Fact Sheet

The U.S. Environmental Protection Agency (EPA)

Proposes to Reissue a National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Pollutants Pursuant to the Provisions of the Clean Water Act (CWA) to:

Quinault Indian Nation

Taholah Village Wastewater Treatment Plant

Public Comment Start Date: May 10th, 2021

Public Comment Expiration Date: June 9th, 2021

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EPA PROPOSES TO REISSUE THE NPDES PERMIT

EPA proposes to reissue 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. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged from the facility.

This Fact Sheet (FS) 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

CWA § 401 CERTIFICATION

EPA is requesting that Quinault Division of Natural Resources (QDNR) provide a CWA Certification of the permit for this facility under CWA § 401. Comments regarding the QDNR intent to certify the permit should be directed to:

Quinault Division of Natural Resources
Dave Bingaman
PO Box 189
Taholah, WA 98587
dbingaman@quinault.org

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 as described in the Public Comments Section of the attached Public Notice.

After the Public Notice expires, and all comments have been considered, EPA's regional Director for the Water Division 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, 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 permit, this Fact Sheet and the Public Notice can also be found by visiting the Region 10 website at **https://www.epa.gov/npdes-permits/Washington-npdes-permits.** Because of the COVID-19 virus and limited building access, we cannot make hard copies available.

The draft Administrative Record for this action contains any documents listed in the References section. The Administrative Record or documents from it are available electronically upon request by contacting James Earl.

For technical questions regarding the Fact Sheet, contact James Earl at (503) 326-2653 or earl.james@epa.gov. Services can be made available to persons with disabilities by contacting Audrey Washington at (206) 553-0523.

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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
AML	Average Monthly Limit
BOD_5	Biochemical oxygen demand, five-day
°C	Degrees Celsius
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
CV	Coefficient of Variation
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved oxygen
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FR	Federal Register
HUC	Hydrologic Unit Code
ICIS	Integrated Compliance Information System
IHS	Indian Health Service
lbs/day	Pounds per day
LTA	Long Term Average
mg/L	Milligrams per liter
mL	Milliliters
ML	Minimum Level
mgd	Million gallons per day
MDL	Maximum Daily Limit or Method Detection Limit
N	Nitrogen
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and maintenance
QAP	Quality assurance plan
RP	Reasonable Potential
RPM	Reasonable Potential Multiplier
SS	Suspended Solids
SSO	Sanitary Sewer Overflow
s.u.	Standard Units

TMDL	Total Maximum Daily Load
TSD	Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001)
TSS	Total suspended solids
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UV	Ultraviolet
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 #:	WA0023434
Applicant:	Quinault Indian Nation Taholah Village Wastewater Treatment Plant
Type of Ownership	POTW, tribal
Physical Address:	Off of Aalis Dr. Taholah, WA 98587
Mailing Address:	P.O. Box 189 Taholah, WA 98587
Facility Contact:	Dave Hinchen QIN Utilities Manager dhinchen@quinault.org 360-276-0074
Operator Name:	Dave Hinchen
Facility Location:	47.342621°N 124.283442°W
Receiving Water	Rapid infiltration basins
Facility Outfall	47.343219°N 124.28143°W

B. PERMIT HISTORY

The most recent NPDES permit for the Taholah Village Wastewater Treatment Plant (WWTP) was issued on June 4, 2015, became effective on July 1, 2015, and expired on June 30, 2020. An NPDES application for permit re-issuance was submitted by the permittee. The QIN continues to comply with the previous permit.

C. TRIBAL CONSULTATION

EPA consults on a government-to-government basis with federally recognized tribal governments when EPA actions and decisions may affect tribal interests. Meaningful tribal consultation is an integral component of the federal government's general trust relationship with federally recognized tribes. The federal government recognizes the right of each tribe to self-government, with sovereign powers over their members and their territory. Executive Order 13175 (November, 2000) entitled "Consultation and Coordination with Indian Tribal Governments" requires federal agencies to have an accountable process to assure meaningful and timely input by tribal officials in the development of regulatory policies on matters that have tribal implications and to strengthen the government-to-government relationship with Indian tribes. In May 2011, EPA issued the "EPA Policy on Consultation and Coordination with Indian Tribes" which established national guidelines and institutional controls for consultation.

The WWTP is located on the reservation of the Quinault Indian Nation (QIN). Consistent with the executive order and EPA tribal consultation policies, EPA coordinated with QIN during development of the draft permit and is inviting QIN to engage in formal tribal consultation.

II. FACILITY INFORMATION

A. TREATMENT PLANT DESCRIPTION

1. Service Area

The QIN owns and operates the Taholah Village WWTP located in Taholah, Grays Harbor County, Washington. The collection system has no combined sewers. The facility serves a residential population of approximately 1500. There are no major industries discharging to the facility.

2. Treatment Process

The WWTP was constructed and became operational in 2006 with a design flow of 0.2 mgd. As a result of a cooperative project between QIN and the U.S. Indian Health Service (IHS), the treatment system was improved in 2009 to include the addition of a UV disinfection system. At present, the treatment process consists of a four-celled lagoon system with UV disinfection and discharge into groundwater via a four celled Rapid Infiltration Basin (RIB) system. The four-celled lagoon system consists of three aerated cells, and one settling basin. Details about the wastewater treatment process and a map showing the location of the treatment facility and discharge are included in Appendix A**.** Because the design flow is less than 1 mgd, the facility is considered a minor facility.

B. OUTFALL DESCRIPTION

The discharge from Outfall 001 flows into a four celled RIB system via a dosage tank designed to alternate basins to allow for rest periods. The RIBs are located approximately 500 feet from the banks of the Quinault River. The RIB system is believed to discharge into a tidally influenced water table with a hydrologic connection to the Quinault River. The exact interaction of the discharge with the river is not known. The bottom of the RIB system is approximately 7 feet below ground surface, and the groundwater table is approximately 13 feet below surface. Based on aerial mapping, the groundwater plume from the RIB system would need to travel at least 505 feet, the closest distance from the RIB system to the Quinault River.

C. EFFLUENT CHARACTERIZATION

To characterize the effluent, EPA evaluated the facility's application form, discharge monitoring report (DMR) data, and additional data provided by QIN The effluent quality is summarized in Table 2. Data are provided in Appendix B.

Table 2 Effluent Characterization

Parameter	Minimum	Maximum
BOD, 5-day, 20 deg. C Weekly Average	25.2 mg/L 11.3 lb/day	27.0 mg/L 52.6 lb/day
BOD, 5-day, 20 deg. C Monthly Average	25.0 mg/L 9.7 lb/day	26.1 mg/L 36.5 lb/day
Total Suspended Solids Weekly Average	21.0 mg/L 9.3 lb/day	24.0 mg/L 46.5 lb/day
Total Suspended Solids Monthly Average	20.0 mg/L 8.1 lb/day	23.3 mg/L 31.8 lb/day
Fecal coliform bacteria Daily Maximum	0 #100 ml	7 #100 ml
Fecal coliform bacteria Monthly Average	0 #100 ml	3 #100 ml
Nitrogen, ammonia total [as N]	0 mg/L	2.0 mg/L
Effluent temperature Daily Maximum	6.8 C	25.3 C
Effluent pH	6.5	7.9
Source: DMR data from 3/31/2016 to 12/31/2020 submitted electronically by permittee.		

D. COMPLIANCE HISTORY

Overall, the facility has had a good compliance record. There were no permit limit exceedances noted from March 2016 to December 2020. Some permit schedule violations occurred due to not meeting scheduled permit related document submission deadlines. The following documents are currently overdue for the facility: Quality Assurance Report, Contingency Plan, Industrial User Report, Operation and Maintenance (O&M) Report and Enforcement Plan. A monthly monitoring report was not submitted for July 2016.

Additional compliance information for this facility, including compliance with other environmental statutes, is available to the public on Enforcement and Compliance History Online (ECHO). The ECHO web address for this facility is: https://echo.epa.gov/detailed-facility-report?fid=110010846852

EPA conducted an inspection of the facility in February 2021. The inspection encompassed the wastewater treatment process, records review, operation and

maintenance, and the collection system. Overall, the results of the inspection were favorable, and no significant compliance or operation items were noted.

E. RECEIVING WATER

In drafting permit conditions, EPA must analyze the effect of the facility's discharge on the receiving water. The details of that analysis are provided in the Water Quality-Based Effluent Limits (WQBEL) section below. This section summarizes characteristics of the receiving water that impact that analysis.

This facility discharges into groundwater through the RIBs with suspected hydrologic connection to the Quinault River. Wastewater discharged into the RIBs is initially diluted within the groundwater, and likely forms a groundwater plume that may reach the Quinault River. Based on aerial mapping, the groundwater plume from the RIBs system would travel at least 505 feet, the closest distance from the RIB system, into the Quinault River.

1. Water Quality Standards (WQS)

CWA § 301(b)(1)(C) requires the development of limitations in permits necessary to meet WQS. 40 CFR 122.4(d) requires that the conditions in NPDES permits ensure compliance with the WQS of all affected States and Tribes. A State's or Tribe's WQS are composed of use classifications, numeric and/or narrative water quality criteria and an anti-degradation policy. The use classification system designates the beneficial uses that each water body is expected to achieve, such as drinking water supply, contact recreation, and aquatic life. The numeric and narrative water quality criteria are the criteria deemed necessary to support the beneficial use classification of each water body. The anti-degradation policy represents a three-tiered approach to maintain and protect various levels of water quality and uses.

QIN has applied and been approved for the status of Treatment as a State (TAS) from EPA for purposes of the CWA. However, QIN does not yet have WQS approved by EPA. In consultation with QIN's Department of Natural Resources, it was agreed that Washington State WQS would be used as a geographically relevant reference to identify beneficial uses and establish effluent limits protective of QIN waters.

The Quinault River is located within the Washington State Department of Ecology's "Queets/Quinault Water Resources Inventory Area (WRIA) #21". The Quinault River is specifically named on Department of Ecology's use designation for fresh waters found at WAC 173-201A-602, Table 602. These designations are described below.

