STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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C.L. "Butch" Otter, Governor
Curt Fransen, Director

June 5, 2014

Mr. Michael Lidgard
US Environmental Protection Agency, Region 10
1200 6th Avenue, OW-130
Seattle, WA 98101

RE: Final §401 Water Quality Certification for the Final NPDES Permit No. ID-0025852 for the City of Post Falls Water Reclamation Facility (Post Falls)

Dear Mr. Lidgard:

As you are aware, the Idaho Water Quality Standards rules regarding antidegradation were revised, which necessitated some changes to each of the three Spokane River dischargers certifications. In the interest of time, DEQ revised the certifications and received public comment on these changes after revision of Idaho Code but prior to the final step of rule adoption. We received no substantive comment on the changes. The rule changes became official on June 4, 2014 with no significant changes to the draft rule. We have made the necessary revisions and are submitting final certification for the City of Post Falls Water Reclamation Facility.

To recap the Post Falls certification process, on September 4, 2012 DEQ submitted our first draft certification. On September 18, 2012 DEQ revised the draft certification due to an error in the mixing zone section. We submitted another revised draft certification on April 18, 2013 in response to a revised draft permit. On June 25, 2013 the DEQ Director clarified the agency's interpretation of IDAPA 58.01.02.055.04 necessitating a revised draft certification.

Please direct any questions to June Bergquist at 208.666.4605 or june.bergquist@deq.idaho.gov .

Sincerely,

Daniel Redline
Regional Administrator
Coeur d'Alene Regional Office

Enclosure

C: Miranda Adams, DEQ Boise
Brian Nickel, EPA Region 10, Seattle
John Beacham, City of Post Falls

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Idaho Department of Environmental Quality

Final §401 Water Quality Certification

June 5, 2014

NPDES Permit Number(s): ID0025852 City of Post Falls Wastewater Treatment Plant

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

The City of Post Falls discharges the following pollutants of concern: carbonaceous biochemical oxygen demand ($CBOD_5$), total suspended solids (TSS), pH, *E. coli*, chlorine, ammonia, total phosphorus (TP), copper, lead and zinc. Effluent limits have been developed for these pollutants of concern. Butyl benzyl phthalate, di-N-butyl phthalate, nitrate + nitrite, phenol and whole effluent toxicity (WET) 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 after full mixing. Cadmium is a pollutant of concern but had no reasonable potential to exceed water quality standards.

Receiving Water Body Level of Protection

The City of Post Falls discharges to the Upper Spokane Subbasin assessment unit (AU) ID17010305PN003_04 (Post Falls Dam to Idaho/Washington border). This AU has the following designated beneficial uses: cold water aquatic life, salmonid spawning, primary contact recreation and domestic water supply. In addition to these uses all waters of the State are protected for agricultural and industrial water supply, wildlife habitat, and aesthetics (IDAPA 58.01.02.100).

The cold water aquatic life use in the Upper Spokane Subbasin AU is not fully supported due to excess phosphorus, cadmium, lead and zinc (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 City of Post Falls 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.

Prior to the completion of a TMDL or equivalent process for water quality limited water bodies, IDAPA 58.01.02.055.04 requires the Department take those actions required by the Antidegradation Policy (section 051), the Antidegradation Implementation Procedures (section 052), and the provisions in Idaho Code §39-3610.

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

Idaho Code §39-3610 requires that a TMDL or equivalent process be developed for high priority waters. 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 nonpoint sources, in Idaho and Washington. The limits EPA has set in the draft permits for the point sources in Idaho, including the Post Falls permit, are based upon this loading analysis. The proposed effluent limits will result in a concentration of 9.1 µg/L of total phosphorus (TP) in the Idaho portion of the Spokane River. This level meets Idaho's narrative criteria for excess nutrients (IDAPA 58.01.02.200.06).

In summary, equivalent to a TMDL, EPA has calculated the loading from point and nonpoint sources, and set limits that will attain WQS for phosphorus in Idaho. Therefore, the phosphorus effluent limits in the draft permit meet the requirement of Tier 1 protection and are consistent with IDAPA 58.01.02 sections 051 (Antidegradation Policy), 052 (Antidegradation Implementation) and 055 (Water Quality Limited Waters and TMDLs).

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 Post Falls. However, this TMDL was invalidated by the Idaho Supreme Court in 2003. Until very recently, there had been no additional effort by DEQ to develop a TMDL for metals in the Spokane River, and therefore, the river is still on the state's 303(d) list for cadmium, lead and zinc and is identified as a high priority water body for TMDL development. As previously mentioned, Idaho Code section 39-

3610 requires that a TMDL or equivalent process be developed for high priority waters. DEQ has begun the process to develop a TMDL for cadmium, lead and zinc pollution in the Spokane River. As part of that TMDL, wasteload allocations will be developed for all point source dischargers.

