Idaho Department of Environmental Quality

Draft §401 Water Quality Certification

August 27, 2012

NPDES Permit Number(s): #ID-002659-0 Hayden Area Regional Sewer Board Wastewater Treatment Facility (HARSB)

Receiving Water Body: Spokane River

Pursuant to the provisions of Section 401(a)(1) of the Federal Water Pollution Control Act (Clean Water Act), as amended; 33 U.S.C. 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 Pollutant 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 complies 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, 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.

Antidegradation Review

In March 2011, Idaho incorporated new provisions in Idaho Code § 39-3603 addressing antidegradation implementation. At the same time, Idaho adopted antidegradation implementation procedures in the Idaho WQS. 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).

- Tier 1 Protection. 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 those existing uses will be maintained and protected (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).
- Tier 2 Protection. 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 (IDAPA 58.01.02.051.02; 58.01.02.052.06).

- Tier 3 Protection. The third level of protection applies to water bodies that have been designated outstanding resource waters and requires that activities not cause a lowering of water quality (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

HARSB discharges the following pollutants of concern: carbonaceous biochemical oxygen demand (CBOD5), total suspended solids (TSS), pH, total phosphorus, E. coli, lead, zinc, cadmium, chlorine, and ammonia. Effluent limits have been developed for these pollutants of concern. Chloroform, copper, nitrate + nitrite, and whole effluent toxicity are additional pollutants of concern for which a reasonable potential analysis was performed. No effluent limits were established for these pollutants because results of the analysis indicated they had no reasonable potential to exceed water quality standards.

Receiving Water Body Level of Protection

HARSB discharges to the Spokane River assessment unit (AU) ID17010305PN004_04 (Coeur d'Alene Lake to Post Falls Dam). This AU has the following designated beneficial uses: cold water aquatic life, salmonid spawning, primary contact recreation, domestic, agricultural and industrial water supply, wildlife habitat, and aesthetics. There is no available information indicating the presence of any existing beneficial uses aside from those that are already designated.

The cold water aquatic life use in the Spokane River AU is not fully supported due to excess cadmium, lead, zinc and phosphorus (2010 Integrated Report). The primary contact recreation beneficial use has not been assessed; however, E. coli data collected in 2007 indicate that recreation uses are fully supported. As such, DEQ will provide Tier 1 protection only for the aquatic life use and Tier 2 protection, in addition to Tier 1, for the recreation beneficial use (Idaho Code §39-3603(2)(b)).

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 Clean Water Act, and requires demonstration 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 narrative and numeric criteria of the Idaho WQS, as well as other provisions of the WQS such as Section 055, which addresses water quality limited

waters. The numeric and narrative criteria in the WQS are set at levels that ensure protection of designated beneficial uses. The effluent limitations and associated requirements contained in the HARSB permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS.

Water bodies not supporting existing or designated beneficial uses must be identified as water quality limited, and a total maximum daily load (TMDL) must be prepared for those pollutants causing impairment. A central purpose of TMDLs is to establish wasteload allocations for point source discharges, which are set at levels designed to help restore the water body to a condition that supports existing and designated beneficial uses. Discharge permits must contain limitations that are consistent with wasteload allocations in the approved TMDL.

The WQS provide that until a TMDL or equivalent process is completed for a high priority water quality limited waterbody, the total load of the impairing pollutant must remain constant or decrease within the watershed. (IDAPA58.01.02.055.04). The cold water aquatic life use in the Spokane River AU is not fully supported due to excess cadmium, lead, zinc and phosphorus (2010 Integrated Report). In addition, the 2010 Integrated Report lists the Spokane River as high priority for TMDL development. Therefore, section 055.04 is applicable to the discharges of phosphorus, lead, zinc and cadmium.

Phosphorus

The restrictions on loading set forth in 055.04 are only applicable until a TMDL or equivalent process is completed. DEQ believes a process equivalent to a TMDL has been completed for phosphorus. In order to meet Washington and Idaho WQS, EPA modeled the cumulative impact of all sources of nutrients and oxygen-demanding pollutants, both point and non-point sources, in Idaho and Washington for the Spokane River. The limits EPA has set in the draft permits for the point sources in Idaho, including the HARSB permit, are based upon this modeling analysis. The proposed effluent limits will result in a concentration of 9.1 μg/L of TP in the Idaho portion of the Spokane River. This level meets or exceeds Idaho's narrative criteria for excess nutrients. (See IDAPA 58.01.02.200.06). In summary, equivalent to a TMDL, EPA has calculated the loading from point and non-point sources, and set limits that will attain WQS for phosphorus in Idaho. Therefore, the effluent limits in the draft permit are consistent with section 055.04.