2. Designated Beneficial Uses

As a geographically relevant reference, EPA considered WAC 173-201A-602, Table 602: Use designations for fresh waters by water resource inventory area (WRIA). For "WRIA 21 Queets-Quinault", and the applicable segment is described as, "Quinault River and tributaries from mouth to the confluence with the North Fork Quinault River", the following water quality use designations apply:

Aquatic Life Uses: Core Summer Salmonid Habitat

Recreational Uses: Primary Contact

Water Supply Uses: Domestic Water; Industrial Water; Agricultural Water; Stock Water

Misc. Uses: Wildlife Habitat; Harvesting; Commerce/Navigation; Boating; and Aesthetics.

a. Water Quality

The water quality for the receiving water is summarized in Table 3.

Table 3. Receiving Water Quality Data

Parameter	Units	Percentile	Value
Temperature	°C	95th	17.0
pH	Standard units	5th – 95th	6.1 - 7.7
Hardness	mg/L	5th – 95th	15.5 - 45.8
Ammonia	mg/L	maximum	1.8
Source: Data collected by permittee 2016-2020			

b. Water Quality Limited Waters

Any waterbody for which the water quality does not, and/or is not expected to meet, applicable water quality standards is defined as a "water quality limited segment."

Section 303(d) of the CWA requires states and tribes/nations to develop a Total Maximum Daily Load (TMDL) management plan for water bodies determined to be water quality limited segments. A TMDL is a detailed analysis of the water body to determine its assimilative capacity for a particular pollutant. The assimilative capacity is the loading of a pollutant that a water body can assimilate without causing or contributing to a violation of water quality standards. Once the assimilative capacity of the water body has been determined, the TMDL will allocate that capacity among point and non-point pollutant sources, considering natural background levels and a margin of safety. Allocations for non-point sources are known as "load allocations" (LAs). The allocations for point sources, known as "waste load allocations" (WLAs), are implemented through effluent limitations in NPDES permits. Effluent limitations for point sources must be consistent with applicable TMDL allocations.

The Quinault River is entirely under the jurisdiction of the QIN and is not currently listed by the Nation as a CWA Section 303(d) impaired water for any pollutants discharged by the Taholah WWTP.

However, the area where the Taholah WWTP discharges is categorized by Washington State's 2016 Integrated Report Section 303(d) as being impaired for temperature and pH

https://apps.ecology.wa.gov/ApprovedWQA/ApprovedPages/ApprovedSearchResults.aspx.

The pH and temperature listings are for a portion of the Quinault River near Amanda Park, which is over 20 river miles from Taholah. No TMDLs were listed for Taholah and the surrounding area, therefore no WLAs are applicable to this NPDES permit in WRIA 21.

c. Low Flow Conditions

There is no information concerning the low flow conditions in the Quinault River in the immediate vicinity of the RIBs. EPA estimated the low flow conditions based on the nearest streamflow gauge, USGS Gauge #12039500 Quinault River near Quinault Lake located approximately 13 miles upstream.

This location is significantly upstream from the RIBs, where the Quinault River is a much smaller waterbody. The Quinault River above the RIBs is a gaining stream, and thus flows near the RIB location is likely significantly greater than summarized below in Table 4. The low flow values were used to estimate dilution of the effluent from the WWTP if it reaches the river. Because the WWTP discharges into the RIBs, the wastewater from the RIBs is first diluted in the groundwater plume before it reaches the river. Accordingly, the dilution factors used are conservative.

The low flow conditions of a water body are used to assess the need for and develop water quality based effluent limits (WQBELs). EPA used the USGS Surface Water Toolbox to model and calculate the low flow conditions.

The Technical Support Document for Water Quality-Based Toxics Control (hereafter referred to as the TSD) (EPA, 1991) and the State of Washington WQS recommend the flow conditions for use in calculating WQBELs using steady-state modeling. The Washington State WQS state that WQBELs intended to protect aquatic life uses should be based on the lowest seven-day average flow rate expected to occur once every ten years (7Q10) for chronic and acute criteria. The flow data below is generated from the USGS data from Jan 1, 1910 through Dec 31, 2020.

Critical low flows for the receiving water are summarized in Table 4 . Low flows are defined in Appendix C.

Table 4. Critical Flows in Receiving Water

Flows	Flow (cfs)
1Q10	307.4
7Q10	317.4
30B3	446.43
30Q10	362.1
Harmonic Mean	1486.7

Flows	Flow (cfs)
Source: e.g. USGS station #12039500 located ~13 miles upstream of Taholah, Washington.	

III. Effluent Limitations and Monitoring

Table 5 below presents the existing effluent limits and monitoring requirements in the current Permit. Table 6, below, presents the effluent limits and monitoring requirements proposed in the draft permit.

Table 5. Existing 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	1/week	24-hour composite
	lbs/day	50	75	--			Calculation[1]
BOD_5 Percent Removal	%	85 (min)	--	--	--	1/month	Calculation[2]
Total Suspended Solids (TSS)	mg/l	30	45	--	Influent and Effluent	1/week	24-hour composite
	lbs/day	50	75	--			Calculation[1]
TSS Percent Removal	%	85 (min)	--	--	--	1/month	Calculation[2]
Fecal Coliform[3]	CFU/ 100 ml	50[7]	--	100 (instant. max)[4,7]	Effluent	5/month	Grab
pH	std units	Between 6.5 – 8.5			Effluent	5/week[5]	Grab
Report Parameters							
Flow	mgd	Report	--	Report	Effluent	continuous	Recording
Temperature	°C	--	---	Report highest daily max	Effluent	1/week	Grab
Copper, Total Recoverable	mg/l	Report	--	Report	Effluent	1/quarter	Grab
Zinc, Total Recoverable	mg/l	Report	--	Report	Effluent	1/quarter	Grab
Total Ammonia as N	mg/l	Report	--	Report	Effluent	1/quarter	Grab
NPDES Application Form 2A (Part B.6) Effluent Testing Data	Report as required by NPDES Application Form 2A				Effluent	3 times[6]	24-hour composite

The following effluent limitations are proposed in the draft permit:

Table 6. 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	1/week	24-hour composite
	lbs/day	50	75	--			Calculation[1]
Biochemical Oxygen Demand (BOD5) Percent Removal	%	85% (minimum)	--	--	--	1/month	Calculation[2]
Total Suspended Solids (TSS)	mg/L	30	45	--	Influent and Effluent	1/week	24-hour composite
	lbs/day	50	75	--			Calculation[1]
TSS Percent Removal	%	85 (minimum)	--	--	--	1/month	Calculation[2]
E. coli [3]	CFU/ 100 ml	100	--	320 (instant. max) [4]	Effluent	5/month	Grab
pH	std units	Between 6.5 – 8.5			Effluent	5/week [5]	Grab
Report Parameters							
Flow	MGD	Report	--	Report	Effluent	Continuous	Recording
Temperature	ºC	--	--	Report daily max	Effluent	1/week	Grab
Total Ammonia as N	mg/L	Report	--	Report	Effluent	1/month	Grab

Table 7. Draft Permit – Summary of Proposed Changes to Effluent Limits

Parameter	Current Permit	Draft Permit	Reason
Bacteria colonies/100ml (geometric mean)	Fecal coliform	*E. coli*	Compliance with current Washington State Water Quality Standards for Primary Contact Recreation WAC 173-201A-200, Table 200(2)(b)

A. BASIS FOR EFFLUENT LIMITS

In general, the CWA requires that the effluent limits for a particular pollutant be the more stringent of either technology-based effluent limits (TBELs) or water quality-

based effluent limits (WQBELs). TBELs are set according to the level of treatment that is achievable using available technology. A WQBEL is designed to ensure that the WQSs applicable to a waterbody are being met and may be more stringent than TBELs.

1. Pollutants of Concern

Pollutants of concern are those that either have TBELs or may need WQBELs. EPA identifies pollutants of concern for the discharge based on those which:

- Have a 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, phosphorus, and dissolved oxygen (DO).

Based on this analysis, pollutants of concern are as follows:

- Ammonia
- BOD_5
- *E. coli* bacteria
- pH
- Temperature
- TSS

2. Technology-Based Effluent Limits (TBELs)

a. Federal Secondary Treatment Effluent Limits

The CWA requires POTWs to meet performance-based requirements based on available wastewater treatment technology. CWA § 301 established a required performance level, referred to as "secondary treatment," which POTWs were required to meet by July 1, 1977. EPA has developed and promulgated "secondary treatment" effluent limitations, which are found in 40 CFR 133.102. These TBELs 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 8. For additional information and background refer to Part 5.1 *Technology Based Effluent Limits for POTWs* in the Permit Writers Manual.

Table 8. Secondary Treatment Effluent Limits

Parameter	30-day average	7-day average

BOD_5	30 mg/L	45 mg/L
TSS	30 mg/L	45 mg/L
Removal for BOD_5 and TSS (concentration)	85% (minimum)	--
pH	within the limits of 6.0 - 9.0 s.u.	
Source: 40 CFR 133.102		

b. Equivalent to Secondary Treatment Effluent Limits

EPA has additionally established effluent limitations (40 CFR 133.105) that are considered "equivalent to secondary treatment" which apply to facilities meeting certain conditions established under 40 CFR 133.101(g). The federally promulgated equivalent to secondary treatment effluent limits are listed below in Table 9.

Table 9. Equivalent to Secondary Treatment Effluent Limits

Parameter	30-day average	7-day average
BOD_5	45 mg/L	65 mg/L
TSS	45 mg/L	65 mg/L
Removal for BOD_5 and TSS (concentration)	65% (minimum)	--
Source: 40 CFR 133.105		

Using DMR data from March 2016 to December 2020, EPA evaluated the facility's eligibility for effluent limits based on equivalent to secondary treatment standards. To be eligible, a POTW must meet all three of the following criteria:

Criterion #1 – Consistently Exceeds Secondary Treatment Standards: The first criterion that must be satisfied to qualify for the equivalent to secondary standards is demonstrating that the BOD_5 and TSS effluent concentrations consistently achievable through proper operation and maintenance of the treatment works exceed the secondary treatment standards set forth in 40 CFR 133.102(a) and (b). The regulations at 40 CFR 133.101(f) define "effluent concentrations consistently achievable through proper operation and maintenance" as

- (f)(1): For a given pollutant parameter, the 95th percentile value for the 30-day average effluent quality achieved by a treatment works in a period of at least 2 years, excluding values attributable to upsets, bypasses, operational errors, or other unusual conditions, and
- (f)(2): A 7-day average value equal to 1.5 times the value derived under paragraph (f)(1)

Criterion #2 – Principal Treatment Process: The second criterion that a facility must meet to be eligible for equivalent to secondary standards is that its principal treatment process must be a trickling filter or waste stabilization

pond (i.e., the largest percentage of BOD_5 and TSS removal is from a trickling filter or waste stabilization pond system).

