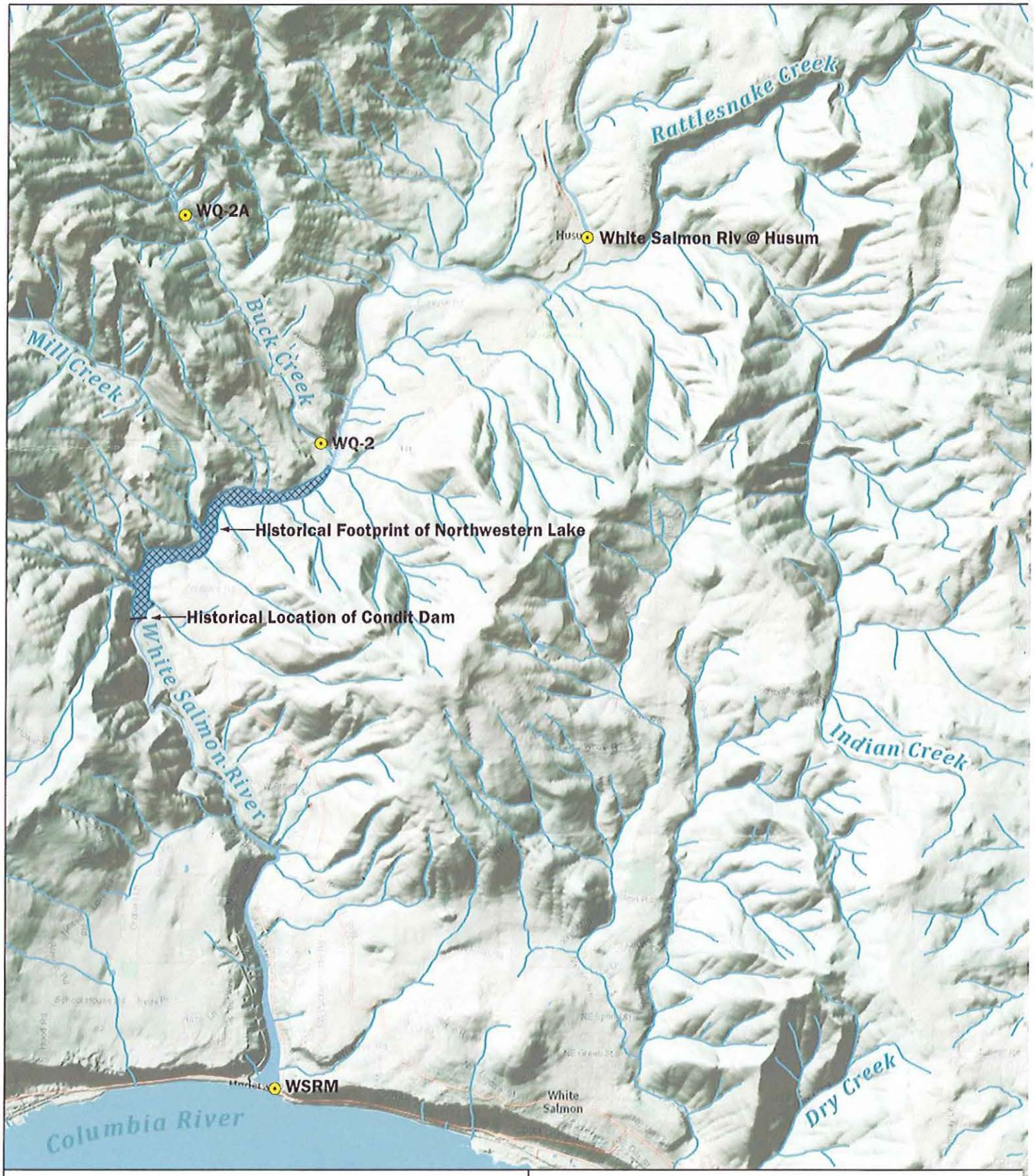
White Salmon River Temperature Data

The proposed 303(d) listing for the lower reach of the White Salmon River below former Condit Dam is based on temperature data collected near the confluence with the Columbia River at station WSRM (White Salmon River Mouth) in the summers of 2009 and 2010. The 7DADmax temperatures exceeded the temperature criterion for aquatic life in the White Salmon River of 17.5°C on 87 of 103 days in 2009 and 77 of 90 days in 2010. The maximum exceedance during this period was 23.6° C for the 7-day period centered on July 30, 2009.

The City notes that this monitoring station is located downstream of the former Condit Dam, which was not breached and drained until October 2011, after the observed exceedances occurred. Removal of Condit Dam and restoration of the White Salmon River to free-flowing conditions is expected to result in a measurable improvement in surface water temperatures within the former impoundment and downstream of the former dam. As such, the data on which the proposed Category 5 303(d) listing is based are not representative of current conditions in the White Salmon River and are inappropriate for establishing a Category 5 listing. Temperature data from locations in the White Salmon River upstream of Condit Dam were not identified for the same time period as the observed exceedances; however, data collected between late July and late September 2008 near Husum (about 4.5 miles upstream of the dam and above the extent of the impoundment) showed maximum temperatures of 10.5° C, approximately 13° C lower than at the river mouth, further supporting the assumption that the dam had significant effects on downstream water temperatures.

