



Idaho Department of Environmental Quality FINAL §401 Water Quality Certification

April 12, 2012

NPDES Permit Number: **ID-0020281** City of Ketchum Wastewater Treatment Plant

Pursuant to the provisions of Section 401(a)(1) of the Federal Water Pollution Control Act (Clean Water Act), as amended, 33 USC Section 1341 (a)(1), the Idaho Department of Environmental Quality (DEQ) has authority to review National Pollution Discharge Elimination System (NPDES) permits and issue a water quality certification decision.

DEQ has reviewed the NPDES permit and associated fact sheet for the above-referenced facility. Based upon its review and consideration of this information, DEQ certifies that if the permittee comply with the terms and conditions imposed by the above-referenced permit along with the conditions set forth in this water quality certification, then there is reasonable assurance the discharge(s) will comply with the applicable requirements of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, including the Idaho Water Quality Standards (WQS) (IDAPA 58.01.02) and other appropriate water quality requirements of state law.

This certification does not constitute authorization of the permitted activities by any other state or federal agency or private person or entity. This certification does not excuse the permit holder from the obligation to obtain any other necessary approvals, authorizations or permits.

Conditions Necessary to Assure Compliance with Water Quality Standards or Other Appropriate Water Quality Requirements of State Law

Instream Water Quality Monitoring

In order to ensure compliance with Water Quality Standards, the permittee must conduct surface water monitoring at two Big Wood River sites (approved by DEQ), one above and one below the influence of the facility's discharge for: temperature (hourly from April to October); and quarterly for hardness, alkalinity, pH, total ammonia as nitrogen, cadmium, mercury, and dissolved zinc. The permittee must follow the conditions for surface water monitoring as defined in the NPDES permit (Part I.D).

Wasteload Allocations for Total Phosphorus and Total Suspended Solids

The current permit does not have wasteload allocations for total phosphorus (TP). Instead, the concentration limit of 1.0 mg/L as an average monthly and 1.5 mg/L as an average weekly exists. These same concentration limits are carried forward in the proposed permit; but with wasteload allocations of 9.9 lb/day as an average monthly and 14.9 lb/day as a weekly average. These wasteload allocations are consistent with the approved Big Wood River TMDL (DEQ 2002). The current permit has wasteload allocations for total suspended solids (TSS) of 505 lb/day as an

average monthly and 760 lb/day as an average weekly. Although the equivalent concentrations of 30 mg/L and 45 mg/L, respectively, are carried forward in the proposed permit; the wasteload allocations are reduced to 275 lb/day as an average monthly and 413 lb/day as an average weekly. The Big Wood River TMDL wasteload allocation for Ketchum is 26.5 ton/year. The 275 lb/day limit is consistent with the WLA of 26.5 tons/year (EPA Fact Sheet, Appendix C).

Compliance Schedules

The Big Wood River TMDL (DEQ 2002) set limits for total phosphorus and total suspended solids at 9.9 lb/day and 26.5 ton/year, respectively. The permit sets limits for total phosphorus and total suspended solids at 9.9 lb/day and 275 lb/day, respectively. These limits should be achievable by the facility immediately. As such, no compliance schedule is necessary.

Mixing Zones

Pursuant to IDAPA 58.01.02.060, the DEQ authorizes a mixing zone that utilizes 25% of the critical low flow volumes (7Q10 flow) of the Big Wood River for total recoverable copper, ammonia, zinc and cadmium. Using this dilution, total ammonia, zinc and cadmium were not shown to have a reasonable potential to cause or contribute to excursions of WQS and therefore no limits were set for these pollutants (Appendix D of the EPA Fact Sheet).

Antidegradation

The Idaho water quality standards (WQS) provide that existing uses and the water quality necessary to protect the existing uses shall be maintained and protected (IDAPA 58.01.02.051.01). In addition, where water quality exceeds levels necessary to support uses, that quality shall be maintained and protected unless the Department finds, after intergovernmental coordination and public participation, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located (IDAPA 58.01.02.051.02).

The limits in the proposed new permit for the City of Ketchum Wastewater Treatment Plant are set at levels which ensure the state's numeric and narrative criteria will be met. The numeric and narrative criteria are set at levels which protect and maintain applicable designated and existing uses. In addition, the permit is consistent with the approved Big Wood River TMDL. Therefore, in accordance with IDAPA 58.01.02.051.01, the limits in the proposed new permit protect and maintain designated and existing uses in the Big Wood River. (Please see attached Antidegradation Review for more detailed analysis.)

