SOA 2011-03

Hanford Reach Working Group
Statement of Agreement on the

Water temperature data that will be used to calculate Temperature Units for the Hanford Reach Fall Chinook Protection Program

Submitted to Hanford Reach Working Group: February 23, 2011
Approved by Hanford Reach Working Group: April 05, 2011

Statement:

The Hanford Reach Working Group (HRWG) agrees that data collected at the Priest Rapids Dam (PRD) tailrace Fixed Site Monitoring station will be used to calculate Temperature Unit accumulations for the Hanford Reach Fall Chinook Protection Program.

Background:

Constraints within the Hanford Reach Fall Chinook Protection Program are based on water temperature accumulation at Vernita Bar or other areas within Exhibit A (~4 miles downstream of PRD) of the Hanford Reach Fall Chinook Protection Program Agreement. Historically, water temperatures at the USGS gauge (~2.6 miles downstream of PRD) were used to calculate Temperature Units (TUs) for the protection program. The PRD tailrace Fixed Site Monitoring (FSM) station (~9 miles downstream of PRD) is a more convenient and reliable method to collect water temperature data for calculating TUs for the protection program.

The Washington Department of Ecology's (WDOE) 401 Water Quality Certification (WQC) was incorporated into the Priest Rapids Project (PRP) operating license and requires Grant PUD to monitor total dissolved gas, water temperature, dissolved oxygen, and pH throughout the PRP. The following list provides the monitoring requirements of the 401 WQC with the relevant sections of the 401 WQC shown for reference:

- Conduct hourly TDG monitoring throughout the year within the forebay and tailrace of Wanapum and Priest Rapids dams (Section 6.4.10);
- TDG data shall be made available electronically to the public as close to the time of occurrence as technology will reasonably allow (Section 6.4.11(a)),
- A fish-spill season TDG monitoring report shall be submitted to WDOE by October 31 of each year (Section 6.4.11 (c)),
- Grant PUD shall provide a temperature monitoring program through a QAPP (Section 6.5.1);
- Grant PUD shall continue to provide periodic monitoring of pH and DO in the Project (Section 6.6.1(a));
- Grant PUD shall provide water quality monitoring results and summary reports to WDOE by March 1 of each year (Section 6.7.3); and
- Grant PUD shall make available to the public all water quality monitoring data and results collected as part of the 401 WQC on its web-site or other readily assessable means (Section 6.1.19).

Grant PUD proposed, and was approved, to use its Fixed Site Water Quality Monitoring (FSM) program to meet the 401 WQC water quality monitoring requirements. Grant PUD developed a Quality Assurance Project Plan (QAPP) that provides details on parameters to be monitored, maps of sampling locations, and descriptions of the purpose of the monitoring; sampling frequency, sampling procedures and equipment, and analytical methods, quality control procedures, data handling and data assessment procedures, and reporting protocols of the FSM program. The QAPP was approved and must be reviewed and updated annually based on a yearly review of data and data quality. Any changes under the adaptive management provisions to the QAPP must be approved by the Washington Department of Ecology (WDOE) and the Federal Energy Regulatory Commission (FERC). The QAPP and other reports, plans, license requirements, and data related to water quality can be found on the Grant PUD website (http://www.gcpud.org/naturalResources/fishWaterWildlife/waterQuality.html).

The current (updated in the spring of 2008) data logging system at each of Grant PUD's FSM stations consist of the same basic equipment. The measurement quality objectives, metrics, range, precision, accuracy, and resolution of the temperature sensor are provided in Table 1 of the QAPP. Each station includes a Hydrolab Corporation Model DS5X®, DS4A®, DS4® or Minisonde® multi-parameter water quality probe that is enclosed in a submerged perforated conduit or standpipe. Water temperature is measured on an hourly basis at each FSM station using a Hydrolab® 30k ohm variable resistance thermistor. The multi-probe is connected to a Sutron Corporation 8210 or 9210 data collection platform (DCP). The multi-probes are interrogated hourly (on the top of the hour) and data is archived within the DCP. The DCPs are then interrogated via radio transmission into Grant PUD's fiber-optic network, which then transfers the data into a secure database (using Sutron's XConnect® database software). Duplicates of the raw data are made available to Grant PUD's water quality web-site (see link above) within approximately two hours of delay from time of measurement.