Cadmium, Zinc and Lead

In August 2000, EPA approved a TMDL prepared by DEQ for cadmium, lead and zinc in the CDA River Basin, which included the Spokane River. The TMDL included allocations for the point source dischargers to the Spokane River, including HARSB. However, this TMDL was invalidated by the Idaho Supreme Court in 2003. There has been no more recent effort by DEQ to develop a TMDL for metals in the Spokane River, and therefore, the river is still on the state's 303d list for metals and is identified as a high priority water body for TMDL development. Thus, the load restrictions in 055.04 apply to the metals discharged to the Spokane River.

The intent of section 055.04 is to ensure that water quality is at least maintained at current levels, until DEQ can make a determination, through a TMDL or equivalent process, regarding reductions necessary to attain WQS. To achieve this goal, Section 055.04 requires that the "load" of the impairing pollutant remain constant or decrease in the watershed. "Load" is not defined in the Idaho WQS. In the context of a TMDL, however, load is typically defined as an

amount of matter, and usually expressed as mass per time (see 40 CFR 130.2(e) (definition of "load") and 40 CFR 130.2(i) (definition of "TMDL")). Loading is expressed in a NPDES permit as a mass-based limit (40CFR 122.45(f)). Therefore, the mass-based limits for the applicable metals in the reissued Spokane River NPDES permits must be kept constant in order to comply with section 055.04.

In the draft NPDES permit for HARSB, EPA has retained the loading limits for lead and zinc that were in the 1999 permit. These limits ensure compliance with section 055.04. However, the draft permit does not contain cadmium limits. In order to ensure compliance with section 055.04, DEQ has included in the draft certification cadmium limits that reflect HARSB's current cadmium loading using the 1999 design flow. Table 1 provides a summary of the existing permit limits and the proposed reissued permit limits, including effluent limitations for cadmium specified in the draft 401 certification.

Section 055.04 provides that once a TMDL or equivalent process is completed, the discharge of causative pollutants must be consistent with the TMDL or equivalent process. Therefore, once a TMDL for metals is completed by DEQ for the Spokane River and approved by EPA, the limits for metals in the permit, including the loading limits discussed herein, should be adjusted to reflect the approved TMDL.

In summary, the effluent limitations and associated requirements contained in the HARSB permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS. Therefore, DEQ has determined the permit will protect and maintain existing and designated beneficial uses in the Spokane River.

Table 1. Summary of the current permit limits and the proposed or reissued permit limits.

		Proposed Permit			**Current Permit**			**Change**[1]
Parameter	Units	Average Monthly Limit	Average Weekly Limit	Maximum Daily	Average Monthly Limit	Average Weekly Limit	Maximum Daily	
Pollutants with limits in both the current and proposed permit								
C BOD_5 November-January	*mg/L*	*25*	*40*	*-*	*30*	*45*	*-*	*I*[2]
	lb/day	*500*	*801*	*-*	*375*	*563*	*-*	
	% removal	*85%*	*-*	*-*	*85%*	*-*	*-*	
C BOD_5 February-October contin. discharge	*mg/L*	*25*	*40*	*-*	*30*	*45*	*-*	*d*
	lb/day	*101*	*162*	*-*	*375*	*563*	*-*	
	% removal	*85%*	*-*	*-*	*85%*	*-*	*-*	
C BOD_5 February-October not contin. discharge	*mg/L*	*25*	*40*	*-*	*30*	*45*	*-*	*d*
	lb/day	*77.4 seasonal average*		*-*	*375*	*563*	*-*	
	% removal	*85%*	*-*	*-*	*85%*	*-*	*-*	
TSS	*mg/L*	*30*	*45*	*-*	*30*	*45*	*-*	*I*[2]
	lb/day	*600*	*901*	*-*	*375*	*563*	*-*	
	% removal	*85%*	*-*	*-*	*85%*	*-*	*-*	
pH October-May	*s.u.*	*6.2 – 9.0 all times*			*6.0 – 9.0 all times*			*d*
pH June-Sept ≤2,000CFS	*s.u.*	*6.4 – 9.0 all times*			*6.0 – 9.0 all times*			*I*[2]
pH June-Sept >2,000CFS	*s.u.*	*6.0-9.0 all times*			*6.0-9.0 all times*			*nc*
E. coli	*#/100 mL*	*126*	*-*	*406*	*-*	*-*	*-*	*nc*[3]
Fecal coliform[3] *May-Sept*	*#/100 mL*	*-*	*-*	*-*	*50*	*200*	*500*	*nc*[3]
Fecal coliform[3] *October-April*	*#/100 mL*	*-*	*-*	*-*	*-*	*200*	*800*	*nc*[3]
Total Residual Chlorine October-May	*µg/L*	*500*	*750*	*-*	*500*	*-*	*-*	*nc*
	lb/day	*10*	*15*	*-*	*-*	*-*	*-*	
Total Residual Chlorine June-September >2,000 CFS	*µg/L*	*500*	*750*	*-*	*500*	*-*	*-*	*nc*
	lb/day	*10*	*15*	*-*	*-*	*-*	*-*	
Total Residual Chlorine June-September ≤2,000 CFS	*µg/L*	*119*	*-*	*629*	*-*	*-*	*-*	*I*[2]
	lb/day	*2.38*	*-*	*12.6*				
Zinc	*µg/L*	*88.2*		*112*	*88.2*	*-*	*112*	*nc*
	lb/day	*1.10*		*1.40*	*1.10*	*-*	*1.40*	

