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# Fact Sheet

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## **Proposed Reissuance of a National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Pollutants Pursuant to the Provisions of the Clean Water Act (CWA)**

### **City of Hailey Wastewater Treatment Plant**

#### **EPA Proposes To Reissue NPDES Permit**

EPA proposes to reissue the NPDES permit for the facility referenced above. The draft permit places conditions on the discharge of pollutants from the pollution control plant to waters of the United States. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged from the facility.

This Fact Sheet includes:

- information on public comment, public hearing, and appeal procedures
- a listing of proposed effluent limitations and other conditions for the facility
- a map and description of the discharge location
- technical material supporting the conditions in the permit

#### **State Clean Water Act Section 401 Certification**

EPA is requesting that the Idaho Department of Environmental Quality (IDEQ) certify the NPDES permit for this facility, under Section 401 of the Clean Water Act. Comments regarding the certification should be directed to:

Idaho Department of Environmental Quality  
1363 Fillmore St.  
Twin Falls, ID 83301  
(208) 736-2190

**Public Comment**

Persons wishing to comment on, or request a Public Hearing for the draft permit for this facility may do so in writing by the expiration date of the Public Comment period. A request for a Public Hearing must state the nature of the issues to be raised as well as the requester's name, address and telephone number. All comments and requests for Public Hearings must be in writing and should be submitted to EPA as described in the Public Comments Section of the attached Public Notice.

After the Public Notice expires, and all comments have been considered, EPA's regional Director for the Office of Water and Watersheds will make a final decision regarding permit issuance. If no substantive comments are received, the tentative conditions in the draft permit will become final, and the permit will become effective upon issuance. If substantive comments are received, EPA will address the comments and issue the permit. The permit will become effective no less than 30 days after the issuance date, unless an appeal is submitted to the Environmental Appeals Board within 30 days.

**Documents are Available for Review**

The draft NPDES permit and related documents can be reviewed or obtained by visiting or contacting EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday at the address below. The draft permits, fact sheet, and other information can also be found by visiting the Region 10 NPDES website at "<http://epa.gov/r10earth/waterpermits.htm>."

United States Environmental Protection Agency  
Region 10  
1200 Sixth Avenue, OWW-130  
Seattle, Washington 98101  
(206) 553-0523 or  
Toll Free 1-800-424-4372 (within Alaska, Idaho, Oregon and Washington)

The fact sheet and draft permits are also available at:

US EPA Region 10  
1435 N. Orchard  
Boise, ID 83706  
(208) 378-5746

Idaho Department of Environmental Quality  
1363 Fillmore St.  
Twin Falls, ID 83301  
(208) 736-2190

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**Acronyms**

1Q10	1 day, 10 year low flow
7Q10	7 day, 10 year low flow
30B3	Biologically-based design flow intended to ensure an excursion frequency of less than once every three years, for a 30-day average flow.
AML	Average Monthly Limit
AWL	Average Weekly Limit
BE	Biological Evaluation
BOD <sub>5</sub>	Biochemical oxygen demand, five-day
BMP	Best Management Practices
°C	Degrees Celsius
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
CV	Coefficient of Variation
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved oxygen
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
IC	Inhibition Concentration
IDEQ	Idaho Department of Environmental Quality
I/I	Infiltration and Inflow
lbs/day	Pounds per day
LTA	Long Term Average
mg/L	Milligrams per liter
ML	Minimum Level
µg/L	Micrograms per liter
mgd	Million gallons per day
MDL	Maximum Daily Limit or Method Detection Limit
N	Nitrogen
NOAA	National Oceanic and Atmospheric Administration

NOEC	No Observable Effect Concentration
NPDES	National Pollutant Discharge Elimination System
OWW	Office of Water and Watersheds
O&M	Operations and maintenance
POTW	Publicly owned treatment works
QAP	Quality assurance plan
RP	Reasonable Potential
RPM	Reasonable Potential Multiplier
RWC	Receiving Water Concentration
SS	Suspended Solids
s.u.	Standard Units
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TRC	Total Residual Chlorine
TRE	Toxicity Reduction Evaluation
TSD	Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001)
TSS	Total suspended solids
TU <sub>c</sub>	Toxic Units, Chronic
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
WET	Whole Effluent Toxicity
WQBEL	Water quality-based effluent limit
WQS	Water Quality Standards
WWTP	Wastewater treatment plant

## I. Applicant

### A. General Information

This fact sheet provides information on the draft NPDES permit for the following entity:

City of Hailey  
Woodside Wastewater Treatment Plant  
NPDES Permit # ID0020303

Physical Address:  
4297 Glenbrook Drive  
Hailey, ID 83333

Mailing Address:  
115 S. Main St. Suite H  
Hailey, ID 83333

Contact: Ray Hyde, Public Works Manager

## II. Facility Information

### A. Treatment Plant Description

The City of Hailey owns, operates, and has maintenance responsibility for the Hailey wastewater treatment plant, which treats domestic sewage from local residents and commercial establishments. The Hailey wastewater treatment plant is designed to provide secondary treatment to 1.6 mgd of wastewater.

### B. Background Information

The most recent NPDES permit for the City of Hailey was issued on May 9, 2001, became effective on June 11, 2001 and expired on June 12, 2006. The first NPDES permit was issued to this facility in December 1973. EPA received a timely and complete application for renewal of this NPDES permit. According to 40 CFR 122.6, when EPA receives a timely and complete application for renewal of an NPDES permit, the conditions of the expired permit continue in force until the effective date of a new permit.

A map has been included in Appendix A which shows the location of the treatment plant and the discharge location.

## III. Receiving Water

This facility discharges to the Big Wood River.

### A. Low Flow Conditions

The *Technical Support Document for Water Quality-Based Toxics Control* (hereafter referred to as the TSD) (EPA, 1991) and Section 210 of the Idaho Water Quality Standards (WQS)

recommend the flow conditions for use in calculating water quality-based effluent limits (WQBELs) using steady-state modeling. The TSD and the WQS state that WQBELs intended to protect aquatic life uses should be based on the lowest seven-day average flow rate expected to occur once every ten years (7Q10) for chronic criteria and the lowest one-day average flow rate expected to occur once every ten years (1Q10) for acute criteria. Because the chronic criterion for ammonia is a 30-day average concentration not to be exceeded more than once every three years, EPA has used the 30B3 for the chronic ammonia criterion instead of the 7Q10. The 30B3 is a biologically-based flow rate designed to ensure an excursion frequency of no more than once every three years for a 30-day average flow rate. For human health criteria, the Idaho water quality standards recommend the 30Q5 flow rate for non-carcinogens, and the harmonic mean flow rate for carcinogens.

The 1Q10, 7Q10, 30B3, 30Q5, and harmonic mean flows are 69.9, 88.0, 96.5, 111 and 211 CFS, respectively. These flows were calculated using flow records from USGS station number 13139510 (Big Wood River at Hailey, Idaho total flow).

## B. Water Quality Standards

### *Overview*

Section 301(b)(1)(C) of the CWA requires the development of limitations in permits necessary to meet water quality standards. Federal regulations at 40 CFR 122.4(d) require that the conditions in NPDES permits ensure compliance with the water quality standards of all affected States. A State's water quality standards are composed of use classifications, numeric and/or narrative water quality criteria, and an anti-degradation policy. The use classification system designates the beneficial uses (such as domestic water supply, contact recreation, and aquatic life) that each water body is expected to achieve. The numeric and/or narrative water quality criteria are the criteria deemed necessary by the State to support the beneficial use classification of each water body. The anti-degradation policy represents a three-tiered approach to maintain and protect various levels of water quality and uses.

This facility discharges to the Big Wood River (HUC 17040219). In this reach, the receiving water is designated for the uses of cold water aquatic life, salmonid spawning, primary contact recreation, and domestic water supply, and is also designated a special resource water (IDAPA 58.01.02.056, 58.01.02.150.21). Water quality criteria designed to protect these beneficial uses appear in Sections 210, 250, and 251 of the Idaho Water Quality Standards. Restrictions on point source discharges to special resource waters appear in Section 400.01.b of the Standards.

In addition, the Idaho Water Quality Standards state that all waters of the State of Idaho are protected for industrial and agricultural water supply (Section 100.03.b and c), wildlife habitats (100.04) and aesthetics (100.05). The WQS state, in Sections 252.02, 252.03, and 253 that these uses are to be protected by narrative criteria which appear in Section 200. These narrative criteria state that all surface waters of the State shall be free from hazardous materials; toxic substances; deleterious materials; radioactive materials; floating, suspended or submerged matter; excess nutrients; oxygen-demanding materials; and sediment in concentrations which would impair beneficial uses. The WQS also state, in Section 252.02 that the criteria from *Water Quality Criteria 1972* (EPA-R3-73-033), also referred to as the "Blue Book," can be used to determine numeric criteria for the protection of the agricultural water supply use.



***Idaho's Antidegradation Policy***

The EPA is required under Section 301(b)(1)(C) of the Clean Water Act (CWA) and implementing regulations (40 CFR 122.4(d) and 122.44(d)) to establish conditions in NPDES permits that ensure compliance with State water quality standards, including antidegradation requirements. The antidegradation analysis is conducted as part of the State's CWA Section 401 certification process (see Appendix F).

