RESPONSE TO COMMENTS

Star Sewer and Water District
Wastewater Treatment Plant
NPDES Permit # ID0023591
March 26, 2015

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I. Introduction

On May 19, 2014, the U.S. Environmental Protection Agency (EPA) issued a 30-day public notice for the proposed issuance of a new National Pollutant Discharge Elimination System (NPDES) Permit for the Star Sewer and Water District (SSWD), Permit No. ID0023591. The EPA solicited public comments on the Draft Permit through June 18, 2014. Notice of the Draft Permit was published on the EPA Region 10 NPDES Permit Program website and in the *Idaho Statesman* newspaper. Notice was also provided to the facility and to key stakeholders in the permitting process. The EPA public notice also served as notice of the opportunity to comment on the draft Clean Water Act (CWA) Section 401 certification, which included an antidegradation analysis, provided to EPA by the Idaho Department of Environmental Quality (IDEQ) for the SSWD Wastewater Treatment Plant (WWTP) on April 23, 2014.

This Response to Comments document provides a summary of the comments on the Permit and provides the corresponding EPA responses. As a result of comments received during the public comment period, and based on the IDEQ final CWA Section 401 certification, the following revisions/clarifications were made to the Permit:

- An additional 60 days from March 15, 2015 was incorporated into the surface water monitoring requirement section, to allow the SSWD more time to construct, install, and calibrate the water quality monitoring equipment necessary to meet the Permit requirements for surface water monitoring;
- Revisions to the compliance schedules for Total Ammonia as N and Total Phosphorus (TP) as well as a revision to the compliance schedule for Total Residual Chlorine (TRC) to allow the facility time to upgrade in order to meet the interim TRC effluent limitations;
- Clarifications were made to the language in Table 1, the methylmercury fish tissue monitoring requirement language, the required WET tests in Table 4; and,

- Footnote 5 of Table 1 was updated to reflect that the minimum level (ML) of 50µg/L must be used in the mass-loading calculations.

The EPA also made grammatical changes and corrected typographical errors while finalizing this Permit.

Comments were received from the following individuals:

1. David M. Bennett, Retired Chemist formerly with Analytical Laboratories, Inc., received June 15, 2014
2. Justin Walker P.E., District Engineer, Keller Associates, on behalf of the Star Sewer and Water District (SSWD) received June 17, 2014
3. Robbin Finch, Water Quality Environmental Program Manager, Boise Public Works (BPW), received June 17, 2014
4. Justin Hayes, Program Director, Idaho Conservation League (ICL), received June 17, 2014
5. Liz Paul, Boise River Campaign Coordinator, Idaho Rivers United (IRU), received June 18, 2014

For tracking purposes, the comments received were numbered, and organized into categories. The comment categories include the following:

A. Comments on the Idaho Water Quality Standards (WQS) and Manmade Waters Provision
B. Comments on the Antidegradation Analysis
C. Comments on the Compliance Schedules for Achieving Final Effluent Limitations
D. Comments on the Total Phosphorus Limitations
E. Comments on the Methylmercury Requirements
F. Comments on Other Specific Limits and/or Monitoring Requirements
G. Other Comments

All comments received are documented here, although comments are paraphrased to highlight the relevant point(s). The original comment letters are attached. However, because the comments were organized into categories, it is possible that a response from the EPA serves to respond to more than one comment. Interested parties are encouraged to review the document in its entirety and to refer to the specific relevant Permit provision, as well as the Fact Sheet explanations, for additional context to the EPA responses below.

II. Comments Received and EPA Responses

A. Comments on the Idaho Water Quality Standards (WQS) and Manmade Waters Provision

Commenter: Liz Paul, IRU
Comment A-1: We agree with EPA's determination that the Lawrence-Kennedy (LK) Canal requires protection for cold water aquatic life, primary contact recreation, agricultural and industrial water supply, salmonid spawning, and aesthetics. While the LK Canal is a man-made

waterway that delivers water from the Boise River to irrigate agricultural land to the west of the City of Star, an undetermined amount of that water re-enters the Boise River either before or after being applied to fields...The LK Canal must be treated as a side channel of the Boise River and must be protected to meet the beneficial uses of the Boise River.

Commenter: David Bennett
Comment A-2: The 1999 NPDES Permit Fact Sheet for the Star WWTP designated the LK Canal as a "man-made" waterway to be protected for agricultural water supply only. Because the IDEQ does not have the personnel or money to conduct a use attainability analysis (UAA), Star's customers are being punished with overly restrictive and expensive requirements to meet the fishable/swimmable use designations.

Commenter: Robbin Finch, BPW
Comment A-3: The 2014 NPDES Fact Sheet is incomplete, it describes only one of three EPA approved classes of undesignated waters (IDAPA 58.01.02.101.01) and omits the provisions for "Manmade Waters and Private Waters" (IDAPA 58.01.02.101.02 and 101.03). IDEQ and EPA used the man-made waters designated use in the 1999 NPDES Permit for Star, and it is identified as appropriate in the IDEQ Draft 401 certification on the Draft Star Permit. Neither the State of Idaho nor EPA has changed the water quality standards use designation for LK Canal since 1999. The 2014 Fact Sheet and Permit need to identify the correct uses and applicable criteria. They need to be revised to remove requirements outside of protection of general water quality criteria, agricultural water quality criteria, or for protection of downstream uses.

Commenter: Justin Walker, SSWD
Comment A-4: The LK Canal is a man-made water and as such is to be protected for the use for which it was created. This was correctly identified by EPA in the 1999 NPDES Permit Fact Sheet. The state has not modified, nor has EPA approved a change in the designated use for the LK Canal since issuance of the 1999 Permit. The LK Canal requires protecting for agricultural water supply consistent with the 1999 Permit. The District's position is that Tier 1 antidegradation protection is appropriate.

Commenter: Justin Hayes, ICL
Comment A-5: In IDEQ's 401 certification for this Permit, the agency determined that the LK canal was a man-made water, and has no designated uses other than agricultural water supply. IDEQ further concluded that it would only provide the receiving water with Tier 1 protection. EPA, however, correctly determined that the receiving water was an undesignated water and that a UAA had not been undertaken to remove beneficial uses. As such, the EPA determined that the LK Canal requires aquatic life and recreation use protection.

EPA Response to Comments Related to the Manmade Waters Provision in the Idaho Water Quality Standards: The EPA acknowledges that the 1999 Permit protected the LK Canal for agricultural water supply. The 2014 Fact Sheet to this Permit provides the basis for protecting the receiving water for the beneficial uses of aquatic life and primary contact recreation, and is reiterated here.

The overall objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." [33 U.S.C. §1251(a)]. Section 101(a)(2) of the CWA states that water quality should provide for the protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water, wherever attainable. This provision is sometimes referred to as the "fishable/swimmable" goal of the CWA. Consistent with this goal, states are required to designate all waters of the U.S. within the state with fishable/swimmable use designations unless the state can meet the requirements found at 40 CFR 131.10 to remove, or "downgrade", the fishable/swimmable uses through a use attainability analysis (UAA) that is subsequently approved by the EPA.

The final CWA Section 401 certification from IDEQ identifies the LK Canal as a man-made waterway, which delivers water from the Boise River to irrigate agricultural land to the west of the City of Star. The final 401 certification protects the LK Canal for agricultural water supply only, stating that "[m]an-made waterways, for which uses are not designated in IDAPA 58.01.02.110-160, are to be protected for the uses for which they were developed; in this case, agricultural water supply (IDAPA 58.01.02.101.02)."

The LK Canal is part of the Lower Boise River Subbasin – Hydrologic Unit Code (HUC) 17050114. At Outfall 001, the LK Canal has not been designated for any specific uses in the State of Idaho WQS, found in the State of Idaho Administrative Procedures Act (IDAPA) at IDAPA 58.01.02.110 through 160. To ensure that such undesignated waters are protected to the fishable/swimmable goal of the CWA, IDAPA 58.01.02.101.01 protects undesignated waters for cold water aquatic life and primary or secondary contact recreation unless and until a UAA has been completed. IDAPA 58.01.02.101.02, the man-made waterways provision, is an additive provision that implies that there may be other designated uses applicable to man-made waterways, such as agricultural water supply. Nowhere, at IDAPA 58.01.02.101.02, does the provision state that manmade waterways are *only* to be protected for the use in which they were developed. The final 401 certification from IDEQ is not sufficient to remove or modify protections for undesignated waters provided by Section 101.01 because of the need to comply with the CWA and IDAPA procedures (58.01.02.101.01, b and c).

No change to the Permit has been made as a result of these comments.

B. Comments on the Antidegradation Analysis

Commenter: ICL
Comment B-1: The IDEQ has conducted a Tier I antidegradation review based on its determination that the LK Canal should only be protected for agricultural water supply. The EPA has failed to direct the IDEQ to redo the antidegradation analysis of the LK Canal, and failed to undertake its own antidegradation review of the water body to consider the impacts that were authorized in the Draft NPDES Permit. As such, no antidegradation review and analysis has been conducted for this NPDES Permit and as a result, the process undertaken to develop this Permit is lacking.

EPA Response to the Comment on the Antidegradation Analysis: The IDEQ conducted its antidegradation analysis based on an assumption that the LK Canal is only protected for

agricultural water supply. In the absence of a UAA, the LK Canal must also be protected for cold water aquatic life and primary contact recreation, so the EPA conducted its own antidegradation analysis, set forth below. See Response to Comment A, regarding the designated uses of LK Canal, above.

The State of Idaho WQS contain an antidegradation policy providing Tier 1, Tier 2, and Tier 3 levels of protection to waterbodies in Idaho (IDAPA 58.01.02.051).

- Tier 1 Protection. The first level of protection applies to all water bodies subject to CWA jurisdiction and ensures that existing uses of a waterbody 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 58.01.02.052.07). The existing uses of the receiving waterbody are cold water aquatic life, primary contact recreation, industrial and agricultural water supplies, wildlife habitat, and aesthetics.
- Tier 2 Protection. The second level of protection applies to those waterbodies 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; 58.01.02.052.08).
- 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 58.01.02.052.03; 58.01.02.052.09).

IDEQ stated in the final 401 certification that it employs a waterbody by waterbody approach to implementing the state's antidegradation policy. That approach means that any waterbody fully supporting its beneficial uses will be considered high quality (IDAPA 58.01.02.052.05.a). Any waterbody not fully supporting its beneficial uses will be provided Tier 1 protection for that use. unless specific circumstances warranting Tier 2 protection are met (IDAPA 58.01.02.052.05.c).

The EPA reviewed the IDEQ Antidegradation Implementation Procedures when conducting this analysis. For the information provided in the Implementation Procedures, see http://www.deq.idaho.gov/media/792352-antidegradation-implementation-procedures-draft-0112.pdf

Absent other evidence, the EPA assumes that the designated uses of the waterbody are the existing uses. The EPA must assume that the quality of the water in the LK Canal is the same as the source of the water in the canal, i.e., the Boise River segment that feeds the canal. In conducting this analysis, the EPA does not have any basis to believe that the LK Canal is a Tier 2 waterbody with high quality water.

