

## **Response to Comments**

Wellpinit WWTP – Spokane Reservation

NPDES Permit Number: WA0025704

November 26, 2018

On October 11, 2018, the U.S. Environmental Protection Agency Region 10 (EPA) proposed issuance of a National Pollutant Discharge Elimination System (NPDES) permit for the Wellpinit Wastewater Treatment Plant on the Spokane Indian Reservation in Wellpinit, Washington. The draft NPDES permit places conditions on the discharge of pollutants from the wastewater treatment plant (WWTP) to waters of the United States. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged from the facility. The Spokane Tribe of Indians (STI) owns and operates the facility, which discharges secondary treated effluent from a lagoon treatment process to Little Tshimikain Creek.

During the public comment period for the draft permit, the EPA received the following comments on the draft permit and fact sheet from the Washington State Department of Ecology. No comments were received specific to the preliminary CWA 401 Certification.

This document presents the comments received from Ecology and EPA's responses to those comments. As a result of comments received, the following revisions and clarifications were made to the permit:

1. Increased the monitoring frequency for effluent BOD<sub>5</sub> and TSS in Table 1 in the permit from once per month to biweekly (twice per month). For consistency, this change has also been reflected in the fact sheet.
2. Corrected the sample type for temperature in Table 1 from 'grab' to 'metered/recorded'. For consistency, this change has also been reflected in the fact sheet.
3. Added clarification in Table 1 to show a list of the pollutant monitoring and reporting required under Part B.6 of the NPDES application for permit renewal. For consistency, this change has also been reflected in the fact sheet.
4. Added a requirement to Section II.A of the permit, O&M Plan, to monitor sludge depth in the lagoon necessary to ensure proper operation and maintenance of the WWTP.
5. Added detailed requirements for receiving water monitoring in Section I.C of the permit. The EPA revised the recording interval to every 30 minutes and added reporting of the maximum daily temperature (Permit, Section I.B.3).
6. Added receiving water pH and alkalinity monitoring to Table 2 of the permit.
7. Added a note to Appendix A of the permit to address comments pertaining to PCB monitoring.
8. Additionally, the EPA determined that because the Tribe's water quality standards do not include provisions for compliance schedules, the proposed compliance schedule for meeting final water quality effluent limits must be removed from the final proposed permit. The EPA may issue a compliance order under CWA § 309 (33 U.S. Code § 1319 – Enforcement) to address significant non-compliance with the effluent limits for total residual chlorine.

## Comments received on the draft permit.

1. Page 5, Table 1; Once per month sampling requirements do not create a situation where the permittee can satisfy meeting the BOD<sub>5</sub> and TSS average monthly and average weekly statistical bases. Averaging is not possible with one sample per month. Please revise to include at least 2 effluent samples per month. Typically, good practice includes requiring a minimum BOD<sub>5</sub> and TSS monitoring frequency of 1/week.

### EPA Response:

EPA reviewed permits for other facilities including EPA-issued tribal permits in Washington (e.g. Town of Harrah, <https://www.epa.gov/npdes-permits/npdes-permit-town-harrah-wastewater-treatment-plant-washington>) and found that permits for comparable facilities (small lagoons) require biweekly (every other week) or weekly monitoring of BOD<sub>5</sub> and TSS. EPA has revised the permit to require biweekly monitoring.

2. Page 6, Table 1; pH effluent limits of 6.5 to 8.5 meet Tribal Surface Water Quality Standards; however, the fact sheet did not include the evaluation regarding the < 0.2 standard unit change in the receiving water. Please ensure these limits are adequate to protect the beneficial uses of the receiving water and include a discussion in the fact sheet.

### EPA Response:

STI Water Quality Standards (WQS) at <https://www.epa.gov/sites/production/files/2014-12/documents/spokane-tribe-wqs.pdf>, state, "*pH shall be within the range of 6.5 to 8.5 with a human-caused variation within a range of less than 0.2 units.*" The EPA had insufficient flow data to authorize a mixing zone and insufficient receiving water data to evaluate the change in receiving pH as a result of the discharge. Given the available information, the conservative approach was to impose WQBELs end of pipe. To address the lack of data, receiving monitoring for pH and alkalinity were added to Table 2 of the permit.

3. Page 6, Table 1; Temperature sample type should be metered/recorded and not a grab sample. Please revise.

### EPA Response:

The EPA corrected the sample type for temperature monitoring to metered/recorded.

