



STATE OF IDAHO  
DEPARTMENT OF  
ENVIRONMENTAL QUALITY

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

February 20, 2015

Mr. Michael J. Lidgard  
NPDES Permits Unit Manager  
EPA Region 10  
1200 Sixth Avenue, Suite 900  
Seattle, WA 98101-3140

Subject: Final 401 Water Quality Certification for the Star Sewer and Water District WWTF,  
ID-0023591

Dear Mr. Lidgard:

The Boise Regional Office of the Department of Environmental Quality (DEQ) has reviewed the above-referenced permit for the Star Sewer and Water District. Section 401 of the Clean Water Act requires that states issue certifications for activities which are authorized by a federal permit and may result in discharge to surface waters. In Idaho, DEQ is responsible for reviewing these activities and evaluating whether the activity will comply with Idaho's Water Quality Standards, including any applicable water quality management plans (e.g., total maximum daily loads). A federal discharge permit cannot be issued until DEQ has provided certification or waived certification, either expressively, or by taking no action.

This letter is to inform you that DEQ is issuing the attached final 401 certification subject to the terms and conditions contained therein. DEQ requests that changes be made to the surface water monitoring requirements and compliance schedule in the permit to address public comments received. DEQ made the following changes to the 401 certification as a result of public comments received:

1. Clarification that the 401 certification does not authorize or excuse the permittee from obtaining surface water monitoring and access agreements.
2. Revised description of water origin for the Lawrence Kennedy Canal.
3. Clarification that in addition to ensuring protection of agricultural water supply use in Lawrence Kennedy Canal, DEQ examined whether the discharge is consistent with downstream sediment, bacteria, and total phosphorus TMDL allocations.
4. Clarification of total phosphorus impairment in the Boise and Snake Rivers and consistency with existing TMDLs and Implementation Plans.

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5. Authorization for a delay in surface water monitoring to allow equipment installation and calibration.
6. Revisions to the tasks, interim limits, and completion dates for the total residual chlorine compliance schedule.
7. Revision of tasks and deliverables for the ammonia and total phosphorus compliance schedules.

The Response to Public Comments is included with this letter. DEQ is providing documents relating to the man-made waterway provision in the Idaho Water Quality Standards. They are available at <ftp://164.165.67.237>, under the directory: *Star Sewer and Water District DEQ Response to Comments Supporting Documents*. Please follow the attached instructions.

Please contact Lauri Monnot at (208) 373-0461 to discuss any questions or concerns regarding the content of this certification.

Sincerely,



Pete Wagner  
Regional Administrator  
Boise Regional Office

Enclosures (3)

ec: Jill Nogi, EPA Region 10  
Stephen Berry, DEQ 401 Program Coordinator  
Justin Hayes, Idaho Conservation League  
Justin Walker, Keller Associates  
Ken Vose, Star Sewer and Water District  
Liz Paul, Idaho Rivers United  
David M. Bennett, Retired Chemist  
Robbin Finch, Boise Public Works



## Idaho Department of Environmental Quality Final §401 Water Quality Certification

February 20, 2015

**NPDES Permit Number(s):** ID-002359-1 Star Sewer and Water District  
Wastewater Treatment Plant (WWTP)

**Receiving Water Body:** Lawrence-Kennedy Canal

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Pursuant to the provisions of Section 401(a)(1) of the Federal Water Pollution Control Act (Clean Water Act), as amended; 33 U.S.C. Section 1341(a)(1); and Idaho Code §§ 39-101 et seq. and 39-3601 et seq., the Idaho Department of Environmental Quality (DEQ) has authority to review National Pollutant Discharge Elimination System (NPDES) permits and issue water quality certification decisions.

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

This certification does not constitute authorization of the permitted activities by any other state or federal agency or private person or entity. This certification does not excuse the permit holder from the obligation to obtain any other necessary approvals, authorizations (including surface water monitoring access agreements), or permits, including without limitation, the approval from the owner of a private water conveyance system, if one is required, to use the system in connection with the permitted activities.

### Antidegradation Review

The WQS contain an antidegradation policy providing three levels of protection to water bodies in Idaho (IDAPA 58.01.02.051).

- Tier 1 Protection. The first level of protection applies to all water bodies subject to Clean Water Act jurisdiction and ensures that existing uses of a water body and the level of water quality necessary to protect those existing uses will be maintained and protected (IDAPA 58.01.02.051.01; 58.01.02.052.01). Additionally, a Tier 1 review is performed for all new or reissued permits or licenses (IDAPA 58.01.02.052.07).
- Tier 2 Protection. The second level of protection applies to those water bodies considered high quality and ensures that no lowering of water quality will be allowed unless deemed necessary to accommodate important economic or social development (IDAPA 58.01.02.051.02; 58.01.02.052.08).