In the draft NPDES permit for Post Falls, EPA has included effluent limits for lead and zinc that ensure the effluent meets the water quality criteria at the end-of-pipe. These same limits were contained in the 1999 permit. There was no reasonable potential for this discharge to exceed water quality criteria for cadmium; therefore, the initial draft permit did not contain cadmium limits. This level of protection meets the requirements of Tier 1 protection and therefore is consistent with IDAPA 58.01.02 sections 051 and 052.Table 1 (below) provides a summary of the existing permit limits and the proposed reissued permit limits. Section 055.05 provides that once a TMDL or equivalent process is completed, the discharge of causative pollutants must be consistent with the allocations in the TMDL. Therefore, once a TMDL for metals is completed by DEQ and approved by EPA, the limits for metals in the permit, including the limits discussed herein, should be adjusted to reflect the approved TMDL.

In summary, the effluent limitations and associated requirements contained in the Post Falls 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 in compliance with the Tier 1 provisions of Idaho's WQS (IDAPA 58.01.02.051.01 and 58.01.02.052.07).

Table 1. Comparison of current and proposed 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								
$CBOD_5$ November-January	*mg/L*	*25*	*40*	-	*30*	*45*	-	*I*[2]
	lb/day	*1043*	*1668*	-	*871*	*1306*	-	
	% removal	*85%*	-	-	*85%*	-	-	
$CBOD_5$ February-October interim limit	*mg/L*	*25*	*40*	-	*30*	*45*	-	*nc*[3]
	lb/day	*726*	*1161*	-	*871*	*1306*	-	
	% removal	*85%*	-	-	*85%*	-	-	
$CBOD_5$ (February-October)	*mg/L*	*25*	*40*	-	*30*	*45*	-	*D*
	lb/day	*seasonal average 255 lb/day*		-	*871*	*1306*	-	
	% removal	*85%*	-	-	-	-	-	
TSS	*mg/L*	*30*	*45*	-	*30*	*45*	-	*I*[2]
	lb/day	*1251*	*1877*	-	*871*	*1306*	-	
	% removal	*85%*	-	-	*85%*	-	-	
pH October-June	*s.u.*	*6.3 – 9.0 all times*			*6.2 – 9.0 all times*			*D*
pH July-September	*s.u.*	*6.4 – 9.0 all times*			*6.3 – 9.0 all times*			*D*
E. coli	*#/100 mL*	*126*	-	*406*	-	-	-	*nc*[4]
Fecal coliform[4] *May-Sept*	*#/100 mL*	-	-	-	*50*	*200*	*500*	*nc*[4]
Fecal coliform[4] *October-April*	*#/100 mL*	-	-	-	-	*200*	*800*	*nc*[4]
Total Residual Chlorine July-Sept. if used	*µg/L*	*127*	-	*294*	*36*	-	*161*	*I*[2]
	lb/day	*5.3*	-	*13.6*	*1.04*	-	*4.67*	
Total Residual Chlorine October-June if used	*µg/L*	*244*	-	*565*	*147*	-	*662*	*I*[2]
	lb/day	*10.2*	-	*23.6*	*4.27*	-	*19.2*	
Ammonia (July-Sept)	*mg/L*	*8.2*	*29.5*	-	*8.2*	-	*29.5*	*I*[2]
	lb/day	*342*	*1230*	-	*238*	-	*856*	
Ammonia (October-June)	-	-	-	-	*25.4*	-	*91.7*	*D*
	-	-	-	-	*737*	-	*2661*	
Ammonia (Feb- October)	*mg/L*	-	-	-	-	-	-	*D*
	lb/day	*seasonal average 255 lb/day*		-	-	-	-	
Ammonia (Nov-Jan)	*mg/L*	*25.4*		*91.7*	*25.4*	-	*91.7*	*nc*
	lb/day	*1059*		*3824*	*737*	-	*2661*	*I*[2]
Zinc	*µg/L*	*84.3*		*115*	*84.3*	-	*115*	*nc*
	lb/day	-		-	*2.45*	-	*3.34*	
Lead	*µg/L*	*2.05*	-	*3.79*	*2.05*	-	*3.79*	*nc*
	lb/day	-	-	-	*0.059*	-	*0.110*	
Copper (July-September)	*µg/L*	*13.8*	-	*27.7*	*13.8*	-	*27.7*	*nc*
	lb/day	*0.58*	-	*1.16*	*0.40*	-	*0.80*	*I*[2]

Table 1 Continued…

Parameter	Units	Proposed Permit			Current Permit			Change[1]
		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)								
Phosphorus (March-Oct)	***percent removal***	-	-	-	***70%***			***D***
Phosphorus[5] (Feb-Oct) interim limits	***lbs/day***	***68.5 70% removal***	***110***	-				***nc[5]***
Phosphorus February-October	***µg/L***	***Report***	***Report***	-	-	-	-	***D***
	lb/day	***3.19 seasonal average***		-	-	-	-	***D***

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	-	-	-	-	-	-	
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 which meets the requirements for Tier 1 protection.

