Fact Sheet

The U.S. Environmental Protection Agency (EPA)
Proposes to Issue a National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Pollutants Pursuant to the Provisions of the Clean Water Act (CWA) to:

Wellpinit WWTP
Spokane Reservation

Public Comment Start Date: October 12, 2018
Public Comment Expiration Date: November 12, 2018

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The EPA Proposes to Issue an NPDES Permit
The EPA proposes to issue the NPDES permit for the facility referenced above. The draft permit places conditions on the discharge of pollutants from the wastewater treatment plant to waters of the United States. 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.

This Fact Sheet includes:
- information on public comment, public hearing, and appeal procedures
- a listing of proposed effluent limitations and other conditions for the facility
- a map and description of the discharge location
- technical material supporting the conditions in the permit

Tribe Certification
Upon the EPA's request, the Spokane Tribe of Indians (STI) has provided a draft certification of the permit for this facility under Section 401 of the Clean Water Act. Comments regarding the certification should be directed to: Chairman, Spokane Tribe Water Control Board, PO Box 480, Wellpinit, WA, Attn: Brian Crossley, or by email to crossley@spokanetribe.com.

Public Comment
Persons wishing to comment on, or request a Public Hearing for the draft permit for this facility may do so in writing by the expiration date of the Public Comment period. A request for a Public Hearing must state the nature of the issues to be raised as well as the requester's name, address and telephone number. All comments and requests for Public Hearings must be in writing and should be submitted to the EPA as described in the Public Comments Section of the attached Public Notice.

After the Public Notice expires, and all comments have been considered, the EPA's regional Director for the Office of Water and Watersheds will make a final decision regarding permit issuance. If no substantive comments are received, the tentative conditions in the draft permit will become final, and the permit will become effective upon issuance. If substantive comments are received, the EPA will address the comments and issue the permit. The permit will become effective no less than 30 days after the issuance date, unless an appeal is submitted to the Environmental Appeals Board within 30 days pursuant to 40 CFR 124.19.

Documents are Available for Review
The draft NPDES permit and related documents can be reviewed or obtained by visiting or contacting the EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday at the address below. The draft permits, fact sheet, and other information can also be found by visiting the Region 10 NPDES website at https://www.epa.gov/npdes-permits/about-region-10s-npdes-permit-program.

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Acronyms

1Q10	1 day, 10 year low flow
7Q10	7 day, 10 year low flow
30B3	Biologically-based design flow intended to ensure an excursion frequency of less than once every three years, for a 30-day average flow.
30Q10	30 day, 10 year low flow
ACR	Acute-to-Chronic Ratio
AML	Average Monthly Limit
ASR	Alternative State Requirement
AWL	Average Weekly Limit
BA	Biological Assessment
BAT	Best Available Technology economically achievable
BCT	Best Conventional pollutant control Technology
BE	Biological Evaluation
BO or BiOp	Biological Opinion
BOD_5	Biochemical oxygen demand, five-day
BOD_{5u}	Biochemical oxygen demand, ultimate
BMP	Best Management Practices
BPT	Best Practicable
°C	Degrees Celsius
C BOD_5	Carbonaceous Biochemical Oxygen Demand
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
COD	Chemical Oxygen Demand
CSO	Combined Sewer Overflow
CV	Coefficient of Variation
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved oxygen
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FDF	Fundamentally Different Factor

FR	Federal Register
Gpd	Gallons per day
HUC	Hydrologic Unit Code
IC	Inhibition Concentration
ICIS	Integrated Compliance Information System
I/I	Infiltration and Inflow
LA	Load Allocation
lbs/day	Pounds per day
LC	Lethal Concentration
LC_{50}	Concentration at which 50% of test organisms die in a specified time period
LD_{50}	Dose at which 50% of test organisms die in a specified time period
LOEC	Lowest Observed Effect Concentration
LTA	Long Term Average
LTCP	Long Term Control Plan
mg/L	Milligrams per liter
Ml	Milliliters
ML	Minimum Level
µg/L	Micrograms per liter
mgd	Million gallons per day
MDL	Maximum Daily Limit or Method Detection Limit
MF	Membrane Filtration
MPN	Most Probable Number
N	Nitrogen
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NOEC	No Observable Effect Concentration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NSPS	New Source Performance Standards
OWW	Office of Water and Watersheds
O&M	Operations and maintenance
POTW	Publicly owned treatment works
PSES	Pretreatment Standards for Existing Sources
PSNS	Pretreatment Standards for New Sources
QAP	Quality assurance plan
RP	Reasonable Potential

RPM	Reasonable Potential Multiplier
RWC	Receiving Water Concentration
SIC	Standard Industrial Classification
SPCC	Spill Prevention and Control and Countermeasure
SS	Suspended Solids
SSO	Sanitary Sewer Overflow
s.u.	Standard Units
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
TRC	Total Residual Chlorine
TRE	Toxicity Reduction Evaluation
TSD	Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001)
TSS	Total suspended solids
TU_a	Toxic Units, Acute
TU_c	Toxic Units, Chronic
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UV	Ultraviolet
WET	Whole Effluent Toxicity
WLA	Wasteload allocation
WQBEL	Water quality-based effluent limit
WQS	Water Quality Standards
WWTP	Wastewater treatment plant

I. Background Information

A. General Information

This fact sheet provides information on the draft NPDES permit for the following entity:

Table 1. General Facility Information

NPDES Permit #:	WA0027952
Applicant:	Spokane Tribe Wellpinit WWTP
Type of Ownership	Tribal
Physical Address:	Wellpinit WWTP Sherwood Rd/Ford Wellpinit Hwy Wellpinit, Washington 99040
Mailing Address:	Wellpinit Sewer System P.O. Box 100 Wellpinit, WA 99040
Facility Contact:	Jay Brown Utilities Manager jay.brown@SpokaneTribe.com 509-458-6546
Operator Name:	Spokane Tribe of Indians
Facility Location:	Latitude -117.968° Longitude 47.895°
Receiving Water	Little Tshimikain Creek to Wellpinit Creek
Facility Outfall	Latitude -117.968 (117° 58' 3.80" W) Longitude 47.895 (47° 53' 40.67" N)

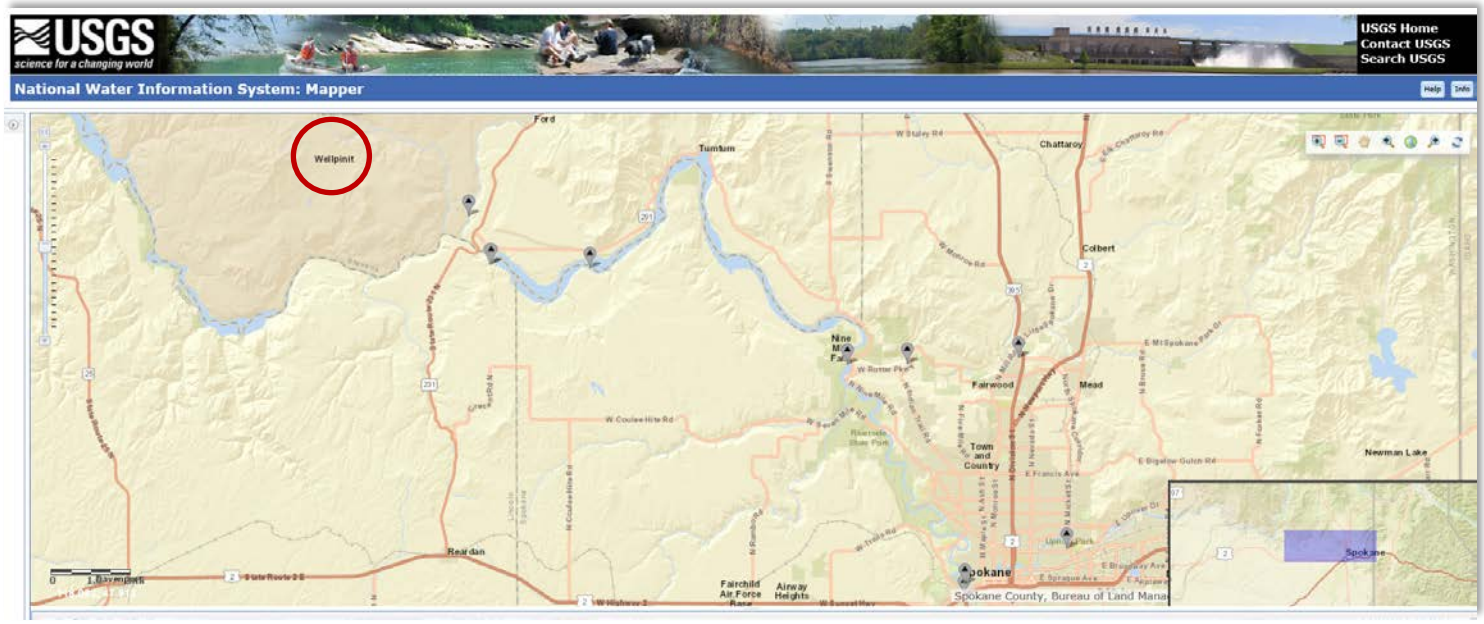


Figure 1. Vicinity of Wellpinit Northwest of Spokane, Washington

B. Permit History

The proposed NPDES permit is the first permit for the Wellpinit WWTP. An NPDES application was submitted by the permittee to the EPA on February 22, 1982. On April 9, 1982, the EPA sent the permittee a letter indicating that the NPDES permit application was received, but that due to budgetary constraints the EPA was unable to issue a permit. The letter provided that the permittee must comply with discharge conditions as listed in the letter. The permittee was required to comply with the Clean Water Act and control the discharge of pollutants such as biochemical oxygen demand (BOD_5), total suspended solids (TSS), fecal coliform bacteria and pH.

The EPA requested a permit application on June 27, 2018. The draft application and supplemental data was provided to the EPA in August, which provided information as the basis for this fact sheet.

II. Facility Information

A. Treatment Plant Description

The Wellpinit WWTP is a tribal facility treating domestic wastewater.

Service Area

Spokane Tribe of Indians owns and operates the Wellpinit (WWTP) located on the Spokane Reservation in Wellpinit, Washington. The collection system has no combined sewers. There are no major industries discharging to the facility.

Treatment Process

The design flow of the facility is 0.08 mgd and a design population of 900. The reported average daily design flow, as reported in the August 2018 application, is 0.024 mgd. During the 2010 inspection, it was reported that the plant serves a population of 300. The August 2018 application indicated the population of the Wellpinit community served is 500-999.

The treatment process consists of a bar screen with 2-inch spacing, two lagoons and disinfection using chlorine. The first lagoon is 720,000 gallons and is equipped with 2 aerators. The aerators operate in an on/off mode on a 12-hour cycle. The second lagoon is 360,000 gallons and equipped with a single aerator. The wastewater from the second lagoon flows into an underground tank that is equipped with a sodium hypochlorite tablet injector. The treated wastewater then flows into the chorine contact chamber. The treated effluent flows from the chlorine contact channel to the outfall.

Outfall Description

The treated effluent discharges to Little Tshimikain Creek through a single port outfall. From the 2010 inspection report, the open pipe discharge is location on the side bank of the creek. Refer to Appendix A for more information about the facility.

Effluent Characterization

To characterize the effluent, the EPA evaluated the most up-to-date information for the facility submitted with the August 2018 application. A summary of the relevant effluent

data is provided in Table 2. A table of the influent and effluent data is provided in Appendix B.

Table 2. Effluent Characterization

Parameter	No. of Data Pts.	Max	Min	Ave	Percentile 5th	Percentile 95th
Flow, gallons per minute (gpm), Influent	34	216.71	6.00	40.79	10.00	216.71
Flow, million gallons per day (mgd), Influent	34	0.31	0.01	0.06	0.01	0.31
BOD_5, mg/L	21	26.40	5.78	17.59	6.35	24.10
TSS, mg/L	18	51.00	1.00	7.83	1.85	26.35
E. coli, #/100 mL	97	34000.00	1.00	1258.57	3.80	5980.00
Chlorine, mg/L	1	1.35	1.35	1.35	1.35	1.35

Source: 2018 Permit Application, Supplemental Effluent and Receiving Water Data

Compliance History

This is a first-time permit issuance for the facility. The EPA reviewed the 2009 inspection report to assess compliance at that time. The conclusion of the 2009 inspection report provided the following:

> The facility is operating without an NPDES Permit and is not sampling for pH, BOD_5, TSS, Total Residual Chlorine (the data [the facility has] is for Total Chlorine and Free Chlorine) or Temperature. There is no flow meter. E. Coli and Fecal Coliform are, often, above 400 counts per 100 ml. There may be sampling or analysis errors since they record Free Chlorine values greater than Total Chlorine values. Finally, the creek may be flow limited in the late summer.