The water in the Boise River both upstream and downstream of the City of Star has been assessed [The Lower Boise River Mile 50 to Star Assessment Unit (AU), ID17050114SW005_06 and the Star to Middleton AU, ID17050114SW005_06a] in the latest July 11, 2014, EPA-approved Integrated Report of 2012.

- In the 2012 EPA-approved Integrated Report for these AUs of the Lower Boise River, the AUs are listed as impaired in Category 4a for sediment and bacteria; in Category 4c for

physical substrate, habitat alteration, and low flow; and in Category 5 for temperature.

- The water from the Boise River that fills the LK canal is located within the River Mile 50 to Star Assessment Unit, which is known to be impaired for sediment and bacteria, and therefore, the water quality in the canal is such that it currently does not meet the water quality criteria promulgated to protect the uses applicable to the canal.

It should be noted that in the IDEQ's final 401 certification, IDEQ states that

> "From October-April, shallow groundwater intercepted by the unlined canals runs into LK Canal for approximately 9 miles, then discharges to South Middleton Drain and/or Watkins Drain, and then to Mill Slough."

To the best of the EPA's knowledge, there was one IDEQ site visit in January of 2015, and at that time, it appeared that the canal was being fed by groundwater. It is unclear from the 401 certification whether the LK Canal is also fed by the Boise River at this time. In the absence of other water quality data, the EPA assumes that the LK Canal is fed by the Boise River at a segment of the river which is known to be impaired and not high quality water. For these reasons, the EPA believes that Tier 1 protection is the appropriate level of protection for the LK Canal.

In the final 401 certification, the IDEQ states that the effluent limitations and associated requirements contained in the SSWD WWTP Permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS and the wasteload allocations (WLAs) established in the Total Maximum Daily Load (TMDL) documents developed by IDEQ - The *Lower Boise River TMDL* (LBR) and the *Snake River-Hells Canyon TMDL* (SR-HC). Therefore the Permit will protect and maintain existing and designated beneficial uses in the LK Canal in compliance with the Tier 1 provisions of Idaho's WQS.

The effluent concentration limits in the 2015 NPDES Permit for total suspended solids (TSS), as well as other limits included in the Permit for the SSWD, were either higher in 1999 or else no limits existed for the pollutant of concern in 1999. Therefore, the EPA has concluded that the 2015 Permit is more protective of water quality and beneficial uses than the previous Permit. The antidegradation review of this Permit is based on a comparison of the current limits to the previous limits applicable to the facility, not to the previous design flow of the facility. **No change to the Permit was made as a result of this comment.**

Commenter: ICL
Comment B-2: The EPA and IDEQ need to consider the implications of the IDEQ's recent action to greatly increase the TMDL WLA for TSS at the Star WWTP; as this runs afoul of the required antidegradation protection. Similarly, the EPA and IDEQ need to consider the consequences of the fact that the facility has increased its design flow since the last (1999) NPDES Permit was issued. The review needs to be based on the 0.33 mgd design flow authorized in the facility's most recent Permit.

EPA Response to Comment on the TSS Reserve for Growth Allocation Provided by IDEQ:

The *Lower Boise River TMDL* (December 18, 1998 – approved by the EPA in January of 2000) was amended to include the April 2008 *Sediment and Bacteria Allocations Addendum to the Lower Boise River TMDL* – see Table 15, pg. 62 of the Addendum for the table of WLAs to point source dischargers in the watershed. On page 64, the TMDL reads:

> *Reserve for Growth: The general form of the waste load allocations is a mass limit based on existing flows and currently permitted TSS concentrations. To account for growth, a reserve of TSS load is included, based on twenty year build out scenarios for each facility. The reserve for growth for treatment plants is the sum of the expected suspended solids loads that occur in a twenty - year build out scenario, relative to the wasteload allocations. Thus, the size of the reserve represents the difference between current design flows and the flows expected after 20 years of population growth in the Treasure Valley. The reserve, if used by the treatment plants, will not exceed the TSS targets established in the TMDL. The mass balance capacity check described below incorporates the full reserve for growth in addition to the waste loads from Table 15, and shows that a margin of safety still exists with respect to the 50 mg/l, 60 day duration criterion.*

In 2008, IDEQ amended Table 15 of the TMDL in order to provide increased WLAs for Avimor, Kuna and Greenleaf. The allocations for these facilities were taken out of the reserve as was intended in the LBR TMDL. On April 7, 2014, IDEQ sent a letter to the SSWD, to inform the District that is was amending Table 15 of the TMDL to reflect the changed allocation for Star taken from the reserve. This action is consistent with the *1998 Lower Boise River TMDL* and this procedure was public noticed with the *2008 Addendum to the TMDL*. Therefore, because the revised mass loading allocations from the sediment reserve for Star at 463 lbs/day average monthly limit and 694 lbs/day average weekly limit are calculated in accordance with the *Lower Boise River TMDL*, the EPA determined that the Idaho WQS, including antidegradation requirements, have been met in this case.

No change to the Permit was made as a result of this comment.

C. Comments on the Compliance Schedules for Achieving Final Effluent Limitations

Commenter: IRU
Comment C-1: To allow the SSWD WWTP to discharge up to 4500 ug/L of total phosphorus (TP) year round for 10 more years, adding approximately 248,400 lbs of TP to the river, is not in keeping with the CWA. The Fact Sheet contains no discussion of a strategy to immediately reduce TP levels and move the Boise and Snake Rivers into compliance with Idaho WQS. The EPA should require lower interim limits starting in 2015.

Commenter: ICL
Comment C-2: IDEQ and the EPA have allowed the Star WWTP 9 years and 11 months to comply with the final TP (seasonal) limits in the Permit. This is unacceptably long and inconsistent with the EPA's direction that compliance schedules should require Permit compliance as soon as possible. The multiyear gap in TP related compliance activities between 2016 and 2019 and 2019 and 2023 is inconsistent with "as soon as possible" and a shorter compliance schedule must be developed.

EPA Response to Comments Related to the Compliance Schedule for Total Phosphorus: As the EPA discussed in the Fact Sheet, there are significant costs to upgrade the current facility to meet the final ammonia and TP limits required of the Star WWTP. In addition, there is the practical planning, obtaining of the funding, completing the design and engineering review requirements, completing the additional technical requirements, contracting, construction, and calibration. In order for the Star WWTP to consistently meet the ammonia and TP limits, the facility is considering the phase-out of the lagoons and the need to design a new treatment plant that would replace the lagoons. The EPA believes that the physical process changes required, and the costs of this upgrade, necessitate adequate time, and that the 10 years provided to the facility in the IDEQ 401 certification to meet the final ammonia and phosphorus limits is a reasonable time frame and is "as soon as possible."

In accordance with 40 CFR 122.47(a)(3), interim requirements are included in the Permit and additional details about the requirements, as well as annual progress reports, have been added to the Permit compliance schedules for ammonia and TP for the years 2015 through 2024, as certified by IDEQ in the final CWA 401 certification. **Therefore, the EPA has included these revisions to the compliance schedule for TP in the final Permit as a result of this comment and the final 401 certification.**

Commenter: SSWD
Comment C-3: The District can't meet the interim total residual chlorine (TRC) limit (technology based limit or TBEL) of 0.5 mg/L based on historical data. Consequently, the District requests the interim TRC limits be eliminated to avoid constructing temporary improvements in the next few months that will be replaced with more permanent improvements in the next 3-4 years to comply with the final TRC limits. At a minimum, the District requests a one (1) year compliance schedule from the effective date of the Permit to construct the improvements necessary to meet the interim TRC limits.

EPA Response to Comment Requesting a Compliance Schedule for Meeting the Interim TRC Limits: The EPA understands that there is work involved in upgrading the facility to the point at which it can meet the interim TRC limits. The facility needs to submit preliminary engineering plans and go through review with IDEQ, and needs to develop a new two-stage process into the existing treatment train: there needs to be a control system for chlorine addition, and also for dechlorination. The IDEQ final 401 certification allows for the facility to take up to one (1) year from the effective date of the Permit to construct, install the necessary system improvements, and comply with the interim TRC limits of 0.5 mg/L on an average monthly basis and 0.75 mg/L on an average weekly basis. The final TRC limits of 50 µg/L on both average monthly and maximum daily (not to exceed) bases must be met six (6) months later, after the facility has time to adjust operations to maximize the performance of the new chlorine and dechlorination controls. **Therefore, the Permit was changed as a result of this comment and IDEQ's final 401 certification to include a one (1) year compliance schedule for meeting the interim TRC limits.**

Commenter: SSWD

Comment C-4: Without undergoing upgrades, the District is not able to meet the *E. coli* bacteria limits using their combined wastewater treatment processes. Due to engineering and funding requirements, the required upgrades are impossible to meet within 30 days of the effective date of the Permit. Therefore, the District requests a 10-year compliance schedule similar to Phosphorus for meeting the *E. coli* limits, enabling the District to construct improvements and abandon the lagoons.

EPA Response to Comment Requesting a Compliance Schedule for Meeting the Bacteria Limits: The EPA believes that the Permit requirement to reduce the TRC in the WWTP effluent down to the interim limit by the end of the first year, and down to 50 µg/L by the end of the compliance schedule will provide sufficient disinfection to comply with the bacteria limits in the Permit, consistent with the Idaho WQS.

The EPA has no data from the facility in either the NPDES Form 2A Permit Application or the supplemental data provided by the facility suggesting that the *E. coli* limit cannot be met 30 days after the effective date of the Permit and reported on the first discharge monitoring report (DMR). In the previous permit, SSWD had to comply with a fecal limit. The fecal limit from the previous permit, issued prior to the change in the Idaho WQS for bacteria, is equivalent to the current *E. coli* limit; as documented in the August 4, 2011 letter from Michael McIntyre, Surface Water Program Manager, IDEQ, to Michael Lidgard, NPDES Unit Manager, EPA. Therefore, there is no basis upon which to allow for a compliance schedule.

The *E. coli* average monthly limit is determined and reported as a geometric mean of 126 organisms/100 ml of water based on a minimum of 5 samples taken every 3-7 days within a calendar month. See footnote 3 to Table 1 on page 11 of the Permit. Calculation of the geometric mean serves to dampen the signal from any individual higher count sampling event. More frequent monitoring can lower the monthly average as well. It is always an option for the facility to monitor more frequently than required. However, in accordance with Part III.D of the Permit, if the Permittee monitors more frequently than required, using test procedures approved under 40 CFR 136, the analytical results of all tests must be included in the calculations and reporting of the data submitted on the DMR. **No change was made to the Permit as a result of this comment.**

D. Comments on the Total Phosphorus Limitations

Commenter: SSWD

Comment D-1: The design of the lagoons (at the Star WWTP) does not include phosphorus removal. Use of the 95th percentile of historical data ensure that that District will have violations of the new 4.5 mg/L average monthly limit (AML) and does not account for future growth. The District requests that the EPA preferably remove the interim limits or at a minimum increase the interim AML to 7 mg/L which is more consistent with historical plant performance and includes a contingency as the District grows and more flow is forced through the lagoons.

