

RESPONSE TO COMMENTS

City of Weippe Wastewater Treatment Plant NPDES Permit WA0020354 August 18, 2014

On June 26, 2014, the U.S. Environmental Protection Agency (EPA) issued a public notice for the reissuance of the City of Weippe Wastewater Treatment Plant (WWTP) National Pollutant Discharge Elimination System (NPDES) Permit No. WA0020354. This Response to Comments provides a summary of significant comments and provides corresponding EPA responses. The comments resulted in removal from Condition I.B.1 reference to the Grasshopper Creek discharge.

Comments were received from the following:

Norman C. Steadman, Mayor, City of Weippe

- 1. Comment:** Weippe entered into a Compliance Agreement Schedule (CAS) with the Idaho Department of Environmental Quality in February, 2012 to address lagoon leakage in excess of allowable limits set forth by the State.

Weippe concurrently began preparation of a Facilities Plan to review the wastewater system, address lagoon leakage, and prepare a general capital improvement plan to maintain our system. The Facilities Plan was submitted to the state in June, 2014:

- If lagoon leakage is addressed for compliance with minimum standards set forth by the state, we must complete a large scale capital project to treat and manage flows previously lost through lagoon leakage. The large capital project is estimated to impact our existing rate structure by over 300 percent.
- Weippe will conduct a Groundwater Impact Assessment (GWIA) to assess compliance with IDEQ Ground Water Quality Rule and Idaho Water Quality Standards.
- If the GWIA effort is successful, Weippe will focus its resources on reduction of the system infiltration and inflow. If the GWIA effort is unsuccessful, Weippe will split resources between a large capital project to address current and pending permit compliance issues together with inflow/infiltration (I/I) reduction.

Weippe intends to move forward to reduce I/I and lagoon leakage. Once leakage is addressed and I/I is reduced it is anticipated that effluent concentration could increase to a level above the federally promulgated secondary treatment effluent limits. A decrease in effluent BOD₅ and TSS concentration due to our demonstrated ability to attain these limits is premature because this demonstrated ability is associated with elevated I/I which we are working to reduce.

Weippe requests that any findings of treatment works as “equivalent to secondary” be delayed until I/I and treatment works performance can be assessed and quantified and the effluent BOD₅ and TSS limits remain at the current levels of 45/65 and 70/105, respectively until that time

Response: The comment does not provide an analysis showing Weippe will exceed the secondary treatment standards with a reductions in I/I. The EPA’s analysis of two years of data show Weippe does not exceed the secondary treatment standards and therefore does not qualify for Treatment Equivalent to Secondary (TES) standards (see Fact Sheet).

To be eligible for consideration for TES limits Weippe must meet all three criteria set forth in 40CFR 133.101(g). The first criterion 40CFR 133.101(g)(1) states:

(1) *The BOD₅ and TSS effluent concentrations consistently achievable through proper operation and maintenance (§ 133.101(f)) of the treatment works exceed the minimum level of the effluent quality set forth in §§ 133.102(a) and (b) [the secondary treatment standards].*

The regulation at 133.101(f) defines effluent concentrations consistently achievable through proper operation and maintenance as the 95th percentile value for a given pollutant for the 30-day average effluent quality achieved by a treatment works in a period of at least two years and a 7-day average value equal to 1.5 times the value derived from that value. The EPA demonstrated Weippe does not exceed the secondary standards, and therefore does not meet the first criterion.

Further, 40CFR 133.101(g) *Facilities eligible for treatment equivalent to secondary treatment* qualifies Weippe to be eligible for TES treatment if:

(3) *The treatment works provide significant biological treatment of municipal wastewater.* The regulations at § 133.101(k) defines significant biological treatment as the use of an aerobic or anaerobic biological treatment process in a treatment works to consistently achieve a 30-day average of at least 65 percent removal of BOD₅.

Weippe is achieving less than the 65 percent removal necessary to meet the third criterion. Because Weippe does not meet all three criteria, the facility does not qualify for the less stringent TES effluent limitations for BOD₅ and TSS.

