EXHIBIT E

FACT SHEET

NPDES Permit Number: ID0020397
Date: January 31, 2018
Public Notice Expiration Date: March 2, 2018
Technical Contact: Cindi Godsey (206) 553-1676 or
800-424-4372, ext. 1676
(within Alaska, Idaho, Oregon and Washington)
godsey.cindi@epa.gov

The U.S. Environmental Protection Agency (EPA) Plans To Re-issue A Wastewater Discharge Permit To:

the

City of Nezperce Wastewater Treatment Plant

The EPA Proposes to Reissue the NPDES Permit

The 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 limits the types and amounts of pollutants that can be discharged from the facility.

This Fact Sheet includes:

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

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 a Public Hearing must be in writing and should be submitted to the EPA as described in the Public Comments Section of the attached Public Notice.

After the Public Notice expires, and all comments have been considered, the EPA's

regional Director for the Office of Water and Watersheds will make a final decision regarding permit issuance. If no substantive comments are received, the tentative conditions in the draft permit will become final, and the permit may become effective upon issuance. If substantive comments are received, the EPA will address the comments and issue the permit. The permit will become effective no less than 33 days after the issuance date, unless an appeal is submitted to the Environmental Appeals Board within 30 days pursuant to 40 CFR 124.19.

Documents are Available for Review

The draft NPDES permit and related documents can be reviewed or obtained by visiting or contacting the EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday at the following address:

US EPA Region 10
Suite 900
1200 Sixth Avenue, OWW-191
Seattle, Washington 98101
(206) 553-0523 or
Toll Free 1-800-424-4372 (within Alaska, Idaho, Oregon and Washington)

The draft permit, fact sheet, and other information can also be found by visiting the Region 10 NPDES website at http://EPA.gov/r10earth/waterpermits.htm

The fact sheet and draft permit are also available at:

EPA Idaho Operations Office
950 W Bannock
Suite 900
Boise, ID 83702
Phone: 208-378-5746

Water Quality Program Coordinator
Water Resources Division
Nez Perce Tribe
PO Box 365
Lapwai, ID 83540

TABLE OF CONTENTS

List of Acronyms

1Q10	1 day, 10 year low flow
7Q10	7 day, 10 year low flow
AML	Average Monthly Limit
ASR	Alternative State Requirement
AWL	Average Weekly Limit
BA	Biological Assessment
BE	Biological Evaluation
BOD_5	Biochemical oxygen demand, five-day
BMP	Best Management Practices
°C	Degrees Celsius
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
CFU	Colony Forming Unit
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
HUC	Hydrologic Unit Code
ICIS	Integrated Compliance Information System
I/I	Infiltration and Inflow
LA	Load Allocation
lbs/day	Pounds per day
LTA	Long Term Average
LTCP	Long Term Control Plan
mg/L	Milligrams per liter
mL	Milliliters
ML	Minimum Level
µg/L	Micrograms per liter
mgd	Million gallons per day
MDL	Maximum Daily Limit or Method Detection Limit
MPN	Most Probable Number
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Unit
OWW	Office of Water and Watersheds
O&M	Operations and maintenance
POTW	Publicly owned treatment works
PSES	Pretreatment Standards for Existing Sources
PSNS	Pretreatment Standards for New Sources
QAP	Quality assurance plan
RP	Reasonable Potential
RPM	Reasonable Potential Multiplier
RWC	Receiving Water Concentration
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 limitation
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 #:	ID-0020397
Applicant:	City of Nezperce
Type of Ownership	City of Nezperce owned WWTP
Physical Address:	2480 Highway 62 Nezperce, ID 83543
Mailing Address:	PO Box 367 Nezperce, ID 83543
Facility Contact:	Craig D. Caldwell Operator Shop@CityOfNezperce.com 208-937-2652
Operator Name:	Craig Caldwell
Facility Location:	46°14'27"N 116°14'35"W

B. Permit History

The most recent NPDES permit for the City of Nezperce Wastewater Treatment Plant (WWTP) was issued on February 5, 2004, became effective on April 1, 2004, and expired on March 31, 2009. An NPDES application for permit issuance was submitted by the permittee on October 2, 2008. The EPA determined that the application was timely and complete. Therefore, pursuant to 40 CFR 122.6, the permit is administratively extended and remains fully effective and enforceable.

II. FACILITY INFORMATION

The City of Nezperce owns and operates a WWTP located in Nezperce, Idaho. The collection system has no combined sewers. The City of Nezperce is an agriculturally based, rural community, serving a resident population of 542. There are no major industries discharging to the facility.

A. Treatment Process

The design flow of the facility is 0.09 mgd. The actual flow of the facility from 2012 to present ranged from 0.06 to 0.77 mgd with an average of 0.17 mgd. The treatment process consists of lagoons followed by chlorination and dechlorination.

A schematic of the wastewater treatment process and photos of the outfall are included in Appendix A. This facility is considered a minor facility.

The WWTP is adjacent to Long Hollow Creek downstream of the City. The stream was moved from its historic channel when the settling ponds were constructed and re-routed along the edge of the ponds. Past data has shown that the settling ponds were not adequately lined and subsequently leaked into Long Hollow Creek. The Nezperce WWTP was upgraded in 2009. The two holding ponds were re-lined to prevent leaking and a new lift station was installed.

In 2007, the facility prepared a plan for an upgrade of the WWTP. The Lagoon Improvements Project was finalized on April 30, 2010. These improvements were meant to address permit issues with effluent Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS) loading and BOD_5 and TSS percent removal, as well as Total Residual Chlorine (TRC) loading & effluent TRC. A Compliance Order on Consent (CWA-10-2018-0003) was signed by the City on November 6, 2017, and by EPA on November 28. The Order lays out a compliance schedule for the facility to reach and maintain compliance with the effluent limitations of the permit with a clause included to amend the Order to account for any changes to the effluent limitations in this reissued permit. A Consent Order (CWA-10-2018-0004), finalized on November 30, imposes a penalty for effluent limitation exceedences outlined in Fact Sheet (FS) II.D. and Appendix B, below.

B. OUTFALL DESCRIPTION

The facility has one outfall (Outfall 001) which discharges into Long Hollow Creek. This outfall has an intermittent, precipitation driven discharge, discharging from approximately October through May. The facility does not discharge from May through September. The effluent is disinfected by chlorination and routed through a dechlorination chamber prior to discharging into the creek. A photograph is included in Appendix A.

C. EFFLUENT CHARACTERIZATION

The effluent data is summarized in Table 2 and provided in Appendix B.

Table 2. Effluent Characterization

Parameter	Maximum	Average	Minimum
Biochemical Oxygen Demand	37.5 mg/L	15.2 mg/L	2.678 mg/L
Chlorine, Total Residual*	0	0	0
Dissolved Oxygen	75 mg/L	12.72 mg/L	2.4 mg/L
E. coli	2419 CFU/100mL	134 CFU/100mL	1 CFU/100mL
pH	9.76 s.u.	8.48 s.u.	7.07 s.u.
Total Suspended Solids	49.8 mg/L	19.27 mg/L	3.31 mg/L

Source: Nezperce DMR 1/2012 – 6/2016

*The City uses an on-site residual chlorine analyzer which lists a detection limit of 0.05 mg/L but zero is recorded when the analyzer reads "0". The draft permit requires a report of <0.05 mg/L when the reading is below the detection limit.

D. COMPLIANCE HISTORY

The EPA reviewed the effluent monitoring data from discharge monitoring reports (DMRs). The data are presented in Appendix B. One hundred effluent limitation exceedences were reported in DMRs for BOD_5, *E. coli*, pH, and TSS from March 2012 to February 2017.

The City of Nezperce has identified several factors contributing to these violations, including aged lift station pumps and a deteriorating collection system plagued by I/I issues. The city will address compliance concerns under the Compliance Order on Consent discussed in FS II.A.

III. RECEIVING WATER

This facility discharges to Long Hollow Creek in the City of Nezperce, Idaho, located within the boundaries of the Nez Perce Reservation and the Clearwater River watershed.