EPA Response to Comment Related to the Interim Total Phosphorus Limits: The Star WWTP provided the EPA with facility performance data as a supplement to the June 2013 NPDES Form 2A application information. All the data submitted on facility performance

between 2006 and 2013 included both samples taken on the membrane bioreactor process (MBR) stream only and samples taken on the combined stream including lagoon effluent. The data was reviewed by the EPA and incorporated into determining the reasonable potential (RP) of the facility to cause or contribute to an exceedance of Idaho's water quality criteria or to an EPA-approved TMDL target. Once RP was established for TP, the performance data on the total effluent stream was analyzed using simple statistical approaches, in order to determine the total effluent concentration of TP at the 95th percentile (i.e., the facility could meet that TP concentration 95% of the time, without changing anything in its operations) so that as work is being done to upgrade the facility to meet the final TP limits in 2025, the concentrations of TP in the effluent discharge do not increase. The interim limit is, thus, a performance-based limit that the facility can meet.

The Star WWTP has not provided any facility performance data to the EPA that would justify changing the interim TP limit to 7 mg/L. The WWTP always has the option to sample more frequently than the required four samples a month (once a week), as the interim TP limit is 4.5 mg/L on an average monthly basis, and 9 mg/L on an average weekly basis. As mentioned above, more frequent sampling allows for the dampening of any one higher sampling event and can lower the weekly average, and therefore, the monthly average as well. However; in accordance with Part III.D of the Permit, if the Permittee monitors more frequently than required by this Permit, using test procedures approved under 40 CFR 136, then the analytical results must be included in the calculations and reporting of the data submitted on the monthly DMR to the EPA.

No change to the Permit was made as a result of this comment.

Commenter: ICL
Comment D-2: The SR-HC TMDL TP target requires that the Boise River not exceed 0.07 mg/L at the confluence with the Snake River during May-September. The EPA's incorporation of final TP limits of 70 ug/L AML and 141 ug/L average weekly limit (AWL) inappropriately allows for daily discharges that may exceed the 'not to exceed' 70 ug/L TMDL target. Because of that, the Permit has the potential of causing the Boise River to exceed the TP target at the confluence of the Boise and Snake Rivers. The EPA either needs to limit TP discharges to a daily maximum of 70 ug/L (or the corresponding mass limit) or to recalculate the AML and AWL such that no single day exceeds 70 ug/L TP (or the corresponding mass limit). Articulating the TP limit as a max daily limit is more practical. Incorporation of final TP limits of 70 ug/L AML and 141 ug/L AWL inappropriately allows for daily discharges that may exceed the 'not to exceed' 70 ug/L TMDL target. Because of that, the Permit has the potential of causing the Boise River to exceed the TP target at the confluence of the Boise and Snake Rivers.

EPA Response to Comment Related to the Expression of the Total Phosphorus Limit as Average Weekly and Average Monthly Limits: The EPA, as the permitting authority for the State of Idaho, must determine whether the target incorporated into an existing EPA-Approved TMDL assessment of a watershed applies to the facility under consideration for an NPDES Permit. The SR-HC TMDL TP target of 0.07 mg/L for the Snake River must be met at the confluence of the Boise River and Snake River, in order to protect the Snake River.

The Boise River is also impaired for phosphorus; which means that it is not meeting WQS itself. As such, there is no assimilative capacity in the Boise River to take any additional TP from point sources, and the Boise River upstream of the confluence with the Snake River must also meet the in-stream concentration targets. Since there is no assimilative capacity in the Lower Boise River, the EPA applied the 70 µg/L TP target at the "end of the pipe" for facilities discharging into the Lower Boise River.

Nothing in the SR-HC TMDL indicates that the 70 ug/L TP target should be applied on a maximum daily basis. IDEQ wrote the TMDL including a seasonal target that must be applied from the beginning of May through the end of September. Phosphorus is a bio-accumulative pollutant and the adverse effects are the most prominent in the summer, when the water is warmer.

The EPA has determined that the AML and AWLs of 70 ug/L mg/L and 141 ug/L of TP in this Permit are sufficient to achieve the water quality target in the SR-HC TMDL.

The EPA regulations at 40 CFR 122.45(d)(2) require NPDES Permit limits for publicly owned treatment works (POTWs) to be stated as average weekly and average monthly limits, unless impracticable. The EPA did not find that those limits are impracticable for the Star WWTP. The seasonal target was incorporated into the Star Permit as the average monthly limit for TP during the months of May-September. Using the EPA *Technical Support Document for Water-Quality Based Toxics Control* (TSD) tables for calculating weekly limits from monthly limits is standard protocol for EPA Permit Writers'. There may be variations in the effluent discharge on a daily basis, but the concentrations of TP in the effluent must not exceed 70 µg/L on an average monthly basis or 141 µg/L on an average weekly basis. **No change to the Permit was made as a result of this comment.**

Commenter: ICL
Comment D-3: The EPA stated that the facility only needs to meet TP limits during May-September, when the SR-HC TMDL calls for an in-stream target of less than or equal to 0.07 mg/L TP. However, phosphorus discharged by Star between October and April will still be present in the Hells Canyon reach and be bioavailable in the May-September time period. As such, this facility needs an annual TP limit in the Permit to meet the TMDL target during the May-September period. Evidence has shown that water quality in Hells Canyon stretch fails to meet WQS for nutrients (the narrative criterion) during periods of time outside of the TMDLs season of applicability. The EPA is therefore obligated to develop year round TP limits for the facility.

Commenter: SSWD
Comment D-4: The Permit and Fact Sheet should acknowledge that allocations greater than those proposed in the Draft Permit will satisfy the SR-HC TMDL. The Lower Boise River Phosphorus TMDL is scheduled to be completed in December of 2014. Preliminary allocations show that the Snake River-Hells Canyon TMDL allocation of 70 ug/L can be met with wastewater controls of 70-300 ug/L for the May-September timeframe. The Fact Sheet should be updated to include this information and the Permit should provide for a reopener clause to include the final EPA approved LBR TP TMDL allocations.

Commenter: IRU

Comment D-5: Given currently available information, IRU supports the final TP limits assigned in the draft Permit for May 1- Sept 30, but does not support the absence of limits for TP for October 1 - April 30. Limits on TP discharge year round are clearly needed as TP accumulates in the river throughout the year. There is ample data to conclude that excess phosphorus is entering the Snake River from the Boise River throughout the year. Boise River impairments also extend beyond the May-Sept period. The EPA should amend the Draft Permit to include winter limits on phosphorus. The Permit includes a reopener that allows those limits to be modified if additional information becomes available or the TMDL approval happens in the next 5 years.

EPA Response to Comments on the Applicability of the Snake River-Hells Canyon TMDL to the Total Phosphorus Effluent Limitations in the Star WWTP Permit: With respect to the Star WWTP discharge's effects upon the Boise and Snake Rivers, between October – April, as stated in the Fact Sheet, it is not feasible to calculate numeric effluent TP limits for one point source in a complex watershed in the absence of a comprehensive watershed analysis and evaluation of all contributing sources. Therefore, the EPA will defer establishing effluent limits for phosphorus based on nutrient-related water quality concerns in the Boise and Snake Rivers in the Star Permit until the phosphorus TMDL for the Boise River is complete. When the LBR TMDL is submitted to the EPA for action under the Clean Water Act, it will include a watershed wide assessment of the loading capacity for phosphorus and the applicable WLAs for each point source in the watershed. IDEQ is currently developing that TMDL and assessing the need for annual limits on phosphorus. Until the LBR TMDL is finalized, submitted to the EPA for action, and approved, the EPA is developing TP limits in Permits consistent with the SR-HC TMDL because the Boise River is impaired and there is no assimilative capacity to take on more TP, as discussed above.

The final 401 Certification states: "...the effluent limitations and associated requirements contained in the Star Sewer and Water District WWTP Permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS and the wasteload allocations established in the *Lower Boise River Sediment and Bacteria TMDL* and the *Snake River-Hells Canyon TMDL.*"

The Star Permit provides for a reopener clause on page 34. See Part IV.K of the Permit. Once the LBR Phosphorus TMDL is completed by IDEQ and approved by the EPA, the Agency can incorporate the WLAs included in that TMDL into the relevant NPDES Permits. If that occurs during the life of this Permit, the EPA can reopen it and recalculate the applicable effluent limitations on the Star WWTP.

As for the need for annual phosphorus limits, the EPA acknowledges that phosphorus may be present in the Boise and Snake Rivers and therefore, potentially bioavailable outside of the seasonal limits included in the SR-HC TMDL. The SR-HC TMDL, on page 164, specifically discusses the application of the TP target as a seasonal target.

No change to the Permit has been made as a result of these comments.

E. Comments on the Methylmercury Requirements

Commenter: BPW
Comment E-1: The City of Boise has implemented a watershed based fish tissue monitoring program and Mercury Minimization Plan as required in the City's 2012 NPDES Permits. We contracted with USGS to conduct the fish tissue sampling program and encourage LBR watershed wastewater and stormwater permittees to join this watershed based mercury fish tissue sampling effort.

Commenter: SSWD
Comment E-2: The District does not consider the WWTP to be contributing mercury to the Lower Boise River, based on one sample taken for Part D in the 2013 NPDES Permit application. The District would like to be excluded from the fish tissue sampling requirements at this time. We propose that the data collected during this Permit cycle to be used to determine the potential contribution, or lack, of mercury to the Lower Boise and either require the fish tissue sampling in the next cycle or exclude the District completely.

Commenter: David Bennett
Comment E-3: Star should monitor their mercury discharge but it defies logic to require that their customers pay for a study of the fish. Again, it appears that the US Government is trying to pass along to Star's customers its responsibility for an unfunded mandate to study the fish in the Boise River.

EPA Response on the Methylmercury Requirements in the Star WWTP Permit:
In 2005, the State of Idaho adopted the EPA nationally recommended methylmercury criterion, at the national default fish consumption rate of 17.5 grams/day, and set 0.3 mg/kg fish tissue as the methylmercury criterion for the protection of human health uses of waterbodies around the state. In addition to setting the EPA-approved methylmercury criterion in the state WQS, Idaho developed guidance for the state water quality programs, including NPDES permitting, in order to assist with implementation of the state's adopted methylmercury criterion.
In order to determine if the SSWD facility has the RP to cause or contribute to an exceedence of the state's methylmercury criterion, the EPA needs reliable fish tissue and effluent water column monitoring data with which to compare to the criteria set in the Idaho WQS. The facility has the choice to collect all the fish tissue data on its own, or to join a cooperative effort to monitor for and collect fish tissue data throughout the watershed.

The EPA acknowledges the City of Boise's effort for a watershed based methylmercury fish tissue sampling program in the Lower Boise watershed. The EPA also encouraged the SSWD to work with the City of Boise and join the cooperative effort that was developed in consultation with the USGS. It is the EPA's understanding that SSWD has entered into an agreement with the City of Boise to participate in the cooperative monitoring efforts. Results of the fish tissue data and effluent monitoring data will be used to assess the RP of the facility to exceed the WQS and any need for additional Permit conditions in the future.