- 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 58.01.02.051.03; 58.01.02.052.09).

DEQ is employing a water body by water body approach to implementing Idaho's antidegradation policy. This approach means that any water body fully supporting its beneficial uses will be considered high quality (IDAPA 58.01.02.052.05.a). Any water body not fully supporting its beneficial uses will be provided Tier 1 protection for that use, unless specific circumstances warranting Tier 2 protection are met (IDAPA 58.01.02.052.05.c). The most recent federally approved Integrated Report and supporting data are used to determine support status and the tier of protection (IDAPA 58.01.02.052.05).

### ***Pollutants of Concern***

The Star Sewer and Water District WWTP discharges the following pollutants of concern: BOD<sub>5</sub>, TSS, *E. coli*, ammonia, total residual chlorine (chlorine), total phosphorus (TP), temperature, chloroform, zinc, and copper. Effluent limits have been developed for BOD<sub>5</sub>, TSS, *E. coli*, ammonia, chlorine, and TP. Due to lack of temperature, chloroform, zinc and copper effluent data, monitoring requirements are included so that reasonable potential to exceed WQS can be determined in future permits.

### ***Receiving Water Body Level of Protection***

The Star Sewer and Water District WWTP discharges to the Lawrence-Kennedy Canal within the Lower Boise Subbasin. Lawrence-Kennedy Canal is a man-made waterway, not designated in sections 110 through 160 of the WQS which delivers water from the Boise River to irrigate agricultural land to the west of the City of Star and collects shallow groundwater and tailwater from agricultural field irrigation. Man-made waterways, for which uses are not designated in IDAPA 58.01.02, sections 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).

Water from the Lawrence-Kennedy (LK) Canal enters Mill Slough (AU 17050114SW005\_02) just before it converges with the Boise River (AU 17050114SW005\_06a) approximately seven (7) miles to the west of the facility near the City of Middleton. During the irrigation season, approximately May–September, water from LK Canal is applied to agricultural land, with any overflow going to various agricultural drains that then enter Mill Slough or the Boise River. From October through 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.

Because no aquatic life or recreational uses are designated for the LK Canal, DEQ will provide Tier 1 protection only for the LK Canal (IDAPA 58.01.02.051.01).

While the LK Canal is the receiving water for Star's discharge, DEQ has also examined whether the discharge is consistent with achieving compliance with WQS in the Boise River through compliance with the sediment and bacteria wasteload allocations (WLAs) applicable to Star in the Lower Boise River TMDL, and the TP load allocation (LA) for the Boise River in the Snake River Hells Canyon (SRHC) TMDL.

### ***Protection and Maintenance of Existing Uses (Tier 1 Protection)***

As noted above, a Tier 1 review is performed for all new or reissued permits or licenses, applies to all waters subject to the jurisdiction of the Clean Water Act, and requires demonstration that existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected. In order to protect and maintain designated and existing beneficial uses, a permitted discharge must comply with narrative and numeric criteria of the Idaho WQS, as well as other provisions of the WQS such as Section 055, which addresses water quality limited waters. The numeric and narrative criteria in the WQS are set at levels that ensure protection of designated beneficial uses. The effluent limitations and associated requirements contained in the Star Sewer and Water District WWTP permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS that are applicable to the LK Canal.

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

Prior to the development of the TMDL, the WQS require the application of the antidegradation policy and implementation provisions, which for an impaired water body means the application of the tier 1 protection provisions discussed in this section (IDAPA 58.01.02.055.04). As discussed above, in order to protect existing uses as required for water afforded tier 1 protection, DEQ must ensure the permit requires compliance with the applicable narrative and numeric water quality criteria.

The Star Sewer and Water District WWTP discharges to the LK canal which, at times, discharges water to the Boise River or Mill Slough, which are both impaired for elevated temperature. Temperature TMDLs have not yet been completed for these water bodies. At this time, there is not sufficient data to determine whether or not the discharge of heat to the LK Canal has the reasonable potential to cause or contribute to excursions above the water quality standards for temperature. Continuous temperature monitoring of the effluent and receiving water are permit requirements and will allow assessment of potential impacts of the discharge on temperature of the Lower Boise River. The results of the monitoring may require temperature related effluent limits in the future.