Other Conditions

This water quality certification is conditioned upon the requirement that any material modification of the permit or the permitted activities, including without limitation, any modifications of the permit to reflect new or modified total maximum daily loads (TMDLs), wasteload allocations, site-specific criteria, variances, or other new information, shall first be provided to DEQ for review to determine compliance with state Water Quality Standards and to provide additional certification pursuant to Section 401. DEQ authorizes pollutant trading set out in the draft permit pursuant to IDAPA 58.01.02.054.06.

Questions regarding the actions taken in this certification should be directed to Balthasar Buhidar, DEQ (Twin Falls Regional Office) at (208) 736-2190 or balthasar.buhidar@deq.idaho.gov.

A handwritten signature in black ink, appearing to read "Bill Allred", is written over a horizontal line.

Bill Allred
Regional Administrator
DEQ-Twin Falls Regional Office

ANTIDegradation REVIEW

NPDES Permit # ID-0020281 City of Ketchum Wastewater Treatment Facility

Idaho Department of Environmental Quality

Antidegradation

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). The Idaho Department of Environmental Quality (DEQ) submitted the antidegradation implementation procedures to the US Environmental Protection Agency (EPA) for approval on April 15, 2011. On August 18, 2011, EPA approved the implementation procedures.

The WQS contain an antidegradation policy provides 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 ensures that existing uses of a water body and the level of water quality necessary to protect the existing uses will be maintained and protected (Tier 1 protection) (IDAPA 58.01.02.051.01; 58.01.02.052.01). Additionally, 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 considered high quality and ensures that no lowering of water quality will be allowed unless 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 58.01.02.051.03; 58.01.02.052.07).

DEQ is employing a water body by water body approach to implementing Idaho's antidegradation policy. This approach means that any water body fully supporting its beneficial uses will be considered high quality (Idaho Code § 39-3603(2)(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 (IR) 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 Ketchum Wastewater Treatment Facility (Ketchum) discharges the following pollutants of concern: biological oxygen demand (BOD), total suspended solids (TSS), *E. coli*, pH, ammonia, total phosphorus (TP), nitrate + nitrite, total Kjeldahl nitrogen, copper, mercury, cadmium, zinc, alkalinity, dissolved oxygen, hardness, oil & grease, orthophosphate, total dissolved solids and temperature. Effluent limits have been developed for BOD, TSS, *E. coli*, pH, total phosphorus, and total recoverable copper. Effluent limits were not developed for temperature, alkalinity, cadmium, dissolved oxygen, hardness, mercury, nitrate + nitrite, oil & grease, ammonia, total dissolved solids, total Kjeldahl nitrogen and zinc in the new permit; however, additional monitoring is necessary for these parameters to assess whether water quality based effluent limits will be needed in future permits.

Receiving Water Body Level of Protection

Ketchum discharges to the Big Wood River assessment units (AUs) ID17040219SK007_05 and ID17040219SK004_05. The original Big Wood River TMDL (DEQ 2002) showed segment-of-concern of the Big Wood River to be from Trail Creek to the Glendale Diversion. The 2010 Integrated Report indicates the segment to be from North Fork Big Wood River to Seamans Creek. Therefore, these two AUs must be considered in terms of the level of protection for the receiving water. The Big Wood River has been designated for the following beneficial uses: cold water aquatic life; salmonid spawning; primary contact recreation; domestic, industrial, and agricultural water supply; wildlife habitats; and aesthetics. There is no other information indicating the presence of existing beneficial uses beyond those uses already designated. According to the federally-approved 2010 Integrated Report, the Big Wood River is not meeting its cold water aquatic life and salmonid spawning use designations as a result of flow alterations, sedimentation/siltation, and total phosphorus. Therefore, the Big Wood River will receive Tier 1 protection only for those uses.

While the recreational uses of this AU have not been assessed, *E. coli* data have been collected. The data show that the Big Wood River has elevated levels of *E. coli*. Therefore, DEQ will provide Tier 1 protection for all designated and existing beneficial uses of the Big Wood River (Idaho Code §39-3603(2)(b)(i)).

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 the Idaho WQS, which contain narrative and numeric criteria as well as other provisions of the WQS such as Section 055, which addresses water quality limited waters.

