

ANTIDEGRADATION REVIEW
NPDES Permit # ID-002080-0
City of Priest River Wastewater Treatment Facility

Idaho Department of Environmental Quality
July 1, 2011

In March 2011, Idaho incorporated additional sections addressing antidegradation implementation in the Idaho Code. The new antidegradation provisions are in Idaho Code §39-3603. At the same time, Idaho adopted antidegradation implementation procedures in its water quality standards. The Department of Environmental Quality (DEQ) submitted the antidegradation implementation procedures to EPA for approval on April 15, 2011.

The Idaho Water Quality Standards (WQS) contain an antidegradation policy providing three levels of protection to water bodies in Idaho (IDAPA 58.01.02.051). The first level of protection applies to all water bodies and assures that existing uses of a water body will be maintained (Tier 1 protection). A Tier 1 review is performed for all new or reissued permits or licenses. The second level of protection applies to those water bodies that are considered high quality and assures that no lowering of water quality will be allowed unless it is deemed necessary to accommodate important economic or social development (Tier 2 protection). The third level of protection applies to water bodies that have been designated outstanding resource waters and requires activities to not cause a lowering of water quality (Tier 3 protection).

DEQ is employing a waterbody-by-waterbody approach to implementing Idaho's antidegradation policy. This approach to antidegradation implementation means that any water body fully supporting its beneficial uses will be considered high quality. Any waterbody not fully supporting its beneficial uses will be provided Tier 1 protection for that use, unless specific circumstances warranting Tier 2 protection are met. The most recent federally-approved Integrated Report and supporting data are used to determine support status and the tier of protection (Idaho Code §39-3603(2)(b)).

Pollutants of Concern

The City of Priest River Wastewater Treatment Facility (Priest River) discharges the following pollutants of concern: biological oxygen demand (BOD), total suspended solids (TSS), *E. coli*, pH, chlorine, ammonia, phosphorus, nitrogen and temperature. Effluent limitations have been developed for BOD, TSS, *E. coli*, pH and chlorine. The reasonable potential analysis completed by EPA and checked by DEQ, shows that there is no reasonable potential for the facility's discharge to cause or contribute to an exceedance of the acute or chronic criteria for ammonia, therefore, effluent limits are not required for this pollutant. Additionally, effluent limitations were not deemed necessary for phosphorus or nitrogen; however, effluent monitoring is required for these pollutants.

Beneficial Uses Applicable to the Pend Oreille River

The Pend Oreille River (water body unit P-2) has the following designated beneficial uses: cold water aquatic life; primary contact recreation; domestic, agricultural and industrial water supply;

wildlife habitat; and aesthetics. There is no available information indicating the presence of any existing beneficial uses aside from those that are already designated.

Receiving Water Body Level of Protection

Idaho has established a water body-by-water body approach for identifying the level of antidegradation protection which DEQ will provide when reviewing whether activities or discharges comply with Idaho's antidegradation policy. This approach relies upon Idaho's most recent federally-approved Integrated Report (IR) of water quality status and its supporting data.

The Priest River wastewater treatment plant discharges directly into the Pend Oreille River (assessment unit ID17010214PN001_08). According to the 2008 Integrated Report, the cold water aquatic life and primary contact recreation beneficial uses in this assessment unit (AU) are not fully supported due to elevated temperatures and excess nitrogen gas; and the primary contact recreation beneficial use is not fully supported due to excess phosphorus concentrations.

Based upon this information, DEQ will provide Tier 1 protection for both aquatic life and recreation beneficial uses (Idaho Code §39-3603(2)(b)).

Protection and Maintenance of Existing Uses

As noted above, a Tier 1 review is performed for all new or reissued permits or licenses, applies to all waters subject to the jurisdiction of the Clean Water Act, and requires a showing that existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected. In order to protect and maintain designated and existing beneficial uses, a permitted discharge must comply with Idaho water quality standards (WQS), which contain narrative and numeric criteria as well as other provisions of the WQS such as Section 055 which address water quality limited waters. The numeric and narrative criteria in the WQS are set at levels which ensure protection of designated beneficial uses.