The EPA has no additional compliance information about the facility.

III. Receiving Water

In drafting permit conditions, the EPA must analyze the effect of the facility's discharge on the receiving water. The details of that analysis are provided later in this Fact Sheet. This section summarizes characteristics of the receiving water that impact that analysis.

A. Receiving Water

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.

The EPA referred to Washington State's Water Quality Atlas (URL: https://fortress.wa.gov/ecy/waterqualityatlas/StartPage.aspx) to identify the vicinity and approximate location of the facility and the outfall. Refer to the following Figures 2, 3 and 4.

Figure 2. Vicinity of Discharge and Downstream Standards (Washington State)

Figure 3. Area of Discharge Near Wellpinit, Washington

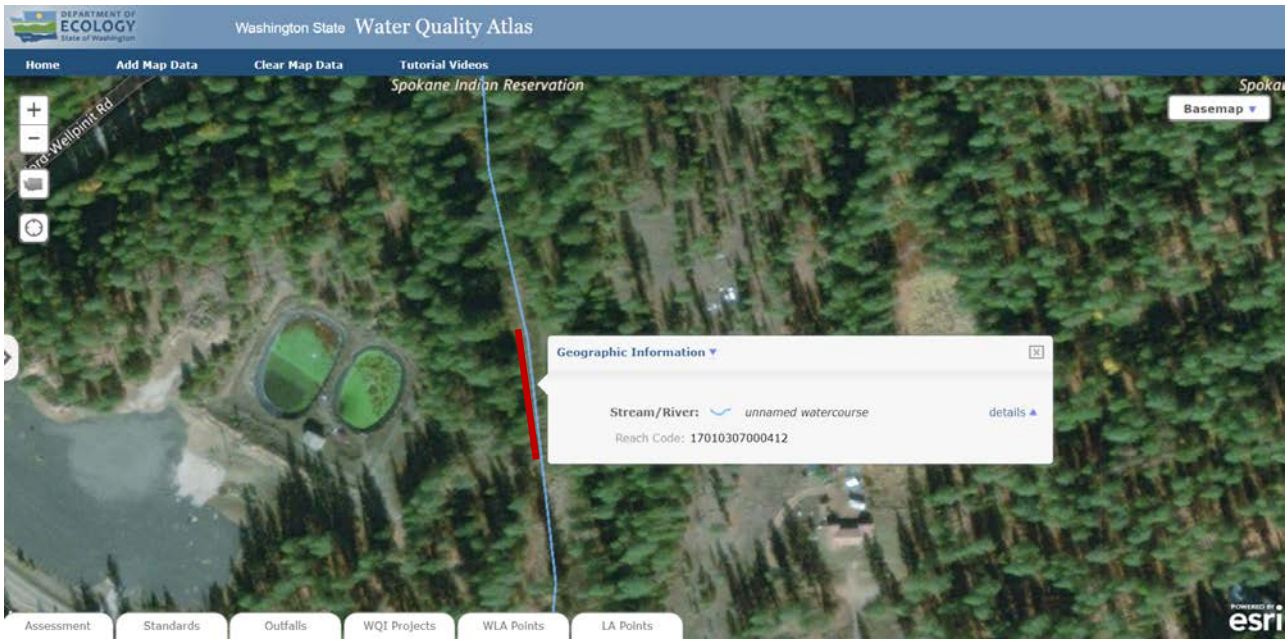


Figure 4. Location of Lagoons and Approximate Location of the Discharge

B. Designated Beneficial Uses

The EPA approved the Tribe's water quality standards on April 22, 2003.[1] The standards were revised 2010 and approved by EPA effective December 19, 2013 (version online dated December 9, 2017).

The facility discharges to Wellpinit Creek. The Tribe's water quality standards identify Wellpinit Creek as a Class A (Excellent) use designation as follows:

Use Designation

Class A (Excellent)

(a) **General characteristics.** Water quality of this class shall meet or exceed the requirements for all or substantially all designated uses.

(b) **Designated uses.** Designated uses shall include, but not be limited to, the following:

(i) Primary contact ceremonial and spiritual;

(ii) Cultural;

(iii) Water supply (domestic, industrial, agricultural);

(iv) Stock watering;

(v) Fish and shellfish, including:

--Salmonid migration, rearing, spawning, and harvesting.

--Other fish migration rearing, spawning, and harvesting.

[1] EPA Webpage, Water Quality Standards Regulations: Spokane Tribe of Indians, https://www.epa.gov/wqs-tech/water-quality-standards-regulations-spokane-tribe-indians

--Mollusks, crustaceans and other shellfish rearing, spawning, and harvesting.

(vi) Primary contact recreation, and

(vii) Commerce and navigation.

Water Quality Criteria

(i) E.coli organism levels must not exceed a geometric mean value of 126/l00 mL with not more than 10 percent of all ·samples (or any single sample when less than ten sample points exist) obtained for calculating the geometric mean value exceeding 406/l00 mL

(ii) Dissolved oxygen shall not be less than 8.0 mg/1.

(iii) Total dissolved gas shall not exceed 110 percent of saturation at any point of sample collection.

(iv) temperatures from June 1 to August 31 may be allowed to reach a 7-day average (7-DADM) of the daily maximum temperature of 18.5 C. Temperature shall not exceed the 7-DADM Table 5 (referenced in standards) value from September 1st through September 30th as well as from April 1st through May 31st. The 7-DADM temperature shall not exceed 11°C between October 1st and March 31st

(v) pH shall be within the range of 6.5 to 8.5 with a human-caused variation within a range of less than 0.5 units.

(vi) Aesthetic values shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste.

C. Water Quality

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.

D. Water Quality Limited Waters

The EPA found no information about the impairment status (e.g. waters not meeting the Tribal water quality standards) for Wellpinit Creek. There are no approved TMDLs for waterbodies within the Spokane Reservation.

E. Low Flow Conditions

There are no available data for critical flows in Wellpinit Creek. Therefore, for this permit, the EPA used the conservative assumption that there are periods during which there is little to no flow in the creek as indicated in the 2009 inspection report. In addition and in accordance with the Tribe's mixing zone provisions in the water quality standards, a mixing zone cannot be authorized if the discharge is not a "sufficient depth below the surface." The outfall is not below the surface, but discharges on the creek bank. River critical low flow conditions are defined in Appendix D, Part C.

F. New Discharge Compliance with 40 CFR 122.4(i)

NPDES regulations prohibit the issuance of a permit to a new source or for a new discharge if it will "cause or contribute to the violation of water quality standards." If the waterbody has an approved TMDL, then there must be a showing that (1) there is sufficient remaining load allocation to allow for the discharge, and (2) that the existing dischargers discharging into the same segment are subject to compliance schedules designed to bring the segment into compliance with the applicable standards.

As provided in Section IV.D, the proposed new discharge does not discharge to a waterbody with any category 5 303(d) listed parameters. The EPA has determined that application of effluent limits based on the State's EPA-approved standards and permitting guidance will ensure that the discharge will not cause or contribute to water quality standards violations and the issuance of the new permit complies with 40 CFR 122.4(i).

IV. Effluent Limitations and Monitoring

This is a first-time permit issuance. Based on the application acceptance letter from 1982, the facility was expected to meet the conditions shown in Table 3. In addition, the letter recommended monitoring for flow, temperature and total residual chlorine.

Table 3. Current Effluent Requirements

Effluent Characteristics	Unit of Measure	Monthly Average	Weekly Average
Biochemical Oxygen Demand (BOD_5)	mg/L	30	45
Total Suspended Solids (TSS)	mg/L	30	45
Fecal Coliform Bacteria	Number/100 mL	200	400
BOD_5 mass Loading	Lbs/day	20	30
TSS mass Loading	Lbs/day	20	30
BOD_5 Percent Removal		>85%	
TSS Percent Removal		>85%	

Table 4, provides the proposed effluent limits and monitoring requirements in the draft permit. The effluent limitations and monitoring are consistent with EPA's permitting guidance and the NPDES permit renewal application, Form 2A, for facilities less than 0.1 mgd design capacity.

Table 4. Draft Permit - Effluent Limits and Monitoring Requirements

Parameter	Units	Effluent Limitations			Monitoring Requirements		
		Average Monthly	Average Weekly	Maximum Daily	Sample Location	Sample Frequency	Sample Type
Parameters with Effluent Limits							
Biochemical Oxygen Demand (BOD_5)	mg/L	30	45	--	Influent and Effluent	Biweekly (2 per month)	24-hour composite
	lbs/day	20	30	--			Calculation[1]

Parameter	Units	Effluent Limitations			Monitoring Requirements		
		Average Monthly	Average Weekly	Maximum Daily	Sample Location	Sample Frequency	Sample Type
BOD_5 Percent Removal	Percent	85% (minimum)	--	--	--	1/month	Calculation[2]
Total Suspended Solids (TSS)	mg/L	30	45	--	Influent and Effluent	Biweekly (2 per month)	24-hour composite
	lbs/day	20	30	--			Calculation[1]
TSS Percent Removal	Percent	85% (minimum)	--	--	--	1/month	Calculation[2]
E. coli [3]	CFU/ 100 ml	126	--	406 (instantaneous max) [3]	Effluent	1/week	Grab
INTERIM Total Residual Chlorine (In effect 30 months from permit issuance date.)	mg/L	0.5	--	0.75[4, 5]	Effluent	1/week	Grab
	lbs/day	0.35	--	0.50[4]			Calculation[1]
FINAL Total Residual Chlorine	µg/L	9.0	--	18[4, 5]	Effluent	1/week	Grab
	lbs/day	0.006	--	0.018[4]			Calculation[1]
pH	Standard Units (s.u.)	Between Minimum 6.5 and Maximum 8.5			Effluent	1/week	Grab
Report Parameters							
Flow	mgd	Report	--	Report	Influent or Effluent	Continuous	Meter
Ammonia	mg/L	--	--	Report	Effluent	1/month	Grab
Temperature	ºC	--	Report	Report	Effluent	Continuous	Metered /recorded
Effluent Testing for Permit Renewal							
Permit Application Effluent Testing Data[6] (Part B.6 includes ammonia, total residual chlorine, dissolved oxygen, TKN, nitrate plus nitrite nitrogen, oil and grease, total phosphorus, total dissolved solids)					Effluent	1/year	--

Parameter	Units	Effluent Limitations			Monitoring Requirements		
		Average Monthly	Average Weekly	Maximum Daily	Sample Location	Sample Frequency	Sample Type

Notes – the references in the section refer to the permit.

1. Loading (in lbs/day) is calculated by multiplying the concentration (in mg/L) by the corresponding flow (in mgd) for the day of sampling and a conversion factor of 8.34. For more information on calculating, averaging, and reporting loads and concentrations see the *NPDES Self-Monitoring System User Guide* (EPA 833-B-85-100, March 1985).
2. Percent Removal. The monthly average percent removal must be calculated from the arithmetic mean of the influent values and the arithmetic mean of the effluent values for that month using the following equation: (average monthly influent concentration – average monthly effluent concentration) ÷ average monthly influent concentration x 100. Influent and effluent samples must be taken over approximately the same time period.
3. The average monthly *E. coli* bacteria counts must not exceed a geometric mean of 126/100 ml with not more than 10 percent of all samples obtained for calculating the geometric mean value exceeding 406 /100 ml. See Part VI of this permit for a definition of geometric mean.
4. Reporting is required within 24 hours of a maximum daily limit or instantaneous maximum limit violation. See Paragraph I.B.3 and Part III.G of this permit.
5. The limits for chlorine are not quantifiable using EPA-approved analytical methods. The minimum level (ML) for chlorine is 50 µg/L for this parameter. The EPA will use 50 µg/L as the compliance evaluation level for this parameter. The permittee will be compliance with the total residual chlorine limitations if the average monthly and maximum daily concentrations are less than 50 µg/L and the average monthly and maximum daily mass loadings are less than 0.35 lbs/day. For purposes of calculating the monthly averages, see Paragraph I.B.7 of this permit.
6. 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 with Part I.B.5 of this permit.