Table 1 continued…		***Proposed Permit***			***Current Permit***		**Change**[1]	
Parameter	*Units*	*Average Monthly Limit*	*Average Weekly Limit*	*Maximum Daily Limit*	*Average Monthly Limit*	*Average Weekly Limit*	*Maximum Daily Limit*	
Pollutants with limits in both the current and proposed permit (continued)								
Total Ammonia Feb-Oct	***mg/L***	***report***	***report***	-	***78.7***	-	***250***	***d***
	lb/day	***101***	***160***		***985***	-	***3128***	
Total Ammonia Nov-Jan	***mg/L***	***78.7***	-	***250***	***78.7***	-	***250***	***I***[2]
	lb/day	***1575***	-	***5004***	***985***	-	***3128***	
Lead	***µg/L***	***2.00***	-	***3.76***	***2.66***	-	***3.76***	***d***
	lb/day	***0.033***	-	***0.047***	***0.033***	-	***0.047***	***nc***
Pollutants with limits only in the proposed permit								
Total Phosphorus Feb-Oct interim limits[5]	***µg/L***	-		-	-	-	-	***nc***
	lb/day >2,000cfs June-Sept	***76***		***114***	-	-	-	***nc***[5]
Total Phosphorus Feb-Oct final limits	***lb/day***	***1.33 seasonal average***		-	-	-	-	***d***
Cadmium[4] ***Oct-May and June-Sept when flows> 2,000cfs***	***µg/L***	-	-	-				
	lb/day	***0.0025***	***0.0034***	-				***nc***[4]
Cadmium[4] ***Year around discharge***	***lb/day***	***0.0021***	***0.0029***	-				***nc***[4]

Table 1 continued…		***Proposed Permit***			***Current Permit***			**Change**[1]
Parameter	*Units*	*Average Monthly Limit*	*Average Weekly Limit*	*Maximum Daily Limit*	*Average Monthly Limit*	*Average Weekly Limit*	*Maximum Daily Limit*	
Pollutants with no limits in either the current and proposed permit								
Temperature	***°C***	***Report***	-	***Report***	-	-	***Report***	***nc***
PCB	***pg/L***	***Report***		***Report***	-	-	-	***nc***
Mercury	***ng/L***	-	-	-	-	-	-	***nc***
TCDD	***pg/L***	***Report***	-	***Report***	-	-	-	***nc***
Silver	***µg/L***	***Report***	-	***Report***	-	-	-	***nc***
	lb/day	-	-	-	-	-	-	
Copper	***µg/L***	***Report***	-	***Report***	-	-	-	
	lb/day	-	-	-	-	-	-	***nc***
Alkalinity	***mg/L as $CaCO_3$***	***Report***	-	***Report***	-	-	-	***nc***
Hardness	***mg/L as $CaCO_3$***	***Report***	-	***Report***	-	-	-	***nc***
Oil and Grease	***mg/L***	***Report***	-	***Report***	-	-	-	***nc***
TDS	***mg/L***	***Report***	-	***Report***	-	-	-	***nc***
Ortho-phosphate	***µg/L***	***Report***	-	***Report***	-	-	-	***nc***
Kjeldahl Nitrogen	***mg/L***	***Report***	-	***Report***	-	-	-	***nc***
Nitrate-Nitrite	***mg/L***	***Report***	-	***Report***	-	-	-	***nc***
Dissolved Oxygen	***mg/L***	***Report minimum and average***			-	-	-	***nc***

[1] ***nc*** = no change in effluent limit from current permit; ***I*** = increase of pollutants from current permit; ***d*** = decrease of pollutants from current permit;

[2] The increased loads of these pollutants in the draft permit do not exceed narrative or numeric criteria in the Idaho WQS and meets the requirements for Tier 1 protection.