**IV. Effluent Limitations****A. Basis for Effluent Limitations**

In general, the CWA requires that the effluent limits for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits. The basis for the effluent limits proposed in the draft permit is provided in Appendices C, D, E, and F.

**B. Proposed Effluent Limitations**

Below are the proposed effluent limits that are in the draft permit.

1. The permittee must not discharge floating, suspended, or submerged matter of any kind in amounts causing nuisance or objectionable conditions or that may impair designated beneficial uses.
2. Removal Requirements for BOD<sub>5</sub> and TSS: The monthly average effluent concentration must not exceed 15 percent of the monthly average influent concentration. Percent removal of BOD<sub>5</sub> and TSS must be reported on the Discharge Monitoring Reports (DMRs). For each parameter, the monthly average percent removal must be calculated from the arithmetic mean of the influent values and the arithmetic mean of the effluent values for that month. Influent and effluent samples must be taken over approximately the same time period.
3. The permittee must not discharge floating, suspended, or submerged matter of any kind in amounts causing nuisance or objectionable conditions or that may impair designated beneficial uses of the receiving water.

Table 1 (below) presents the proposed numeric effluent limits.

<b>Table 1: Proposed Effluent Limits</b>				
<b>Parameter</b>	<b>Units</b>	<b>Effluent Limits</b>		
		<b>Average Monthly Limit</b>	<b>Average Weekly Limit</b>	<b>Maximum Daily Limit</b>
<b>Five-Day Biochemical Oxygen Demand (BOD<sub>5</sub>)</b>	mg/L	30	45	—
	lb/day	94	141	—
	% removal	85% (min)	—	—
<b>Total Suspended Solids (TSS)</b>	mg/L	30	45	—
	lb/day	45	68	—
	% removal	85% (min)	—	—
<b>E. Coli</b>	#/100 ml	126 (geo. mean)	—	406 <sup>2</sup>
	CFU/day	$7.63 \times 10^9$ (geo. mean)	—	—
<b>pH</b>	s.u.	6.5 – 9.0		
<b>Total Ammonia as N</b>	mg/L	1.9	2.9	3.3
	lb/day	9.0	14	15.6
<b>Total Kjeldahl Nitrogen</b>	lb/day	55	78	—
<b>Total Phosphorus as P (Final)</b>	lb/day	5.2	7.8	—
<b>Total Phosphorus as P (Interim)</b>	lb/day	15	23	—
Notes: 1. Geometric mean. 2. Instantaneous/single sample maximum.				

### Compliance Schedule for Total Phosphorus

Effluent data indicate that the permittee cannot comply with the proposed water quality-based effluent limits for total phosphorus immediately. The proposed average monthly limit for total phosphorus is 5.2 lb/day. The 95<sup>th</sup> percentile monthly average phosphorus load from January 2005 through May 2010 was 9.7 lb/day, and the average monthly limit in the prior permit was 15 lb/day.

Federal regulations (40 CFR 122.47) and the Idaho Water Quality Standards (IDAPA 58.01.02.400.03) allow for compliance schedules in permits. Idaho's compliance schedule rule allows compliance schedules only for water quality-based effluent limits "when new limitations are in the permit for the first time." The federal compliance schedule rule allows compliance schedules "when appropriate," requires compliance with effluent limits "as soon as possible," and requires "interim requirements and the dates for their achievement."

In its draft Clean Water Act Section 401 certification, the State of Idaho has proposed to allow a compliance schedule for total phosphorus. The compliance schedule requires compliance with the final effluent limits for total phosphorus no later than four years and 11 months after the effective date of the final permit. The permit includes interim requirements and the dates for their achievement, in compliance with 40 CFR 122.47. In accordance with 40 CFR 122.44(1)(1), the draft permit also proposes interim effluent limits for total phosphorus that apply during the term of the compliance schedule and which are identical to the final effluent limits in the prior permit.

### **Basis for Deleting Fecal Coliform Effluent Limits**

The draft permit proposes to delete the previous permit's effluent limits for fecal coliform. Effluent limitations for all other pollutants are as stringent as or more stringent than those in the current permit.

#### ***Statutory Prohibitions on Backsliding***

Section 402(o) of the Clean Water Act (CWA) generally prohibits the establishment of effluent limits in a reissued NPDES permit that are less stringent than the corresponding limits in the previous permit, but provides limited exceptions. Section 402(o)(1) of the CWA states that a permit may not be reissued with less-stringent limits established based on Sections 301(b)(1)(C), 303(d) or 303(e) (i.e. water quality-based limits or limits established in accordance with State treatment standards) except in compliance with Section 303(d)(4). Section 402(o)(1) also prohibits backsliding on technology-based effluent limits established using best professional judgment (i.e. based on Section 402(a)(1)(B)), but in this case, the effluent limits being revised are water quality-based effluent limits (WQBELs).

Section 303(d)(4) of the CWA states that, for water bodies where the water quality meets or exceeds the level necessary to support the water body's designated uses, WQBELs may be revised as long as the revision is consistent with the State's antidegradation policy. For water bodies where the applicable water quality standard has not yet been attained, any effluent limitation based on a total maximum daily load or other waste load allocation may be revised only if the cumulative effect of all such revised effluent limitations will assure the attainment of such water quality standard, or the designated use which is not being attained is removed in accordance with 40 CFR 131(g). Additionally, Section 402(o)(2) contains exceptions to the general prohibition on backsliding in 402(o)(1). According to the *U.S. EPA NPDES Permit Writers' Manual* (EPA-833-B-96-003) the 402(o)(2) exceptions are applicable to WQBELs (except for 402(o)(2)(B)(ii) and 402(o)(2)(D)) and are independent of the requirements of 303(d)(4). Therefore, WQBELs may be relaxed as long as either the 402(o)(2) exceptions or the requirements of 303(d)(4) are satisfied.

Even if the requirements of Sections 303(d)(4) or 402(o)(2) are satisfied, Section 402(o)(3) prohibits backsliding which would result in violations of water quality standards or effluent limit guidelines.

#### ***Fecal Coliform***

The draft permit proposes to delete the fecal coliform limits in the previous permit. In 2002, IDEQ completed and EPA approved a total maximum daily load or TMDL called the *Big Wood River Watershed Management Plan*. In 2011, IDEQ amended the *Big Wood River Watershed Management Plan* in order to correct calculation errors made in the original document. The E. coli effluent limits in the draft permit are based upon the *Errata to the Big Wood River Watershed Management Plan (aka TMDL) of 2002*, which was adopted by IDEQ in November 2011 and approved by EPA in February 2012.

For waters where standards have not yet been attained, Section 303(d)(4)(A) of the Act states that "any effluent limitation based on a total maximum daily load or other waste load allocation established under this section may be revised only if (i) the cumulative effect of all such revised

effluent limitations based on such total maximum daily load or waste load allocation will assure the attainment of such water quality standard, or (ii) the designated use which is not being attained is removed in accordance with regulations established under this section.”

The EPA-approved TMDL, as modified by the errata, has load and wasteload allocations for all known sources of bacteria to the Big Wood River. The permit includes an effluent limit of 7.63 billion ( $7.63 \times 10^9$ ) colony-forming units per day, which is consistent with the wasteload allocation for the discharge in the *Big Wood River Watershed Management Plan*, as modified by the errata. The cumulative effect of all of the load and wasteload allocations in the modified TMDL will assure the attainment of water quality standards for bacteria in the receiving water. Therefore, the effluent limits for bacteria may be revised to remove the effluent limits for fecal coliform and retain effluent limits for E. Coli.

In addition, the draft permit, like the previous permit, includes “criteria end-of-pipe” concentration effluent limits for bacteria, in order to protect contact recreation beneficial uses in the receiving water. The new water quality criteria and effluent limits simply use the indicator organism currently specified in the Idaho water quality standards (E. coli) to provide the same level of protection for the beneficial use of primary contact recreation as was provided by the fecal coliform effluent limits. As explained above, the deletion of the fecal coliform limits and retention of limits for E. Coli do not violate the Act’s antibacksliding provisions. Also this limit complies with the antidegradation provisions of the Idaho Water Quality Standards (see Appendix F).

### ***Clean Water Act Section 402(o)(3) Requirements***

Because the E. coli limits apply current water quality criteria at the end-of-pipe, the effluent limits are derived from and comply with water quality standards for E. coli. The secondary treatment technology-based effluent limits do not include effluent limits for bacteria. Because the effluent limits will continue to ensure that water quality standards are met and do not violate the secondary treatment effluent limits, the limits comply with Section 402(o)(3) of the CWA.

EPA is requesting that IDEQ certify that the elimination of the fecal coliform limits is protective of Idaho’s water quality standards under Section 401 of the CWA.

## **V. Monitoring Requirements**

### **A. Basis for Effluent and Surface Water Monitoring**

Section 308 of the CWA and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality. The permit also requires the permittee to perform effluent monitoring required by parts B.6 and D of the NPDES Form 2A application, so that these data will be available when the permittee applies for a renewal of its NPDES permit.

The permittee is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports (DMRs) or on the application for renewal, as appropriate, to the U.S. Environmental Protection Agency (EPA).