A. Basis for Effluent Limits

In general, the CWA requires that the effluent limits for a pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits.

B. Pollutants of Concern

Pollutants of concern are those that either have technology-based limits or may need water quality-based limits. The EPA identifies pollutants of concern for the discharge based on those which:

- Have a technology-based limit (TBEL)
- Have an assigned wasteload allocation (WLA) from a TMDL
- Had an effluent limit in the previous permit
- Are present in the effluent monitoring. Monitoring data are reported in the application and DMR and any special studies
- Are expected to be in the discharge based on the nature of the discharge

The wastewater treatment process for this facility includes both primary and secondary treatment, as well as disinfection with chlorination. Pollutants expected in the discharge from a facility with this type of treatment, include but are not limited to: five-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), E. coli bacteria, total residual chlorine (TRC), pH, ammonia, temperature, and phosphorus.

Based on this analysis, pollutants of concern are as follows: (WQC indicates that there are approved water quality criteria for the parameter):

- BOD_5 - TBEL
- TSS - TBEL
- Total Residual Chlorine – TBEL and WQC
- *E. coli* bacteria - WQC
- pH - WQC
- Ammonia - WQC
- Temperature - WQC
- Phosphorus

C. Technology-Based Effluent Limits

Federal Secondary Treatment Effluent Limits

The CWA requires POTWs to meet performance-based requirements based on available wastewater treatment technology. Section 301 of the CWA established a required performance level, referred to as "secondary treatment," which POTWs were required to meet by July 1, 1977. The EPA has developed and promulgated "secondary treatment" effluent limitations, which are found in 40 CFR 133.102. These technology-based effluent limits apply to certain municipal WWTPs and identify the minimum level of effluent quality attainable by application of secondary treatment in terms of BOD_5, TSS, and pH. The federally promulgated secondary treatment effluent limits are listed in Table 5. For additional information and background refer to Part 5.1 *Technology Based Effluent Limits for POTWs* in the Permit Writers Manual.

Table 5. Secondary Treatment Effluent Limits

Parameter	30-day average	7-day average
BOD_5	30 mg/L (or 25 mg/L $CBOD_5$)	45 mg/L (or 40 mg/L $CBOD_5$)
TSS	30 mg/L	45 mg/L
BOD_5 and TSS removal (concentration)	not less than 85%	--
pH	within the limits of 6.0–9.0	

Mass-Based Limits

The federal regulation at 40 CFR 122.45(f) requires that effluent limits be expressed in terms of mass, except under certain conditions. The regulation at 40 CFR 122.45(b) requires that effluent limitations for POTWs be calculated based on the design flow of the facility. The mass based limits are expressed in pounds per day and are calculated as follows:

Mass based limit (lb/day) = concentration limit (mg/L) × design flow (mgd) × 8.34[2]

Since the design flow for this facility is 0.08 mgd, the technology based mass limits for BOD_5 and TSS are calculated as follows:

Average Monthly Limit = 30 mg/L × 0.08 mgd × 8.34 = 20 lbs/day
Average Weekly Limit = 45 mg/L × 0.08 mgd × 8.34 = 30 lbs/day

Equivalent to Secondary Treatment Standards

Equivalent to secondary treatment standards may be applied to lagoon facilities. To be eligible for discharge limitations based on equivalent to secondary standards, a POTW must meet all three of the following criteria:

- Criterion #1—Consistently Exceeds Secondary Treatment Standards
- Criterion #2—Principal Treatment Process
- Criterion #3—Provides Significant Biological Treatment

Regulations at regulations at 40 CFR 133.101 provide information for implementation of the equivalent standards based on facility performance data. Table 6 provides the equivalent to secondary treatment standards.

Table 6. Equivalent to Secondary Treatment Standards

Parameter	30-day average	7-day average
BOD_5	not to exceed 45 mg/L (or not to exceed 40 mg/L $CBOD_5$)	not to exceed 65 mg/L (or not to exceed 60 mg/L $CBOD_5$)
TSS	not to exceed 45 mg/L	not to exceed 65 mg/L
BOD_5 and TSS removal (concentration)	not less than 65%	--
pH	within the limits of 6.0–9.0	

Based-based effluent limits based on equivalent to secondary standards:

Average Monthly Limit = 45 mg/L × 0.08 mgd × 8.34 = 30 lbs/day
Average Weekly Limit = 65 mg/L × 0.08 mgd × 8.34 = 43 lbs/day

Based on the effluent data provided in Table 2. Effluent Characterization, the EPA has concluded that technology-based effluent limitations based on the secondary treatment standards are appropriate for this permit. Based on the 95th percentile effluent data for BOD_5 and TSS, the facility should be able to comply with the secondary treatment standards.

Chlorine

Chlorine is often used to disinfect municipal wastewater prior to discharge. The Wellpinit WWTP uses chlorine disinfection. A 0.5 mg/L average monthly limit for chlorine is derived from standard operating practices. The Water Pollution Control Federation's *Chlorination of Wastewater* (1976) states that a properly designed and maintained wastewater treatment plant can achieve adequate disinfection if a 0.5 mg/L chlorine residual is maintained after 15

[2] 8.34 is a conversion factor with units (lb ×L)/(mg × gallon×10^6)

minutes of contact time. Therefore, a wastewater treatment plant that provides adequate chlorine contact time can meet a 0.5 mg/L total residual chlorine limit on a monthly average basis. In addition to average monthly limits (AMLs), NPDES regulations require effluent limits for POTWs to be expressed as average weekly limits (AWLs) unless impracticable. For technology-based effluent limits, the AWL is calculated to be 1.5 times the AML, consistent with the "secondary treatment" limits for BOD_5 and TSS. This results in an AWL for chlorine of 0.75 mg/L.

Since the federal regulations at 40 CFR 122.45 (b) and (f) require limitations for POTWs to be expressed as mass based limits using the design flow of the facility, mass based limits for chlorine are calculated as follows:

Monthly average Limit= 0.5 mg/L x 0.08 mgd x 8.34 = 0.34 lbs/day

Weekly average Limit = 0.75 mg/L x 0.08 mgd x 8.34 = 0.50 lbs/day

More stringent water quality-based effluent limitations are applied in this permit because a mixing zone could not be authorized. However, the TBEL is imposed as an interim effluent limitation until the final limit can be met under the proposed compliance schedule.

D. Water Quality-Based Effluent Limits

Statutory and Regulatory Basis

Section 301(b)(1)(C) of the CWA requires the development of limitations in permits necessary to meet water quality standards. Discharges to State or Tribal waters must also comply with limitations imposed by the State or Tribe as part of its certification of NPDES permits under section 401 of the CWA. The NPDES regulation 40 CFR 122.44(d)(1) implementing Section 301(b)(1)(C) of the CWA requires that permits include limits for all pollutants or parameters which are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State or Tribal water quality standard, including narrative criteria for water quality. Effluent limits must also meet the applicable water quality requirements of affected States other than the State in which the discharge originates, which may include downstream States (40 CFR 122.4(d), 122.44(d)(4), see also CWA Section 401(a)(2)).

The regulations require the permitting authority to make this evaluation using procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant in the effluent, species sensitivity (for toxicity), and where appropriate, dilution in the receiving water. The limits must be stringent enough to ensure that water quality standards are met, and must be consistent with any available wasteload allocation for the discharge in an approved TMDL. If there are no approved TMDLs that specify wasteload allocations for this discharge; all the water quality-based effluent limits are calculated directly from the applicable water quality standards.

Reasonable Potential Analysis and Need for Water Quality-Based Effluent Limits

The EPA uses the process described in the *Technical Support Document for Water Quality-based Toxics Control* (*TSD*) to determine reasonable potential. To determine if there is reasonable potential for the discharge to cause or contribute to an exceedance of water quality criteria for a given pollutant, the EPA compares the maximum projected receiving

water concentration to the water quality criteria for that pollutant. If the projected receiving water concentration exceeds the criteria, there is reasonable potential, and a water quality-based effluent limit must be included in the permit.

In some cases, a dilution allowance or mixing zone is permitted. A mixing zone is a limited area or volume of water where initial dilution of a discharge takes place and within which certain water quality criteria may be exceeded (EPA, 2014). While the criteria may be exceeded within the mixing zone, the use and size of the mixing zone must be limited such that the waterbody as a whole will not be impaired, all designated uses are maintained and acutely toxic conditions are prevented.

Spokane Tribal Standards include the following provisions for mixing zones.[3]

> Definition - "Mixing zone" means that portion of a water body affected by the discharge of effluents in accordance with Section 13(2) of this chapter where·mixing results in the dilution of the effluent with the receiving water.
>
> The standards required in this chapter may not be met by using a mixing zone, except where:
>
> (a) the allowable size, location and duration of the mixing zone and associated effluent limits are established by the Department as part of a cleanup performed under the Federal or Tribal cleanup laws, and as established, the mixing zone will be at least as protective of human health and the environment as a mixing zone established under the laws of the State of Washington; and
>
> (b) the size of the mixing zone and the concentrations of pollutants present shall be minimized; and
>
> (c) overlapping mixing zones shall only be allowed if, in combination, the requirements of subsection (f) are satisfied; and
>
> (d) water quality criteria shall not be violated outside of the boundary of a mixing zone as a result of the discharge for which the mixing zone was authorized; and
>
> (e) the discharge is either:
>
> *(i) at a sufficient depth below the surface of the receiving water body that the criteria applicable to the constituent of concern being addressed by using the mixing zone is met at the water body's surface; or*
>
> *(ii) located at a distance from the shore that ensures sensitive human and wildlife receptors are not likely exposed at the water body's surface for extended periods. (3) Activities which cause pollution of storm water shall be conducted so as to comply with these water quality standards.*

[3] Spokane Tribe of Indians Surface Water Quality Standards, Section 13. Implementation. https://www.epa.gov/sites/production/files/2014-12/documents/spokane-tribe-wqs.pdf

A mixing zone is not authorized by this permit because the conditions (e) of the tribal standards are not met.

Table 7. Mixing Zones and Dilution Factors

Criteria Type	Critical Low Flow (cfs)	Mixing Zone (% of Critical Low Flow)	Dilution Factor
Acute Aquatic Life	unknown	0	1
Chronic Aquatic Life (except ammonia)	unknown	0	1
Chronic Aquatic Life (ammonia)	unknown	0	1
Human Health Noncarcinogen	unknown	0	1
Human Health Carcinogen	unknown	0	1

The reasonable potential analysis and water quality-based effluent limit calculations were based on mixing zones shown in Table 7. If the Tribe revises the allowable mixing zone in its final certification of this permit, reasonable potential analysis and water quality-based effluent limit calculations will be revised accordingly.

The equations used to conduct the reasonable potential analysis and calculate the water quality-based effluent limits are provided in Appendix D.

Reasonable Potential and Water Quality-Based Effluent Limits

The reasonable potential and water quality-based effluent limit for specific parameters are summarized below. The WQBEL calculations are provided in Appendix D.

Chlorine

The Tribal state water quality standards establish criteria to protect aquatic life and human health. The chorine criteria for the protection of aquatic life are an acute criterion of 19 µg/L and a chronic criterion of 11 µg/L. A reasonable potential calculation showed that the discharge from the facility has the reasonable potential to cause or contribute to a violation of the water quality criteria for chlorine. Therefore, the draft permit contains a water quality-based effluent limit on a monthly average and maximum daily basis of 9 and 18 µg/L, respectively, along with associated mass-based effluent limits.

E. coli

The Tribal water quality standards state that waters that are designated for recreation and establish criteria for E. coli organism levels that must not exceed a geometric mean value of 126 counts/l00 mL with not more than 10 percent of all ·samples (or any single sample when less than ten sample points exist) obtained for calculating the geometric mean value exceeding 406 counts/l00 mL.