[3] DEQ requested EPA replace the fecal coliform limits with *E. coli* effluent limits. See discussion under High Quality Waters section (below).

[4] Effluent limits for cadmium have been added by the 401 certification to ensure that the load of cadmium remain constant in the watershed to meet the requirements of IDAPA 58.01.02.055.04. This limit was based on the actual concentrations of cadmium currently discharged, in combination with the 1999 design flow. Similarly, the zinc and lead limits established in 1999 are the same or more stringent in the draft permits, in part, to comply with anti-backsliding and reasonable potential analysis, and WQS Section 055.04. This certification allows an increased discharge of cadmium, lead and zinc if an offset is provided to meet conditions of Section 055.04 (see page 11).

[5] Interim effluent limits for phosphorus were established based on HARSB current design flow and treatment levels authorized by their current permit. See discussion on page 3 regarding the use of an equivalent process.

High-Quality Waters (Tier 2 Protection)

The Spokane River is not assessed for recreational use. Monitoring data for E. coli collected in 2007 within the subject assessment unit, indicates that the Spokane River is high quality for the primary contact recreation beneficial use. As such, the water quality relevant to recreational uses of the Spokane River must be maintained and protected, unless a lowering of water quality is deemed necessary to accommodate important social or economic development.

To determine whether degradation will occur, DEQ must evaluate how the permit issuance will affect water quality for each pollutant that is relevant to recreational uses of the Spokane River (IDAPA 58.01.02.052.04). These include the following: E. coli bacteria, phosphorus and mercury. Effluent limits are set in the proposed and existing permit for all these pollutants except mercury.

For a reissued permit or license, the effect on water quality is determined by looking at the difference in water quality that would result from the activity or discharge as authorized in the current permit and the water quality that would result from the activity or discharge as proposed in the reissued permit or license (IDAPA 58.01.02.052.04.a). For a new permit or license, the effect on water quality is determined by reviewing the difference between the existing receiving water quality and the water quality that would result from the activity or discharge as proposed in the new permit or license (IDAPA 58.01.02.052.04.a).

Pollutants with Limits in the Current and Proposed Permit: E. coli

For Tier 2 pollutants that are currently limited (have effluent limits) and will have limits under the reissued permit, the current discharge quality is based on the limits in the current permit or license (IDAPA 58.01.02.052.04.a.i), and the future discharge quality is based on the proposed permit limits (IDAPA 58.01.02.052.04.a.ii). For the HARSB permit, this means determining the permit's effect on water quality based upon the limits for E. coli and phosphorus in the current and proposed permits. Table 1 provides a summary of the current permit limits and the proposed or reissued permit limits.

The existing permit for the HARSB contains effluent limits for fecal coliform and *E. coli*. In 1986, EPA updated its criteria to protect recreational use of water by recommending an *E. coli* criterion as a better indicator than fecal coliform of bacteria levels that may cause gastrointestinal distress in swimmers. In 2000, DEQ changed its bacteria criterion from fecal coliform to *E. coli.* The *E. coli* limits are in the existing 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 limits are 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 that fecal coliform concentrations not exceed a geometric mean of 200/100 mL based on a minimum of five samples in one week. This section of the Idaho WQS was revised in 2002 to reflect the change in the bacteria criterion from fecal coliform to *E. coli*. The *E. coli* limits are as or more protective of water quality than the old fecal coliform limits. The

proposed final permit contains both fecal coliform and *E. coli* effluent limits that comply with previous and current numeric "end-of-pipe" criteria.

Because the fecal coliform criterion has been replaced with an *E. coli* criterion, DEQ is requesting that EPA remove the fecal coliform effluent limits, consistent with how EPA has handled other NPDES permits for wastewater treatment plants in Idaho. Retaining the *E. coli* limits will ensure that the receiving water quality will not be degraded even when the fecal coliform limits are removed. Even with the omission of fecal coliform limits, DEQ believes the discharge will not cause or contribute to a violation of the bacteria criteria because the permit incorporates "end-of-pipe" limits for *E. coli*. Thus, removal of the fecal coliform limits complies with both the Tier 1 and Tier 2 components of Idaho's antidegradation policy.