Long Hollow Creek is a tribal water that flows into Little Canyon Creek which flows into Big Canyon Creek which flows into the Clearwater River. The confluence of Big Canyon Creek and the Clearwater River is located approximately 25 miles upstream of the boundary between the Nez Perce Reservation and the State of Idaho and is within the tribal reservation.

A. WATER QUALITY STANDARDS

1. Overview

CWA § 301(b)(1)(C) requires the development of limitations in permits necessary to meet water quality standards. Federal regulations at 40 CFR 122.4(d) require that the conditions in NPDES permits ensure compliance with the water quality standards of all affected States. A State's water quality standards 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.

The Nez Perce Tribe has not applied for the status of Treatment as a State (TAS) from the EPA for purposes of the Clean Water Act. When the Nez Perce Tribe is granted TAS, and when it has water quality standards approved by EPA, those tribal standards will be used for determining effluent limitations. Until that time, the Idaho Water Quality Standards (WQS) were used as reference for setting permit limits and to protect downstream uses in the State of Idaho.

2. Designated Beneficial Uses

The WWTP discharges to Long Hollow Creek in the Clearwater Subbasin (HUC 17060306). It is protected for:

- industrial and agricultural water supply,
- wildlife habitats, aesthetics,
- cold water aquatic life and
- primary contact recreation.

3. Existing Uses

Tier 1 protection under the Antidegradation Policy applies to all water bodies under the CWA. It requires the protection of existing uses and requires that the water quality necessary to protect those uses be maintained and protected (40 CFR 131.12(a)(1)). Under the antidegradation regulations, EPA must include permit conditions in the NPDES permit sufficient to protect and maintain the existing uses in that water body. See Appendix D.

4. Surface Water Quality Criteria

The reference criteria are found in the following sections of the WQS:

- The narrative criteria applicable to all surface waters are found at IDAPA 58.01.02.200 (General Surface Water Quality Criteria).
- The numeric criteria for toxic substances for the protection of aquatic life and primary contact recreation are found at IDAPA 58.01.02.210 (Numeric Criteria for Toxic Substances for Waters Designated for Aquatic Life, Recreation, or Domestic Water Supply Use).
- Additional numeric criteria for the protection of aquatic life can be found at IDAPA 58.01.02.250 (Surface Water Quality Criteria for Aquatic Life Use Designations).
- Numeric criteria for the protection of recreation uses can be found at IDAPA 58.01.02.251 (Surface Water Quality Criteria for Recreation Use Designations).
- Water quality criteria for agricultural water supply can be found in the EPA's Water Quality Criteria 1972, also referred to as the "Blue Book" (EPA R3-73-033)

5. Antidegradation

In setting permit conditions, EPA must consider the antidegradation policy. This policy is designed to protect existing water quality when the existing quality is better than that required to meet the standard and to prevent water quality from being degraded below the standard when existing quality just meets the standard. For high quality waters, antidegradation requires a finding that allowing lower water quality is necessary to accommodate important economic or social development before any degradation is authorized. This means that, if water quality is better than necessary to meet the water quality standards, increased permit limits can be authorized only if they do not cause degradation, or if the EPA makes the determination that more stringent limits are necessary.

Since EPA evaluated the discharge by referencing Idaho's water quality standards, EPA utilized IDEQ's antidegradation implementation methods as guidance. Appendix D contains EPA's antidegradation analysis for this permit.

B. LOW FLOW CONDITIONS

The Technical Support Document for Water Quality-Based Toxics Control (hereafter referred to as the TSD) (EPA, 1991) and the WQS recommend the flow conditions for use in calculating water quality-based effluent limits (WQBELs) using steady-state modeling. The TSD states 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 criteria and the lowest one-day average flow rate expected to occur once every ten years (1Q10) for acute criteria.

Because the chronic criterion for ammonia is a 30-day average concentration not to be exceeded more than once every three years, EPA has used the 30B3 for the chronic ammonia criterion instead of the 7Q10. The 30B3 is a biologically-based flow rate designed to ensure an excursion frequency of no more than once every three years for a 30-day average flow rate. For human health criteria, the WQS recommend the 30Q5 flow rate for non-carcinogens, and the harmonic mean flow rate for carcinogens. (see Appendix C of this fact sheet for additional information on flows).

Critical low flows for Long Hollow Creek are presented below. Low flows are defined in Appendix C.

- 7Q10 flow: 0.5 cubic feet per second (cfs)
- 1Q10 flow: 0.2 cfs

C. Receiving Water Quality

The EPA reviews receiving water quality data when assessing the need for and developing water quality based effluent limits (WQBELs). In granting assimilative capacity of the receiving water, the EPA must account for the amount of the pollutant already present in the receiving water. In situations where some of the pollutant is actually present in the upstream waters, an assumption of zero background concentration overestimates the available assimilative capacity of the receiving water and could result in limits that are not protective of WQS.

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

Table 3. Receiving Water Quality Data

Parameter	Units	Percentile	Value
Temperature	°C	95th	20
pH	Standard units	95th	8.69
Ammonia	mg/L	maximum	0.331
Source: Nezperce Tribe ambient sampling in Long Hollow Creek (2005-2006)			

D. Water Quality Limited Waters

On September 26, 2016, EPA promulgated regulations expressly establishing a process for tribes to obtain Treatment as a State (TAS) authority to administer the water quality restoration provisions of CWA § 303(d), including issuing lists of impaired waters and developing total maximum daily loads (TMDLs), as states routinely do (81 FR 65901). By establishing regulatory procedures for eligible tribes to obtain TAS for the CWA § 303(d) Impaired Water Listing and TMDL Program, the rule enables eligible tribes to obtain authority to identify impaired waters on their reservations and to establish TMDLs, which serve as plans for attaining and maintaining applicable WQS.

The rule does not require tribes to have applicable WQS in place on their reservations prior to applying for TAS eligibility for the CWA § 303(d) Program. The rule also does not require tribes seeking TAS eligibility for the CWA § 303(d) Program to have previously obtained EPA approval for TAS for the WQS Program. Under CWA § 303(d), however, lists of impaired waters and TMDLs must be developed based on applicable WQS.

IV. EFFLUENT LIMITATIONS AND MONITORING

Table 4, below, presents the proposed effluent monitoring requirements in the draft permit.

Table 4. Draft Permit - Effluent Limits and Monitoring Requirements

Parameter	Units	Effluent Limitations			Monitoring Requirements		
		Average Monthly	Average Weekly	Maximum Daily	Sample Location	Sample Frequency[1]	Sample Type
Biochemical Oxygen Demand (BOD_5)	mg/L	30	45	--	Influent and Effluent	1/week	8-hour composite
	lbs/day	23	34	--			Calculation[2]
BOD_5 Percent Removal	%	85 (minimum)	--	--	Influent and Effluent	1/month	Calculation[3]
Total Suspended Solids (TSS)	mg/L	30	45	--	Influent and Effluent	1/week	8-hour composite
	lbs/day	23	34	--			Calculation[2]
TSS Percent Removal	%	85 (minimum)	--	--	Influent and Effluent	1/month	Calculation[3]
E. coli[4]	CFU/ 100 ml	126	--	406 (instant. max) [5]	Effluent	5/month	Grab
pH	std units	Between 6.5 – 9.0			Effluent	1/week	Grab
Total Residual Chlorine [1,5,6]	mg/L	0.007	---	0.018	Effluent	1/week	Grab
	lbs/day	0.005	---	0.014			
Floating, Suspended, or Submerged Matter	--	See Paragraph I.B.3 of the permit				1/month	Visual Observation
Report Parameters							
Dissolved Oxygen	mg/L	Report Minimum and Average			Effluent	1/month	Grab
Total Ammonia (as N)	mg/L	---	---	Report	Effluent	1/month	Grab
Total Phosphorus (as P)	mg/L	_	--	Report	Effluent	1/month	Grab
Flow	Mgd	Report	--	Report	Effluent	1/week	Measurement
Temperature	ºC	--	Report	Report	Effluent	1/week	Grab