The goal of a water quality-based effluent limit is to ensure a low probability that water quality standards will be exceeded in the receiving water because of a discharge, while considering the variability of the pollutant in the effluent. Because a single sample value exceeding 406 organisms per 100 ml indicates a likely exceedance of the geometric mean criterion, the EPA has imposed an instantaneous (single grab sample) maximum effluent limit for E. coli of 406 organisms per 100 ml, in addition to a monthly geometric mean limit

of 126 organisms per 100 ml, which directly implements the water quality criterion for E. coli. This will ensure that the discharge will have a low probability of exceeding water quality standards for E. coli.

Regulations at 40 CFR 122.45(d)(2) require that effluent limitations for continuous discharges from POTWs be expressed as average monthly and average weekly limits, unless impracticable. Additionally, the terms "average monthly limit" and "average weekly limit" are defined in 40 CFR 122.2 as being arithmetic (as opposed to geometric) averages. It is impracticable to properly implement a 30-day geometric mean criterion in a permit using monthly and weekly arithmetic average limits. The geometric mean of a given data set is equal to the arithmetic mean of that data set if and only if all the values in that data set are equal. Otherwise, the geometric mean is always less than the arithmetic mean. To ensure that the effluent limits are "derived from and comply with" the geometric mean water quality criterion, as required by 40 CFR 122.44(d)(1)(vii)(A), it is necessary to express the effluent limits as a monthly geometric mean and an instantaneous maximum limit. The permit imposes the criteria as effluent limits at the point of discharge.

pH

The Tribal water quality standards require pH values of the river to be within the range of 6.5 to 8.5 standard units. A mixing zone is not authorized; therefore, the limits must be met at the point of discharge. The permit imposes the criteria as effluent limits at the point of discharge.

Ammonia

The Tribal water quality standards establish criteria for ammonia as follows:

Aquatic Life, Acute Criteria, 24,000 µg/L

Aquatic Life, Chronic Criteria, 5,900 µg/L

There is no monitoring data upon which to evaluate reasonable potential. The EPA's NPDES Application Form 2A does not require ammonia testing for facilities with a design capacity of less than 0.1 mgd. Monitoring is required under the permit to inform the subsequent permit.

Temperature

The Tribal water quality standards establish criteria for temperature as follows:

June 1 to August 31

7-DADM Temperature shall not exceed 18.5°C

September 1 through September 30 and April 1 through May 31

7-DADM Temperature shall not exceed 13.5°C

October 1st and March 31st

7-DADM temperature shall not exceed 11°C

There is no monitoring data upon which to evaluate reasonable potential. Monitoring is required under the permit to inform the subsequent permit.

Dissolved Oxygen (DO) and BOD_5

The Tribal water quality standards establish criteria is that dissolved oxygen shall not be less than 8.0 mg/L in the receiving water. Natural decomposition of organic material in wastewater effluent impacts dissolved oxygen in the receiving water at distances far outside of the regulated mixing zone. The BOD_5 of an effluent sample indicates the amount of biodegradable material in the wastewater and estimates the magnitude of oxygen consumption the wastewater will generate in the receiving water.

The mass loading of BOD_5 from the discharge is low and the discharge will quickly mix and dilute with downstream waters to mitigate the far field impacts of BOD_5 on DO in the receiving water. The technology-based effluent limits are presumed to be sufficient prevent low DO in the receiving water based on available information.

Phosphorus

Phosphorus monitoring or data is not required by the NPDES application for facilities less than 0.1 mgd. There is no Tribal water quality standard for phosphorus upon which to establish reasonable potential. Monitoring is required under the permit to inform the subsequent permit.

Residues

The Tribal water quality standards require that "aesthetic values shall not be impaired by the presence of materials or their effects, excluding those of natural origin, which offend the senses of sight, smell, touch, or taste." The permit imposes the criteria as effluent limits at the point of discharge.

E. Antibacksliding

Section 402(o) of the Clean Water Act and federal regulations at 40 CFR §122.44 (l) generally prohibit the renewal, reissuance or modification of an existing NPDES permit that contains effluent limits, permit conditions or standards that are less stringent than those established in the previous permit (i.e., anti-backsliding) but provides limited exceptions. For explanation of the antibacksliding exceptions refer to Chapter 7 of the Permit Writers Manual *Final Effluent Limitations and Anti-backsliding*.

This is the first issuance of an NPDES permit for the facility; therefore, the backsliding provisions are not a consideration for this permit.

V. Monitoring Requirements

A. Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality.

The permit also requires the permittee to perform effluent monitoring required by the NPDES Form 2A application, so that these data will be available when the permittee applies for a renewal of its NPDES permit.

The permit also requires the permittee to perform effluent monitoring required by parts B.6 and D of the NPDES Form 2A application, so that these data will be available when the permittee applies for a renewal of its NPDES permit.

The permittee is responsible for conducting the monitoring and for reporting results on DMRs or on the application for renewal, as appropriate, to the EPA.

B. Effluent Monitoring

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples must be used for averaging if they are conducted using the EPA-approved test methods (generally found in 40 CFR 136) or as specified in the permit.

Monitoring Changes from the Previous Permit

This section is not applicable to the first-time issuance of this permit.

C. Surface Water Monitoring

In general, surface water monitoring may be required for pollutants of concern to assess the assimilative capacity of the receiving water for the pollutant. In addition, surface water monitoring may be required for pollutants for which the water quality criteria are dependent and to collect data for TMDL development if the facility discharges to an impaired water body.

Surface water monitoring is not required because of the low design capacity of the facility. However, if the facility chooses to perform surface water monitoring to inform the next permit, the facility should consult with the EPA about the requirement of a surface water monitoring plan and submission of receiving water data.

D. Electronic Submission of Discharge Monitoring Reports

The draft permit requires that the permittee submit DMR data electronically using NetDMR. NetDMR is a national web-based tool that allows DMR data to be submitted electronically via a secure Internet application.

The EPA currently conducts free training on the use of NetDMR. Further information about NetDMR, including upcoming trainings and contacts, is provided on the following website: https://netdmr.epa.gov. The permittee may use NetDMR after requesting and receiving permission from EPA Region 10.

VI. Sludge (Biosolids) Requirements

The EPA Region 10 separates wastewater and sludge permitting. The EPA has authority under the CWA to issue separate sludge-only permits for the purposes of regulating biosolids. The EPA may issue a sludge-only permit to each facility later, as appropriate.

Until future issuance of a sludge-only permit, sludge management and disposal activities at each facility continue to be subject to the national sewage sludge standards at 40 CFR Part 503 and any requirements of the State's biosolids program. The Part 503 regulations are

self-implementing, which means that facilities must comply with them whether or not a permit has been issued.

VII. Other Permit Conditions

A. Compliance Schedules

Compliance schedules are authorized by federal NPDES regulations at 400 CFR 122.47. Compliance schedules allow a discharger to phase in, over time, compliance with water quality-based effluent limitations when limitations are in the permit for the first time. The EPA has found that a compliance schedule is appropriate for chlorine because facility cannot immediately comply with the new effluent on the effective date of the permit. Refer to Section 9.1.3 Compliance Schedules in the Permit Writers Manual.

The permit allows for a compliance schedule to complete tasks in Table 8.

Table 8. Tasks Required Under the Schedule of Compliance for Chlorine

Task No.	Due By	Task Activity
1	12 months from effective date of permit.	**Facility Planning** The permittee must develop a facility plan that evaluates alternatives to meet the final effluent limitations for chlorine and select a preferred alternative. Deliverable: The permittee must provide written notice to EPA.
2	18 months from effective date of permit.	**Final Design** The permittee must complete design of the selected alternative for meeting the final effluent limitations to total residual chlorine. Deliverable: The permittee must provide written notice to EPA that the final design is complete.
3	24 months from effective date of permit.	**Construction Complete** The permittee must complete construction to achieve the effluent limitations for total residual chlorine. Deliverable: The permittee must submit a construction completion report to the EPA.
4	30 months from effective date of permit.	**Meet Effluent Limitation for Chlorine** Construction and optimization of process such that compliance with the phosphorus effluent limitations are achieved. Deliverable: The permittee must provide written notice to the EPA that the chlorine effluent limitations are achieved.

Revised following Reponse to Comments:

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 remove 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.

B. Quality Assurance Plan

The Spokane Tribe Wellpinit WWTP is required to update the Quality Assurance Plan within 180 days of the effective date of the final permit. The Quality Assurance Plan must include of standard operating procedures the permittee must follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting. The plan must be retained on site and be made available to the EPA upon request.

C. Operation and Maintenance Plan

The permit requires the Spokane Tribe Wellpinit WWTP to properly operate and maintain all facilities and systems of treatment and control. Proper operation and maintenance is essential to meeting discharge limits, monitoring requirements, and all other permit requirements at all times. The permittee is required to develop and implement an operation and maintenance plan for their facility within 180 days of the effective date of the final permit. The plan must be retained on site and made available to the EPA upon request.

D. Sanitary Sewer Overflows and Proper O&M of the Collection System

SSOs are not authorized under this permit. The permit contains language to address SSO reporting and public notice and operation and maintenance of the collection system. The permit requires that the permittee identify SSO occurrences and their causes. In addition, the permit establishes reporting, record keeping and third party notification of SSOs. Finally, the permit requires proper operation and maintenance of the collection system.

The following specific permit conditions apply:

Immediate Reporting – The permittee is required to notify the EPA of an SSO within 24 hours of the time the permittee becomes aware of the overflow. (See 40 CFR 122.41(l)(6))

Written Reports – The permittee is required to provide the EPA a written report within five days of the time it became aware of any overflow that is subject to the immediate reporting provision. (See 40 CFR 122.41(l)(6)(i)).

Third Party Notice – The permit requires that the permittee establish a process to notify specified third parties of SSOs that may endanger health due to a likelihood of human exposure; or unanticipated bypass and upset that exceeds any effluent limitation in the permit or that may endanger health due to a likelihood of human exposure. The permittee is required to develop, in consultation with appropriate authorities at the local, county, tribal and/or state level, a plan that describes how, under various overflow (and unanticipated bypass and upset) scenarios, the public, as well as other entities, would be notified of overflows that may endanger health. The plan should identify all overflows that would be reported and to whom, and the specific information that would be reported. The plan should include a description of lines of communication and the identities of responsible officials. (See 40 CFR 122.41(l)(6)).

Record Keeping – The permittee is required to keep records of SSOs. The permittee must retain the reports submitted to the EPA and other appropriate reports that could include work orders associated with investigation of system problems related to a SSO, that describes the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the SSO. (See 40 CFR 122.41(j)).

Proper Operation and Maintenance – The permit requires proper operation and maintenance of the collection system. (See 40 CFR 122.41(d) and (e)). SSOs may be indicative of improper operation and maintenance of the collection system. The permittee may consider the development and implementation of a capacity, management, operation and maintenance (CMOM) program.

The permittee may refer to the Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems (EPA 305-B-05-002). This guide identifies some of the criteria used by the EPA inspectors to evaluate a collection system's management, operation and maintenance program activities. Owners/operators can review their own systems against the checklist (Chapter 3) to reduce the occurrence of sewer overflows and improve or maintain compliance.

E. Environmental Justice

As part of the permit development process, the EPA Region 10 conducted a screening analysis to determine whether this permit action could affect overburdened communities. "Overburdened" communities can include minority, low-income, tribal, and indigenous populations or communities that potentially experience disproportionate environmental harms and risks. The EPA used a nationally consistent geospatial tool that contains demographic and environmental data for the United States at the Census block group level. This tool is used to identify permits for which enhanced outreach may be warranted.

Regardless of whether a Wellpinit WWTP is located near a potentially overburdened community, the EPA encourages permittees to review (and to consider adopting, where appropriate) Promising Practices for Permit Applicants Seeking EPA-Issued Permits: Ways to Engage Neighboring Communities (see https://www.federalregister.gov/d/2013-10945). Examples of promising practices include: thinking ahead about community's characteristics and the effects of the permit on the community, engaging the right community leaders, providing progress or status reports, inviting members of the community for tours of the facility, providing informational materials translated into different languages, setting up a hotline for community members to voice concerns or request information, follow up, etc.

For more information, please visit https://www.epa.gov/environmentaljustice and Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*.