[3] The interim concentration and removal rate limits for $CBOD_5$ are federal technology-based effluent limits (40 CFR 133.102(a)(4)). The interim $CBOD_5$ load limits are calculated from

the concentration limits using the same design flow that was used to calculate the BOD_5 loading limits for the prior permit (3.48 mgd), which ensures that the interim $CBOD_5$ loading limits are as stringent as the final BOD_5 loading limits in the prior permit, as required by federal regulations (40 CFR 122.44(l)(1)).

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

[5] Interim effluent limits for phosphorus were established based on Post Falls' 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 Upper Spokane Subbasin is not assessed for recreational use. Monitoring data for *E. coli* collected in 2007 within the 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 Upper Spokane Subbasin 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 Upper Spokane Subbasin (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*, Phosphorus

For Tier 2 related 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 City of Post Falls 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(above) provides a summary of the current permit limits and the proposed or reissued limits.

E. coli

The existing permit for the City of Post Falls 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 *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 has requested 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 (3.48mgd to 5mgd) 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)). Post Falls new design flow will increase *E. coli* by 0.44% over the currently permitted amount. Since this value is less than 10% of the remaining assimilative capacity and determined by the Department to be an insignificant increase, no alternatives analysis or socioeconomic justification are required for the increase of *E. coli* in the Spokane River (see Appendix A for the analysis).

Phosphorus

The proposed permit for Post Falls 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, its aquatic life uses are impaired 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 waterbody back into compliance with criteria for support of aquatic life uses. This needed reduction is reflected in the proposed permit limits. Because the Spokane River is impaired for phosphorus in Idaho, and because the Post Falls 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 (WET) testing using three different organisms will be required twice per year to detect toxic pollutants 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 NPDES application Form 2A (EPA Form 3510-2A, revised 1-99). Mercury levels in Post Fall's 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 and 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 Upper Spokane Subbasin.

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. City of Post Falls cannot immediately achieve compliance with the effluent limits for phosphorus and under some circumstances $CBOD_5$; therefore, DEQ authorizes a compliance schedule and interim requirements as set forth below.

Table 2. Interim Limits

Parameter	Units	Average Monthly Limit	Average Weekly Limit
$CBOD_5$ (Feb-Oct)	mg/L	25	40
	lb/day	726	1161
	% removal	85% (min)	-
Phosphorus (Feb-Oct)	mg/L	report	report
	lb/day	68.5	110
	% removal	70%	-

Records indicate that since 2001, Post Falls has fallen short of achieving reductions necessary to meet the final effluent limits for CBOD, 30% of the time. Additionally, as this facility transitions

to tertiary treatment to meet their final limits, there is also less of an assurance that the current high levels of $CBOD_5$ removal can be maintained until the new treatment system is operational. The $CBOD_5$ interim limits maintain the currently permitted load and concentration (Table 1). The compliance schedule described below 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 (see Appendix B).

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

2. The permittee must achieve compliance with the final effluent limitations for 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.

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

4. All other provisions of the permit, except the final effluent limits for phosphorus and $CBOD_5$ as described in Table 3 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 DEQ 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 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 DEQ that 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. If pilot testing is determined to be unnecessary by the permittee, the summary report shall include the reasons for this decision.

3. By five (5) 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 by year ten (10).

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 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 limitations.
   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.D of the permit are in effect, the permittee must comply with interim effluent limitations and monitoring requirements as specified in Part I.E 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 the Spokane River for pH, ammonia, chlorine, butyl benzyl phthalate, copper, diethyl phthalate, di-N-butyl phthalate, nitrate + nitrite, phenol, TSS and WET.

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 .

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. In addition, taking into consideration the size and character of the discharge, the Department must consider the magnitude of the pollutant's effect on the receiving water (IDAPA 58.01.02.052.08.a).

