

United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, Suite 155
Seattle, Washington 98101

Statement of Basis

A Draft National Pollutant Discharge Elimination System (NPDES) Permit has been prepared to address changes to the original draft permit that was public noticed on January 31, 2018.

NPDES Permit: ID0020397

Applicant: City of Nezperce
2480 Highway 62
Nezperce, ID 83543

Facility Contact: Craig Cardwell (208) 937-2652
Facility Location: 46.2408°N 116.2431°W

Receiving Water: Long Hollow Creek

I. PROPOSED ACTION, TYPE OF FACILITY AND DISCHARGE LOCATION:

EPA provided public notice of the draft permit for the City of Nezperce Wastewater Treatment Plant (WWTP) on January 31, 2018. An accompanying Fact Sheet explained the conditions in the draft permit. The comment period ended on March 2, 2018. Comments were received from the City of Nezperce and the Nez Perce Tribe.

This Statement of Basis is to address some issues raised in the comments received during the comment period and to correct an error in development of an ammonia effluent limitation. The issues to be addressed are:

- ▶ Treatment Equivalent to Secondary
- ▶ Monitoring Frequency
- ▶ Ammonia
- ▶ Reporting to the Nez Perce Tribe
- ▶ Pretreatment Requirement

A. 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 460. There are no major industries discharging to the facility.

B. 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 facultative lagoon treatment. A variable draw-off structure located on the second lagoon is utilized to feed the chlorine contact chamber. The structure allows the City to optimize effluent water quality by allowing effluent to be drawn at different lagoon levels. Flows are subsequently dechlorinated using a tablet dechlorinator.

The WWTP is adjacent to Long Hollow Creek downstream of the City. A schematic of the wastewater treatment process and photos of the outfall were included in Appendix A of the Fact Sheet. This facility is considered a minor facility.

In 2007, the facility prepared a plan for an upgrade of the WWTP. The Lagoon Improvements Project was finalized on April 30, 2010. A new lift station and pumps were installed to address age, reliability, and maintenance concerns. Other improvements were completed to address permit compliance issues with effluent Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS) loading, BOD₅ and TSS percent removal, and Total Residual Chlorine (TRC).

A Compliance Order on Consent (CWA-10-2018-0003) was signed and entered into between the City and EPA on November 28, 2017. The Order establishes a compliance schedule for the facility to achieve and maintain compliance with the effluent limitations of the administratively continued permit. The Order includes a clause that allows for amending the Order to account for any changes to the effluent limitations that may occur when the permit is reissued. A Consent Agreement and Final Order (CWA-10-2018-0004), dated November 30, 2017, imposes a penalty for effluent limitation exceedences outlined in the Fact Sheet.

C. OUTFALL DESCRIPTION

The facility has one outfall (Outfall 001) that discharges into Long Hollow Creek. Discharges from the outfall are intermittent and precipitation driven. The existing and draft permit allow year-round discharge. Historically, the facility discharged from approximately October through May, but in recent years the facility discharges more frequently (10 months during 2017) and plans to continue discharging whenever conditions allow.

II. LIMITATIONS AND CONDITIONS

As indicated above, EPA is proposing to address the five listed issues. All other conditions of the draft permit, including effluent limitations and monitoring provisions are unchanged. For clarity, rather than issue only the revised permit provisions, the new draft permit includes the entire text of the permit. **However, EPA is accepting comment only on the conditions considered in this action. Any comments received on the previous draft that are not addressed in this action will be responded to in the Response to Comments document prepared for the final permit.**

III. BACKGROUND FOR THIS ACTION

Comments on the previous draft permit raised issues about the application of the Secondary Treatment Requirements to the discharge. In addition, the City submitted comments that requested reduced monitoring frequency and removal of some pretreatment requirements. The Nez Perce Tribe submitted a comment requesting that reports required by the permit be submitted to the Nez Perce Tribe as well as EPA. Finally, in reviewing the permit documents, EPA discovered an error in the calculations used to determine whether an ammonia effluent limitation was required. Each of these will be addressed in the follow section.