The proposed increased design flow (1.5mgd to 2.4mgd) as well as the new authorization of a discharge during low river flow conditions from June-September will theoretically increase the concentration of E. coli bacteria at the edge of a mixing zone. A Tier 2 analysis, however, is only required if the degradation is determined to be significant (Idaho Code §39-3603(2)(c)). Degradation is determined to be significant when the discharge of the pollutant will cumulatively decrease the remaining assimilative capacity by more than ten percent (Idaho Code §39-3603(2)(c)(i)). HARSB new design flow will increase E. coli by 0.30% to 0.70% (depending on timeframe) over the currently permitted amount. Since this value is less than 10% of the remaining assimilative capacity, HARSB new design flow is an insignificant increase (see Appendix A for the analysis).

New Permit Limits for Pollutants Currently Discharged: Phosphorus

When new limits are proposed in a reissued permit for pollutants in the existing discharge, the effect on water quality is based upon the current discharge quality and the proposed discharge quality resulting from the new limits. Current discharge quality for pollutants that are not currently limited is based upon available discharge quality data (IDAPA 58.01.02.052.04.a.i). Future discharge quality is based upon proposed permit limits (IDAPA 58.01.02.052.04.a.ii).

The proposed permit for HARSB includes new final effluent limits for phosphorus (draft permit Table 1). Tier 2 waters are waters in which the quality of the water is better than necessary to support beneficial uses. The tier 2 antidegradation policy provides that pollutants relevant to recreational uses may be significantly increased only if socially or economically justified. However, while the Spokane River is tier 2 for recreational uses, it is also impaired for aquatic life uses due to excess total phosphorous (TP). Because TP is relevant to both uses, and the water quality standards require both uses be protected, the use with the more stringent requirement limits the TP levels. Thus, the phosphorus levels must be reduced to get the River back into compliance with criteria for support of aquatic life uses. This needed reduction is reflected in the proposed permit limits. Because the River is impaired for phosphorus in Idaho, and because the HARSB permit must ensure compliance with Washington WQS, the limits in the permit require a significant reduction in phosphorus. Specifically, the draft permit final effluent limits for the three Idaho dischargers will reduce phosphorus concentrations in the Idaho portion of the Spokane River to approximately 9.1µg/L at the state line. These limits meet the Tier 2 requirement under the antidegradation policy because there will be no degradation in water quality, but rather an improvement in TP levels.

Pollutants with No Limits: Mercury

Mercury is a pollutant relevant to Tier 2 protection of recreation that currently is not limited and for which the proposed permit also contains no limit (Table 1). For such pollutants, a change in water quality is determined by reviewing whether changes in production, treatment, or operation that will increase the discharge of these pollutants are likely (IDAPA 58.01.02.052.04.a.ii). With respect to mercury, there is no reason to believe this pollutant will be discharged in quantities greater than those discharged under the current permit. This conclusion is based upon the fact that there have been no changes in the influent quality or treatment processes that would likely result in an increased discharge of this pollutant. Additionally, whole effluent toxicity testing using three different organisms will be required twice per year to detect toxics in toxic amounts. A toxicity reduction evaluation is required in the event of an excursion above a trigger value. Mercury monitoring will be required three times over a five year period as part of the expanded effluent testing requirements in Part D of the NPDES application Form 2A (EPA Form 3510-2A, revised 1-99). Mercury levels in HARSB effluent were tested in 2004 and reported in Part D of Form 2A as "no detection". Because of these provisions, the proposed permit does not allow for any increased water quality impact from this pollutant, DEQ concludes that the proposed permit should not cause a lowering of water quality for mercury. As such, the proposed permit should maintain the existing high water quality in the Spokane River.

Conditions Necessary to Ensure Compliance With Water Quality Standards or Other Appropriate Water Quality Requirements of State Law

The 2010 Integrated Report lists the Spokane River as high priority for TMDL development. Pursuant to IDAPA 58.01.02.055.04, DEQ must ensure that discharges of pollutants of concern remain constant or decrease within the watershed. Pollutants of concerns for which a TMDL is to be developed are cadmium, lead, zinc and total phosphorus. The draft permit retains the previously permitted effluent limits for zinc and lead along with a reduction of the previously permitted average monthly limit for lead, which meets the requirements of Section 055.04. The draft permit, however, lacks effluent limits for cadmium because the discharge didn't have reasonable potential to exceed WQS criteria. Therefore, to meet Section 055.04 requirements, this 401 certification adds effluent limits as specified in Table 2, below.