F. Standard Permit Provisions

Sections III, IV and V of the draft permit contain standard regulatory language that must be included in all NPDES permits. The standard regulatory language covers requirements such as monitoring, recording, and reporting requirements, compliance responsibilities, and other general requirements.

VIII. Other Legal Requirements

A. Endangered Species Act

The Endangered Species Act requires federal agencies to consult with National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) and the U.S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or

endangered species. A review of the threatened and endangered species located in Washington finds that issuance of this NPDES permit is Not Likely to Adversely Affect endangered or threatened species. Refer to Appendix F.

B. Essential Fish Habitat

Essential fish habitat (EFH) is the waters and substrate (sediments, etc.) necessary for fish to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires the EPA to consult with NOAA Fisheries when a proposed discharge has the potential to adversely affect EFH (i.e., reduce quality and/or quantity of EFH). A review of the Essential Fish Habitat documents shows that issuance of this NPDES permit is Not Likely to Adversely Effect.

The EFH regulations define an adverse effect as any impact which reduces quality and/or quantity of EFH and may include direct (e.g. contamination or physical disruption), indirect (e.g. loss of prey, reduction in species' fecundity), site specific, or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. The EPA has prepared an EFH assessment which appears in Appendix F.

C. Tribal Certification

Section 401 of the CWA requires the EPA to seek Tribal certification before issuing a final permit. As a result of the certification, the Tribe may require more stringent permit conditions or additional monitoring requirements to ensure that the permit complies with water quality standards, or treatment standards established pursuant to any State law or regulation. A copy of the draft 401 certification is provided in Appendix G.

D. Antidegradation

The Tribe has completed an antidegradation review which is included in the draft 401 certification for this permit. The EPA has reviewed this antidegradation statement and finds that it is consistent with the State's water quality standards and the Tribe's antidegradation rules. Comments on the 401 certification including the antidegradation statement can be submitted to the Tribe as set forth above.

E. Permit Expiration

The permit will expire five years from the effective date.

IX. References

EPA. 1991. *Technical Support Document for Water Quality-based Toxics Control.* US Environmental Protection Agency, Office of Water, EPA/505/2-90-001.

https://www3.epa.gov/npdes/pubs/owm0264.pdf

Water Pollution Control Federation. Subcommittee on Chlorination of Wastewater. *Chlorination of Wastewater.* Water Pollution Control Federation. Washington, D.C. 1976.

EPA. 2010. *NPDES Permit Writers' Manual.* Environmental Protection Agency, Office of Wastewater Management, EPA-833-K-10-001. September 2010. https://www3.epa.gov/npdes/pubs/pwm_2010.pdf

EPA, 2007. *EPA Model Pretreatment Ordinance*, Office of Wastewater Management/Permits Division, January 2007.

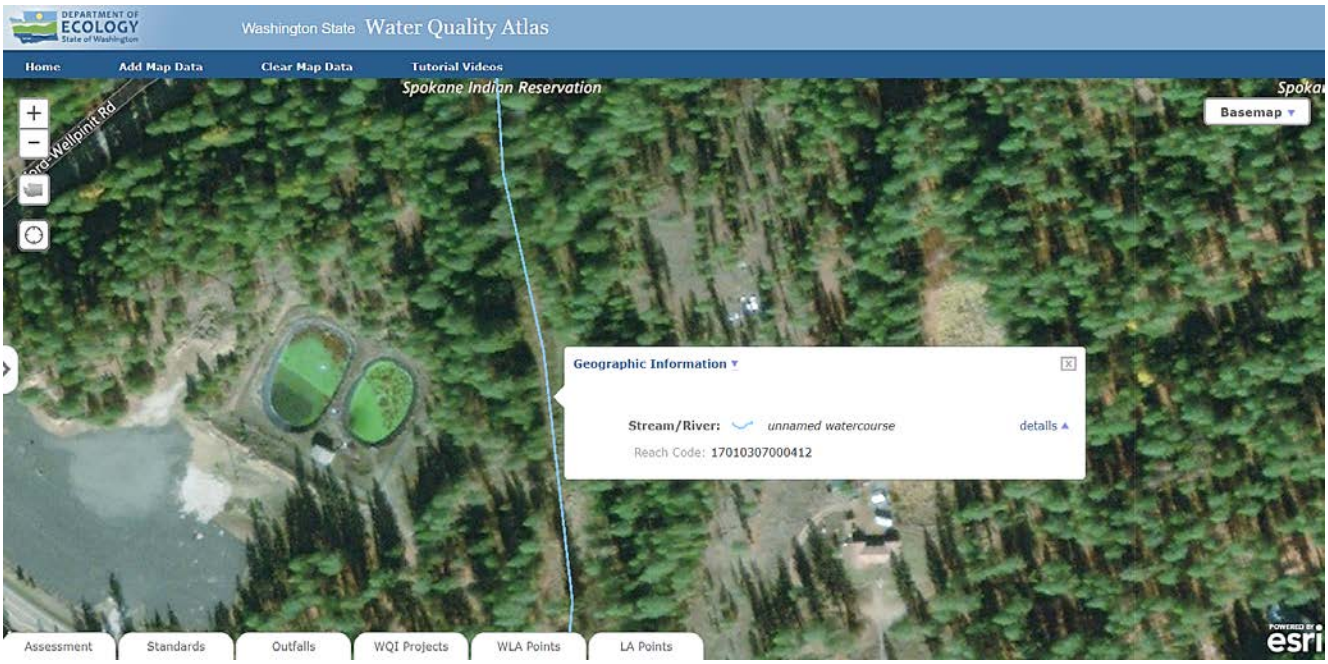
EPA, 2011. *Introduction to the National Pretreatment Program*, Office of Wastewater Management, EPA 833-B-11-011, June 2011.

EPA. 2014. Water Quality Standards Handbook Chapter 5: General Policies. Environmental Protection Agency. Office of Water. EPA 820-B-14-004. September 2014. https://www.epa.gov/sites/production/files/2014-09/documents/handbook-chapter5.pdf

Appendix A. Facility Information

The design flow of the facility is 0.8 mgd and a design population of 900. The reported actual flows from the facility range from 0.01 to 0.05 (average monthly flow based on the 1982 permit application). During the 2010 inspection, it was reported that the plant serves a population of 300.

The treatment process consists of a bar screen with 2-inch spacing, two lagoons and disinfection using chlorine. The first lagoon is 720,000 gallons and is equipped with 2 aerators. The aerators operate in an on/off mode on a 12-hour cycle. The second lagoon is 360,000 gallons and equipped with a single aerator. The wastewater from the second lagoon flows into an underground tank that is equipped with a sodium hypochlorite tablet injector. The treated wastewater then flows into the chorine contact chamber. At typical flows, the chlorine contact chamber has sufficient residence time. The treated effluent flows from the chlorine contact channel to the outfall.



Series of pictures from the 2009 Inspection Report

1.Primary Lagoon with 2 aerators

2.Second Lagoon

3.Underground Storage Tank

4.Outfall Pipe

5.Receiving Water at the point of discharge.

Appendix B. Water Quality Data

A. Treatment Plant Effluent Data

NPDES supplement Permit Application

Data for the period from 2003 through 2013.

Site Description	Date	TUR	TDS	TSS	Cl	F	Nitrat	Nitrite	ortho	S	E.coli	ecal Colifor	BOD
FROM OUTFALL PIPE	3/4/2003										20		
FROM OUTFALL PIPE	3/18/2003										14		
FROM OUTFALL PIPE	4/21/2003										290		
FROM OUTFALL PIPE	5/13/2003										80		
FROM OUTFALL PIPE	6/2/2003										780		
FROM OUTFALL PIPE	7/14/2003										210		
FROM OUTFALL PIPE	8/5/2003										2700		
FROM OUTFALL PIPE	9/16/2003										74		
FROM OUTFALL PIPE	12/9/2003										6800		
FROM OUTFALL PIPE	1/20/2004										600		
FROM OUTFALL PIPE	2/24/2004										80		
FROM OUTFALL PIPE	3/10/2004										1100		
FROM OUTFALL PIPE	4/20/2004										1500		
FROM OUTFALL PIPE	5/12/2004										20		
FROM OUTFALL PIPE	6/15/2004										23		
FROM OUTFALL PIPE	7/14/2004										800		
FROM OUTFALL PIPE	8/31/2004										1400		
FROM OUTFALL PIPE	9/27/2004										100		
FROM OUTFALL PIPE	10/17/2004										1		
FROM OUTFALL PIPE	11/22/2004										20		
FROM OUTFALL PIPE	1/18/2005										120		
FROM OUTFALL PIPE	2/22/2005										8		
FROM OUTFALL PIPE	3/29/2005										6		
FROM OUTFALL PIPE	4/12/2005										18		
FROM OUTFALL PIPE	5/10/2005										24		
FROM OUTFALL PIPE	6/19/2005										110		
FROM OUTFALL PIPE	7/18/2005										17		
FROM OUTFALL PIPE	8/9/2005										13		
FROM OUTFALL PIPE	9/26/2005	20.9		3									
FROM OUTFALL PIPE	10/19/2005	20		4									
FROM OUTFALL PIPE	1/3/2006	17.1		2									
FROM OUTFALL PIPE	1/16/2006										79		
FROM OUTFALL PIPE	2/6/2006										190		
FROM OUTFALL PIPE	3/27/2006										9100		
FROM OUTFALL PIPE	4/23/2006	6.61		<2									
FROM OUTFALL PIPE	6/5/2006	9.43		<2									
FROM OUTFALL PIPE	7/31/2006	9.7		<2									
FROM OUTFALL PIPE	10/30/2006										11		
FROM OUTFALL PIPE	12/5/2006										27		
FROM OUTFALL PIPE	3/20/2007										40		
FROM OUTFALL PIPE	4/2/2007										3500		
FROM OUTFALL PIPE	5/29/2007										5800		
FROM OUTFALL PIPE	7/24/2007										44		
FROM OUTFALL PIPE	8/14/2007										70		
FROM OUTFALL PIPE	9/19/2007	0.68		<2									
FROM OUTFALL PIPE	12/13/2007	3.87		5									
FROM OUTFALL PIPE	3/17/2008	1.96		2									
FROM OUTFALL PIPE	4/21/2008										1900		
FROM OUTFALL PIPE	5/21/2008	5.44		6									
FROM OUTFALL PIPE	6/16/2008	2.12		<2									
FROM OUTFALL PIPE	8/18/2008	2		1									
FROM OUTFALL PIPE	9/21/2008										6		
FROM OUTFALL PIPE	10/15/2008										8		
FROM OUTFALL PIPE	11/18/2008										1		
FROM OUTFALL PIPE	1/14/2009										4800		
FROM OUTFALL PIPE	2/17/2009										120		
FROM OUTFALL PIPE	3/23/2009										240		
FROM OUTFALL PIPE	4/14/2009										1100		
FROM OUTFALL PIPE	5/20/2009										60		
FROM OUTFALL PIPE	6/9/2009										6700		
FROM OUTFALL PIPE	6/16/2009										120		
FROM OUTFALL PIPE	7/2/2009										5		
FROM OUTFALL PIPE	7/6/2009										4		
FROM OUTFALL PIPE	8/19/2009										680		
FROM OUTFALL PIPE	9/9/2009										620		
FROM OUTFALL PIPE	9/16/2009										780		
FROM OUTFALL PIPE	10/20/2009										68		
FROM OUTFALL PIPE	11/17/2009										540		
FROM OUTFALL PIPE	12/2/2009										22		