Criterion #3 – Provide Significant Biological Treatment: The third criterion for applying equivalent to secondary standards is that the treatment works provides significant biological treatment of municipal wastewater. 40 CFR 133.101(k) defines significant biological treatment as using an aerobic or anaerobic biological treatment process in a treatment works to consistently achieve a 30-day average of at least 65 percent removal of BOD_5.

See Table 10 for the Treatment Equivalent to Secondary Treatment determinations for BOD5 and TSS.

Table 10. Treatment Equivalent to Secondary Treatment Determinations for BOD_5 and TSS

Criterion 1: Consistently Exceeds Secondary Treatment Standards			
BOD_5	**95th Percentile**	**Secondary Treatment Standard**	**Exceeds Secondary Standard**
Average Monthly	25.9 mg/L	30 mg/L	No
Weekly Average	26.6 mg/L × 1.5 = 39.9 mg/L	45 mg/L	No
TSS	**95th Percentile**	**Secondary Treatment Standard**	**Exceeds Secondary Standard**
Average Monthly	22.6 mg/L	30 mg/L	No
Weekly Average	23.0 mg/L × 1.5 = 34.5 mg/L	45 mg/L	No

Criterion 2: Principal Treatment Process

Waste stabilization ponds are not the primary treatment method; this does not meet Criterion 2.

Table 11: Significant Biological Treatment

Criterion 3: Provides Significant Biological Treatment			
BOD_5 30-day Average Percent Removal	**5th Percentile**	**Treatment Standard**	**Provides Significant Biological Treatment**
	90.6%	65%	Yes

The POTW does not meet the three criteria for treatment equivalent to secondary for BOD_5, therefore the treatment equivalent to secondary/technology-based secondary limits, for BOD_5, do not apply.

The POTW does not meet the three criteria for treatment equivalent to secondary for TSS, therefore the treatment equivalent to secondary/technology-based secondary limits, for TSS, do not apply.

Table 12 lists the basis and proposed effluent limits for BOD_5 and TSS.

Table 12. Treatment Equivalent to Secondary Determinations for BOD_5 and TSS

Parameter	Monthly Average	Weekly Average	Percent Removal	Basis
BOD_5	30 mg/L	45 mg/L	85%	TBELs for secondary treatment (40 CFR 133.102(a)-(b))
TSS	30 mg/L	45 mg/L	85%	TBELs for secondary treatment (40 CFR 133.102(a)-(b))

c. 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 = concentration limit (mg/L) × design flow (mgd) × 8.34[1]

Since the design flow for this facility is 0.2 mgd, the technology-based mass limits for BOD_5 and TSS are calculated as follows:

Average Monthly Limit = 30 mg/L × 0.2 mgd × 8.34 = 50 lbs/day

Average Weekly Limit = 45 mg/L × 0.2 mgd × 8.34 = 75 lbs/day

[1] 8.34 is a conversion factor with units (lb ×L)/(mg × gallon×10^6)

3. Chlorine

Chlorine is often used to disinfect municipal wastewater prior to discharge. The Taholah Village Wastewater Treatment Plant uses UV disinfection and does not use chlorine disinfection in any of the treatment process, therefore no chlorine limits apply.

4. Water Quality-Based Effluent Limits (WQBELs)

a. Statutory and Regulatory Basis

CWA § 301(b)(1)(C) requires the development of limitations in permits necessary to meet applicable WQS. Discharges to state or tribal waters must also comply with conditions imposed by the state or tribe as part of its

[1] 8.34 is a conversion factor with units (lb ×L)/(mg × gallon×10^6)

certification of NPDES permits under CWA § 401. 40 CFR 122.44(d)(1) implementing CWA § 301(b)(1)(C) 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 WQS, 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 § 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 WQS 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 of the WQBELs are calculated directly from the applicable WQS.

b. Reasonable Potential Analysis and Need for WQBELs

EPA uses the process described in the 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, 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 WQBEL 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.

The low flow condition of the Quinault River is obtained from the upstream USGS Gauge #12039500, “Quinault River near Quinault Lake”. This location is significantly upstream from the RIBs, where the Quinault River is a much smaller waterbody. The Quinault River above the RIBs is a gaining stream, but there is no gauge to measure the river flow rate near the RIBs. Therefore, low flow conditions can only be determined at the river near the Quinault Lake location. As a comparison, EPA expects that low flow is significantly higher near the RIBs. In addition, because the WWTP discharges into RIBs, the wastewater is first significantly diluted in the groundwater plume prior to being able to reach the river. Accordingly, the dilution factors used are conservative.

As a geographically relevant standard, The Washington Water Quality Standards in WAC 173-201A-400 provides a mixing zone policy for point

source discharges. The policy allows a mixing zone for a point source discharge if circumstances meet regulations in the Washington Water Quality Standards for granting a mixing zone. Pertaining to WAC 173-201A-400(7)(a), the following code states:

(7) The maximum size of a mixing zone shall comply with the following:

(a) In rivers and streams, mixing zones, singularly or in combination with other mixing zones, shall comply with the most restrictive combination of the following (this size limitation may be applied to estuaries having flow characteristics that resemble rivers):

(i) Not extend in a downstream direction for a distance from the discharge port(s) greater than three hundred feet plus the depth of water over the discharge port(s), or extend upstream for a distance of over one hundred feet;

(ii) Not utilize greater than twenty-five percent of the flow; and

(iii) Not occupy greater than twenty-five percent of the width of the water body.

The following formula is used to calculate a dilution factor based on an allowed mixing zone.

$$D = \frac{Q_e + Q_u \times \%MZ}{Q_e}$$

Where: D	=	Dilution Factor
Qe	=	Effluent flow rate (set equal to the design flow of the WWTP)
Qu	=	Receiving water low flow rate upstream of the discharge (1Q10, 7Q10, 30B3, etc)
%MZ	=	Percent Mixing Zone

Table 13. Mixing zones

Criteria Type	Critical Low Flow* (cfs)	Mixing Zone (% of Critical Low Flow)	Dilution Factor
Acute Aquatic Life	317.4	0.025	26.6
Chronic Aquatic Life (including ammonia)	317.4	0.25	257.5

*Washington WQS utilize 7Q10 to calculate maximum allowed dilution factors

The reasonable potential analysis and WQBEL calculations were based on mixing zones shown in Table 13.

The equations used to conduct the reasonable potential analysis and calculate the WQBELs are provided in Appendix D.

c. Reasonable Potential and WQBELs

The reasonable potential and WQBEL for specific parameters are summarized below. The calculations are provided in Appendix D.

Ammonia

Ammonia criteria are based on a formula which relies on the pH and temperature of the receiving water, because the fraction of ammonia present as the toxic, un-ionized form increases with increasing pH and temperature. Therefore, the criteria become more stringent as pH and temperature increase. The table and equations below show the calculations used to determine water quality criteria for ammonia.

Table 14 Ammonia Criteria

f. Shall not exceed the numerical value in total ammonia nitrogen (mg N/L) given by:

For salmonids present: $\frac{0.275}{1+10^{7.204-pH}} + \frac{39.0}{1+10^{pH-7.204}}$

For salmonids absent: $\frac{0.411}{1+10^{7.204-pH}} + \frac{58.4}{1+10^{pH-7.204}}$

g. Shall not exceed the numerical concentration calculated as follows:
Unionized ammonia concentration for waters where salmonid habitat is an existing or designated use:

$$0.80 \div (FT)(FPH)(RATIO)$$

where: RATIO = 13.5; $7.7 \le pH \le 9$

RATIO = $(20.25 \times 10^{(7.7-pH)}) \div (1 + 10^{(7.4-pH)})$; $6.5 \le pH \le 7.7$

FT = 1.4; $15 \le T \le 30$

FT = $10^{[0.03(20-T)]}$; $0 \le T \le 15$

FPH = 1; $8 \le pH \le 9$

FPH = $(1 + 10^{(7.4-pH)}) \div 1.25$; $6.5 \le pH \le 8.0$

Freshwater Un-ionized Ammonia Criteria Calculation
Based on Chapter 173-201A WAC, amended November 20, 2006

		mixed @ Acute Boundary	mixed @ Chronic Boundary	mixed @ Whole River
INPUT				
1. Receiving Water Temperature (deg C):	17.0	17.3	17.0	17.0
2. Receiving Water pH:	7.7	#DIV/0!	#DIV/0!	#DIV/0!
3. Is salmonid habitat an existing or designated use?	Yes	Yes	Yes	Yes
4. Are non-salmonid early life stages present or absent?	Present	Present	Present	Present
OUTPUT				
Using mixed temp and pH at mixing zone boundaries?	no			
Ratio	13.489	#DIV/0!	#DIV/0!	#DIV/0!
FT	1.400	1.400	1.400	1.400
FPH	1.201	#DIV/0!	#DIV/0!	#DIV/0!
pKa	9.499	9.489	9.498	9.499
Unionized Fraction	0.016	#DIV/0!	#DIV/0!	#DIV/0!
Unionized ammonia NH_3 criteria (mg/L as NH_3)				
Acute:	0.183	#DIV/0!	#DIV/0!	#DIV/0!
Chronic:	0.035	#DIV/0!	#DIV/0!	#DIV/0!
RESULTS				
Total ammonia nitrogen criteria (mg/L as N):				
Acute:	9.644	#DIV/0!		#DIV/0!
Chronic:	1.855		#DIV/0!	#DIV/0!