With regards to the commenter's request for the 70/105 limits for TSS, the fact sheet states:

“The current permit TSS limits were in accordance with 40 CFR 133.103(c) and (IDAPA16.01.01.420.02.b.ii). These alternative state requirements (ASRs) for TSS were a monthly limit of 70 mg/L and a weekly limit of 105 mg/L. However, these limitations were never submitted to nor approved by EPA as ASRs. Therefore, they should not have been included in the previous permit. Additionally, the State of Idaho eliminated IDAPA16.01.01.420.02.b.ii.”

The permit is unchanged.

- 2. Comment:** The BOD₅ and TSS load currently allowed in the permit should not be reduced unless the assimilative capacity of the receiving water requires a load reduction. The TMDL analysis did not show a need for a BOD₅ and TSS load reduction. The anti-degradation rules will prevent us from recovering that load as our population increased which would create an unnecessary burden on our citizens. If a concentration limit is justified we may have to improve treatment; however, we should be able to set our base “anti-degradation” load to the values permitted today so excessive treatment is not required as our population grows.

Response: The BOD₅ and TSS effluent concentration limitations and loading mass limits are technology based effluent limitations. These technology-based effluent limits apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by application of secondary treatment (see Fact Sheet, Appendix B. Part A). The assimilative capacity of Jim Ford Creek is not part of establishing technology based limits.

The TMDL analysis provides an allocation for compliance with the surface water quality standards of the State of Idaho (see Fact Sheet, Appendix B. Part B.). In the case of Weippe there are allocations for total phosphorus and *E-coli* in Jim Ford Creek and for Grasshopper Creek

fecal coliform. The BOD₅ and TSS limits do not have an allocation from the applicable *Jim Ford Creek Total Maximum Daily Load Management Plan*.

The loading limits for BOD₅ and TSS with units of lbs/day are based on the design flow of the facility which was provided in the application to be 0.536 mgd. If the City expands the wastewater treatment plant to meet the population growth of Weippe, the City should develop an antidegradation analysis as part of the expansion plans.

3. **Comment:** Due to the significant time and expense associated with I/I reduction required to attain percent removal limits, Weippe requests an extended compliance schedule equivalent to two permit cycles for compliance with the proposed BOD₅ and TSS percent removal limits.

Response: A compliance schedule cannot be granted for technology based effluent limitations because the statutory deadlines for meeting technology standards (i.e., secondary treatment standards and effluent guidelines) have passed. The 85 percent BOD₅ and TSS minimum removal rate are technology based effluent limitations and therefore a compliance schedule cannot be established.

4. **Comment:** The Jim Ford Creek TMDL notes that, “The existing load is estimated using all available nutrient data, however, these data are very limited. For example, the existing nutrient load is estimated using 23 samples taken over one water year.” (p.3-25) Review of the referenced data provided within the TMDL appendix shows that only 11 of these samples were obtained with the critical phosphorus period. The TMDL states that the point source load allocation is a “rough estimate of the actual nutrient load and will be revised, if needed using nutrient data gathered subsequent to the final TMDL” (p 3-35)

Finally, the TMDL states,

- “Because the majority of the TP load to Jim Ford Creek is from non-point sources, there are no point source load reductions required by this TMDL” (p1-4)
- “...the Weippe WWTP discharge permit will be written at their existing nutrient load.” (p3-25)

We feel that an average phosphorus load of 30 lbs per month is inconsistent with the intent of the TMDL for the following reasons:

- The TMDL discusses in Section 3.3.3 that the load capacity is calculated using the 50th percentile average daily discharge and the 84th percentile concentration over the averaging period, and further states that, “no load reductions are required” for the Weippe WWTP, and “period average” phosphorus load to the receiving stream is 30 lbs/month.

Application of the 50th and 84th percentile calculations in the permit will cause us to violate on a regular basis despite the intent of the TMDL which called for no load reductions from our point source discharge.