Mayor David Poucher
City of White Salmon

cc: Derek Sandison, Director, Office of Columbia River
Chris Coffin, Water Quality Program, Ecology Central Regional Office



Surface Water Monitoring Station

Historical Footprint of Northwestern Lake

0 4,000 8,000

Feet

N

Surface Water Temperature Monitoring Stations

White Salmon, Washington

Aspect CONSULTING	APR-2015	BY JM / EAC	FIGURE NO.
	PROJECT NO 090094-003	REVISED BY ---	1

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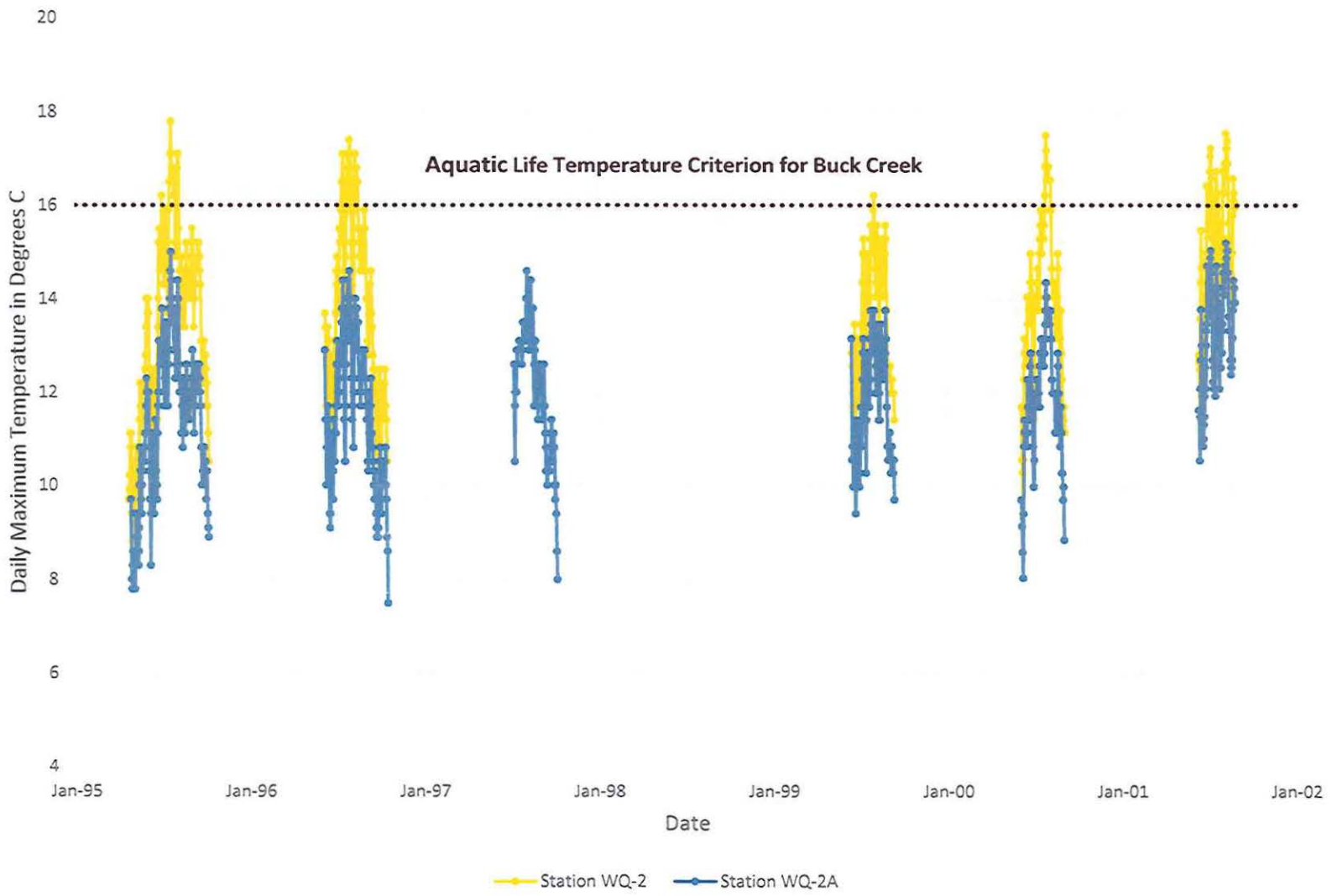

Aspect Consulting
April 24, 2015
C:\Users\jmorrice\Desktop\BuckCreekTemp\Figures

Figure 2
Buck Creek Temperature Data