Notes are found on the next page

Notes to Table 4

1. The facility must monitor whenever there is a discharge from the facility, at the frequency listed.
2. Loading (in lbs/day) is calculated by multiplying the concentration (in mg/L) by the corresponding flow (in mgd) for the day of sampling and a conversion factor of 8.34. For more information on calculating, averaging, and reporting loads and concentrations see the *NPDES Self-Monitoring System User Guide* (EPA 833-B-85-100, March 1985).
3. Percent Removal. The monthly average percent removal must be calculated from the arithmetic mean of the influent values and the arithmetic mean of the effluent values for that month using the following equation:
   (average monthly influent concentration – average monthly effluent concentration) ÷ average monthly influent concentration x 100. Influent and effluent samples must be taken over approximately the same time period.
4. The average monthly *E. coli* bacteria counts must not exceed a geometric mean of 126/100 ml based on a minimum of five samples taken every 3 - 7 days within a calendar month. See Permit Part VI. for a definition of geometric mean.
5. Reporting is required within 24 hours of a maximum daily limit or instantaneous maximum limit violation. See Permit Parts I.B.3. and III.G**.**
6. The average monthly and maximum daily concentration limits for chlorine are not quantifiable using EPA approved test methods. The permittee will be in compliance with the effluent limits for chlorine provided the average monthly and maximum daily total chlorine residual levels are at or below the compliance evaluation level of 0.05 mg/L, with a loading at or below 0.04 lbs/day.

The effluent limitations proposed in the draft permit are substantially the same as those limitations found in the current permit. Sampling type for BOD_5 and TSS has been changed from grab to composite sampling as described in FS VI.C. and the compliance level for chlorine is decreased based on the sampling methods becoming more precise.

V. 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 WQBELs. TBELs are set according to the level of treatment that is achievable using available technology. A WQBEL is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than TBELs.

A. POLLUTANTS OF CONCERN

The EPA identified the pollutants for concern for the discharge. Pollutants of concern for the discharge include those pollutants which:

- Have a technology-based limit
- Had an effluent limit in the previous permit
- Are present in the effluent monitoring. Monitoring data are reported in the application and discharge monitoring report 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 typical of a sewage treatment plant treating with chlorine disinfection include five-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), E. coli bacteria, total residual chlorine (TRC), pH, ammonia, phosphorus, and dissolved oxygen (DO).

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

- BOD_5
- TSS
- E. coli bacteria
- Total Residual Chlorine
- pH
- Ammonia
- Phosphorus
- Dissolved Oxygen

B. TECHNOLOGY-BASED EFFLUENT LIMITS

1. *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. The 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 5.

Table 5. 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 range of 6.0 - 9.0 s.u.	

Source: 40 CFR 133.102

2. *Mass-Based Limits*

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

Mass based limit (lb/day) = concentration limit (mg/L) × design flow (mgd) × 8.34[1]

Since the design flow for this facility is 0.09 mgd, the technology based mass limits for BOD_5 and TSS are calculated as follows:

Average Monthly Limit = 30 mg/L × 0.09 mgd × 8.34 = 23 lbs/day

Average Weekly Limit = 45 mg/L × 0.09 mgd × 8.34 = 34 lbs/day

3. *Chlorine*

Chlorine is often used to disinfect municipal wastewater prior to discharge. The City of Nezperce uses chlorine disinfection. The Water Pollution Control Federation's Chlorination of Wastewater (1976) states that a properly designed and maintained wastewater treatment plant can achieve adequate disinfection if a 0.5 mg/L chlorine residual is maintained after 15 minutes of contact time. Therefore, a wastewater treatment plant that provides adequate chlorine contact time can meet a 0.5 mg/L total residual chlorine limit on a monthly average basis.

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

In addition to average monthly limits (AMLs), NPDES regulations require effluent limits for POTWs to be expressed as average weekly limits (AWLs) unless impracticable. For TBELs, the AWL is calculated to be 1.5 times the AML, consistent with the secondary treatment limits for BOD_5 and TSS. This results in an AWL for chlorine of 0.75 mg/L.

C. WATER QUALITY-BASED EFFLUENT LIMITS

The goal of a WQBEL is to ensure a low probability that WQS will be exceeded in the receiving water as a result of a discharge, while considering the variability of the pollutant in the effluent.

1. Statutory and Regulatory Basis

CWA § 301(b)(1)(C) requires the development of limitations in permits necessary to meet water quality standards. The NPDES regulation 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 WQS, including narrative criteria for water quality. Effluent limits must also meet the applicable water quality requirements of affected States other than the where 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 applied WQS.

2. Reasonable Potential Analysis and Water Quality Based Effluent Limits

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

The reasonable potential and basis for WQBELs for specific parameters are summarized below. The calculations are provided in Appendix C.

EPA is using the reference criteria below based on (1) the applicable beneficial uses of the river, (2) the type of facility, (3) a review of the application materials submitted by the permittee, and (4) the quality of the water in Long Hollow Creek.

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 below details the equations used to determine water quality criteria for ammonia.

A reasonable potential calculation for ammonia (See Appendix C) showed that the City of Nezperce discharge would not have the reasonable potential to cause or contribute to a violation of the water quality criteria. 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 on a monthly basis along with ambient pH and temperature in order to determine applicable ammonia criteria for the next permit reissuance.

Chlorine

The WQS at IDAPA 58.01.02.210 establish an acute criterion of 19 µg/L and a chronic criterion of 11 µg/L for the protection of aquatic life. These values are below the detection level of current methods used to measure chlorine. The City indicates that all chlorine effluent data collected resulted in zero when analyzed. However, since a chlorine TBEL is included and there is a corresponding WQS, a WQBEL must be calculated so the more stringent of the two can be utilized in the permit as the effluent limitations.

EPA used a coefficient of variation of 0.6 and calculated the WQBEL according to the equations outlined in Appendix C. This resulted in an Average Monthly limitation of 9.5 ug/L and a Daily Maximum Limitation of 19 ug/L. These limitations are slightly above the current permit limitations which the City has had no problem meeting so to avoid backsliding, EPA is proposing to retain the chlorine effluent limitations from the previous permit – Average Monthly of 7 ug/L and Daily Maximum of 18 ug/L. Federal regulations at 40 CFR 122.45(b) and (f) require limitations for POTWs to be expressed as mass based limits using the design flow of the facility so the mass based limits for chlorine are calculated as follows:

Monthly average Limit= 0.007 mg/L x 0.09 mgd x 8.34 = 0.005 lbs/day

Daily Maximum Limit = 0.018 mg/L x 0.09 mgd x 8.34 = 0.014 lbs/day

which equal the loading limits of the current permit.

Pollutants of Concern			CHLORINE (Total Residual)
Aquatic Life Effluent Limit Calculations			
Number of Compliance Samples Expected per month (n)			
n used to calculate AML (if chronic is limiting then use min=4 or for ammonia min=30)			4
LTA Coeff. Var. (CV), decimal	(Use CV of data set or default = 0.6)		0.600
Permit Limit Coeff. Var. (CV), decimal	(Use CV from data set or default = 0.6)		0.600
Acute WLA, ug/L	$C_d = (\text{Acute Criteria} \times MZ_a) - C_u \times (MZ_a\text{-}1)$	Acute	19.0
Chronic WLA, ug/L	$C_d = (\text{Chronic Criteria} \times MZ_c) - C_{u\,x} (MZ_c\text{-}1)$	Chronic	11.0
Long Term Ave (LTA), ug/L	WLAc x $\exp(0.5\sigma^2\text{-}z\sigma)$, Acute	99%	6.1
(99^{th} % occurrence prob.)	WLAa x $\exp(0.5\sigma^2\text{-}z\sigma)$; ammonia n=30, Chronic	99%	5.8
Limiting LTA, ug/L	used as basis for limits calculation		5.8
Applicable Metals Criteria Translator (metals limits as total recoverable)			--
Average Monthly Limit (AML), ug/L , where % occurrence prob =		95%	**9**
Maximum Daily Limit (MDL), ug/L , where % occurrence prob =		99%	**18**
Average Monthly Limit (AML), mg/L			**0.009**
Maximum Daily Limit (MDL), mg/L			**0.018**
Average Monthly Limit (AML), lb/day			**0.007**
Maximum Daily Limit (MDL), lb/day			**0.014**

The concentration effluent limitations are below the detection level of current methods used to measure chlorine so EPA has adopted a compliance level of 50 ug/L which is equal to the Minimum Level for analytical purposes. At the design flow, a concentration of 50 µg/L translates into a load of 0.04 lbs/day. Therefore, if the average monthly and daily maximum effluent values are less than 50 ug/L and the loading is less than 0.04 lbs/day, the permittee will be considered in compliance with the chlorine effluent limitations of the permit.

pH

The WQS at IDAPA 58.01.02.250.01.a, require pH values of the receiving water to be within the range of 6.5 to 9.0. 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. The pH of the effluent ranged from 7.07 to 9.76 standard units which varies from water quality criterion of 6.5 - 9.0 standard units. Since the exceedances are on the high end of the range, a mixing zone cannot be granted because the permitted range cannot be above the required TBEL of 9.0 standard units.