**B. Effluent Monitoring**

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples can be used for averaging if they are conducted using EPA-approved test methods (generally found in 40 CFR 136) and if the Method Detection Limits are less than the effluent limits.

Table 2, below, presents the proposed effluent monitoring requirements for the City of Hailey WWTP. In general, the monitoring requirements are similar to those in the prior permit, with certain exceptions explained below. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

Parameter	Units	Sample Location	Sample Frequency	Sample Type
<b>Flow</b>	mgd	Effluent	continuous	recording
<b>BOD<sub>5</sub></b>	mg/L	Influent & Effluent	1/week	24-hour composite
	lb/day	Effluent		calculation <sup>1</sup>
	% Removal	% Removal	1/month	calculation <sup>2</sup>
<b>TSS</b>	mg/L	Influent & Effluent	2/week	24-hour composite
	lb/day	Effluent		calculation <sup>1</sup>
	% Removal	% Removal	1/month	calculation <sup>2</sup>
<b>pH</b>	standard units	Effluent	daily	grab
<b>E. Coli</b>	#/100 ml	Effluent	5/month	grab
<b>Total Ammonia as N</b>	mg/L	Effluent	2/month	24-hour composite
	lb/day	Effluent		calculation <sup>1</sup>
<b>Total Phosphorus (Interim)</b>	mg/L	Influent & Effluent	2/month	24-hour composite
	lb/day	Effluent		calculation
<b>Total Phosphorus (Final)</b>	mg/L	Influent & Effluent	1/week	24-hour composite
	lb/day	Effluent		calculation
<b>Alkalinity</b>	mg/L as CaCO <sub>3</sub>	Effluent	1/quarter	24-hour composite
<b>Copper</b>	µg/L	Effluent	1/quarter	24-hour composite
<b>Dissolved Oxygen</b>	mg/L	Effluent	1/month	grab
<b>Hardness</b>	mg/L as CaCO <sub>3</sub>	Effluent	1/quarter	24-hour composite
<b>Mercury</b>	µg/L	Effluent	1/quarter	24-hour composite
<b>Nitrate + Nitrite</b>	mg/L	Effluent	1/quarter	24-hour composite
<b>Oil and Grease</b>	mg/L	Effluent	1/quarter	grab
<b>Orthophosphate</b>	mg/L	Effluent	1/quarter	24-hour composite
<b>Temperature (April – October)</b>	°C	Effluent	continuous	recording
<b>Temperature (November – March)</b>	°C	Effluent	5/week	grab
<b>Total Dissolved Solids</b>	mg/L	Effluent	1/quarter	24-hour composite
<b>Total Kjeldahl Nitrogen</b>	mg/L	Effluent	1/month	24-hour composite
<b>Zinc</b>	µg/L	Effluent	1/quarter	24-hour composite
<b>NPDES Application Form 2A Expanded Effluent Testing</b>	—	Effluent	3x/5 years	—
<b>Whole Effluent Toxicity (WET)</b>	TU <sub>C</sub>	Effluent	1/quarter for one year	24-hour composite

Table 2: Effluent Monitoring Requirements				
Parameter	Units	Sample Location	Sample Frequency	Sample Type
Notes:				
1. Loading is calculated by multiplying the concentration in mg/L by the flow in mgd and a conversion factor of 8.34. If the concentration is measured in µg/L, the conversion factor is 0.00834.				
2. Percent removal is calculated using the following equation: (average monthly influent – average monthly effluent) ÷ average monthly influent.				
3. The permittee must report the minimum effluent dilution ratio observed during the month.				
4. Each sampling event must include three 24-hour composite samples taken over the course of a calendar week.				

### ***Monitoring Changes from the Previous Permit***

The monitoring frequency for TSS has been increased from once per week to twice per week, and, once the final effluent limits for total phosphorus take effect, the monitoring frequency for total phosphorus has been increased from twice per month to once per week. These changes were made in order to better determine compliance with the more-stringent water quality-based TSS and phosphorus limits that are proposed in the draft permit. The draft permit also proposes monthly monitoring of orthophosphate, in order to better characterize the facility's phosphorus discharges, although only total phosphorus is subject to effluent limits.

The draft permit proposes to require monitoring at a frequency of quarterly for all parameters listed in Part B.6 of the application form for POTWs (EPA Form 3510-2A, revised 1-99) that are not subject to effluent limitations, except for total residual chlorine, which may be omitted because the facility does not use chlorine for disinfection.<sup>1</sup> EPA also proposes quarterly monitoring of the effluent for copper, mercury, and zinc. Copper and mercury have been previously analyzed for and detected in the effluent, and zinc has been measured in the Big Wood River upstream from the City of Ketchum's discharge, sometimes at concentrations close to Idaho's water quality criteria for zinc.

The permit also requires at least three samples over the term of the permit for all parameters listed in Part D of the application form for POTWs so that these data will be available when the City applies for a reissued permit.<sup>2</sup> In accordance with Part E of the form 2A application, the permit requires quarterly whole effluent toxicity testing for one year.<sup>3</sup>

EPA proposes to reduce the effluent monitoring frequency for total Kjeldahl nitrogen (TKN) from twice per month to once per month, because the discharges of TKN are generally much less than the effluent limits. Specifically, long-term the average TKN load is 8.2 lb/day, or 15% of the average monthly limit. Therefore, an effluent limit violation is not likely to be "missed" because of less-frequent sampling (see *Interim Guidance for Performance - Based Reductions of NPDES Permit Monitoring Frequencies*, EPA 1996, at Appendix A).

### **C. Surface Water Monitoring**

In its draft Clean Water Act Section 401 certification of this Permit, IDEQ specified receiving water monitoring requirements. Federal regulations require that NPDES permits incorporate the conditions of the State's Clean Water Act Section 401 certification (40 CFR 124.55(a)(2)).

<sup>1</sup> See also 40 CFR 122.21(j)(4)(iii)

<sup>2</sup> See also 40 CFR 122.21(j)(4)(iv)

<sup>3</sup> See also 40 CFR 122.21(j)(5)

Table 3 presents the proposed surface water monitoring requirements. The City of Hailey should continue receiving water monitoring at the established location. Surface water monitoring results must be submitted with the DMRs for the last month of each quarter.

<b>Table 3: Surface Water Monitoring Requirements</b>			
<b>Parameter and Units</b>	<b>Location(s)</b>	<b>Sampling Frequency</b>	<b>Maximum Method Detection Limit (MDL)</b>
Alkalinity, mg/L as CaCO <sub>3</sub>	Upstream	1/quarter	—
Cadmium, dissolved, µg/L	Upstream	1/quarter	0.1 µg/L
Copper, dissolved, µg/L	Upstream	1/quarter	0.5 µg/L
Cyanide, weak acid dissociable, µg/L	Upstream	1/quarter	0.02 µg/L
Hardness, mg/L as CaCO <sub>3</sub>	Upstream	1/quarter	—
Lead, dissolved, µg/L	Upstream	1/quarter	0.5 µg/L
Mercury, total, µg/L	Upstream	1/quarter	0.01 µg/L
Nickel, dissolved, µg/L	Upstream	1/quarter	1 µg/L
pH, standard units	Upstream	1/quarter	—
Silver, dissolved, µg/L	Upstream	1/quarter	0.1 µg/L
Temperature, °C (April – October)	Upstream and downstream	Hourly	—
Total Ammonia as N, mg/L	Upstream	1/quarter	0.04 mg/L
Zinc, dissolved, µg/L	Upstream	1/quarter	2 µg/L

## VI. Sludge (Biosolids) Requirements

EPA Region 10 separates wastewater and sludge permitting. EPA has authority under the CWA to issue separate sludge-only permits for the purposes of regulating biosolids. EPA may issue a sludge-only permit to each facility at a later date, as appropriate.

Until future issuance of a sludge-only permit, sludge management and disposal activities at each facility continue to be subject to the national sewage sludge standards at 40 CFR Part 503 and any requirements of the State's biosolids program. The Part 503 regulations are self-implementing, which means that facilities must comply with them whether or not a permit has been issued.

## VII. Other Permit Conditions

### A. Quality Assurance Plan

The federal regulation at 40 CFR 122.41(e) requires the permittee to develop procedures to ensure that the monitoring data submitted is accurate and to explain data anomalies if they occur. The City of Hailey is required to update the Quality Assurance Plan for the water pollution control plant within 180 days of the effective date of the final permit. The Quality Assurance Plan shall consist of standard operating procedures the permittee must follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting.

**B. Operation and Maintenance Plan**

The permit requires the City of Hailey to properly operate and maintain all facilities and systems of treatment and control. Proper operation and maintenance is essential to meeting discharge limits, monitoring requirements, and all other permit requirements at all times. The permittee is required to develop and implement an operation and maintenance plan for their facility within 180 days of the effective date of the final permit. The plan shall be retained on site and made available to EPA and IDEQ upon request.

**C. Standard Permit Provisions**

Sections III, IV, and V of the draft permit contain standard regulatory language that must be included in all NPDES permits. Because these requirements are based directly on NPDES regulations, they cannot be challenged in the context of an NPDES permit action. The standard regulatory language covers requirements such as monitoring, recording, and reporting requirements, compliance responsibilities, and other general requirements.