Site Description	Date	TUR	TDS	TSS	Cl	F	Nitrate	Nitrite	ortho I	S	E.coli	ecal Colifor	BOD
FROM OUTFALL PIPE	1/11/2010										6		
FROM OUTFALL PIPE	2/22/2010	37.8	218	14									
FROM OUTFALL PIPE	3/29/2010										26		
FROM OUTFALL PIPE	4/20/2010										60		
FROM OUTFALL PIPE	4/20/2010										170		
FROM OUTFALL PIPE	5/18/2010	19.1	160	2	1.35	0.1	0.01	<0.01	0.03	4.11			
FROM OUTFALL PIPE	5/18/2010										1600		
FROM OUTFALL PIPE	6/23/2010										800		
FROM OUTFALL PIPE	6/23/2010										300		
FROM OUTFALL PIPE	7/12/2010										1200		
FROM OUTFALL PIPE	7/13/2010										620		
FROM OUTFALL PIPE	8/17/2010										170		
FROM OUTFALL PIPE	8/23/2010										180		
FROM OUTFALL PIPE	9/22/2010										44		
FROM OUTFALL PIPE	10/19/2010										72		
FROM OUTFALL PIPE	11/22/2010										710		
FROM OUTFALL PIPE	12/14/2010										9		
FROM OUTFALL PIPE	1/24/2011										19		
FROM OUTFALL PIPE	1/24/2011										500		
FROM OUTFALL PIPE	2/28/2011										3		
FROM OUTFALL PIPE	3/21/2011										1		
FROM OUTFALL PIPE	4/19/2011										1		
FROM OUTFALL PIPE	5/16/2011	27	155	12									
FROM OUTFALL PIPE	5/16/2011	18.9	128	2									
FROM OUTFALL PIPE	6/7/2011	28.6	160	2									
FROM OUTFALL PIPE	6/7/2011	48.8	180	51									
FROM OUTFALL PIPE	7/12/2011	22	155	4									
FROM OUTFALL PIPE	8/23/2011	30.9	185	3									
FROM OUTFALL PIPE	9/19/2011										8		
FROM OUTFALL PIPE	9/25/2011										16		
FROM OUTFALL PIPE	10/24/2011										90		
FROM OUTFALL PIPE	10/24/2011	22.3	115	22									
FROM OUTFALL PIPE	10/30/2011	12.2	148	4									
FROM OUTFALL PIPE	11/21/2011	18.4	112	2									
FROM OUTFALL PIPE	11/21/2011										29		17.5
FROM OUTFALL PIPE	12/19/2011										42		19.6
FROM OUTFALL PIPE	12/20/2011										4300		
FROM OUTFALL PIPE	1/9/2012										34000		
FROM OUTFALL PIPE	2/14/2012										<1		
FROM OUTFALL PIPE	2/20/2012												23.7
FROM OUTFALL PIPE	3/6/2012												15.2
FROM OUTFALL PIPE	3/6/2012										<1		
FROM OUTFALL PIPE	4/16/2012												20.5
FROM OUTFALL PIPE	4/16/2012										300		
FROM OUTFALL PIPE	5/7/2012												22.3
FROM OUTFALL PIPE	5/7/2012										7400		
FROM OUTFALL PIPE	6/18/2012										46		24.1
FROM OUTFALL PIPE	7/10/2012												26.4
FROM OUTFALL PIPE	7/10/2012										76		
FROM OUTFALL PIPE	8/8/2012												13.3
FROM OUTFALL PIPE	8/8/2012										1800		
FROM OUTFALL PIPE	9/10/2012												19
FROM OUTFALL PIPE	10/8/2012												21
FROM OUTFALL PIPE	10/8/2012										1000		
FROM OUTFALL PIPE	11/26/2012										720		
FROM OUTFALL PIPE	11/26/2012												12.9
FROM OUTFALL PIPE	12/17/2012										3300		23
FROM OUTFALL PIPE	1/14/2013												16.7
FROM OUTFALL PIPE	1/14/2013										<1		
FROM OUTFALL PIPE	2/11/2013												16.3
FROM OUTFALL PIPE	2/11/2013										1200		
FROM OUTFALL PIPE	3/11/2013												15.8
FROM OUTFALL PIPE	3/11/2013										300		
FROM OUTFALL PIPE	3/11/2013										300		
FROM OUTFALL PIPE	4/29/2013												<3
FROM OUTFALL PIPE	4/29/2013										<1		
FROM OUTFALL PIPE	5/28/2013												17.1
FROM OUTFALL PIPE	6/10/2013										<1		
FROM OUTFALL PIPE	6/10/2013												19.7
FROM OUTFALL PIPE	7/8/2013										1700		13.2
FROM OUTFALL PIPE	8/1/2013												5.78
FROM OUTFALL PIPE	8/13/2013										5400		
FROM OUTFALL PIPE	10/22/2013										<1		6.35
FROM OUTFALL PIPE	3/15/2017										<10000	<10000	
	Count	**23**	**11**	**18**	**1**	**1**	**1**	**0**	**1**	**1**	**97**	**0**	**21**
	Max	**48.80**	**218.00**	**51.00**	**1.35**	**0.10**	**0.01**	**0.00**	**0.03**	**4.11**	**34000.00**	**0.00**	**26.40**
	Min	**0.68**	**112.00**	**1.00**	**1.35**	**0.10**	**0.01**	**0.00**	**0.03**	**4.11**	**1.00**	**0.00**	**5.78**
	Ave	**16.77**	**156.00**	**7.83**	**1.35**	**0.10**	**0.01**	**#DIV/0!**	**0.03**	**4.11**	**1258.57**	**#DIV/0!**	**17.59**
	Percentile 5	**1.964**	**113.5**	**1.85**	**1.35**	**0.1**	**0.01**	**#NUM!**	**0.03**	**4.11**	**3.8**	**#NUM!**	**6.35**
	Percentile 95	**37.11**	**201.5**	**26.35**	**1.35**	**0.1**	**0.01**	**#NUM!**	**0.03**	**4.11**	**5980**	**#NUM!**	**24.1**

B. Receiving Water Data

The permittee submitted supplemental data with the 2018 NPDES permit application.

The data cover the period from March 4, 2003 through October 22, 2013.

Data was included for the following Site Descriptions:

- 20 Feet Below Outfall Pipe
- 20 Feet Above Outfall Pipe
- 50 Feet Above Outfall Pipe

Due to the large volume of data, the following table provides only a statistical data summary of the receiving water data for each of the above-mentioned locations.

20 Feet Above						
Date	Count	Max	Min	Ave	Percentile 5	Percentile 95
FLOWS IN CFS	1	0.27	0.27	0.27	0.2693	0.2693
TUR	2	3.70	1.50	2.60	1.61	3.59
TDS	1	44.90	44.90	44.90	44.9	44.9
TSS	1	0.00	0.00	0.00	0.002	0.002
HARDNESS	17	260.00	52.00	131.76	52	258.4
Cl	15	10.89	0.55	3.46	0.627	10.547
F	4	0.22	0.18	0.20	0.1815	0.2185
Nitrate	19	14.20	0.01	1.33	0.01	4.993
Nitrite	2	0.98	0.01	0.50	0.0585	0.9315
TKN	0					
TP	0					
ortho P	20	1.13	0.03	0.24	0.03	0.769
S	27	37.00	2.10	10.84	2.773	21.4
Alk	18	249.00	28.21	117.07	35.588	243.9
Al	5	0.82	0.01	0.51	0.058	0.814
Sb						
As						
Ba	6	0.07	0.04	0.06	0.04	0.07
Be						
Cd	2	0.01	0.01	0.01	0.01	0.01
Ca	14	55.00	5.17	25.31	5.534	51.035
Cr	1	0.01	0.01	0.01	0.01	0.01
Co						
Cu						
Fe	15	4.30	0.02	0.93	0.034	3.495
Pb						
Mg	14	23.00	1.50	8.03	1.5	18.32
Mn	11	0.17	0.01	0.03	0.01	0.105
Hg						
Ni						
K	7	3.83	1.50	2.64	1.665	3.587
Se						
Si						
Ag	1	0.01	0.01	0.01	0.01	0.01
Na	11	21.50	3.45	7.72	3.47	19
Ur	3	0.09	0.03	0.06	0.034	0.088
Zn						
Tl						
Total Coliformes						
E.coli						
Fecal Coliformes						
BOD						
Ammonia as N	15	0.16	0.02	0.06	0.02	0.111
Total Data Points	232					

20 Feet Below						
Date	Count	Max	Min	Ave	Percentile 5	Percentile 95
FLOWS IN CFS						
TUR	10	28.80	1.12	15.48	2.4475	28.215
TDS	48	520.00	20.00	165.59	65.5	290.75
TSS	32	189.00	2.00	21.43	2.4425	104.185
HARDNESS	36	225.00	29.30	96.49	43.425	187.75
Cl	48	21.70	0.52	3.18	0.7052	11.3915
F	47	0.26	0.02	0.09	0.0253	0.1883
Nitrate	39	7.03	0.01	0.33	0.0089	1.453
Nitrite	2	2.28	0.27	1.27	0.3667	2.1793
TKN	10	1.19	0.32	0.58	0.3239	1.04285
TP	19	0.22	0.07	0.13	0.0713	0.2141
ortho P	45	0.96	0.02	0.10	0.0322	0.1246
S	48	27.50	1.15	7.84	1.37	24.22
Alk						
Al	39	22.20	0.03	2.33	0.0359	8.114
Sb	3	0.04	0.02	0.03	0.022	0.0346
As	20	0.01	0.00	0.00	0.001	0.01015
Ba	43	0.48	0.02	0.07	0.026	0.1246
Be	1	0.00	0.00	0.00	0.004	0.004
Cd	2	0.01	0.00	0.00	0.00405	0.00495
Ca	43	52.10	7.40	23.36	8.356	44.11
Cr	7	0.01	0.00	0.01	0.004	0.0101
Co	3	0.01	0.00	0.01	0.0041	0.0059
Cu	12	0.08	0.00	0.01	0.004	0.043
Fe	43	13.40	0.01	1.45	0.0305	5.202
Pb	7	0.01	0.00	0.00	0.0013	0.0051
Mg	43	23.00	2.63	7.71	3.206	17.66
Mn	38	0.48	0.00	0.04	0.002	0.19225
Hg	1	0.00	0.00	0.00	0.0002	0.0002
Ni	4	0.01	0.01	0.01	0.01015	0.013
K	43	8.24	1.69	2.93	1.873	4.896
Se	2	0.09	0.01	0.05	0.01015	0.08485
Si	43	53.70	10.60	20.11	10.93	27.9
Ag	1	0.01	0.01	0.01	0.006	0.006
Na	43	35.10	5.11	9.83	5.681	16.66
Ur	0					
Zn	15	0.19	0.01	0.03	0.0071	0.084
Tl						
Total Coliformes						
E.coli	41	18000.00	2.00	639.24	4	1500
Fecal Coliform	2	800.00	800.00	800.00	800	800
BOD	1	15.20	15.20	15.20	15.2	15.2
Ammonia as N	3	0.27	0.05	0.12	0.0501	0.2481
Total Data Points	887					

50 Feet Above						
Date	Count	Max	Min	Ave	Percentile 5	Percentile 95
FLOWS IN CFS	0					
TUR	0					
TDS	20	293.00	113.00	197.60	126.3	274
TSS	14	10.70	2.00	4.99	2	9.335
HARDNESS	20	167.00	25.00	70.72	29.18	152.75
Cl	23	15.20	0.57	2.93	0.6117	9.667
F	21	0.22	0.02	0.09	0.031	0.14
Nitrate	20	4.90	0.00	0.35	0.00577	0.64495
Nitrite	3	0.06	0.03	0.05	0.035	0.0566
TKN						
TP						
ortho P	22	0.95	0.01	0.09	0.01635	0.13735
S	23	25.40	1.92	7.40	2.27	19.75
Alk						
Al	20	16.20	0.10	2.82	0.11225	7.5455
Sb						
As	6	0.01	0.00	0.01	0.00225	0.00925
Ba	23	0.11	0.02	0.05	0.0343	0.1047
Be	1	0.00	0.00	0.00	0.001	0.001
Cd						
Ca	23	44.10	6.59	20.22	7.175	43.39
Cr	1	0.01	0.01	0.01	0.008	0.008
Co						
Cu	3	0.10	0.01	0.05	0.0106	0.0889
Fe	23	8.56	0.03	1.63	0.0356	4.242
Pb	3	0.00	0.00	0.00	0.001	0.0037
Mg	22	15.30	2.08	5.74	2.7115	10.4565
Mn	18	6.01	0.00	0.35	0.00385	0.96695
Hg						
Ni	1	0.04	0.04	0.04	0.04	0.04
K	23	17.20	1.97	3.50	2.165	6.11
Se						
Si	23	39.70	8.55	19.55	11.5	27.81
Ag						
Na	22	20.00	5.04	8.15	5.1165	15.8
Ur						
Zn	5	0.15	0.01	0.04	0.0112	0.1264
Tl						
Total Coliform	1	24.00	24.00	24.00	24	24
E.coli	14	80.00	2.00	21.86	4.6	52.7
Fecal Coliformes						
BOD						
Ammonia as N						
Total Data Points	398					

Appendix C. Reasonable Potential and WQBELs Formula

A. Reasonable Potential Analysis

The EPA uses the process described in the *Technical Support Document for Water Quality-based Toxics Control* (EPA, 1991) to determine reasonable potential. To determine if there is reasonable potential for the discharge to cause or contribute to an exceedance of water quality criteria for a given pollutant, the EPA compares the maximum projected receiving water concentration to the water quality criteria for that pollutant. If the projected receiving water concentration exceeds the criteria, there is reasonable potential, and a water quality-based effluent limit must be included in the permit.