E. coli

The WQS state that waters designated for recreation, are not to contain *E. coli* bacteria in concentrations exceeding 126 organisms per 100 ml based on a minimum of five samples taken every three to seven days over a thirty-day period. Therefore, the draft permit contains a monthly geometric mean effluent limit for *E. coli* of 126 organisms per 100 ml (IDAPA 58.01.02.251.01.a.).

The WQS also state that a water sample that exceeds certain “single sample maximum” values indicates a likely exceedance of the geometric mean criterion, although it is not, in and of itself, a violation of water quality standards. For waters designated for primary contact recreation, the “single sample maximum” value is 406 organisms per 100 ml (IDAPA 58.01.02.251.01.b.ii.).

The goal of a WQBEL is to ensure a low probability that WQS will be exceeded in the receiving water as a result of a discharge, while considering the variability of the pollutant in the effluent. Because a single sample value exceeding 406

organisms per 100 ml indicates a likely exceedance of the geometric mean criterion, the EPA has imposed an instantaneous (single grab sample) maximum effluent limit for *E. coli* of 406 organisms per 100 ml, in addition to a monthly geometric mean limit of 126 organisms per 100 ml, which directly implements the water quality criterion for *E. coli*. This will ensure that the discharge will have a low probability of exceeding 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 of 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 for *E. coli* as a monthly geometric mean and an instantaneous maximum limit.

Residues

The WQS require that surface waters be free from floating solids, visible foam in other than trace amounts, oily wastes that produce a sheen on the surface of the receiving water, floating, suspended or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses. The draft permit contains a narrative limitation prohibiting the discharge of such materials.

D. ANTIBACKSLIDING

The NPDES regulation 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 WQS, including narrative criteria for water quality. After performing an analysis, no pollutant of concern was found to have reasonable potential to cause or contribute to a violation of the water quality criteria. Therefore, WQBELs remain unchanged from the previous permit and backsliding is not an issue.

VI. MONITORING REQUIREMENTS

A. BASIS FOR EFFLUENT AND SURFACE WATER MONITORING

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 effluent monitoring is sufficient for the Permittee to fill out NPDES Form 2A when reapplication is due. *E. coli* data can be substituted for fecal coliform data on the form.

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

B. INFLUENT MONITORING

Influent flow monitoring shall be performed at the headworks. Samples shall be representative of the influent flow and collected at approximately the same time as effluent samples. The results are used to calculate effluent removal efficiency requirements for BOD_5 and TSS.

C. EFFLUENT MONITORING

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

Monitoring is required in the draft permit for every parameter for which there is an effluent limitation, in the frequency described Table 5, above. This includes:

- BOD_5
- BOD_5 Percent Removal
- TSS
- TSS Percent Removal
- E. coli bacteria
- TRC
- pH

The draft permit is proposing composite sampling instead of grab sampling for TSS and BOD_5. Composite samples are collected over time, either by continuous sampling or by mixing discrete samples, and represent the average characteristics of the wastestream during the sample period. Composite samples might provide a more representative measure of the discharge of pollutants over a given period than grab samples, and are used when any of the following is true:

- a measure of the average pollutant concentration during the compositing period is needed,
- a measure of mass loadings per unit of time is needed, or
- wastewater characteristics are highly variable.

An 8-hour composite sample is proposed. This means a combination of at least 4 discrete sample aliquots of at least 200 milliliters collected (either automated or manual) over periodic intervals from the same location, during the operating hours of a facility (8 hour period).

This draft permit also includes monitoring only for the following parameters based on the analysis below.

<u>Ammonia</u>

Based on the reasonable potential analysis in Appendix C, and described further in Part V.C, there is no requirement for a WQBEL in the draft permit for ammonia.

Monitoring is required once per month whenever there is a discharge from the facility. This monitoring data will be used to evaluate reasonable potential in the next permit.

Phosphorus

The WQS require surface waters of the state be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses. Monitoring is required once per month whenever there is a discharge from the facility. This monitoring data will be used to evaluate reasonable potential in the next permit

Floating, Suspended, or Submerged matter

The WQS require that surface waters of the State 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 and monitoring by visual observation once a month.

Dissolved Oxygen

Monitoring is required once per month whenever there is a discharge from the facility. This monitoring data will be used to evaluate reasonable potential in the next permit.

Flow

Because loading calculations are made using flow information for the day of sampling, an effluent monitoring requirement for flow is included in the draft permit.

Temperature

Monitoring is required once per month whenever there is a discharge from the facility. This monitoring data will be used to evaluate reasonable potential in the next permit.

D. Surface Water 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 impact on the receiving water. This information is also necessary in determining the need for other effluent limitations in future permits.

E. Submission of Discharge Monitoring Reports

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

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

VII. SLUDGE (BIOSOLIDS) REQUIREMENTS

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

VIII. OTHER PERMIT CONDITIONS

A. Special Conditions

1. Operation and Maintenance Plan

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

2. Quality Assurance Plan

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

3. Pretreatment Requirements

The City of Nezperce does not have an approved POTW pretreatment program per 40 CFR 403.8, therefore EPA is the Control Authority of industrial users that might introduce pollutants into the Nezperce Wastewater Treatment Facility.

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

Although there are currently no major industrial users, the Permittee is required to inform EPA if that situation changes. The City will then be required to develop 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. The 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.

4. Emergency Response and Public Notification Plan

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

The following specific permit conditions apply:

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

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

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

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

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

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

against the checklist (Chapter 3) to reduce the occurrence of sewer overflows and improve or maintain compliance.

B. 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. The EPA used a nationally consistent geospatial tool that contains demographic and environmental data for the United States at the Census block group level. This tool is used to identify permits for which enhanced outreach may be warranted.

The City of Nezperce is not located within or near a Census block group that is potentially overburdened. The draft permit does not include any additional conditions to address environmental justice.

Regardless of whether a City of Nezperce is located near a potentially overburdened community, the EPA encourages permittees to review (and to consider adopting, where appropriate) Promising Practices for Permit Applicants Seeking EPA-Issued Permits: Ways to Engage Neighboring Communities (see https://www.federalregister.gov/articles/2013/05/09/2013-10945/epa-activities-to-promote-environmental-justice-in-the-permit-application-process#p-104). 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 http://www.epa.gov/compliance/ej/plan-ej/ and Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*.

C. 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.

IX. 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 (T&E) species. An iPAC report from USFWS lists no aquatic T&E species in the area downstream of the discharge into Long Hollow Creek. NOAA Fisheries referenced EPA to the Clint Chandler with the Nez Perce Tribe (email communication from David Arthrand to Cindi Godsey, EPA). Chandler reported (email communication from Chandler to Godsey) that salmonids

were not encountered during July-August 2006 electrofishing surveys of Long Hollow Creek. He also reported that he was unaware of any anecdotal information regarding their use of the stream but expects that *O. mykiss* (steelhead) are occasionally present within the lower stream reaches. The Long Hollow Creek sites surveyed by the Nez Perce Tribe nearest the City of Nezperce did not have surface flow during the 2006 summer baseflow period. Given this information, EPA determines that there will be no effect on T&E species.