[1]Table 2: Final Effluent Limit Requirements for Outfall 001 at Design Flow of 1.5 MGD

Parameter	Units	Average Monthly Limit	Average Weekly Limit
[2]Cadmium Oct-May and June-September when flows >2,000cfs	lb/day	0.0025	0.0034
Cadmium year around discharge	lb/day	0.0021	0.0029

[1]The discharger must select one of the two effluent limits options presented in Table 2 and notify EPA and DEQ of this selection in writing 30 days from the effective date of this permit. The

selection can be changed annually by submitting a written notice to EPA and DEQ 30 days prior to the day and month of permit issuance.

[2]This timeframe assumes that HARSB uses their land application site and there is no discharge to the river when flows are <2,000cfs from June 1 through September 30.

In order to meet the requirements of Section 055.04, the effluent limits for cadmium, lead and zinc are all based upon the design flow used to develop the 1999 permit. HARSB's application for a reissuance of the permit, however, specifies a new increased design flow for the facility and a year round discharge. HARSB may increase its loading of cadmium, lead and zinc only if prior to the discharge of an increased load, an Offset Plan developed by HARSB and approved by DEQ is in place. The Offset Plan must demonstrate that the additional metals loading from the increased discharge will be offset by other actions or projects in the watershed and will otherwise meet concentration limits of this permit. Once approved by DEQ, HARSB must implement the approved Offset Plan in order to increase its load of cadmium, lead and zinc. Once a TMDL for metals is approved by EPA, the wasteload allocations specified in the TMDL shall replace the above Table 2 effluent limit requirements and the Offset Plan.

Compliance Schedule

Pursuant to IDAPA 58.01.02.400.03, DEQ may authorize compliance schedules for water quality–based effluent limits issued in a permit for the first time. HARSB cannot immediately achieve compliance with the effluent limits for phosphorus (February-October) and under some circumstances $CBOD_5$; therefore, DEQ authorizes a compliance schedule and interim requirements as set forth below. This compliance schedule provides the permittee a reasonable amount of time to achieve the final effluent limits as specified in the permit. At the same time, the schedule ensures that compliance with the final effluent limits is accomplished as soon as possible.

1. The permittee must comply with all effluent limitations and monitoring requirements in Part I.B beginning on the effective date of the permit, except those for which a compliance schedule is specified in Part I.C.2.

2. A schedule of compliance is authorized for the following effluent limitation during the timeframe specified below:
   a) Total phosphorus effluent limits in effect during February-May and October and during June-September when river flows are greater than 2,000cfs.
   b) Average monthly and average weekly loading (lb/day) limits for five day carbonaceous biochemical oxygen demand ($CBOD_5$) limits in effect for continuous discharge during February-May, October and June-September during periods when the Spokane River flow is greater than 2,000cfs.

3. The permittee must achieve compliance with the final effluent limitations for total phosphorus and $CBOD_5$ as set forth in Part I.B. (Table 1) of the permit, not later than ten (10) years after the effective date of the final permit.

4. While the schedules of compliance specified in Part I.C.2 are in effect, the permittee must complete interim requirements and meet interim effluent limits and monitoring requirements as specified in Part I.D. of the permit.

5. All other provisions of the permit, except the final effluent limits for total phosphorus and $CBOD_5$ as described in paragraph 2 of this certification, must be met after the effective date of the final permit.

Interim Requirements for Compliance Schedules

1. By one (1) year after the effective date of the final permit, the permittee must provide a preliminary engineering report to EPA and IDEQ outlining estimated costs and schedules for completing capacity expansion and implementation of technologies to achieve final effluent limitations. This schedule must include a timeline for full scale pilot testing and results of any testing conducted to date.

2. By three (3) years after the effective date of the final permit, the permittee must provide written notice to EPA and IDEQ that full scale pilot testing of the technology that will be employed to achieve the final limits has been completed and must submit a summary report of results and plan for implementation.

3. By five years after the effective date of the final permit, the permittee must provide EPA and DEQ with written notice that design has been completed and bids have been awarded to begin construction to achieve final effluent limitations.