The Boise River, downstream from the City of Middleton, is impaired for TP. The Star Sewer and Water District WWTP discharge has the potential to cause or contribute to excursions above water quality standards for nutrients (i.e. total phosphorus); therefore, the permit proposes water quality based effluent limits for total phosphorus. A TMDL is under development to address TP impairment in the Lower Boise River. Once this TMDL is approved by EPA, DEQ expects wasteload allocations for the Star Sewer and Water District WWTP will be incorporated into their NPDES permit. The effluent limitations in the permit will result in a decrease of TP in the Boise River.

The Hells Canyon segment of the Snake River is also impaired because of excess nutrients. The *SRHC TMDL* (DEQ 2003) established a load allocation for the Boise River based upon a total phosphorus concentration of 0.07 mg/L at the mouth of the Boise River. The Lower Boise

Watershed Council and DEQ (2008) developed the *Lower Boise Implementation Plan Total Phosphorus* (Implementation Plan), which implements the SRHC TMDL for the Lower Boise watershed and assigns wasteload allocations to the point sources and load allocations to non-point sources in order to meet the target for total phosphorus set in the SRHC TMDL.

The permit allows the Star Sewer and Water District WWTP to discharge a monthly average of 1.1 lbs/day of phosphorus to the LK canal, and ultimately the Boise River from May-September. The Implementation Plan established a WLA in years 10-15 of implementation to the Star Sewer and Water District WWTF of 2.4 lbs/day (1.1 Kg/day), as a monthly average. The WLAs in the Implementation Plan allow the 0.07 mg/L TP target to be met at the mouth of the Boise River in Parma. The permit limit is more stringent than the target limit set forth in the Implementation Plan; therefore, DEQ believes the permit will ensure compliance with the TMDL and the applicable narrative criteria.

The Boise River (AU 17050114SW005\_06b) is also impaired for sediment and bacteria at the confluence of Mill Slough. The EPA-approved *Lower Boise River TMDL* (DEQ 1999) and TMDL Addendum (2008) establishes load allocations for sediment and bacteria at the mouth of Mill Slough as well as wasteload allocations for sediment and bacteria for the Star Sewer and Water District WWTP. In accordance with the procedure outlined in the sediment TMDL, the Star Sewer and Water District requested an increase in their wasteload allocation from the sediment TMDL Reserve for Growth. Their design flow has increased from 0.33 million gallons per day (MGD) at the time of TMDL development to 1.85 MGD. DEQ has approved the requested sediment wasteload allocation increase and has adjusted the remaining reserve for growth accordingly. These sediment and bacteria allocations are designed to ensure the Boise River will achieve the water quality necessary to support its existing and designated aquatic life beneficial uses and comply with the applicable numeric and narrative criteria. The effluent limitations and associated requirements contained in the Star Sewer and Water District WWTP permit are set at levels that comply with these wasteload allocations.

In sum, 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 TMDL* and the *Snake River-Hells Canyon TMDL*. Therefore, DEQ has determined the permit will protect and maintain existing and designated beneficial uses in the Lawrence-Kennedy Canal in compliance with the Tier 1 provisions of Idaho's WQS (IDAPA 58.01.02.051.01 and 58.01.02.052.07).

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

### Alternative Limitations

The following subsection(s) discuss how the permit can be made less stringent and still comply with Idaho WQS.

#### ***Compliance with IDAPA 58.01.02.101.02 Protected Uses for Non-designated Man-made Waterways***

The Star permit contains effluent limits to meet cold water aquatic life and recreational uses in the LK Canal, which is a man-made waterway. In order to include these limits, EPA relies upon the provision in the WQS, IDAPA 58.01.02.101.01, that generally applies to waters that are not specifically designated for uses in the WQS. The WQS, however, include a specific provision that addresses man-made waterways that is applicable to the LK Canal. In accordance with IDAPA 58.01.02.101.02, unless designated for other uses in the WQS, man-made waterways are to be protected for the use for which they were developed. The LK Canal is a man-made waterway developed to convey irrigation water for agricultural purposes. It is not designated for other uses in the WQS. Therefore, the LK Canal is not protected for aquatic life or recreational uses. As a result, the limits in the permit to protect aquatic life and recreational uses are not consistent with state law and should be removed. This includes the following limits: chlorine and ammonia.