4. Page 6, Table 1; Footnote 5, Ecology disagrees with the statement regarding the compliance evaluation level for total residual chlorine. EPA has approved use of SM 4500-CL-G for compliance which has reporting limits capable of meeting the WQBEL. There should be no compliance level, rather the facility should be required to meet the calculated WQBEL as written. Ecology supports the compliance schedule included in the permit for meeting the total chlorine residual WQBEL.

EPA Response:

EPA retained the compliance evaluation level of 50 µg/L for TRC. This is consistent with Ecology's NPDES permits Appendix A, as well as, EPA's current permitting practice. EPA will evaluate the quantitative level with the next permit cycle after more data is available and the final effluent limits are put in effect.

5. Page 6, Table 1; Phosphorus was identified as a parameter of concern in the fact sheet. Please add effluent total phosphorus monitoring to the monitoring requirements.

EPA Response:

The permit requires monitoring for all pollutants in Part B.6 of the application for permit renewal, see the draft permit which requires under Table 1, Note No.7:

*Effluent Testing Data - See NPDES Permit Application Form 2A, Part B.6 for the list of pollutants to be included in this testing. The Permittee must use sufficiently sensitive analytical methods in accordance Part I.B.5 of this permit.*

Clarification was added to Table 1 of the permit to show a list of the pollutant reporting required under Part B.6 of the application.

*(Part B.6 includes ammonia, total residual chlorine, dissolved oxygen, TKN, nitrate plus nitrite nitrogen, oil and grease, total phosphorus, total dissolved solids)*

6. Page 6, Table 1; Given the age of the facility and the ongoing lack of adequate operation and maintenance, please include a sludge depth monitoring provision at least once during the first of second year of the permit term to ensure the lagoons have adequate treatment capacity.

EPA Response:

Conditions were added to Section II.A, O&M Plan, to require monitoring sludge depth in the lagoon which is necessary to ensure proper operation and maintenance of the WWTP.

*The O&M plan must include provisions to monitoring sludge in the lagoon including a process and protocol for measuring the sludge depth within 1-year of the effective date of this permit. The permittee must report the finding of the monitoring as provided in this section.*

7. Page 6, Table 1; Footnote 8, please revise to include information necessary to describe the blank censoring technique and clean sampling methods required to return usable analytical data.

EPA Response:

The following note was added to Appendix A of the permit to address the comment.

Note for PCB monitoring:

The EPA is requiring the use of EPA Method 1668C. Permittees must report the total concentration of PCB congeners. A complete congener analysis must also be submitted as an attachment to the DMR. For any analysis of PCB congeners using EPA Method 1668, the permittee must target MDLs no greater than the MDLs listed in Table 2 of EPA Method 1668 Revision C (EPA-820-R-10-005) and must analyze for each of the 209 individual congeners.

Permittees must follow the Spokane River Regional Toxics Task Force Quality Assurance Project Plan with respect to data validation and blank censoring. The Task Force QAPP addresses this issue in

Section 4.2.2, on Pages 40 and 41. Analytes found in samples at concentrations less than 3 times the associated blank concentration will be flagged with a “B” qualifier. The Task Force QAPP states that “all qualified data will be reported with validation qualifiers, however B flagged data will not be used in congener summations for total PCB” (Page 41). See [http://srrttf.org/wp-content/uploads/2013/05/QAPP\\_FINAL\\_081114.pdf](http://srrttf.org/wp-content/uploads/2013/05/QAPP_FINAL_081114.pdf).

8. Page 7, Section B.3; There are no requirements for upstream and downstream temperature monitoring. Background temperatures are needed to establish background conditions and to evaluate the temperature impact of the discharge. Also, please consider setting recording intervals at every 30-minutes and revising the maximum daily average reporting requirement to a 1-day maximum value.

EPA Response:

The EPA added more specific requirements for receiving water monitoring to Section I.C of the permit. The EPA revised the recording interval to every 30-minutes and added reporting of the maximum daily.

9. Page 27, Appendix A; Ecology suggests including methods for analysis of each pollutant. Also, the table excludes PCBs and also E.coli. Please ensure the table identifies the correct reporting limit for each pollutant.

EPA Response:

Corrections were made consistent with Ecology’s permit template for Appendix A and EPA’s permitting practices. Although not specifically related to the comment, the EPA changed the units in Table 1 of the permit for reporting PCB’s from µg/L to nanograms per liter (ng/L) because of the flow level of PCB expected to be present in the effluent. A note was added to Appendix A of the permit to address the details related to PCB monitoring in the Spokane Watershed. See response to comment no. 7.