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. 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 river 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 cfu 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 >2,000 cfs
spreadsheet inputs:
509.3cfs upstream flow + CdA discharge
13.79 cfu/L upstream E. coli
126 maximum *E. coli* effluent concentration per current NPDES permit
2.32 cfs effluent flow
This results in 14.3cfu in-river 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 0.3 cfu

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 14.6 cfu 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 + CdA + HARSB current
14.6 cfu/L upstream *E. coli*
126 max effluent concentration
5.38cfs effluent flow
This results in 15.8 cfu 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:
513 cfs upstream flow + CdA + HARSB proposed
14.6 cfu/L upstream E. coli
126 max effluent concentration
7.7 cfs effluent flow
This results in 16.2 cfu 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 0.5 cfu

Assimilative Capacity

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

126 cfu (Standard) – 13.79 cfu *E. coli* (background + current design of CdA) = 112.21 X %10 (maximum 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 dischargers, if discharging at permitted maximums, below the Post Falls discharge is 0.8 cfu.

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

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

Conclusion
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 the maximum allowable degradation of 10% of the remaining assimilative capacity. *E. coli* also is not a bioaccumulative pollutant and the resulting increase of *E. coli* in the river amounts to less than one colony forming unit (cfu). Therefore, after considering the size and character of the discharge and magnitude of its effect, DEQ concludes that this increase of *E. coli* is not a significant degradation of river water quality.

Appendix B

Compliance Schedule Justification Letters
dated
April 1, 2013 and April 12, 2013
from
City of Post Falls, Department of Public Services

CITY OF POST FALLS

Department of Public Services

April 1, 2013

Daniel Redline, Regional Administrator
Coeur d'Alene Office
Idaho Department of Environmental Quality
2110 Ironwood Parkway
Coeur d'Alene, ID 83815

Re: City of Post Falls NPDES Permit ID-002585-2, 401 Certification – CBOD Compliance Schedule

Dear Mr. Redline:

The City of Post Falls requests a compliance schedule of at least 8 years to meet the seasonal CBOD discharge limit proposed in the latest draft permit from EPA. As with phosphorus, the compliance schedule for CBOD should allow sufficient time to pilot test, design, install and optimize the tertiary treatment facilities required to meet the final waste load allocation. For both parameters, interim requirements for schedules of compliance would be as indicated in the February 2013 draft permit for phosphorus, Section I.E. As explained below, we propose an interim seasonal limit of 348 pounds per day for BOD.

A compliance schedule is allowable for the following reasons.

1. The TMDL allows it. The 2010 WDOE Spokane River and Lake Spokane DO TMDL includes a ten year period in the Managed Implementation Plan to meet final waste load allocations. With the exception of Spokane County (which is a new facility and therefore can comply upon opening), all of the Washington permits provide ten-year compliance schedules for CBOD, phosphorus and ammonia.

2. Federal law allows it. There are two key regulations regarding the CBOD compliance schedule. The first is 40 CFR Section 122.47(a)(1), which states that NPDES permits may include a compliance schedule "when appropriate" and any compliance schedule must require compliance "as soon as possible." The second key regulation is 40 CFR Section 122.45(b)(1), which states that, for POTWs, "effluent limitations, standards, or prohibitions shall be calculated based on design flow." The question is how to read Section 122.45(b)(1) in conjunction with Section 122.47(a)(1) in a situation where a POTW can comply with an effluent mass limit upon issuance of a permit because the discharger is discharging below design flows but later on in the permit cycle cannot comply due to increased flows until new treatment technology is installed.

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As an example, assume that a POTW in a growing community currently discharges 1 lbs/day of CBOD at 10 mg/L. A TMDL is adopted that limits the POTW to 2 lbs/day based on a 5 mg/L CBOD concentration. It will take 4 years to install the technology to reduce the discharge to 5 mg/L. Because of growth, the POTW will discharge 4 lbs/day CBOD (in violation of the mass limit) after 4 years at the point at which the new technology begins operating, and 2 lbs/day (in compliance) after the technology is installed.

Under these circumstances, it is not "possible" within the meaning of Section 122.47(a)(1) for the POTW to comply once flows increase to the point that the mass load exceeds 2 lbs/day. It is only possible to comply after 4 years when the new treatment technology is installed. Therefore, EPA meets the requirements of Section 122.47(a)(1) if the permit includes a 4-year compliance schedule for CBOD. The compliance schedule should include interim limits that ensure that current levels of performance for the treatment system are maintained, without arbitrarily limiting the discharge prior to the installation of the technology needed to meet the TMDL limits.

EPA policy states that, if a compliance schedule is issued, EPA must make a reasonable finding based on evidence in the record that compliance cannot be achieved "immediately" upon issuance of a permit. This is a reasonable general policy, but, of course, it must be read in conjunction with the applicable regulations. It seems to me that Section 122.45(b)(1) becomes meaningless if EPA or DEQ cannot include a compliance schedule that accounts for the fact that flows may increase to design flows before treatment technology necessary to support lower limits can be installed. At that point, the POTW's limits are not "based on design flows" but are based on the happenstance that the facility will discharge below design flows at the beginning of the permit cycle while completely ignoring the facility's higher flows and inability to comply later on.