Data source: DMR data and field measurements from Quinault Indian Nation

A reasonable potential calculation shown in Appendix D concluded that the Taholah Village WWTP discharge would not have the reasonable potential to

cause or contribute to a violation of the water quality criteria for ammonia. Therefore, the draft permit does not contain a WQBEL for ammonia**.** The draft permit requires that the permittee monitor the effluent and receiving water for ammonia, pH and temperature in order to determine the applicable ammonia criteria for the next permit reissuance.

BOD_5 and Dissolved Oxygen (DO)

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.

BOD discharged into the groundwater from the Taholah Village WWTP is not expected to have an appreciable effect on the dissolved oxygen concentration in the Quinault River. For dissolved oxygen, the point of compliance for determining if a measurable change would occur at the point of maximum oxygen depletion (caused by an increase in BOD and nutrients) which often occurs many miles down gradient. The discharge is close to the mouth of the Quinault River which drains into coastal waters of the Pacific Ocean. If the point of maximum oxygen depletion occurs miles down gradient, the dilution factor will be far greater than the chronic dilution factor in the river of 257.5. The proposed effluent limitation for BOD is required by Federal Secondary Treatment Standards, and thus controls the discharge of oxygen demanding constituents into the Quinault River.

E. coli

The water quality standard pertaining to *E. coli* bacteria is for the beneficial uses of Primary Contact Recreation.

WAC 173.201A.200(2), Table 200(2)(b) Primary Contact Recreation use states that *E. coli* organism levels must not exceed a geometric mean value of 100 colony forming units (CFU) per 100mL, 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 320 CFU/100mL.

EPA is proposing the 100 colonies/100 ml as the Average Monthly Limit; and, 320 colonies/ 100 ml as the Maximum Daily Limit since the permittee is only required to collect 5 samples per month (i.e., less than ten samples trigger as indicated by Washington WQS). The current permit uses fecal coliform as the bacterial indicator, the proposed permit uses *E. coli*. This change is consistent with WAC 173.201A.200(2), Table 200(2)(b) phase out of fecal coliform for use after 12/31/2020.

The goal of a WQBEL is to ensure a low probability that WQS 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 100 CFU per 100 ml indicates a likely exceedance of the geometric mean criterion, EPA has imposed an instantaneous (single grab sample) maximum effluent limit for *E. coli* of 100 CFU per 100 ml, in addition to a monthly geometric mean limit of 50 CFU 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 WQS 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. In order 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.

pH

Minimum and maximum pH values have been included in the draft permit in the range of 6.5 and 8.5 standard units. These effluent limits are consistent with Washington’s Water Quality Standards for Core Summer Salmonid Habitat. The pH range in the draft permit is a not changed from the previous permit. Mixing zones are generally not granted for pH, therefore the most stringent water quality criterion must be met before the effluent is discharged to the receiving water. Effluent pH data were compared to the water quality criteria and the Taholah WWTP consistently meets pH effluent limits.

Temperature

The applicable temperature standards are the aquatic life temperature criteria found in WAC 173.201A.200(1)(c): water temperature is measured by the 7-day average of the daily maximum temperatures (7-DADMax). Table 200 (1)(c) lists the temperature criteria for each of the aquatic life use categories.

For Core Summer Salmonid Habitat (June 15 to September 15): 16ºC;

Where, "7-DADMax" or "7-day average of the daily maximum temperatures" is the arithmetic average of seven consecutive measures of daily maximum temperatures. The 7-DADMax for any individual day is calculated by averaging that day's daily maximum temperature with the daily maximum temperatures of the three days prior and the three days after that date.

WAC 173.201A.200(1)(c.)(i) states: When a water body's temperature is warmer than the criteria in Table 200(1)(c) (or within 0.3°C (0.54°F) of the criteria) and that condition is due to natural conditions, then human actions

considered cumulatively may not cause the 7-DADMax temperature of that water body to increase more than 0.3°C (0.54°F).

Based on DMR data from March 2016 to December 2020, the 95th percentile of effluent temperature is 23.3ºC. However, subsurface conditions indicate that it is unlikely for excessive temperature in the effluent to violate Washington's temperature criteria in the river for Salmonid Spawning, Rearing and Migration, or for Core Summer Salmonid Habitat. Because the groundwater table is at least 13 feet below surface (IHS Project PO-08-K89 construction as-builts), a near constant year-round groundwater temperature can be assumed. According to USDA's Washington Soil Atlas for Moclips Series soil, the average annual soil temperature is approximately 48ºF (9ºC) (see page 55, Washington Soil Atlas: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_034094.pdf). Accordingly, EPA estimates the groundwater temperature beneath the RIBs to be in the range of 9ºC. The groundwater does not surface prior to the river. According to USGS, the estimated rate of groundwater flow through a typical sand and gravel is 0.8 to 2.3 feet per day (page 9, "Sewage Plume in Sand and Gravel Aquifer, Cape Cod, Massachusetts", USGS Water Supply Paper 2218: http://pubs.usgs.gov/wsp/wsp2218/pdf/wsp_2218b.pdf). Assuming the effluent travels at 2.3 feet/day, it could take 219 days to travel the 505 feet from the RIBs to the river. Given the estimated groundwater temperature and the amount the effluent is estimated to travel per day, EPA has determined that there is no reasonable potential for temperature. Accordingly, EPA is not proposing an effluent limit for temperature.

TSS

Washington State WQS require that surface waters be free from floating, suspended, or submerged matter of any kind in concentrations impairing designated beneficial uses. The draft permit contains a narrative limitation prohibiting the discharge of such materials.

d. Anti-backsliding

CWA § 402(o) and 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. Section 402(o)(1) of the CWA states that a permit may not be reissued with less-stringent limits established based on Sections 301(b)(1)(C), 303(d) or 303(e) (i.e. water quality-based limits or limits established in accordance with State treatment standards) except in compliance with Section 303(d)(4). Section 402(o)(1) also prohibits backsliding on technology-based effluent limits established using best professional judgment (i.e. based on Section 402(a)(1)(B)), but in this case, the effluent limits being revised are water quality-based effluent limits (WQBELs).

Section 303(d)(4) of the CWA states that, for water bodies where the water quality meets or exceeds the level necessary to support the water body's

designated uses, WQBELs may be revised as long as the revision is consistent with the State's antidegradation policy. Additionally, Section 402(o)(2) contains exceptions to the general prohibition on backsliding in 402(o)(1). According to the EPA NPDES Permit Writers' Manual (EPA-833-K-10-001) the 402(o)(2) exceptions are applicable to WQBELs (except for 402(o)(2)(B)(ii) and 402(o)(2)(D)) and are independent of the requirements of 303(d)(4). Therefore, WQBELs may be relaxed if either the 402(o)(2) exceptions or the requirements of 303(d)(4) are satisfied.

The proposed permit is as stringent as the current permit; therefore, there is no backsliding. All effluent limitations are the same as the current permit except for bacteria. In the case of bacteria, EPA proposed to change the limit parameter from fecal coliform to *E. coli* to comply with current Washington State Water Quality Standards. This change of bacteria standard does not trigger anti-backsliding considerations, as the permit limits remain in compliance with Washington State Water Quality Standards.

B. MONITORING REQUIREMENTS

CWA § 308 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 Table B (as applicable) 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 EPA.

1. 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 EPA-approved test methods (generally found in 40 CFR Part 136) or as specified in the permit.

Table 15 Proposed Monitoring Changes from the Current Permit

Parameter	Current Permit	Proposed Permit
Bacteria	Fecal coliform, 5/month, grab sampling	*E. coli*, 5/month, grab sampling
Copper, Total Recoverable	1/quarter, grab	None
Zinc, Total Recoverable	1/quarter, grab	None

The draft permit proposes monitoring changes for bacteria, copper, and zinc. EPA is proposing to change the bacteria limit parameter from fecal coliform to *E. coli* to comply with current Washington State Water Quality Standards. EPA proposes to discontinue copper and zinc monitoring due to QIN disposing of fish processing waste in municipal trash instead of the sanitary sewer as originally planned.

2. 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. Table 16 presents the proposed surface water monitoring requirements for the draft permit. EPA requires the permittee to conduct surface water monitoring at an upstream station on the Quinault River. Surface water monitoring must be conducted for the duration of the permit. Surface water monitoring results must be submitted with the DMR.

Table 16. Quinault River Surface Water Monitoring in Draft Permit

Parameter	Units	Sample Type	Sample Frequency
Temperature	ºC	Grab	1/quarter
Total Ammonia as N	mg/L	Grab	1/quarter
pH	Standard units	Grab	1/quarter

3. 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.

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.

C. SLUDGE (BIOSOLIDS) REQUIREMENTS

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

IV. OTHER PERMIT CONDITIONS

A. COMPLIANCE SCHEDULES

Compliance schedules are authorized by federal NPDES regulations at 40 CFR 122.47. Compliance schedules allow a discharger to phase in, over time, compliance with WQBELs when limitations are in the permit for the first time. EPA has found that a compliance schedule is not appropriate for the proposed permit because WQBELs are the same as the current permit.

B. QUALITY ASSURANCE PLAN

The QIN is required to update the Quality Assurance Plan (QAP) within 90 days of the effective date of the permit. The QAP must consist 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 made available to EPA upon request.

C. OPERATION AND MAINTENANCE PLAN

The permit requires the QIN 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 of the effective date of the permit. The plan must be retained on site and made available to EPA upon request.

D. SANITARY SEWER OVERFLOWS & 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 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 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 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 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, 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. 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.

