



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1445 North Orchard • Boise, Idaho 83706 • (208) 373-0550

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

November 2, 2012

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

Subject: Final 401 Certification of the City of Greenleaf Wastewater Treatment Plant NPDES Permit No. ID-0028304

Dear Mr. Lidgard:

On October 18, 2012, EPA provided DEQ with a proposed final draft of the above-referenced permit and requested DEQ provide a final certification of the permit pursuant to section 401 of the Clean Water Act.

Upon assessment of the proposed final permit DEQ submits the enclosed §401 certification for the final permit.

If you have questions or need further information, please contact Lauri Monnot at (208) 373-0461 or by email at Lauri.Monnot@deq.idaho.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Pete Wagner", with a long, sweeping underline.

Pete Wagner
Regional Administrator
Boise Regional Office

Enclosure: DEQ Final 401 Certification for NPDES Permit No. ID-0028304

C: Barry Burnell, DEQ Water Quality Administrator
Miranda Adams, DEQ 401 Program Coordinator
Lance Holloway, DEQ Boise Regional Water Quality Manager



Idaho Department of Environmental Quality Draft §401 Water Quality Certification

November 2, 2012

NPDES Permit Number(s): ID-002830-4, City of Greenleaf

Receiving Water Body: West End Drain

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 our 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, there is reasonable assurance the discharge will comply with the applicable requirements of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, the Idaho Water Quality Standards (WQS) (IDAPA 58.01.02), and other appropriate water quality requirements of state law.

This certification does not constitute authorization of the permitted activities by any other state or federal agency or private person or entity. This certification does not excuse the permit holder from the obligation to obtain any other necessary approvals, authorizations, or permits, 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 58.01.02.052.05).
- Tier 2 Protection. The second level of protection applies to those water bodies considered high quality and ensures that no lowering of water quality will be allowed unless deemed necessary to accommodate important economic or social development (IDAPA 58.01.02.051.02; 58.01.02.052.06).

- Tier 3 Protection. The third level of protection applies to water bodies that have been designated outstanding resource waters and requires that activities not cause a lowering of water quality (IDAPA 58.01.02.051.03; 58.01.02.052.07).

DEQ is employing a water body by water body approach to implementing Idaho's antidegradation policy. This approach means that any water body fully supporting its beneficial uses will be considered high quality (IDAPA 58.01.02.052.05). 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.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 City of Greenleaf discharges the following pollutants of concern: biological oxygen demand (BOD), total suspended solids (TSS), E. coli bacteria, pH, chlorine, total phosphorus (TP), ammonia, nitrate, nitrite and temperature (heat). Effluent limits have been developed for biological oxygen demand (BOD), total suspended solids (TSS), E. coli bacteria, pH, chlorine and total phosphorus (TP). No effluent limits are proposed for ammonia, nitrate, nitrite or temperature (heat).

Receiving Water Body Level of Protection

The City of Greenleaf discharges to the West End Drain. The West End Drain is a man-made water body which carries agricultural runoff, groundwater, and stormwater drainage from the lands east and south of the wastewater treatment facility. Man-made water bodies, 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).

Because no aquatic life or recreational uses are designated for the West End Drain, DEQ will provide Tier 1 protection only for the West End Drain (IDAPA 58.01.02.051.02).

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 effluent limitations and associated requirements in the permit are set at levels that meet the numeric and narrative criteria in the WQS, and therefore, are set at levels that ensure protection of beneficial uses.

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.

In the absence of a TMDL and depending upon the priority status for development of a TMDL, the WQS require that either there be no further impairment of the designated or existing beneficial uses or that the total load of the impairing pollutant remains constant or decreases (IDAPA 58.01.02.055.04 and 58.01.02.055.05). The West End Drain discharges to Riverside Canal. During the irrigation season (May-September), the water is used within the irrigation district. From approximately mid-October to mid-April, the water in Riverside Canal is diverted into Dixie Slough (AU 17050114SW001_02) which flows into the Boise River (AU 17050114SW001_06). The Boise River (AU 17050114SW001_06) is impaired for temperature and nutrients (total phosphorus), and its 1st and 2nd order tributaries (AU 17050114SW001_02) are impaired for temperature. There is no existing TMDL for these pollutants; therefore, the discharge permit limits must comply with these provisions of Idaho WQS.