3. The requested interim limit is needed to ensure the City can remain in compliance during the period before the tertiary treatment facilities are completed and ready to meet the final waste load allocations.

   The City's data indicate that BOD loading to the WRF has been increasing at an average rate of 4.6% per year since 2001. The average influent BOD loading in 2012 was 5,809 pounds per day. In 8 years from permit issuance (2013), the projected influent BOD loading is 8,707 pounds per day. In order to meet the draft permit load limit of 255 pounds per day seasonal average in year 8, the WRF would need to perform at 97% efficiency or better, on a seasonal average. Since 2001, the WRF has not performed at that level 30% of the time. Thus, there is a 1 in 3 chance of violating the draft permit limit before tertiary facilities are up and running.

   The WRF is a secondary treatment facility. Although it has performed remarkably well compared to the minimum level of 85% specified under the Clean Water Act, BOD removal efficiency is variable and not entirely under the control of operations. Conditions that cannot be controlled by the secondary treatment facility are temperature, influent quality, weather and metabolic conditions of the naturally diverse biota that form the basis of secondary treatment. That is why EPA regulation has established 85% as a

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reasonable minimum performance criterion for secondary treatment. In spite of that, the interim BOD limit of 348 pounds per day represents a high level of treatment, and the City believes the WRF can achieve a BOD removal efficiency of 96% on a TMDL seasonal basis.

4. Post Falls' requested interim BOD limit will have de minimis effect on Long Lake dissolved oxygen. In aggregate, the Washington permits allow a combined BOD load of over 12,000 pounds per day during the interim ten year period. The City of Spokane, located 11 miles upstream of Long Lake, is allowed 10,759 pounds per day of the aggregate BOD load during the low flow season. Post Falls is asking for an increase of 93 pounds from the draft permit BOD limit. This will increase the aggregate interim load allocation by a fraction of 1 percent.

   Modeling experts have demonstrated that a mass nutrient unit discharged from Post Falls has a fractional effect on dissolved oxygen in Long Lake compared to a unit discharged from Spokane. This is because there are 30 river miles and two impoundments that provide assimilation of nutrients from Post Falls, above and beyond what is available to Spokane.

5. The requested interim BOD limit represents a significant reduction in allowable BOD load compared to the current permit. The City's administratively extended discharge permit allows up to 871 pounds per day of effluent BOD. The requested interim load limit of 348 pounds per day is 60% less than the current allowable amount, which represents a significant improvement.

Thank you for this opportunity to comment on EPA's proposed seasonal CBOD limit, and for considering our request for a compliance schedule and interim seasonal BOD limit in your revision of the 401 certification.

Sincerely,

Terry Werner, Director
Department of Public Services

c: Mike Neher, Environmental Manager
June Bergquist, IDEQ
Gary Allen, Givens Pursley
Paul Klatt, JUB ENGINEERS