4. By eight (8) years after the effective date of the final permit, the permittee must provide EPA and DEQ with written notice that construction has been completed on the facilities to achieve final effluent limitations.

5. By ten (10) years after the effective date of the final permit, the permittee must provide EPA and DEQ with a written report providing details of a completed start up and optimization phase of the new treatment system and must achieve compliance with the final effluent limitations of Part I.B. The report shall include two years of effluent data demonstrating that final effluent limits can be achieved (the two years of data do not have to consistently meet final effluent limits but demonstrate that at the end of this period final limits can be met).

6. By year six (6), seven (7), and eight (8) after the effective date of the final permit, the permittee must submit to EPA and DEQ progress reports, which outline the progress made toward achieving compliance with the total phosphorus and $CBOD_5$ effluent limitations. At a minimum, the reports must include:
   a) An assessment of the previous year of effluent data and comparison to the interim effluent limits.
   b) A report on progress made toward meeting the final effluent limits.
   c) Further actions and milestones targeted for the upcoming year.

7. When the schedules of compliance specified in Part I.C.2 of the permit are in effect, the permittee must comply with interim effluent limitations and monitoring requirements as specified in Part I.D. of the permit.

Mixing Zones

Pursuant to IDAPA 58.01.02.060, DEQ authorizes a mixing zone that utilizes 25% of the critical flow volumes of Spokane River for pH, ammonia, chlorine (June-September when river flows are less than or equal to 2,000cfs), chloroform, copper, nitrate + nitrite, and WET. Refer to Table 1 in the Fact Sheet for the 1Q10 flows and utilize the FERC license flow of 500cfs for the June-September timeframe.

Pollutant Trading

Pursuant to IDAPA 58.01.02.055.06, DEQ authorizes pollutant trading for phosphorus and other oxygen demanding pollutants. Trading must be conducted in a manner that is consistent with the most recent version of DEQ's *Water Quality Pollutant Trading Guidance*, available at: http://www.deq.idaho.gov/media/488798-water_quality_pollutant_trading_guidance_0710.pdf. The use of pollutant offsets is authorized for purposes of compliance with antidegradation rules and IDAPA 58.01.02.055.

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 TMDLs, wasteload allocations, site-specific criteria, variances, or other new information—shall first be provided to DEQ for review to determine compliance with Idaho WQS and to provide additional certification pursuant to Section 401.

Right to Appeal Final Certification

The final Section 401 Water Quality Certification may be appealed by submitting a petition to initiate a contested case, pursuant to Idaho Code § 39-107(5) and the "Rules of Administrative Procedure before the Board of Environmental Quality" (IDAPA 58.01.23), within 35 days of the date of the final certification.

Questions regarding the actions taken in this certification should be directed to June Bergquist, Coeur d'Alene Regional Office at 208.666.4605 or via email at june.bergquist@deq.idaho.gov .

DRAFT

Daniel Redline
Regional Administrator
Coeur d'Alene Regional Office

Appendix A

HARSB and Post Falls *E. coli* Significance Tests

Background

The Spokane River is considered a high quality water for recreational uses. To prevent the lowering of water quality with respect to *E. coli*, DEQ must ensure that the Hayden Area Regional Sewer Board (HARSB) and Post Falls (PF) draft permits do not cumulatively decrease the remaining assimilative capacity of the river by more than ten percent to be considered insignificant degradation (Idaho Code §39-3603(2)(c)(i)).

Assimilative capacity is determined by comparing the background (ambient) concentration of a pollutant with the Water Quality Standard. The difference between these two numbers is the remaining assimilative capacity. A ten percent or less decrease of the remaining assimilative capacity is considered to be insignificant degradation. Because no data exists for E. coli in the Spokane River above the three dischargers, data from USGS monitoring station #12419000 located below the Post Falls WWTP (6 samples in 2007) will be used as the upstream background concentration until new data is made available.

Analysis

The following information was used in calculating assimilative capacity in order to determine significance:

- Background concentration upstream of CdA discharge: 11.7 *E. coli* colony forming units/100ml (cfu) (average value of USGS data that was collected monthly from April to September in 2007);
- The increased discharge from current design flow to proposed design flow for all dischargers along the Spokane River: CdA 6.0 mgd (no increase), HARSB 1.5 to 2.4 mgd increase (0.9mgd increase); Post Falls 3.48 to 5 mgd (1.52mgd increase);
- The WQS effluent limit of 126 colony forming units/100ml (cfu) for *E. coli*;
- A river flow of 500cfs as measured at the USGS Station #12419000 located below the Post Falls hydroelectric facility. This minimum flow is required in the 2009 Avista Corporation relicensing agreement for the operation of the Post Falls hydroelectric facility.
- The full low flow for mixing.