Note that, in addition to the fish tissue methylmercury criteria for protection of human health, the state also has water column mercury criteria established in the WQS for the protection of aquatic

life. The required semi-annual effluent and surface water monitoring for total mercury will help both the facility and the EPA determine if there is any RP to cause or contribute to an exceedance of the acute and chronic total mercury criteria (for aquatic life protection) set at 2.1 µg/L and 0.012 µg/L, respectively. See the Permit Fact Sheet on page 12 for the mercury discussion.

The Star WWTP is a major point source facility in the watershed, with an average monthly design flow capacity of 1.85 million gallons a day (MGD) of effluent discharge. Under the NPDES regulations, "major" municipal facilities with design flows greater than 1 MGD, or with EPA/state approved industrial pretreatment programs have additional requirements that must be met. The methylmercury criterion is a part of the Idaho WQS and the required levels in fish tissue also must be met.

No change to the Permit was made as a result of this comment.

F. Comments on Other Specific Limits and/or Monitoring Requirements

Commenter: SSWD

Comment F-1: The design of the lagoons does not include ammonia removal. As growth occurs and the flows and loading increase into the WWTP, the ammonia concentrations out of the lagoon will increase until the plant is upgraded and the lagoons are abandoned. The District requests that the EPA remove the interim AML or at a minimum, increase the AML from 5.4 mg/L to a level reflecting the use of the lagoons. The MBR treats 68% of the influent into the plant. We propose that the interim ammonia limit reflect the lagoon flow as well (19.5 mg/L for 32% of the influent in 2013). The combination interim ammonia limit would be 9.9 mg/L as a weighted average of 5.4 mg/L * 0.68 + 19.5 mg/L * 0.32).

EPA Response to Comment Related to the Interim Ammonia Limit: The Star WWTP provided the EPA with facility performance data as a supplement to the June 2013 required NPDES Form 2A application information. All the data submitted on facility performance between 2006 and 2013 included both samples taken on the MBR stream only and samples taken on the combined stream. The data was reviewed by the EPA and incorporated into determining the RP of the facility to cause or contribute to an exceedance of Idaho's water quality criteria or to an EPA-approved TMDL target. Once RP was established for ammonia, the performance data on the total effluent stream, including the data submitted on lagoon performance, was analyzed using simple statistical approaches, in order to determine the total effluent concentration of ammonia at the 95th percentile (i.e.; the facility could meet that TP concentration 95% of the time, without changing anything in its operations) so that as work is being done to upgrade the facility to meet the final ammonia limits in 2025, the concentrations of ammonia in the effluent discharge do not increase. It is a performance-based interim limit that is reasonable and achievable according to the eight years of facility performance data submitted to the EPA. Using the 95th percentile concentration of current performance as an interim limit is a standard permitting practice. While working towards the final ammonia effluent limits, the facility must maintain current removal rates.

The Star WWTP has not provided any facility performance data to the EPA that would justify changing the interim ammonia limit to 9.9 mg/L. The WWTP always has the option to sample more frequently than the required four samples a month (once a week), as the interim ammonia limit is 5.4 mg/L on an average monthly basis, and 24 mg/L on a daily maximum basis. As long as the treatment plant removes ammonia to less than 24 mg/L on a daily max basis, the plant will meet the MDL. If there are concerns of occasionally exceeding the AML, more frequent sampling allows for the dampening of any one higher sampling event and can lower the weekly average, and therefore, the monthly average as well. Additional sampling results must be reported on the DMR submitted to the EPA.

In addition, the interim mass-based loading limits are calculated using the facility's maximum design flow capacity. There is room for growth already factored into the Permit limits, because the facility is currently operating below its design capacity. **No change to the Permit has been made as a result of this comment.**

Commenter: SSWD
Comment F-2: The District would have two violations of the proposed TSS AWL, based on historical data. TSS will likely increase as growth occurs and flows increase into the WWTP. Consequently, the District requests that the EPA remove the interim limits or at a minimum, increase the interim AWL from 45 to 60 mg/L. Use of secondary treatment standards does not recognize the existence of the lagoon treatment process.

EPA Response to Comment Related to the TSS Limit: As stated in the Permit Fact Sheet on pages 60-61, the Star WWTP is no longer eligible for TSS limits in its Permit at anything higher than the secondary treatment standards found at 40 CFR 133.102 (b). There are national regulations on TSS concentrations, based on the proper operation and maintenance of a treatment plant using a technology that can consistently achieve greater removals than a trickling filter or lagoon. The EPA acknowledges the existence of the lagoon treatment in use at the Star WWTP, but since Star is using MBR technology for 60-70% of the influent, the Star WWTP no longer qualifies for the higher "equivalent to secondary" treatment standards. See the Fact Sheet on pages 60-61 for more information.

As also discussed in the Fact Sheet on page 62, there was no TSS mass-based loading limit in the 1999 Permit. The mass-based limit in the current Permit is calculated based on the more stringent concentration requirements and the current design flow capacity. Since the facility currently operates at less than its maximum capacity, there is room for growth and flow increases built into the limits as currently calculated. The TSS limits are not interim limits, however, they are final limits and must be met immediately upon the effective date of the Permit. **No change to the Permit has been made as a result of this comment.**

Commenter: IRU
Comment F-3: IRU supports the EPA's new requirements for monitoring of temperature, methylmercury, metals, and WET testing.

EPA Response to Comment in Support of New Requirements: Comment noted.

Commenter: IRU
Comment F-4: The EPA's establishment of receiving water flow conditions was hampered by lack of flow measurements in the LK Canal, which can be easily remedied by measuring flow upstream of the discharge point. IRU supports the EPA's requirement for the Star WWTP to continuously measure flow in the LK Canal upstream of the discharge.

Commenter: SSWD
Comment F-5: Permit Part I.E - Surface Water Monitoring: The new Permit requires monitoring in the receiving stream. Access must be obtained by the District from the owner of the LK Canal (Ada County Drainage District #2). Compliance with the requirements will be contingent upon approval from the owner of the canal.

EPA Response to Comments Related to Surface Water Monitoring: The EPA acknowledges support for continuous monitoring of flow through the LK Canal from IRU. The surface water monitoring of the conditions of the LK Canal is a new requirement this Permit cycle. The EPA allowed for time to work with the canal company to obtain permission to take samples of the waterbody with the requirement to begin surface water monitoring. In the final 401 certification, IDEQ certified an additional 60 days from the March 15, 2015 commencement date which was proposed in the draft Permit. Therefore, the new commencement date for the required surface water monitoring in the final Permit is May 14, 2015. This additional time allows the SSWD to complete construction, as per the agreement with the canal company for property access, and to allow for equipment installation and calibration for representative data collection on the receiving water. **No change to the Permit was made as a result of this comment.**

Commenter: SSWD
Comment F-6: Table 1 (page 7) TRC final limits: Concentrations in the table and in footnote 5 are different, and therefore confusing. The loading limits for TRC were not changed to reflect the ML concentration for Permit compliance. The loading limits in footnote 5 should be changed to 0.77 lbs/day for both the AML and MDL.

Commenter: David Bennett
Comment F-7: Page 11, Footnote 5: The mass loading TRC limits need to be adjusted to reflect the allowable ML concentration.

EPA Response to Comments Related to Mass Loading for TRC: Thank you for pointing out the error in Footnote 5 on page 11 of the Permit. Footnote 5 has been corrected to reflect that the ML of 50µg/L must be used in the mass-loading calculations. Multiplying 0.050 mg/day concentration limit * 1.85 MGD design flow * 8.34 conversion factor = 0.77. **The last sentence of Footnote 5 now reads "...The Permittee will be in compliance... if the average monthly and maximum daily mass discharge limits are less than 0.77 lbs/day."**

Commenter: SSWD
Comment F-8: Attachment A: On page 40 the table provides values for ML where MDL is more appropriate. There is no ML listed for BOD. On pages 42-43, the District requests that the 8000 series tests, used for testing clean water, be used in order to provide the required level of detection for volatile and semi volatile compounds.

Commenter: David Bennett
Comment F-9: Attachment A: Several of the parameters included in the ML table will require expensive testing to get to the minimum levels listed, with questionable benefits to the Boise River and the LK Canal, in which it is illegal to trespass, fish, or swim.

EPA Response to Comments Related to Attachment A: There is an ML for BOD_5 on page 40. BOD_5 is the first parameter included in the table. As far as test methods are concerned, facilities permitted under NPDES Permits are required to use the EPA-approved laboratory test methods listed at 40 CFR 136. In most cases, the EPA does not require a specific test method. The method must be sufficiently sensitive to detect the amount of the pollutant of concern, should it be present in the effluent.

In addition, it is important to note that the ML table included in Attachment A to the Permit is a comprehensive list of all the possible MLs that may be identified in the Permit. The SSWD Permit identifies where compliance evaluation levels will be set at the ML instead of at the calculated WQBEL, and only total residual chlorine (TRC) is involved. **No change to the Permit was made as a result of these comments.**

Commenter: SSWD
Comment F-10: Table 1 (page 8): All metals should be total recoverable. See chromium.

EPA Response to Comment Related to the Expression of Metals Limits: Comment noted; thank you for pointing out this error. **A change was made to the Permit to correct the error with chromium, in the Table on page 8.**

Commenter: SSWD
Comment F-11: Table 1 (page 7): This sample frequency for expanded effluent testing is excessive for a small discharger like the District, it's the same as that for the City of Boise. A more reasonable sampling frequency would be "at least once during the 4th year of the Permit term."

EPA Response to Comment Related to Expanded Effluent Testing: As explained in the Fact Sheet to the Permit, the Star WWTP is a major facility according to NPDES definitions, regulations and EPA policy. The NPDES Form 2A Application requires major facilities to run Part D expanded effluent testing at least three times prior to submitting an application for the next permit cycle. That application requirement for expanded effluent testing for major facilities was included in the Star Permit. Part D testing must be run 3 times during this 5-year Permit cycle in order to comply with the application requirements. **No change to the Permit was made as a result of this comment.**

Commenter: BPW
Comment F-12: The EPA reviewed metals and hardness data and determined that insufficient data were available for determination of reasonable potential and that additional data should be collected this Permit cycle on metals. In 2007, the EPA used the Biotic Ligand Model (BLM) to update the national 304(a) recommendation for the copper criterion in freshwater. The BLM

requires 10 water quality parameters in addition to the metal to determine the appropriate water quality criterion for a metal (against which to determine reasonable potential). The draft Permit and Fact Sheet suggest that metals are a future concern for Permitting, and should identify the best current science based evaluation methods and data requirements to determine if appropriately protective metals (effluent limits) are necessary in the next Permit cycle.