EJSCREEN Report (Version 2020)

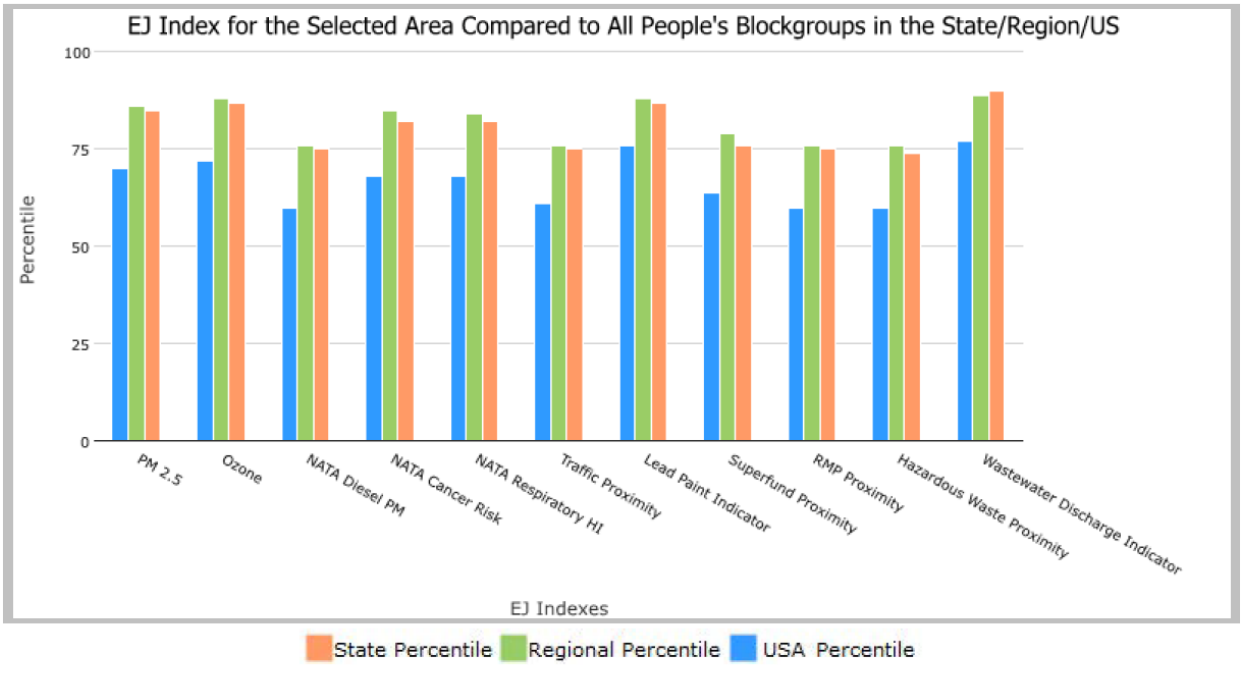
the User Specified Area, WASHINGTON, EPA Region 10

Approximate Population: 588

Input Area (sq. miles): 1.34

Taholah, WA

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	85	86	70
EJ Index for Ozone	87	88	72
EJ Index for NATA* Diesel PM	75	76	60
EJ Index for NATA* Air Toxics Cancer Risk	82	85	68
EJ Index for NATA* Respiratory Hazard Index	82	84	68
EJ Index for Traffic Proximity and Volume	75	76	61
EJ Index for Lead Paint Indicator	87	88	76
EJ Index for Superfund Proximity	76	79	64
EJ Index for RMP Proximity	75	76	60
EJ Index for Hazardous Waste Proximity	74	76	60
EJ Index for Wastewater Discharge Indicator	90	89	77



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

*The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

The Taholah Village WWTP is located within or near a Census block group that is potentially overburdened because of PM 2.5, Ozone, NATA* Air Toxics Cancer Risk, NATA* Respiratory Hazard Index, Lead Paint Indicator, and Wastewater Discharge Indicator. In order to ensure that individuals near the facility are able to participate meaningfully in the permit process, EPA will work collaboratively with the QIN to conduct enhanced outreach activities such as posting the draft permit and fact sheet in public places, the QIN website, and other media the QIN feels is necessary to ensure membership are able to participate in the review and comment period.

Regardless of whether a facility is located near a potentially overburdened community, 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. DESIGN CRITERIA

The permit includes design criteria requirements. This provision requires the permittee to compare influent flow to the facility's design flow and prepare a facility plan for maintaining compliance with NPDES permit effluent limits when the flow exceeds 85% of the design criteria values for any two months in a twelve-month period. Currently, influent flow does exceed 85% of the design criteria values during a twelve-month period. The 95th percentile of influent flow for the period from 3/2016 to 12/2020 is 0.17 MGD.

G. PRETREATMENT REQUIREMENTS

The QIN does not have an approved POTW pretreatment program per 40 CFR 403.8, EPA is the Control Authority of industrial users that might introduce pollutants into the WWTP.

Permit Part II E reminds the Permittee that it cannot authorize discharges which may violate the national specific prohibitions of the General Pretreatment Program.

Although, not a permit requirement, the Permittee may wish to consider developing the legal authority enforceable in Federal, State or local courts which authorizes or enables the POTW to apply and to enforce the requirement of CWA §§ 307 (b) and (c) and 402(b)(8), as described in 40 CFR 403.8(f)(1). Where the POTW is a municipality, legal authority is typically through a sewer use ordinance, which is usually part of the city or county code. EPA has a Model Pretreatment Ordinance for use by

municipalities operating POTWs that are required to develop pretreatment programs to regulate industrial discharges to their systems (EPA, 2007). The model ordinance should also be useful for communities with POTWs that are not required to implement a pretreatment program in drafting local ordinances to control nondomestic dischargers within their jurisdictions.

H. STANDARD PERMIT PROVISIONS

Permit Parts III., IV. and V. 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.

V. 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 the vicinity of the discharge finds that there is no effect caused by the discharge from the Taholah Village WWTP. (see Appendix E).

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 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).

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. EPA has prepared an EFH assessment which appears in Appendix F.

For the same reasons as listed for endangered species the EPA has determined that issuance of this permit would have no effect to EFH in the vicinity of the discharge. The EPA will provide NOAA Fisheries with copies of the draft permit and fact sheet during the public notice period. Any comments received from NOAA Fisheries regarding EFH will be considered prior to issuance of this permit.

C. CWA § 401 CERTIFICATION

CWA § 401 requires EPA to seek certification before issuing a final permit. As a result of the certification, QDNR may require more stringent permit conditions or additional monitoring requirements to ensure that the permit complies with WQS, or treatment standards established pursuant to any Nation law or regulation. Since this facility discharges to QIN waters and the QIN has been approved for TAS from EPA for purposes of the CWA, QDNR is the certifying authority.

EPA had preliminary discussions with QDNR regarding the CWA § 401 Certification during development of the draft permit. EPA is sending a request for CWA § 401 Certification to QDNR with the public notice. Based upon the preliminary discussions with QDNR, EPA anticipates that no conditions will be included in the CWA § 401 Certification. If QDNR includes conditions in the CWA § 401 certification, EPA will include those conditions in the permit pursuant to CWA § 401(d).

D. ANTIDEGRADATION

EPA is required under Section 301(b)(1)(C) of the CWA and implementing regulations (40 CFR 122.4(d) and 122.44(d)) to establish conditions in NPDES permits that ensure protection of the downstream State water quality standards, including antidegradation requirements. EPA has prepared an antidegradation analysis consistent with Ecology's antidegradation implementation procedures. EPA referred to Washington's antidegradation policy (WAC 173-201A-300) and Ecology's 2011 Supplemental Guidance on Implementing Tier II Antidegradation (https://apps.ecology.wa.gov/publications/documents/1110073.pdf)

The purpose of Washington's Antidegradation Policy is to:

• Restore and maintain the highest possible quality of the surface waters of Washington.

• Describe situations under which water quality may be lowered from its current condition.

• Apply to human activities that are likely to have an impact on the water quality of surface water.

• Ensure that all human activities likely to contribute to a lowering of water quality, at a minimum, apply all known, available, and reasonable methods of prevention, control, and treatment (AKART); and

• Apply three tiers of protection (described below) for surface waters of the state.
  - Tier I ensures existing and designated uses are maintained and protected and applies to all waters and all sources of pollution.
  - Tier II ensures that waters of a higher quality than the criteria assigned are not degraded unless such lowering of water quality is necessary and in the overriding public interest. Tier II applies only to a specific list of polluting activities.
  - Tier III prevents the degradation of waters formally listed as "outstanding resource waters," and applies to all sources of pollution.

The receiving water from the indirect discharge is the Quinault River and the anti-degradation analysis was completed for this receiving water body. Accordingly, EPA will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

For the purpose of the anti-degradation analysis in the Quinault River, EPA made the following assumptions:

• EPA conducted the antidegradation analysis on the Quinault River because it is the receiving waterbody from the groundwater plume.

• Average temperature data, and low flows based on the chronic criteria are used to simulate conservatively representative conditions for anti-degradation analysis.

The 7Q10 low flow in the Quinault River (USGS Gauge number, 12039500, located upstream near Lake Quinault, Washington) is 317 cfs, which calculates to a chronic dilution factor of 257 based on a 25% mixing zone and the WWTP's design flow of 0.2 mgd. Accordingly, the 7Q10 low flow is used to calculate the acute dilution factor of 26.6, based on a 2.5% mixing zone. Both the chronic and acute dilution factors are conservative because the gauge being located approximately 13.6 miles upstream, and the river flow where the discharge occurs is likely to be significantly higher due to additional contributions from tributaries between the USGS Gauge and the vicinity of the WWTP, as well as the dilution in the groundwater plume. Therefore, had there been another gauge closer, the chronic and acute dilution factors would be greater than 257 and 26.6, respectively.

Based on a review of the water quality data for the Quinault River, the receiving water qualifies for Tier I protection explained in more detail below.

Tier I Protection

According to Washington's antidegradation policy, a facility must first meet Tier I requirements. Existing and designated uses must be maintained and protected. No degradation may be allowed that would interfere with, or become injurious to, existing or designated uses, except as provided for in Chapter 173-201A WAC. The Quinault River at the point of discharge has the following designated beneficial uses:

Aquatic Life Uses: Core Summer Habitat;

Recreational Uses: Extraordinary Primary Contact

Water Supply Uses: Domestic Water; Industrial Water; Agricultural Water; Stock Water

Misc. Uses: Wildlife Habitat; Harvesting; Commerce/Navigation; Boating; and Aesthetics.

The effluent limits in the draft permit ensure compliance with applicable numeric and narrative water quality criteria. The numeric and narrative water quality criteria are set at levels that ensure protection of the designated uses. As there is no information indicating the presence of existing beneficial uses other than those that are designated, the draft permit ensures a level of water quality necessary to protect the designated uses and, in compliance with WAC 173-201A-310 and 40 CFR 131.12(a)(1), also ensures that the level of water quality necessary to protect existing uses is maintained and protected.