IV. ISSUES

A. Treatment Equivalent to Secondary

Comments were submitted by the City during the previous comment period that the development of the 2004 Permit accurately predicted that effluent BOD₅ and TSS limits, "will be problematic for the City." Based on data obtained and submitted in Discharge

Monitoring Reports (DMRs) under the 2004 Permit, the City commented that the data clearly shows that the facility cannot consistently achieve secondary limits and qualifies for "Treatment Equivalent to Secondary". To address this issue, EPA performed the following analysis:

40 CFR 133.101(g) *Facilities eligible for treatment equivalent to secondary treatment* states: Treatment works shall be eligible for consideration for effluent limitations described for treatment equivalent to secondary treatment (§ 133.105), if:

- (1) The BOD₅ and TSS effluent concentrations consistently achievable through proper operation and maintenance (§ 133.101(f)) of the treatment works exceed the minimum level of the effluent quality set forth in §§ 133.102(a) and 133.102(b),
- (2) A trickling filter or waste stabilization pond is used as the principal process, and
- (3) The treatment works provide significant biological treatment of municipal wastewater.

Applicable definition for (1), above:

40 CFR 133.101(f) *Effluent concentrations consistently achievable through proper operation and maintenance.* (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 two years, excluding values attributable to upsets, bypasses, operation errors, or other unusual conditions, and (2) a 7-day average value equal to 1.5 times the value derived under paragraph (f)(1) of this section.

EPA analyzed the data over the period of the last two years since, as the City's comments emphasize, the discharge has become more frequent ("As noted in the 2017 Compliance Report, the City discharged 11 months out of the year in 2017") and thus more representative of the discharge than previous timeframes. The Table that follows contains the data from January 2017 through December 2018.

Date	BOD mg/L Monthly Average	1.5 X BOD	BOD % Removal	TSS mg/L Monthly Average	1.5 X TSS
01/31/2017	20.1		89.7	11.2	
03/31/2017	13.5		70.8	11.6	
04/30/2017	12.1		73.7	23.	
05/31/2017	8.		83.6	4.7	
06/30/2017	7.7		95.9	6.1	
07/31/2017	8.2		90.3	2.5	
08/31/2017	9.9		88.8	7.2	
09/30/2017	12.7		78.3	26.6	
11/30/2017	5.3		94.0	17.5	
12/31/2017	2.9		98.2	2.3	
01/31/2018	7.3		90.1	8.2	
02/28/2018	3.7		96.0	6.8	
03/31/2018	5.2		92.3	21.3	
04/30/2018	3.2		98.6	5.	
05/31/2018	4.4		96.6	18.8	
06/30/2018	5.3		94.1	4.3	
07/31/2018	6.3		93.5	12.8	

Date	BOD mg/L Monthly Average	1.5 X BOD	BOD % Removal	TSS mg/L Monthly Average	1.5 X TSS
10/31/2018	4.6		96.3	27	
11/30/2018	3		97.6	27	
12/31/2018	5.5		97	11	
95th %-tile	13.8	20.7		27.0	40.5
5th %-tile			73.6		
Average	6.8		90.8		12.8
	95 th percentile > 30 mg/L	1.5 times > 45 mg/L	% Removal > 65% Removal	95 th percentile > 30 mg/L	1.5 times > 45 mg/L
	No	No	Yes	No	No

As can be seen from the above Table, the effluent data does not indicate that the effluent concentrations consistently achievable through proper operation and maintenance of the treatment works exceed the minimum level of the effluent quality set forth in 40 CFR §§ 133.102(a) and 133.102(b).

In the Compliance Order on Consent (CWA-10-2018-0003) that was entered into between the City and EPA in November 2017, the most recent permit violation was in November 2016. The facility has been discharging more frequently and recent data show no violations of the monthly average effluent limitations for either BOD₅ or TSS.

A trickling filter or waste stabilization pond is used as the principal process as required in (2), above.

Applicable definition for (3), above:

40 CFR 133.101(k) *Significant biological treatment*. The use of an aerobic or anaerobic biological treatment process in a treatment works to consistently achieve a 30-day average of a least 65 percent removal of BOD₅.

The percent removal data shown in the above Table indicates that the system does provide significant biological treatment.

Since all three conditions are not satisfied, the facility is not eligible for effluent limitations based on Equivalent to Secondary regulations.

B. Monitoring Frequency

The City requested a reduced monitoring frequency for BOD₅ and TSS to once per month, similar to NPDES permits for other local communities, because they plan to discharge more frequently than was anticipated in the current permit.