Attachments: BOD charts

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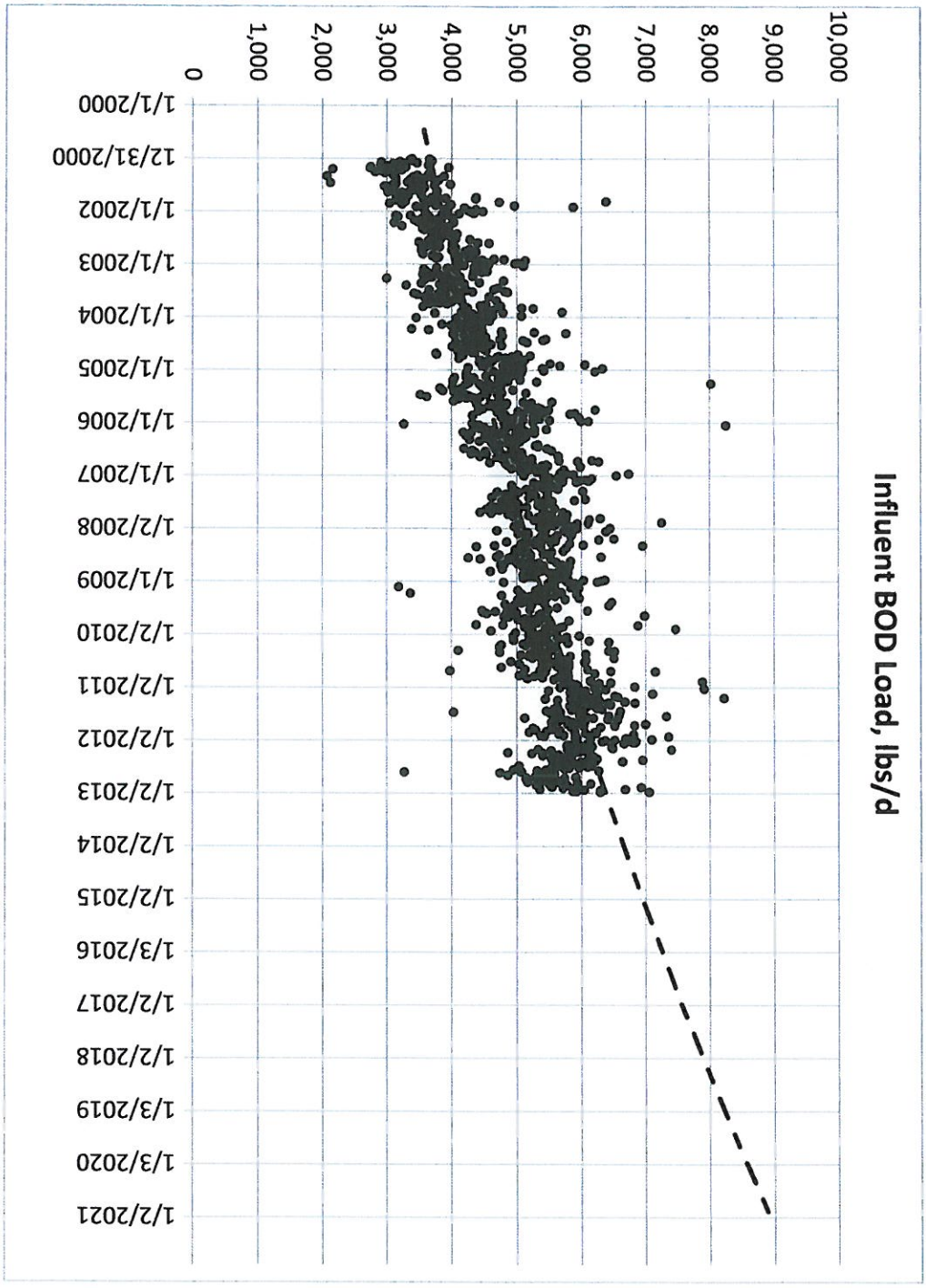
Influent BOD Load, lbs/d
0
1,000
2,000
3,000
4,000
5,000
6,000
7,000
8,000
9,000
10,000
1/1/2000
12/31/2000