**VIII. Other Legal Requirements****A. Endangered Species Act**

The Endangered Species Act requires federal agencies to consult with National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) and the U.S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or endangered species. EPA has determined that the issuance of this NPDES permit will have no effect on threatened or endangered species. Therefore, consultation is not required for this action. However, EPA will notify USFWS and NOAA Fisheries of the issuance of this draft permit and will consider any comments made by the Services prior to issuance of a final permit. See Appendix E of this fact sheet for more information.

**B. Essential Fish Habitat**

Essential fish habitat (EFH) is the waters and substrate (sediments, etc.) necessary for fish to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires EPA to consult with NOAA Fisheries when a proposed discharge has the potential to adversely affect (reduce quality and/or quantity of) EFH. EPA has determined that the discharge from the City of Hailey WWTP will not affect any EFH species in the vicinity of the discharge, therefore consultation is not required for this action.

**C. State Certification**

Section 401 of the CWA requires EPA to seek State certification before issuing a final permit. As a result of the certification, the State may require more stringent permit conditions or additional monitoring requirements to ensure that the permit complies with water quality standards, or treatment standards established pursuant to any State law or regulation.



#### **D. Sanitary Sewer Overflows and Proper Operation and Maintenance of the Collection System**

Untreated or partially treated discharges from separate sanitary sewer systems are referred to as sanitary sewer overflows (SSOs). SSOs may present serious risks of human exposure when released to certain areas, such as streets, private property, basements, and receiving waters used for drinking water, fishing and shellfishing, or contact recreation. Untreated sewage contains pathogens and other pollutants, which are toxic. SSOs are not authorized under this permit. Pursuant to the NPDES regulations, discharges from separate sanitary sewer systems authorized by NPDES permits must meet effluent limitations that are based upon secondary treatment. Further, discharges must meet any more stringent effluent limitations that are established to meet EPA-approved state water quality standards.

The permit contains language to address SSO reporting and public notice and operation and maintenance of the collection system. The permit requires that the permittee identify SSO occurrences and their causes. In addition, the permit establishes reporting, record keeping and third party notification of SSOs. Finally, the permit requires proper operation and maintenance of the collection system. The following specific permit conditions apply:

**Immediate Reporting** – The permittee is required to notify the EPA of an SSO within 24 hours of the time the permittee becomes aware of the overflow. (See 40 CFR 122.41(l)(6))

**Written Reports** – The permittee is required to provide the EPA a written report within five days of the time it became aware of any overflow that is subject to the immediate reporting provision. (See 40 CFR 122.41(l)(6)(i)).

**Third Party Notice** – The permit requires that the permittee establish a process to notify specified third parties of SSOs that may endanger health due to a likelihood of human exposure; or unanticipated bypass and upset that exceeds any effluent limitation in the permit or that may endanger health due to a likelihood of human exposure. The permittee is required to develop, in consultation with appropriate authorities at the local, county, and/or state level, a plan that describes how, under various overflow (and unanticipated bypass and upset) scenarios, the public, as well as other entities, would be notified of overflows that may endanger health. The plan should identify all overflows that would be reported and to whom, and the specific information that would be reported. The plan should include a description of lines of communication and the identities of responsible officials. (See 40 CFR 122.41(l)(6)).

**Record Keeping** – The permittee is required to keep records of SSOs. The permittee must retain the reports submitted to the EPA and other appropriate reports that could include work orders associated with investigation of system problems related to a SSO, that describes the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the SSO. (See 40 CFR 122.41(j)).

**Proper Operation and Maintenance** – The permit requires proper operation and maintenance of the collection system. (See 40 CFR 122.41(d) and (e)). SSOs may be indicative of improper operation and maintenance of the collection system. The permittee may consider the development and implementation of a capacity, management, operation and maintenance (CMOM) program.

The permittee may refer to Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems (EPA 305-B-05-002). This guide identifies some of the criteria used by EPA inspectors to evaluate a collection

system's management, operation and maintenance program activities. Owners/operators can review their own systems against the checklist (Chapter 3) to reduce the occurrence of sewer overflows and improve or maintain compliance.

**E. Permit Expiration**

The permit will expire five years from the effective date.

**IX. References**

EPA. 1991. *Technical Support Document for Water Quality-based Toxics Control*. US Environmental Protection Agency, Office of Water, EPA/505/2-90-001.

EPA. 1996. *Interim Guidance for Performance-based Reduction of NPDES Permit Monitoring Frequencies*.

## Appendix A: Facility Information

### General Information

NPDES ID Number: ID0020303

Physical Address: 4297 Glenbrook Drive, Hailey, ID 83333

Mailing Address: 115 S. Main Street, Suite H, Hailey, ID 83333

Facility Background: The most recent NPDES permit for the City of Hailey was issued on May 9, 2001, became effective on June 11, 2001 and expired on June 12, 2006. The first NPDES permit was issued to this facility in December 1973. EPA received a timely and complete application for renewal of this NPDES permit. According to 40 CFR 122.6, when EPA receives a timely and complete application for renewal of an NPDES permit, the conditions of the expired permit continue in force until the effective date of a new permit.

### Facility Information

Type of Facility: Publicly Owned Treatment Works (POTW)

Treatment Train: Influent pumps, bar screen, grit removal, sequencing batch reactors, equalization basin, cloth filters, ultraviolet disinfection.

Flow: Design flow is 1.6 mgd. The maximum daily flow from January 2005 – May 2010 was 1.26 mgd.

Outfall Location: latitude 43E 28' 42" N; longitude 114E 16' 48" W

### Receiving Water Information

Receiving Water: Big Wood River

Watershed: Big Wood River (HUC 17040219)

Beneficial Uses: Cold water aquatic life, salmonid spawning, domestic water supply, primary contact recreation, industrial and agricultural water supply, wildlife habitats, and aesthetics.



## Appendix C: Basis for Effluent Limits

The following discussion explains in more detail the statutory and regulatory basis for the technology and water quality-based effluent limits in the draft permit. Part A discusses technology-based effluent limits, Part B discusses water quality-based effluent limits in general, and Part C discusses facility specific water quality-based effluent limits.

### A. Technology-Based Effluent Limits

#### *Federal Secondary Treatment Effluent Limits*

The CWA requires POTWs to meet requirements based on available wastewater treatment technology. Section 301 of the CWA established a required performance level, referred to as “secondary treatment,” which all POTWs were required to meet by July 1, 1977. EPA has developed and promulgated “secondary treatment” effluent limitations, which are found in 40 CFR 133.102. These technology-based effluent limits apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by application of secondary treatment in terms of BOD<sub>5</sub>, TSS, and pH. The federally promulgated secondary treatment effluent limits are listed in Table C-1.

Parameter	Average Monthly Limit	Average Weekly Limit	Range
BOD <sub>5</sub>	30 mg/L	45 mg/L	—
TSS	30 mg/L	45 mg/L	—
Removal Rates for BOD <sub>5</sub> and TSS	85% (minimum)	—	—
pH	—	—	6.0 – 9.0 s.u.

#### *Chlorine*

The City of Hailey does not use chlorine for disinfection. Therefore, no technology-based chlorine effluent limits are applicable to this discharge.

#### *Mass-Based Limits*

The federal regulation at 40 CFR 122.45(f) requires that effluent limits be expressed in terms of mass, if possible. The regulation at 40 CFR 122.45(b) requires that effluent limitations for POTWs be calculated based on the design flow of the facility. The mass based limits are expressed in pounds per day and are calculated as follows:

$$\text{Mass based limit (lb/day)} = \text{concentration limit (mg/L)} \times \text{design flow (mgd)} \times 8.34^1$$

#### *Use of Technology-based Effluent Limits in the Draft Permit*

The concentration and removal rate limits for BOD<sub>5</sub> and TSS are the technology-based effluent limits of 40 CFR 133.102. However, the mass limits for BOD<sub>5</sub> and TSS are more stringent than the technology-based effluent limits. The mass limits for TSS are water quality-based effluent

<sup>1</sup> 8.34 is a conversion factor equal to the density of water in pounds per gallon

limits that are consistent with the assumptions and requirements of the wasteload allocation for the discharge in the *Big Wood River Watershed Management Plan*. The BOD<sub>5</sub> mass limits are identical to the limits in the prior permit. The limits were originally based on a 1996 antidegradation analysis by Idaho DEQ and have been continued forward based on the anti-backsliding provisions of the Clean Water Act (Section 402(o)).

## **B. Water Quality-based Effluent Limits**

### ***Statutory and Regulatory Basis***

Section 301(b)(1)(C) of the CWA requires the development of limitations in permits necessary to meet water quality standards by July 1, 1977. Discharges to State or Tribal waters must also comply with limitations imposed by the State or Tribe as part of its certification of NPDES permits under section 401 of the CWA. Federal regulations at 40 CFR 122.4(d) prohibit the issuance of an NPDES permit that does not ensure compliance with the water quality standards of all affected States. The NPDES regulation (40 CFR 122.44(d)(1)) implementing Section 301(b)(1)(C) of the CWA requires that permits include limits for all pollutants or parameters which are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State or Tribal water quality standard, including narrative criteria for water quality, and that the level of water quality to be achieved by limits on point sources is derived from and complies with all applicable water quality standards.