EPA Response to Comment Related to the Use of the BLM for Determining an Applicable Copper Criterion: The EPA updated the national CWA 304(a) criteria recommendation for copper in freshwater by recommending that the BLM be used as a means of calculating the applicable copper criterion for a waterbody, incorporating site-specific data on the conditions relative to the 10 required water quality parameters. Once the EPA updates the national recommendation for a water quality criteria under the CWA, the next step is for states and tribes to adopt the new recommendation into their WQS and submit the revised WQS to the EPA for action under the CWA. To date, the State of Idaho has not adopted the BLM as a means of calculating the applicable copper criterion in waters across the state. Once Idaho adopts the BLM and the EPA approves the changes to the states WQS, the NPDES Permitting program can incorporate the BLM into RP analyses and calculation of effluent limitations. At this time, the SSWD WWTP Permit includes monitoring requirements, in order to collect data to determine RP during the development of the next Permit.

G. Other Comments

Commenter: IRU
Comment G-1: Permit term: The CWA and federal regulations authorize the EPA to issue an NPDES Permit for a five year term. Idaho Rivers United expects the EPA to process a new Star Water and Sewer District Permit by 2019.

EPA Response to Comment Regarding 5-Year Permit Term: Comment noted.

Commenter: IRU
Comment G-2: 1998 TMDL: Why is the EPA referring to the 1998 TMDL when the Idaho Integrated Reports provide more current information? IRU supports the EPA's application of sediment, bacteria, and temperature TMDL allocations for the Lower Boise River to LK Canal because of its proximity to the Boise River.

EPA Response to Comment Regarding 1998 Lower Boise River TMDL for Sediment, Bacteria and Temperature: While it is true that the Idaho Integrated Reports (IRs) provide more current information on the status of waterbody impairments and TMDL development, and those IRs are updated every two years, the 1998 LBR TMDL [for Sediment, Temperature, and Bacteria] is the document which includes the WLAs for sediment and bacteria to the Star WWTP. Therefore, the TMDL is referenced in the Fact Sheet to the Star WWTP Permit, as it is relevant to the discussion of TSS and the TSS effluent limitations included in the Permit. As discussed in the Response to Comment B-1, above, the 1998 TSS allocation was amended by IDEQ, as of the April 7, 2014 letter to the SSWD, in order to reflect the current design flow capacity of the facility and give some of the reserve for growth in the TMDL to the SSWD. And, as noted in the Fact Sheet and in the response to Comment C-4, above, the WLA for fecal

coliform for the Star WWTP has been superseded by the change to the Idaho WQS for bacteria criteria. **No change is made to the Permit as a result of the comment.**

Commenter: IRU
Comment G-3: Modification: EPA should modify this Permit to include pertinent wasteload allocations (WLAs) when the LBR nutrient TMDL is completed.

EPA Response to Comment Regarding Modification of Permit: Comment noted. As stated earlier, the Permit includes a reopener clause. If the LBR Phosphorus TMDL is completed by IDEQ and approved by EPA prior to the end of the Permit, EPA can reopen the Permit under the reopener clause to modify as necessary in order to translate the allocations in the TMDL to permit limits.

Commenter: BPW
Comment G-4: Downstream Protection: The 2014 Fact Sheet mentions that protection of downstream waters is one of the factors permitting authorities must consider in the development of the Permit and Fact Sheet. But it contains no information concerning water quality of the LK canal or the Boise River at the confluence and appears to need additional water quality information and data to justify the basis for application of more stringent standards for the protection of downstream waters that potentially apply to the Star WWTP discharge.

EPA Response to Comment Regarding Downstream Protection: The effluent limitations and monitoring requirements included in the Star WWTP Permit were based on the uses and criteria applicable to the LK Canal and the determination of the reasonable potential (RP) of the facility to cause or contribute to an exceedance of the water quality criteria. The standards applicable to the Boise River downstream were discussed in the Fact Sheet, and the limits and conditions in the Permit also protect downstream waters, in accordance with NPDES regulations at 40 CFR 122.44(d)(1) and WQS regulations at 40 CFR 131.10 (b). Due to the EPA-approved SR-HC TMDL, there is a TP target on the Boise River and therefore, EPA translated the in-stream target to effluent limitations of TP on the facility. For more information regarding the phosphorus limitations, see the Fact Sheet Appendix G. **No change to the Permit was made as a result of this comment.**

David M. Bennett

Retired Chemist, Supervisor

Analytical Laboratories, Inc.

1804 N. 33rd Street, Boise, ID 83703

208-859-4237

(I have either sampled and tested or supervised testing for samples from Star Sewer and Water District, Wastewater Treatment Plant for their NPDES from 1978 through March, 2014, along with many other cities in this same area.)

For: Star Sewer and Water District, Wastewater Treatment Plant, (Star) NPDES Permit# ID0023591

New permit (http://yosemite.epa.gov/r10/water.nsf/NPDES+Public+Notices/star_id_2014) comments:

1. NPDES Facts Sheet pages 10- 11

The NPDES Facts Sheet clearly designated Star's receiving water (the Lawrence Kennedy Canal) as a "man made" waterway for agricultural water supply only. However, because Idaho Department of Environmental Quality (IDEQ) does not have the personnel or money to conduct a government required unfunded mandate to complete a UAA Study, Star's customers are being punished with overly restrictive and expensive requirements to meet the fishable/swimmable uses designation.

2. NPDES Draft Permit page 19, F, Methylmercury Requirements - Fish Tissue Sampling

It makes sense to require Star to monitor their mercury discharge, however it defies logic to require that their customers pay for a study of the fish in the waters in the United States within the State of Idaho. By monitoring Star's mercury discharge and the dilution factor from the discharge in to the Lawrence Kennedy Canal and eventually into the Boise River, Star's maximum possible contribution to any contamination in fish tissue could be estimated. Again, it appears that the U.S. Government is trying to pass along to Star's customers its responsibility for an unfunded mandate to study the fish in the Boise River.

In any mercury study, it would be most cost effective to test random fish and random sites along the Boise River for total mercury first (a less expensive test). If there is no total mercury, there cannot be any Methylmercury. If there is mercury contamination, it could also be coming from non point sources, such as agricultural, residential, or naturally occurring run-off.

3. NPDES Draft Permit page 11, Note 5, Total Residual Chlorine (TRC)

Note 5 admits that the final limits "are not quantifiable using EPA approved analytical methods". EPA will allow 50 ug/L as the compliance level instead of 10 ug/L monthly average, and 20 ug/L maximum, that are in the permit. However, the monthly and maximum mass discharge limits have not been adjusted from 0.15 and 0.32 lbs/day. Since the mass limits are calculated using concentration multiplied times flow and a factor(8.34), if you raise the allowable concentration limit by 2.5 to 5 times, it makes no mathematical sense to leave the mass limits at the same unattainable levels as the concentrations used for the calculation.

Even the 50 ug/L TRC limit will require most laboratories to change their current test method to a more involved and costly method to attain reliable EPA approved analyses at this level.

4. NPDES Draft Permit attachment A, Minimum Levels

Several of the Conventional Parameters and many of the Non Conventional Parameters, in addition to the Priority Pollutant levels, will require extraordinarily expensive testing to get to the minimum levels listed in attachment A with questionable benefits in the real world environment and specifically the Boise River (and the Lawrence Kennedy Canal, in which it is illegal to trespass, fish or swim).

KELLER associates
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June 16, 2014

Ms. Jill Nogi
Permit Writer
EPA Region 10
Director, Office of Water and Watersheds (OWW-130)
1200 Sixth Avenue, Suite 900
Seattle, WA 98101

Re: **Star Sewer and Water District, Idaho - Comments to Draft National Pollution Discharge Elimination System (NPDES) Preliminary Permit #ID-0023591**

Dear Ms. Nogi:

Please find this as comment letter to the Draft NPDES Permit #ID-0023591 for the Star Sewer and Water District (District). Where possible, we have numbered our comments, stated the section and part of the permit, showed the change, addition/deletion requested (in bold), and included an explanation for why the comment is provided for your convenience.

1. The Permit and Fact Sheet should Acknowledge Allocations Greater Than those Proposed in the draft Permit will satisfy the Snake River Hells Canyon TMDL.

    a. The phosphorus TMDL is scheduled to be completed in December 2014. Preliminary allocations (IDEQ, 2014) and USGS Mass Balance Analysis (USGS, 2014) show that the Snake River – Hells Canyon TMDL allocation of 70 ug/l can be met with wastewater controls of 70-300 ug/l for the May – September timeframe. The Fact Sheet should be updated to include this information and the permit should provide for a reopener to include final EPA approved LBR TP TMDL allocations as required at 40CFR122.44.D.vii.(B)

2. The Permit and Fact Sheet incorrectly identify the designated use of the receiving stream. The Lawrence Kennedy Canal is a man-made water way and as such is to be protected for the use for which it was created. This use and the "man-made" designation for the Lawrence Kennedy Canal were correctly identified by EPA as agricultural water supply in the 1999 NPDES permit fact sheet. The state has not modified nor has EPA approved a change in the designated use for Lawrence Kennedy canal since issuance of the 1999 permit so the same designated use should apply for this permit.

    The Lawrence-Kennedy Canal was constructed in the 1880s by local farmers to collect and convey excess drainage from their agricultural activities to the Boise River. The Lawrence-Kennedy Canal's usage has not changed since then, and will continue to be utilized for similar purposes into the foreseeable future. Today, Drainage District #2

maintains the Lawrence-Kennedy Canal. They do not allow any persons to fish, swim, recreate, or participate in any similar activities in or near the canal. There are no public access points along the canal.

In a letter from Bill Allred (Regional Administrator for Idaho DEQ in the Twin Falls Regional Office) dated May 3, 2012, he clarifies a receiving water body's level of protection for a private man-made canal. The following is an excerpt from the Receiving Water Body Level of Protection paragraph on page 3 of the letter (the full letter can be found in the appendix).

"The Jerome Cheese Company discharges to a private man-made canal, Lateral 12 that eventually discharges into the Snake River assessment unit (AU) ID 17040212SK007_07 (Snake River - Rock Creek to Box Canyon Creek). The Lateral 12 is considered a man-made waterway in the Idaho WQS. For this reason, DEQ only affords protections adequate to protect the use for which it was developed, that is agricultural water conveyance (IDAPA 58.01.02.101.02). Because man-made canals are not protected for aquatic life or recreational uses, DEQ provides only tier 1 antidegradation protection."

Based on precedent concerning private, man-made canals, the Lawrence-Kennedy Canal requires protecting agricultural water supply consistent with EPA's development of the 1999 permit. The District's position is that Tier 1 antidegradation protection is the appropriate protection.

3. Article I.E - Surface Water Monitoring: The new permit requires extensive water monitoring in the receiving stream. First, access to the receiving stream for anything other than discharge of effluent at the outfall, including monitoring, must be obtained by the District from the owner of the Lawrence-Kennedy Canal (Ada County Drainage District No. 2). The District's compliance with the required flow monitoring will be contingent on approval from the owner of the Lawrence-Kennedy Canal. The District is unable to comply with the surface water monitoring requirements without legal authorization from Drainage District No. 2.