1/1/2002
1/1/2003
1/1/2004
1/1/2005
1/1/2006
1/1/2007
1/2/2008
1/1/2009
1/2/2010
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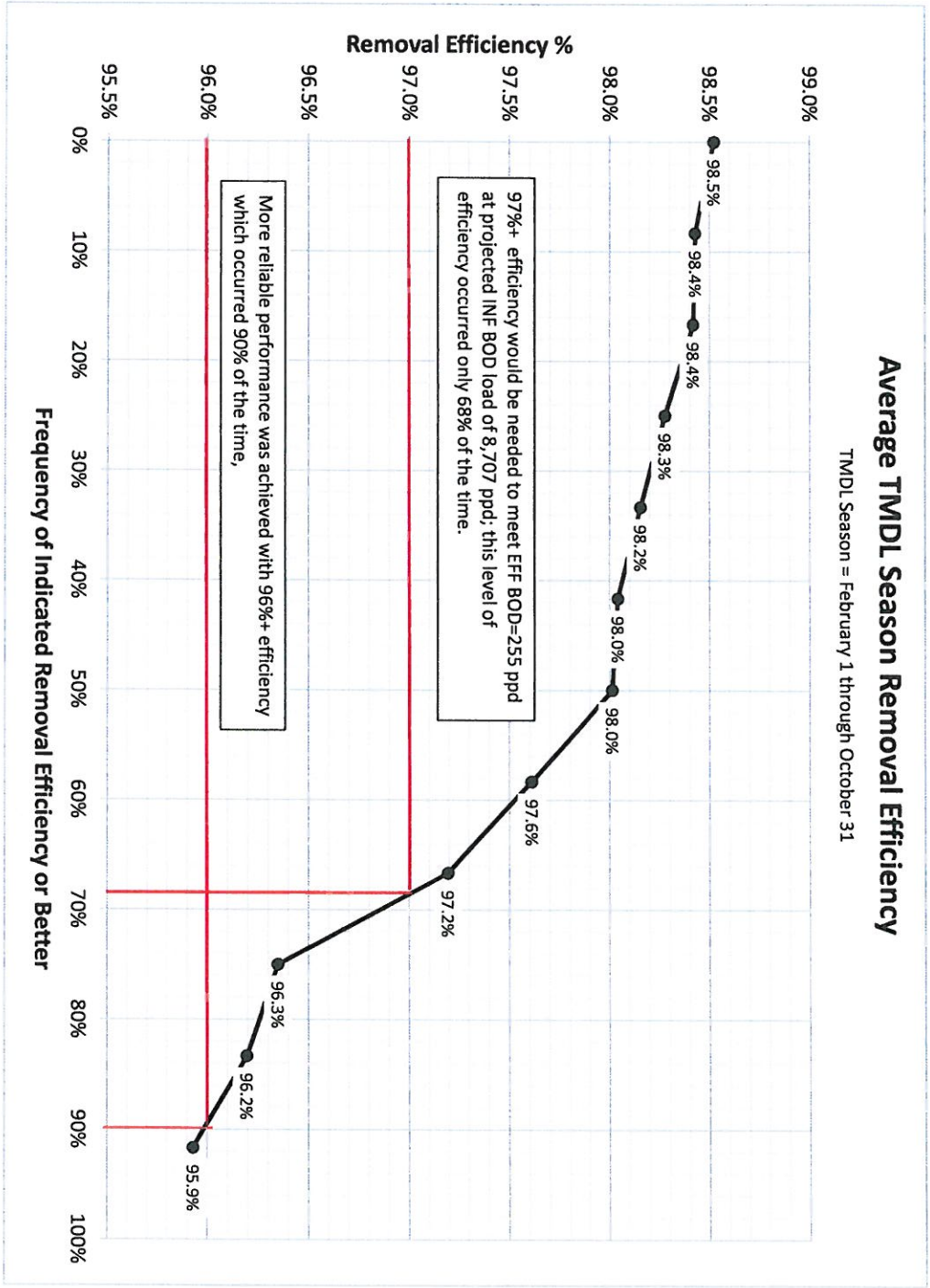
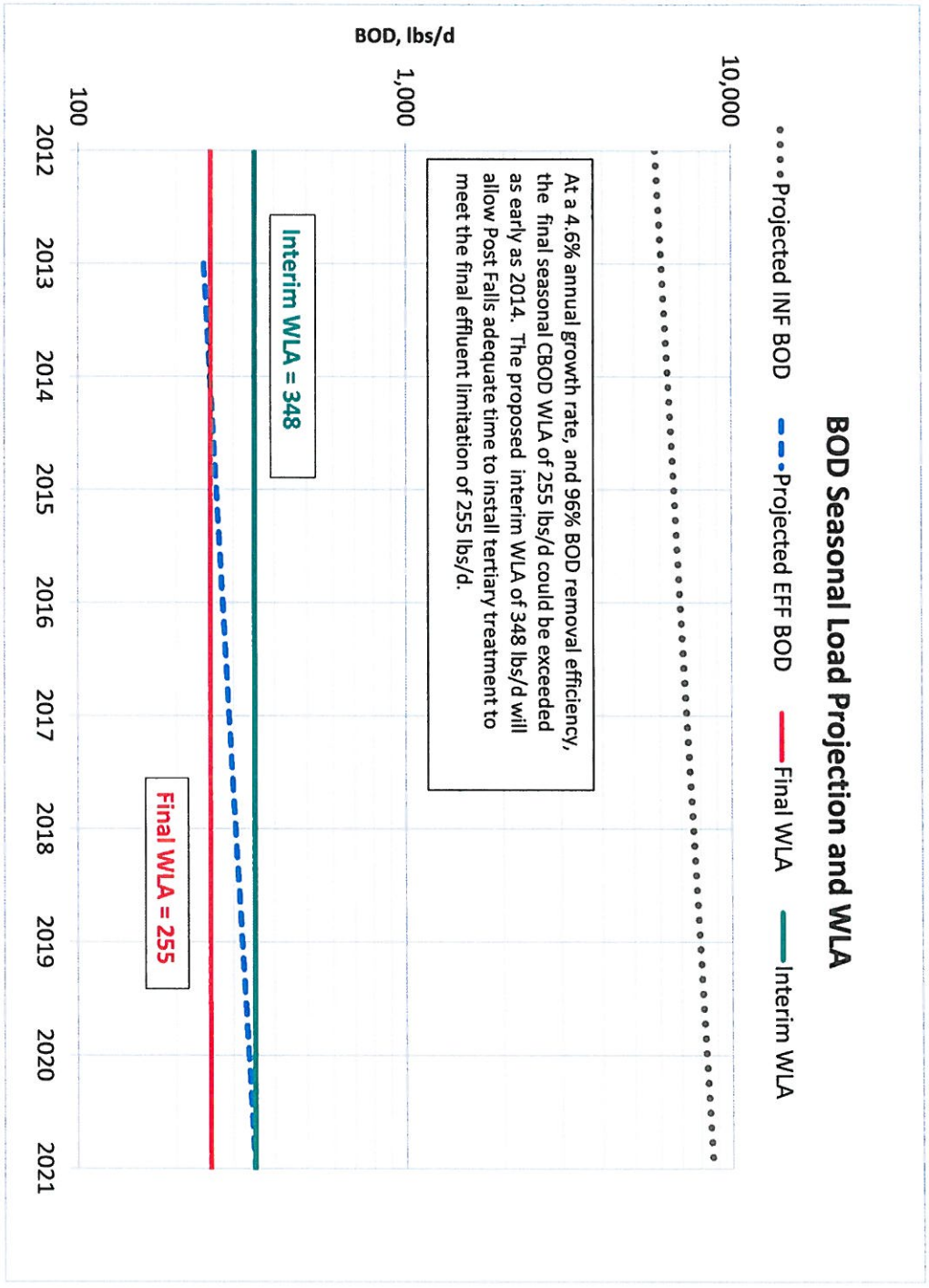
1/3/2020
1/2/2021