B. Essential Fish Habitat

Essential fish habitat (EFH) is the waters and substrate (sediments, etc.) necessary for fish to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires the EPA to consult with NOAA Fisheries when a proposed discharge has the potential to adversely affect EFH (i.e., reduce quality and/or quantity of EFH) of species that are part of a managed fisheries. Given the lack of species included in a managed fishery, EPA determines that issuance of this permit will not affect EFH.

C. CWA § 401 Certification

40 CFR 121.21 requires EPA to issue a CWA § 401 certification where (1) standards have been promulgated by EPA or (2) water quality standards have been established, but no State or interstate agency has authority to give such a certification. EPA has neither promulgated water quality standards nor have water quality standards been established for the Nez Perce Reservation, therefore no certification is required.

D. Permit Expiration

The permit will expire five years from the effective date.

X. REFERENCES

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

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

EPA 2010. *NPDES Permit Writers' Manual.* Environmental Protection Agency, Office of Wastewater Management, EPA-833-K-10-001.

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

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

Idaho Water Quality Standards – IDAPA 58-01-02

40 CFR 122 – EPA administered permit programs: the National Pollutant Discharge Elimination System.

40 CFR 124 – Procedures for Decisionmaking

40 CFR 133 – Secondary Treatment Regulation

40 CFR 403 – General Pretreatment Regulations for Existing and New Sources of Pollution

40 CFR 503 - Standards for the Use or Disposal of Sewage Sludge

USFWS List of threatened and endangered species that may occur in your proposed project: City of Nezperce WWTP. February 22, 2016. Consultation Code: 01EIFW00-2017-SLI-1153.

Email from Clint Chandlar (Nez Perce Tribe) to Cindi Godsey (EPA) dated May 4, 2017, regarding fish presence in Long Hollow Creek.

Email from David Arthaud (USFWS) to Cindi Godsey dated April 24, 2017 regarding fish presence in Long Hollow Creek. (2 attachments: Map showing steelhead distribution and Map showing Steelhead Intrinsic Potential)

Executive Order 12898. February 11, 1994. Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.

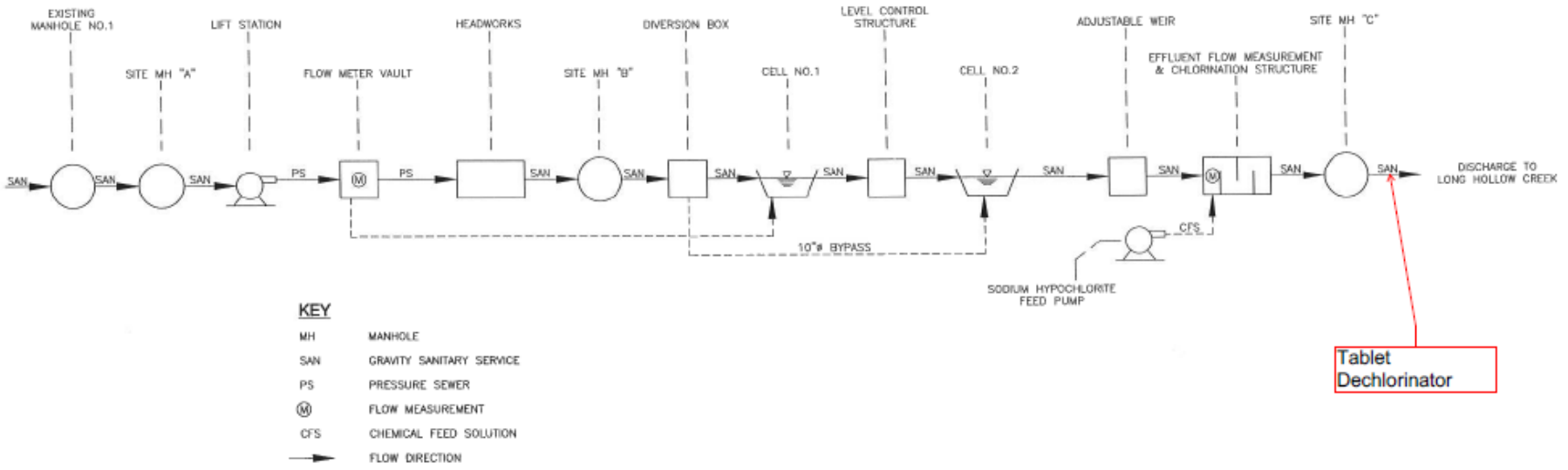
Promising Practices for Permit Applicants Seeking EPA-Issued Permits: Ways to Engage Neighboring Communities. 78 Federal Register 27220, May 9, 2013.

Email from Amy Uptmor (City of Nezperce consultant) to Cindi Godsey dated July 7, 2017, regarding chlorine monitoring and reporting.

81 FR 65901, September 26, 2016. Treatment of Indian Tribes in a Similar Manner as States for Purposes of Section 303(d) of the Clean Water Act

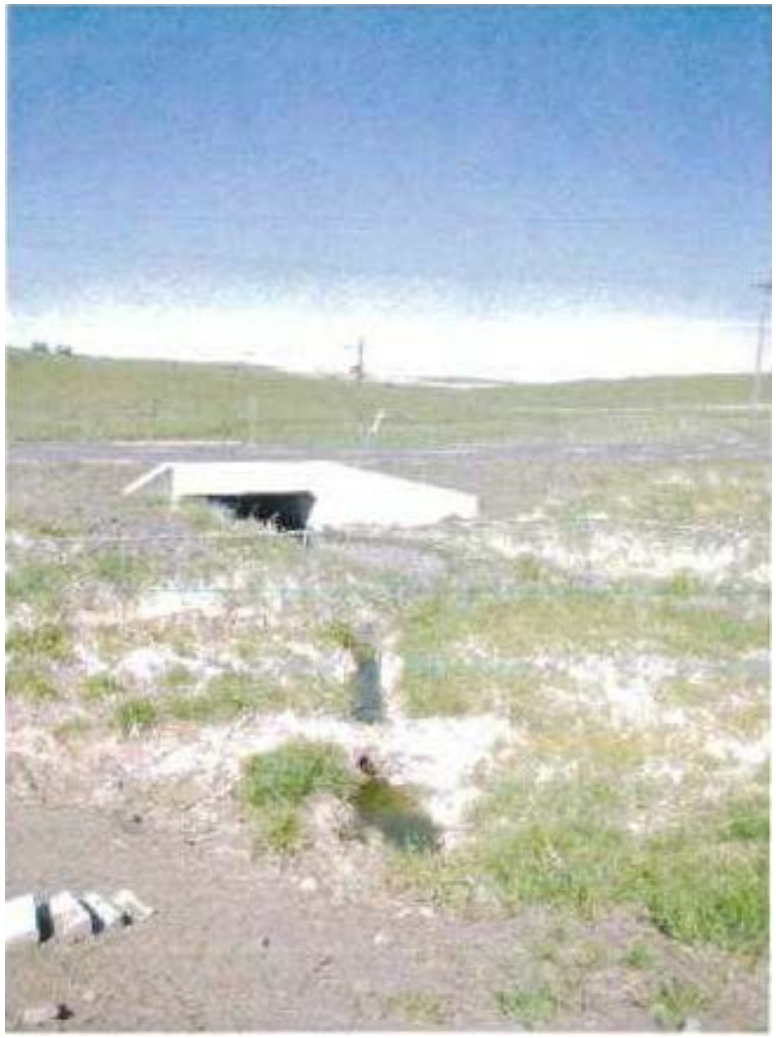
Email from Katie Adams (EPA) to Cindi Godsey dated September 08, 2017, regarding LaMotte meters.