The regulations require the permitting authority to make this evaluation using procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant in the effluent, species sensitivity (for toxicity), and where appropriate, dilution in the receiving water. The limits must be stringent enough to ensure that water quality standards are met, and must be consistent with any available wasteload allocation.

### ***Reasonable Potential Analysis***

When evaluating the effluent to determine if water quality-based effluent limits are needed, based on numeric criteria, EPA projects the receiving water concentration (downstream of where the effluent enters the receiving water) for each pollutant of concern. EPA uses the concentration of the pollutant in the effluent and receiving water and, if appropriate, the dilution available from the receiving water, to project the receiving water concentration. If the projected concentration of the pollutant in the receiving water exceeds the numeric criterion for that specific chemical, then the discharge has the reasonable potential to cause or contribute to an exceedance of the applicable water quality standard, and a water quality-based effluent limit is required.

Sometimes it is appropriate to allow a small area of the receiving water to provide dilution of the effluent. These areas are called mixing zones. Mixing zone allowances will increase the mass loadings of the pollutant to the water body and will decrease treatment requirements. Mixing zones can be used only when there is adequate receiving water flow volume and when the receiving water meets the criteria necessary to protect the designated uses of the water body. Mixing zones must be authorized by IDEQ. Based on the previous permit, the mixing zone recommendations of EPA's *Water Quality Standards Handbook: Second Edition*, and the draft certification, the water quality-based effluent limits in this permit have been calculated using a

mixing zone. If IDEQ does not grant a mixing zone, the water quality-based effluent limits will be recalculated such that the criteria are met before the effluent is discharged to the receiving water.

### ***Procedure for Deriving Water Quality-based Effluent Limits***

The first step in developing a water quality-based effluent limit is to develop a wasteload allocation (WLA) for the pollutant. A wasteload allocation is the concentration or loading of a pollutant that the permittee may discharge without causing or contributing to an exceedance of water quality standards in the receiving water.

In cases where a mixing zone is not authorized, either because the receiving water already exceeds the criterion, the receiving water flow is too low to provide dilution, or the State does not authorize one, the criterion becomes the WLA. Establishing the criterion as the wasteload allocation ensures that the permittee will not cause or contribute to an exceedance of the criterion. The following discussion details the specific water quality-based effluent limits in the draft permit.

Once a WLA is developed, EPA calculates effluent limits which are protective of the WLA using statistical procedures described in Appendix E.

## **C. Facility-Specific Water Quality-based Limits**

### ***Total Phosphorus***

Federal regulations require that “effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge” in a total maximum daily load (TMDL) that has been prepared by the State and approved by EPA. The Big Wood River Watershed Management Plan is a TMDL that was approved by EPA on May 15, 2002. The TMDL’s wasteload allocation for total phosphorus for this discharge was 5.2 lb/day.

In the TMDL, the loading capacity was calculated using the annual average river flow and the maximum monthly average in-stream target of 50 µg/L (0.05 mg/L) total phosphorus (see the TMDL at page 62). Federal regulations require that effluent limits for POTWs be expressed as average monthly and average weekly limits, unless impracticable (40 CFR 122.45(d)(1)). Therefore, it is consistent with the assumptions and requirements of the phosphorus wasteload allocation to establish an average monthly effluent limit equal to the wasteload allocation. Consistent with the technology-based effluent limits for BOD<sub>5</sub> and TSS, EPA has established an average weekly limit equal to 1.5 times the maximum daily limit.

### ***Metals***

The toxicities of some metals vary with the hardness of the water. Therefore, the water quality criteria for these metals also vary with hardness. Since toxicity decreases (and numeric water quality criteria increase) as hardness increases, EPA has used the 5<sup>th</sup> percentile as a worst-case assumption for ambient hardness. The 5<sup>th</sup> percentile ambient hardness is 90.6 mg/L as CaCO<sub>3</sub>. Effluent hardness data were not available.

The hardness-dependent water quality criteria for the metals of concern are expressed as dissolved metal. The dissolved fraction of the metal is the fraction that will pass through a 0.45-micron filter. However, the federal regulation at 40 CFR 122.45(c) requires that NPDES permit effluent limits must be expressed as total recoverable metal. Total recoverable metal is the concentration of the metal in an unfiltered sample. To develop effluent limits for total recoverable metals which are protective of the dissolved metals criteria, “translators” are used in the equations to determine reasonable potential and derive effluent limits. Translators can either be site specific values or default values. EPA has published guidance related to the use of translators in NPDES permits in *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion* (EPA 823-B-96-007, June 1996). In the absence of site-specific translators, this guidance recommends the use of water quality criteria conversion factors as the default translators. Because site-specific translators were not available, EPA has used the conversion factors in the Idaho Water Quality Standards in the reasonable potential and effluent limit calculations for the City of Hailey discharge. The only hardness-dependent metal that has been measured in the City’s discharge is copper. Table C-2, below, details the calculations for water quality criteria for copper (see also IDAPA 58.01.02.210).

Table C-2: Aquatic Life Metals Criteria				
Parameter	Equations for Metals Criteria (expressed as total recoverable) <sup>1,2,3</sup>		Equations or Values of Conversion Factors and Translators <sup>4</sup>	
	Acute	Chronic	Acute	Chronic
Copper	$e^{0.9422[\ln(\text{hardness})]-1.464}$	$e^{0.8545[\ln(\text{hardness})]-1.465}$	0.960	0.960
Notes:				
1. “e” is the exponential constant, approximately equal to 2.718				
2. “ln” is the natural logarithm (log base “e”)				
3. Hardness is measured in mg/L as CaCO <sub>3</sub>				
4. Multiplying the results of the criteria equations by these conversion factors yields the dissolved criteria.				

At a hardness of 90.6 mg/L as CaCO<sub>3</sub>, the numeric water quality criteria for copper are equal to 15.5 µg/L (acute) and 10.4 µg/L (chronic). EPA has determined that the discharge does not have reasonable potential to cause or contribute to violations of Idaho’s water quality criteria for copper. Therefore the draft permit does not include an effluent limit for copper.

**pH**

The most stringent water quality criterion for pH is for the protection of aquatic life. The pH criteria for aquatic life uses state that the pH must be no less than 6.5 and no greater than 9.0 standard units (IDAPA 58.01.02.250.01.a). Mixing zones are generally not granted for pH, therefore the most stringent water quality criterion must be met before the effluent is discharged to the receiving water. The draft permit requires that the effluent have a pH of no less than 6.5 and no greater than 9.0 standard units. Effluent data indicate that the permittee will have no difficulty in complying with these effluent limits.



### Ammonia

The Idaho water quality standards contain criteria for the protection of aquatic life from the toxic effects of ammonia. Because the Snake River is designated for salmonid spawning, EPA has applied ammonia criteria which are protective of salmonids, including early life stages. The criteria are dependent on pH and temperature, because the fraction of ammonia present as the toxic, un-ionized form increases with increasing pH and temperature. Therefore, the criteria become more stringent as pH and temperature increase. The following table details the equations used to determine water quality criteria for ammonia, and the values of these equations at the 95<sup>th</sup> percentile pH, which is 8.5 standard units, and the 95<sup>th</sup> percentile temperature observed in the Big Wood River upstream from the discharge, which is 15.7 °C.

EPA has determined that the ammonia effluent limits in the previous permit will ensure compliance with Idaho's water quality criteria for ammonia. Therefore, the previous permit's ammonia effluent limits have been retained under the anti-backsliding provisions of the Clean Water Act (Section 402(o)).

<b>Table C-4: Water Quality Criteria for Ammonia</b>		
	<b>Acute Criterion<sup>1</sup></b>	<b>Chronic Criterion<sup>2</sup></b>
<b>Equations:</b>	$\frac{0.275}{1+10^{7.204-pH}} + \frac{39}{1+10^{pH-7.204}}$	$\left( \frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}} \right) \times \text{MIN}(2.85, 1.45 \times 10^{0.028 \times (25-T)})$
<b>Results:</b>	2.1	1.01
1. No seasonal variation was assumed for pH, therefore, there is no seasonal variation in the acute criterion (which is a function of pH only).		

### E. Coli

#### Concentration Limits

The Idaho water quality standards state that waters of the State of Idaho that are designated for recreation are not to contain E. coli bacteria in concentrations exceeding a geometric mean of 126 organisms per 100 ml based on a minimum of five samples taken every three to seven days over a thirty day period. Therefore, the draft permit contains a monthly geometric mean effluent limit for E. coli of 126 organisms per 100 ml, and a minimum sampling frequency of five grab samples per month (IDAPA 58.01.02.251.01.a.).

The Idaho water quality standards also state that a water sample that exceeds certain "single sample maximum" values indicates a likely exceedance of the geometric mean criterion, although it is not, in and of itself, a violation of water quality standards. For waters designated for primary contact recreation, the "single sample maximum" value is 406 organisms per 100 ml (IDAPA 58.01.02.251.01.b.ii.).