Average TMDL Season Removal Efficiency
TMDL Season = February 1 through October 31
Removal Efficiency %
99.0%
98.5%
98.0%
97.5%
97.0%
96.5%
96.0%
95.5%
98.5%
98.4%
98.4%
98.3%
98.2%
98.0%
98.0%
97.6%
97.2%
96.3%
96.2%
95.9%
97%+ efficiency would be needed to meet EFF BOD=255 ppd at projected INF BOD load of 8,707 ppd; this level of efficiency occurred only 68% of the time.
More reliable performance was achieved with 96%+ efficiency which occurred 90% of the time,
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Frequency of Indicated Removal Efficiency or Better


BOD Seasonal Load Projection and WLA
Projected INF BOD
Projected EFF BOD
Final WLA
Interim WLA
BOD, lbs/d
10,000
1,000
100
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
At a 4.6% annual growth rate, and 96% BOD removal efficiency, the final seasonal CBOD WLA of 255 lbs/d could be exceeded as early as 2014. The proposed interim WLA of 348 lbs/d will allow Post Falls adequate time to install tertiary treatment to meet the final effluent limitation of 255 lbs/d.
Interim WLA = 348
Final WLA = 255

CITY OF POST FALLS

Department of Public Services

April 12, 2013

Daniel Redline, Regional Administrator
Coeur d'Alene Office
Idaho Department of Environmental Quality
2110 Ironwood Parkway
Coeur d'Alene, ID 83815

Re: City of Post Falls NPDES Permit ID-002585-2: 401 Certification – CBOD Compliance Schedule Supplemental Information

Dear Mr. Redline:

This letter is to supplement the City of Post Falls' April 1, 2013 letter requesting an 8-year compliance schedule to meet the anticipated seasonal 5-day carbonaceous biochemical oxygen demand (CBOD) discharge limit in our upcoming NPDES permit renewal.

In addition to the detailed justification provided in our previous letter, it is important to realize that the improvements necessary to meet our anticipated final permit limits for CBOD and phosphorus will require significant and disruptive construction at our Water Reclamation Facility. We anticipate new preliminary treatment (headworks and equalization basins), new chemical coagulation facilities, possible tertiary clarification, tertiary filtration, disinfection improvements, and multiple recycle streams into the existing process units.

In particular, equalization basins and headworks construction will require complete rerouting of influent and preliminary treatment flows through the facility and increase the likelihood of biological upsets which can easily migrate through secondary clarification. The equalization basins are important because they will moderate the daily flow and load fluctuations that currently reduce the reliability of our biological phosphorus removal process (BPR). BPR is an essential component of permit compliance since it will significantly affect the pilot testing, selection, and sizing of our final tertiary process.

In addition, because our treatment system is biologically based, when the proposed tertiary treatment systems introduce chemicals for coagulation, filter cleaning and pH/alkalinity adjustments, they will undoubtedly create biological stresses that must be carefully managed. As with all new systems, start-up of the operations often negatively affects the existing biological system performance and the BPR often takes a number of weeks or even several months to return to previous performance levels.

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Thank you again for this opportunity to comment on EPA's proposed seasonal CBOD limit, and for considering our request for a compliance schedule and interim seasonal BOD limit in your revision of the 401 certification.

Sincerely,

Terry Werner, Director
Department of Public Services

c: Mike Neher, Environmental Manager
June Bergquist, IDEQ
Gary Allen, Givens Pursley
Paul Klatt, JUB ENGINEERS

Attachments: BOD charts

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