APPENDIX A: FACILITY INFORMATION



Process Flow Schematic

Outfall to Long Hollow Creek
(Source: Inspection Report April 2016)



Effluent as it enters Long Hollow Creek
(Source: Inspection Report April 2016)

APPENDIX B: WATER QUALITY DATA

Table B-1 Discharge Monitoring Monthly Data
January 2012 through November 2016

DMR Month	Dissolved Oxygen	Total Suspended Solids					*E. coli* CFU/100 ml		pH (std units)		Biochemical Oxygen Demand (5 day)				
		Monthly Average		Weekly Average		% Removal					Monthly Average		Weekly Average		% Removal
	mg/L	lb/day	mg/L	lb/day	mg/L		Max	GeoMean	MIN	MAX	lb/day	mg/L	lb/day	mg/L	
01/31/12	3.5	16.9	20.	18.1	25.	64.5	3.	2.	7.99	8.35	14.2	17.2	15.6	21.1	36.5
02/29/12	8.7	36.3	49.8	45.5	66.5	87.3	1.	1.	8.41	8.48	26.5	37.5	36.5	53.3	89.6
03/31/12	7.5	27.7	10.	27.7	10.	83.3	1203.	49.	8.33	8.33	43.3	15.6	43.3	15.6	23.2
04/30/12	5.5	21.2	11.	27.8	17.	93.8	118.	3.	8.43	8.87	38.5	18.	60.7	23.1	82.1
05/31/12	2.7	12.06	8.4	23.1	17.	95.3	1.	1.	7.85	8.43	13.3	9.48	18.4	13.5	92.5
06/30/12	3.4	23.7	15.5	34.7	22.	94.7	130.	21.	8.35	8.82	22.3	14.1	34.4	16.	86.5
11/30/12	7.5	33.7	31.3	32.9	33.	75.	980.	5.	8.12	9.18	34.3	32.8	62.5	37.6	69.
12/31/12	6.	19.8	27.3	23.	30.	72.5	31.	3.	8.53	8.9	21.6	26.8	29.7	37.5	68.2
01/31/13	29.5	25.7	21.	25.7	21.	67.7	29.	29.	8.43	8.43	15.2	12.4	15.2	12.4	77.5
02/28/13	27.5	22.7	20.	31.2	23.	78.7	97.	5.	7.89	8.36	22.5	19.8	30.7	20.9	72.3
03/31/13	27.1	21.6	22.	26.7	32.	90.1	1.	1.	7.81	8.78	20.3	20.4	24.	26.	81.4
04/30/13	65.	19.4	26.8	25.1	32.	85.	5.	1.	8.76	9.42	14.9	20.3	20.8	25.7	85.
05/31/13	75.	18.3	40.	18.3	40.	39.	1.	1.	8.8	8.8	13.2	28.8	13.2	28.8	67.
11/30/13	13.7	38.	39.	64.	48.	85.	140.	18.	9.3	9.4	30.	31.	48.	34.	85.
12/31/13	12.9	28.1	30.6	44.8	34.	63.8	1300.	31.	8.98	9.37	23.9	26.9	41.6	35.2	78.9
01/31/14	7.7	39.	41.3	65.5	52.	75.	152.	30.	8.85	9.05	34.2	35.	49.2	39.1	75.
02/28/14	2.4	34.5	26.8	57.5	36.	71.4	2419.	20.	7.95	8.24	33.4	25.9	56.6	34.6	85.5
03/31/14	3.2	53.9	17.5	116.	21.	73.3	1.	1.	7.7	8.45	58.5	16.1	139.4	22.8	70.6
04/30/14	9.4	29.4	31.6	39.2	43.	73.5	33.	3.	8.98	9.76	24.7	26.	34.	31.5	73.6
11/30/14	3.7	37.5	32.	59.9	42.	77.2	5.	2.	8.15	8.64	12.9	11.8	19.4	16.	90.7
12/31/14	10.5	38.1	33.	49.6	39.	65.6	105.	2.	8.04	8.81	15.3	13.2	22.3	18.7	87.9
01/31/15	3.3	17.2	17.	20.4	22.	81.9	7.	2.	7.59	8.19	17.7	16.1	36.9	28.9	86.6
02/28/15	3.1	22.7	17.3	32.	20.	88.4	1.	1.	7.43	7.81	5.9	5.8	10.5	10.4	92.7
03/31/15	3.1	7.3	11.4	10.5	15.	95.	1.8	1.	7.85	9.21	6.6	10.3	15.3	21.8	91.7
11/30/15	10.5	15.1	18.8	18.3	24.	88.8	1046.	6.	7.07	8.59	9.4	11.1	17.6	19.2	87.3
12/31/15	7.	20.4	23.6	29.8	30.	90.8	185.	7.	7.97	8.23	16.7	18.1	26.4	19.9	81.1
01/31/16	5.3	16.	23.5	25.6	26.	91.	1.	1.	7.6	8.1	15.3	20.7	27.3	27.7	85.3
02/29/16	7.1	24.5	30.3	35.8	34.	78.6	3.	1.	8.11	8.73	21.9	27.3	32.9	39.	67.2
03/31/16	12.2	54.1	40.8	89.5	50.	81.6	21.	8.	8.38	9.02	31.4	24.2	55.6	29.2	77.2
04/30/16	6.1	29.6	25.5	45.9	33.	82.9	1.	1.	8.79	9.31	16.	14.3	20.1	19.6	79.2

DMR Month	Dissolved Oxygen*	Total Suspended Solids					*E. coli* CFU/100 ml		pH (std units)		Biochemical Oxygen Demand (5 day)				
		Monthly Average		Weekly Average		% Removal					Monthly Average		Weekly Average		% Removal
	mg/L	lb/day	mg/L	lb/day	mg/L		Max	GeoMean	MIN	MAX	lb/day	mg/L	lb/day	mg/L	
05/31/16	4.4	46.2	45.6	72.6	60.	75.3	1.	1.	8.55	8.87	20.6	20.5	34.	32.5	74.8
11/30/16	5.4	19.	25.6	24.	36.	82.5	118.	4.	7.92	8.67	11.5	15.3	14.5	21.8	84.3

*The Water Research Center (http://www.water-research.net/index.php/dissovled-oxygen-in-water) states that a Dissolved Oxygen value greater than 18 mg/L is impossible so where a value greater than 18 has been reported, any calculation has adjusted that value down to 18.

The 2004 Permit contained the following monitoring requirement for ammonia:

> Monitoring shall be conducted once per week whenever there is a discharge from the facility until a minimum of 10 samples has been collected during the permit cycle.

The Permittee collected 15 samples during the permit cycle but none of them were within the same timeframe as the effluent data from Table B-1, above. The ammonia data is shown below:

Table B-2: Ammonia (mg/L) effluent

2007	Jan	8.37
	April	0.44
	Dec	1.71
2008	Feb	8.82
	March	7.4
	April	5.45
	May	2.3
	June	5.76
	Dec	3.6
2009	Jan	4.81
	Feb	5.6
	March	6.72
	April	4.84
	Dec	5.64
2010	March	8.37
Maximum		8.82

The 2004 Permit required ambient monitoring upstream of the outfall in Long Hollow Creek for temperature, pH and ammonia. Receiving water data also was collected during 2005 – 2006 by the Nez Perce Tribe. The tribal collection stations were upsteam of the outfall (Up), downstream of the outfall (Down) and at the mouth of Long Hollow Creek at the confluence with Little Canyon Creek (Mouth). The permit data was collected from 2004 to 2008 and has been incorporated with the upstream tribal data which is summarized in Table B-3 below.

Table B-3: Receiving Water Data – Long Hollow Creek

	Site ID	Air Temp °C	Water Temp °C	DO mg/L	pH su	*E.Coli* CFU/100 ml	Turbidity NTU	Ammonia mg/L	Phosphorus mg/L	TSS mg/L
Maximum	Up	24.1	22.75	12.06	8.97	44.8	38.8	0.331	0.466	54
	Down	25.03	21.48	17.45	9.06	2419.6	68.5	5.65	2.1	253
	Mouth	28.2	20.47	13.19	8.15	1119.9	21.9	0.388	0.903	15
Average	Up	17.42	11.5	8.4	7.9	17.5	11.0	0.1	0.3	16.9
	Down	15.63	11.4	8.7	8.1	376.3	17.1	1.6	1.1	47.8
	Mouth	16.96	9.3	9.0	7.7	184.0	4.2	0.1	0.4	4.9
Minimum	Up	7.3	-0.2	3.1	7.34	2	1.28	0.025	0.124	2
	Down	6.62	0.33	2.33	7.07	3	1.7	0.05	0.251	2.4
	Mouth	5.36	0.16	6.44	7.3	2	1.26	0.05	0.092	2

Units: °C – degrees Celsius; mg/L – milligrams per liter
su – standard units; CFU/100ml - Colony Forming Unit per 100 millilters
NTU - Nephelometric Turbidity Unit

Table B-4 contains a list of permit effluent limitation violations.