If EPA receives information during the public comment period demonstrating that there are existing uses for which the Quinault River is not designated, EPA will consider this information before issuing a final permit and will establish additional or more stringent permit conditions if necessary to ensure protection of existing uses.

E. PERMIT EXPIRATION

The permit will expire five years from the effective date.

VI. 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

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

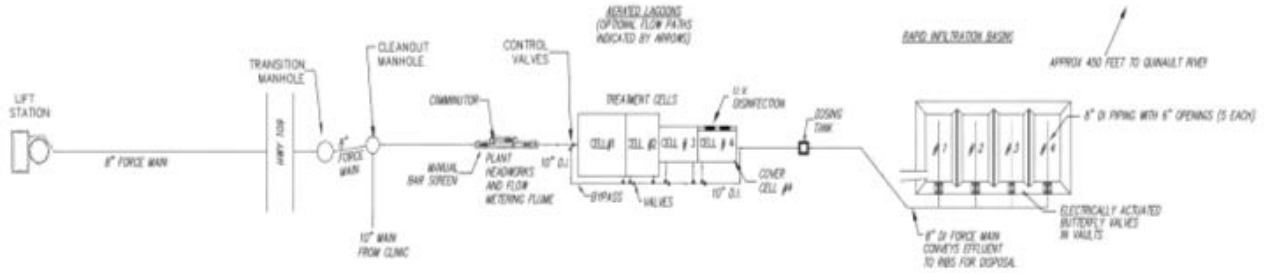
EPA. 2014. Water Quality Standards Handbook Chapter 5: General Policies. Environmental Protection Agency. Office of Water. EPA 820-B-14-004. September 2014. https://www.epa.gov/sites/production/files/2014-09/documents/handbook-chapter5.pdf

State of Washington. 2019. Water Quality Standards for Surface Waters of the State of Washington. 12/30/19. https://apps.leg.wa.gov/wac/default.aspx?cite=173-201A

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

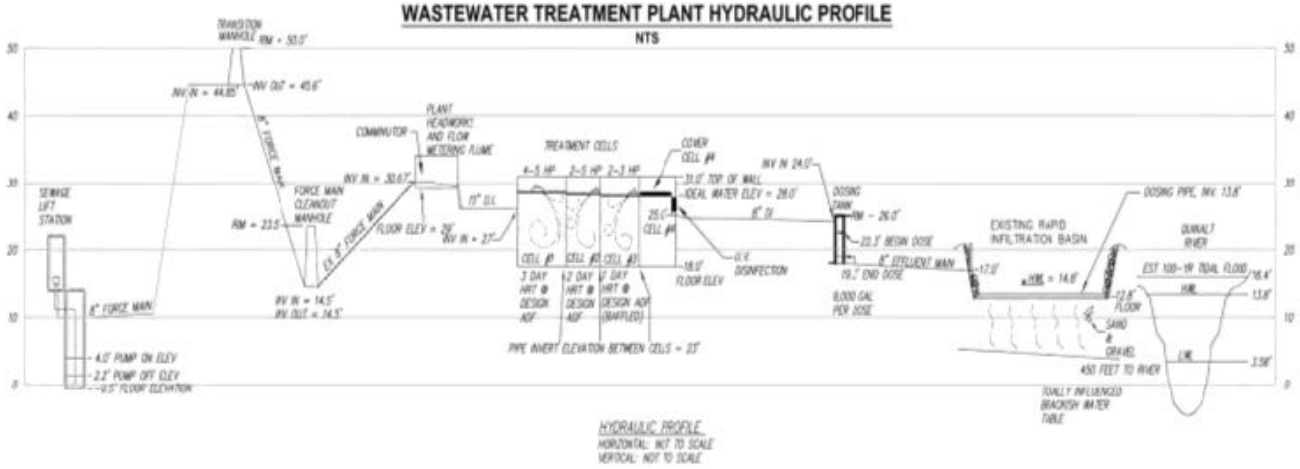
USDA's Washington Soil Atlas for Moclips Series soil, page 55, Washington Soil Atlas: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_034094.pdf

