ANTIDEGRADATION REVIEW

NPDES Permit # ID-002069-9
City of Fruitland Wastewater Treatment Plant Facility
Payette River Discharge

Idaho Department of Environmental Quality
June 2011

Antidegradation Overview

In March 2011, Idaho incorporated new provisions 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 the Idaho Water Quality Standards ("WQS"). DEQ submitted the antidegradation implementation procedures to EPA for approval on April 15, 2011.

The 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 subject to Clean Water Act jurisdiction and assures that the level of water quality necessary to protect existing uses will be maintained and protect. (Tier 1 protection). (IDAPA 58.01.02.051.01; 58.01.02.052.01) A Tier 1 review is performed for all new or reissued permits or licenses. (IDAPA 58.01.02.052.05). 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).(IDAPA 58.01.02.051.02; 58.01.02.052.06). 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). (IDAPA 58.01.02.03; 58.01.02.052.07).

DEQ is employing a water body-by-water body 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. (Idaho Code §39-3603(20(b)(i)). Any water body not fully supporting its beneficial uses will be provided Tier 1 protection for that use, unless specific circumstances warranting Tier 2 protection are met. (Idaho Code §39-3603(2)(b)(iii)). 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

According to the NPDES Permit Fact Sheet, EPA analyzed the following pollutants discharged by the City of Fruitland Wastewater Treatment Plant (Fruitland WWTP) to determine whether effluent limits were needed. DEQ has reviewed these same pollutants in this antidegradation review: biological oxygen demand (BOD), total suspended solids (TSS), *E. coli*, fecal coliform, pH, chlorine, ammonia, total phosphorus (TP) and temperature. Effluent limitations have been developed for BOD, TSS, *E. coli*, fecal coliform, chlorine, and TP.

Receiving Water Body Level of Protection

The Fruitland WWTP discharges to the Payette River (assessment unit ID17050122SW001_06). This Payette River assessment unit (AU) has the following designated beneficial uses: cold water aquatic life; salmonid spawning: 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.

Idaho has established a water body-by-water body approach for identifying what level of antidegradation protection DEQ will provide when reviewing whether activities or discharges will 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 cold water aquatic life use in this Payette River AU is not fully supported due to excess temperature (DEQ, 2008 IR). According to Idaho Code §39-3603(2)b)(iii)(1)), a water body that is identified in the IR as not fully supporting aquatic life uses because of temperature shall, nevertheless, be afforded tier 2 protection if biological or aquatic habitat parameters show a healthy, balanced biological community is present. DEQ monitored on the Payette River as part of the Idaho Major Rivers Survey (2006 and 2008 effort). One monitoring site (RDEQA099) was between Emmett and New Plymouth. The River Macroinvertebrate Index (RMI) for this site was 16, which gives it a rating of 2, or Full Support, according to WBAGII. There was a second site monitored in 2006 just outside New Plymouth (RDEQA063) which had an RMI=21, rating it a 3, Full Support. Both sites were in AU ID17050122SW001_06. However, in keeping with the assessment process outlined in the Water Body Assessment Guidance, more than one index is needed in order to determine support status. Therefore, AU ID17050122SW001_06 will be afforded only Tier 1 protections since there is not enough data available to determine if a healthy, balanced biological community is present.

The primary contact beneficial use is not fully supported due to bacteria levels. (DEQ, 2008 IR). As such, DEQ will provide Tier 1 protection only for recreational uses and aquatic life uses. (Idaho Code §39-3603(2)(b)(i) and (iii)).

Protection and Maintenance of Existing Uses (Tier 1 Protection)

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 CWA, 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 054 which addresses water quality limited waters. The numeric and narrative criteria in the WQS are set at levels which ensure protection of designated beneficial uses. The effluent limitations and associated requirements contained in the Fruitland WWTP permit are set at levels that ensure compliance with the

narrative and numeric criteria in the WQS. Because there is no available information indicating the presence of any existing uses other than the designated uses discussed above, the permit ensures that the level of water quality necessary to protect both designated and existing uses is maintained and protected, in compliance with IDAPA 58.01.02.051.01, IDAPA 58.01.02.052.05 and 40 CFR 131.12(a)(1).

While the permit limits are set at levels that ensure compliance with WQS, DEQ believes the bacteria limits could be made less stringent and still comply with WQS. The existing permit for the Fruitland WWTP contains effluent limitations for fecal coliform as well as *E. coli*. In 1986, EPA updated its criteria to protect recreational use of water recommending an *E. coli* criterion as a better indicator of bacteria levels that may cause gastro-intestinal distress in swimmers than fecal coliform. In 2000, DEQ changed its bacteria criterion from fecal coliform to *E. coli.* The fecal coliform limits were in the current permit because at the time the permit was issued, the WQS included the fecal coliform criteria that was replaced by the E. coli criteria. The *E. coli* limits are as or more protective of water quality than the old fecal coliform limits. The proposed final permit contains both fecal coliform and *E. coli* effluent limitations that comply with previous and current numeric criteria at the "end-of-pipe." Because the fecal coliform criteria have been replaced with *E. coli* criteria, DEQ is requesting that EPA remove the fecal coliform effluent limitations. This is consistent with how EPA has handled other NPDES permits for WWTPs in Idaho. Furthermore, retention of the *E. coli* limits will ensure that the receiving water quality will not be degraded even when the fecal coliform limits are removed. Even with the omission of fecal coliform limitations, DEQ believes the discharge will not cause or contribute to a violation of the bacteria criteria because the permit incorporates "end-of-pipe" limitations for *E. coli*. Thus, removal of the fecal coliform limits ensures the existing recreational use is protected.

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 designed to help restore the water body to a condition that supports existing and designated beneficial uses. Discharge permits must contain limitations that are consistent with WLAs in the approved TMDL.

The EPA-approved *Lower Payette River TMDL* (DEQ 1999) establishes a wasteload allocation for bacteria, of 200 cfu/100 ml fecal coliform. This allocation was based upon the criterion at the time, and thus the TMDL was specifying a criterion at end-of-pipe limit. As noted above, in 2000 DEQ revised its criteria to reflect EPA's 1986 update of criteria recommended to protect recreational use of water. The proposed permit calls for meeting the current E. coli criterion of 126 cfu/100ml at end-of-pipe as well. Although the numeric value and indicator organism are different, both are end-of-pipe application of criteria. Therefore DEQ is confident that the modern E. coli limits are consistent with the older fecal coliform allocation in the TMDL and, by virtue of being a better indicator of fecal contamination, actually provide more reliable protection of human health than would reliance on the outdated fecal coliform TMDL. Therefore, the E. coli effluent limitation for bacteria contained in the Fruitland WWTP permit is set at a level that is consistent with the Lower Payette River TMDL WLA.

In sum, the effluent limitations and associated requirements contained in the Fruitland WWTP permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS as well as the wasteload allocations established in the *Lower Payette TMDL*. Therefore, DEQ has determined the permit will protect and maintain existing and designated beneficial uses in the Payette River and comply with IDAPA 58.01.02.051.01 and IDAPA 58.01.02.052.05.