4. Article I.C - Compliance Schedule: The District's understanding is that the compliance schedule was developed with the intent to allow the District to continue to operate the lagoons while they District completes planning, design, secures funding, and constructs improvements to displace the lagoons and simultaneously comply with the final effluent limits including phosphorus and ammonia. We have the following comments regarding the compliance schedule:

    a. Based on historical data, without undergoing upgrades the District is not able to meet E. coli Bacteria concentration limits with the combined wastewater treatment effluent. Due to engineering and funding requirements, the required upgrades are physically impossible to meet within 30 days after the effective date of the permit.

       The wastewater treatment process is not currently equipped with any dechlorination facilities. Since there is no flow pacing nor dechlorination

facilities, it is necessary for the District to establish a high chlorine dosing rate to ensure adequate bacteria kill. Even then, upsets or high TSS events in the lagoon treatment process occasionally cause higher bacteria counts.

Consequently, the District requests a 10-year compliance schedule similar to the compliance schedule for Phosphorus for meeting the new E-coli limits which will enable the District to construct improvements to abandon the lagoons. Once this occurs, the District can confidently meet the new E-coli limits.

b. The design of the lagoons does not include ammonia removal. The surface aerators do not provide sufficient air to meet the oxygen demand for nitrification as flows and loads to the lagoons increase. Ammonia removal during lower temperature months is also a factor that slows down/stops nitrification. Based on historical data in the last five years, the District would have five violations of the proposed interim ammonia Average Monthly concentration limit. Use of the 95th percentile of historical data ensures the District will have violations of the new 5.4 mg/l limit and does not account for future growth. As growth occurs and the flows and loading increase into the WWTP, the ammonia effluent concentrations out of the lagoon will increase until the plant is upgraded. Consequently, the District requests that EPA preferably remove the interim limits or at a minimum increase the interim "Average Monthly Limit" concentration from 5.4 to a level that reflects both the MBR and the lagoon's ability or lack of ability to remove ammonia. The proposed ammonia limit of 5.4 mg/l is appropriate for the MBR which is projected to treat 68% of the influent into the plant. However, since the lagoon is not configured to nitrify, we propose the interim ammonia limit to reflect the average ammonia concentration measured in the influent which was 19.5 mg/l for 2013 for the portion of flow (32%) treated by the lagoons. Consequently, we propose the composite interim ammonia limit for the combined effluent to be 9.9 mg/l (calculated as weighted average = 5.4 mg/l*0.68 + 19.5 mg/l*0.32).

c. Based on historical data, the District is not able to meet the interim total residual chlorine (TRC) limits with current infrastructure due to the absence of flow pacing on the chlorine dosing pump and absence of dechlorination facilities on the lagoon treatment process as explained in more detail in Comment 4.a. Consequently, the technology based limit of 0.5 mg/l is not appropriate for the District. As evidenced in the historical data included in the fact sheet, the District is far from being able to comply with the proposed 0.5 mg/l limit for TRC with current treatment infrastructure. Consequently, the District requests the interim limits be eliminated to avoid constructing temporary improvements in the next few months that will be replaced with more permanent improvements in the next three to four years to comply with the final TRC limits. At a minimum, the District requests a one year compliance schedule from the effective date of the permit to construct improvements necessary to meet the interim total residual chlorine limits.

d. The design of the lagoons does not include phosphorus removal. Based on historical data in the last five years, the District would have four violations of the proposed interim phosphorus Average Monthly concentration limit. Use of the 95th percentile of historical data ensures the District will have violations of the new 4.5 mg/l limit and does not account for future growth. As growth occurs and the flows and loading increase into the WWTP, the phosphorus effluent concentrations out of the lagoon will increase until the plant is upgraded. Consequently, the District requests that EPA preferably remove the interim limits or at a minimum increase the interim "Average Monthly Limit" concentration from 4.5 mg/l to 7 mg/l which is more consistent with historical plant performance and includes a contingency as the District grows and more flow is forced through the lagoons.

e. Based on historical data in the last five years, the District would have two violations of the proposed TSS Average Weekly concentration limit. As growth occurs and the flows increase into the WWTP, the TSS effluent concentrations out of the lagoon will likely increase until the plant is upgraded. Consequently, the District requests that EPA preferably remove the interim limits or at a minimum increase the interim "Average Weekly Limit" concentration from 45 to 60 mg/l. Use of secondary treatment standards does not recognize the existence of the lagoon treatment process.

I. Limitations and Monitoring Requirements (Page 6)

5. **Table 1** (Page 7)

a. Total Residual Chlorine Final Limits. The concentration limits in the table are replaced by limits in footnote 5. It would be less confusing if the limits from footnote 5 were in Table 1 and footnote 5 was deleted. However, the loading limits are not changed in footnote 5 and at the concentration of 50 ug/L, a flow of 0.36 mgd would be required to meet the loading limit. The loading limits in footnote 5 should be changed to 0.77 lbs/day for both Average Monthly Limit and Maximum Daily Limit.

b. Footnote 5 (related to Item "a" above). Change the permit TRC concentration levels in the permit to the levels indicated in the footnote and eliminate confusion. If the District cannot measure below 50 ug/L and their flow is 1.85 mgd (the design flow), then their effluent load will be 0.77 ppd and in violation of the permit. In order to be in compliance, the flow would have to be less than 0.36 mgd. Change the loading limits in the footnote to 0.77 ppd and 0.77 ppd or change the limits and loads in Table 1 and delete footnote 5.

c. All metals should be total recoverable. See chromium in Table 1 pg. 8

d. This sample frequency for expanded effluent testing is excessive for a small discharger like the District. This sampling frequency is the same as that for the City of Boise. A more reasonable sample frequency would be "Sampling must occur at least once during the 4th year of the permit term."

6. **F.** (Page 19)
   The District does not consider the WWTP to be a contributor for mercury in the lower Boise River based on available sampling data from the single round of Part D Expanded Effluent Data used in the 2013 permit application, (EPA method 245.7 was used, < 0.1 ug/L was the reported result). Therefore, the District would like to be excluded from I. F. page 19 for the current draft permit at this time. District proposes that data collected during the new permit period be used to determine District potential contribution, or lack of, mercury to the lower Boise River and either assign the methylmercury fish tissue sampling criteria for the next permit cycle or exclude the District completely

7. **Attachment A Table** (Page 40)
   The table provides values for minimum level (ML) where minimum detection level (MDL) is more appropriate. For some constituents such as BOD there is no ML. Further, the ML can vary and labs will only certify levels at the MDL or above.

8. **Attachment A Table** (Page 42 and 43)
   District request the use of the 8000 series test used for testing clean water in order to provide the required level of detection for volatile and semi volatile compounds.

We look forward to your response to our comments.

Sincerely,

KELLER ASSOCIATES, INC.

Justin Walker, P.E.
District Engineer

cc: Star Sewer and Water District (Hank Day, Ken Vose)
File

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June 17, 2014

Ms. Jill Nogi, Permit Writer
EPA Region 10
Director, Office of Water and Watersheds (OWW-130)
1200 Sixth Avenue, Suite 900
Seattle, WA 98101

Re: City of Boise Comments on the Draft National Pollution Discharge Elimination System (NPDES) Fact Sheet and Permit for Star Sewer and Water District #ID-0023591

Dear Ms. Nogi:

The City of Boise has reviewed the draft NPDES Permit for the Star Sewer and Water District (District) #ID-0023591 and appreciates the opportunity to comment on the draft Fact Sheet and Permit. The draft Fact Sheet and permit are generally well-written and well-documented. The City has four comments that we believe will further strengthen the technical basis for the proposed Fact Sheet and Permit and ensure that water quality is protected:

1. Water Quality Standards

The 2014 Fact Sheet description of the Idaho Water Quality Standards description of undesignated waters is incomplete and needs to be augmented. The Fact Sheet describes only one of three Environmental Protection Agency (EPA) approved classes of undesignated waters, Undesignated Surface Waters (IDAPA 58.01.02.101.01), and omits two additional EPA approved undesignated water classes "Manmade Waters" (IDAPA 58.01.02.101.02) and "Private Waters" (IDAPA 58.01.02.101.03).

"Manmade Waters" is the designated use that Idaho Department of Environmental Quality (IDEQ) and EPA used in the Fact Sheet and as the basis for the permit developed in 1999[1] for the Star Sewer and Water District and the use class that the IDEQ 2014 draft 401 certification identifies as the appropriate designated use.

Neither the State of Idaho nor EPA has changed the water quality standards use designation for Lawrence Kennedy Canal since 1999. The 2014 Fact Sheet and the associated permit need to correctly identify the designated use(s), which based on the NPDES permitting and Water Quality Standards record, appears to be "Manmade Waters".

The water quality standards applicable to the Lawrence Kennedy Canal appear to be incorrectly identified in the 2014 Fact Sheet. The correct criteria based on the Manmade Waters use include:

- General Surface Water Criteria applicable to all surface waters of the State IDAPA 58.01.02.200, and
- Water quality criteria for agricultural water supply or EPA's *Water Quality Criteria 1972*, also referred to as the "Blue Book" (EPA R3-73-033 and IDAPA 58.01.02.252.02).

The Fact Sheet and permit contain permit limits and conditions, including monitoring requirements that are based on designated uses and criteria that are not applicable to the Lawrence Kennedy Canal, including aquatic life and human health limits or sampling and monitoring requirements. The Fact Sheet and permit need to be revised to remove requirements not required by protection general water quality criteria, agricultural water quality criteria, or for the protection of downstream uses.

2. Protection of Downstream Uses

The 2014 Fact Sheet identifies the connection of the Lawrence Kennedy Canal to the Lower Boise River between Rivermile 50 and Indian Creek and that protection of downstream waters is one of the factors permitting authorities must considered in the development of the Fact Sheet and associated NPDES permit requirements.

The Fact Sheet contains no information concerning the water quality of the Lawrence Kennedy Canal or the Boise River at the confluence and appears to need additional water quality information and data to justify the basis for application of more stringent standards for the protection of downstream waters that potentially applicable to the Star Sewer and Water District discharge.

3. Watershed based Mercury Fish Tissue Monitoring

The City of Boise has implemented a watershed based fish tissue monitoring program and Mercury Minimization Plan as required in the City's 2012 NPDES permits. The City contracted with the United States Geological Survey (USGS) to conduct the watershed based mercury fish tissue sampling program and welcomes and encourages Lower Boise River watershed wastewater and stormwater permittees to join the watershed based mercury fish tissue sampling effort.

4. Metals limits and associated data collection

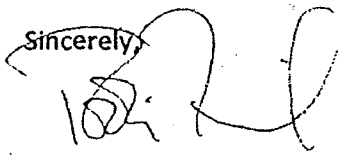
EPA reviewed metals and hardness data and concluded that insufficient data were available for determination of reasonable potential and that additional data should be collected this permit cycle that do provide sufficient data for this analysis. The proposed evaluation is based on hardness based water quality criteria. Hardness based metals criteria are known to be under or overly conservative (EPA, 2008)[ii]. Water quality parameters, particularly organic matter and pH, but also sulfate, chloride, sodium, and alkalinity can affect metals toxicity. Failure to consider these effects may make a water quality criterion overly or under protective for a number of sites where metals limits are a consideration. In 2007, EPA used the Biotic Ligand Model (BLM) to update 304(a) recommended national copper criterion for freshwater.