EPA proposes to reduce the monitoring frequency based on the EPA's *Interim Guidance for Performance-based Reduction of NPDES Permit Monitoring Frequencies* (April 19, 1996). The following Table summarizes the reductions in monitoring frequency that are proposed based on the guidance.

Reductions in Monitoring Frequency			
Parameter	Ratio*	Previous Frequency	New Frequency
BOD ₅	8.5/30 = 28%	1/week	2/month
TSS	12.0/30 = 40%	1/week	2/month
*Ratio of Long Term Average (Nov. 2016 – July 2018) to Average Monthly Limitation			

It is important to recognize that permittees that receive monitoring frequency reductions are still expected to take all appropriate measures to control both the average level of pollutants of concern in their discharge (mean) as well as the variability of such parameters in the discharge (variance), *regardless* of any reductions in monitoring frequencies granted from the baseline levels. Reliance on monitoring the discharge at a reduced frequency as the sole means of tracking and controlling the discharge could increase the risk of violations.

As discussed in the guidance document, permittees are expected to maintain the performance levels that were used as the basis for granting monitoring reductions. To remain eligible for these reductions, the permittee: (1) may not have any Significant Noncompliance (SNC) violations for effluent limitations of the parameters for which reductions have been granted; (2) must submit timely DMRs; or (3) may not be subject to a new formal enforcement action. For facilities that do not maintain performance levels, EPA may require increased monitoring in accordance with CWA §§ 308 or 309 Orders.

C. Ammonia

In developing the draft permit, EPA incorrectly applied the reported ammonia effluent concentrations to be in units of ug/L. Instead, the data were in mg/L. This means the effluent levels of ammonia were much higher in comparison to the criteria. The updated reasonable potential calculation using the correct units shows that the discharge has reasonable potential to cause or contribute to a violation of the water quality criteria for ammonia. Therefore, the revised draft permit contains water quality-based effluent limits for ammonia. Appendix A shows the reasonable potential analysis and effluent limitation calculations.

D. Requirement to report to the Nez Perce Tribe

The Nez Perce Tribe requested that the permit require that reports received by EPA also be submitted or be made available to the Tribe. EPA is proposing to accommodate this request by adding this requirement to the permit in several places.

E. Pretreatment Requirement

The City commented that a review of 40 CFR 403 was completed and does not believe there are any industrial users introducing pollutants to the POTW. A request was made that the requirement to develop a municipal code regarding pretreatment be removed from the permit and required only if industrial users are identified in accordance with paragraph II.C.4.

Since the City states that there are no industrial users, EPA is proposing to remove this condition from the permit. Even if it is 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.

V. PUBLIC COMMENT PERIOD AND PROCEDURE FOR FINAL DECISION

Persons wishing to comment on, or request a public hearing for, this limited draft permit action may do so in writing by the expiration date of the public notice 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 should include name, address, phone number, a concise statement of the basis for a comment and relevant facts upon which it is based. All written comments should be addressed to the Office of Water & Watersheds Director at U.S. EPA, Region 10, 1200 Sixth Avenue Suite 155, OWW-191, Seattle, WA 98101; submitted by facsimile to (206) 553-0165; or comments on the draft permit may be submitted via e-mail to godsey.cindi@epa.gov

After the Public Notice expires, the EPA will consider all substantive comments related to this revised draft permit. The EPA's Regional Director for the Office of Water & Watersheds will make a final decision regarding permit issuance based on all comments received during both comment periods. The EPA will address the comments and issue the permit along with a response to comments. The permit will become effective no less than 30 days after the issuance date, unless an appeal is submitted to the Environmental Appeals Board within 30 days pursuant to 40 CFR 124.19.

Documents are Available for Review.

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

United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, Suite 155 OWW-191
Seattle, Washington 98101
(206) 553-0523 or
1-800-424-4372 (within Alaska, Idaho, Oregon and Washington)

The draft permit, this Statement of Basis, the previous Fact Sheet and other information can also be found by visiting the Region 10 website at <https://www.epa.gov/npdes-permits/idaho-npdes-permits>. The draft Administrative Record for this action contains the pertinent documents from the previous draft permit and any documents listed in the References section that were not previously included. The Administrative Record or documents from it are available upon request by contacting Cindi Godsey.