Table B-4: Permit Effluent Limitation Violations

Month of Violation	Pollutant	Permit Limit	Value Reported	Units
E. coli maximum				
March 2012	*E. coli*	406	1203	#/100mL
November 2012	*E. coli*	406	980	#/100mL
December 2013	*E. coli*	406	1300	#/100mL
February 2014	*E. coli*	406	2419	#/100mL
November 2015	*E. coli*	406	1046	#/100mL
pH maximum				
November 2012	pH	9	9.18	SU
April 2013	pH	9	9.42	SU
November 2013	pH	9	9.40	SU
December 2013	pH	9	9.37	SU
January 2014	pH	9	9.05	SU
April 2014	pH	9	9.76	SU
March 2015	pH	9	9.21	SU
March 2016	pH	9	9.02	SU
April 2016	pH	9	9.31	SU
TSS Monthly Percent Removal				
March 2012	TSS	85	83.3	%

Table B-4: Permit Effluent Limitation Violations

Month of Violation	Pollutant	Permit Limit	Value Reported	Units
November 2012	TSS	85	75.0	%
December 2012	TSS	85	72.5	%
January 2013	TSS	85	67.7	%
February 2013	TSS	85	78.7	%
May 2013	TSS	85	39.0	%
December 2013	TSS	85	63.8	%
January 2014	TSS	85	75.0	%
February 2014	TSS	85	71.4	%
March 2014	TSS	85	73.3	%
December 2014	TSS	85	65.6	%
January 2015	TSS	85	81.9	%
February 2016	TSS	85	78.6	%
March 2016	TSS	85	81.6	%
April 2016	TSS	85	82.9	%
May 2016	TSS	85	75.3	%
November 2016	TSS	85	82.5	%
TSS Weekly Loading				
June 2012	TSS	34	34.7	lbs/d
November 2013	TSS	34	64.0	lbs/d
December 2013	TSS	34	44.8	lbs/d
January 2014	TSS	34	65.5	lbs/d
February 2014	TSS	34	57.5	lbs/d
March 2014	TSS	34	116	lbs/d
April 2014	TSS	34	39.2	lbs/d
November 2014	TSS	34	59.9	lbs/d
December 2014	TSS	34	49.6	lbs/d
February 2016	TSS	34	35.8	lbs/d
March 2016	TSS	34	89.5	lbs/d
April 2016	TSS	34	45.9	lbs/d
May 2016	TSS	34	72.6	lbs/d
TSS Weekly Concentration				
November 2013	TSS	45	48	mg/L
January 2014	TSS	45	52	mg/L
March 2016	TSS	45	50	mg/L
May 2016	TSS	45	60	mg/L
TSS Monthly Loading				
March 2012	TSS	23	27.7	lbs/d
June 2012	TSS	23	23.7	lbs/d
November 2012	TSS	23	33.7	lbs/d
January 2013	TSS	23	25.7	lbs/d
November 2013	TSS	23	38.0	lbs/d
December 2013	TSS	23	28.1	lbs/d
January 2014	TSS	23	39.0	lbs/d
February 2014	TSS	23	34.5	lbs/d
March 2014	TSS	23	53.9	lbs/d
April 2014	TSS	23	29.4	lbs/d
November 2014	TSS	23	37.5	lbs/d
December 2014	TSS	23	38.1	lbs/d
February 2016	TSS	23	24.5	lbs/d
March 2016	TSS	23	54.1	lbs/d
April 2016	TSS	23	29.6	lbs/d

Table B-4: Permit Effluent Limitation Violations

Month of Violation	Pollutant	Permit Limit	Value Reported	Units
May 2016	TSS	23	46.2	lbs/d
TSS Monthly Concentration				
November 2012	TSS	30	31.3	mg/L
May 2013	TSS	30	40.0	mg/L
November 2013	TSS	30	39.0	mg/L
December 2013	TSS	30	30.6	mg/L
January 2014	TSS	30	41.3	mg/L
April 2014	TSS	30	31.6	mg/L
November 2014	TSS	30	32.0	mg/L
December 2014	TSS	30	33.0	mg/L
February 2016	TSS	30	30.3	mg/L
March 2016	TSS	30	40.8	mg/L
May 2016	TSS	30	45.6	mg/L
BOD_5 Monthly Percent Removal				
December 2011	BOD_5	85	84.4	%
January 2012	BOD_5	85	36.5	%
March 2012	BOD_5	85	23.2	%
April 2012	BOD_5	85	82.1	%
November 2012	BOD_5	85	69	%
December 2012	BOD_5	85	68.2	%
January 2013	BOD_5	85	77.5	%
February 2013	BOD_5	85	72.3	%
March 2013	BOD_5	85	81.4	%
May 2013	BOD_5	85	67	%
December 2013	BOD_5	85	78.9	%
January 2014	BOD_5	85	75	%
March 2014	BOD_5	85	70.6	%
April 2014	BOD_5	85	73.6	%
December 2015	BOD_5	85	81.1	%
February 2016	BOD_5	85	67.2	%
March 2016	BOD_5	85	77.2	%
April 2016	BOD_5	85	79.2	%
May 2016	BOD_5	85	74.8	%
BOD_5 Weekly Loading				
March 2012	BOD_5	34	43.3	lbs/d
April 2012	BOD_5	34	60.7	lbs/d
June 2012	BOD_5	34	34.4	lbs/d
November 2012	BOD_5	34	62.5	lbs/d
November 2013	BOD_5	34	48	lbs/d
December 2013	BOD_5	34	41.6	lbs/d
January 2014	BOD_5	34	49.2	lbs/d
February 2014	BOD_5	34	56.6	lbs/d
March 2014	BOD_5	34	139.4	lbs/d
January 2015	BOD_5	34	36.9	lbs/d
March 2016	BOD_5	34	55.6	lbs/d
BOD_5 Monthly Concentration				
November 2012	BOD_5	30	32.8	mg/L
November 2013	BOD_5	30	31	mg/L
January 2014	BOD_5	30	35	mg/L

Table B-4: Permit Effluent Limitation Violations				
Month of Violation	**Pollutant**	**Permit Limit**	**Value Reported**	**Units**
BOD_5 Monthly Loading				
March 2012	BOD_5	23	43.3	lbs/d
April 2012	BOD_5	23	38.5	lbs/d
November 2012	BOD_5	23	34.3	lbs/d
November 2013	BOD_5	23	30.0	lbs/d
December 2013	BOD_5	23	23.9	lbs/d
January 2014	BOD_5	23	34.2	lbs/d
February 2014	BOD_5	23	33.4	lbs/d
March 2014	BOD_5	23	58.5	lbs/d
April 2014	BOD_5	23	24.7	lbs/d
March 2016	BOD_5	23	31.4	lbs/d

APPENDIX C: REASONABLE POTENTIAL AND WQBEL CALCULATIONS

Reasonable Potential Analysis

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

MASS BALANCE

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

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

where,

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

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

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

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

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

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

where:

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

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

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

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

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

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

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

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

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

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

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

MAXIMUM PROJECTED EFFLUENT CONCENTRATION

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

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

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

where,

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

and

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

where,

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

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

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

where MRC = Maximum Reported Concentration

MAXIMUM PROJECTED EFFLUENT CONCENTRATION AT THE EDGE OF THE MIXING ZONE

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

REASONABLE POTENTIAL

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

WQBEL Calculations

CALCULATE THE WASTELOAD ALLOCATIONS (WLAS)

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

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

The next step is to compute the "long term average" concentrations which will be protective of the WLAs. This is done using the following equations from the TSD:

$$LTA_a = WLA_a \times e^{(0.5\sigma^2 - z\,\sigma)} \quad \text{Equation 12}$$

$$LTA_c = WLA_c \times e^{(0.5\sigma_4^2 - z\sigma_4)} \quad \text{Equation 13}$$

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 (LTA_c) is calculated as follows:

$$LTA_c = WLA_c \times e^{(0.5\sigma_{30}^2 - z\sigma_{30})} \quad \text{Equation 14}$$

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.