**Comments received on the fact sheet.**

*EPA does not typically revise the fact sheet, but rather, addresses comments on the fact sheet in the RTC. However, the FS was updated to reflect changes that were made to Table 1 for the final permit to avoid any confusion about the limits and monitoring requirements.*

10. Page 10; Correct 0.024 mdg typo to 0.024 mgd.

EPA Response:

This minor correction was made to the fact sheet.

11. Page 11, Table 2; Data in table appears erroneous. Given the treatment plant's design flow of 0.08 mgd, the maximum reported influent flow of 0.31 mgd seems suspect. If correct, Ecology recommends including an inflow and infiltration investigation permit requirement. TSS effluent data of 1.00 mg/L is also suspect as 1.0 mg/L is less than the reporting limit for that parameter. How were non-detects handled in the analysis? Please include this explanation. In addition, EPA guidance recommends reporting geometric

means for bacteria rather than percentiles for bacteria. Please revise the statistical basis for the repotting of this parameter. Also, a chlorine residual of 1.35 mg/L would appear to be toxic to aquatic life. Please verify these numbers and update the table as necessary.

EPA Response:

To EPA's knowledge, the information provided in the fact sheet is correct. STI did not correct or provide any additional information during their review of the preliminary draft permit and fact sheet for preliminary CWA 401 Certification. Issuance of this permit will ensure more accurate monitoring and reporting of the facility's operation and discharge going forward.

12. Page 11, Receiving water: No receiving water quality information was provided in this section. Please indicate any impairments in the vicinity of the outfall or within the watershed.

EPA Response: STI has not indicated and EPA has no record of any water quality impairments in the vicinity of the permitted discharge.

13. Page 14; EPA indicated that no relevant receiving water quality data was available upstream of the outfall; however, Appendix B indicates that water quality data is available from 20 feet upstream of the outfall. Please explain why this data is not relevant and was not used in the reasonable potential calculation.

EPA Response:

As indicated on page 14, "The EPA found no relevant receiving water quality data for Wellpinit Creek in publicly available data sources." Tribal staff provided receiving water data for Little Tshimikain Creek, which is summarized in Appendix B, Section B. POC were identified as indicated on page 17 of the fact sheet.

- BOD<sub>5</sub> – TBEL
- TSS – TBEL
- Total Residual Chlorine – WQC
- *E. coli* bacteria – WQC
- pH – WQC
- Ammonia – WQC
- Temperature – WQC
- Phosphorus – Surrogate WQC Dissolved Oxygen

EPA evaluated RP for POC where sufficient effluent data were available. Limits were established for TBELs (BOD, TSS, pH) and POC with applicable WQC (bacteria and chlorine). Effluent data were not available for ammonia, temperature or phosphorus, see FS, Appendix B, Section A, page 32. The receiving water data provided in the FS, Appendix B, Section B, page 35 are relevant in RPA analysis where there were effluent data to evaluate RP for POC.

Small POTW are required to monitor only BOD, TSS, pH, temperature and fecal coliform (NPDES Application Part A.12 <https://www.epa.gov/sites/production/files/2015->

[09/documents/final2a.pdf](#)). The majority of the receiving water data (metals data) are not relevant for this small POTW, refer to the fact sheet Appendix B, Page 34.

14. Page 24; Previous discussion in the fact sheet references an effluent dominated stream with no available dilution. The discussion of mass loading from BOD indicates that the discharge will quickly mix and dilute with downstream waters. No analysis of a DO sag was included in this permit to evaluate the far field effects of BOD<sub>5</sub> on DO. Ecology recommends revisiting this assumption and revising calculations as necessary.

EPA Response:

Refer to Attachment 1 for the input data required to perform the Streeter-Phelps Analysis. The NPDES permit application requirement for very small POTWs does not require submission of the much of the input data needed to run the analysis. As stated in EPA's response to comment no. 5, the permittee is required to submit additional effluent data with this first permit cycle. With this permit cycle, EPA assumes that the TBEL for BOD<sub>5</sub> is sufficient to ensure minimal far-field impact on downstream dissolved oxygen levels.

15. Page 24; While there is no water quality standard for phosphorus, there is a tribal water quality standard for dissolved oxygen. Excess nutrients cause eutrophication and substantially degrade water quality. The region is also known for its DO impairment as it relates to phosphorus. A monitoring requirement is mentioned in this section so that it may inform the future permit; however, no phosphorus monitoring requirement was included in the draft permit. See the comment above related to Ecology's request to include this additional monitoring. Please revise.