#### ***Surface Water Monitoring Requirements***

The permit requires surface water monitoring of the receiving water, LK Canal. This is a new permit requirement and the Star Sewer and Water District WWTP does not yet have access agreements or continuous monitoring equipment installed upstream from their point of discharge. The Star Sewer and Water District WWTP requests 60 days from March 15<sup>th</sup>, the last day construction is allowed in the channel, to install and calibrate monitoring equipment. They have been working with the LK Canal owner and adjacent property owners on an agreement for property access and construction of monitoring structures. The agreement shall be in place in time to complete construction of the monitoring structure prior to March 15<sup>th</sup>, when water will be diverted to the canal for seasonal agricultural use. DEQ authorizes this day delay in receiving water monitoring to allow equipment installation for representative data collection.

### Compliance Schedules

Pursuant to IDAPA 58.01.02.400.03, DEQ may authorize compliance schedules for water quality-based effluent limits issued in a permit for the first time. Star Sewer and Water District WWTP cannot immediately achieve compliance with the effluent limits for chlorine, total ammonia as N (ammonia), and total phosphorus (TP). As set forth above, the chlorine and ammonia limits should be removed from the permit because these limits are intended to protect aquatic life uses in the LK Canal. However, since they have not been removed, DEQ authorizes a

compliance schedule and interim requirements as set forth below. This compliance schedule provides the permittee a reasonable amount of time to achieve the final effluent limits as specified in the permit. At the same time, the schedule ensures that compliance with the final effluent limits is accomplished as soon as possible.

1. The Star Sewer and Water District WWTP (Permittee) must achieve compliance with the final chlorine effluent limitations of Part I.B.1. (Draft NPDES permit, Table 1), within one (1) year and six (6) months after the effective date of this Permit. The Permittee must also achieve compliance with the final ammonia and TP effluent limitations of Part I.B.1. (NPDES permit, Table 1) within nine (9) years and eleven (11) months after the effective date of this permit.
2. While the schedules of compliance are in effect, the Permittee must comply with the following interim requirements:
  - a) The Permittee must comply with the interim effluent limitations and monitoring requirements in Part I.B. of the Permit.
  - b) Until compliance with the final chlorine, ammonia, and TP effluent limits are achieved, at a minimum, the Permittee must complete the tasks and reports listed in Table 1 (below), as required under the schedules of compliance.
3. In addition to the tasks and deliverables listed in the table below, the Permittee must submit an annual progress report outlining progress made towards reaching the final compliance dates for the chlorine, ammonia, and TP effluent limitations. The annual report of progress must be submitted by December 31<sup>st</sup> of each year. The first report is due December 31, 2015 and annually thereafter, until compliance with the chlorine, ammonia, and TP effluent limits is achieved. At a minimum, the written notice must include:
  - a) An assessment of the previous year's chlorine, ammonia, and TP effluent data and comparison to the final effluent limitations in the permit.
  - b) Any exceedances of interim permit limits or anticipated challenges for compliance within the next year. This may include a technological explanation of why the interim limit is no longer appropriate as well as a request to modify the Permit.
  - c) A report on progress made towards meeting the final effluent limitations, including the applicable deliverable required under Part I.C.2 of the Permit.
  - d) Further actions and milestones targeted for the upcoming year.

**Table 1. Tasks Required Under the Schedules of Compliance**

Task No.	Completion Date	Task Activity
<b>Tasks to Achieve Final Chlorine Effluent Limits</b>		
1	Six (6) months from the Effective Date of the Permit (EDP)	<p>Disinfection System Design/Planning Phase: The Permittee must complete preliminary and final engineering designs to comply with the final chlorine effluent limits. The design documents must be submitted to and approved by DEQ.</p> <p>Deliverables:</p> <ul style="list-style-type: none"> <li>Permittee must provide written notice that the final design has been completed and submitted to DEQ for approval within 6 months of EDP.</li> <li>Permittee must provide written notice to EPA that approval of the final design has been provided by DEQ within 14 days of receiving DEQ approval.</li> </ul>
2	<p>Nine (9) months from EDP</p> <p>One (1) year from the EDP</p>	<p>Disinfection System Construction Phase: The Permittee will have completed the construction and commissioning of disinfection system upgrades to meet the interim TRC limits.</p> <p>Deliverables:</p> <ul style="list-style-type: none"> <li>Construction: Permittee must provide EPA with written notice that construction of the disinfection system is complete within 9 months of the EDP.</li> <li>Commissioning: Permittee must achieve and send written notice of compliance with the interim chlorine effluent limit (0.5 mg/L AML and 0.75 mg/l AWL and associated mass loading limits) to EPA within 1 year of the EDP.</li> </ul>
3	18 months after EDP	<p>Disinfection Process Optimization and Compliance Phase: The Permittee will optimize the disinfection process and chemical dose rates to achieve compliance with final chlorine limits.</p> <p>Deliverables:</p> <ul style="list-style-type: none"> <li>Permittee must achieve and send written notice of compliance with the final effluent limits for chlorine to EPA within 18 months of the EDP.</li> </ul>
<b>Tasks to Achieve Final Ammonia and TP Limits</b>		
4	2 years after EDP	<p>Ammonia and TP Facility Upgrade Early Design/Planning Phase: The Permittee must complete a comprehensive facility plan to comply with the final effluent limitations for ammonia and TP by the end of each parameter's compliance schedule. Options to meet final limits may include: pollutant trading, offsets, chemical treatment, biological treatment, and any other options available at the time of the facility planning study.</p> <p>Deliverables:</p> <ul style="list-style-type: none"> <li>Permittee must provide a written progress report to the EPA on the status of facility upgrade planning, by 1 year after EDP.</li> <li>Permittee must provide written notice to the EPA that the facility upgrade plan has been completed and submitted to DEQ for approval within 2 years of the EDP.</li> </ul>