Appendix A. **Facility Information**



WASTEWATER TREATMENT PLANT HYDRAULIC PROFILE

NTS



HYDRAULIC PROFILE
HORIZONTAL: NOT TO SCALE
VERTICAL: NOT TO SCALE

Appendix B. **Water Quality Data**

Treatment Plant Effluent Data

Parameter	Flow, in conduit or thru treatment plant	BOD, 5-day, 20 deg. C	BOD, 5-day, 20 deg. C	BOD, 5-day, 20 deg. C	BOD, 5-day, 20 deg. C	BOD, 5-day, 20 deg. C	BOD, 5-day, 20 deg. C	Solids, total suspended	Solids, total suspended	Solids, total suspended	Solids, total suspended	Solids, total suspended	Solids, total suspended	Nitrogen, ammonia total [as N]	pH	pH	Fecal coliform	Fecal Coliform	Temperature
Monitoring Location	Effluent Gross	Influent Gross	Effluent Gross	Effluent Gross	Effluent Gross	Effluent Gross	Percent Removal	Influent Gross	Effluent Gross	Effluent Gross	Effluent Gross	Effluent Gross	Percent Removal	Effluent Gross	Effluent Gross	Effluent Gross	Effluent Gross	Effluent Gross	Effluent Gross
Statistical Base	MO AVE	MO AVG	MO AVG	MO AVG	WKLY AVG	WKLY AVG	MIN % RMV	MO AVG	MO AVG	MO AVG	WKLY AVG	WKLY AVG	MIN % RMV	MO AVG	INST MAX	INST MIN	INST MAX	MO GEO MN	MX DA AV
Limit Units	MGD	mg/L	mg/L	lb/d	mg/L	lb/d	%	mg/L	mg/L	lb/d	mg/L	lb/d	%	mg/L	SU	SU	#/100mL	#/100mL	C
Current Limit	Report	Report	30	50	45	75	85	Report	30	50	45	75	85	Report	8.5	6.5	100	50	Report
Proposed Limit	Report	Report	30	50	45	75	85	Report	30	50	45	75	85	Report	8.5	6.5	100	50	Report
03/31/2016	0.095	285.7	25.8	17.9	26.3	20.7	90.8	288	21.3	14.8	22	17.5	92.5		7.81	7.28	1	0.2	10.1
04/30/2016	0.095	280.8	25.6	15.3	26.4	20.25	90.7	276.5	21	12.5	22	16.61	92.1		7.37	6.85	3	1	14.2
05/31/2016	0.156	262.6	25.1	20.4	25.7	32.7	90.1	288.3	23.25	18.86	24	29.96	91.7		7.08	6.61	1	0.2	19.02
06/30/2016	0.105	277.6	25.9	14.2	26.6	15.58	90.6	281.8	22.8	12.4	23	13.67	91.9	1.3	7.44	6.81	1	0.2	21.9
07/31/2016																			
08/31/2016	0.066	284.8	25.7	11.8	26.1	13.2	90.9	279.8	22.8	10.5	23	11.7	91.8		7.03	6.61	0	0	22.6
09/30/2016	0.12	277.9	25.4	19.4	25.7	25.73	90.7	278.8	22.3	17.1	23	22.03	91.7	1.8	6.73	6.56	2	0.8	21.1
10/31/2016	0.242	285.4	25.8	36.5	26	52.58	90.8	281.5	22.5	31.8	23	46.5	91.8		6.73	6.54	1	0.6	15
11/30/2016	0.238	283.7	25.8	26.3	26.1	44.3	90.7	318	22	22.6	23	39.1	92		6.76	6.6	2	1	14.4
12/31/2016	0.088	282.2	25.8	17	26.6	18.7	90.6	282.3	22.3	14.6	23	16.1	91.9	2	6.83	6.61	2	1	9
01/31/2017	0.091	282.3	25.9	18.5	26.6	19.4	90.7	277	22.5	16.1	23	17.5	91.7		7.36	7.06	2	0.8	6.8
02/28/2017	0.104	285.4	25.3	16.4	25.7	22.3	90.9	280.3	21.75	13.96	22	18.26	92.1		7.94	7.36	2	1	8.6
03/31/2017	0.095	285.7	25.8	17.9	26.3	20.7	90.8	288.8	21.3	14.8	22	17.5	92.5	1.9	7.81	7.28	1	0.2	10.1
04/30/2017	0.095	280.8	25.6	15.3	26.4	20.25	90.7	276.5	21	12.5	22	16.61	92.1		7.37	6.85	3	1	14.2
05/31/2017	0.075	283.3	25.7	14.3	26.2	15.99	90.7	303	21.8	12.1	23	13.12	92.1		6.95	6.6	2	0.8	18.8
06/30/2017	0.059	288	26	12.11	27	13.39	90.7	285	21.5	10.01	22	10.51	92.2	1.8	7.2	6.83	1	0.4	22.1
07/31/2017	0.062	282.5	25.6	12.44	26.4	12.95	90.7	282.5	21.5	10.5	22	11.35	92.1		7	6.61	1	0.4	23.1
08/31/2017	0.057	280.1	25.5	11.75	25.7	11.99	90.5	281.8	22	10.2	23	10.55	91.9		6.9	6.57	1	0.4	23.3
09/30/2017	0.061	279.8	25.8	12.3	26.1	13	90.7	280	20	9.6	21	10.1	92.4	1.7	7.08	6.99	1	0.02	22.1
10/31/2017	0.069	281.9	25.4	12.8	25.7	14.5	90.8	279.5	21	10.6	22	12	92.3		6.95	6.5	1	0.4	15.6
11/30/2017	0.096	284.6	25.8	18.1	26	20.8	90.8	291	20.8	14.5	21	16.4	92.8		7.29	6.58	1	0.4	13.7
12/31/2017	0.079	286.1	26.1	14.2	26.3	17.24	90.7	279.5	21	11.5	22	14.42	92.1	1.9	7.39	6.64	1	0.6	8.6
01/31/2018	0.11	277.6	25.2	18.2	25.5	22.9	90.8	278.3	20.5	14.8	21	19.3	92.5		7.21	6.77	2	0.8	9.3
02/28/2018	0.067	282	25.6	13.15	26	13.88	90.6	278.8	20.8	10.7	21	11.6	92.4		7.28	6.95	2	0.8	10.1
03/31/2018	0.063	284.2	25.8	11.9	26.2	13.4	90.8	290.5	21.3	9.8	22	11.34	92.5	1.7	7.35	6.94	7	3	10.3
04/30/2018	0.063	288.1	26	13.65	26.5	13.87	90.8	278.8	21	11	22	11.44	92.1		6.91	6.75	3	1.4	14.7
05/31/2018	0.063	280.7	25.5	12.3	26	13.29	90.8	279.5	21.3	10.3	22	11.1	92		6.81	6.51	3	1	20.2
06/30/2018	0.091	278.5	25.5	15.9	25.8	19.2	90.6	282	21.3	13.2	22	15.9	92.4		6.93	6.55	2	1.2	22.1
07/31/2018	0.081	279.8	25.2	13.1	25.5	17.2	90.9	277.8	21.3	11.1	22	14.8	91.9		6.76	6.54	2	0.8	23
08/31/2018	0.053	277.1	25.6	9.74	25.9	11.45	90.5	270.5	21.3	8.09	22	9.32	92.2		7.12	6.55	2	0.8	22.7
09/30/2018	0.088	282.2	25.1	12.1	25.6	18.5	91	283.5	21	10.1	22	15.4	92.2	1.8	7.02	6.53	2	0.8	18.5
10/31/2018	0.073	281.1	25.2	12.33	25.6	14.26	91	279.3	20.8	10.16	21	11.7	92.5		6.74	6.55	2	0.8	17.5
11/30/2018	0.076	283.4	25.3	13.9	25.6	16	90.9	281.3	21	11.6	22	13.3	92.1		6.92	6.61	2	0.8	14.2
12/31/2018	0.431	279.9	25.3	19	25.7	25.43	90.7	280	21	15.7	22	20.1	92.2		6.93	6.54	2	0.8	10.8
01/31/2019	0.105	279.4	25	17.04	25.3	20.19	91	280.3	20.8	14.17	21	16.96	92.4		7.55	6.661	2	1.4	10.7
02/28/2019	0.074	279.9	25	14.5	25.4	15.23	90.9	280.8	21	12.2	22	13	92.3		7.31	6.77	1	0.6	7.7
03/31/2019	0.066	278.3	25.5	14.03	25.7	13.4	90.7	280	21.3	11.8	22	11.1	92.2	1.8	6.94	6.87	2	0.8	17.6
04/30/2019	0.069	280.2	25.3	13.1	25.5	14.6	90.9	286	21.3	10.97	22	12.03	922		7.24	6.5	3	1.6	15.9
05/31/2019	0.057	278.6	25.3	10.29	25.4	11.55	90.8	280	20.8	8.41	21	9.55	92.4		6.83	6.6	1	0.4	18.4
06/30/2019	0.065	280.5	25.2	12.04	25.4	13.65	90.9	282.5	21.3	10.13	22	11.33	92.2	0.01	6.89	6.52	2	0.8	21.6
07/31/2019	0.057	277.6	25.4	11.98	25.6	11.35	90.7	281.5	20.8	9.27	21	9.94	92.4		7.46	6.67	1	0.4	23.5
08/31/2019	0.066	278	25	11.45	25.5	11.99	90.8	283.3	21.3	9.72	22	10.34	92.1		7.33	6.74	1	0.8	23.8
09/30/2019	0.083	279.2	25.1	14.9	25.4	17.51	90.9	281.3	21.5	12.73	22	14.48	92.1		7.11	6.7	2	0.8	21.8
10/31/2019	0.099	280.6	25.3	15.5	25.4	20.9	90.9	281.5	21.3	13	22	17.29	92.2		6.95	6.55	2	0.8	16.7
11/30/2019	0.084	277.6	25.1	14.34	25.3	17.58	90.9	281.3	20.8	11.85	21	14.71	92.5		6.69	6.5	1	0.5	12.2
12/31/2019	0.085	283.7	25.5	13.9	26	16.25	90.7	283.8	20.5	11.2	21	12.5	92.5		6.96	6.53	2	1	10.3
01/31/2020	0.114	280.5	25.5	20.73	25.8	23.82	90.7	279	20.3	16.63	21	19.21	92.6		6.68	6.53	1	0.6	9.5
02/29/2020	0.114	280.2	25.3	18.6	25.6	23.77	90.9	280.5	21	15.4	22	20	92.2		6.67	6.55	2	1	8.7
03/31/2020	0.066	279	25.1	12.68	25.3	13.5	90.9	283.5	21.3	10.75	22	11.34	92.3		6.73	6.56	3	1.8	16.5
04/30/2020	0.069	279.6	25.2	13.01	25.2	14.6	90.9	278	21.3	10.97	22	12.17	92.2		7.25	6.61	2	1	16.1
05/31/2020	0.06	280.3	25.1	12.23	25.5	12.37	90.9	282.5	21	10.2	22	10.6	92.3		6.67	6.56	2	1.2	18.4
06/30/2020	0.066	281.9	25.2	12.39	25.4	13.89	90.9	280.8	20.8	10.22	21	11.53	92.4	0.1	6.71	6.51	2	1	21.7
07/31/2020	0.053	279.7	25.4	11.07	25.7	11.33	90.8	278.3	21.5	9.35	22	9.77	92.1		6.83	6.67	2	0.8	25.3
08/31/2020	0.065	280.6	25.4	9.73	25.8	13.94	90.9	281	21.3	8.17	22	11.89	92.3		7.29	6.76	2	1	22.3
09/30/2020	0.067	279.6	25.2	11.21	25.5	13.9	90.9	278.3	21	9.33	22	11.68	92.2		7.12	6.67	2	0.8	21.3
10/31/2020	0.067	280.7	25.3	12.6	25.5	14.22	90.9	280.8	21	10.4	22	11.71	92.1		6.91	6.65	2	1.2	18.7
11/30/2020	0.091	280.3	25.3	15.13	25.4	19.11	91	280	20.8	12.37	21	15.17	92.4		6.74	6.54	2	1.2	13.9
12/31/2020	0.108	281.2	25.3	15.49	25.8	20.71	90.9	281.5	21	12.86	22	17.68	92.3		6.87	6.55	2	1.3	10
Average	0.092228	280.93	25.451	14.879	25.828	17.982	90.78421	282.22281	21.298246	12.459298	21.964912	15.136316	106.7614	1.48416667	7.0654	6.6825	1.842105	0.828421	16.32140351
Minimum	0.053	262.6	25	9.73	25.2	11.33	90.1	270.5	20	8.09	21	9.32	91.7	0.01	6.67	6.5	0	0	6.8
Maximum	0.431	288.1	26.1	36.5	27.0	52.58	91	318	23.25	31.8	24	46.5	922	2	7.94	7.36	7	3	25.3
Count	57	57	57	57	57	57	57	57	57	57	57	57	57	12	57	57	57	57	57
Std Dev	0.058096	3.6439	0.2892	4.2804	0.4135	7.3635	0.153285	6.6057069	0.6304027	3.7870493	0.680465	6.5818955	109.90948	0.68934037	0.3054	0.2015	0.959715	0.473255	5.335330837
CV	0.629917	0.013	0.0114	0.2877	0.016	0.4095	0.001688	0.023406	0.0295988	0.3039537	0.0309796	0.4348413	1.029487	0.46446291	0.0432	0.0301	0.520988	0.571274	0.326891669
95th Percentile	0.1724	285.78	25.92	20.466	26.6	27.124	91	290.6	22.56	17.452	23	23.616	92.52	1.945	7.602	7.104	3	1.44	23.34
5th Percentile	0.057	277.6	25.08	10.914	25.3	11.53	90.58	276.9	20.5	9.098	21	9.906	91.78	0.0595	6.688	6.508	1	0.2	8.6
90th percentile	0.114	285.4	25.8	18.76	26.4	23.79	90.9	288.12	22.3	15.86	23	19.58	92.5	1.9	7.41	6.944	3	1.24	22.82

Receiving Water Data

Parameter	Ambient pH	Ambient Hardness	Ambient Ammonia as N
Monitoring Location	Upstream	Upstream	Upstream
Statistical Base	1 PER QTR GRAB	1 PER QTR GRAB	1 PER QTR GRAB
Limit Units	SU	mg/L	mg/L
Current Limit	Report	Report	Report
Proposed Limit	Report	-	Report
03/31/2016			
04/30/2016			
05/31/2016			
06/30/2016	6.86	16	0.01
07/31/2016			
08/31/2016			
09/30/2016			
10/31/2016			
11/30/2016			
12/31/2016	6.86	16	0.02
01/31/2017			
02/28/2017			
03/31/2017	6.53	17	0
04/30/2017			
05/31/2017			
06/30/2017	5.89	14	0
07/31/2017			
08/31/2017			
09/30/2017	7.74	21	0.1
10/31/2017			
11/30/2017			
12/31/2017	7.62	21	1.8
01/31/2018			
02/28/2018			
03/31/2018	7.24	26	0.01
04/30/2018			
05/31/2018			
06/30/2018	7.18	17	0
07/31/2018			
08/31/2018			
09/30/2018	7.12	25	0.1
10/31/2018			
11/30/2018			
12/31/2018	7.18	17	0.01
01/31/2019			
02/28/2019			
03/31/2019	7.12	25	0.1
04/30/2019			
05/31/2019			
06/30/2019	7.11	44	0
07/31/2019			
08/31/2019			
09/30/2019	7.12	27	0
10/31/2019			
11/30/2019			
12/31/2019	7.18	51	0
01/31/2020			
02/29/2020			
03/31/2020	6.58	22	0
04/30/2020			
05/31/2020			
06/30/2020	6.19	25	0.01
07/31/2020			
08/31/2020			
09/30/2020			
10/31/2020			
11/30/2020			
12/31/2020			
Average	6.97	24	0.135
Minimum	5.89	14	0
Maximum	7.74	51	1.8
Count	16	16	16
Std Dev	0.47975	10.1390335	0.4456606
CV	0.068831	0.42245973	3.3011893
95th Percentile	7.65	45.75	0.525
5th Percentile	6.115	15.5	0
90th percentile	7.43	35.5	0.1

Appendix C. **Reasonable Potential and WQBEL Formulae**

A. Reasonable Potential Analysis

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, 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 WQBEL must be included in the permit.