The goal of a water quality-based effluent limit is to ensure a low probability that water quality standards will be exceeded in the receiving water as a result of a discharge, while considering the variability of the pollutant in the effluent (see TSD at Section 5.3.1). Because a single sample value exceeding 406 organisms per 100 ml indicates a likely exceedance of the geometric mean criterion, EPA has imposed an instantaneous (single grab sample) maximum effluent limit for E. coli of 406 organisms per 100 ml, in addition to a monthly geometric mean limit of 126 organisms per 100 ml, which directly implements the water quality criterion for E. coli. This will ensure that the discharge will have a low probability of exceeding water quality standards for E. coli.

Regulations at 40 CFR 122.45(d)(2) require that effluent limitations for continuous discharges from POTWs be expressed as average monthly and average weekly limits, unless impracticable. The terms “average monthly limit” and “average weekly limit” are defined in 40 CFR 122.2 as being arithmetic (as opposed to geometric) averages. It is impracticable to properly implement a 30-day geometric mean criterion in a permit using monthly and weekly arithmetic average limits. The geometric mean of a given data set is equal to the arithmetic mean of that data set if and only if all of the values in that data set are equal. Otherwise, the geometric mean is always less than the arithmetic mean. In order to ensure that the effluent limits are “derived from and comply with” the geometric mean water quality criterion, as required by 40 CFR 122.44(d)(1)(vii)(A), it is necessary to express the effluent limits as a monthly geometric mean and an instantaneous maximum limit.

#### CFU/Day Limits

Federal regulations require that “effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge” in a total maximum daily load (TMDL) that has been prepared by the State and approved by EPA. The Big Wood River Watershed Management Plan is a TMDL that was approved by EPA on May 15, 2002. The TMDL was modified by IDEQ in November 2011, and the modification was approved by EPA in February 2012. The modified TMDL’s wasteload allocation for E. coli for this discharge is 7.63 billion ( $7.63 \times 10^9$ ) CFU/day.

In the TMDL, the loading capacity was calculated using the annual average river flow and the maximum monthly geometric mean in-stream target of 126 CFU/100 ml total phosphorus (see the TMDL at Page 63). Therefore, it is appropriate to establish a monthly geometric mean effluent limit equal to the wasteload allocation.

#### ***Floating, Suspended and Submerged Matter***

The State of Idaho has a narrative water quality criterion which reads “Surface waters of the state shall be free from floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses (IDAPA 58.01.02.200.05).” This criterion has been included in the permit as a narrative effluent limit.

#### ***Total Suspended Solids***

The TSS mass limits are water quality-based effluent limits which are more stringent than the technology-based effluent limits, and have been included for consistency with the *Big Wood River Watershed Management Plan* (IDEQ 2002), which is a TMDL that was prepared by Idaho DEQ and approved by EPA. NPDES permits must contain water quality-based effluent limits that are consistent with the assumptions and requirements of any available wasteload allocation in an EPA-approved TMDL (40 CFR 122.44(d)(1)(vii)(B)). The wasteload allocation for TSS in the Watershed Management Plan is 3.3 tons per year (see the Watershed Management Plan at Table BBB). On a daily basis, the wasteload allocation is equivalent to 18 lb/day.

The goal of a water quality-based effluent limit is to ensure a low probability that water quality standards will be exceeded in the receiving water as a result of a discharge, while considering the variability of the pollutant in the effluent (see TSD at Section 5.3.1). The average monthly and

average weekly loading limits for TSS are calculated based on the annual total wasteload allocation as well as the variability of the effluent TSS load, using the relationship shown in Table 5-2 of the TSD.

The average monthly limit is 45 lb/day, which is calculated as 2.51 times the wasteload allocation translated to a daily load. The monthly average effluent limits will nonetheless ensure that the facility will have a low probability of exceeding its 3.3 ton-per-year wasteload allocation because facilities must generally operate below their average monthly limits most of the time in order to ensure consistent compliance (see TSD at figure 5-3). Therefore, the TSS effluent limits are consistent with the assumptions and requirements of the wasteload allocation.

The draft permit also proposes an average weekly limit equal to 68 lb/day, which is 1.5 times the average monthly limit (consistent with the technology-based concentration limits). Thus, the monthly and weekly effluent limits for TSS are consistent with the assumptions and requirements of the wasteload allocation in the *Big Wood River Watershed Management Plan*, as required by 40 CFR 122.44(d)(1)(vii)(B).

**Temperature**

There are insufficient data to determine if the discharge has the reasonable potential to cause or contribute to excursions above water quality standards for temperature. Therefore, no effluent limits are proposed for temperature.

The State of Idaho’s draft Clean Water Act Section 401 certification for the City of Hailey requires hourly monitoring of the receiving water temperature, upstream and downstream of the outfall, from April through October each year. EPA is required to incorporate requirements specified in Section 401 certifications into NPDES permits (40 CFR 124.55(a)(2)). Therefore, the draft permit proposes hourly monitoring of the receiving water temperature, upstream and downstream of the outfall, from April through October each year.

The draft permit also proposes continuous monitoring of the effluent temperature, from April through October.

**D. Summary of Limits and Bases**

The following table summarizes the general statutory and regulatory bases for the limits in the draft permit

<b>Table C-5 Summary of Effluent Limit Bases</b>	
<b>Limited Parameter</b>	<b>Basis for Limit</b>
BOD <sub>5</sub> and TSS Concentration and Removal Rate	Clean Water Act (CWA) Section 301(b)(1)(B), 40 CFR 133 (technology-based)
BOD <sub>5</sub> Load	CWA Section 402(o) (anti-backsliding)
TSS Load	CWA Section 301(b)(1)(C), 40 CFR 122.44(d)(1)(vii)(B) (water quality-based, TMDL)
Floating, Suspended or Submerged Matter	CWA Section 301(b)(1)(C), 40 CFR 122.44(d), IDAPA 58.01.02.200.05 (water quality-based)
pH	CWA Sections 301(b)(1)(C) and 402(o), 40 CFR 122.44(d), IDAPA 58.01.02.250.01.a. (water quality-based and anti-backsliding)
E. Coli Concentration	CWA Sections 301(b)(1)(C) and 402(o), 40 CFR 122.44(d), IDAPA 58.01.02.251.01 (water quality-based and anti-backsliding)
E. Coli Load	CWA Sections 301(b)(1)(C) 40 CFR 122.44(d)(1)(vii)(B) (water quality-based, TMDL)

<b>Table C-5 Summary of Effluent Limit Bases</b>	
<b>Limited Parameter</b>	<b>Basis for Limit</b>
Ammonia	CWA Section 402(o) (anti-backsliding)
Phosphorus	CWA Section 301(b)(1)(C), 40 CFR 122.44(d)(1)(vii)(B) (water quality-based, TMDL)

## Appendix D: Reasonable Potential Calculations

The following describes the process EPA has used to determine if the discharge authorized in the draft permit has the reasonable potential to cause or contribute to a violation of Idaho's federally approved water quality standards. EPA uses the process described in the *Technical Support Document for Water Quality-based Toxics Control* (EPA, 1991) to determine reasonable potential.

To determine if there is reasonable potential for the discharge to cause or contribute to an exceedance of water quality criteria for a given pollutant, EPA compares the maximum projected receiving water concentration to the water quality criteria for that pollutant. If the projected receiving water concentration exceeds the criteria, there is reasonable potential, and a water quality-based effluent limit must be included in the permit. This section discusses how the maximum projected receiving water concentration is determined.

### A. Mass Balance

For discharges to flowing water bodies, the maximum projected receiving water concentration is determined using the following mass balance equation:

$$C_d Q_d = C_e Q_e + C_u Q_u \quad (\text{Equation D-1})$$

where,

$C_d$  = Receiving water concentration downstream of the effluent discharge (that is, the concentration at the edge of the mixing zone)

$C_e$  = Maximum projected effluent concentration

$C_u$  = 95th percentile measured receiving water upstream concentration

$Q_d$  = Receiving water flow rate downstream of the effluent discharge =  $Q_e + Q_u$

$Q_e$  = Effluent flow rate (set equal to the design flow of the WWTP)

$Q_u$  = Receiving water low flow rate upstream of the discharge (1Q10, 7Q10 or 30B3)

When the mass balance equation is solved for  $C_d$ , it becomes:

$$C_d = \frac{C_e Q_e + C_u Q_u}{Q_e + Q_u} \quad (\text{Equation D-2})$$

The above form of the equation is based on the assumption that the discharge is rapidly and completely mixed with the receiving stream, and 100% of the stream flow is available for mixing, under the State's mixing zone policies. If the mixing zone is based on less than complete mixing with the receiving water, the equation becomes:

$$C_d = \frac{C_e Q_e + C_u (Q_u \times MZ)}{Q_e + (Q_u \times MZ)} \quad (\text{Equation D-3})$$

Where MZ is the fraction of the receiving water flow available for dilution. The Idaho water quality standards generally limit mixing zones to 25% of the volume of the stream flow. EPA's Water Quality Standards Handbook Second Edition states that mixing zones "must be limited to an area or volume as small as practicable." In order to ensure that the mixing zones used in the

reasonable potential analysis are as small as practicable, in general, the mixing zones were limited to 10% of the critical stream flow volume. EPA has determined that, if a mixing zone encompassing 20% of the critical stream flow volume is used in the reasonable potential analysis, the City of Hailey does not have the reasonable potential to cause or contribute to excursions above water quality standards for copper. Because 20% of the stream volume is less than the 25% generally allowed by the Idaho water quality standards, EPA has used a mixing zone encompassing 20% of the critical stream flow volume, for the reasonable potential analysis for copper.