Mass Balance

For discharges to flowing water bodies, the maximum projected receiving water concentration is determined using the following mass balance equation:

$$C_d Q_d = C_e Q_e + C_u Q_u \qquad \text{Equation 1}$$

where,

- C_d = Receiving water concentration downstream of the effluent discharge (that is, the concentration at the edge of the mixing zone)
- C_e = Maximum projected effluent concentration
- C_u = 95th percentile measured receiving water upstream concentration
- Q_d = Receiving water flow rate downstream of the effluent discharge = Q_e+Q_u
- Q_e = Effluent flow rate (set equal to the design flow of the WWTP)
- Q_u = Receiving water low flow rate upstream of the discharge (1Q10, 7Q10 or 30B3)

When the mass balance equation is solved for C_d, it becomes:

$$C_d = \frac{C_e \times Q_e + C_u \times Q_u}{Q_e + Q_u} \qquad \text{Equation 2}$$

The above form of the equation is based on the assumption that the discharge is rapidly and completely mixed with 100% of the receiving stream.

If the mixing zone is based on less than complete mixing with the receiving water, the equation becomes:

$$C_d = \frac{C_e \times Q_e + C_u \times (Q_u \times \%MZ)}{Q_e + (Q_u \times \%MZ)} \qquad \text{Equation 3}$$

Where:

% MZ = the percentage of the receiving water flow available for mixing.

If a mixing zone is not allowed, dilution is not considered when projecting the receiving water concentration and,

$$C_d = C_e \qquad \text{Equation 4}$$

A dilution factor (D) can be introduced to describe the allowable mixing. Where the dilution factor is expressed as:

$$D = \frac{Q_e + Q_u \times \%MZ}{Q_e} \qquad \text{Equation 5}$$

After the dilution factor simplification, the mass balance equation becomes:

$$C_d = \frac{C_e - C_u}{D} + C_u \qquad \text{Equation 6}$$

If the criterion is expressed as dissolved metal, the effluent concentrations are measured in total recoverable metal and must be converted to dissolved metal as follows:

$$C_d = \frac{CF \times C_e - C_u}{D} + C_u \qquad \text{Equation 7}$$

Where C_e is expressed as total recoverable metal, C_u and C_d are expressed as dissolved metal, and CF is a conversion factor used to convert between dissolved and total recoverable metal.

The above equations for C_d are the forms of the mass balance equation which were used to determine reasonable potential and calculate wasteload allocations.

Maximum Projected Effluent Concentration

When determining the projected receiving water concentration downstream of the effluent discharge, the EPA's Technical Support Document for Water Quality-based Toxics Controls (TSD, 1991) recommends using the maximum projected effluent concentration (Ce) in the mass balance calculation (see equation 3, page C-5). To determine the maximum projected effluent concentration (Ce) the EPA has developed a statistical approach to better characterize the effects of effluent variability. The approach combines knowledge of effluent variability as estimated by a coefficient of variation (CV) with the uncertainty due to a limited number of data to project an estimated maximum concentration for the effluent. Once the CV for each pollutant parameter has been calculated, the reasonable potential multiplier (RPM) used to derive the maximum projected effluent concentration (Ce) can be calculated using the following equations:

First, the percentile represented by the highest reported concentration is calculated.

$$p_n = (1 - \text{confidence level})^{1/n} \qquad \text{Equation 8}$$

where,

p_n = the percentile represented by the highest reported concentration
n = the number of samples
confidence level = 99% = 0.99

and

$$RPM = \frac{C_{99}}{C_{P_n}} = \frac{e^{Z_{99} \times \sigma - 0.5 \times \sigma^2}}{e^{Z_{P_n} \times \sigma - 0.5 \times \sigma^2}} \qquad \text{Equation 9}$$

Where,

σ^2 = $\ln(CV^2 + 1)$
Z_{99} = 2.326 (z-score for the 99th percentile)
Z_{Pn} = z-score for the P_n percentile (inverse of the normal cumulative distribution function at a given percentile)
CV = coefficient of variation (standard deviation ÷ mean)

The maximum projected effluent concentration is determined by simply multiplying the maximum reported effluent concentration by the RPM:

$$C_e = (RPM)(MRC) \qquad \text{Equation 10}$$

where MRC = Maximum Reported Concentration

Maximum Projected Effluent Concentration at the Edge of the Mixing Zone

Once the maximum projected effluent concentration is calculated, the maximum projected effluent concentration at the edge of the acute and chronic mixing zones is calculated using the mass balance equations presented previously.

Reasonable Potential

The discharge has reasonable potential to cause or contribute to an exceedance of water quality criteria if the maximum projected concentration of the pollutant at the edge of the mixing zone exceeds the most stringent criterion for that pollutant.

B. WQBEL Calculations

Calculate the Wasteload Allocations (WLAs)

Wasteload allocations (WLAs) are calculated using the same mass balance equations used to calculate the concentration of the pollutant at the edge of the mixing zone in the reasonable potential analysis. To calculate the wasteload allocations, C_d is set equal to the acute or chronic criterion and the equation is solved for C_e. The calculated C_e is the acute or chronic WLA. Equation 6 is rearranged to solve for the WLA, becoming:

$$C_e = WLA = D \times (C_d - C_u) + C_u \qquad \text{Equation 11}$$

For some metels criterion only, Tribe's water quality criteria for some metals are expressed as the dissolved fraction, but the Federal regulation at 40 CFR 122.45(c) requires that effluent limits be expressed as total recoverable metal. Therefore, the EPA must calculate a wasteload allocation in total recoverable metal that will be protective of the dissolved criterion. This is accomplished by dividing the WLA expressed as dissolved by the criteria translator. As discussed in Appendix D, the criteria translator (CT) is equal to the conversion factor, because site-specific translators are not available for this discharge.

$$C_e = WLA = \frac{D \times (C_d - C_u) + C_u}{CT} \qquad \text{Equation 12}$$

The next step is to compute the "long term average" concentrations which will be protective of the WLAs. This is done using the following equations from the EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD):

$$LTA_a = WLA_a \times e^{(0.5\sigma^2 - z\,\sigma)} \qquad \text{Equation 13}$$

$$LTA_c = WLA_c \times e^{(0.5\sigma_4^2 - z\sigma_4)} \qquad \text{Equation 14}$$

where,

σ^2 = $\ln(CV^2 + 1)$
Z_{99} = 2.326 (z-score for the 99th percentile probability basis)
CV = coefficient of variation (standard deviation ÷ mean)
σ_4^2 = $\ln(CV^2/4 + 1)$

For ammonia, because the chronic criterion is based on a 30-day averaging period, the Chronic Long Term Average (LTAc) is calculated as follows:

$$LTA_c = WLA_c \times e^{(0.5\sigma_{30}^2 - z\sigma_{30})} \quad \text{Equation 15}$$

where,

$\sigma_{30}^2 = \ln(CV^2/30 + 1)$

The LTAs are compared and the more stringent is used to develop the daily maximum and monthly average permit limits as shown below.

Derive the maximum daily and average monthly effluent limits

Using the TSD equations, the MDL and AML effluent limits are calculated as follows:

$$MDL = LTA \times e^{(z_m\sigma - 0.5\sigma^2)} \quad \text{Equation 16}$$

$$AML = LTA \times e^{(z_a\sigma_n - 0.5\sigma_n^2)} \quad \text{Equation 17}$$

where σ, and σ² are defined as they are for the LTA equations above, and,

σ_n^2 = $\ln(CV^2/n + 1)$

z_a = 1.645 (z-score for the 95th percentile probability basis)

z_m = 2.326 (z-score for the 99th percentile probability basis)

n = number of sampling events required per month. With the exception of ammonia, if the AML is based on the LTA_c, i.e., $LTA_{minimum} = LTA_c$), the value of ''n'' should is set at a minimum of 4. For ammonia, In the case of ammonia, if the AML is based on the LTA_c, i.e., $LTA_{minimum} = LTA_c$), the value of ''n'' should is set at a minimum of 30.

C. Critical Low Flow Conditions

The low flow conditions of a water body are used to determine water quality-based effluent limits. In general, Tribe's water quality standards require criteria be evaluated at the following low flow receiving water conditions (See IDAPA 58.01.02.210.03) as defined below:

Acute aquatic life	1Q10 or 1B3
Chronic aquatic life	7Q10 or 4B3
Non-carcinogenic human health criteria	30Q5
Carcinogenic human health criteria	harmonic mean flow
Ammonia	30B3 or 30Q10
1. The 1Q10 represents the lowest one day flow with an average recurrence frequency of once in 10 years. 2. The 1B3 is biologically based and indicates an allowable exceedence of once every 3 years. 3. The 7Q10 represents lowest average 7 consecutive day flow with an average recurrence frequency of once in 10 years. 4. The 4B3 is biologically based and indicates an allowable exceedance for 4 consecutive days once every 3 years. 5. The 30Q5 represents the lowest average 30 consecutive day flow with an average recurrence frequency of once in 5 years. 6. The 30Q10 represents the lowest average 30 consecutive day flow with an average recurrence frequency of once in 10 years. 7. The harmonic mean is a long-term mean flow value calculated by dividing the number of daily flow measurements by the sum of the reciprocals of the flows.	

Appendix D. Reasonable Potential and WQBEL Calculations

The RPA for chlorine is based on the AML TBEL for chlorine due to the lack of sufficient chlorine effluent data. The EPA determined that a end-of-pipe WQBEL for chlorine is appropriate due to the no dilution of the effluent.