Water bodies not supporting existing or designated beneficial uses must be identified as water quality limited, and a watershed management plan, also known as 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 comply with the approved TMDL.

The EPA-approved *Big Wood River Watershed Management Plan* (DEQ, 2002) addresses phosphorus, *E. coli* and sediment for the Big Wood River. The proposed permit for Ketchum contains effluent limits for *E. coli*, TP and TSS that are consistent with the TMDL (Table 1). The phosphorus effluent concentration limits have been continued forward from the previous permit; but load effluent limits are now included. The sediment (TSS) effluent limits have been reduced from the previous 505 lbs/day to 275 lbs/day (Table 1); and a review of the facility's DMRs indicates they can easily meet this limit. DEQ does not develop TMDLs for flow alteration because it is not a pollutant.

The existing permit contains effluent limitations for fecal coliform as well as *E. coli*. The *E. coli* limits were in the permit to reflect the bacteria criterion that DEQ adopted to protect the contact recreation beneficial use (IDAPA 58.01.02.251.01). The fecal coliform limit was in the current permit because at the time the permit was issued, IDAPA 58.01.02.420.05 established a disinfection requirement for sewage wastewater treatment plant effluent. This requirement specified fecal coliform concentrations not exceed a geometric mean of 200/100 mL fecal based on a minimum of five samples in one week. This section of Idaho WQS was revised in 2002 to reflect an earlier change in the bacteria criterion from fecal coliform to *E. coli*. As such, the proposed reissuance permit for Ketchum removes the fecal coliform limits. The *E. coli* limits are as or more protective of water quality than the old fecal coliform limits. 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. DEQ changed its bacteria criterion from fecal coliform to *E. coli*, which as indicated earlier, is reflected in the current permit for Ketchum. The proposed permit contains *E. coli* effluent limitations that comply with numeric criteria at the "end-of-pipe;" therefore, DEQ believes this discharge will not cause or contribute to a violation of the bacteria criteria in the Big Wood River. All other effluent limitations and associated requirements contained in the permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS.

Table 1. Comparison of proposed permit limits with current permit limits for Hailey.

Parameter	Units	Proposed Permit			Current Permit		
		Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit
Five-Day BOD	mg/L	30	45	-	30	45	-
	lb/day	505	760	-	505	760	-
	removal	85%	-	-	85%	-	-
TSS	mg/L	30	45	-	30	45	-
	lb/day	275	413	-	505	760	-
	removal	85%	-	-	85%	-	-
pH	s.u.	6.5 - 9.0 all times			6.5 - 9.0 all times		
<i>E. coli</i>	#/100 mL	126 (geometric mean)	-	406 (instantaneous maximum)	126 (geometric mean)	200 cfu/100 mL FC ¹	406 (instantaneous maximum)
Total Phosphorus (final)	mg/L	1.0	1.5	-	1.0	1.5	-
	lb/day	9.9	14.9	-	-	-	-
Total Recoverable Copper	µg/L	19.2	-	35.1	Report	-	-
	lb/day	0.64	-	1.17	Report	-	-
Temperature	°C	Report	-	Report	Report	-	-
Alkalinity	mg/L as CaCO ₃	Report	-	Report	Report	-	-
Cadmium, Total Recoverable	µg/L	Report	-	Report	Report	-	-
Dissolved Oxygen	mg/L	Report	-	Report	-	-	-
Hardness	mg/L as CaCO ₃	Report	-	Report	-	-	-

Total Mercury	µg/L	Report	-	Report	Report	-	-
Nitrate ¹ Nitrite	mg/L	Report	-	Report	-	-	-
Oil & Grease	mg/L	Report	-	Report	-	-	-
Total Ammonia	mg/L	Report	-	-	Report	-	-
Total Dissolved Solids	mg/L	Report	-	Report	-	-	-
Total Kjeldahl Nitrogen	mg/L	Report	Report	-	Report	Report	-
Total Recoverable Zinc	µg/L	Report	-	Report	Report	-	-
1. FC = Fecal coliform in the current permit set as an average weekly limit as a geometric mean.							

In sum, the effluent limitations and associated conditions contained in the Ketchum permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS, and are also consistent with the wasteload allocations in the Big Wood River TMDL. Therefore, DEQ has determined the permit will protect and maintain existing and designated beneficial uses in the Big Wood River.