The EPA-approved *Lower Boise River TMDL* (1999) establishes wasteload allocations for sediment and bacteria for the Lower Boise River and select tributaries. A TMDL addendum developed in 2008 revised the wasteload allocation section to accommodate new dischargers and outline a process for allocating the sediment reserve for growth to new or existing dischargers in the future. In June 2012, DEQ allocated a sediment load for the City of Greenleaf WWTF from a portion of the remaining reserve for growth. These wasteload allocations are designed to ensure the Boise River will achieve water quality necessary to support the existing and designated aquatic life beneficial uses and comply with applicable numeric and narrative criteria designed to protect those uses. The effluent limitations and associated requirements contained in the City of Greenleaf permit are set at levels that comply with these bacteria and sediment wasteload allocations.

In sum, the effluent limitations and associated requirements contained in the City of Greenleaf 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*. Therefore, DEQ has determined the permit will protect and maintain existing and designated beneficial uses in the West End Drain.

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

Compliance with IDAPA 58.01.02.055.04 for Nutrient (Total Phosphorus) Impairment

IDAPA 58.01.02.055.04 provides that until a TMDL or equivalent process is completed, new or increased discharges of pollutants to a high priority impaired water body may be allowed only if the total load of the pollutant remains constant or decreases within the watershed. Once the TMDL or equivalent process is completed, the discharge must be consistent with the approved document. The *Snake River Hells Canyon (SR-HC) 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 SR-HC 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 SR-HC TMDL. Since the SR-HC TMDL has been approved and implemented in the Lower Boise watershed through the Implementation Plan, Greenleaf's new discharge must be consistent with the SR-HC TMDL and the Implementation Plan.

The NPDES permit allows the City of Greenleaf to discharge a monthly average of 0.14 lb/day phosphorus to West End Drain, and ultimately the Boise River. The Implementation Plan established a reserve for growth load, part of which will be allocated to the City of Greenleaf Wastewater Treatment Plant. DEQ authorizes 0.14 lb/day (0.06 Kg/day), as a monthly average, to be allocated from the reserve for growth to the City of Greenleaf for the May 1 through September period. This represents 1.3 percent of the reserve allocation after 50% reuse for years 10-15 of the Implementation Plan.

Compliance with IDAPA 58.01.02.055.04 Temperature Impairment

IDAPA 58.01.02.055.04 provides that until a TMDL or equivalent process is completed, new or increased discharges of pollutants to a high priority impaired water body may be allowed only if the total load of the pollutant remains constant or decreases within the watershed. Once the TMDL or equivalent process is completed, the discharge must be consistent with the approved document. The Boise River (AU 17050114SW001_06) and first and second order tributaries, including the Dixie Slough (AU 17050114SW001_02), are impaired by excess water temperature (heat) during the critical time period for cold water aquatic life (June 21-September 21). There is no TMDL for temperature developed for this AU, and the Boise River AU is a high priority water for TMDL development. Therefore, there must be no net increase of temperature in the watershed as a result of the City of Greenleaf discharge.

In order to determine compliance with the no net increase requirement, DEQ must look at temperature impacts to the Dixie Slough and the Boise River, which are the impaired waters. In addition, IDAPA 58.01.02.055.04 requires the load of causative pollutants be kept constant. For several reasons, however, using a heat load is an inappropriate measure to determine compliance with IDAPA 58.01.02.055.04. First, heat is a very non-conservative pollutant, and therefore, loading is not as relevant to water quality as it is for other pollutants. Second, there is really no zero load of heat because a discharge will always have some heat load to it. This makes it impossible, or at least impractical, to prevent any increase in heat loading from a discharge. For these reasons, DEQ determines compliance with the no net increase requirement by looking at whether the Greenleaf discharge will increase temperatures in the Dixie Slough and the Boise River.