- The TMDL does not provide any flow data from the WWTP to quantify how the loads averaging 30 lbs/month were calculated. Estimated flows were back-calculated using listed monthly loads for Plate J-2 and effluent concentrations from Plate J-1 as follows:

| Date | Reported Load (lb/month) ¹ | Average Effluent Concentration (mg/L) ² | Number of Samples | Calculated Flow (mgd) ³ | Reported Flow (mgd) ⁴ |
|-------------|---------------------------------------|--|-------------------|------------------------------------|----------------------------------|
| April, 1998 | 48 | 0.8 | 5 | 0.24 | 0.208 |
| May, 1998 | 18 | 1.11 | 3 | 0.06 | 0.176 |
| June, 1998 | 24 | 0.89 | 3 | 0.11 | 0.075 |
| July, 1998 | 0 | No data | No data | -- | -- |

¹Per Plate J-2 of the Jim Ford Creek TMDL

²Calculated based on raw data provided in Plate J-1 of the Jim Ford Creek TMDL

³Based on reported load and average effluent concentration averaged over the month

⁴As reported from monthly DMRs

The TMDL states the, “The Weippe wastewater treatment plant usually discharges into Jim Ford Creek from January to mid-June each year” (p1-2). As shown by the table above, based on reported loads, we would have discharged at approximately 0.24 mgd during the month of April, reduced flow by 75% during the month of May, and then doubled flow during the month of June. This is inconsistent with our operational discharge regime discussed in the TMDL. Finally, as shown by the table, these values differ significantly from reported values provided in our DMRs during the same timeframe, which align more closely with the operational scenario described in the TMDL and raised further questions regarding the validity of the 30 lb/month load allocation.

Because a lagoon treatment facility typically offers limited phosphorus removal, typical effluent concentrations for a domestic wastewater treatment facility similar to Weippe’s should be on the order of 3 to 7 mg/L. Although system infiltration and inflow will impact and lower these concentrations through a more dilute effluent, this raises further questions regarding the 11 samples obtained during development of the TMDL which averaged 0.91 mg/L.

Due to concerns associated with development of the 30 lb/month load allocation presented in the TMDL, the City requests that effluent phosphorus limits be removed from the draft permit to allow for additional data collection as recommended within the TMDL, and that a revised load be calculated based on a 95% confidence level that the City can consistently attain.

Response: The *Jim Ford Creek Total Maximum Daily Load Management Plan*, approved by the EPA in June, 2000, provides a Total Phosphorus (TP) allocation of 30 lbs/month averaged over the months of April through July (see Fact Sheet pages 30-33). The permit must be consistent with the assumptions and requirements of any available wasteload allocations of the TMDL pursuant to 122.44(d)(1)(vii)(B).

Appendix J of the TMDL, Plate J-1 page J-7 shows Weippe TP discharge concentrations for the year 1998. Using the reported flows, as in the commenters table, instead of the calculated flows shows Weippe can achieve the effluent limitations in the permit. Since both flows and TP concentrations are measured, these data best represent the nutrient load from Weippe and are representative of the treatment plant operations at the time of the TMDL.

| Date | TP Concentration Mg/L | Reported Flow over the month (mgd) | Loading (lbs/mo.) |
|--|--------------------------|--|----------------------|
| Apr-98 | 0.87 | | |
| Apr-98 | 0.89 | | |
| Apr-98 | 0.68 | | |
| Apr-98 | 0.7 | | |
| Apr-98 | 0.86 | | |
| Average | 0.8 | 0.208 | 41.6 |
| | | | |
| May-98 | 1.1 | | |
| May-98 | 1.3 | | |
| May-98 | 0.94 | | |
| Average | 1.11 | 0.176 | 48.9 |
| | | | |
| Jun-98 | 0.89 | | |
| Jun-98 | 0.85 | | |
| Jun-98 | 0.93 | | |
| Average | 0.89 | 0.075 | 16.6 |
| | | | |
| Total Loading for the allocation period (lbs) | | | 107 |
| Average Loading for the seasonal allocation period (divide by four) (Average Pounds per month) | | | 26.8 |

Based on the concentration data in the TMDL and the reported flows from the DMRs the average pounds per month for the four month seasonal averaging period is 26.8 lbs/month. Loading does not vary with dilution. Therefore Weippe will be able to meet the seasonal average TP load allocation and effluent limitation of 30 lb/month with its existing discharges without additional treatment. For this reason the EPA will not calculate an interim limit at the 95th percentile of the existing loads.