The revised draft permit and Statement of Basis 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

For technical questions regarding the Statement of Basis, contact Cindi Godsey at (206) 553-1676 or godsey.cindi@epa.gov. Services can be made available to persons with disabilities by contacting Audrey Washington at (206) 553-0523.

VI. REFERENCES

EPA 1991. *Technical Support Document for Water Quality-based Toxics Control*. Office of Water Enforcement and Permits, Office of Water Regulations and Standards. Washington, DC. March 1991. EPA/505/2-90-001.

EPA 2010. *NPDES Permit Writers' Manual 2010*. Office of Wastewater Management, Water Permits Division, State and Regional Branch. Washington, DC. September 2010. EPA-833-K-10-001.

40 CFR 133 – Secondary Treatment Regulations

<https://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol22/pdf/CFR-2011-title40-vol22-part133.pdf>

EPA 2007. *EPA Model Pretreatment Ordinance*. Office of Wastewater Management, Permits Division. Washington, DC. January 2007. EPA 833-B-06-002.

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

EPA 1996. *Interim Guidance for Performance - Based Reductions of NPDES Permit Monitoring Frequencies*. Memorandum from Robert Perciasepe, Assistant Administrator Office of Water and Steven A. Herman, Assistant Administrator Office of Enforcement and Compliance Assurance to Regional Administrators, Regional Water Division Directors and Regional Counsels. Washington, DC. April 19, 1996.

<https://www.epa.gov/sites/production/files/2014-08/documents/interim-guidance-for-performance-memo-1996.pdf>

Appendix A – Ammonia Effluent Limitation Calculations

The previous permit only required the collection of a minimum of 10 ammonia samples. Table A-1 shows the effluent values for the 22 samples collected between 2004 and 2009 along with the statistics of the data set including the Coefficient of Variation (CV).

Table A-1: Effluent Ammonia		
Date	Daily Maximum	Units
06/30/2004	6.41	mg/L
03/31/2005	4.30	mg/L
04/30/2005	6.52	mg/L
05/31/2005	6.22	mg/L
06/30/2005	6.53	mg/L
02/28/2006	9.04	mg/L
03/31/2006	9.49	mg/L
04/30/2006	5.10	mg/L
05/31/2006	6.23	mg/L
01/31/2007	8.37	mg/L
04/30/2007	0.44	mg/L
12/31/2007	1.71	mg/L
02/29/2008	8.82	mg/L
03/31/2008	7.40	mg/L
04/30/2008	5.45	mg/L
05/31/2008	2.30	mg/L
06/30/2008	5.76	mg/L
12/31/2008	3.60	mg/L
01/31/2009	4.81	mg/L
02/28/2009	5.60	mg/L
03/31/2009	6.72	mg/L
Max	9.49	mg/L
Min	0.44	mg/L
Average	5.75	mg/L
Std Dev	2.36	
95th %-tile	9.04	mg/L
CV	0.41	

Table A-2 on the following page shows the results of the calculations to determine reasonable potential and effluent limitations. The reasoning for these calculations follows the Table.

Table A-2

Receiving Water Data

Hardness, as mg/L CaCO₃
 Temperature, °C
 pH, S.U.

Notes:

5th % at critical flows
 Temperature, °C 95th percentile
 pH, S.U. 95th percentile

Annual

Crit. Flows
 20
 8.69

Pollutants of Concern		AMMONIA, default: cold water, fish early life stages
Effluent Data	Number of Samples in Data Set (n)	22
	Coefficient of Variation (CV) = Std. Dev./Mean (default CV = 0.6)	0.41
	Effluent Concentration, µg/L (Max. or 95th Percentile) - (C _e)	9,040.0
	Calculated 50 th % Effluent Conc. (when n>10), Human Health Only	
Receiving Water Data	90 th Percentile Conc., µg/L - (C _u)	331
	Geometric Mean, µg/L, Human Health Criteria Only	
Applicable Water Quality Criteria	Aquatic Life Criteria, µg/L Acute	1,499.714
	Aquatic Life Criteria, µg/L Chronic	555.678
	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%
	Aquatic Life - Chronic 7Q10 or 4B3	--
	Ammonia 30B3 or 30Q10	0%
	Human Health - Non-Carcinogen 30Q5	--
	Human Health - carcinogen Harmonic Mean	--
Calculated Dilution Factors (DF) (or enter Modeled DFs)	Aquatic Life - Acute 1Q10	1.0
	Aquatic Life - Chronic 7Q10 or 4B3	--
	Ammonia 30B3 or 30Q10	1.0
	Human Health - Non-Carcinogen 30Q5	--
	Human Health - carcinogen Harmonic Mean	--