Scenarios

CdA

current design	new design
6.0 mgd	6.0 mgd=no change (9.3 cfs)

spreadsheet inputs:
500cfs upstream flow
11.7 cfu/L upstream E. coli
126cfu maximum E. coli effluent concentration per current NPDES permit
9.3 cfs effluent flow

This results in 13.79 in-river potential concentration of *E. coli* downstream of CdA outfall under both current and proposed permits

HARSB

current design	new design
1.5 mgd (2.32 cfs)	2.4 mgd (3.7 cfs)

HARSB Current >2,000cfs
spreadsheet inputs:
509.3cfs upstream flow, including CdA discharge
13.79 cfu/L upstream E. coli, with CdA discharging at permitted capacity
126 max effluent concentration
2.32 cfs effluent flow

This results in 14.3cfu in-river potential concentration of *E. coli* downstream of HARSB under their current permit

HARSB Proposed
spreadsheet inputs:
Upstream flow and quality same as for HARSB current above

126 max effluent concentration
3.7cfs effluent flow

This results in 14.6cfu in-river potential concentration of *E. coli* downstream of HARSB with their proposed permit

14.6 – 14.3 = an Increase of 0.3cfu

HARSB Current ≤2,000cfs June-September
spreadsheet inputs:
509.3cfs upstream flow, including CdA discharge
13.79cfu/L upstream E. coli, with CdA discharging at permitted capacity
126 max effluent concentration
0 cfs effluent flow

This results in 13.79cfu in-river potential concentration of *E. coli* downstream of HARSB under their current permit during no discharge timeframe

HARSB Proposed
spreadsheet inputs:
Upstream flow and quality same as for HARSB current above

126 max effluent concentration
3.7cfs effluent flow

This results is 14.6cfu in-river potential concentration of *E. coli* downstream of HARSB with their proposed permit

14.6 – 13.79 = an Increase of 0.8cfu

Post Falls

current design	new design
3.48mgd	5mgd
(5.38cfs)	(7.7cfs)

Post Falls Current
spreadsheet inputs:
513 cfs upstream flow, including + CdA + HARSB proposed
14.6 cfu/L upstream E. coli, with CdA & HARSB discharging at permitted capacity
126 max effluent concentration
5.38cfs effluent flow

This results in 15.8cfu in-river potential concentration of *E. coli* downstream of Post Falls under their current permit and with both upstream discharges at their proposed limits

Post Falls Proposed
spreadsheet inputs:
Upstream flow and quality as for HARSB current above
126 max effluent concentration
7.7 cfs effluent flow

This results in 16.2cfu in-river potential concentration of *E. coli* downstream of Post Falls with their proposed permit and with both upstream discharges at their proposed limits

16.2 – 15.8 = an Increase of 0.5cfu

Assimilative Capacity

The assimilative capacity and the amount of that capacity that is determined to be insignificant degradation is calculated as follows:

126 cfu (Standard) – 13.79 cfu E. coli (background + current design of CdA) = 112.21 X %10 (insignificant amount) = 11.22cfu

Therefore, the dischargers collectively, cannot increase *E. coli* concentrations in the river by more than 11.22cfu as a result of increased design flows.

Currently Permitted
11.7cfu above CdA → 13.8cfu below CdA → 14.3cfu below HARSB → 15.5cfu below Post Falls

Proposed Increases
11.7cfu above CdA → 13.8cfu below CdA → 14.6cfu below HARSB → 16.2cfu below Post Falls

The cumulative increase in E. coli due to all three discharges, if discharging at permitted maximums, below the Post Falls discharge is 0.8cfu

Calculation of Significance
HARSB new design flow increased E. coli by 0.3cfu (0.8cfu <2,000cfs June-Sept) or
0.3cfu ÷ 112.21cfu = 0.27% increase
(0.8cfu ÷ 112.21 = 0.7% increase <2,000cfs June-Sept)

Post Falls new design flow increased E. coli by 0.5cfu or
0.5cfu ÷ 111.91cfu =0.44% increase

In total, the two dischargers at their new design flows would decrease assimilative capacity by 0.71% (1.1% during <2,000cfs June-Sept). This increase does not exceed 10% of the remaining assimilative capacity and therefore, is not a significant degradation of river water quality.