The biotic ligand model is a desktop geochemical model developed by EPA that requires ten (10) water quality parameters (alkalinity, DOC, sulfate, chloride...) in addition to the metal to determine the appropriate criterion for a metal. EPA has developed biotic ligand models for seven metals and is working on additional metals and metals combinations.

The draft Fact Sheet and permit suggest that metals are a future concern for permitting. Metals RPE should be assessed using the best available science, which according to EPA is BLM. The Fact Sheet and permit should identify the best current science based evaluation methods and data requirements (e.g., collection of the ten BLM parameters and use of the BLM model) to determine if appropriately protective metals are necessary in the next permit cycle.

This concludes the City of Boise comments. Should you have any questions, please feel free to contact me.

Sincerely,



Robbin Finch, Water Quality Environmental Program Manager
Boise Public Works

cc: Pete Wagner, IDEQ
Ken Vose, Star Sewer and Water District
Steve Burgos, Boise Public Works
SAR-276

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[i] Star Sewer and Water District Fact Sheet (EPA, 1999)
B. Water Quality Standards

A State's water quality standards are composed of use classifications, and numeric and/or narrative water quality criteria. The use classification system designates the beneficial uses (such as cold water biota, contact recreation, etc.) that each water body is expected to achieve. The numeric and/or narrative water quality criteria are the criteria deemed necessary, by the State, to support the beneficial use classification of each water body. The anti-degradation policy represents a three-tiered approach to maintain and protect various levels of water quality and uses.

The Lawrence-Kennedy Canal is a man-made waterway. Section IDAPA 16.01.02.101.02 of the Idaho *Water Quality Standards and Wastewater Treatment Requirements* states that such waterways are to be protected for the use for which they were developed. The Lawrence-Kennedy Canal was constructed for the purpose of agricultural water supply.

Flows from the Lawrence-Kennedy Canal eventually reach the Boise River near the City of Middleton. This segment of the Boise River is protected for cold water biota, primary and secondary contact recreation, salmon spawning, and agricultural water supply.

[ii] EPA, 2008, An Introduction to the Biotic Ligand Model, Water Quality Standards Academy presentation and notes, 56p.
http://water.epa.gov/learn/training/standardsacademy/upload/2008_08_20_standards_academy_special_blm_presentation-notes.pdf

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Delivered via email

Jill Nogi
US EPA Region 10
1200 Sixth Ave, #900 M/S OWW-130
Seattle, WA 98101

Lauri Monnot
IDEQ – Boise Regional Office
1445 North Orchard
Boise, ID 83706

6/18/14

RE: Idaho Conservation League comments on the draft NPDES for Star Sewer and Water District WWTP, Permit No.: ID 0023591 and IDEQ 401 cert.

Dear Ms. Nogi and Ms. Monnot;

Thank you for the opportunity to comment on the draft NPDES permit and 401 certification for Star Sewer and Water District's WWTP. Since 1973, the Idaho Conservation League has been Idaho's leading voice for clean water, clean air and wilderness—values that are the foundation for Idaho's extraordinary quality of life. The Idaho Conservation League works to protect these values through public education, outreach, advocacy and policy development. As Idaho's largest state-based conservation organization, we represent over 25,000 supporters, many of whom have a deep personal interest in protecting and restoring water quality throughout the Boise River watershed. Indeed, we represent a number of members who depend on waters from of the Boise River system for irrigation, industry and recreation.

This draft permit and the 401 certification runs afoul of certain antidegradation requirements related to the protection of waters in Idaho. As such, the proposed permit violates the Clean Water Act and should not be issued as written.

Our specific comments are attached.

Please do not hesitate to contact me at 208-345-6933 ext 24 or jhayes@idahoconservation.org if you have any questions regarding our comments or if we can provide you with any additional information on this matter.

Sincerely,

Justin Hayes
Program Director

Year Round Total Phosphorus Effluent Limits Need to be Developed

The EPA has stated that this facility only needs TP limits during the season (May-September) that the Snake River Hells Canyon TMDL calls for the attainment of an instream target of less than or equal to 0.07 mg/l TP.

However, phosphorus discharged by Star between October 1 and April does not travel completely through and exit the segment of the Snake River covered in the Hells Canyon TMDL during this October – April time frame. Rather, phosphorus discharged by Star between October – April will still be present in the Hells Canyon reach and be bio available into the May-September time period. As such, this facility needs a annual TP limit in the permit to meet the instream target of less than or equal to 0.07 mg/l TP during the May-September season.

Further, evidence has shown that water quality in the Hells Canyon stretch is failing to meet the water quality standards for nutrients (i.e. "Surface waters of the state shall be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths that impair designated beneficial uses.") during periods of time outside of the TMDL's season of applicability (May – September). This is evidenced by the fact that Oregon has determined that the Hells Canyon stretch is failing to meet Oregon nutrient standards outside of the May-Sept seasonal window. As such, EPA is aware of the fact that the TMDL is not adequately protecting WQS in the Hells Canyon reach. Pursuant to this, the EPA is obligated to develop NPDES effluent limits necessary to meet water quality standards. As a result, EPA needs to develop TP limits year round – not just limits for the May-September timeframe.

Failure to Undertake Sufficient Antidegradation Analysis and Review.

In DEQ's 401 cert for this permit, the agency determined that the receiving water (the LK Canal) was a 'man made water' and, as such, in the agency's opinion, the water body has no 'designated uses' other than agricultural water supply. DEQ further concluded that since no aquatic life or recreational uses were designated for the LK Canal, that DEQ would only provide the receiving water with Tier 1 protection.

EPA, however, correctly determined that the receiving water was an undesignated water and that a UAA had not been undertaken to remove beneficial uses. As such, the EPA has determined that the LK Canal has aquatic life and recreation uses. To this end, the EPA issued effluent limits that are more stringent than the limits that the DEQ authorized in its 401 cert.

However, the EPA has failed to direct the DEQ to redo the antidegradation analysis of the LK Canal in light of the fact that there are aquatic life and recreation uses. Nor did the EPA undertake its own antidegradation review of the water body to consider the impacts that were authorized in the raft NPDES permit. As such, no antidegradation review and

analysis has been conducted for this NPDES permit and as a result, this process undertaken to develop this permit is legally lacking and must be redone.

While undertaking this needed antidegradation review, the EPA (and DEQ) need to consider the implications of the DEQ's recent action to greatly increase the TMDL WLA for TSS at the Star WWTP. By increasing the TSS WLA from this facility, the DEQ runs afoul of required antidegradation protection.

Similarly, EPA (and DEQ) need to consider the consequences of the fact that the facility has increased its design flow since the most recent (1999) NPDES permit was issued for this facility. As such, it is not appropriate to base the antidegradation review on the 1.85 mgd design flow. Rather, the review needs to be based on the 0.33 mgd design flow authorized in the facility's most recent permit.

TP Compliance Schedule is Unreasonable and Unnecessarily Protracted

DEQ (and the EPA) have allowed Star WWTP to have 9 years and 11 months to comply with the final TP (seasonal) limits in the permit. Setting aside our concern that these seasonal TP limits are insufficient and that the facility needs year round TP limits, is unacceptably long and inconsistent with EPA's direction that compliance schedules should require permit compliance as soon as possible.

The DEQ 401 cert contains a list and schedule for compliance schedule related tasks (see table 1 in 401 cert.). This table provides that Star shall undertake an 'overall planning phase' for compliance with TP limits during 2015 and 2016. However, not until 2019 must Star again visit TP compliance. And then, Star has no obligations related to TP until 2023 when it must conclude the 'final construction phase' for TP compliance.

The multiyear gap in TP related compliance activities between 2016 and 2019 and 2019 and 2023 is inconsistent with EPA's direction to secure permit compliance as soon as possible and represents an unacceptable delay. A shorter compliance schedule must be developed.

Seasonal TP Limits not Consistent with SR-HC TMDL Target

The SR-HC TP target requires that the Boise River not exceed .07 mg/l at the confluence with the Snake River during the May-Sept season.

EPA's incorporation of final TP effluent limits of 70 ug/l AML and 141 ug/l AWL inappropriately allows for daily dischargers that will exceed the 'not to exceed' 70 ug/l TMDL target. Because the permit limits allow discharges on individual days to greatly exceed 70 ug/l TP, the permit has the potential of causing the Boise River to exceed the TP at the confluence of the Boise River and Snake River.

EPA needs to either limit TP discharges to a daily maximum of 70 ug/l (or its corresponding mass load) or the EPA needs to recalculate the AML and AWL such that

no single day exceeds 70 ug/l TP (or its corresponding mass load). We submit that recrafting the AML and AWL such that no single day has the appropriate statistical probability of exceeding 70 ug/l would result in the need for a very stringent AML and AWL; well below the 70 ug/l limit. As such, this method of complying with the 'not to exceed' 70 ug/l limit would be impractical. It would be more practical to simply articulate the TP limit as a daily maximum of 70 ug/l (or its corresponding mass load).

IDAHO RIVERS UNITED
20th ANNIVERSARY

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June 18, 2014

EPA Region 10
Director, Office of Water and Watersheds (OWW-130)
1200 Sixth Avenue, Suite 900
Seattle, WA 98101
Nogi.jill@epa.gov

RE: Comments of Idaho Rivers United on draft NPDES permit for Star Sewer and Water District Wastewater Treatment Facility, ID-00-23591

Dear Director,

Idaho Rivers United appreciates the opportunity to comment on the Environmental Protection Agency's draft NPDES permit for the Star Sewer and Water District Wastewater Treatment Facility.

Idaho Rivers United is a non-profit river conservation organization dedicated to protecting and restoring the rivers of Idaho. Based in Boise, Idaho Rivers United has 3,500 members. Protecting the Boise River watershed is one of our organization's primary goals. Many of our members use and enjoy the Boise River, and we represent their interest in seeing the Clean Water Act fully applied in order that the Boise River is fishable and swimmable.

Please consider the following comments.

Term of permit

The CWA and supporting federal regulations authorize EPA to issue an NPDES permit for a term of five years. The *NATIONAL WATER PROGRAM STRATEGY: RESPONSE TO CLIMATE CHANGE* KEY ACTION UPDATE FOR 2010-2011 reinforces the importance of reviewing NPDES permits on a five-year cycle, "The five-year permitting cycle provides permit writers with a significant amount of flexibility to adapt to changing conditions." The five year term is more important than ever as climate change has the potential to impact water quality–based effluent limitations and other permit conditions.

Idaho Rivers United supports the five year permit term because it allows new information to be considered in a timely manner. This results in better protection for waters of the United States. Idaho Rivers United expects EPA to process a new Star Water and Sewer District permit by 2019.