EPA Response:

There is no indication of dissolved oxygen impairments at this time. Effluent phosphorus monitoring is required by the permit to inform the subsequent permit.

## Attachment 1: Streeter-Phelps Analysis of Critical Dissolved Oxygen (DO) Sag

As described in the FS (page 11), “This facility discharges to Little Tshimikain Creek in Wellpinit, Washington. The outfall is located upstream Wellpinit Creek, which flows into Little Chamokane and then into the Spokane River”, see Figure 3 in the fact sheet. There is significantly more dilution as the effluent quickly flows into larger downstream waterbodies.

The following data is required to analyze the far field impact on DO. EPA attempted to evaluate DO by employing worst-case assumptions where data was not available. The following serves as an example of the data required to run the analysis. Because of the assumptions, the results do not represent a reasonable estimate of the far field impact on DO.

Streeter-Phelps Analysis of Critical Dissolved Oxygen Sag			
INPUT		Assumptions	
<b>1. EFFLUENT CHARACTERISTICS</b>			
Discharge (cfs):	0.12376	Design Flow cfs	
CBOD5 (mg/L):	25	Effluent limits	
NBOD (mg/L):	2	Assume based on typical effluent	
Dissolved Oxygen (mg/L):	8	Assume lagoon effluent D.O is near WQC	
Temperature (deg C):	18.5	Max. discharge at WQC	
<b>2. RECEIVING WATER CHARACTERISTICS</b>			
Upstream Discharge (cfs):	10	Assume very low flow summer, Wellpinit Creek	
Upstream CBOD5 (mg/L):	1.0	Assume low biochemical oxygen demand	
Upstream NBOD (mg/L):	1	Assume low biochemical oxygen demand	
Upstream Dissolved Oxygen (mg/L):	8	Assume DO at WQC	
Upstream Temperature (deg C):	18.5	Assume temperature at WQC	
Elevation (ft NGVD):	2400	<a href="https://www.arcgis.com/home/webmap/viewer.html?webmap=Be4d2f59996d49008358a295b05d08ab">https://www.arcgis.com/home/webmap/viewer.html?webmap=Be4d2f59996d49008358a295b05d08ab</a>	
Downstream Average Channel Slope (ft/ft):	0.001	Unknown, assume conservative shallow slope	
Downstream Average Channel Depth (ft):	2	Unknown, assume conservative shallow slope	
Downstream Average Channel Velocity (fps):	1	Unknown, assume conservative shallow slope	
<b>3. REAERATION RATE (Base e) at 20 deg C (day<sup>-1</sup>):</b>			
	3.57	Suggested Values	
Reference	Applic. Val (fps)	Applic. Dep (ft)	Suggested Values
Churchill	1.5 - 6	2 - 50	3.64
O'Connor and Dobbins	0.1 - 1.5	2 - 50	4.58
Owens	0.1 - 6	1 - 2	5.99
Tsivoglou-Wallace	0.1 - 6	0.1 - 2	4.14
<b>4. BOD DECAY RATE (Base e) AT 20 deg C (day<sup>-1</sup>):</b>			
	2.51	(Suggested value = 2.51, Wright and McDonnell, 1979)	
OUTPUT			
<b>1. INITIAL MIXED RIVER CONDITION</b>			
CBOD5 (mg/L):	1.3		
NBOD (mg/L):	1.0		
Dissolved Oxygen (mg/L):	8.0		
Temperature (deg C):	18.5		
<b>2. TEMPERATURE ADJUSTED RATE CONSTANTS (Base e)</b>			
Reaeration (day <sup>-1</sup> ):	3.45		
BOD Decay (day <sup>-1</sup> ):	2.34		
<b>3. CALCULATED INITIAL ULTIMATE CBODU AND TOTAL BODU</b>			
Initial Mixed CBODU (mg/L):	1.9		
Initial Mixed Total BODU (CBODU + NBOD, mg/L):	2.9		
<b>4. INITIAL DISSOLVED OXYGEN DEFICIT</b>			
Saturation Dissolved Oxygen (mg/L):	8.572		
Initial Deficit (mg/L):	0.57		
<b>5. TRAVEL TIME TO CRITICAL DO CONCENTRATION (days):</b>			
	0.26		
<b>6. DISTANCE TO CRITICAL DO CONCENTRATION (miles):</b>			
	4.29		
<b>7. CRITICAL DO DEFICIT (mg/L):</b>			
	1.07		
<b>8. CRITICAL DO CONCENTRATION (mg/L):</b>			
	7.50		