If a mixing zone is not allowed, dilution is not considered when projecting the receiving water concentration and,

$$C_d = C_e \quad \text{(Equation D-4)}$$

Equation D-2 can be simplified by introducing a “dilution factor,”

$$D = \frac{Q_e + 0.1 \times Q_u}{Q_e} \quad \text{(Equation D-5)}$$

There are multiple values for the dilution factor, which depend on the receiving stream flow used and what fraction of it is available for mixing. Dilution factors for acute aquatic life criteria are based on the 1Q10 flow rate in the receiving stream, one based on the 7Q10 flow rate to determine reasonable potential and wasteload allocations chronic aquatic life criteria (except for ammonia) and conventional pollutants, one based on the 30B3 flow rate to determine reasonable potential and wasteload allocations for the chronic ammonia criterion, one based on the 30Q5 flow rate and used to determine reasonable potential and wasteload allocations for human health criteria for non-carcinogens, and one based on the harmonic mean flow rate and used to determine reasonable potential and wasteload allocations for human health criteria for carcinogens. All dilution factors are calculated with the effluent flow rate set equal to the design flow of 2.48 CFS (1.6 mgd). The dilution factors are listed in Table D-1, below.

<b>Table D-1: Dilution Factors</b>					
<b>Mixing Zone</b>	<b>Acute Dilution Factor (1Q10)</b>	<b>Chronic Dilution Factor (7Q10)</b>	<b>Chronic Ammonia Criterion Dilution Factor (30B3)</b>	<b>Human Health Non-Carcinogen Dilution Factor (30Q5)</b>	<b>Human Health Carcinogen Dilution Factor (Harmonic Mean)</b>
10% of Critical Flow (Except Copper)	3.82	4.55	4.90	5.48	9.52
20% of Critical Flow (Copper)	6.65	8.11	N/A	N/A	N/A

After the dilution factor simplification, Equation D-2 becomes:

$$C_d = \frac{C_e - C_u}{D} + C_u \quad \text{(Equation D-6)}$$

If the criterion is expressed as dissolved metal, the effluent concentrations, which are measured in total recoverable metal, must be converted to dissolved metal as shown in Equation D-7.

$$C_d = \left[ \frac{CF \times C_e - C_u}{D} \right] + C_u \quad (\text{Equation D-7})$$

Where  $C_e$  is expressed as total recoverable metal,  $C_u$  and  $C_d$  are expressed as dissolved metal, and CF is a conversion factor used to convert between dissolved and total recoverable metal.

Equations D-6 and D-7 are the forms of the mass balance equation which were used to determine reasonable potential and calculate wasteload allocations.

## B. Maximum Projected Effluent Concentration

For ammonia, EPA has used maximum daily limits in the 2001 permit as the maximum projected effluent concentration. The previous permit's effluent limits are used in this manner because, in general, the anti-backsliding provisions of the Clean Water Act (Section 402(o)) require that effluent limits in reissued permits be at least as stringent as the effluent limits in the previous permit. If a discharge at the maximum limits in the previous permit would not result in excursions above water quality standards, then the previous permit's effluent limits may be retained.

To calculate the maximum projected effluent concentration for copper and mercury, EPA has used the procedure described in section 3.3 of the TSD, "Determining the Need for Permit Limits with Effluent Monitoring Data." In this procedure, the 99<sup>th</sup> percentile of the effluent data is the maximum projected effluent concentration in the mass balance equation.

Since there are a limited number of data points available, the 99<sup>th</sup> percentile is calculated by multiplying the maximum reported effluent concentration by a "reasonable potential multiplier" (RPM). The RPM is the ratio of the 99<sup>th</sup> percentile concentration to the maximum reported effluent concentration. The RPM is calculated from the coefficient of variation (CV) of the data and the number of data points. The CV is defined as the ratio of the standard deviation of the data set to the mean.

Using the equations in section 3.3.2 of the TSD, the reasonable potential multiplier (RPM) is calculated based on the CV and the number of samples in the data set as follows. The following discussion presents the equations used to calculate the RPM, and also works through the calculations for the RPM for copper as an example. Reasonable potential calculations for all pollutants can be found in Table D-2.

First, the percentile represented by the highest reported concentration is calculated.

$$p_n = (1 - \text{confidence level})^{1/n} \quad (\text{Equation D-8})$$

where,

$p_n$  = the percentile represented by the highest reported concentration

$n$  = the number of samples

confidence level = 99% = 0.99

The data set contains 23 copper samples collected from the effluent, therefore:

$$p_n = (1 - 0.99)^{1/23}$$

$$p_n = 0.819$$

This means that we can say, with 99% confidence, that the maximum reported effluent copper concentration is greater than the 81<sup>st</sup> percentile.

The reasonable potential multiplier (RPM) is the ratio of the 99th percentile concentration (at the 99% confidence level) to the maximum reported effluent concentration. This is calculated as follows:

$$\text{RPM} = C_{99}/C_p \quad (\text{Equation D-9})$$

Where,

$$C = \exp(z\sigma - 0.5\sigma^2) \quad (\text{Equation D-10})$$

Where,

$$\sigma^2 = \ln(\text{CV}^2 + 1) \quad (\text{Equation D-11})$$

$$\sigma = \sqrt{\sigma^2}$$

CV = coefficient of variation = (standard deviation) ÷ (mean)

z = the inverse of the normal cumulative distribution function at a given percentile

In the case of copper:

CV = coefficient of variation = 0.588

$$\sigma^2 = \ln(\text{CV}^2 + 1) = 0.297$$

$$\sigma = \sqrt{\sigma^2} = 0.545$$

z = 2.326 for the 99<sup>th</sup> percentile = 0.910 for the 81<sup>st</sup> percentile

$$C_{99} = \exp(2.326 \times 0.545 - 0.5 \times 0.297) = 3.06$$

$$C_{81} = \exp(0.910 \times 0.545 - 0.5 \times 0.297) = 1.42$$

$$\text{RPM} = C_{99}/C_{81} = 3.06/1.42$$

$$\text{RPM} = \mathbf{2.16}$$

The maximum projected effluent concentration is determined by simply multiplying the maximum reported effluent concentration by the RPM:

$$C_e = (\text{RPM})(\text{MRC}) \quad (\text{Equation D-12})$$

where MRC = Maximum Reported Concentration

In the case of copper,

$$C_e = (2.16)(17.2 \mu\text{g/L}) = \mathbf{37.2 \mu\text{g/L}}$$

### C. Maximum Projected Receiving Water Concentration

The discharge has reasonable potential to cause or contribute to an exceedance of water quality criteria if the maximum projected concentration of the pollutant at the edge of the mixing zone exceeds the most stringent criterion for that pollutant. The maximum projected receiving water concentration is calculated from Equation D-6:



$$C_d = \frac{C_e - C_u}{D} + C_u \quad (\text{Equation D-6})$$

Or, if the criterion is expressed as dissolved metal, the maximum projected receiving water concentration is calculated from Equation D-7:

$$C_d = \left[ \frac{CF \times C_e - C_u}{D} \right] + C_u \quad (\text{Equation D-7})$$

Where  $C_e$  is expressed total recoverable metal,  $C_u$  and  $C_d$  are expressed as dissolved metal, and CF is the conversion factor. EPA was not able to locate any upstream ambient water quality data for copper. For the purposes of this analysis, EPA has assumed that the upstream ambient copper concentration is zero.

For copper the acute receiving water concentration is, in micrograms per liter:

$$C_d = \left[ \frac{0.960 \times 37.2 - 6.5}{6.65} \right] + 6.5 = 10.9$$

For copper the chronic receiving water concentration is, in micrograms per liter:

$$C_d = \left[ \frac{0.960 \times 37.2 - 6.5}{8.11} \right] + 6.5 = 10.1$$

The acute and chronic water quality criteria are 15.5 and 10.4  $\mu\text{g/L}$ , respectively. Because the projected receiving water concentrations are less than the criteria, water quality-based effluent limits are not necessary for copper.

Table D-2, below, summarizes the reasonable potential calculations for ammonia, copper, and mercury. It was not necessary to perform reasonable potential analyses for total Kjeldahl nitrogen, total phosphorus, total suspended solids, or biochemical oxygen demand, because effluent limits for these parameters are independently required by either technology-based requirements, to ensure consistency with the wasteload allocations in the *Big Wood River Watershed Management Plan*, antidegradation and anti-backsliding requirements, or a combination of the above. Parameters other than those named above have not been sampled for in the effluent.