Effluent Limitations: Idaho Rivers United agrees with EPA's determination that the LK Canal must be protected for cold water aquatic life, primary contact recreation, agricultural and industrial water supply, wildlife habitats, salmonid spawning and aesthetics. While the LK Canal is a man-made waterway that delivers water from the Boise River to irrigate agricultural land to the west of the City of Star, an undetermined amount of that water re-enters the Boise River either before or after being applied to fields. Canals routinely overfill, and it's common to have large volumes of water flowing out of canals and re-entering the Boise River. With that in mind, Idaho DEQ is wrong in protecting the water in the LK Canal for agricultural use only – the LK Canal must be treated as a side channel of the Boise River and it must be protected to meet the beneficial uses of the Boise River.

Compliance Schedule
To allow the Star Sewer and Water District WWTP to discharge up to 4500 ug/L of TP year round for 10 more years, adding approximately 248,400 lbs of TP to the river, is not in keeping with the CWA. IRU recognizes that permanent plant improvements take many years, but the facility could use chemical treatment to greatly reduce TP discharge to the Boise River and the Snake River in the interim. The fact sheet contains no discussion of this strategy to immediately reduce TP levels and move the Boise and Snake Rivers into compliance with Idaho WQS. EPA should require lower interim limits starting in 2015.

Seasonality
Given currently available information and analysis, IRU supports the final Total Phosphorus limits assigned in the draft permit for May 1 – September 30. IRU does not support the absence of limits for Total Phosphorus for October 1 – April 30. IRU doesn't agree with EPA that, "It is not feasible to calculate numeric effluent phosphorus limits for October-April for one point source in a complex watershed in the absence of a comprehensive watershed analysis and evaluation of all contributing sources." WWTPs are a large point source contributor of phosphorus to the Boise River (and onto the Snake River). EPA permits all of the WWTPs on the Boise River, and most of them are being issued new permits currently. Limits on TP discharge year round are clearly needed as TP accumulates in the river throughout the year and algae grow (and die) in the river throughout the year.

There is ample data to conclude that excess phosphorus is entering the Snake River from the Boise River throughout the year. The impairment of the Boise River also extends beyond the May – September period.

The situation is complicated because phosphorus pollution problems commonly manifest at a temporal and geographic distance from the discharge, but huge amounts of information have been collected on nutrient pollution as it is the nation's foremost water pollution problem and complicated doesn't mean impossible to determine. For Brownlee Reservoir to meet water quality standards, the inflow of phosphorus to Brownlee Reservoir must be reduced or eliminated throughout the entire year, and there must be near-zero sediment enrichment in the reservoir. Winter discharge limits

of phosphorus into the Boise River watershed **are clearly needed.** What those limits should be at the Star Sewer and Water District WWTP needs to be determined by the EPA, just like EPA determined the May - September limits.

EPA should amend the draft permit to include winter limits on phosphorus. The permit includes a reopener that allows those limits to be modified if additional information becomes available or TMDL approval happens in the next five years.

Nancy Stoner, Acting Assistant Administrator of the EPA issued a memo on March 16, 2011 that states, in part, "States, EPA and stakeholders, working in partnership, must make greater progress in accelerating the reduction of nitrogen and phosphorus loadings to our nation's waters." Ms. Stoner referenced the 2009 Urgent Call to Action of the EPA Nutrient Innovations Task Group that said, "nutrients now pose significant water quality and public health concerns across the United States." The lack of winter limits in this draft permit does not reflect the urgency with which this serious pollution problem must be eliminated.

Further support for IRU's request is found in EPA's response to comments in the City of Boise WWTP permit as follows.

"The EPA based the total phosphorus limits (in the city of Boise permit) on requirements found in the Snake River-Hells Canyon (SR-HC) TMDL. In that document the phosphorus target (70 µg/L) applies from May through September. The EPA has completed a more thorough review of that document and found that the SR-HC TMDL does not provide an adequate basis for limiting the phosphorus target to the May through September time period. Based on our review EPA has determined that effluent limitations for phosphorus are needed year-round.

The discussion below presents some of the information the EPA used to determine that year-round limits are required.

High levels of nutrients such as phosphorus and nitrogen can excessively stimulate the growth of algae, both in the water column and attached to the streambed as periphyton. The nutrients also encourage growth of aquatic weeds (macrophytes), resulting in severe water quality problems. In the Snake River (of which the Boise River is a tributary), phosphorus has been identified as the primary nutrient causing water quality degradation. Phosphorus takes many forms in the aquatic environment, and phosphorus pollution is not readily attenuated by physical, chemical, and biological processes (i.e., phosphorus does not degrade in the aquatic environment). The persistence of phosphorus is particularly problematic in reservoirs. When a river enters a reservoir, the water velocity slows and the surface temperatures increase due to thermal stratification. This provides an ideal environment (abundant nutrients, warm temperatures) for rapid and excessive growth of floating and/or suspended algae. When algae die they sink, decaying and drawing oxygen from the middle and lower depths of the reservoir creating an environment that is harmful to aquatic life. In simple terms, phosphorus pollution is converted to oxygen demanding algae.

In addition, when the dissolved oxygen at the bottom of the reservoir is very low (typically < 2 mg/L), chemical reactions in the sediments release the previously-sequestered phosphorus in a dissolved form. This dissolved phosphorus mixes into the overlying water column and becomes available for uptake by algae. This "internal loading" (recycling) process is a common, long-term problem in lakes and reservoirs impacted by human activities.
Water quality problems associates with high nutrient levels (e.g., excessive algae levels, low DO) are often most severe during spring and summer conditions. However, due to the complex cycling processes between water column phosphorus, algae, macrophytes and reservoir sediments, it is important to consider the potential impacts of phosphorus discharge throughout the year:

1. While algae growth is greatest in the late spring and summer, algae can grow and even bloom (i.e., the rapid, excessive growth of algae) in winter and early spring, and fall blooms are common after reservoir turnover, when phosphorus released from sediments is mixed into the surface layer.
2. Travel time for upstream discharges and long residence times in a reservoir may result in a significant delay effect from the time of discharge to the time of effect. For example, winter discharges in a watershed can affect spring algae growth in a downstream reservoir.
3. Periphyton and macrophyte biomass from year-round growth can slough and float downstream to the reservoir in any season. Again, this may link a discharge in one season to an effect in another.
4. Phosphorus can bind to particulate matter in the water column. As a result, even when algae growth is low in the winter, some portion of the phosphorus discharged to the reservoir will settle to the bottom of the reservoir, either attached to sediment or as dead algal cells, and increase the mass available for re-cycling from the sediments to the water column.

The USGS recently released a report with new water quality data for the Boise River at Parma and Snake River at locations upstream and downstream of the Boise River confluence (Wood, M., and Etheridge, A. Water Quality Conditions near the Confluence of the Snake and Boise Rivers, Canyon County, Idaho. USGS Report 2011-5217). Several findings in this report indicate that October through April discharges of phosphorus to the Boise River affect dissolved oxygen conditions in Brownlee Reservoir, including:

1. Algae blooms have been observed in March in the Snake River.
2. The Boise River contributes 30% of the phosphorus to the Snake River at the confluence, and 72% of the orthophosphate, which is the form of phosphorus that directly fuels algae growth.
3. High chlorophyll-*a* concentrations were observed in both the Boise and Snake Rivers in the winter and spring. In the Boise River, it is likely that this chlorophyll-*a* spike is caused by sloughed periphytic algae from upstream river reaches.

With these facts in mind, EPA has reviewed the basis for the dissolved oxygen portion of the SR-HC TMDL, which is focused on conditions in Brownlee Reservoir. The reservoir analysis involved the use of a water quality model to evaluate whether phosphorus allocations and targets for the mainstem Snake River (and tributaries including the Boise River) would be sufficient to meet dissolved oxygen standards in the reservoir. The analysis found that upstream river controls would not be sufficient, and the TMDL required that the dam owner, Idaho Power, augment the oxygen levels in the reservoir. This responsibility was expressed as a required increase in oxygen tonnage per day in the middle depths (metalimnion) of the reservoir (See SN-HC TMDL, page 449).

The model analysis supporting the TMDL involved continuous, year-long simulations of dissolved oxygen in Brownlee Reservoir using the CE-QUAL-W2 model. Boundary inputs of phosphorus loading to the reservoir (i.e., inputs of phosphorus from the Snake River and its tributaries and other external sources of phosphorus) were set to reduced levels (40-70 ug/L) consistent with the TMDL target level (<70 ug/L). Importantly, these reduced levels were assumed for the entire year, not just the months of May through September (see SR-HC TMDL, Appendix F, page 12). The allocations established in the SR-HC TMDL for the mainstem and tributaries did not align with these assumptions of the underlying modeling analysis. Instead, the TMDL established May-September allocations only, and included no allocations (reductions) for the October-April period, based on a qualitative view that only summer discharges of phosphorus contribute to water quality problems in the system. Given the discrepancy between the supporting modeling analysis which assumed year-around reductions, and the seasonal nature of the TMDL allocations, the adequacy of the oxygenation requirement established for Idaho Power and other components of the TMDL allocations are not supported.

Furthermore, as discussed above, October-April loadings have an effect on the long-term quality of the sediments in the reservoir. The TMDL assumptions for future sediment quality established an implicit and ambitious future goal of near-zero sediment enrichment. Specifically, the model simulation that established Idaho Powers oxygenation requirement assumed pristine sediment conditions in the reservoir in the future (0.1 mg O_2/m^2-day[1] in the lacustrine zone of the reservoir) compared to highly enriched sediments today (2-8 mg O_2/m^2-day in the lacustrine zone of the reservoir, see SR-HC TMDL, Appendix F, page 14). For the suite of allocations in the TMDL to meet water quality standards, this pristine sediment condition must be viewed as a target condition necessary to meet water quality standards (in conjunction with tributary allocations and Idaho Power's oxygenation requirement). In this light, it would be inconsistent to allow high phosphorus loadings from tributaries during October to April, which could contribute to enriched sediments either directly or via algal growth and die-off."

Receiving Water Low Flow Conditions

EPA's establishment of receiving water flow conditions was severely hampered by lack of measurement in the LK Canal. (I assume there was no data on LK Canal or the EPA wouldn't have been looking at the Little Pioneer Canal and the South Middleton Drain.) This problem

can be easily remedied by measuring flow upstream of the discharge point. IRU supports EPA's requirement that the Star Sewer and Water District continuously measure and report flow in the LK Canal upstream of the discharge.

Water Quality Limited Waters

Why is EPA referring to a 1998 water quality document (Fact Sheet pg. 17), when the Integrated Reports from Idaho provide much more current information? IRU supports EPA's application of sediment, bacteria and temperature TMDL allocations for the lower Boise River to LK Canal because of its proximity to the Boise River.

Monitoring

IRU supports EPA's new requirements for monitoring of temperature, methylmercury, metals and WET testing.

Modification for Cause:

EPA should modify this permit to include pertinent wasteload allocations when the nutrient TMDL is completed.

Sincerely

Liz Paul

Liz Paul
Boise River Campaign Coordinator