Reasonable Potential Analysis (RPA) and Water Quality Effluent Limit (WQBEL) Calculations

Facility Name	Wellpinit
Facility Flow (mgd)	0.08
Facility Flow (cfs)	0.12

		Annual
DF at defined percent of river flow allow	25%	
DF at defined percent of river flow allow	25%	

Pollutants of Concern			CHLORINE (Total Residual)
Effluent Data	**Number of Samples in Data Set (n)**		1
	Coefficient of Variation (CV) = Std. Dev./Mean (default CV = 0.6)		0.6
	Effluent Concentration, µg/L (Max. or 95th Percentile) - (C_e)		500
	Calculated 50th % Effluent Conc. (when n>10), Human Health Only		
Receiving Water Data	**90th Percentile Conc., µg/L - (C_u)**		
	Geometric Mean, µg/L, Human Health Criteria Only		
Applicable Water Quality Criteria	Aquatic Life Criteria, µg/L	Acute	19.
	Aquatic Life Criteria, µg/L	Chronic	11.
	Human Health Water and Organism, µg/L		1,750.
	Human Health, Organism Only, µg/L		
	Metals Criteria Translator, decimal (or default use Conversion Factor)	Acute	--
		Chronic	1.
	Carcinogen (Y/N), Human Health Criteria Only		--
Percent River Flow Default Value = **0%**	**Aquatic Life - Acute**	**1Q10**	0%
	Aquatic Life - Chronic	7Q10 or 4B3	0%
		30B3 or 30Q10	0%
	Human Health - Non-Carcinogen and Chronic Ammonia	30Q5	0%
	Human Health - Carcinogen	Harmonic Mean	0%
Calculated Dilution Factors (DF) (or enter Modeled DFs)	Aquatic Life - Acute	1Q10	1.0
	Aquatic Life - Chronic	7Q10 or 4B3	1.0
		30B3 or 30Q10	1.0
	Human Health - Non-Carcinogen and Chronic Ammonia	30Q5	1.0
	Human Health - Carcinogen	Harmonic Mean	1.0

Aquatic Life Reasonable Potential Analysis

σ	$\sigma^2=\ln(CV^2+1)$		0.555
P_n	$=(1-\text{confidence level})^{1/n}$, where confidence level =	**99%**	0.010
Multiplier (TSD p. 57)	$=\exp(z\sigma-0.5\sigma^2)/\exp[\text{normsinv}(P_n)\sigma-0.5\sigma^2]$, where	**99%**	13.2
Statistically projected critical discharge concentration (C_e)			6,598
Predicted max. conc.(ug/L) at Edge-of-Mixing Zone		Acute	--
(note: for metals, concentration as dissolved using conversion factor as translator)		Chronic	6,598
Reasonable Potential to exceed Aquatic Life Criteria			**YES**

Aquatic Life Effluent Limit Calculations

Number of Compliance Samples Expected per month (n)			4
n used to calculate AML (if chronic is limiting then use min=4 or for ammonia min=30)			4
LTA Coeff. Var. (CV), decimal	(Use CV of data set or default = 0.6)		0.600
Permit Limit Coeff. Var. (CV), decimal	(Use CV from data set or default = 0.6)		0.600
Acute WLA, ug/L	$C_d = (\text{Acute Criteria} \times MZ_a) - C_u \times (MZ_a-1)$	Acute	19.0
Chronic WLA, ug/L	$C_d = (\text{Chronic Criteria} \times MZ_c) - C_u \times (MZ_c-1)$	Chronic	11.0
Long Term Ave (LTA), ug/L	WLAc x $\exp(0.5\sigma^2-z\sigma)$, Acute	**99%**	6.1
(99th % occurrence prob.)	WLAa x $\exp(0.5\sigma^2-z\sigma)$; ammonia n=30, Chronic	**99%**	5.8
Limiting LTA, ug/L	used as basis for limits calculation		5.8
Applicable Metals Criteria Translator (metals limits as total recoverable)			--
Average Monthly Limit (AML), ug/L	, where % occurrence prob =	**95%**	**9**
Maximum Daily Limit (MDL), ug/L	, where % occurrence prob =	**99%**	**18**
Average Monthly Limit (AML), mg/L			**0.009**
Maximum Daily Limit (MDL), mg/L			**0.018**
Average Monthly Limit (AML), lb/day			**0.006**
Maximum Daily Limit (MDL), lb/day			**0.012**

References:

Technical Support Document for Water Quality-based Toxics Control, US EPA, March 1991, EPA/505/2-90-001

Filename: C:\Users\KBurgess\Documents\[RPA Limits Wellpinit.xlsm]RP and Limits

Appendix E. Effluent Limit Calculations for pH

End of pipe limits are imposed for pH to ensure that there is not reasonable potential to cause or contribute to violations of the Tribal water quality standards.

Appendix F. ESA and EFH Assessment

Endangered Species Act (ESA)

The 1973 Endangered Species Act (ESA), 16 U.S.C. 1531 et seq., was enacted to protect and conserve endangered and threatened species and critical habitat. The Fish and Wildlife Service (FWS) of the Department of the Interior and the National Marine Fisheries Service (NMFS) of the National Oceanic and Atmospheric Administration (NOAA) within the Department of Commerce (collectively the Services) share primary responsibility for administration of the ESA.

ESA section 7 requires that federal agencies consult with the Services to ensure that any action authorized, funded, or carried out by the agencies that could affect a listed species or critical habitat and to ensure that their actions are not likely to jeopardize the continued existence of any endangered species or threatened species, or result in the destruction or adverse modification of critical habitat of such species. The ESA section 7 regulations are in 50 CFR Part 402. FWS/NMFS published the ESA Section 7 Consultation Handbook to address the major consultation processes pursuant to ESA section 7.

Consultation may be either informal or formal. An informal consultation determines if an action is or is not likely to adversely affect the species. A formal consultation is required if the findings from the informal consultation show that there is a likelihood for adverse impacts and evaluates whether the proposed action is likely to jeopardize the continued existence of the species. It is EPA's responsibility to ensure that consultation occurs; however, a nonfederal representative (i.e., the discharger) may be designated for the informal consultation.

For this permit, the EPA reviewed the list of endangered and threated species near the discharge.

Fish and Wildlife Service, Listed and Threated Species in Stevens County, Washington

https://www.fws.gov/wafwo/speciesmap/StevensCounty042413.pdf

LISTED Bull trout (Salvelinus confluentus) Canada lynx (Lynx canadensis) Grizzly bear (Ursus arctos horribilis), Plant Spiranthes diluvialis (Ute ladies'-tresses)

DESIGNATED Critical habitat for the bull trout

Fish and Wildlife Service, Listed and Threated Species in Stevens County, Washington

https://www.fws.gov/wafwo/speciesmap/SpokaneCounty0312.pdf

LISTED Bull trout (Salvelinus confluentus),Plants Howellia aquatilis (Water howellia) Silene spaldingii (Spalding's silene) Spiranthes diluvialis (Ute ladies'-tresses)

DESIGNATED None

National Marine Fisheries Service (NMFS)

http://www.westcoast.fisheries.noaa.gov/protected_species/species_list/species_lists.html

The EPA concluded that, based on the small impact of the discharge and that the permit ensures water quality standards are not violated, EPA's action in issuing the permit will not adversely affect listed or threated species or critical habitat for ESA-listed species.

Essential Fish Habitat

The 1996 Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act or MSA) promote the protection of essential fish habitat in any federal action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency that might adversely affect such habitat identified under the MSA [16 U.S.C. 1855(b)(2)]. The MSA requires that federal agencies, such as EPA, consult with the NMFS for any EPA-issued permits that might adversely affect essential fish habitat identified under the MSA. The regulations applicable to federal agencies' coordination and consultation under the MSA are codified at 50 CFR 600.905 through 600.930. Federal permit writers should note any EFH determinations and consultation activities in the permit file.

For this permit, the EPA reviewed the areas of EFH near the discharge.

https://www.habitat.noaa.gov/protection/efh/efhmapper/

The EPA concluded that, based on the small impact of the discharge and that the permit ensures water quality standards are not violated, EPA's action in issuing the permit will not adversely affect essential fish habitat.

Appendix G. CWA 401 Tribe Certification

The EPA requested the Tribe's review of the preliminary draft permit and fact sheet for CWA 401 certification for compliance with the Tribe's water quality standards including antidegradation on August 30, 2018. The EPA received the Tribe's certification on October 9, 2018 as included in this appendix.

The EPA reviewed the Tribe's certification and incorporated conditions specified in their preliminary CWA 401 certification into the draft permit. The EPA will public notice the draft NPDES permit, factsheet and the Tribe's certification prior to issuing the permit.

Spokane Tribe of Indians

P.O. Box 100 – Wellpinit, WA 99040 – Ph. (509) 458 – 6500

CENTURY OF SURVIVAL

October 9, 2018

Michael Lidgard, Acting Director
Office of Water & Watersheds
U.S. EPA, Region 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140
Attn: OWW-191

Re: EPA's August 4th request for Final CWA 401 Certification of EPA's NPDES Permit No. WA0025704, Wellpinit WWTP .

Dear Mr. Lidgard:

The Spokane Tribe of Indians (STI), Water Control Board, has reviewed the U.S. Environmental Protection Agency's (EPA) revised final NPDES permit for the Wellpinit new discharge outfall. In that letter, EPA requested the Tribe to review the Agency's proposed permit action and to provide Draft Clean Water Act (CWA) 401 Certification (Certification). Following the public comment period a Final 401 Certification will be considered.

The Tribe's Draft 401 Certification is enclosed

Sincerely,

Brian Crossley, Water & Fish Program Manager acting on behalf of Danny Kieffer
Chairman, Water Control Board

encl: STI-DNR CWA 401 Cert. & Conds.

cc: C. Evans (STI Business Council Chairwoman) (via email)
B. Crossley (STI Water & Fish Program Manager) (via email)

SPOKANE INDIAN TRIBE'S
DRAFT CLEAN WATER ACT SECTION 401
WATER QUALITY CERTIFICATION & CONDITIIONS

October 9, 2018

NPDES Applicant, Site, Permit Number – Spokane Tribe Wellpinit WWTP, WA0025704-Outfall 001.

Authority - Pursuant to the provisions of Section 401 (a)(1) of the Federal Water Pollution Contract Act (Clean Water Act), as amended, 33 U.S.C. Section 1341 (a)(1), the Spokane Tribe of Indians (STI), Water Control Board (WCB), has authority to review National Pollution Discharge Elimination System (NPDES) permits and to issue water quality certification decisions thereon.

Draft 401 Certification – STI's WCB certifies that if the Applicant complies with the terms and conditions imposed by NPDES Permit Number WA0025704 on Outfall 001 (Permit) and complies with all the conditions described in this water quality certification and conditions (Certification), then there is reasonable assurance that Outfall 001 discharges will comply with the applicable requirements of Sections 301 – 307 of the Clean Water Act, including the federally-approved Spokane Tribe of Indians Water Quality Standards (STI-WQS). Specifically, this Certification:

1. Polychlorinated Bi-phenyls (PCB's) are a constituent of concern for the Tribe and although no data exists for this discharge, wastewater at other sources has been shown to exceed Tribal WQS. Within this permit period we would request that data be collected using method 1668 to determine the quantities of PCB's in the wastewater effluent. It is recognized that this discharge will most likely not meet Tribal WQS for PCB's therefore continuous efforts are being undertaken by the Tribe and Indian Health Service to move towards a "non discharge" scenario.

2. Concludes that the Permit requirements meet the Antidegradation policy of the STI-WQS in that the Permit requirements are expected to maintain and protect the existing instream beneficial uses of the receiving waterbody.

401 Certification Conditions – This Certification is subject to Applicant's compliance with all the following conditions necessary to assure that Permit discharges comply with the STI-WQS:

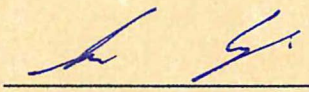
1. Applicant shall measure and record the temperature of effluent as close to point of discharge as possible using a continuous temperature monitoring probe or similar device and shall report those measurements in its Discharge Monitoring Reports to EPA as specified in the Permit;

2. Absent prior written approval from the STI-DNR, Applicant shall submit all data/information contained in its Discharge Monitoring Reports to EPA (DMRs) in electronic format to the STI-DNR concurrent with submitting that data/information to EPA. Applicant shall also cooperate with STI-DNR to facilitate access to and interpretation of that data/information. Applicant's data/information shall be submitted to STI-DNR on an electronic storage medium (e.g., CD/DVD) if its total size exceeds 3MB, or by email if its total size is 3MB or less. Submissions by electronic storage medium shall be addressed to Spokane Tribe of Indians, Department of Natural Resources, P.O. Box 480, Wellpinit, WA 99040, Attn: Water & Fish Program Manager. Email submissions shall be sent to crossley@spokanetribe.com, unless otherwise specified in writing by STI-DNR. Applicant's submission of DMRs to EPA using its internet based system shall not constitute compliance with this condition absent Applicant obtaining prior written approval from STI-DNR.

3. Applicant shall submit a copy of any application to EPA for reissuance of this Permit and/or application or request for material modification(s) to this Permit or Permitted activities concurrently to the STI-WCB for review to determine compliance with the STI's WQS and, if necessary, to provide additional certification pursuant to Clean Water Act Section 401.

4. This Certification is not intended as, nor shall not it be construed as, an irreversible and irretrievable commitment of natural resources in an environmental impact statement, or other comparable environment analysis, nor is it intended as, and shall not be construed as, a decision granting a permit or license authorizing such commitment of natural resources.

Contact Information - Questions or comments about this Certification can be submitted in writing addressed to the Chairman, Spokane Tribe Water Control Board, P.O. Box 480, Wellpinit, WA, 99040 and Brian Crossley, Water & Fish Program Manager by email at crossley@spokanetribe.com.



Brian Crossley, Water & Fish Program Manager acting on behalf of Chairman, Water Control Board Danny Kieffer