Table D-2: Reasonable Potential Calculations

Effluent Percentile value	99%	State Water Quality Standard		Max concentration at edge of...													
	Ambient Concentration (metals as dissolved)	Acute	Chronic	Acute Mixing Zone	Chronic Mixing Zone	LIMIT REQ'D?		Max effluent conc. measured (metals as total recoverable)	Coeff Variation	s	# of samples	Multiplier	Acute Dil'n Factor	Chronic Dil'n Factor	COMMENTS	Metal Criteria Translator as decimal	Metal Criteria Translator as decimal
Parameter	ug/L	ug/L	ug/L	ug/L	ug/L		Pn	ug/L	CV		n					Acute	Chronic
Ammonia (Prev Limit) mg/L	0.1000	2.13	1.009	0.38	0.318	NO	N/A	1.17	N/A		N/A	1.00	3.82	4.90	10% Mixing Zone	1.00	1.00
Mercury	0.0050	2.10	0.012	0.00400	0.00416	NO	0.819	0.00038	0.932	0.791	23	3.06	3.82	4.55	10% Mixing Zone	1.00	1.00
Cu	6.5	15.5	10.4	10.90	10.10	NO	0.819	17.2	0.588	0.545	23	2.16	6.65	8.11	20% Mixing Zone	0.96	0.96

## Appendix E: Endangered Species Act

Section 7 of the Endangered Species Act (ESA) requires federal agencies to request a consultation with the National Oceanic and Atmospheric Administration (NOAA) Fisheries and the US Fish and Wildlife Service (USFWS) regarding potential effects that a federal action may have on listed endangered and threatened species.

In an e-mail dated January 21, 2009, NOAA Fisheries stated that there are no threatened or endangered species under NOAA's jurisdiction in the Snake River drainage upstream of the Hells Canyon Dam, which is located at river mile 247.5. The City of Hailey discharge is to the Big Wood River, which is a tributary to the Malad River, which is a tributary to the Snake River. The Malad River flows into the Snake River at river mile 571, about 324 miles upstream from the nearest occurrence of threatened or endangered species under NOAA's jurisdiction. Therefore, the reissuance of this permit will have no effect on any listed threatened or endangered species under NOAA's jurisdiction.

The subject discharge is located in Blaine County, Idaho. The USFWS county species list for Fremont County lists the following threatened and endangered species:

- Bull trout (*Salvelinus confluentus*) Listed Threatened
- Canada lynx (*Lynx canadensis*) Listed Threatened

Discharges of pollutants to surface waters have the potential to directly affect aquatic species such as the bull trout. According to *The Big Wood River Watershed Management Plan* (IDEQ 2002, Page 8), bull trout are not present in the Big Wood River subbasin. Therefore, the discharge will have no effect on bull trout.

EPA has also determined that the reissuance of an NPDES permit to the City of Hailey will have no effect on the Canada lynx. The Canada lynx is a terrestrial species, which is generally not susceptible to the water quality impacts that may result from the reissuance of an NPDES permit. The primary causes of the Canada lynx's decline are habitat destruction, overutilization for commercial, recreational, scientific, or educational purposes, and climate change (USFWS 2005). Reissuance of an NPDES permit to the City of Hailey will have no effect on habitat destruction, overutilization for commercial, recreational, scientific, or educational purposes, or climate change. Therefore, the issuance of this permit will have no effect on the Canada lynx.

### References

IDEQ. 2002. *The Big Wood River Watershed Management Plan*.

US Fish and Wildlife Service. 2005. "Recovery Outline for the Contiguous United States Distinct Population Segment of the Canada Lynx."

**Appendix F: Clean Water Act Section 401 Certification and  
Antidegradation Review**



## Idaho Department of Environmental Quality **DRAFT §401 Water Quality Certification**

February 3, 2012

NPDES Permit Number: **ID-0020303** City of Hailey Wastewater Treatment Plant

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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), and Idaho Code §§ 39-101 et.seq., and 39-3601 et.seq., the Idaho Department of Environmental Quality (DEQ) has authority to review National Pollution Discharge Elimination System (NPDES) permits and issue water quality certification decisions.

Based upon its review of the above-referenced permit and associated fact sheet, DEQ certifies that if the permittee comply with the terms and conditions imposed by the permit along with the conditions set forth in this water quality certification, then there is reasonable assurance the discharge 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 starting at 180 days after the effective date of the permit and continue for four (4) years at one (1) Big Wood River site (approved by DEQ) above the influence of the facility's discharge for: hardness (quarterly), pH (quarterly), temperature (hourly from April through October), total ammonia as nitrogen (quarterly), dissolved copper (quarterly), mercury (quarterly), and dissolved zinc (quarterly). In addition, the permittee must conduct hourly temperature monitoring (from April through October) at a location (approved by DEQ) downstream of the facility's discharge. The permittee must follow the conditions for surface water monitoring as defined in the NPDES permit (Part I.D).

### **Compliance Schedule for Total Phosphorus**

IDAPA 58.01.02.400.03 provides that compliance schedules may be allowed for water quality-based effluent limitations when new limitations are in the permit for the first time. The current

wastewater treatment facility for the City of Hailey cannot immediately achieve compliance with the final total phosphorus (TP) effluent limit as proposed in this draft permit. DEQ has met with City of Hailey staff on several occasions and has also conducted an assessment of the TP wasteload allocation issue. On May 26, 2009 DEQ formally wrote to the City of Hailey and denied the City's request to revise the Big Wood River TMDL and allow the 15 lbs/day TP limit to continue. Therefore, DEQ is authorizing the following compliance schedule:

1. The permittee must comply with all effluent limitations, with the exception of the final TP effluent limitation, and monitoring requirements in Part I.B of the NPDES permit beginning on the effective date of the permit.
2. Interim Limits. The permittee is authorized to discharge 15 lbs/day TP average monthly limit and 23 lbs/day TP average weekly limits as *interim* limits.
3. Final Limits. The permittee shall discharge 5.2 lbs/day TP average monthly limit and 7.8 lbs/day TP average weekly limit as *final* limits no later than four years and eleven months after the effective date of the permit.
4. The permittee must submit a progress report annually as summarized in Part II.C. of the NPDES permit.

The goal of this compliance schedule is to give the City of Hailey a reasonable amount of time to achieve the final effluent limits specified in Table 1 of the NPDES permit but also to accomplish compliance as soon as possible.

## **Mixing Zones**

Pursuant to IDAPA §58.01.02.060, the DEQ authorizes a mixing zone that utilizes 10% of the critical low flow volumes (7Q10 flow) of the Big Wood River for total ammonia and mercury. Furthermore, DEQ authorizes a mixing zone that utilizes 20% of the critical low flow volumes of the Big Wood River for copper.

## **Antidegradation**

Idaho's antidegradation policy (IDAPA 58.01.02.051.01) requires that existing uses of all waters in the state be maintained and protected (Tier 1 protection). In addition, where water quality exceeds levels necessary to support uses, then DEQ must assure that no degradation will occur unless, after allowing an opportunity for public comment and intergovernmental coordination, degradation is deemed to be necessary to accommodate important economic or social development (Tier 2 protection) (IDAPA 58.01.02.051.02).

The effluent limitations in the draft permit for the City of Hailey Wastewater Treatment Plant are set at levels which ensure the State's numeric and narrative criteria and other WQS provisions will be met and that comply with the *Big Wood River TMDL* (DEQ, 2006). The numeric and narrative criteria and TMDL wasteload allocations are set at levels which protect and maintain designated and existing beneficial uses. Therefore, in accordance with IDAPA 58.01.02.051.01,

the limits in the draft permit protect and maintain designated and existing uses in the Big Wood River.

See the attached Antidegradation Review for a more detailed discussion of the antidegradation analysis.

## **Other Conditions**

This 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 Dave Anderson or Balthasar Buhidar, DEQ (Twin Falls Regional Office) at (208) 736-2190.

DRAFT

Bill Allred  
Regional Administrator

**ANTIDegradation REVIEW**  
**NPDES Permit # ID-0020303**  
**City of Hailey Wastewater Treatment Facility**

Idaho Department of Environmental Quality  
February 3, 2012

*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). 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 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 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 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 Hailey Wastewater Treatment Facility (Hailey) discharges the following pollutants of concern: biological oxygen demand (BOD), total suspended solids (TSS), *E. coli*, pH, ammonia, phosphorus, nitrogen, copper, mercury, zinc, and temperature. Effluent limitations have been developed for BOD, TSS, *E. coli*, pH, total ammonia, total phosphorus, and total Kjeldahl nitrogen. Effluent limitations have not been developed for copper, mercury, zinc, or temperature; 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*

Hailey discharges to the Big Wood River assessment unit (AU) ID17040219SK004\_05. This AU 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.

The cold water aquatic life and salmonid spawning beneficial uses in this AU are impaired due to excess sediment/siltation (TSS) and total phosphorus (TP) (DEQ, 2010 Integrated Report). While 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 both phosphorus and sediment for the Big Wood River. In addition, the Big Wood TMDL contains bacteria WLA for Hailey. The effluent limitations and associated conditions contained in the Hailey permit and certification are set at levels that ensure compliance with the narrative and numeric criteria as well as the *Big Wood River TMDL* (DEQ, 2006). The proposed permit for Hailey contains effluent limits for total phosphorus, total suspended solids, and *E. coli* that are consistent with the TMDL. Therefore, DEQ has determined the permit will protect and maintain existing and designated beneficial uses in the Big Wood River.