DERIVE THE MAXIMUM DAILY AND AVERAGE MONTHLY EFFLUENT LIMITS

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

$$\mathrm{MDL} = \mathrm{LTA} \times e^{(z_m \sigma - 0.5\sigma^2)} \qquad \text{Equation 15}$$

$$\mathrm{AML} = \mathrm{LTA} \times e^{(z_a \sigma_n - 0.5\sigma_n^2)} \qquad \text{Equation 16}$$

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

σ_n^2 = $\ln(CV^2/n + 1$

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

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

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

Critical Low Flow Conditions

The low flow conditions of a water body are used to determine WQBELs. In general, WQS require criteria be evaluated at the following low flow receiving water conditions (See IDAPA 58.01.02.210.03) as defined below:

Acute aquatic life	1Q10[1] or 1B3[2]
Chronic aquatic life	7Q10[3] or 4B3[4]
Non-carcinogenic human health criteria	30Q5[5]
Carcinogenic human health criteria	harmonic mean flow[6]
Ammonia	30B3[7] or 30Q10[8]

1. The 1Q10 represents the lowest one day flow with an average recurrence frequency of once in 10 years.
2. The 1B3 is biologically based and indicates an allowable exceedence of once every 3 years.
3. The 7Q10 represents lowest average 7 consecutive day flow with an average recurrence frequency of once in 10 years.
4. The 4B3 is biologically based and indicates an allowable exceedance for 4 consecutive days once every 3 years.
5. The 30Q5 represents the lowest average 30 consecutive day flow with an average recurrence frequency of once in 5 years.
6. The 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.
7. The 30B3 is biologically based and indicates an allowable exceedance for 30 consecutive days once every 3 years.
8. The 30Q10 represents the lowest average 30 consecutive day flow with an average recurrence frequency of once in 10 years.

Reasonable Potential and Water Quality Based Effluent Limit Calculations

Pollutants of Concern			AMMONIA, default: cold water, fish early life stages	CHLORINE (Total Residual)
Effluent Data	**Number of Samples in Data Set (n)**		2	124
	Coefficient of Variation (CV) = Std. Dev./Mean (default CV = 0.6)		0.6	0.6
	Effluent Concentration, µg/L (Max. or 95th Percentile) - (C_e)		5.5	0
	Calculated 50th % Effluent Conc. (when n>10), Human Health Only			
Receiving Water Data	**90th Percentile Conc., µg/L - (C_u)**			
	Geometric Mean, µg/L, Human Health Criteria Only			
Applicable Water Quality Criteria	Aquatic Life Criteria, µg/L	Acute	1,499.714	19.
	Aquatic Life Criteria, µg/L	Chronic	555.678	11.
	Human Health Water and Organism, µg/L		--	--
	Human Health, Organism Only, µg/L		--	--
	Metals Criteria Translator, decimal (or default use Conversion Factor)	Acute		--
		Chronic		--
	Carcinogen (Y/N), Human Health Criteria Only		--	--
Percent River Flow Default Value = **25%**	**Aquatic Life - Acute**	**1Q10**	0%	0%
	Aquatic Life - Chronic	7Q10 or 4B3	0%	0%
	Ammonia	30B3 or 30Q10	0%	0%
	Human Health - Non-Carcinogen	30Q5	0%	0%
	Human Health - carcinogen	Harmonic Mean	0%	0%
Calculated Dilution Factors (DF) (or enter Modeled DFs)	Aquatic Life - Acute	1Q10	1.0	1.0
	Aquatic Life - Chronic	7Q10 or 4B3	--	1.0
	Ammonia	30B3 or 30Q10	1.0	1.0
	Human Health - Non-Carcinogen	30Q5	--	1.0
	Human Health - carcinogen	Harmonic Mean	--	1.0

Aquatic Life Reasonable Potential Analysis

σ	$\sigma^2=\ln(CV^2+1)$		0.555	0.555
P_n	$=(1\text{-confidence level})^{1/n}$, where confidence level =	**99%**	0.100	0.964
Multiplier (TSD p. 57)	$=\exp(z\sigma-0.5\sigma^2)/\exp[\text{normsinv}(P_n)-0.5\sigma^2]$, where	**99%**	7.4	1.3
Statistically projected critical discharge concentration (C_e)			40.67	0.00
Predicted max. conc.(ug/L) at Edge-of-Mixing Zone		Acute	40.67	0.00
(note: for metals, concentration as dissolved using conversion factor as translator)		Chronic	40.67	0.00
Reasonable Potential to exceed Aquatic Life Criteria			**NO**	**NO**

APPENDIX D: ANTIDEGRADATION ANALYSIS

The WQS contain an antidegradation policy providing Tier 1 and Tier 2 levels of protection (IDAPA 58.01.02.051).

- Tier 1 Protection. The first level of protection applies to all water bodies subject to Clean Water Act jurisdiction and ensures that existing uses of a water body and the level of water quality necessary to protect those existing uses will be maintained and protected (IDAPA 58.01.02.051.01; 58.01.02.052.01). Additionally, a Tier 1 review is performed for all new or reissued permits or licenses (IDAPA 58.01.02.052.07).
- Tier 2 Protection. The second level of protection applies to those water bodies considered high quality and ensures that no lowering of water quality will be allowed unless deemed necessary to accommodate important economic or social development (IDAPA 58.01.02.051.02; 58.01.02.052.08).

EPA is employing a water body by water body approach in conducting the antidegradation analysis. This approach means that any water body fully supporting its beneficial uses will be considered high quality (IDAPA 58.01.02.052.05.a). Any water body not fully supporting its beneficial uses will be provided Tier 1 protection for that use, unless specific circumstances warranting Tier 2 protection are met (IDAPA 58.01.02.052.05.c). EPA is analyzing Long Hollow Creek as a Tier 2 waterbody.

Pollutants with Limits in the Current and Draft Permit

For pollutants that are currently limited and will have limits under the reissued permit, the current discharge quality is based on the limits in the current permit and the future discharge quality is based on the proposed permit limits. For the City of Nezperce permit, this means determining the permit's effect on water quality based upon the limits for BOD_5, TSS, *E. coli*, total residual chlorine and pH in the current and draft permits. Table D-1 provides a summary of the current permit limits and the proposed permit limits.

Table D-1. Comparison of Current and Proposed Permit Limits

Pollutant	Units	Current Permit			Draft Permit		
		Average Monthly	Average Weekly	Max Daily	Average Monthly	Average Weekly	Max Daily
BOD_5	mg/l	30	45	---	30	45	---
	lbs/day	23	34	---	23	34	---
TSS	mg/l	30	45	---	30	45	---
	lbs/day	23	34	---	23	34	---
E. coli	CFU/100ml	126	---	406	126	---	406
Total Residual Chlorine*	µg/L	7	---	18	7	---	18
	lbs/day	0.005	---	0.014	0.005	---	0.014
pH	s.u.	6.5 – 9.0			6.5 – 9.0		

*The Compliance Evaluation Level in the 2004 permit was 100 ug/L while the proposed level for the new permit is 50 ug/L.

The proposed permit limits in Table D-1 for BOD_5, TSS, *E. coli*, and pH are the same as, or more stringent than, those in the previous permit. Therefore, no adverse change in water quality and no degradation will result from the discharge of these pollutants in the

reissued permit. Neither the limits in the previous permit nor in the draft permit for chlorine are quantifiable using EPA-approved analytical methods. The minimum level (ML) for chlorine, 50 µg/L, is used as the compliance evaluation level for this parameter. The new ML is less than that used in the 2004 Permit (100 ug/L). The mass based limit is derived from the ML concentration and is effectively more stringent than that in the 2004 permit. Therefore, no adverse change in water quality and no degradation will result from the discharge of total residual chlorine.

EPA concludes that the draft permit complies with the Tier 2 provisions of the WQS.