Further, the IDEQ 401 Water Quality Certification states:

“In sum, the effluent limitations and associated requirements contained in the City of Weippe Wastewater Treatment Plant permit are set at levels that ensure compliance with the

narrative and numeric criteria in the WQS and the wasteload allocations established in *Jim Ford Creek Total Maximum Daily Load.*”

The permit is unchanged.

5. **Comment:** As noted within the draft Facilities Plan, the under drain pipe referenced in the TMDL has been plugged. The City requests that discussion regarding the discharge to Grasshopper Creek and associated monitoring requirements be removed from the Permit.

Response: Condition I.B.1 states:

“Grasshopper Creek Requirement: Discharge to Grasshopper Creek is prohibited. Permittee must inspect the underdrain outfall to Grasshopper Creek for discharges weekly.

Alternatively, the Permittee can avoid weekly monitoring of flow by certifying that it has blocked any flow to Grasshopper Creek, and submitting a report to IDEQ and EPA Region 10 describing the actions taken to halt the flow.”

In a letter dated August 7th, 2014 the EPA received certification that Weippe blocked any flow to Grasshopper Creek and received a report describing the actions taken to halt the flow. The Condition in I.B.1 referring to the Grasshopper Creek discharge is removed from the permit.

6. **Comment:** Proposed sampling frequencies have been modified as summarized in the following table.

| Parameter | Existing Sample Frequency | Proposed Sample Frequency |
|------------------|---------------------------|---------------------------|
| BOD | 1/month | 1/week |
| TSS | 1/month | 1/week |
| <i>E.coli</i> | 1/week | 5/month |
| Total Phosphorus | 1/month | 1/week |

The sample frequency creates a significant draw on our resources through both additional time and expense, as we must transport the sample approximately one hour to the nearest laboratory. The increased sample frequency provides minimal benefit; as noted within the Fact Sheet, facilities generally perform within proposed limits. Further, the requirement to obtain five *E.coli* samples per month creates an additional loss of time and expense which provides minimal benefit. The City requests that sample frequency within the draft permit be revised for consistency with the current permit requirements.

Response: Weekly monitoring is required to insure compliance with the weekly effluent limitations. Sampling five times per month is required for *E.coli* as discussed below, therefore sampling weekly for the other parameters does not add significantly to sampling time. Analytical costs are approximately \$45 for BOD₅, \$15 for TSS and \$30 for TP. These costs are reasonable.

The *E.coli* monitoring frequency is required by the IDEQ Water Quality Standards. As the fact sheet states Jim Ford Creek at the point of discharge is designated for primary contact recreation.

Waters of the State of Idaho that are designated for recreation are not to contain *E. coli* bacteria in concentrations exceeding 126 organisms per 100 ml as a geometric mean *based on a minimum of five samples* (emphasis added) taken every three to seven days over a thirty day period (IDAPA 58.01.02.251.01.a). Therefore, the proposed compliance monitoring contains a monthly geometric mean effluent limit for *E. coli* of 126 organisms per 100 ml and a minimum sampling frequency of five grab samples per calendar month.

Monitoring is also essential to determine the effects of the planned upgrades to the facility.

The permit is unchanged.

7. **Comment:** The current facility contact is David Thomson, Maintenance Superintendent, (208) 435-4216.

Response: Thank you for the update.

8. **Comment:** The wastewater treatment plant consists of two lagoons in series, followed by chlorination and a dechlorination cell. There is no primary treatment at the lagoons.

Response: The correction to the fact sheet is noted.