DEQ has a limited data set to determine the impact of the Greenleaf discharge. For example, there is inadequate flow data regarding the relevant waters, limited temperature data for West End Drain, and no temperature data for the Riverside Canal. In order to evaluate the impact, preliminary temperature and flow data collected in West End Drain in 2011 were used to determine whether the discharge would result in a net increase in water temperature. Irrigation season average flow in West End Drain was estimated at 71.35 MGD (110 cfs), and the design flow of the facility is 0.24 MGD. Modeling results show the temperature of West End Drain would not measurably increase with effluent temperatures as high as 30 degrees Centigrade. In

addition, during the irrigation season, the West End Drain discharges to the Riverside Canal, and water is reused in the irrigation system with little or no potential for discharge to reach Dixie Slough or the Boise River. Based on the available data, DEQ does not believe the Greenleaf discharge will increase temperatures in the Dixie Slough or the Boise River.

To improve the accuracy of the analysis regarding the temperature impacts of the discharge and in order to determine compliance with WQS and other appropriate requirements of state law, DEQ requires, as a condition in the permit, the city to commit to continuous monitoring of temperature of treated effluent at the West End Drain above the discharge point and Dixie Slough. This monitoring will assist in determining whether temperature effluent limits are required in future permits. Prior to discharge to the West End Drain during the critical time period for cold water aquatic life, the City of Greenleaf will need to develop and obtain DEQ approval of a plan that depicts how Greenleaf's discharge and the receiving water bodies will be monitored to ensure consistency with IDAPA 58.01.02.055.04. Greenleaf may include in the plan measures to offset the amount of heat load that is in excess of the WQS and the stream temperature in Dixie Slough. No discharge that raises the instream temperature of Dixie Slough during the critical time period for cold water aquatic life may occur until DEQ has approved the plan and any proposed temperature offsets.

At a minimum, the plan shall:

- (1) Describe a temperature monitoring plan for the effluent and receiving water bodies that includes, at a minimum, the monitoring described in the preceding paragraph.
- (2) Describe measures the City may implement to ensure the discharge from the Greenleaf facility is consistent with the Dixie Slough instream water temperature, including without limitation, any measures the City may implement to ensure that the addition of heat load that is in excess will be offset.
- (3) Include a schedule for the implementation of the monitoring plan and any necessary offset measure(s).
- (4) Identify remediation steps that may be taken if the City identifies their discharge is exceeding temperature requirements for the Dixie Slough.

Once approved by DEQ, the plan shall be implemented according to the schedule in the approved plan. In addition, the City of Greenleaf must send the plan, along with documentation of DEQ's approval of the plan, to EPA.

Mercury

Because of the size and type of facility, mercury characterization was not required in the permit application submitted to EPA. The facility is a minor discharger, with only seasonal discharge anticipated. DEQ and EPA have no basis to believe the City of Greenleaf will be a significant contributor of mercury to the watershed. A Methylmercury Fish Tissue Monitoring program was initiated by the City of Boise to collect reliable methylmercury fish tissue data, within a specific geographic area, to determine if fish tissue concentrations of methylmercury are compliant with Idaho's methylmercury fish tissue criterion of 0.3 mg/kg. The monitoring program may also be used to advise the public on safe levels of fish consumption. DEQ encourages other entities which have NPDES permitted discharges to water bodies in the lower Boise River watershed to

engage in this as a cooperative effort even if they do not have monitoring requirements or effluent limits for mercury in their permit.

Mixing Zones

Pursuant to IDAPA 58.01.02.060, DEQ authorizes a mixing zone that utilizes 100% of the flows of the West End Drain for chlorine, ammonia, nitrate-nitrite, and nitrite. Man-made water bodies 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). DEQ has determined the 100% mixing zone results in support of the agricultural water supply use in West End Drain and Riverside Canal and will not cause impairment of aquatic or recreational uses in Dixie Slough or the Boise River.

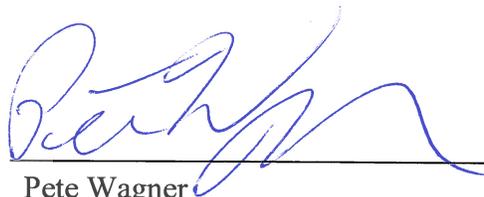
Other Conditions

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

Right to Appeal Final Certification

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

Questions regarding the actions taken in this certification should be directed to Lauri Monnot, DEQ Boise Regional Office, (208) 373-0461, Lauri.Monnot@deq.idaho.gov.



Pete Wagner
Regional Administrator
Boise Regional Office