Water bodies not supporting existing or designated beneficial uses must be identified as water quality limited and a total maximum daily load (TMDL) must be prepared for any water quality limited water body. A central purpose of TMDLs is to establish wasteload allocations for point source discharges, which are set at levels designated to help restore the water body to a condition that supports existing and designated beneficial uses. Discharge permits must contain limitations that comply with the approved TMDL. In the absence of a TMDL, Idaho WQS (IDAPA 58.01.02.055.04 and .05) stipulate that either there be no further impairment of the designated or existing beneficial uses or that the total load of the impairing pollutant remains constant or decreases. Discharge permits must comply with these provisions of Idaho WQS.

As previously indicated, the Pend Oreille River AU is not supporting its primary contact recreation and cold water aquatic life beneficial uses. DEQ has not developed a TMDL for temperature or phosphorus to date and per the 2008 Integrated Report, Pend Oreille River is considered a high priority water body for TMDL development. Based on its priority status, DEQ must ensure that the discharge of pollutants of concern remain constant or decrease from permitted point source discharges. Because the facility is not increasing its design flow or

altering its treatment practices, DEQ believes that this permit will not further impair the uses of the Pend Oreille River.

Furthermore, DEQ has included a condition in its 401 water quality certification requiring continuous temperature monitoring in the effluent as well as quarterly temperature monitoring in the Pend Oreille River upstream of the discharge. The previous permit included only effluent temperature monitoring 5 times per week. Continuous monitoring will better detect temperature variability in the discharge. Total phosphorus and total nitrogen have also been added to effluent and river monitoring requirements to determine the loading of these nutrients to the river. This data will be used to quantify whether the facility has the potential to cause or contribute to a violation of water quality criteria and to establish a baseline for nutrients in support of a voluntary nutrient plan outlined below.

Although the Pend Oreille River is currently listed as impaired due to phosphorus, DEQ is seeking to remove the phosphorus impairment listing from the 2010 Integrated Report. Data collected in 2009 by DEQ indicates that the Pend Oreille River is nearing its capacity to accept additional loads of nutrients (this may include nitrogen but requires further study), but is not yet impaired due to excess nutrients. The Pend Oreille River dischargers are aware of the potential for nutrient impairment, and have organized to discuss the future of wastewater discharge to the river and how to manage it. Included in these discussions are ways to maintain the current nutrient load while providing for community growth. DEQ is participating in this work, in part, by establishing baseline nutrient data to document existing conditions and to ensure that water quality in the river is maintained. Ultimately, DEQ's goal is to establish a voluntary nutrient plan which the dischargers and future dischargers will follow to prevent the degradation of the Pend Oreille River. This plan is modeled after a similar effort on the Clark Fork River (*Clark Fork River Voluntary Nutrient Reduction Program*, Tristate Implementation Council 1998).

Total dissolved nitrogen gas is a pollutant of concern in the Pend Oreille River as indicated in the 2008 Integrated Report. In 2008, DEQ developed the *Pend Oreille River and Lake Total Dissolved Gas Total Maximum Daily Load* (TMDL) to address this pollutant. The TMDL identifies that dissolved gas enters the water column in the Pend Oreille Lake and River from upstream sources in Montana, and from spillage at Cabinet Gorge and Albeni Falls Dams. No excess nitrogen gas entrainment was attributed to wastewater effluent or associated outfalls and no wasteload allocations were established for any wastewater discharger in the TMDL. Therefore, this discharge does not contribute to the exceedance of nitrogen gas numeric criteria.

In summary, the effluent limitations and associated conditions contained in the Priest River permit are set at levels that ensure compliance with the narrative and numeric criteria and Section 055 of the Idaho WQS. Therefore, DEQ has determined the permit complies with Tier 1 antidegradation requirements and protects existing and designated beneficial uses in the Pend Oreille River.