1. Mass Balance

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

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

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:

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

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:

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

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,

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

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

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

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

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

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:

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

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.

2. Maximum Projected Effluent Concentration

When determining the projected receiving water concentration downstream of the effluent discharge, 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) 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.

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

where,

p_n = the percentile represented by the highest reported concentration

n = the number of samples

confidence level = 99% = 0.99

and

$$RPM = \frac{C_{99}}{C_{P_n}} = \frac{e^{Z_{99} \times \sigma - 0.5 \times \sigma^2}}{e^{Z_{P_n} \times \sigma - 0.5 \times \sigma^2}}$$ *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:

$$C_e = (RPM)(MRC)$$ *Equation 10*

where MRC = Maximum Reported Concentration

3. 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.

4. 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

1. 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:

$$C_e = WLA = D \times (C_d - C_u) + C_u$$ *Equation 11*

Some 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, 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 shown in equation 12. The criteria translator (CT) is equal to the conversion factor, because site-specific translators are not available for many discharges.

$$C_e=WLA=\frac{D\times(C_d-C_u)+C_u}{CT}$$ *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 EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD):

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

$$LTA_c=WLA_c\times e^{(0.5\sigma_4^2-z\sigma_4)}$$ *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:

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

where,

σ_{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.

2. Derive the maximum daily and average monthly effluent limits

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

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

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

where σ, and σ^2 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 WQBELs. In general, Washington's WQS require criteria be evaluated at the following low flow receiving water conditions (See Table 12. Applicable Criteria/Design Conditions for Determining the Acute and Chronic Dilution Factors for Aquatic Life, Department of Ecology Water Quality Program Permit Writer's Manual page 190 at https://apps.ecology.wa.gov/publications/summarypages/92109.html) as defined below:

Acute aquatic life		7Q10
Chronic aquatic life		7Q10
Non-carcinogenic human health criteria		30Q5
Carcinogenic human health criteria		Harmonic mean flow
Ammonia		7Q10

1. The 7Q10 represents lowest average 7 consecutive day flow with an average recurrence frequency of once in 10 years.
2. The 30Q5 represents the lowest average 30 consecutive day flow with an average recurrence frequency of once in 5 years.
3. 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**

Reasonable Potential Calculation

Facility	Taholah WWTP
Water Body Type	Freshwater
Rec. Water Hardness	45.8 mg/L

Dilution Factors:	Acute	Chronic
Aquatic Life	26.6	257.5
Human Health Carcinogenic		770.4
Human Health Non-Carcinogenic		360.1

Pollutant, CAS No. & NPDES Application Ref. No.		AMMONIA, Criteria as Total NH3										
Effluent Data	# of Samples (n)	12	1	1	1							
	Coeff of Variation (Cv)	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	Effluent Concentration, ug/L (Max. or 95th Percentile)	1,945										
	Calculated 50th percentile Effluent Conc. (when n>10)											
Receiving Water Data	90th Percentile Conc., ug/L	0	0	0	0							
	Geo Mean, ug/L		0	0								
Water Quality Criteria	Aquatic Life Criteria, ug/L — Acute	9,644										
	Aquatic Life Criteria, ug/L — Chronic	1,855										
	WQ Criteria for Protection of Human Health, ug/L	-										
	Metal Criteria Translator, decimal — Acute	-										
	Metal Criteria Translator, decimal — Chronic	-										
	Carcinogen?	N										

Aquatic Life Reasonable Potential

Effluent percentile value		0.990
s	$s^2=\ln(CV^2+1)$	0.472
Pn	$Pn=(1\text{-confidence level})^{1/n}$	0.681
Multiplier		2.40
Max concentration (ug/L) at edge of…	Acute	175
	Chronic	18
Reasonable Potential? Limit Required?		**NO**

References: Washington State Spreadsheets for Water Quality-Based NPDES Permit Calculations 2012 version.

Appendix E. **Endangered Species Act**

Section 7 of the Endangered Species Act (ESA) requires federal agencies to evaluate potential effects an action may have on listed endangered species. EPA used the U.S Fish and Wildlife Service's online database to determine the services' species list for the area near the discharge. A letter was obtained on March 9, 2021, from the U.S. Fish and Wildlife's Information for Planning and Consultation (IPaC) data base for the area in the vicinity of the discharge. The letter identified 5 threatened or candidate species: 3 bird species and 2 fish species. Of these 5 species identified, there is no species listed as endangered.

EPA has determined that the issuance of the draft permit would have no effect on the listed bird species because they are terrestrial species and would not be affected by the proposed discharge.

EPA considered the effluent from the Taholah Village WWTP for possible impacts on the two threatened USFWS listed fish species: The discharge from the WWTP (0.31 cfs) is extremely small compared with the flow volume of the Quinault River (317+ cfs), approximately 0.10%. With a conservative mixing of 25% of the chronic low flow in the river, the dilution factor is 257. Also using a conservative mixing of 2.5% of the acute low flow in the river, the dilution factor is 26. Considering that the effluent had already undergone secondary treatment, ultra-violet disinfection prior to discharge, and is also significantly diluted in the groundwater plume, EPA concludes that the proposed permit would have no effect on the USFW listed fish species found in the Quinault River.

Appendix F. **Essential Fish Habitat Assessment**

Pursuant to the requirements for Essential Fish Habitat (EFH) assessments, this appendix contains the following information:

- Listing of EFH Species in the Facility Area
- Description of the Facility and Discharge Location
- EPA's Evaluation of Potential Effects to EFH

A. Listing of EFH Species in the Facility Area

All waterbodies must be considered for EFH identification. According to NOAA Fisheries, the receiving water is a ESA Critical Habitat Designation: Eulachon (Southern DPS).

https://www.webapps.nwfsc.noaa.gov/portal/apps/webappviewer/index.html?id=7514c715b8594944a6e468dd25aaacc9

B. Description of the Facility and Discharge Location

The activities and sources of wastewater at the Taholah Village WWTP are described in detail in II and Appendix A of this fact sheet. The location of the outfall is described in E ("Receiving Water").

C. EPA's Evaluation of Potential Effects to EFH

Water quality is an important component of aquatic life habitat. NPDES permits are developed to protect water quality in accordance with WQS. The standards protect the beneficial uses of the waterbody, including all life stages of aquatic life. The development of permit limits for an NPDES discharger includes the basic elements of ecological risk analysis. The underlying technical process leading to NPDES permit requirements incorporates the following elements of risk analysis:

Effluent Characterization

Characterization of Taholah Village WWTP's effluent was accomplished using a variety of sources, including:

- Permit application monitoring
- Permit compliance monitoring
- Statistical evaluation of effluent variability
- Quality assurance plans and evaluations

Identification of Pollutants of Concern and Threshold Concentrations

The pollutants of concern include pollutants with aquatic life criteria in Washington State's WQS used as a reference for the development of permit limits. Threshold concentrations are equal to the numeric water quality criteria for the protection of aquatic life. No other pollutants of concern were identified by NMFS.

Exposure and Wasteload Allocation

Analysis of the transport of pollutants near the discharge point with respect to the following:

- Mixing zone policies in the Washington State WQS
- Dilution modeling and analysis
- Exposure considerations (e.g., prevention of lethality to passing organisms)
- Consideration of multiple sources and background concentrations

Statistical Evaluation for Permit Limit Development

Calculation of permit limits using statistical procedures addressing the following:

- Effluent variability and non-continuous sampling
- Fate/transport variability
- Duration and frequency thresholds identified in the water quality criteria

Monitoring Programs

Development of monitoring requirements, including:

- Compliance monitoring of the effluent
- Ambient monitoring

Protection of Aquatic Life in NPDES Permitting

EPA's approach to aquatic life protection is outlined in detail in the Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001, March 1991). EPA and states evaluate toxicological information from a wide range of species and life stages in establishing water quality criteria for the protection of aquatic life.

The NPDES program evaluates a wide range of chemical constituents (as well as whole effluent toxicity testing results) to identify pollutants of concern with respect to the criteria values. When a facility discharges a pollutant at a level that has a "reasonable potential" to exceed, or to contribute to an exceedance of, the water quality criteria, permit limits are established to prevent exceedances of the criteria in the receiving water (outside any authorized mixing zone).

Effects Determination

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. It is predicted that the Taholah Village WWTP would not cause any of the above adverse effects to fish habitat.

As stated in Appendix E, circumstances discussed indicate that there is no measurable impact on essential habitat. Therefore EPA has determined that the issuance of this permit has no effect on EFH in the vicinity of discharge.

Quinault Indian Nation

5/26/2021

Susan Poulsom, Section Manager
NPDES Permitting Section
Environmental Protection Agency, Region 10
1200 Sixth Avenue, Suite 155
Seattle, WA 98101-3188

Re: Public Notice of Draft Permit for the Taholah WWTP, NPDES Permit No. WA0023434 and Request for Final Clean Water Act Section 401 Certification

Dear Ms. Poulsom,

The Quinault Indian Nation has designated the Environmental Protection Department's Water Quality Program Coordinator to review the draft NDPDES permit WA-0023434. After collaboration with James Earl and review of the draft NPDES permit, the Quinault Indian Nation grants certification for the Taholah Waste Water Treatment Plant under Section 401 of the Clean Water Act. There is reasonable assurance that the proposed activity and resulting discharge complies with the above-referenced NPDES Permit and requirements of the Clean Water Act and Water Quality Standards for Surface Waters of Washington State, which were used as benchmarks in the development of this permit.

The Quinault Indian Nation appreciates the efforts that James Earl has made to work on NDPES compliance and ensure that the standards of the Clean Water Act are met.

Sincerely,

Elyse Wulfkuhle

Elyse Wulfkuhle
Water Quality Program Coordinator
Quinault Indian Nation

cc: James Earl, Civil Engineer, EPA