Aquatic Life Reasonable Potential Analysis

σ	σ ² =ln(CV ² +1)	0.394
P _n	=(1-confidence level) ^{1/n} , where confidence level = 99%	0.811
Multiplier (TSD p. 54)	=exp(zσ-0.5σ ²)/exp[normsinv(P _n)-0.5σ ²], where 99%	1.8
Statistically projected critical discharge concentration (C _e)		15974.05
Predicted max. conc.(ug/L) at Edge-of-Mixing Zone Acute		15974.05
(note: for metals, concentration as dissolved using conversion factor as translator) Chronic		15974.05
Reasonable Potential to exceed Aquatic Life Criteria		YES

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)		30
LTA Coeff. Var. (CV), decimal (Use CV of data set or default = 0.6)		0.410
Permit Limit Coeff. Var. (CV), decimal (Use CV from data set or default = 0.6)		0.410
Acute WLA, ug/L C _d = (Acute Criteria x MZ _a) - C _u x (MZ _a -1) Acute		1,499.7
Chronic WLA, ug/L C _d = (Chronic Criteria x MZ _c) - C _u x (MZ _c -1) Chronic		555.7
Long Term Ave (LTA), ug/L WLAc x exp(0.5σ ² -zσ), Acute 99%		647.9
(99 th % occurrence prob.) WLa x exp(0.5σ ² -zσ); ammonia n=30, Chronic 99%		468.3
Limiting LTA, ug/L used as basis for limits calculation		468.3
Applicable Metals Criteria Translator (metals limits as total recoverable)		--
Average Monthly Limit (AML), ug/L, where % occurrence prob = 95%		528
Maximum Daily Limit (MDL), ug/L, where % occurrence prob = 99%		1,084
Average Monthly Limit (AML), mg/L		0.5
Maximum Daily Limit (MDL), mg/L		1.1
Average Monthly Limit (AML), lb/day		0.40
Maximum Daily Limit (MDL), lb/day		0.81

REASONABLE POTENTIAL

Although the Maximum Expected Effluent Concentration is calculated in Table A-2, the discharge has reasonable potential to cause or contribute to an exceedance of water quality criteria because the actual maximum effluent concentration exceeds the most stringent criterion for ammonia.

CALCULATE THE WASTELOAD ALLOCATIONS (WLAs)

Where no mixing zone is authorized, the criterion becomes the WLA.

CALCULATE THE LONG-TERM AVERAGES (LTAs)

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:

$$LTA_a = WLA_a \times e^{(0.5\sigma^2 - z\sigma)} \quad \text{Equation A-1}$$

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

where,

$$\begin{aligned} \sigma^2 &= \ln(CV^2 + 1) \\ Z_{99} &= 2.326 \text{ (z-score for the 99th percentile probability basis)} \\ CV &= \text{coefficient of variation (standard deviation } \div \text{ mean)} \\ \sigma_{30}^2 &= \ln(CV^2/30 + 1) \end{aligned}$$

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

DERIVE THE MAXIMUM DAILY AND AVERAGE MONTHLY EFFLUENT LIMITS

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

$$MDL = LTA \times e^{(z_m\sigma - 0.5\sigma^2)} \quad \text{Equation A-3}$$

$$AML = LTA \times e^{(z_a\sigma_n - 0.5\sigma_n^2)} \quad \text{Equation A-4}$$

where σ and σ^2 are defined as they are for the LTA equations above, and,

$$\begin{aligned} \sigma_n^2 &= \ln(CV^2/n + 1) \\ z_a &= 1.645 \text{ (z-score for the 95th percentile probability basis)} \\ z_m &= 2.326 \text{ (z-score for the 99th percentile probability basis)} \\ n &= \text{number of sampling events required per month. If the AML is based on the} \\ &\quad LTA_c \text{ (i.e., } LTA_{\text{minimum}} = LTA_c \text{), the value of "n" is set at a minimum of 30.} \end{aligned}$$