Task No.	Completion Date	Task Activity
5	Five (5) years from EDP	<p>Funding Phase: The Permittee must acquire funds to complete facility upgrades necessary to comply with the final effluent limitations for ammonia and TP by the end of this compliance schedule.</p> <p>Deliverables:</p> <ul style="list-style-type: none"> <li>Permittee must provide a written progress report to the EPA on the status of funding for facility upgrades by December 31<sup>st</sup> of 2017 and 2018, including any necessary alternatives.</li> <li>Permittee must provide written notice to EPA that the funding to finance the facility upgrade is in place within 5 years of the EDP.</li> </ul>
6	Five (5) years from EDP	<p>Final Facility Design Phase: The Permittee will have completed the detailed design for the upgraded facility to meet the final ammonia and TP limitations.</p> <p>Deliverables:</p> <ul style="list-style-type: none"> <li>Permittee must provide written notice that the final design report has been submitted to IDEQ for approval within 5 years of the EDP.</li> </ul> <p>Permittee must provide written notice to EPA that approval of the final design has been provided by IDEQ within 14 days of receiving DEQ approval.</p>
7	Nine (9) years from EDP	<p>Final Facility Construction Phase: The Permittee will select a construction contractor, acquire equipment and complete the construction for the upgraded facility to meet the final total ammonia as N and total phosphorus limitations.</p> <p>Deliverables:</p> <ul style="list-style-type: none"> <li>Permittee must provide a progress report to the EPA on construction activity by December 31, 2020, and each year thereafter until final construction is complete.</li> </ul> <p>Permittee must provide EPA with written notice that the facility construction has been completed within 9 years of EDP.</p>
8	Nine (9) years and eleven months from EDP	<p>Process Optimization and Compliance with Final Effluent Limitations:</p> <p>Deliverable:</p> <p>Permittee must achieve compliance with the final ammonia and TP effluent limitations within 9 years and 11 months and must submit written notice of compliance to EPA within 14 days of compliance with final effluent limits.</p>

## Mixing Zones

As set forth above, the chlorine and ammonia limits should be removed from the permit because these limits are intended to protect aquatic life uses in the LK Canal. However, since they have not been removed, DEQ authorizes a mixing zone as set forth below.

Pursuant to IDAPA 58.01.02.060, DEQ authorizes a mixing zone that utilizes 25% of the critical flow volumes of Lawrence-Kennedy Canal for ammonia and chlorine.

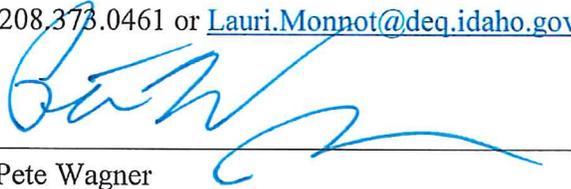
## Other Conditions

This certification is conditioned upon the requirement that any material modification of the permit or the permitted activities—including without limitation, any modifications of the permit to reflect new or modified TMDLs, wasteload allocations, site-specific criteria, variances, or other new information—shall first be provided to DEQ for review to determine compliance with Idaho WQS and to provide additional certification pursuant to Section 401.

## Right to Appeal Final Certification

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

Questions or comments regarding the actions taken in this certification should be directed to Lauri Monnot, DEQ Boise Regional Office at 208.373.0461 or [Lauri.Monnot@deq.idaho.gov](mailto:Lauri.Monnot@deq.idaho.gov).



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Pete Wagner  
Regional Administrator  
Boise Regional Office